Bundling for consumers?
Understanding complementarity and its effect on consumers’ preferences and satisfaction

Erika Knutsson
Acknowledgements

When I was accepted as a PhD student some years ago I set of on a long journey. If I ever thought the journey would follow a straight road towards a predefined destination, I was wrong. Along the road I have explored a number of alternative tracks and sidetracks. At times I have made tough uphill climbs while at other times enjoyed straight stretches in tailwind. And this is it. This is the end of my PhD journey.

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Abstract

It is a common market practice to offer two products in a package, so called bundling. While much research investigate how companies can use bundling to increase sales and profit, less is known about how bundling can be beneficial for consumers. There are many advantages with bundling for consumers, as bundles often are offered at a reduced price and provide convenience and reduced risk. But there are also major drawbacks, for example reduced freedom of choice and increased risk of over-consumption. In the present study, the general aim is to increase the understanding of how consumers’ perceive bundle value. To achieve this, focus is turned to bundle composition, more specifically the complementarity between bundle products, as a source of value for consumers. By exploring what complementarity is, how it influences consumer preferences for and satisfaction with bundles and how it interacts with bundle discount insights about the overall value of bundles for consumers is gained.

In five scenario-based experiments, the influence of different kinds and different degrees of complementarity on consumers’ perceptions of bundle value is studied and compared to evaluations of separate products.

The results show that bundles generally are not preferred over separate products and that they only exceptionally provide more satisfaction. However, the results also highlight the influence of bundle composition on consumer evaluations. Generally, bundle complementarity has a positive effect on preferences and satisfaction, especially when combined with a discount. The results also illustrate that complementarity is a multifaceted concept. Many kinds of relations between bundle products are considered complementary and the degree of complementarity may vary within and between different types of complementarity.

Based on the results it is suggested that the notion of complementarity is closely related to consumers’ everyday practices and the value bundles provides in use. When consumers understand the value that bundle products provide in use, the perceived complementarity increases and preferences and satisfaction is positively influenced.

It is suggested that bundling can be used as a strategic tool by companies to increase value for customers. By considering their customers’ needs and practices companies can compose bundles that are perceived as complementary and offer value-in-use.

**Keywords:** Bundling, value, consumer decision making, complementarity, preferences, satisfaction, experiments
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Introduction

In our everyday lives we are all consumers; we eat, live, wear clothes, travel, and watch movies. As consumers we make decisions more or less on a daily basis about what to purchase or consume. As a way to influence these decisions, companies may engage in various marketing activities, such as promotional campaigns, advertising, sponsorships, or public relations. These activities aim at influencing consumers’ attitudes and behavior and have traditionally been used to increase sales and consumers’ awareness about a company, brand, or product. However, marketing activities may also be considered a tool for value creation, in that they communicate and highlight the value that the company, brand, or product can offer customers.

One common marketing strategy is to combine and sell two or more products in a package, so called bundling. This strategy is employed by companies in different industries and on different kinds of markets: on industrial as well as consumer markets, by manufacturers, wholesalers, and retailers, and of sellers of both goods and services. As consumers, we meet bundles almost every time we visit stores and, hence, as an empirical phenomenon, bundling is widely familiar.

Bundles are often complex for customers to evaluate compared to separate products as they consist of several products, may be on the market for a limited time and may consist of varying products. The complexity of a decision task has been shown to influence decisions (Payne et al. 1993; Tversky and Shafir 1992) and preference structures (Swait and Adamowics 2001; Nilsson 2010). When the decision task is complex decisions take longer time to make and become less accurate (Speier et al. 2003). It also increases the use of simplifying decision strategies (Swait and Adamowics 2001), the likelihood that choice is avoided altogether (Dhar 1997a; 1997b), or that a decision is made to maintain status quo (Tversky and Shafir 1992). This means that the decision process and the actual decision made may be different for bundles than for separate products.

Understanding how bundling affects consumers’ decisions is interesting from a theoretical standpoint as it provides insights into how task complexity influences consumers decision making and evaluations. It is also interesting from an empirical point of view as it aids companies in their strategic decisions and in creating offerings that are valued by consumers.

What is a bundle?
The definition of bundling is ambiguous; the concept is used in a multitude of ways and for many different kinds of offerings. It has been described as selling goods in packages (Adams and Yellen 1976), marketing two or more products/services in a single package for a special price (Guiltinan 1987),
offering a group of products or services as a package (Eppen et al. 1991), or selling two or more separate products in one package, where “separate products” means products for which separate markets exist because at least some consumers are interested in buying the products separately (Stremersch and Tellis 2002). On the market, there is a wide variety in the range of bundle offerings, from simple take-three-pay-for-two deals or multi-packs, to complex product combinations, such as all-inclusive trips or offers including cable television, telephone services, and broadband subscriptions.

Most often, bundle products can be bought either separately or in combination, so called mixed bundling, as for instance the offering to buy a crate of soft drinks at a reduced price when shopping groceries for a minimum amount or the choice between self-assembling and buying a ready-made computer package. Other times, products can only be bought in bundle, so called pure bundling, as for example the evening papers’ appendices that can only be bought together with the newspaper. Moreover, bundle components may even be impossible to disjoint; for instance a car offer including a set of attributes such as an exclusive steering wheel, a certain type of gear shift, and a sunroof (Wäppling 2008). Bundles can also take the form of brand alliances, where two brands are included in one product, such as Marabou milk chocolate bar with Daim or Dell and Intel Inside (Gammoh et al. 2006). This practice is also referred to as ingredient or component branding (Norris 1992; 1993) or composite branding alliances (Park et al. 1996). These last examples of product combinations are arguably not clear-cut bundles; the exclusive steering wheel and the sunroof may as well be considered product attributes and a chocolate bar with Daim is adjacent to product development. In this thesis, focus is on bundles that are a combination of products that also could be purchased separately, and thus not of bundles of product add-on features or attributes.

Positive effects of bundling for companies

Bundling has been shown to be an effective tool to increase sales or profit (Telser 1979; Richards 2006; Schmalensee 1984; Sharpe and Staelin 2010) and to reduce costs of production, carrying, or shipping (Eppen et al. 1991). It can also be used to price discriminate by allowing sellers to segment the market based on consumers’ reservation prices (that is, the price the consumers are willing to pay) (Adams and Yellen 1976; Tellis 1986; Chung and Rao 2003), to introduce new products (Yadav 1994; Simonin and Ruth 1995; Lee and O’Connor 2003; Sarin et al. 2003), and to create entry barriers for competitors (Lawless 1991).

Much research has also focused on how bundling can be used as a promotional and pricing tool to maximize consumer purchases (see Table 1 in Appendix I). In brief, research suggests that in order for companies to
maximize sales, the price should be presented for a bundle as a whole and not for each included product. Bundle discounts, on the other hand, should be presented separately for each product in the bundle in order to appeal the most to consumers (Yadav and Monroe 1993; Mazumdar and Jun, 1993; Kaicker et al. 1995; Heath et al. 1995; Suri and Monroe, 1995; Johnson et al., 1999; Munger and Grewal 2001; Chakravarti et al. 2002; Tanford et al. 2011).

Bundling may also have a positive effect on sales for other reasons, for example because it makes the bundled products more salient and directs attention to the offering (Nordfält 2007). A bundle offering directs attention to the separate products included. Even if consumers do not choose to purchase the bundle, they notice the products and are more likely to purchase one of the included bundle products. This is manifested in increased sales of the separate products during bundle promotion campaigns (Foubert and Gijsbrechts 2007). Even sales of other products, not included in the bundle, are indirectly influenced by bundling. As a result of the bundle offering attracting more customers to enter the store, overall sales have been shown to increase (Ailawadi et al. 2006).

Positive effects of bundling for consumers

There seems to be many reasons why companies employ a bundling strategy - but why are consumers interested in buying bundles? One reason is that bundles often come at a reduced price and thus provide monetary savings for consumers (Kim et al. 2009). Estelami (1999) found that consumers on average save eight per cent by purchasing bundles. However, in nine per cent of the cases he found bundle surcharges, that is, the price of the bundles was as high as or higher than the price of the separate products. In his study, Estelami (1999) mapped bundle offerings of fast food meals, photographic equipment, and personal computers. In some industries, such as online bookstores and web shops in general, bundles consisting of a product and a shipping and handling fee are offered at a surcharge. Approximately half of the 50 biggest online retailers profit by their shipping and handling fees (Burman and Biswas 2007).

Besides potential monetary savings, reduced risk and increased convenience is often put forward as major reasons for consumers to purchase bundles (Paun 1993; Harris 1997; Ovans 1997; Stremersch and Tellis 2002; Sarin et al. 2003; Andrews et al. 2010). Reduced risk is especially valuable when buying a complex product bundle such as a computer as the consumers then know that all parts are compatible or that the retailer or manufacturer assembles the computer for them (Aribag and Foutz 2009). In an exploratory study by Harris and Blair (2006a), the results showed that bundling was considered beneficial for consumers who need help with purchases due to lack of time or skills to assemble products.
themselves. Bundles can also simplify shopping by reducing the time and effort spent on searching for information, for example, by allowing the customers to do all purchases in one store or to customize a bundle such as a vacation trip. Naylor and Frank (2001) showed that hassle savings with an all-inclusive vacation bundle outweighed the monetary savings of the non-inclusive option.

Yet another way that consumers may benefit from bundling is if the bundle is a product system. Product systems are bundles consisting of products that enhance or maximize the performance of each other, as for instance hair shampoo and conditioner (Stremersch and Tellis 2002; Montoya 2006).

Negative effects of bundling
Undoubtedly, there are also negative effects of bundling for companies as well as consumers. For example, even though bundling strategies generally are put forward as positive for companies as a way to increase consumption, Gourville and Soman (2001) showed that bundling might also hurt consumption. Buying a vacation bundle consisting of a condominium and a four-day ski pass as opposed to renting a condominium and separately buying four separate one-day tickets increases a person’s likelihood of cutting the vacation trip short if the weather is bad on the last day. By that, the resort misses out on additional consumption, such as lunches, coffee breaks etc.

Another possible negative effect of bundling for companies is that consumers get accustomed to discounted bundling offers and only buy the products in bulk when there is a promotional campaign (Levy et al. 2004, Hardie 1996). This risk may be especially large in industries where brand loyalty is low and/or the frequency of bundle campaigns is high, for example, ground coffee.

There is even ambiguity regarding whether promotional campaigns actually increase sales or if it only brings the purchase date forward in time. Sales increases may be caused by consumers switching to the promoted brand (Gupta 1988) which is beneficial for the promoting brand. However, there are indications that sales increases from promotional campaigns are caused by brand loyal consumers buying in bulk when there is a campaign (Grover and Srinivasan 1992). This is less beneficial for companies as the increased sales are likely to be followed by a future drop in sales.

Negative effects of bundling for consumers may be for example unwanted increased consumption. Consumers who buy bundles often spend more money than consumers who select individual items (Drumwright 1992; Guiliffin 1987; Oppewal and Holyoake 2004). Thus, consumers may feel lured into over-consuming by the temptation of a low bundle price and they may end up spending more money than originally planned. Bundles may
also cause reduced freedom of choice (Wilson et al. 1990) and increased risk of waste, as consumers may buy products they do not really want only because they were included in a bundle with a product that they did desire (Harris and Blair 2006b).

As illustrated above, bundling may have both positive and negative effects for companies and consumers and whether bundles in the end generate more satisfied or dissatisfied customers is therefore debatable.

Problem area
Even though some aspects of how bundles affect consumers have been given attention during the last 20 years, knowledge about the effect of bundling offers on consumer decision making is still rather limited. Historically, much bundling research was conducted within the field of economics and with an explicit firm perspective. The individual's evaluation of bundles and the decision making process was largely ignored and few empirical studies were conducted (see Table 1 in Appendix I). Before 1993, only two published articles empirically investigate consumers' evaluations of bundle offerings (Gaeth et al. 1991; Drumwright 1992). Several researchers (Goldberg et al. 1984; Drumwright 1992) remarked on the need for increased knowledge about consumers in order to understand the effects of bundling and to market bundles effectively. Increasingly, research has taken interest in how consumers perceive bundles and how consumers' evaluations and decision making are affected by bundling, which is illustrated in Figure 1.

![Figure 1. Company or consumer focus in published bundling articles.](image-url)
Figure 1 is based on an overview of bundling research up to date, summarized in Table 1 in Appendix I. The table briefly describes the general aim, method, and main results in journal articles about the effects of bundling. It also reports the composition of the bundles studied (if bundles are used in the empirical investigations or conceptual discussions) and if the study focuses on bundling as a tool to create value for companies or for consumers. The articles included are those referred to in the present text and the figure is therefore slightly geared towards consumer oriented research. Despite this gearing towards consumer oriented research, Figure 1 illustrates that there is more research about how bundling can be used to create value for companies rather than for customers. Several researchers comment on the need for further studies about what drives consumer preferences for bundles versus separate products as a way to better understand how to compose attractive bundles (Hamilton and Koukova 2008; Stremersch and Tellis 2002).

The growing interest of understanding consumers in bundling research corresponds to a general trend in marketing research and practice. Focus has shifted towards knowing and adapting to market and customer demands and providing customer value rather than being on selling and distribution techniques (Noble et al. 2002). Today, knowledge about consumer behavior and consumers’ decision making process plays a large role in many firms’ strategic marketing decisions. As the share of customer-oriented companies grow, it is increasingly important for remaining actors on the market to become more customer oriented in order to be competitive. Research has an important task in aiding these endeavors, by investigating consumers’ behavior and decision making process in order to understand how consumer value is created. Yet, the field is still developing and there are major gaps in knowledge and understanding. By contributing to the knowledge about if and how bundling might create value for consumers another piece is added to the overall puzzle. Knowledge about bundle value is thus an important input to consumer research as well as marketing practice. The discussion above highlights that bundling potentially can be positive as well as negative for consumers and an essential question when studying the effect of bundling on consumers is whether bundling at all can be beneficial for consumers. The overall aim of this dissertation is therefore to increase the understanding of how consumers perceive bundle value. By understanding if and what kinds of bundles that are valued by consumers insights about how bundling can be beneficial for consumers are gained. Perceptions of bundle value are formed through consumers' evaluations of bundles, which occurs both before and after a purchase. To reach the overall aim it is therefore important to understand how consumers evaluate bundles.
How perceptions of bundle value are formed

Bundle value is here considered an overall assessment resulting from evaluation processes of benefits and sacrifices (Zeithaml 1988) of a certain bundle at several points in time. Often, consumers’ evaluations are depicted as parts of a five-step model of decision making including problem recognition, information search, evaluation of alternatives, purchase, and outcomes of purchase (Engel et al. 1968). The model illustrates how a purchase is more than just choosing and paying for a product. It demonstrates that the process starts long before and continues long after the actual choice and that some sort of evaluation occurs both before purchase and after consumption. Because of the process perspective, the five-step model of decision making is a valuable framework when discussing how value is formed.

Related to how consumers perceive bundle value, two concepts are of special importance: preferences and satisfaction. These are measures of how consumers value bundles at two separate point in time and are the results of evaluations in two parts in the decision making process: before and after purchase. When evaluating alternatives before a purchase choice is made, consumers form preferences; of bundles compared to separate product alternatives and between different bundle offerings. These preferences are here considered an expression of the value consumers expect a bundle to provide. However, perceptions of value are not fully formed until a product is experienced. After purchasing and using a bundle, consumers make a post-purchase evaluation that results in feelings of satisfaction or dissatisfaction. These judgments are here considered a measure of the experienced value of a bundle. When studying how consumers value bundles, both expected and experienced value is suggested to be imperative as it captures different aspects of bundle value. Expected value is important as it is the initial judgment that lies as a foundation for further evaluations after use. Experienced value after purchase is imperative as it is an outcome of actual usage. If usage of a product results in low experienced value and dissatisfaction it is hard to argue that the product has provided any real overall value despite a possible positive pre-purchase evaluation.

There are still much to learn about how consumer value bundles, though. In the early (mainly economic) bundling research, it was assumed that the utility (value) of a bundle was equal to the sum of the value of the separate bundle products, the so called additivity assumption (Adams and Yellen 1976; Dansby and Conrad 1984; Guiltinan 1987). However, later research abandoned the idea of additivity for the averaging model and the products included in a bundle were shown to be balanced in forming an overall impression of the bundle (Levin and Gaeth 1988; Gaeth et al. 1991). Yadav (1994) showed that consumers examine bundle components in the order of
decreasing importance and make insufficient adjustments from the initial judgment based on the evaluations of the remaining products.

In more recent marketing research, effort has been paid to understand how bundles are valued compared to separate products. The mere fact that products are bundled has been shown to influence the value. Bundle products are perceived as more important and more popular than products offered individually and a bundle offering increases the salience of the included products, which has a positive effect on preferences (Wansink and Deshpande 1994; Chakravarti et al. 2002). Yet, the opposite effect has also been demonstrated; Popkowski Leszczyc et al. (2008) showed that bundles under some circumstances are valued lower than any of the included products separately. Moreover, the effect of different factors on consumers’ evaluations of bundles has attracted growing attention. For example, product quality (e.g. Gaeth et al. 1991), the inclusiveness of the products/services that are included (e.g. Naylor and Frank 2001), the perceived risk (e.g. Harris and Blair 2006b), and the consumers’ familiarity with the products (e.g. Harlam et al. 1995) have been shown to impact preferences for bundles.

The effects of these factors on consumer evaluations have been studied mainly by measuring purchase intention as a manifestation of preferences. Generally, though, few studies attempt to predict or explore the outcome of a bundle purchase, that is, the satisfaction with or experienced value of bundles for consumers. Nguyen et al. (2009) and Naylor and Frank (2001) are the only two studies including an overall measure of post-purchase satisfaction or value. Others (e.g. Johnson 1999; Sheng et al. 2007a; Suri and Monroe 1995; Yadav and Monroe 1993) measure how satisfied consumers are with the financial terms of bundle offerings, that is, transaction value. Yet, to understand how consumers perceive bundle value, satisfaction is a principal aspect. As argued above, even if a bundle has very positive effects on pre-purchase evaluations, the perceived value will be low if an actual choice, purchase, and consumption of the bundle lead to dissatisfaction.

In the present text, the preferences that consumers form in pre-purchase evaluations and the satisfaction resulting from post-purchase evaluations are used to capture consumers’ overall perceptions of value and the influence of bundling on preferences and satisfaction will be further explored. Arguably, one reason why bundles may have a different effect on preferences and satisfaction than separate products is that bundles represent a more demanding evaluative task, at least if they contain several different products (as opposed to multi-packs) and if the option is to purchase only one of the products in the bundle. In this case, the number of attributes to evaluate and relations between products to consider is larger for a bundle than a separate product, which may make the bundle more difficult to categorize. Since categorization ease or difficulty has been shown to influence preferences
(Mandler 1982; Schwartz 2004) bundles may have an impact on consumers’ overall perception of value.

In order to determine if bundles are beneficial for consumers and to understand how consumers value bundles, knowledge about how various factors affect consumer preferences and satisfaction is central. Numerous factors influence consumers’ preferences for and satisfaction with bundles. Below, these factors are presented according to if they are aspects of the purchase situation, individual characteristics, or bundle composition. This dissertation focuses on how bundle composition affects consumers’ preferences for and satisfaction with bundles. Yet, in order to give a more complete picture of the current knowledge a brief presentation of all factors is offered.

**The effect of contextual factors on perceived bundle value**

Contextual factors are factors not related to consumer personality or to attributes of the bundle products; for example, the purchase situation or how the bundle is presented. Presentation of bundle price is one contextual factor that has been extensively researched. As mentioned, bundles are most appealing to consumers when price is presented for the bundle as a whole and discounts are presented product by product (e.g. Yadav and Monroe 1993; Kaicker et al. 1995; Suri and Monroe, 1995; Johnson et al., 1999; Chakravarti et al. 2002; Tanford et al. 2011). Generally, discount size has a positive effect on bundle evaluations (Herrmann et al. 1997), but non-bundling specific research has shown that too large discounts may have a negative effect due to suspicions of poor quality (Campbell and Diamond 1990). When only one bundle product is reduced in price, the bundle is most appealing when the product perceived as most important is discounted (Sheng et al. 2007a).

Other contextual factors that research has paid attention to are how risk and hassle influence bundle value. Harris and Blair (2006a; 2006b) found that purchase intention is greater for bundles compared to separate products when the perceived compatibility risk is high, that is, when the risk that two products would not function together is highlighted and when the bundle reduces search and assembly costs. Their findings support the alleged importance of bundling as a risk and search cost reduction tool for consumers, which is also emphasized but not directly investigated by other researchers (see for example Sarin et al. 2003; Naylor and Frank 2001; Stremersch and Tellis 2002).

Yet another factor that has been shown to influence evaluations is the extent to which sellers are perceived to have consumers best in mind. Hamilton and Koukova (2008) found that if sellers’ motives for bundling were perceived as customer oriented (that is, put together with customer value in mind, for example to increase convenience or simplify decision)
rather than firm-oriented (for example, to increase profit), consumers judged bundle products as more important and they also had higher purchase intention. In addition, the perceived fairness of surcharge size influences consumers’ purchase intention positively (Sheng et al. 2007b).

**The effect of individual factors on perceived bundle value**

Individual characteristics have been shown to influence consumers’ perception of and preference for bundles in comparison to separate products, for instance, consumers’ product knowledge (Harlam et al. 1995), expectations (Naylor and Frank 2001), and prior purchase plans (Suri and Monroe 1995). It is well established that, generally, knowledge and experience reduces the perception of effort of an evaluative task (Brucks 1985; Alba and Hutchinson 1987; Sujan 1985). In accordance with this, product familiarity and knowledge has been found to have an influence on bundle evaluations as well. Consumers that are familiar with the bundle products are more positively affected by price reduction than consumers who are unfamiliar with the products (Harlam et al. 1995) and more likely to choose bundles compared to separate products (Harris and Blair 2006b). These findings are contradictory to Paun’s (1993) proposition that the demand for ready-made bundles would decrease when consumers gain knowledge, as a function of the decreased perceived risk.

Moreover, having expectations that match what is actually offered in a bundle has a positive influence on bundle evaluations (Naylor and Frank 2001) as do individuals’ need for cognition, that is, their innate motivation to process information (Burman and Biswas 2007; Harris and Blair 2006a). Consumers that are more motivated to evaluate bundles extensively have higher assessments of bundle value and purchase intention when partitioned rather than consolidated pricing is used (Burman and Biswas 2007) and are less likely to choose a bundle over separate products as a way of avoiding search costs (Harris and Blair 2006a).

**The effect of composition on perceived bundle value**

A third aspect to consider, that is also the focus of this dissertation, is how different types of bundles may be valued differently. That is, not only contrasting bundles and separate products, but also bundles with different composition. It is likely that consumers’ perceptions of bundle value differ depending on the products included and that bundle composition thus affects preferences for and satisfaction with bundles.

Research show that the overall attractiveness of a bundle is influenced by the number of products included (Herrmann et al. 1997) and that consumers find it hard to choose between bundles when they consist of many products or similar products (Agarwal and Chatterjee 2003). In addition, the perceived value of one bundle product is impacted by the other products or
brands in the bundle (Park et al. 1991; Yadav 1995; Popkowski Leszczyc et al. 2008; Sheng and Pan 2009). For example, Sheng and Pan (2009) showed that when introducing a new brand, the perceived quality of the brand is higher when it is bundled with a strong brand than with a weak brand. Moreover, if bundle products are durable or fast moving may impact how the bundle is evaluated, even though Harlam et al. (1995) found no difference in purchase intention between bundles with durable and fast-moving product. Furthermore, whether bundle products are expensive or low-budget or complex or simple may impact evaluations. Harris and Blair (2006b) showed that the risk of low functional compatibility of technically advanced products influenced preferences for bundles positively compared to separate products.

Central to this dissertation is that the relation between bundle products generally has been assumed and to some extent shown to have a positive influence on bundle evaluations. Research has shown that functional relation between bundle products has a positive effect on purchase intentions (Harlam et al. 1995; Herrmann et al. 1997). While it is likely that the positive effect of functional relation extends to consumer satisfaction as well, no studies have further explored the issue (see Table 1 in Appendix I). The knowledge about how the composition of bundles influences consumers’ preferences and satisfaction is limited and needs to be further developed in order to better understand how bundling affects consumers’ decision making and perceptions of value as well as for companies to be able to compose appealing bundles.

As mentioned, contextual and individual factors influencing consumer evaluations are not the focus of this dissertation. Instead, characteristics of bundles are in center, more specifically the composition of bundles and the relation between bundle products. One reason for focusing on bundle composition is that it potentially has a major impact on consumers’ evaluations. Bundles that consist of several different products constitute a more complex evaluative task than separate products which may have a negative effect on evaluations. The relation between bundle products may help to reduce that complexity, though. By understanding how bundle composition influences preferences and satisfaction, insights about how value formation is affected by task complexity are gained. Generally, the relation between bundle products is assumed to have an impact on consumers’ evaluations but the research about bundle composition is limited and the actual influence of bundle composition on consumers’ preferences and satisfaction has rarely been studied. Another reason for focusing on bundle composition is that it is a factor that companies easily can control. While companies may be able to influence contextual factors as well, for example by highlighting the risk of poor product fit when purchasing products separately, composition is an important strategic tool that is fully under company control. Therefore, knowledge about how bundle
composition influence consumers preference and satisfaction is valuable from a company perspective.

**Main purpose and sub-purposes**

Knowledge about consumers’ preferences for and satisfaction with bundles are important as a way to fulfill the overall aim of this dissertation to increase the understanding of how consumers perceive bundle value. Bundle evaluations are demanding compared to separate product evaluations because bundles have numerous and varying product attributes. Despite the importance of understanding the effect of bundle composition on preferences and satisfaction, the area has received limited attention in marketing research (Table 1 in Appendix I) and there are many aspects of bundle composition that need further exploration. The literature review reveals that bundling research increasingly put consumers in center but that the effect of composition and the relation between bundle products on consumers' evaluations have rarely been studied.

Hence, there is a need of increased knowledge about the effects of bundle composition on consumer evaluations. The main purpose of this thesis is therefore to increase the understanding of how bundle composition influences consumers’ preferences for and satisfaction with bundles.

There are many aspects of how composition may influence consumers and the main purpose is therefore specified by a number of sub-purposes. Typically, it is assumed that products that are related have a positive influence on evaluations (see e.g. Telser 1979; Gaeth et al, 1991; Simonin and Rut, 1995; Agarwal and Chatterjee 2003) and a few studies have confirmed this assumption (Harlam et al. 1995; Herrmann et al. 1997). The relation between bundle products is an important aspect of bundle composition and to fulfill the main purpose of this study, the influence of the relation between bundle products, in this text discussed as complementarity, needs to be further explored.

Despite the general assumption that complementarity affects the evaluation process the term has been used with brief or no explanation of the meaning of the concept. Often, complementary bundles have been described as consisting of functionally related products (Gaeth et al. 1991; Herrmann et al. 1997; Harris and Blair 2006b; Sheng and Pan 2009). Other researchers relate complementarity to the equally imprecise term “product fit” (Chakravarti et al. 2002; Sheng and Pan 2009; Simonin and Ruth 1995) while others emphasize enhanced functionality of the products in a bundle (Wilson et al. 1990; Estelami 1999). Yet, few attempts of elaboration or explanation of what constitutes complementarity has been made. Varadarajan (1986) reports different kinds of complementary linkages between products in offers found on the market. However, he does not
further discuss why the products are perceived as complementary, if different kinds of complementarity can be ranked, or how they affect consumers’ evaluations. A literature review shows that only four studies investigate the influence of complementarity on consumer preferences and satisfaction (Harlam et al. 1995; Herrmann et al. 1997; Sheng and Pan 2009; Sheng et al. 2007a) and researchers have commented on the need for further investigations of the effects of complementarity (Stremersch and Tellis 2002; Varadarajan 1986; Harlam et al. 1995). The importance of complementarity for consumers’ preferences for and satisfaction with bundles and the limited attention paid to the construct warrants for further studies about the issue. **The first sub-purpose is therefore to explore what complementarity is.**

One of few exceptions to the lack of research about the effects of complementarity is Harlam et al. (1995) who investigate how consumers’ purchase intention for bundles of durable and nondurable goods is affected by the relation between bundle products. Two types of relation are considered: functionally related vs. unrelated products, and similar price vs. different price level of bundle products. The results of their experiment showed that consumers had higher purchase intention for bundles with functionally related products than for bundles of unrelated products, but they found no significant influence of price relation. Their results about the effects of functional relation were supported by Herrmann et al. (1997) and Sheng and Pan (2009). Herrmann et al. (1997) extended the results by examining the influence of complementarity on a diminishing scale, from bundles of “very related” to “moderately related” and “unrelated” products and found that complementarity is positively related to purchase intentions. Sheng and Pan (2009) found that a positive brand image more easily is transferred to other bundle products if the products are complementary. These studies indicate that complementarity is an important aspect of bundle composition and that it has an influence on consumer preferences. However, no insight is provided as to whether and how complementarity affects satisfaction. Knowledge about how preferences and satisfaction are created is important to understand bundle value and investigations about the effect of complementarity on consumer evaluations are therefore worth pursuing to develop and nuance the knowledge about bundle value. **The second sub-purpose is therefore to analyze how complementarity influences consumers’ preferences for and satisfaction with bundles.**

An important factor influencing consumers’ preferences and satisfaction is price. As bundles in real life often come at a reduced price (Estelami 1999) and because discount has been shown to influence evaluations (Sheng et al. 2007a), the effect of discount on bundle evaluations is of interest. Moreover, to investigate how preferences for and satisfaction with bundles of varying
degrees of complementarity is affected by price discounts is yet another way to explore the effect of bundle composition.

Discounts come in many forms, for example as money or percentage off, rebates, or coupons. Bundles can be discounted as a whole, on one or several of the included products separately, or as a gift together with the main product. Consumers generally expect bundles to be discounted and in lack of specific discount information, they even infer a saving when presented with a bundle offer (Heeler et al. 2007). Intuition and research agree that bundle discounts have a positive effect on consumer preferences for bundles (Herrmann et al. 1997; Johnson et al. 1999; Yadav and Monroe 1993, Harlam et al. 1995). While numerous studies have explored how bundles’ price and discount information should be presented to maximize purchase intention, few studies have examined how the effects of discount are affected by the composition of bundles. Three published papers examine the effect of the relation between bundle products on consumers’ evaluations in relation to discounts (Harlam et al. 1995; Herrmann et al. 1997; Sheng et al. 2007a). Herrmann et al. (1997) and Sheng et al. (2007a) show that the positive effects of discount are larger the less complementary bundles are, while Harlam et al. (1995) report contradictory results.

Even though some initial results about the effect of discount on consumer preferences for bundles exist, the issue needs further exploration, for example regarding the effect of discount on bundles with different types of complementarity. Moreover, as no studies have yet investigated the relationship between bundle discount and consumer satisfaction, there is an obvious lack of research in the area. Therefore, the third and last sub-purpose is to examine how bundle price discounts influence consumers’ preferences for and satisfaction with bundles.

Definitions and Delimitations
Often, words are used in different ways in different situations and with slightly different meaning. In order to disentangle the terminology used in the present text some key concepts are described and discussed with regard to their meaning in this dissertation.

The concept “bundle”
Without doubt, two of the most central concepts in this dissertation are “bundling” and “bundle”. As stated in the introduction, there is no common definition of the terms and even though the phenomenon has been studied for many years, there are still many inconsistencies and question marks regarding the concept bundling (Stremersch and Tellis 2002). There are many terms for special instances of bundling in the literature. For example tie-in, which is a pure bundling strategy (Burstein 1960; Telser 1979), block booking, which is when multiple products are purchased at the same time,
for example when several movie tickets are booked at one go (Stiegler 1963), and commodity bundling (Adams and Yellen 1976; Dansby and Conrad 1983; Carbajo et al. 1990; Lawless 1991; Chae 1992).

Other concepts that are adjacent to bundling are product systems and industrial systems. These kinds of systems can be seen as special cases of bundling, where products are combined with the specific purpose of optimizing product fit, enhance each other’s performance (Montoya 2006; Wilson et al. 1990), or provide positive network effects, that is, increased value as more users adopt the products, which is the case with for example telecommunications (Lee and O’Connor 2003; Matutes and Regibeau 1992).

Yet another kind of product offering that is of interest when investigating bundles is hybrid products (Gibbert and Mazursky 2009; Rajagopal and Burnkrant 2009), also referred to as ambiguous products (Rajagopal 2004; Uekermann et al. 2010). Hybrid products are conjunctions of two normally disjoint products (Gibbert and Mazursky 2009), for example, a PDA and a cell phone (smart phones) or a pair of running shoes and an MP3 player. Hybrid products are interesting from a bundling research perspective, since they possess many features similar to bundles, not the least because they are combinations of products with varying degrees of complementarity. Thus, even though hybrid products are not used in the empirical investigations of this study, findings from hybrid product literature are still applicable in a bundling setting.

Mulhern and Leone (1991) use the term implicit price bundling, which is the strategic use and consideration of the effects of price changes in one product category on potential sale increases or decreases in other product categories. Also Hess and Gerstner (1987) touch upon this in their article about loss leader pricing, when they argue that loss leader pricing can be interpreted as a bundling strategy in that consumers are persuaded to go into a store because of a low price on one product (the leader product) and once in store buy other products on impulse (see also Richards 2006). However, the ambiguity surrounding the term bundling may increase even more if also concepts such as implicit price bundling and loss leader pricing are considered (Stremersch and Tellis 2002). As they do not enhance the understanding of the core concept of bundling these types of bundling strategies are not considered in the present text.

**Different kinds of bundles**
A common way to distinguish between different kinds of bundles, introduced by Adams and Yellen (1976), is to differentiate between mixed and pure bundling. A mixed bundling strategy, which is the prevailing practice on the market, means that companies offer products in a bundle as well as separately. A pure bundling strategy, on the other hand, means the products are only sold in a bundle and cannot be bought separately.
Bundles can consist of multiples of the same product, so called multi-packs, or of different products, so called multi-product bundles (Gaeth et al. 1991). Bundles, especially multi-packs are often offered at reduced price, a strategy termed price bundling. Price bundling can take many forms, such as offering coupons, a free gift or a percentage off. The contrast to price bundling is product bundling. Product bundles are not characterized by their price, even though they may come at a discount, but rather by the value they offer. It is important to distinguish between the two strategies since price bundling is a pricing and promotional tool while product bundling is a more strategic tool as it creates added value for customers in other than monetary terms (Stremersch and Tellis 2002).

Bundling in this dissertation
How bundles (if possible) offer value to customer is a central question in this dissertation. The kind of value in focus here is not in the form of low price but of added value through the way the bundle is composed. Therefore, bundling as a strategic tool is in focus, and product bundling rather than price bundling is of interest. Bundles are here considered a combination of two or more separate products that are sold at a common price and where the bundle products also can be bought separately. The bundles are thus composed of several different products and of separate products rather than of a product with a set of features or attributes (as opposed to e.g. Herrmann et al. 1997 and Wäppling 2008).

The bundles consist of two products, which can be both traditional goods and services. Throughout the thesis, the term bundle products includes both goods and services. The term product is often used to refer to physical goods rather than services, but it is also commonly used as a generic name for all kinds of offerings to consumers and it is in this manner it is used in this text.

As mentioned, many different terms have been applied to describe the phenomenon of combining two or more goods or services. Throughout this text, the words “bundle” and “bundling” will be used.

To simplify reading, bundles consisting of complementary products will be referred to as “complementary bundles”. Hence, in this text the term “complementary bundles” do not refer to the relation between bundles but between two bundle products. Correspondingly, when the term “unrelated bundles” is used, bundles consisting of two products with no relation are intended. This terminology is paralleled when discussing bundles consisting of two low-budget products or two exclusive products, referred to as “low-budget bundles” or “exclusive bundles”, respectively.

Value
The overall aim of this dissertation is to increase the understanding of how consumers perceive bundle value. What is value, then? Traditionally, value is
equated with utility or desirability and consumers are assumed to experience value as the difference between the utility that a product provides and the disutility represented by the price (Tellis and Gaeth 1990). The notion of utility is based on the idea of rationality. Rational consumers are assumed to make decisions about choice of products and how much to consume based on a utility maximization principle. That is, with respect to available income and product prices, the products that provide maximum level of utility products are chosen. Rational consumers are also assumed to have preferences that are stable over time and the consumers are supposed to be willing to trade one choice for another. Operationalizations of value that are based on utility maximizing principles are for example acquisition value (the value for money) and transaction value (the pleasure of taking part of a good deal) (Grewal et al. 1998). In this text, value is assumed to go beyond an assessment of product utility. For instance, it is acknowledged that habit and loyalty influences perceived benefits and that other aspects than price are perceived as sacrifices by consumers when making a purchase, such as time, effort, and search involved.

A definition of value corresponding to the use of the word in this thesis is the frequently quoted definition by Zeithaml (1988): “perceived value is the consumers overall assessment of the utility of a product based on perceptions of what is received and what is given” (p. 14). This definition is a development and extension of the utility concept. It implies that value is perceived as a trade-off between benefits and sacrifices and as an interaction between customer and product (good or service). Zeithaml (1988) also highlights that what is perceived as benefits and sacrifices varies between individuals. In addition, as opposed to rational utility, Zeithaml (1988) emphasize that consumers evaluate products based on their perceptions of price, quality, and value, rather than based on objective attributes, such as actual monetary price or actual quality. This is an important aspect of how value is used in this text; no attempt is made to capture the measures objectively. On the contrary, focus is on consumers’ individual evaluations and perceptions of bundles and separate products.

Zeithaml’s (1988) definition of value indicates a view of value as a uni-dimensional construct that can be captured by asking consumers to rate the perceived value (which may be operationalized by a set of variables). However, some researchers argue that value is a too complex construct to be able to capture or describe in one dimension. Instead, value is to be viewed as a multi-dimensional concept (Sweeney and Soutar 2001) that has both hedonic and utilitarian facets (Holbrook 1996; Babin et al. 1994). It may even be divided into as many as five dimensions: social, emotional, functional, epistemic, and conditional (Sánchez-Fernández and Niesta-Bonillo 2007), of which Zeithaml (1988) mainly discusses functional value. In research highlighting the multi-dimensional aspects of value, the relative
nature of the concept is emphasized; value is considered a comparative, personal, and context dependent concept (Holbrook 1996) that changes over time as it stems from customers learned preferences and perceptions (that evolve over time) (Woodruff 1997; Sánchez-Fernández and Iniesta-Bonillo 2007).

In this text, as value is used as an overall assessment of a bundle, the term is used as a uni-dimensional construct. The multifaceted and subjective nature of value is acknowledged, yet the aim of this dissertation is not to increase the understanding of the nature of value. Instead, value is used as an overall judgment of bundles, captured by measures of preferences and satisfaction. Whether the perceived value is functional, emotional, or social is in this respect not central. Therefore, it is considered sufficient to view perceived value as a uni-dimensional construct and to use it as a measure of an overall product assessment.

Importantly, in this text, value is not used normatively; the value of a bundle may be high as well a low, or none. A distinction should therefore be made between “value” and “valuable” as the term valuable inherently suggests a positive state. The term valuable foremost concerns the monetary or material value for use or exchange while value has a wider meaning, also including for instance usefulness and importance to the possessor, desirability, or utility. In this dissertation, the focus is on how bundles are valued, that is, an assessment of the perceived value (usefulness, importance, utility) of different bundles. How valuable bundles are in terms of their monetary worth or how much consumers are willing to pay for bundles are not imperative.

Similarly, it is important to distinguish between value, which is a central aspect in this dissertation, and the word in its plural form: “values”. While value denotes the outcome of an evaluative judgment, values refer to the standards, rules, criteria, norms, goals, or ideas that serve as the basis for evaluative judgment (Holbrook 1998). Values are important personal beliefs that people hold and that guides their behavior (Bardi and Schwartz 2003; Jansson et al. 2010). While values have an impact on the value a customer perceives a bundle to have, it is not within the boundaries of this dissertation to investigate this relationship. Instead, it is the word in its singular form, value, which is in center.

Another term that is frequently used in this dissertation and is related to value is evaluation. The terms value and evaluation have distinct and separate meanings in this text, though. While value is the outcome and overall perception of a product or bundle offering, evaluation is a part of the process of arriving at that assessment/perception. Evaluation is thus the act of weighing perceived benefits and sacrifices to arrive at a final assessment of perceived value, and value is the outcomes of these evaluations. It is here assumed that consumers’ perception of value is formed when encountering
and evaluating bundles, both before and after purchase. Briefly, consumers’ pre-purchase evaluations result in formation of preferences that govern purchase intentions while consumers’ post-purchase consumption and evaluation result in feelings of satisfaction or dissatisfaction. These evaluations together constitute the overall perception of value. The relation between consumer decision making, value, and evaluations will be discussed further in the theoretical chapter.

Preferences
The word preferences can be used in many related but not identical ways, for example as individuals’ attitudes towards a product or as an evaluative judgment in the sense of liking or disliking a product. Preferences in the meaning of attitudes are typically considered as relatively stable compared to evaluative judgments (Eagly and Chaiken 1993), even though this idea is challenged (e.g. Schwarz 2007). Evaluative judgments are, on the contrary, easily influenced by previous choices, context, and even unconsciously (Schwarz 2007; Bettman et al. 2008). The latter meaning of the term preferences (liking or disliking) is most typical in psychology and the way in which it is used in this dissertation. Preference and preference formation is further discussed in the theoretical chapter.

Satisfaction
Satisfaction is yet another central concept in this dissertation. Satisfaction is a complex construct and its meaning and relation to other concepts, such as quality and value is vividly debated. These relations will be discussed in the theoretical chapter. Another issue frequently discussed is what causes satisfaction; for example product performance, expectations, disconfirmation, or equity. Though touched upon in this dissertation, these aspects are not central to reach the general aim of the study, since they contribute more to increased understanding of the concept satisfaction than to the understanding of satisfaction as an outcome of bundle evaluations.

A distinction that is relevant to make in this question is between transaction-specific and cumulative satisfaction (e.g. Boulding et al. 1993; Jones and Suh 2000). Transaction-specific satisfaction is a post-choice evaluation of a specific purchase occasion. Cumulative customer satisfaction, on the other hand, is an overall judgment that stems from the total purchase and consumption experience over time. Cumulative satisfaction is an indicator of a firm’s past, current, and future performance while transaction-specific satisfaction provides information about a particular purchase or service encounter (Anderson et al. 1994). Because the focus here is to understand the direct effects of different kinds of bundles on customer satisfaction rather than long-term effects of bundling for firms, customer satisfaction will be treated as transaction-specific in this literature review.
Advantages of transaction-specific measures are for example that they capture reactions a customer has on a given occasion (Olsen and Johnson 2003). The importance of bundling as a strategy to provide long-term customer satisfaction should not be ignored. However, the issue is not within the scope of the present study.

Complementarity
Finally, a factor that is imperative for this dissertation is complementarity. Complementarity is one of the most important concepts in this thesis and a complex construct. Complementarity, its meaning, nuances, and previous studies are discussed in the theoretical chapter and therefore the discussion is not pursued further here.

Disposition
The introduction given in this chapter constitutes a background and introduces the reader to the aim and purposes of this study. In the next chapter, a theoretical background is provided that sets the stage for the empirical investigations. The relation between the theoretical constructs value, preferences, and satisfaction is outlined as well as how they may be influenced by bundle complementarity and discount. The following chapter describes the methodological considerations made when conducting the research, including reflections about the research process and consequences of choices made. In the following chapter, the empirical data is presented. The first three experiments focus on elaborating on what complementarity is and the effect it has on consumer preferences. In the fourth experiment, consumer evaluations are expanded to include post-purchase evaluation, that is, satisfaction and the last experiment investigates the effect of bundle discount on consumer preferences and satisfaction. For each experiment, the presentation of results is intertwined with initial analyses. After the presentation of the experiments, an overall analysis of the results guided by the purposes and related research questions is presented. In the general discussion, thoughts and ideas generated from the results are discussed before the study is concluded and theoretical and managerial conclusions are presented along with methodological reflections and limitations with suggestions for future research.
Theoretical foundations: value, complementarity, preferences, and satisfaction

Consumers’ preferences for and satisfaction with bundles are in this dissertation assumed to be qualifications of bundle value. According to Woodruff (1997), value is frequently operationalized as preference. In this text, value has a broader meaning, though. While preferences are linked to purchase intentions, it is here considered vital to also include the after-purchase experience when discussing value. The reason for the wider scope is linked to the overall aim of the dissertation. In order to determine if and how bundles can be beneficial for consumers, actual use ought to be considered, not only pre-purchase preferences. Defining value as “consumers’ overall assessment of the utility of a product based on perceptions of what is received and what is given” (Zeithaml 1988, p. 14) reveals a view that an interaction between customer and product is needed in order for value to become, as well as some sort of evaluation of benefits and sacrifices related to the product. To determine the benefits and costs of a product, consumers need to encounter the product in some sense, mainly by physical encounters and use, but also through written or oral information, pictures, etc.

Thus, a longitudinal perspective to analyze and understand perceptions of value is here emphasized. Value is not experienced only at one point in time but formed in a process before, during, and after purchase (Woodruff 1997; Woodall 2003). Consumers have preconceptions regarding value whenever they consider a purchase. They have thoughts about desired value and make evaluations of the predicted benefits and sacrifices of the products resulting in expectations about the value that a bundle will provide, which is also the case with the evaluative judgments resulting in formation of preferences. Further, value is experienced at the point of trade, which may be referred to as exchange value (Grewal 1998b; Grönroos 2008), transaction value, or acquisition value (Grewal et al. 1998b). These aspects of value are mainly concerned with financial considerations of costs and benefits. Acquisition value is an assessment of the price worthiness of a product and transaction value is an assessment of how much of a bargain a purchase is (Grewal et al. 1998b). Finally, new evaluations of the received benefits and sacrifices takes place after use, which result in experienced or acquired value (Woodall 2003) which results in feelings of satisfaction or dissatisfaction. Value is experienced after purchase, in use and consumption and even when disposing of a bundle (Vargo and Lusch 2004).
The longitudinal perspective of value is vital when viewing value as an overall assessment of a bundle, as it illustrates how value is experienced both before and after a purchase. Even though notions of value can be limited to value in exchange (Grewal 1998b) or value in use (Vargo and Lusch 2004; 2008), it is here argued that to understand if bundles can provide customer value, we need to consider the overall value. A positive pre-purchase evaluation or high exchange value is not sufficient for a bundle to provide customers with overall value. A positive experience after purchase is equally important. Consider, for example, that pre-purchase evaluation of a bundle is positive but the subsequent consumption experience is negative. The feelings of dissatisfaction from use of the bundle will have a negative impact on the overall perception of value, which in this case will not be high. Even if bundle product work as they are supposed to, value may be low if, for example, design features or brand image is not attractive, resulting in low value. Moreover, if pre-purchase evaluations are negative, it is likely that no purchase will be made and there will be no consumption experience of assessment of overall value. It is also possible that no pre-purchase evaluation takes place, as in the case of a gift. In this case, bundle value is determined purely by the consumption experience. Hence, customer value is not formed at a single point in time, but can be formed at several points in time. Evidence that supports the importance of the temporal aspects of value formations is research showing that consumers may perceive value differently before and after use. Product attributes are more important for perceptions of value in pre-purchase evaluations whereas consequences are more important for perceptions of value in post-purchase evaluations (Gardial et al. 1994). Therefore, to understand how consumers overall perception of bundle value, a comprehension about the value at different stages in the decision making process is needed.

Value is thus an umbrella construct that covers many aspects of consumers' evaluation of bundles. It should be clarified that value as such is not measured in the study. Instead it is operationalized as preferences for and satisfaction with bundles that are measured by a set of variables. Preferences are measured by ratings of perceived quality, attractiveness and purchase intention. Satisfaction is measured by ratings of overall satisfaction with a bundle and satisfaction if one of the bundle products is not used.

By relating the value formation process to the five-step model of decision making (Engel 1968), the temporal aspects and the link to preferences and satisfaction are highlighted. Relating value to the decision making model also illustrates how value is related to consumer behavior such as choice and consumption.

As illustrated in Figure 2, the model describes consumer decision making as divided into five steps: (1) problem recognition, when a need is discovered or a discrepancy between desired and actual state, which is followed by (2)
external or internal information search and (3) evaluation of identified alternatives and attributes, before (4) a choice or purchase is made and, finally, (5) the outcome is evaluated (Engel et al. 1968).

Figure 2. The five-step model of decision making.

The five-step decision making model is in many ways a foundation for understanding consumer behavior and it serves a purpose of integrating various components of consumer decision making. The five-step model has been critiqued for its assumptions about consumer rationality and for being too comprehensive and oversimplifying reality. It is well established that consumer behavior in most cases is not rational and, in addition, too complex to be captured in a single model (Simonson et al. 2001). Because of the limitations of the model, its applicability and ability to explain everyday situations is restricted. Consumers do in many situations not go through all stages in the model, as when making a purchase out of habit or loyalty, or when the involvement in the product is low (Ray 1982). Purchases may even be made without any conscious evaluations. Instead, consumers act on first impression, recognition, or emotion, with no cognitive processing and without any external information retrieval (Olshavsky and Granbois 1979; O’Shaughnessy & O’Shaughnessy 2002; Nordfält 2009). Examples are purchases made out of necessity, based on recommendations, or derived from interlocked purchases, such as bundles (Olshavsky and Granbois 1979). A consumer that intends to buy one specific product and finds it in a bundle offering, which he or she purchases, may not go through a decision process regarding the other products in the bundle. It has also been questioned whether the steps necessarily come in the stipulated order; consumers may buy a product without preceding evaluation and evaluate the product once it is used (Wilkie 1994). Despite its limitations, the five-step decision making model is useful as a framework to depict how bundling influences consumers evaluations and perceived value.

Bundling potentially influences all parts of the decision making process. For example, bundle offerings may be highly salient and thereby affect need recognition, or affect how available information is or which information that is collected. However, for the purposes of understanding value focus is here centered to the last three steps in the model; the pre-purchase evaluation of
bundles, to some extent (indirectly) the choice and purchase, and the outcomes of a bundle purchase, as these are the steps where perceptions of value mainly are formed. Emphasis is put on consumer evaluations of bundles: pre-purchase evaluations such as assessments of and preferences for bundles and post-purchase evaluations, such as satisfaction with bundles.

One advantage of the model is that it shows that a purchase decision is a process that begins before and continues long after the actual purchase and after consumption. It highlights that choice and purchase are only parts of an extensive process that makes up a purchase. In the present study, the process perspective on decision making is important for the understanding of how value and consumer behavior is related. Many aspects of decision making are influential when forming an overall assessment of value of a product.

The relation between consumers’ perceptions of value and the decision making model is illustrated in Figure 3. Preferences are assumed to be an approximation of expected value since both constructs are the outcome of pre-purchase evaluations (Bettman et al. 2008; Woodall 2003). Expected value and preferences are outcomes of pre-purchase evaluations of how one alternative is expected to perform and provide satisfaction compared to other alternatives (Fornell et al. 1996; Gale 1994; Lefkoff-Hagius and Mason 1993) based on a weighting of benefits and costs of each alternative (Bettman et al. 2008; Kahneman and Tversky 1979; Woodall 2003; Zeithaml 1988). Perceived benefits and costs can be both monetary, such as price and discount, and nonmonetary, based on for instance product quality or convenience (Zeithaml 1988). Preferences and expected value are thus measures of how attractive different alternatives are to consumers and they are commonly assumed to lead to actions, such as choice or purchase (Fishbein and Ajzen 1980; Woodall 2003; Woodruff 1997). Many factors are assumed to influence pre-purchase evaluations. In this study, quality and appearance are included as factors that may influence preferences. In addition, attractiveness is measured as the outcome of the pre-purchase evaluations, that is, as a measure of actual preference. The behavioral consequences that are assumed to follow from preferences are in this study measured by ratings of purchase intentions.

After purchase, post-purchase evaluation take place, resulting in perceptions of value and feelings of satisfaction or dissatisfaction (Chen 2008; Oliver 1997; Woodall 2003). The words “value” and “satisfaction” is commonly used interchangeably (Oliver 1999) but they can be considered as two distinct yet related concepts. Most researchers agree that experienced value is an antecedent to satisfaction (Fornell et al. 1996; Ravald and Grönroos 1996; Woodall 2003) even though the opposite relation has been demonstrated as an exception (Eggert and Ulaga 1996). Butz and Goodstein (1996) claim that there is a difference between the concepts and argue that
satisfaction is about attitudes while experienced value is about behavior. The exact relation between experienced value and satisfaction is interesting and may be debated as a way to gain deeper insights to the meaning and understanding of the concepts. However, as this is not in focus here, satisfaction is considered as a reflection of experienced value and as an important part of the overall concept of bundle value. In this study, satisfaction is measured by an overall rating of satisfaction with a product or a bundle and, in addition, by a rating of satisfaction if the product or one of the bundle products is not used. The variables used in the study are discussed further in the method chapter.

Because of the strong relationship between expected value and preferences as well as between experienced value and satisfaction and because of the importance of temporal aspects when considering overall perceptions of customer value, it is here argued that it is relevant to study preferences and satisfaction in order to understand how overall perceptions of value are formed.

This way of modeling formation of value as a process is applicable to bundles as well as separate products. Both bundles and separate products are evaluated before and after purchase resulting in preferences, purchase intentions, and satisfaction or dissatisfaction. However, there are reasons to believe that the evaluation process for bundles and separate products are different, for example because bundles are more complex to evaluate. As bundles consist of several different products they have many and potentially diverse attributes to evaluate compared to separate products. Decisions have been shown to be more difficult when there are many attributes to evaluate and if the number of shared attributes is small (Bettman et al. 1998). Therefore, it may be more difficult to assess the benefits and drawbacks of bundles and, hence, which value they will provide. Complexity of choice has been show to been perceived as costs when evaluating products (Shugan
and the complexity in bundle evaluation as such may hence be perceived as a sacrifice by consumers in their evaluation of bundles.

How effortful bundle evaluations are may however be affected by the relation between bundle products. Bundle products that are related are likely to have less diverse product attributes. Therefore, bundle evaluation may be perceived as less complex and thus less demanding. Estelami (1999) argues that choosing a bundle with related products is an efficient way of making purchases for consumers. He claims that a complementary bundle presents customers with "a pre-engineered combination of products, designed to be operational as a system. […] This reduces the need for consumers to tailor-design a product combination, and reduces the associated cognitive effort required in the purchasing process" (p. 109). Evaluation ease has been shown to influence preferences for products positively (Mandler 1982; Schwarz 1998; 2004) and bundle complementarity may therefore have a positive effect on consumers’ perceptions of value. The positive effect of bundle complementarity is generally assumed yet rarely studied (Table 1 in Appendix I). In order to fulfill the purposes of this dissertation an understanding of the concept complementarity in relation to bundling is essential.

**Complementarity**

Complementarity is a wide concept that is used in many situations. One of the first to recognize complementarity as an important factor in a bundling setting was Telser (1979) who investigated how sellers can increase profit by bundling complementary products. Several studies have since included complementary bundles using a number of different terms and operationalizations; commodity bundling (Lawless 1991), functional relation (e.g. Harris and Blair 2006 a; 2006b; Herrmann et al. 1997), similarity (Agarwal and Chatterjee 2003), fit (Chakravarti et al. 1990; Simonin and Ruth 1995), and network or system effects (Lee and O’Connor 2003; Matutes and Regibeau 1992). Most commonly, functionally related products have been used to exemplify complementarity, for example, shampoo and conditioner (Montoya 2006), VCR and video cassette tapes (Harlam et al. 1995), or speaker system and surround sound receiver (Sheng and Pan, 2009).

In the following, an examination of definitions and explanations of what complementarity is will be presented in order to clarify the concept. Discussion and elaboration about complementarity is uncommon in the bundling literature. Complementarity and related concepts in other research fields such as economics and linguistics are reviewed and presented in order to gain a deeper understanding of the meaning of the concept.
Definitions of complementarity

Much of the early bundling studies were conducted in the field of economics and complementarity was initially defined in terms of price elasticity (e.g. Adams and Yellen 1976; Shocker et al. 2004; Tellis 1986; Venkatesh and Kamakura 2003). With this kind of definition, products are considered complementary if a price increase for one product decreases the sales of the other, for example, hot dogs and hot dog buns. If the price of hot dogs increases, the demand for hot dogs falls, and so do the demand for hot dog buns. Moreover, complementary products are contrasted with substitutable and unrelated products, which are defined in the same terms; a higher price on one product has a positive effect on demand for substitutes, while price changes has no effect on demand for unrelated products (Guiltnan 1987; Paun 1993; Shocker et al. 2004). Though straightforward and applicable in many cases, the economic definition of complementarity is limiting in a bundle setting. Products that are normally are substitutes according to the economic definition can be perceived as complementary in a bundle. Consider a bundle of electronic and printed versions of a newspaper as investigated by Koukova et al. (2008). An increase in subscriptions of the electronic version of a newspaper typically ought to decrease the demand for the printed version. However, offered together in a bundle, they can be perceived as complementing each other, so that the printed version is for reading in peace and quiet at home, while the electronic version can be used for searching for specific information, when away from home, etc. In this case, complementarity is not defined by price elasticity but by the suggested usage situation. The example also emphasizes that complementarity is a question of individual perception of the state, based on individual needs and context. A wider conceptualization of complementarity is thus needed.

In psycholinguistics, effort has been put into understanding how people make sense of word combinations that they have not encountered before. Typically, noun-noun word combinations such as whiskey-beer and dancer-musician are interpreted. Rajagopal and Burnkrant (2009) argue that since the research examines how people understand the combination of two different nouns it “holds interesting insights for understanding how people understand the combination of two different products”. Besides attributive similarity, such as similarity in appearance, also thematic relations, such as events or places, are a source of perceived similarity (Bassok and Medin 1997; see also Wisniewski and Bassok 1999). Estes (2003) point to that milk can be considered more similar to coffee than to lemonade, because milk is sometimes poured into coffee and no such thematic link exists between milk and lemonade. There are many possible thematic relations between words, such as causal (e.g., rope burn), temporal (e.g., winter holiday), spatial (e.g. table vase), compositional (e.g., glass eye), etc. (Estes and Jones 2006). In relation to the meaning of bundle complementarity, thematic relations
(rather than attributive similarity) may be useful to explain or understand what complementarity is in a bundling setting. By including a larger variety of possible relations, complementarity is given a wider meaning and embraces a broader set of product combinations.

Words such as complementarity, product fit, compatibility, and functional relatedness, that have been used to describe the relation between bundle products, are largely linked to judgments of similarity between products. Similarity can be regarded as the result of a comparison process. To determine how similar a cat and a dog is they are compared on the degree of shared and distinctive features (Tversky 1977) in parallel with attributive similarity in linguistics. The similarity of objects increases with the salience of the features they share and decreases with the salience of the features that distinguish between them (Tversky et al. 2000). For example, to determine similarity between a cat and a dog, a cat’s tail is compared with the dog’s tail, revealing a commonality, and the cat’s meow is compared with the dog’s bark, revealing a difference (example from Estes 2003). Similarity is not the same as, or even a typical characteristic of, bundle complementarity. Complementary bundles may consist of products that are similar, but not necessarily; bundle products that share many features may instead be substitutes, for example a mobile phone and a smart phone, or as adjacent to multi-packs, for example a black and a purple scarf.

In the bundling literature, definitions of complementarity have typically been vague or lacking. Many researchers declare that they use complementary bundles with no closer description of what it means (e.g. Harlam et al. 1995; Johnson et al. 1999; Soman and Gourville 2001; Tanford et al. 2011; Yadav 1995). Others describe complementarity as functional relation (Gaeth et al 1990; Harris and Blair 2006; Herrmann et al 1997), product “fit” (Simonin and Ruth 1995; Chakravarti et al 2002), products providing synergy effects (Estelami 1999; Heeler 2007; Popkowski Leszczyc and Häubl 2010), or in terms of price elasticity (Guiltinan 1987). Yet others do not at all comment on the relation between bundle products (e.g. Hamilton and Koukova 2008).

Sheng and Pan (2009) are somewhat more elaborate when they describe complementarity as “functional relatedness and dependence between bundle components” (p. 369). In an attempt to gain insight into the nature of relations between products in joint sales promotions, Varadarajan (1986) mapped the market and identified several kinds of complementarity, such as use occasion complementarity, target market commonality, image complementarity, and seasonal complementarity, see Table 1. Joint sales promotion is a marketing activity including two or more companies that combine products for sale in shared promotional campaigns. However, the different types of relations between products identified are equally relevant to all kinds of product combinations, regardless of the underlying cause and
objective for combining the products. It should be noted that the list is non-exhaustive and that many bundles can be referred to more than one type of complementarity.

Table 1. Relations between bundle products (adapted from Varadarajan 1986).

<table>
<thead>
<tr>
<th>Kind of relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect use complementarity</td>
</tr>
<tr>
<td>Partial use complementarity</td>
</tr>
<tr>
<td>Use time complementarity</td>
</tr>
<tr>
<td>Use occasion complementarity</td>
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<tr>
<td>Seasonal complementarity</td>
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<tr>
<td>Process complementarity</td>
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<tr>
<td>Newly evolving complementary relationships through creative promotion of new uses</td>
</tr>
<tr>
<td>Image complementarity</td>
</tr>
<tr>
<td>Distribution complementarity</td>
</tr>
<tr>
<td>Derived demand relationship</td>
</tr>
<tr>
<td>Target market commonality</td>
</tr>
<tr>
<td>Directly noncompeting products with common thread</td>
</tr>
<tr>
<td>Thematic tie-ins</td>
</tr>
<tr>
<td>Events/special occasions tie-ins</td>
</tr>
<tr>
<td>Seemingly non-complementary (brands frequently attempt to reach new customer groups or gain incremental exposure by reaching customers with similar demographic profiles through such tie-ins)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exemplified as</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toothbrush and toothpaste</td>
</tr>
<tr>
<td>Ground coffee and nondairy creamer</td>
</tr>
<tr>
<td>Breakfast: Cereal and orange juice</td>
</tr>
<tr>
<td>Flu/colds: Cold tablets and facial tissue</td>
</tr>
<tr>
<td>Summer vacation: Towels and pocket road atlas</td>
</tr>
<tr>
<td>Cooking: Skillet, margarine, pancake mix, and syrup</td>
</tr>
<tr>
<td>Promoting use of white vinegar for periodic cleaning of automatic drip coffeemaker</td>
</tr>
<tr>
<td>Low calorie soft drink and low fat yogurt</td>
</tr>
<tr>
<td>Disposable razors and batteries (both use retail display risers at the front end check-out counter)</td>
</tr>
<tr>
<td>Battery powered toys and batteries</td>
</tr>
<tr>
<td>Shavers and pantyhose</td>
</tr>
<tr>
<td>Over-the-counter non-prescription drugs: Aspirin, sore throat lozenges, and indigestion medication</td>
</tr>
<tr>
<td>Products used in the morning: Mouthwash, shaving gel, toothbrush, coffeemaker, and deodorant</td>
</tr>
<tr>
<td>Super Bowl: Corn chips, chili, and cheese spread</td>
</tr>
<tr>
<td>Aspirin and toothpaste</td>
</tr>
</tbody>
</table>

In summary, the discussions about complementarity has been limited or overlooked, even though there is a common agreement that it is an important aspect of bundling. In this dissertation, one purpose is to explore what complementarity is. In order to understand how complementarity affects perceptions of value, the understanding of the concept must go beyond price elasticity. The understanding also need to be developed compared to its common use in the marketing perspective as functional relation or the indistinct term “product fit” as products can be related in many other ways. By expanding the focus beyond functional relation, a deeper insight into what complementarity is and how it if possible can be of value for consumers can be gained.
Complementarity in previous bundling research

A few bundling studies have been conducted where findings have bearing on the development of the complementarity concept. Harlam et al. (1995) made comparisons between bundles consisting of functionally related products and bundles consisting of unrelated products and between bundles with products of similar and different price level. However, price was only stated as a kind of similarity, not as a type of complementarity. Harlam et al. (1995) did not elaborate on or define what complementarity is, but acknowledged the lack of definition of complementarity and requested future research about various definitions of complements, for example other ways to define product fit than functional relation. Still, little is done in the area and no research has focused on investing different types of complementarity.

Moreover, some researchers acknowledge that complementarity is likely to vary on a continuum, with perfect complementarity in one end and noncomplementarity in the other end. Venkatesh and Kamakura (2003) argue that complementarity and substitutability are matters of degree and not a simple dichotomy. Herrmann et al. (1997) also address the issue by varying the degree of complementarity of bundles (very complementary, moderately complementary, and not at all complementary). In the study, complementarity was operationalized as functional relation. The bundles were composed of different sets of add-on attributes for cars and the degree of bundle complementarity was varied by changing the number of complementary and unrelated attributes in the bundles. However, besides these two studies, no research has investigated the continuous nature of complementarity (see Table 1 in Appendix I) and the knowledge about how different degrees of complementarity affect consumers is needed in order to understand how bundles are valued.

Exploring if the previous findings are stable, if they transfer to other industries and types of complementarity and to bundles consisting of separate products rather than bundles of add-on attributes would further the existing knowledge and understanding about what complementarity is. The present study extends previous research in a number of ways. One important extension is that several additional types of complementarity are included in the investigations. Similar to previous research, this study takes off by operationalizing complementarity as functional relation between bundle products. However, this study widens the concept by incorporating other kinds of complementarity, such as use situation, use time, and process (compare with Varadarajan 1986). An advantage with this is that the effect of many kinds of complementarity is investigated under similar conditions and with the same method, which enables larger generalizability and additional conclusions compared to previous research. Another extension to previous research concerns complementarity as a continuous concept. This notion is addressed in several ways. One is by varying the level of bundle
complementarity in three steps, similar to Herrmann et al. (1997), while in contrast to Herrmann et al. (1997) using bundles consisting of separate products rather than add-on attributes. A limitation to the study conducted by Herrmann et al. (1997) is that they did not measure how complementary the participants considered the bundles in the study to be. This issue is addressed in the present study as the continuous nature of complementarity is explored by measuring how complementary different kinds of product relations are perceived to be.

Besides exploring what complementarity is, a purpose of this dissertation is to analyze the effects of complementarity on consumers’ preferences and satisfaction, that is, how consumers evaluate bundles before and after purchase. To fulfill this purpose, an understanding of the evaluation processes and how preferences and satisfaction are formed and influenced. Based on this, an increased understanding of how and why bundles are valued by consumers can be obtained. In the following, a literature review is presented, starting with preference formation in pre-purchase evaluations.

Preferences
Preferences can broadly be defined in terms of how similar one product is to an ideal product (Lefkoff-Hagius and Mason 1993). In the five-step model of decision making, preferences are assumed to be formed in pre-purchase evaluations (Engel et al. 1968). When the model was developed, preferences were assumed to be stable and based on internalized environmental influences such as cultural norms and values and reference groups, general motivating influences such as motives and life style, and personal beliefs and attitudes about products and brands – factors that are relatively fixed and firmly rooted in memory (Engel et al. 1968). Since then, the constructive aspects of preferences has been acknowledged (Bettman et al. 1998; Payne et al. 1993) and established in research, indicating that consumers do not have a master list of preferences stored in memory that they consult when making a decision. Instead it is recognized that preferences at times (not always) are created on the spot and influenced by many factors, for instance the description of the offers and the choice context (Bettman et al. 2008; Coupey et al. 1998; Lichtenstein and Slovic 2006).

Consumers’ preferences for products can be manifested by choice and purchase (Fishbein and Ajzen 1980) and preferences is therefore often operationalized by its effect on actual or stated behavior, for example by asking people to make a choice between alternatives (Heath and Tversky 1991; Thompson et al. 2005) or rank alternatives (Kalish and Nelson 1991), or by measuring willingness to pay (e.g. Gaeth et al. 1990; Kahneman et al. 1999), purchase intention (e.g. Harlam et al. 1995) or willingness to buy (e.g. Herrman et al. 1997; Grewal et al. 1998b). It should be noted, though, that preferences are not equal to choice or purchase, for example may factors in
the decision situation impact actual choice to differ from preferences (Amir and Levav 2008; Belk 1975; Simonson 1990). Preferences are also measured in other way than by how it influences behavior, for example by ratings of perceived acquisition value of a product (Grewal et al. 1998b), product attractiveness (Dhar and Nowlis 1999; Eckman and Wagner 1994) or general liking (e.g. Bower et al. 2003; Veryzer, Jr. 1993). In this thesis, preferences are operationalized both by the attractiveness of offerings and by statements of purchase intention, see Figure 4.

In addition, quality is included as a measure of preference as it has an established influence on preferences (Rust et al. 1999). Perceived quality is sometimes treated as a relatively global value judgment, similar in many ways to attitude or preferences (Parasuraman et al. 1985). Perceptions of quality are also emphasized as a major antecedent to overall perceptions of value (Storbacka et al. 1994; Zeithaml 1988) and expected value (Dodds et al. 1991; Fornell et al. 1996). Thus, it is a relevant measure to include when studying expected value and preference formation.

A number of factors of contextual and personal nature have been shown to influence preferences, such as, task complexity (Swait and Adamowics 2001; Thompson et al. 2005), time pressure (Dhar and Nowlis 1999; Ordóñez and Benson III 1997), risk with purchase (Campbell and Goodstein 2001; Harris and Blair 2006b), knowledge (Bettman et al. 1998), experience (Hu and Ritchie 1993; Laroche et al. 1996), reference groups and family (Childers and Rao 1992), personal need for cognition (Hagtvedt et al. 1992), variety seeking (Kahn 1995; Ratner et al. 1999), repeated exposure (Zajonc 1968), demographics (Bower et al. 2003; Yang and Allenby 2003), and affect (Meloy 2000).
Preferences for products are of course also affected by product attributes and features. Brand image (Cobb-Walgren et al. 1995; Dodds et al. 1991; Grewal et al. 1998a), country-of-origin (van Ittersum et al. 2003; Verlegh and Steenkamp 1999), and design and aesthetic features (Veryzer Jr. 1993), perceived safety (Veryzer Jr. 1998), and expected usability have been shown to influence preferences. Quality has been highlighted as a major factor influencing purchase intentions (e.g. Cronin, Jr. et al. 2000).

Moreover, many promotional marketing activities are specifically intended to influence consumers preferences and thereby their behavior. Advertising generally has a positive effect on preferences (Vakratsas and Ambler 1999) but product trial has an even more positive effect (Smith and Swinnyard 1983). Tellis (1988) showed that advertising reinforce preferences for current brands rather than stimulate brand switching. Celebrity endorsers in advertising have a major impact depending on the trustworthiness, expertise, and attractiveness of the celebrity, and thus, also a major negative effect of negative information about the celebrity (Amos et al. 2008). Pope and Voges (2000) showed a positive relationship between companies sponsoring sports and purchase intention and the attractiveness and accent of sales-persons have been shown to influence purchase intention (DeShields Jr. et al. 1996). The level and presentation of price and discount also have major impact on consumer preferences for products. A high price signals high quality (Dodds et al. 1991), which is valued by costumers, but price is most often negatively related to preferences (Dodds et al. 1991; Erickson and Johansson 1985). Discount has a more unambiguously positive impact on preferences. However, evaluations deteriorate if discounts become too large (DelVecchio et al. 2006). Some research indicates that the impact of sales promotions is relatively short-term, and that it hardly has any impact when the promotional campaign is over (DelVecchio et al. 2006).

In a bundling setting, Gaeth et al. (1990) showed that bundling as a sales promotion strategy give more favorable preferences than a cash rebate strategy. Harlam et al. (1995) show that familiarity influences consumer preferences for bundles so that consumers that are familiar with bundle products react more strongly on a price decrease than less familiar consumers. Also, price (Kaicker et al. 1995; Nguyen et al. 2009; Tanford et al. 2011; Yadav and Monroe 1993), discount (Harlam et al. 1995; Herrmann et al. 1997; Janiszewski and Cuhna Jr. 2004; Johnson et al. 1999), and brand image (Sheng and Pan 2009; Shine et al. 2007) influence consumers preference for bundles.

Even though research on how different factors influence consumer preferences mainly focus on evaluations of separate products, the results are likely to be applicable in a bundling setting as many factors are likely to have the same effect on consumer preference for bundles as for separate products. Probably, culture, reference groups, personal norms and beliefs, or need for
cognition have the same effect on preferences regardless of whether bundles or separate products are evaluated. Similarly, product appearance, quality, or country-of-origin is likely to have the same influence preferences for bundles as for separate products. However, because of the nature of bundles compared to separate products (e.g., several products and thus more complex evaluations) a few factors conceivably have different impact on bundles than separate products. As the aim of this dissertation is to increase the knowledge about how consumers value bundles, these factors are of extra interest.

One such factor is the perceived risk of purchase. Compared to separate products, bundles may reduce the perceived risk of purchase by ensuring that products work together (Harris 1997; Harris and Blair 2006b) and by lowering the financial risk as bundles often come at a discount (Estelami 1999; Sarin et al. 2003). Another factor that may be more prominent in bundle evaluations is perceived convenience. Bundles consisting of products that are used together can offer convenience as consumers can find all products in one place and do not have to assemble the products, thereby saving time and effort (Harris and Blair 2006a; Naylor and Frank 2001). A third aspect that is unique for bundles and has been shown to have a positive influence on preferences is the complementarity between bundle products (Harlam et al. 1995; Herrmann et al. 1997; Sheng et al. 2007a; Sheng and Pan 2009).

The main purpose of this dissertation is to examine how bundle composition influences consumers’ preferences for and satisfaction with bundles. To be able to fulfill the purpose, the effect of complementarity between bundle products on consumer evaluations is in focus. The bundles in focus in this dissertation consist of two different products (as opposed to multi-packs) and the products are complementary in varying degrees. Bundles consisting of different products are likely to be more complex to evaluate than separate products but complementarity between bundle products may decrease the complexity of the evaluation task. Task complexity has been shown to influence preferences, for example so that choice is more difficult when there are many options to choose between (Agarwal and Chatterjee 2003; Swait and Adamowics 2001) and that consumers therefore sometimes defer choice (Dhar 1997a; 1997b). Thus, it may be expected that bundle complementarity has a positive influence on consumer preferences. To increase the understanding of how (and why) complementarity influences consumers’ preferences for bundles, insights into the pre-purchase evaluation process is vital.

The process of forming preferences
On a general level, it has been suggested that consumers have two approaches to evaluate information in pre-purchase evaluations: piecemeal
Categorization based (Fiske 1982). In piecemeal evaluation, information about a product is evaluated attribute by attribute in a bottom-up process to form an overall assessment of a product. In contrast, category-based evaluation is characterized by attempts to classify a product in a top-down process, by making a comparison between an overall assessment of the product and the category schema structure. If the product can be referred to a category, the preferences for and the knowledge about that category are transferred to the product, such as judgments about quality and image. Categorization is less effortful than piecemeal evaluations and if possible a category-based evaluation is therefore used. Pavelchak (1989) suggests that consumers start off by attempting to make a categorization based evaluation of products. If classification is not possible, piecemeal evaluation follows.

How products are categorized has been shown to affect consumers’ thoughts about, attitude towards, and overall evaluations of products (Moreau et al. 2001; Sujan 1985; Sujan and Bettman 1989) as well as the likelihood of recalling and choosing the products (Nedungadi 1990; Nedungadi et al. 2001). Therefore, an understanding of the categorization process may provide important awareness when it comes to determining how bundling and bundle composition influence consumers’ preferences for bundles and subsequent behavior.

**Categorization**

Categorization is a process of organizing information about objects (e.g. products) in groups according to how similar they are perceived to be (Rosch 1975; Rosch et al. 1976; Mervis and Rosch 1981). The goal of categorization is to create a structure (a schema) that maximizes the similarity between objects within each category and minimizes the similarity between objects in different categories. Hence, in the categorization process, similarity and relations are important aspects. Categorizing objects into a schema helps individuals to structure their knowledge and to efficiently store and recall information, evaluate new objects (for example products) and develop expectations about them (Cohen and Basu 1987; Kahneman and Miller 1986). Categorization is a general theory that can be applied on people (Cantor and Mischel 1979) and events (Abelson 1981) as well as on objects. Yet, in third text, people and events are disregarded and the terms product or bundle is used to denominate objects in order to simplify reading and minimize repetition and because objects such as products and product bundles are in center.

When consumers encounter a product that is perceived as similar to other known products, they classify it as belonging to the same category. Sometimes assimilation is not possible and new categories or sub-categories will have to be formed (Meyers-Levy and Tybout 1989; Sujan and Bettman 1989). Establishing new categories or subcategories is cognitively demanding
as information need to be deeply processed in a piecemeal based approach (Fiske 1982; Sujan 1985; Sujan and Bettman 1989); it means handling information about product attributes, category label, interrelationships between these attributes and relationships with other categories (Markman and Ross 2003). Consequently, individuals prefer to make categorization based evaluations and assimilate new products into existing categories. If the discrepancy is marginal to moderate no new categories are formed (Sujan and Bettman 1989) and only if the discrepancy between product and category is large, piecemeal based evaluation take place.

When attempting to categorize products, the similarity between product and category can be determined based on attributes in so called taxonomical categorization (Rosch and Mervis 1975; Tversky 1977). But products can also be judged as similar according to how well they fit as response to a certain goal, for example, “things to take out of the house in case of fire”, so called goal-derived or ad-hoc categorization (Barsalou 1983; Barsalou 1991; Ratneshwar et al. 2001). Goal-derived categories are constructed to answer to a specific goal based on the situation or on personal characteristics (Barsalou 1983; Barsalou 1991). This means that consumers can create categories that fit a specific consumption goal or use situation, for example a “breakfast substitute” category of an apple, a granola bar, and fruit yoghurt (Ratneshwar et al. 2001).

In contrast to taxonomical categories, goal-derived categories often contain disparate products that share few features on the surface. They are also often created on the spot, which means that they, compared to common categories, do not have well established category representations, that is, information about features and characteristics typical for the category (Ratneshwar et al. 2001). Consequently, goal-derived categories, in contrast to common categories, do not have well established names or labels that are shared by different individuals, such as fast-food restaurants or breakfast cereals (Ratneshwar et al. 2001). However, as a goal-derived category is used many times, the representations become established, at least on an individual basis (Barsalou 1983). This means that a goal-derived category that is accessed frequently in the end becomes firmly rooted in the schema structure.

**Categorization of complementary versus unrelated bundles**

How easily a bundle can be referred to a category is likely to be influenced by the relation between bundle products. Due to the variety of attributes, unrelated bundles may be more difficult to refer to an existing category than complementary bundles. Products in unrelated bundles are less likely to have many attributes in common with a certain category, as the product features may be diverse; consider a bundle with a TV and a bicycle or estate agent service and a meal of sushi (examples of bundle promotions by a major
actor on the home electronics market and a real estate agency in Sweden (2011). Products in complementary bundles may share more attributes and may therefore be possible to refer to a common taxonomical category. Even when they cannot be referred to a taxonomical category, they may instead be referred to a goal-derived category. Consequently, the chance of successful categorization is larger for complementary bundles than unrelated bundles and thus complementary bundles are more likely to be evaluated in a categorization based process.

Labeling products affects how they are categorized. When there is a large discrepancy between a product and existing category structure, labeling the product as belonging to a certain category makes consumers refer it to that specific category instead of creating a new category to hold it (Uekermann et al. 2010). This indicates that the demanding task of evaluating and classifying bundles may be simplified by providing a label. Consider a subscription bundle containing TV broadcasting, broadband, and telephone. The separate products share some similarities but also have many differences. Hence, the bundle may be difficult to refer to an existing category and consumers may need to create a new category to hold the bundle. However, the bundle may be labeled as a “communication media” bundle. The label would provide the consumers with a common denominator between the products and suggest a goal-derived category that can hold the bundle. Classification is thus possible and there is no need to move on to a piecemeal-based evaluation of the bundle. It may be hard to find a label that fits an unrelated bundle. If there is a conflict between the appearance of a product and the product label, the positive effect of labeling on categorization ease can be reduced. Gregan-Paxton et al. (2005) showed that products that look like a PDA but is labeled a cell phone under some circumstances are compared to multiple categories instead of being referred to the cell phone category. In order for labeling to simplify categorization of a bundle, it is important that consumers understand why it is labeled the way it is and the relation between bundle products is therefore important.

The purpose of this thesis is to increase the understanding of how complementarity influences consumers’ preferences for and satisfaction with bundles, which puts focus on the outcome of the evaluation process. However, this far focus has been on the process of evaluating and categorizing bundles. The reason is that it was judged as important to have an understanding of the categorization process and how it is influenced by bundle complementarity, as categorization ease or difficulty has been shown to directly affect consumers’ preferences, which is an aspect of outcome of an evaluation process (Mandler 1982; Schwarz 2004). It is acknowledge that categorization ease or difficulty is not the only factor that influences preferences. Quite the reverse, as mentioned in the beginning of this section many factors influence bundle evaluations. However, many factors have the
same impact on preferences regardless of whether the products are evaluated separately or in a bundle. Complementarity is one of the factors that have a different impact on bundle than separate product evaluations. Hence, by understanding the effect bundles have on the categorization process, the effect of complementarity on consumers’ preferences through its influence on the categorization process can be appreciated.

Consumer preferences for bundles

Many studies show that how easily a product can be categorized influences consumers’ preferences for the product (Mandler 1982; Schwarz 1998; 2004). Whether this relationship is a straightforward positive one or not is debatable, though. Research has showed that products that are typical for a category are better liked than products that are less typical (e.g. Loken and Ward 1990). One suggested reason for the positive effect of typicality on evaluations is that feelings of fluency, that is low perceived difficulty in processing have a positive impact on evaluation (Schwarz 2004). Easy processing is assumed to elicit positive evaluations because it tends to be indicative of progress towards successful recognition and interpretation (Carver & Scheier 1990; Simon 1967). In addition, Winkielman et al. (2003) propose that positive evaluations follow easy processing because the fluency signal itself is hedonically marked. “In general, high fluency is indicative of positive states of the environment or the cognitive system, whereas low fluency is indicative of negative states of the environment or the cognitive system” (p. 197). High process fluency can also indicate that the object has been encountered before and is familiar which has been shown to increase liking (e.g. Zajonc, 1968). Another explanation for why products that are typical for a category are more positively evaluated is that a typical member of a goal-derived category is likely to be valued since it is more likely to be helpful in achieving a certain goal (Barsalou 1983; Loken and Ward 1990).

A different research stream has showed that larger typicality is not unambiguously positive. When consumers that have abundant cognitive resources and are highly motivated to process information, products that differ somewhat from a specific category are more positively evaluated than products that either are perfect matches to or extremely different are (e.g. Meyers-Levy and Tybout 1989; Meyers-Levy et al. 1994; Tybout and Artz 1994). The rational for this effect is that stimulus that conforms to expectations (that is, is congruent), for example a product or bundle that can easily be classified, results in mildly positive evaluations due to familiarity. Stimulus that is incongruent with existing schema, on the other hand, constitutes a case of interruption of expectations and predictions. Thereby it evokes arousal and cognitive elaboration to make sense of the mismatch, which in turn gives rise to positive feelings about the product and a positive evaluation. However, stimulus that is too incongruent to be possible to
assimilate into the category schema, results in negative emotions and hence a negative evaluation of the product. In the studies confirming the positive effect of mild incongruity, easily classified products such as beverages and books were investigated (e.g. Stayman et al. 1992; Meyers-Levy and Tybout 1989; Tybout and Artz 1994). The results may therefore not be applicable to bundles, as a bundle constitutes a more complex unit of categorization.

It appears there is a conflict between the predicted positive effect of mild incongruity and that of typicality. However, Winkielman et al. (2003, p. 211) state that they "generally expect fluency-based affective reactions to exert their strongest influence under the conditions that are also known to give rise to pronounced mood effects in evaluative judgment; when little other information is available; when the person's predicting capacity or motivation is low, thus limiting more deliberate information search and integration; and when the informational value of the affect has not been called into question (for discussions see Schwarz, 1998; Schwarz & Clore, 1996)". Hence, the positive effect of fluency is most salient when the evaluation process is less deliberate. This is in line with findings that the positive effect of slight incongruity between product and category has been found to be moderated by low category knowledge (Peracchio and Tybout 1996), time pressure (Srull et al. 1985) and low involvement (Maoz and Tybout 2002) which all are all factors that makes evaluations less careful. Hence, whether typicality has a straight forward positive effect on evaluations or not depends on a number of contextual and personal factors that determine how deliberate the processing is. Loken et al. (2008) conclude that most studies support a strong positive relationship between typicality and positive evaluations.

In a bundling setting it is here argued that complementary bundles are easier to categorize than unrelated bundles, indicating that complementary bundles are preferred over unrelated bundles due to greater typicality. Still, even though complementary bundles are easier to classify, they may still be slightly incongruent with existing category schema; However, only so much that the incongruity can be resolved, resulting in favorable evaluations. Unrelated bundles, on the other hand, may prove impossible to assimilate into a category, which yields negative evaluations. In conclusion, complementary bundles are expected to be evaluated more positively than unrelated bundles as a result of the ease of processing.

The effect of bundle complementarity on preferences
The positive effect of complementarity on consumer preferences for bundles is generally assumed in the bundling literature. The first study to actually include both complementary and unrelated bundles in empirical investigations was conducted by Gaeth et al. (1991). They compared consumers' evaluations of willingness to buy, usefulness, and perceived bundle quality of functionally related (VCR and video cassette tapes), non-
functionally related (electronic typewriters and calculators), and separate products. However, their primary interest was to test how ratings of separate bundles combine to determine ratings of the bundles. Hence, no effort was put into analyzing differences in ratings between functionally and non-functionally related bundles. Still, examining the results, no positive effect of bundle complementarity in comparison to unrelated bundles (or separate products) can be detected.

In recent studies, Sheng and colleagues investigate bundles from the opposite direction compared to Gaeth et al. (1991). Thus, instead of investigating how separate product evaluations fuse to an overall bundle evaluation, Sheng and Pan (2009) and Sheng et al. (2007a) investigate how encountering unrelated and complementary bundles influence consumers' evaluations of the separate bundle products. Complementarity was found to have a positive effect on perceived quality in new product introduction and price discount settings in that it helps transferring a positive value of one product to a second product. In more detail, they found that the positive effects on quality judgments of combining a new product with a strong brand was enhanced in complementary bundles compared to unrelated bundles. That is, a positive perception of one brand is more easily transferred to another brand if products are functionally related (Sheng and Pan 2009). They also found that complementarity moderated negative effects of bundle price discount on perceived quality of the discounted product (Sheng et al. 2007a). A positive effect of complementarity can be detected in these studies, but they do not contribute to the understanding of how a bundle as a unit is affected by the relation between bundle products.

Other studies do put focus on the effects of product complementarity on evaluations of bundles as units. Harlam et al. (1995) hypothesized that bundles of functionally related and equally priced products would result in higher purchase intention than bundles of unrelated products and products of unequal price. In their empirical study they investigated complements of durable (electronic devises) as well as non-durable (hair care) products. They provide no definition or description of what they consider to be complements; a VCR was combined with a TV or video tapes and hair shampoo was combined with hair conditioner or soap in the complementary bundles. In the study, price equality between bundle products was investigated, not specifically as a measure of complementarity, but it was stated as a kind of similarity. Their findings confirmed the expected effect of complementarity, in that bundles of functionally related products had higher purchase intention than bundles of unrelated products. However, they failed to support the hypothesis that bundles of products with similar price had higher purchase intention than those with unequal price. There were no differences in findings between durable and non-durable products. The results indicate that the effect of product complementarity on consumer
preferences may generalize to several industries but vary for different types of complementarity. Herrmann et al. (1997) confirmed the positive effects of bundle complementarity on purchase intention found by Harlam et al. (1995). In addition, they extended the results by varying the degree of bundle complementarity; very related, moderately related, and unrelated. As a way of adding to the knowledge about how consumers value bundles, this thesis aims at extending the knowledge about how different types and degrees of bundle complementarity affect consumer preferences.

Besides analyzing how preferences for bundles are affected by complementarity, a purpose of this dissertation is to analyze the effects of complementarity on satisfaction. According to the five-step model of decision making, consumers make post-purchase evaluations after buying a bundle, which results in feelings of satisfaction or dissatisfaction. While bundling research collectively confirms there is an effect of bundle composition on consumer preferences and choice, the effect on post-purchase evaluations, that is, consumer satisfaction or dissatisfaction has largely been ignored (Pedersen and Nysveen 2010).

**Satisfaction**

Knowledge about customer satisfaction is a key aspect in order to understand how bundles are valued by consumers. Post-purchase evaluation comes last in the five-step decision making model. As illustrated in Figure 5 experiences of satisfaction is involved when forming a perception of bundle value. Positive pre-purchase evaluations do not automatically lead to satisfaction with a bundle or perceptions of high value for the customers. After purchase, many factors influence the perceived value; whether or not the products performs as expected, the durability of the products, and the needs of the customer, which may change.

Satisfaction is a broad concept that has been defined in many ways, for example as a fulfillment response. Satisfaction is “a judgment that a product/service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of over- and underfulfillment” (Oliver 1997, p.13). The significance of meeting expectations has also been highlighted, and satisfaction has been described as “consumers’ response to the evaluation of the perceived discrepancy between prior expectations (or some norm of performance) and the actual performance of the product as perceived after its consumption” (Tse and Wilton 1988, p. 204). There are many more ways to define satisfaction but arguably satisfaction is too complex and too context dependent to be captured in one general model or definition. More and more, terms such as customer relationship, loyalty, value-in-use, and co-creation of value are discussed in relation to satisfaction (Ballantyne and Varey 2006; Prahalad and Ramaswamy 2004; Vargo and Lusch 2004; Vargo
et al. 2008; Woodruff 1997). Satisfaction is thus not considered a pure outcome or response to company activities but mainly as something that is co-created by firms and customers in a process and it is recognized that the value of an offer is determined in relation to consumption (Vargo and Lusch 2004). For the purpose of this dissertation, satisfaction is used as a self-reported measure that corresponds with experienced bundle value. Even though the term satisfaction is used, it is not assumed to be a final outcome or the only goal for companies. Instead, it is interesting as it is an effect of experienced value and a part of the overall bundle value.

With the development of a marketing perspective in companies, which puts consumer value in center, there is and increasing interest in assuring that customers are satisfied. Many positive effects for firms are ascribed to satisfaction. Satisfied customers are more likely to buy the product again (Bearden and Teel 1983; Mazursky and Geva 1989; Zeithaml et al. 1996) and to be loyal to the company (Anderson and Sullivan 1993; Bearden and Teel 1983; Oliver and Swan 1989), thereby ensuring a steady cash flow and long run profitability (Reichheld and Sasser, Jr. 1990; Rust and Zahorik 1993). Satisfied consumers are also more willing to pay for products, more tolerant to price increases, make purchases more frequently and in larger quantities (Reichheld and Sasser, Jr 1990), and are more likely to engage in positive word-of-mouth (Söderlund 1998). Having satisfied customers also means that firms need to assign fewer resources to handling returns and complaints and that their overall reputation is improved which, in turn, may lead to making it easier to introduce new products as the consumers are more aware of the company and experience lower risk of trial (Schmalensee 1978; Yuan and Jang 2008). A meta-analysis conducted by Szymanski and Henard (2001) showed a strong link between satisfaction and loyalty and further between satisfaction and profitability. However, it is recognized that the relationship between satisfaction and profit is not straight forward but intermediated by numerous factors, for example attitudinal loyalty (Jaiswal and Niraj 2011; Zeithaml et al. 1996). Even though the relationship between satisfaction and profit is complex, it is hard to argue against aiming to satisfy customers as satisfaction correlates with consumer behavior that is positive for companies and there is no evidence that satisfaction may have negative impact on profit or loyalty (Szymanski and Henard 2001). For the purposes of this dissertation it is enough to conclude that having satisfied customers is, if not positive for firms then at least not negative. Here, satisfaction is not mainly interesting as a way to understand or manage customer relationship. Instead, it is adopted because it is a commonly used and accepted measure related to consumers’ post-purchase evaluations and because of its relation to customer value.

A number of factors have been found to influence satisfaction. Intuitively, product performance is assumed to have an impact on consumer
satisfaction, which research confirms (Churchill and Surprenant 1982; Halstead et al. 1994; Oliver and DeSarbo 1988; Tse and Wilton 1988). However, the effect of performance on satisfaction is not dominated by product performance relative to consumer’s expectations, so called disconfirmation (Oliver 1997; Szymanski and Henard 2001). Consumers are satisfied when outcomes match or exceed expectations (positive disconfirmation) and dissatisfied when expectations were higher than the outcome (negative disconfirmation) (Oliver 1981; Oliver and DeSarbo 1988). In addition, expectations alone have been shown to influence satisfaction, with no assessments of or comparisons to actual performance (LaTour and Peat 1979; Oliver and DeSarbo 1988). Other factors that have been shown to influence satisfaction are equity, the perceived fairness, rightness, or deservingness of what an individual receives in comparison to what a referent group receives (Oliver 1993; Oliver and Swan 1989; Swan and Oliver 1991), general life satisfaction, perceived personal competence (Westbrook and Newman 1978), and stress caused by negative changes is life status (Andreasen 1984).

Quality is often assumed to have a central role in feelings of satisfaction (Storbacka et al. 1994). Even though there are some indications that satisfaction may be an antecedent to perceived quality (Gotlieb et al. 1994), most researchers agree that the causal effect goes the other way around; product quality leads to customer satisfaction (Gotlieb et al. 1994; Meng and Elliot 2009; Olsen 2002). In Figure 5, the relationship between quality and satisfaction is illustrated. Thus, quality is in this text assumed to impact both preferences and satisfaction. However, satisfaction is here used mainly as a
global evaluation or statement of a feeling, similar to how it is used by for example Gotlieb et al. (1994) and Olsen (2002). The aim is not to increase the understanding of how satisfaction is created and the relation between quality and satisfaction is not central. Therefore, quality is mainly used as a measure of preference in the empirical investigations, and not as an antecedent to satisfaction.

The effect of bundling on satisfaction
Which effects may bundles have on consumer satisfaction? Does bundling as such, combining two or more products, have an impact on consumer satisfaction? Possibly, it is harder for consumers to form realistic expectations about bundles as they are more complex, which increases the risk of negative disconfirmation leading to dissatisfaction. The complexity of bundles also make them more demanding to classify into categories as they are more incongruent from existing category structure. Therefore, using information based on category knowledge may give less accurate expectations and, consequently, bundle performance may not live up to expectations (or the other way around, expectations may be so low that performance exceeds them), which would influence satisfaction. Following this line of argumentation, bundle complementarity has an impact on satisfaction as complementary bundles are easier to fit into existing categories and, hence, easier to form accurate expectations about.

Another possible reason why bundling may affect satisfaction is that it reduces consumers’ freedom of choice since it stipulates which products that can be bought together. Generally, it is assumed that a reduction in freedom of choice is negative for consumer satisfaction (Reibstein et al. 1975). However, too many varieties to choose from are not valued by consumers (Herrmann et al. 2009). Iyengar and Lepper (2000) reported larger satisfaction when participants had a choice of 6 alternative gourmet jams or chocolate than when they had a choice of 24 or 30 alternatives. Too many choices makes the decision process difficult and research show that simplifying the decision process by for example grouping alternatives into categories increases satisfaction (Mogilner et al. 2008). Parallels can be drawn to bundling which may be considered as a way to group alternatives. Thereby bundles have the potential to simplify consumers’ decision process and hence improve satisfaction. Furthermore, many of the potential benefits with bundling for consumers are enhanced by complementarity between the products, such as product compatibility and assemblage, and lowered search cost, which indicates that bundle complementarity may have a positive effect on consumer satisfaction.

Previous research has contributed to knowledge of how composition of bundles influences consumers’ preferences but very little is known about how it influences satisfaction. A strong correlation between stated purchase
intention and satisfaction with a purchase should perhaps be expected. Yet, there are some conceivable reasons why consumers may experience dissatisfaction with a bundle purchase despite positive pre-purchase evaluations. One possible reason is that they purchase a product they did not intend to purchase because it was included in a bundle with a low price. Another is that they settle for a product with lower quality or lacking features compared to what they originally intended to purchase because it was included in a bundle with a low price. This risk may be larger when an exclusive product is combined with a low-budget product, as people interested in an exclusive product arguably have a predilection for exclusive products and would not want a low-budget product. Another reason why preferences and satisfaction may not be correlated is the risk of products malfunctioning. The more products purchased, the larger is the probability that one of them breaks, gets lost, or for some other reason cannot be used. Buying bundles may therefore increase the risk of dissatisfaction due to malfunctioning goods compared to purchasing a separate product. Arguably, complementary bundles may be more negatively affected than unrelated bundles by this. When a product in a complementary bundle cannot be used, in addition to not being able to use the product, the extra value that the complementarity offers (of, for example, the products being used together or enhancing each other’s function) is lost. This is a special case following a bundle purchase that potentially has a large impact how consumers value bundles and would therefore be valuable to study. There is no previous research investigating these issues. On the whole, there are only a handful of studies that include post-purchase effects of bundling in the investigations and none of them focus on the effect bundle complementarity may have on satisfaction (see Table 1 in Appendix I).

Two studies that have a post-purchase focus by investigating the outcome of bundle purchase and consumption is Soman and Gourville (2001) and Mankila (2004). Soman and Gourville (2001) conclude that bundling can have a negative effect on consumption and suggest that this may impact customer satisfaction. The effect of satisfaction is only hypothesized and not investigated, though. Mankila (2004) showed that price bundling increased the demand for additional services in a retail banking setting. However, though they have a post-purchase focus, none of them emphasize customer satisfaction.

Bundles are often offered at a discount and some attention has been paid to how it influences satisfaction. Actual savings (Sheng et al. 2007a) or inferred savings (Nguyen et al. 2009) on bundles have been shown to have a positive effect on overall satisfaction with financial terms, and knowing that bundles are undiscounted have a negative effect on customer satisfaction (Nguyen et al. 2009). It has also been demonstrated that satisfaction is affected by how the discount is presented and that discount information
presented for each separate product provides the most satisfaction (Johnson et al. 1999). Sheng et al. (2007a) provide results indicating that complementary bundles provide more satisfaction with financial terms than unrelated bundles. However, these studies investigate customer satisfaction with the financial aspects of bundling, such as the feeling of making a good deal. In this dissertation, the financial aspects are not of major importance, as they mainly concerns bundling as a pricing strategy rather than as a tool to provide value. To capture the value aspect of bundling, satisfaction with the products rather than with the price is central.

In the review of the bundling literature, only two studies were found that measure the effect of bundling as a value providing strategy rather than pricing strategy. Naylor and Frank (2001) showed that the value of an all-inclusive fitness resort visit was higher when it was an all-inclusive bundle than when consumers paid separately for the treatments and activities they took part in, even though they paid a surcharge for the all-inclusive option. Andrews et al. (2010) showed that consumers value a bundled service offering higher than corresponding separate services, and refer the results partly to the convenience of consolidated charges into one bill but also to the monetary savings offered.

Studies investigating the effect of bundling and bundle complementarity on consumer satisfaction are scarce and extending the focus beyond the effect of complementarity on consumer pre-purchase evaluations by including consumers’ post-purchase experiences is therefore valuable. Insight in how bundling and composition of bundles influence satisfaction is vital when studying perceptions of value as value is an overall assessment based on both pre-purchase expectations of value and post-purchase experienced value.

The effect of discount on consumer preferences and satisfaction
This far, the influence of complementarity on preferences for and satisfaction with bundles has been in focus. When exploring the possible value of bundling for consumers, bundle discounts cannot be disregarded, though. Bundle discounts are common on the market, even to the extent that consumers take them for granted and infer monetary savings in the absence of discount information (Heeler et al. 2007). Research in a bundling as well as non-bundling setting confirm that discount has an effect on consumers’ evaluations (e.g. Johnson et al. 1999; Suri and Monroe 1995) and behavior (e.g. Alford and Biswas 2002; Foubert and Gijsbrechts 2007; Munger and Grewal 2001). However, there is also a risk that large discounts raises questions regarding the quality and image of products or that it increases overconsumption and purchases of unwanted products, which may lead to dissatisfaction. Thus, it is not obvious that discounted bundle offers have a
positive influence on preferences and satisfaction. Therefore, the relation between discount level and consumer preferences and satisfaction is interesting to study in order to explore if and how much bundles should be discounted to be as positively evaluated as the separate products.

There are many kinds of price reductions; for example, coupons, rebates, or free-bees (e.g. BOGO’s, i.e. “buy one get one free”, or buy three pay for two) and research show that consumers’ evaluations are affected by the kind of discount used. For example, Munger and Grewal (2001) showed that whether free-bees, discounts, or rebates were offered on a bundle influenced consumers’ perception of quality, price acceptability, perceptions of value, and subsequent purchase intention for bundles. Free-bees were viewed more favorably than discounts and rebates. This is contrary to results from other studies showing that freebees are not attractive (Gaeth et al. 1991; Harlam et al. 1995). Harlam et al. (1995) found that discounts presented for the bundle as a whole gave higher purchase intentions than discounts presented on each bundle product or as a free-bee. Evaluations of bundles with a freebee were not affected by discount at all; purchase intention for the free-bee bundle was the same with no discount as with a discount. This may be a result of consumers inferring a discount in lack of explicit price information when encountering a bundle with a freebee.

Price reductions can be presented in many ways: as percentage or money off for the bundle as a whole, for one of the products, or for each product in the bundle. The general finding is that discounts have the most positive impact on consumer evaluations if presented on each separate product than on the bundle as a whole (Chakravarti et al. 2002; Heath et al. 1995; Johnson et al. 1999; Kaicker et al. 1995; Mazumdar and Jun 1993; Munger and Grewal 2001; Suri and Monroe, 1995; Tanford et al. 2011; Yadav and Monroe 1993). Moreover, whether a discount is presented as money or percentage off also influences consumers’ perceptions. In a meta-analysis Krishna et al. (2002) found that both percentage and money off had positive impact on perceived savings, but percentage more so than money off. It has also been demonstrated that it matters which product in a bundle that is discounted. Janiszewski and Cunha Jr. (2004) showed that consumers are more sensitive to discounts on the less important and less valued product, for example a bag of M&M candy that comes with a rental movie. Hence, there are many ways to discount bundles and the findings give no clear-cut answer to which way is the best.

The rather intuitive result that a larger discount is preferred to a smaller has been demonstrated for separate products as well as bundles (Alford and Biswas 2002; Herrmann et al. 1997; Hu et al. 2006; Janiszewski and Cunha, Jr. 2004). However, research also show that price reductions do not always have a positive impact on consumer evaluations. Increasing discounts improve consumers’ perception of value only to a certain level. After that,
further discounts have a negative effect on consumer evaluations due to, for instance, suspicions of low product quality, which in addition may discourage consumers from purchase (Raghubir and Corfman 1999; Nusair et al. 2010; Jensen and Drozdenko 2008). Della Bitta et al. (1981) demonstrated that a 15 per cent discount is attractive and induces purchase intention. Other studies point to a threshold value of between 40 and 60 per cent. After that, ratings of quality and purchase intention drop (Jensen and Drozdenko 2008; Nusair et al. 2010). The findings about attractive discount rates and threshold levels are valid for the effect of discount on evaluations of separate products. Whether the effect is the same for bundles are uncertain. It is likely that there is a threshold effect of discounts on bundles as well. Still, Herrmann et al. (1997) showed straightforward positive effects of discount on purchase intentions. One reason for this may be that they investigated the effect of 0, 10 and 20 per cent discounts; that is, well below the reported threshold levels and instead close to the 15 per cent discount rate shown to be attractive. In a bundling setting, discounts of more than 50 per cent are unlikely when bundle products are approximately same priced since that would mean that the price for the bundle would be lower than for the separate products. In the case of bundle products with dissimilar price level, discounts larger than 50 per cent may occur.

Discount and complementarity

As mentioned, there are many studies focusing on how discounts should be presented in order to induce maximum purchase intention (Harlam et al. 1995; Janiszewski and Cunha, Jr. 2004; Johnson et al. 1999; Raghubir 2005; Sheng and Pan 2009; Tanford et al. 2011; Yadav 1995; Yadav and Monroe 1993, see Table 1 in Appendix I). In a non-bundling setting, research evidence suggests that different kinds of discounts are differently valued by consumer depending on the risk of bad product performance (Lowe 2010). When there is low perceived risk that a product will malfunction consumers prefer free-bee offers while money off offers are perceived as better when the risk of bad product performance is high. In a bundle setting this would indicate that, since complementary bundles reduces the risk of products not working well together compared to purchasing separate products, they would be better off presented as an offer of “BOGO”. Unrelated bundles, on the other hand, which do not offer larger compatibility probabilities than separate products, ought to be presented with a money-off discount. This line of argument is not supported by Harlam et al. (1995) who found no effect of complementarity on which type of discount that was preferred.

The literature review revealed only three bundling studies investigating the effect of discount on bundles with varying degrees of complementarity (Harlam et al. 1995; Herrmann et al. 1997; Sheng et al. 2007a). The results indicate that the positive effect of discount is less pronounced for
complementary than noncomplementary bundles (Sheng et al. 2007a) even though the results are not unambiguous (Herrmann et al. 1997). Support for the notion that the effect of discount interacts with bundle complementarity on consumer evaluations is also found in a study by Harlam et al. (1995). They showed that in the case of surcharges, purchase intentions for complementary bundles are as low as for unrelated bundles. However, in the case of discounts, complementary bundles are more positively evaluated than unrelated bundles. None of these three studies focus on the effect of discount on satisfaction. (Sheng et al. 2007a study the effect of discount size on satisfaction restricted to financial terms and did, not surprisingly, find a positive relation) (see Table 1 in Appendix I).

In summary, indications are that bundle complementarity influences the effect of bundle discounts on consumers’ evaluations. Still, there are questions unanswered and the issue needs further investigation, for example regarding the effect of discount levels and complementarity on consumer satisfaction.

**Discount and product price level**

Another issue with regard to the effect of bundle discount is whether perceptions are affected by the price level of the products. That is, if discount affects perceptions differently depending on whether the bundles include exclusive or low-budget products. Consumers often use price information to make inferences about the quality of a product (e.g. Rao and Monroe 1989). A high price signals high product quality and a low price signals low product quality. Building on this reasoning, it can be argued that consumers may react differently to discounts on bundles consisting of low-budget than exclusive products. Since low price is one of the strongest indicators of low quality, a large discount may signal that the original price did not match the quality of the products. Therefore, consumers encountering a bundle with large discount may lower the expectations of product quality. A large discount on a low-budget bundle potentially changes/lowers consumers’ expectations less than a discount on an exclusive bundle. The risk of a discount having a negative impact on evaluations is therefore smaller for low-budget than exclusive bundles. Another reason why discount may have a larger negative impact on exclusive bundles is that a large discount may confuse consumers by giving mixed signals about the quality of the bundle products.

However, discounts may also have a positive impact on evaluations of exclusive bundles compared to low-budget bundles. One reason in that the potentially lowered expectations on quality caused by discounts may lead to positive disconfirmation and satisfaction in post-purchase evaluations. Since exclusive bundles have higher quality, the chance of positive disconfirmation ought to be larger for discounted exclusive than low-budget bundles.
Another reason is that the financial risk is larger for bundles with exclusive than low-budget products. A discount may therefore account for a larger perceived benefit for exclusive than low-budget bundles. The impact of discount may also have more positive impact on evaluations of exclusive than low-budget bundles because the nominal value is larger; the nominal value of a discount expressed in percentage is larger for exclusive bundles than for low-budget bundles. That is, a 10 per cent discount is larger in monetary terms for an exclusive bundle than a budget bundle. These arguments indicate that the effect of discounts may differ depending on price level of bundle products, yet in which direction is unclear. Previous research in a non-bundling setting indicates that perceptions of quality and purchase intentions for exclusive products were positively related to discount size while perceptions of quality dropped and purchase intentions stagnated as discounts on low-budget products increased from 40 to 50 per cent. That is, consumers' preferences were less positively affected by discounts on low-budget than on exclusive products (Hu et al. 2006).

In summary, previous research indicate that price level of bundle products have an impact on how bundle discounts are perceived by consumers but no studies are conducted in a bundling setting (see Table 1 in Appendix I). Furthermore, the influence of discount on bundle satisfaction has so far been ignored. Indications are that discount may impact consumer satisfaction by influencing consumers' expectations of bundles. As a means of increasing the understanding of how consumers’ value bundles, these questions need further pursuing.

**Summing up – theoretical framework**

As stated in the introduction the underlying question in this dissertation is if bundling can be beneficial for consumers and the general aim was to increase the understanding of how consumers perceive bundle value. In this chapter a literature review has been presented that shows my understanding of the problem area, which is summarized in Figure 6. As illustrated, it is here assumed that both preferences (expected value) and satisfaction (experienced value) need to be considered to understand bundle value and how it is influenced by bundle complementarity. As any model, the illustration is a simplification of the factors and the relationships that impacts the perceptions of value. The model is not supposed to provide a full picture of how bundling affects consumers' perceptions of value but to highlight the factors and relationships of importance for this dissertation.
Three aspects that are highlighted in the theoretical review and considered central when understanding value will here be presented and discussed: complementarity, preferences, and satisfaction.

First of all, to be able to understand how this dissertation increases the understanding of how consumers perceive bundle value, an understanding of what value is and how it is used in this text is needed. Value is here considered as an overall judgment of a bundle, based on perceptions of the benefits and costs associated with the purchase and use of the bundle (Zeithaml 1988). Overall value is assumed to involve both expectations about value to come from a bundle and value experienced in actual use and consumption of a bundle. This highlights the temporal aspect of value, which is taken into account by considering both pre-purchase and post-purchase evaluations of bundles. One part of the temporal aspect of value is not included in the model, though. Consumers may also experience value at the point of trade, so called exchange value. However, this kind of value is mainly related to monetary aspects of value, such as whether or not the purchase is a good deal or the product is worth its price. Here, the main interest is in the non-monetary aspects of value and exchange value was therefore excluded.

Evaluations made before purchase is here assumed to result in expectations about value and in preferences for the bundle, which in turn are determining factors in a purchase decision. The model shows expected value and preferences as matching constructs and parallel outcomes of pre-purchase evaluations. Arguably, expected value is an antecedent to preference (Woodall 2003), but due to the close relationship between the constructs, this distinction was not judged as important to make.
Similarly, experienced value and satisfaction are proposed as outcomes of post-purchase evaluations. There are indications that experienced value is an antecedent to satisfaction (Chen 2008; Fornell et al. 1996), but regardless of the exact relationship between the constructs, they are similar and correlated (Oliver 1999) and therefore the causal relationship between them was not further scrutinized. The relationship between preferences and satisfaction may be more complicated than depicted in the model, though. Here, consumer formation of value is depicted as starting with pre-purchase evaluations. However, post-purchase evaluations also influence pre-purchase evaluations so that a satisfactory experience with a product has a positive impact on consumer future preferences for the product (e.g. Anderson and Sullivan 1993). Though acknowledged, this relationship is not illustrated in the model based on the notion that the effect of complementarity can be understood without making a distinction of which type of evaluation process that precedes the other.

The third central aspect highlighted in theory is complementarity. It is here considered as a factor influencing both pre- and post-purchase evaluation. Investing the influence of complementarity is a specification of the main purpose to increase the understanding of how bundle composition influences consumers’ preferences and satisfaction. This means that one aspect of bundle composition – complementarity – is selected and investigated in the empirical studies. Even though not included in the model, there are more aspects of bundle composition that may influence preferences and satisfaction, for example perceived risk and convenience. However, based on theoretical studies, the relation between bundle products was identified as an interesting aspect for several reasons. It is a factor that distinguishes bundle from separate products, it potentially has an impact on perceptions of value, and while the positive effect of bundle complementarity commonly was assumed it was largely overlooked in empirical investigations.

The model is a simplification of the factors and relations that in this dissertation in considered when studying consumers’ perceptions of value. It makes no claim to give a comprehensive picture of how value is created, but to illustrate and summarize the central aspects that lye as the foundation for the empirical investigations and further for the analysis and discussion of the results.
Research method

As in any research, there are many ways to study consumers and as in this case consumers’ perceptions of value. Every approach and method has its advantages and drawbacks and do inevitably influence the outcome. In the process of writing this thesis, many decisions were made, for example about research technique, how to design the studies and how to collect data. The purpose of this chapter is to present and motivate these choices.

The general aim of the study is to increase the understanding of how consumers’ value bundles. Since consumer decision making as a theoretical field has been dominated by views of consumers as rational actors, it is motivated with a section describing the standpoint and view of consumers in this thesis. Focus is then turned to the choices that were made when conducting the research, from choice of research method, to design of the study, and data collection. Finally, as this dissertation partly builds on a licentiate thesis, a description and comparison of the licentiate thesis and the dissertation is presented.

Consumers as rational actors?

As described in the theoretical review it is here assumed that consumers’ perceptions of value are formed in evaluation processes. Often, theories about how consumers form judgments and preferences depart from ideas of rationality and normative behavior (how one should behave). Consumers are assumed to have stable preferences and complete information about costs and benefits of all options, to evaluate all attributes and options and to choose the option that maximizes utility (Schwartz et al. 2002). Based on these ideas, much consumer research has tried to identify and explain deviations from normative and rational behavior and findings that show violations of the assumptions of consumers as rational decision makers have been regarded interesting and important (Shafir and LaBoeuf 2002; Dhar and Novemsky 2008). However, in recent years research has increasingly focused on trying to understand how consumer preferences are constructed instead of demonstrating violations of value maximization (Simonson et al. 2001). As indicated by the problem area and stated in the purposes, this thesis adds to the latter stream of research by aiming at increasing the understanding of how complementarity and discount influence consumers’ preferences and satisfaction rather than to demonstrate how consumers are irrational in their decision making.

Consumer rationality is thus not assumed in this text, at least not in the strictest meaning of the word. Instead, consumers are assumed to make intelligent trade-offs regarding how much effort they put into making bundle evaluations. For example, by evaluating bundles in a category based process
to avoid effortful piecemeal processing of information. This is an example of how consumers may strive after simplifying decisions rather than maximizing accuracy.

On a general level, many bundle evaluations can be made with little or no cognitive elaboration, but rather based on habit or convenience; particularly inexpensive, low-involvement products such as groceries. In contrast, when evaluating bundles of electronic devices the rational features of the evaluation processes are likely to be more emphasized, since these kinds of bundles are likely to be more important to consumers as they are expensive, have long-lasting consequences because they are durables, and large impact on social or self-image. Even in these cases, though, consumers are assumed to, if possible, use simplifying strategies to evaluate the bundles. Compared to the bundles evaluated in this study, there are conceivably bundles that are more important because they are more expensive and have larger impact on self-image, for instance houses and cars. These kinds of bundles may be evaluated in a more extensive manner, even though research indicates that evaluations are not rational in these cases either (Khoo et al. 2007). However, even if evaluations are never fully rational, the rational features of the evaluation process may differ depending on the kind of products included in the bundle. This discussion is to be seen as a statement of my view of consumer rationality. This view permeates and influences decision and discussions in the research process and thus has an impact on the end result. The specific question of consumer rationality is not in focus though and the study does not aim at demonstrating or proving consumer irrationality.

Research approach
When investigating how consumers perceive bundle value, many different approaches and methods can be used. The choices in this matter impacts how the research is carried out and the analyses and conclusions that are possible to make. The approach a researcher takes is more than a question about how the study is conducted. Instead, it is a question about how a research problem is defined and tackled (Van Maanen et al. 2007). In order to provide the reader with a better understanding of the choices that were made and the motives for those choices, the underlying research approach is discussed in the following.

One important characteristic of the present research is its exploratory features. One indicator of the exploratory nature is that the research was instituted by an interest in the empirical phenomenon bundling based on observations of its frequent use on the market. The widespread use of bundling as a strategy for manufacturers as well as retailers indicates that it is favorable for companies. This observation was imperative and resulted in a question that permeates this dissertation: can bundling also be beneficial for
consumers? A review of the bundling literature revealed that much is known about how to use bundling as a strategy (pricing, framing, etc.) to influence consumers’ behavior, while less is known about why bundling influences consumer behavior, that is, what the reasons are for consumers to buy bundles. The lack of research in the area also calls for an exploratory outlook on the subject as there is not much theory to build on or test. In this dissertation bundle composition, more specifically the relation between bundle products is suggested as one factor that influences consumers’ perceptions of value; an assumption partly based on the literature review, partly on intuition. While commonly assumed in previous research, actual studies about how bundle composition and the relation between bundle products affect consumers’ behavior are rare. Thus, when formulating the initial research questions and collecting data, there were not many theories to base the research on. Moreover, when analyzing data, several new questions arose, for example regarding the effect of a new kind of relation between bundle products and which effect discount would have on perceptions of bundle value. Consequently, additional theoretical and empirical studies were conducted in order to be able to interpret and understand the results and new research questions were formulated and investigated. Furthermore, as the research process went along, bundle complementarity crystallized as a specification of relation between bundle products and as an important concept to understand the impact of bundle composition on consumer evaluations. However, in the literature, little effort had been made to understand what complementarity actually means and why it was positive for consumers. Yet another example that illustrates the exploratory nature of the study is that satisfaction emerged in the research process as an aspect of how bundles can be of value to consumers, which thus was included in the study at a later stage both empirically and theoretically.

Exploratory studies are often equated with an inductive research approach and collecting and analyzing qualitative data. It should be noted though, that the nature of data, qualitative or quantitative, does not determine whether a study is explorative or not (Stebbins 2001). It is rather the aim of the study, how data is analyzed, and the conclusions drawn from it that determine how exploratory a study is. As is evident from the description above, the exploratory features of this study meant constantly moving back and forth between theoretical studies and empirical observations. This way of moving between empirical observations and theory is often stated as abduction (Dubois and Gibbert 2010). Taking an abductive approach to research here means that the process moved back and forth between theoretical studies and empirical observations in different phases of the research and that theoretical insights and empirical observations evolved simultaneously. Albeit the research process as a whole may be abductive, “its sub-phases may
be more deductively or inductively oriented” (Dubois and Gibbert 2010, p. 133).

Having a deductive research approach, on the other hand, means testing theory to see if it applies to specific instances (Dubois and Gadde 2002). Arguably though, most research processes are not straightforward inductive or deductive but have elements of going back and forth between theory and empirical observations. However, taking an abductive approach means something more than merely shifting between inductive and deductive phases. It is a choice to continuously and simultaneously explore and develop the theoretical and empirical understanding of the research problem to be able to incorporate empirical and theoretical findings throughout the research process (Dubois and Gadde 2002).

A purely deductive approach is not suitable or possible when studying how consumers value bundles, as there is no overall theory to test. Moreover, even the general aim of the study indicates a “not deductive” approach as the problem is rather wide and not strictly derived from theory. Furthermore, deduction does not allow for data-driven theory development (Järvensivu and Törnroos 2010), which is important in this dissertation. There are several examples of data-driven theory development in the research as unanticipated factors were identified that were thought to influence perceived bundle value. One example is the factor similarity in level of luxury between bundle products that were assumed to influence consumer preferences. Another is that complementarity emerged as a central concept based on both empirical and theoretical observations in the research process.

However, it is also evident that the present study is not strictly inductive even though exploratory research is often equated with an inductive approach. The study clearly has inductive features, for example the fact that a major aim was to explore new relationships and concepts. Still, inductive research approach is a theory generating process that starts with empirical observations and tries to conclude general laws and in this research process theory development rather than theory generation was stressed. While there is little theory in the area, literature studies were undertaken continuously in order to identify theories that would help explain findings. The original theoretical framework evolved during the research process, which is typical for research with an abductive approach; “[u]nlike induction, abduction accepts existing theory, which might improve the theoretical strength [...]” (Järvensivu and Törnroos 2010, p. 102). There are numerous examples of how the theoretical framework of this dissertation changed during the research process. For example, the initial theoretical framework was largely rooted in decision making theory. While decision making theories are still an important part of the theoretical framework it has developed and is now enriched and intertwined with customer value theories. Moreover, the subsequent theoretical insights that were gained in the research process, for
example the lack of elaboration on the concept complementarity and the absence of research about how bundling influence consumer satisfaction, in turn, motivated further empirical studies. Thus, the kind of exploratory features present in the current study makes abduction a suitable description of how the research was approached. While the research started out as an empirical observation, existing theories provided important understanding that was advanced by further empirical and theoretical studies.

**Choice of research technique**

Since knowledge about if and how consumer may benefit from bundling potentially are interesting for companies in general and marketers in specific as well as for legislators, generalizability was considered important. When seeking to generalize research conclusions to a wider setting, a quantitative research technique is usually recommended (Eliasson 2010). Considering the above discussion about consumers as irrational decision makers, there are advantages with using a quantitative technique. With a large data set, individual deviances and confounding influencing factors are averaged out and general effects are possible to identify. A large number of respondents make it possible to make conclusions with some amount of probability (Eliasson 2010). This is also important when the purpose, as here, is to study consumers’ perceptions of bundles since perceptions inevitably are subjective and individual because it is a question about opinions about bundles. Because of the subjective nature of the ratings they are susceptible for influence of other factors than the intended, such as the participants' attitudes, memories, mood, etc. These kinds of individual differences make up “noise” variables which are impossible to control for. However, with a large sample, these noise effects can be minimized. Taken together, a quantitative research method where many subjects are investigated was found suitable.

The formulation of the purpose reveals a wish to gain knowledge about causal relations, that is, how one factor influences another, namely how bundle composition and discount influence consumer evaluations. Fundamental to this study was therefore to be able to determine that consumers’ perceptions of bundle value were caused by bundle complementarity and not by unknown confounding factors. To test the cause and effect of factors, experiments are generally suggested as the best research method (Hudson and Ozanne 1988). In an experiment the researcher can systematically vary potential causes eliminating other possible influences (nuisance factors) and observe the corresponding changes in effects (Hair et al., 2003). By varying only the relation between bundle products it can be determined that differences in evaluations are caused by the changed complementarity and not by other factors. Calder et al. (1981) point out the minimized possibility of interference of confounding
factors, that is, high *construct validity*, as one of the major advantages of experiments. Since all other factors but type and degree of complementarity are held constant, such as the influence of purchase situation and surroundings, personal characteristics, etc., the influence of these factors is minimized. It can be concluded that positive bundle evaluations do not occur because the bundles are only offered at certain stores, where the atmosphere and sales people are extra nice.

An advantage with experiments is that they offer high *internal validity*. Internal validity is determined by the design of a study and increases the credibility of the results. Actions taken to improve the internal validity were to group the participant into groups randomly and to use a standardized procedure, so that all participants had similar information, time frame, and experimental environment when making the evaluations. In the first three experiments, which were conducted in classrooms, it was easier to control factors influencing the internal validity. For each experiment, data was collected at two separate times, and at each time all participants were informed and conducted the evaluations at the same time and in the same room. In the last two experiments, it was not possible to control how much information the participants got, the environment in which they made the evaluations, how long it took to complete the task, or even that only one person made the evaluations. Thus, the possibility to control the internal validity was lower in Experiment 4 and 5 than in the first three experiments.

The use of experiments has been criticized for limited *external validity*. External validity addresses whether results can be generalized to different persons, settings, and times (Cook and Campbell, 1979). In the first three experiments, student samples were used. Critics argue that by using a convenience sampling, such as students, there are no statistical grounds for generalizing the experimental results. The external validity is also claimed to be limited because students are not representative of the population of consumers. They might for example not have the same knowledge, experience, or interest in the products in question as other consumers (Lynch, 1982). Peterson (2001) showed that college students were slightly more homogeneous than nonstudent objects and that effect sizes often differed in magnitude and direction from nonstudents. Yet, since the experiments in which student samples were used investigated bundles of electronic devices, it can be argued that the participants have as much knowledge, interest, and experience with the products than the average consumer albeit not the same purchase power due to limited financial resources.

Moreover, Calder et al. (1981) state that the representativeness of students is not an issue because a theory is supposed to apply to consumers in general. Consequently, if a theory is falsified for any subgroup of consumers it should be rejected. When testing a causal relationship it is an advantage to
have a homogeneous sample. Heterogeneity of subjects inflates the error term of statistical tests of experimental predictions and reduces the chance of detecting systematic violations of a theory when it is false. This line of argument builds on the notion that there are two kinds of generalizability, which Calder et al. (1981) label effects application and theory application. Effects application extends findings directly beyond the research settings, that is, the results are expected to be the same if the data were collected for other populations and settings in the real world, in which case a student sample is not the best choice. Theory application, on the other hand, uses theory to explain events beyond the research setting - research findings are only used to assess the adequacy of the theory, in this case if complementarity has a positive effect on preferences and satisfaction. When aiming for high theory application, no single study needs to reach high external validity; the research process where new studies contradict previous leads to theory development, which Calder et al. (1982) articulate as: “no one study proves a theory, nor is a theory ever proven” (p. 243). Accordingly, the use of experiments with students as research subjects in this thesis might restrict the type of generalizability called effects application, but not theory application.

The main interest in this dissertation is to establish what complementarity is and how it influences consumers’ preferences and satisfaction by studying how the preferences and satisfaction differs depending on complementarity. Thus, it is important that the results can be used to confirm the causal effect of complementarity, indicating a need for high theory application. If the aim instead was to investigate how complementarity appeals to consumers by studying how the level of preferences and satisfaction are affected by complementarity larger demands on effects application would be imposed. Efforts to increase the effects application were still made; the bundles consisted of products in a price range available for a general consumer, existed on the market at that time, and were presented in a purchase context by a scenario. In addition, introducing discounts in Experiment 5 has a positive effect on effects application as this is a common practice on the market. Furthermore, in the last two experiments members of a consumer panel more representative of Swedish consumers was used which increases the effects application. Some bundles, for example the bundle with a TV and a DVD player, were evaluated both by a student and a non-student sample. The results show that students had the same preference structures as the more representative consumer sample as there were no preference reversals between the different samples. These findings indicate that the use of student samples in the experiments did not affect the external validity of the results negatively.

As experimental settings are artificial, the generalizability of experimental results has been questioned. The main critique is that of the appropriateness
of verifying a theory by empirical investigations that is has little or no resemblance to real life, which is supposed to inhibit comprehensive and deep knowledge or understanding (e.g. Eneroth 1984). In the present study, the participants evaluated bundles and separate products based on written information and pictures in classrooms or in front of a computer screen. Both cases constitute contexts that are very unlike a real life purchase situation or consumption situation. To make an estimation of how satisfied one anticipates being with a purchase is undoubtedly far from how satisfaction is generated in real life. This has a negative impact on the external validity of the study. Attempts were made to increase the external validity by asking participants to imagine that they were in a store and needed to purchase a product and for the satisfaction ratings that they had purchased the product. It is questionable whether the actions taken are sufficient to achieve acceptable external validity, though. However, whether an artificial experimental setting is to be considered a problem or not depends on the purpose with the study. When effects application is the goal, a correspondence between the setting and real world is desirable (Calder et al. 1981); in this case a field setting is appropriate. When the goal is theory application, a real life-like setting is not imperative, though. In order to have the best test of cause-and-effect, it is more important to reduce noise factors than to have a realistic setting (Calder et al. 1982).

Undisputedly, there are drawbacks as well as benefits with an experimental design and, as described, the use of experiments has implications for the validity of the study. Foremost, there is a delicate trade-off between internal and external validity as both types of validity arguably is hard to achieve in one experiment. Like most experiments, the internal validity of the present study is higher than the external validity. In the trade-off between internal and external validity, Calder et al. (1982) emphasize the importance of internal rather than external validity when the aim is to test a theory, such as a proposed causal relation. Anderson and Bushman (1997) even argue that if the internal validity is low, in this case that the causal relationship cannot be determined, there is nothing to generalize. Hence, though realizing the limitations in external validity, it was judged as more important to have high internal validity when pursuing the main purpose in this dissertation, to test how complementarity affects consumer evaluations.

The experiments
The experiments investigate different aspects of complementarity and how it influences consumers’ evaluations. The first three experiments focus on consumers’ pre-purchase evaluations and investigate how bundle complementarity influences perceptions of quality, attractiveness, and purchase intention. In these experiments, complementarity was operationalized as functional relation and price relation, building on
research by Harlam et al. (1995). Based on the results of the first two experiments, similarity in level of luxury and dependency between products was suggested as other types of complementarity that may have a strong impact on consumer preferences. The two new factors were investigated in Experiment 3. Initially, bundle composition (and its effect on consumer evaluations) was operationalized in accordance with previous research as a means of building on and adding to that research. During the research process, the concept complementarity crystallized as important and over time, it became a central concept in the dissertation. Based on the vagueness in how the term had been used and the fact that elaboration about what it meant was lacking, a desire to develop the operationalization further than functional relation emerged. Therefore, other kinds of bundles, from new industries and with new kinds of relations were included in Experiment 4. Consumer value is the underlying reason for my interest in how bundle composition affect consumers. As it is here argued that value is experienced at several points in time in a purchase process and therefore is a wider concept than merely preference, attention was turned to post-purchase evaluations of bundles and separate products in the last two experiments. Thus, the research scope was extended in the last two experiments to include measures of satisfaction. Moreover, as another way to add knowledge about how bundles can be of value for consumers, bundle discount was introduced in the last experiment. Since it is common practice on the market to offer bundles at a discount and since price is an aspect of value that is hard to disregard, the effect of bundle discount on consumer evaluations is important when aiming at increasing the understanding of how bundles are valued by consumers.

The empirical features increased with each experiment. The first experiment explores if bundles or separate products are more valued by consumers by comparing bundle evaluations with averages of separate product evaluations. The second experiment progressed towards reality in that a more authentic setting was used; when evaluating the bundles the participants had purchase intent for one of the products in the bundles (the anchor product). Another example of the increased empirical features in the experiments is that the results from the second experiment resulted in two new empirically derived questions that were followed up in the third experiment. Further progress towards reality took place in the fourth experiment by the use of a sample which was more representative of consumers and by adding new industries. Finally, in the last experiment, bundles were discounted which is common practice on the market.

**Design of questionnaires**

The experiments were conducted by participants rating bundles and separate products on a number of variables in pen-and-paper exercises (in
Experiment 1, 2, and 3) or as web-based computer tasks (in Experiment 4 and 5). For the pen-and-paper exercises, booklets were administered to students in classes. The web-based questionnaires were administered to consumer panel members via e-mail. Before each experiment, a pre-test was conducted on a number of colleagues and students or panel members in order to increase reliability. From the pre-tests, feedback regarding wording of scenarios and questions, difficult measures, and the products and bundles included were obtained, which was used to improve and clarify the tasks. The pre-tests were also used to improve the design regarding between- and within-groups factors in the experiments. To a large extent these decision were made based on which statistical analyses that was desirable but consideration was also paid to the size of the questionnaires, so that they would not be too complex and time consuming for the participants to conduct.

The questionnaires in the pen-and-paper and web-based computer exercises had similar designs, which are described in detail in connection to each experiment. Briefly, they contained background questions about the individual and evaluations of bundles and separate products. In some experiments, there was a distraction task between bundle and separate product evaluations. The reason for having distraction tasks is that the bundle and separate product evaluations ideally should not influence each other. If participants remember how they rated a separate product, they may adjust their bundle ratings to match the separate product evaluations instead of rating it according to actual preferences and satisfaction. In Experiment 1, the distraction task consisted of a set of unrelated questions about the participants’ subjective well-being and travel habits. In Experiment 2, bundle and separate product evaluations were separated by similarity judgments of products. The distraction task in Experiment 3 consisted of estimations of price changes due to inflation. In contrast to the other experiments, participants in Experiment 4 evaluated either separate products or bundles and no distraction task was judged necessary. However, as a distraction and to reduce the amount of repetition each participant evaluated bundles with two kinds of anchor products even though only one kind was used in the analyses. In the last experiment, no distraction task was included. Less rigor was applied concerning distraction task in the last two experiments, partly because they were web-based. Each bundle or separate product was presented on a separate web page and the participants could not go back once they had continued to the next page, ensuring that no one could go back to refresh memory and check previous ratings. Despite this, the risk that ratings are influenced by previous evaluations is larger in the last two experiments.

All five experiments had a factorial design. The first two experiments consisted of two within-groups factors, functional relation (functionally
related product, products from the same product category, or unrelated products) and price similarity (same price level, small price difference, or large price difference) and one between-groups factor, type of target product in the bundles (TV, DVD player, or digital camera). In the third experiment, the design consisted of two within-groups factors, functional relation (functionally related, same product category, or unrelated) and similarity in level of luxury (two exclusive products, one exclusive and one low-budget product, or two low-budget products). One between-groups factor was dependency of the anchor product (independent or dependent), which is determined by whether the product needs another product to function or not. The fourth experiment had one within-groups factor, complementarity (complementary or unrelated) and one between-groups factor, anchor product (digital camera, TV, pre-made lunch, filet meat, movie ticket, or swimming pool entrance). In the last experiment the design consisted of three within-groups factors, complementarity (complementary and unrelated), price level of the products (two exclusive products or two low-budget products), and anchor product (TV and digital camera) and one between-groups factor, discount level (0, 15, 30, or 45 %).

When evaluating the bundles and separate products in Experiment 1, the task was introduced with a scenario where the participants were asked to imagine that they were in a store and saw offerings of bundles or separate products. In the subsequent experiments, purchase intention was induced by a scenario that asked the participants to imagine that they needed to buy a certain product. In all experiments, the products and bundles were presented with pictures and short specifications, together with information about price, similar to Harris and Blair (2006a) and Sheng (2007b). In Appendices II-IV, examples showing the layout, including scenarios and product information, are presented. While some researchers have used printed ads (Yadav and Monroe 1993; Koukova et al. 2008; Raghubir 2005; Simonin and Ruth 1995) or brochures (Arora 2008) in experiments where participants evaluated bundles, this was not judged suitable in this case. When investigating how consumers value bundles, it was deemed appropriate for the participants to evaluate the bundles as potential customers.

Even though discounts often are offered for bundles on the market, the bundles evaluated in the first three experiments had no price reductions. Discount influences consumers’ evaluations of an offer largely (Alford and Biswas 2002; Foubert and Gijsbrechts 2007) and in order avoid confounding influences, bundles were evaluated without price reductions. However, since discounts are very common on the market, a phrase indicating that the bundle was discounted was included in the scenario in Experiment 4. In the final experiment, the effect of discount was in focus and bundles with different levels of discount were evaluated; the bundle prices were reduced...
Research has shown that presenting price reductions as money off influences consumers differently than presenting it as per cent off (Chen et al. 1998; Krishna et al. 2002; Nusair et al. 2010) and that different presentation formats are attractive for different kinds of bundles. To minimize this framing effect, information about both money and per cent off were provided to the participants, as well as information about the resulting prices for separate products and total price for the bundle. As the price level varied much between bundles (approximately SEK 10 000 for bundles with electronic devices and approximately SEK 100 for bundles with a movie ticket) there is a risk that only providing discount information only in percent or only in monetary unit would influence evaluations. The price reduction was presented as a discount on the bundle as a whole, so called mixed-joint bundling (as compared to mixed-leader pricing where only one of the products is discounted). A mixed-joint bundling approach was chosen since it is a common practice on the market for the kinds of products investigated. Mixed-joint bundling increases the likelihood that a bundle is evaluated as a unit in a categorization based approach rather than product by product in piecemeal based evaluation process. When evaluating a bundle as a unit the preferences for one of the bundle products more easily rub off on the other product, especially if the products are complementary (Sheng and Pan 2009). Considering that two of the purposes of the study were to explore complementarity and its effect on preferences for and satisfaction with bundles, no reason to differentiate between the products by highlighting one as the “leader” could be identified. As a mixed-joint pricing also has a positive effect on effects application of the study, this approach was chosen.

Measures
The products and bundles were evaluated on nine-step Likert-like scales on a number of dependent variables, summarized in Table 2. The participants were asked to make a subjective assessment of each measure. That is, the wording of the questions was in the form: “How appealing do you find...”, “What is your judgment of the quality of...” (see Appendices II-III). Whether it is at all possible for people to make objective assessments is debatable (Arbnor and Bjerke 1994). People always have a backpack of memories, attitudes, and previous experiences that influence their opinions and judgments, regardless of precautions taken in the experimental design and data collection to make the evaluation context as similar between individuals as possible. However, the kinds of assessments that participants were asked to make is inherently subjective. What is for example an objective measure of appearance or purchase intention? These variables are by default subjective as they concern individuals’ personal opinions about products.
Table 2. Measures of bundles and separate products.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Category</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>Appearance</td>
<td>S</td>
<td>1a</td>
</tr>
<tr>
<td>Complements</td>
<td>B</td>
<td>1b</td>
</tr>
<tr>
<td>Exclusiveness</td>
<td>S</td>
<td>1c</td>
</tr>
<tr>
<td>Luxury</td>
<td>S</td>
<td>2</td>
</tr>
<tr>
<td>Need to think</td>
<td>S</td>
<td>3</td>
</tr>
<tr>
<td>Info.</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Usefulness</td>
<td>S</td>
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</tr>
<tr>
<td>Durability</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Dependability</td>
<td>S/B</td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Affectiveness</td>
<td>S/B</td>
<td></td>
</tr>
<tr>
<td>Purchase int.</td>
<td>S/B</td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>S/B</td>
<td></td>
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<tr>
<td>Satisfied if not used</td>
<td>S/B</td>
<td></td>
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</tbody>
</table>

Arguably, quality is one variable that is possible to measure objectively. Objective quality can be determined by a combined assessment of experts and instruments of the performance on a number of product specific attributes, for example calculations of material strength, performance, and available features. Subjective quality, on the other hand, is the quality that consumers perceive, which may differ substantially from objective quality (e.g. Parasuraman et al. 1985). Perceptions of quality can be formed without using or examining the product (Mitra and Golder 2006). In this dissertation, objective measures of quality or any other variable are not sought after. The link between objective and subjective quality is an interesting question for companies as a way to understand what they can do to influence consumers’ perceptions of quality (or appearance, attractiveness, etc.). However, the issue it is not within the scope of this dissertation.

Below, the measures used in the experiments are presented and the choice of measures and the relation between measures and purposes are described and motivated. Not all measures were similar for bundle and separate product evaluations. First, the measures that were used to evaluate both bundles and separate products are presented. Thereafter, assessments made of bundles and separate products exclusively are presented.

In addition to the variables included in Table 2, measures of experience with and knowledge about products were rated on nine-step Likert-like scales (see Appendix V) in Experiment 1, 2, and 3. As no systematic differences in product or bundle evaluations were detected depending on how experienced and how much knowledge the participants had with the products, the ratings were excluded from the last two experiments.

Measures used in both bundle and separate product evaluations
As a way to map consumer preferences for bundles, participants were asked to rate the perceived quality and attractiveness of bundles and separate products as well as their purchase intentions for the same. Quality was included in evaluations as a measure closely connected to consumers’
preferences and expected value (Zeithaml 1988; Woodall 2003). As quality sometimes is equated with preferences or attitudes (Zeithaml 1988) and an undisputed antecedent to both preferences (Rust et al. 1999) and value (Dodds et al. 1991) it was judged as important to include such a measure. Still, quality is only one factor that influences consumers’ preferences. Other factors, such as appearance, attitudes towards the specific product type, price, etc. also has an impact on preferences, which thus may be low despite high product quality. Therefore, a rating of overall attractiveness was included as a more direct measure of preference, similar to how for example Bhattacharya et al. (1998) use it to depict general liking of a product. However, reasons for liking or not liking a bundle or separate product do not have to be the same as the reasons for buying or not buying the same; a product that has high perceived quality and are attractive to consumers, may still not be an alternative for purchase, for instance due to a high price. Statement of purchase intention is an approximation of behavior (although not perfect, see Chandon et al. 2005; Morwitz et al. 1993; Morwitz et al. 2007) that often is used to confirm that preferences has relevance for behavior (e.g. Fishbein and Ajzen 1980; Newberry et al. 2003; Sheppard et al. 1988). Despite possible weaknesses in the relation between preferences and purchase intention it is a common way to operationalize preferences and therefore it was judged a relevant measure to include in order to facilitate comparisons with previous studies.

The three measures, quality, attractiveness, and purchase intention, captures three different aspects of preferences; quality as an antecedent that is so closely related to preferences that the terms sometimes are used interchangeably (Fornell et al. 1996), attractiveness as a direct measure of preference and purchase intention as the potential behavioral consequence of preferences. Since each variable depicts a different aspect of the construct preference they are not expected to correlate and do not constitute a multi-item scale of preference, suitable to combine in an overall index of preference. This indirectly points at a reliability problem with how preference is measured in this study. Reliability concerns the consistency of findings so that repeated measures yield the same result. As a way to increase the reliability of a measure it is often recommended to include three different variables that measure the same construct (Hair et al. 2003). As stated above, the variables used to capture preference cannot be considered a multi-item measure of preferences as each is included to capture a different aspect of preferences. In addition, each variable (quality, attractiveness, and purchase intention) is a single-item measure, that is, the participants only rate each construct by one variable. The use of single-item measure has been criticized for limiting the reliability of the results (Peter 1979). Single-item measures are acceptable when the investigated construct is sufficiently narrow or unambiguous (Wanous et al. 1997). In this case, however, the
constructs quality, attractiveness, and purchase intention cannot be considered either narrow or unambiguous, which limits the reliability of the measures. Potentially, more measures of each construct could have been included. However, the number of ratings would in this case have been very large and the risk of evaluation fatigue (Thompson et al. 2005) would have been large. Another way to increase reliability is the so-called test-retest method, in which the same scale is applied a second time to the same subjects under conditions as similar as possible to the first time (Peter 1979). In the present study, some bundles were evaluated in several experiments under similar circumstances but with different participants. Even though the procedure is not a perfect example of the test-retest reliability method, the fact that ratings were similar over several experiments increases the reliability of the measures. Moreover, perceived quality of separate products was in two experiments measured by a multi-item scale, which will be described further in the next section. The three variables used to measure perceived quality were highly correlated, which was taken as an indicator that the overall measure of quality was sufficiently reliable.

Further, satisfaction with a purchase of bundles and separate products was evaluated in the final two experiments. Satisfaction was measured with a straightforward statement of how satisfied the participants thought they would be with a purchase. In addition, the participants rated how satisfied they would be if the by-product (for bundles) or the separate product (for separate products) could not be used. The latter measure was included to study the effect of bundle composition on feelings of disappointment or regret with a purchase. Arguably, if products break or get lost give stronger feelings of disappointment or regret than if they simply are not used. However, some of the products included in the products were not likely to break (ticket to swimming pool) or get lost (DVD player) respectively. For reasons of continuity, the somewhat weaker formulation that a product was not used was chosen. Thus, satisfaction and satisfaction if one product was not used were measured with single variables. Consequently, the same discussion as for quality, attractiveness, and purchase intention, about reliability of single-item measures is applicable.

Overall, measuring satisfaction is complicated, much because satisfaction is a rather complex concept. Firstly, it may be hard to determine what causes satisfaction: actual performance, consumer expectations, disconfirmation, perceived equity, etc. (Szymanski and Henard 2001). In the present study, satisfaction is used as an overall measure of post-purchase evaluation. That is, underlying causes of satisfaction such as individual expectations or perceived equity are not measured. As the aim of the study was not to further the understanding of the concept satisfaction, an overall measure was judged appropriate. However, in retrospect this had limiting effects on the conclusions that could be made based on the results. If consumers’
expectations and perceptions of equity of bundles and separate products had been included, the construct validity had been higher and more insightful conclusions about the effect of bundling and bundle composition could have been made. Secondly, ratings of satisfaction with a purchase are sensitive in the meaning that they are important for the ego or self-image. In cases of dissatisfying experiences (as e.g. when one product in a bundle is not used) participants’ statements of satisfaction may be affected by dissonance reducing strategies that are applied in order to justify the decision and make the consumer feel better about him or herself. Self-reported measures of consumer satisfaction are usually skewed, with the majority of consumers reporting satisfaction (Peterson and Wilson 1992). Participants may also wish to appear as a good decision maker in front of the researcher by giving higher ratings of satisfaction than is actually experienced. Overall, Peterson and Wilson (1992) found limited support for negative effects of social desirability on judgments of satisfaction, though. There is a possibility that ratings of satisfaction are skewed in this study, which imposes a limitation in construct validity. However, as the aim of the study is to detect differences in magnitude rather than actual states of satisfaction, skewness is a limited problem. Any dissonance reducing strategies or social desirability effects are likely to have the same effect on all ratings of satisfaction from an individual regardless of the relation between bundle products and whether the individual evaluates bundles or separate products.

In Experiment 4, two measures of information processing were included; how much participants needed to think before making a purchase decision and how much the provided information helped them in making that decision. The variables were included to investigate how demanding the evaluative task was for the participants. The latter measure were used as a control to check if high ratings of need to think before making a decision was caused by lacking or confusing product information. The first measure was included to be able to determine which evaluative task that was most demanding: separate products, complementary bundles, or unrelated bundles. However, there is a risk that the variable “need to think” did not measure what it was intended to measure. The question was formulated as (translated into English): “Decisions can be hard or easy to make. How much would you need to think before making a purchase decision about the [bundle/product]?” In retrospect, the wording of the question means the participants rated decision difficulty rather than evaluation difficulty. Evaluating and making a decision is two distinct yet related actions. Often, they coincide, but there are several reasons why they may not. For example, when making a decision out of habit no evaluation takes place. Conceivably, an unattractive product or bundle may be hard to evaluate and categorize, but a decision not to purchase it may be done very fast. The low construct validity of the measure has consequences for the conclusions that are made
concerning information processing, which is discussed further in relation to the presentation of the results.

**Measures used exclusively in evaluations of separate products**

Generally, bundles and separate products were evaluated on the same variables. However, in a few cases variables were used exclusively in separate product evaluations. These variables were included to be able to control for confounding factors, for increased reliability, or as manipulation check. One such variable was appearance. Branding is one aspect of appearance that potentially has a large impact on consumer evaluations (Orth and Malkewitz 2008). Brands often have characteristic appearances and are recognizable by their design. In order to minimize the effect of brand on evaluations, brand name was edited out from the pictures of the products. Moreover, brands with obvious exterior design profiles, such as Apple products, were avoided and instead products with “anonymous” designs were chosen. However, despite the precautions taken to minimize the effect of brand, another appearance aspect remained – aesthetics. Aesthetics is an important aspect of appearance that has been shown to impact preferences (Veryzer, Jr. 1993; Eckman and Wagner 1994). As it was deemed important to be able to control for the effect of exterior design on evaluations, participants were asked to rate how appealing product appearance was to them. Appearance was rated only for separate products because it was judged important to be able to identify the evaluation for each product rather than for a bundle a whole and because it was sufficient to be able to control for confounding effects. Participants rated product appearance in the first three experiments. As no confounding effects were found, the variable was excluded in the last two experiments.

While perceptions of bundle quality were measured by an overall rating, separate products were evaluated on two additional quality variables in the first two experiments: durability and workmanship/dependability. These variables were included to form an overall measure of quality along with the quality variable. The three variables are replicates of the items used by Yadav (1994) in his study of how buyers evaluate product bundles. By using multi-item scales reliability is increased since measurement errors can be cancelled out against each other (Peter 1979; Peterson 1994). Quality was determined by a single variable for bundles because it was judged too difficult to make an overall assessment of dependability and durability for two products and because the reliability of the items could be established in the evaluation of the separate products. The reliability of the quality measure was established in the first two experiments and only the overall measure of quality was used in the subsequent experiments.

Ratings of luxury and exclusiveness of separate products was included in Experiment 3 as a manipulation check. The experiment focused on the
influence of similarity in level of luxury on bundle evaluations. It was therefore to measure how luxury the products were perceived to be. Two measures were used: perceived luxury and exclusiveness of products. Analyses showed that the manipulation was successful in that there was a difference in how luxury products were perceived to be. However, as no measure of perceived complementarity was included, it is not possible to determine if consumers actually perceived products with similar level of luxury to be complementary, indicating that the construct validity of the luxury variables is low. In addition, for purposes of increase reliability, which is an indication that the participants make the ratings in a consistent manner, it is often recommended to include three variables (Hair et al. 2003). In this case, it was difficult to identify a third variable that was sufficiently different from the others not to be perceived as repetitive, while still similar enough to capture the same concept. Despite the limitations it imposes on the reliability of the luxury measure, it was decided to settle with two variables. Similarly to the appearance and quality ratings, luxury was only rated for separate products to be able to identify the perceived luxury of each product because the evaluation task would be difficult for the bundle as a whole and because the manipulation check could be performed with only separate product ratings.

*Measures used exclusively in evaluations of bundles*

The only variables that were included only for bundles were measures of complementarity between bundle products. For natural reasons these variables would not be used in separate product evaluations. In the dissertation, the effect of bundle complementarity on consumer evaluations and overall perception of value is explored. In order to do that, bundles with different degrees of complementarity were evaluated in experiments. The included bundles were composed of two products with varying level of complementarity, from complementary to unrelated. To be able to check if the manipulation was successful, participants rated the perceived complementarity between bundle products in Experiment 2, 4, and 5. In Experiment 2, participants rated to which extent the two products belonged together by a marking on a 150 mm graphic scale (see Appendix IV for an example). In Experiment 4 and 5, the participants were asked to rate the extent to which they perceived bundle products to complement each other on a nine-step Likert-like scale. In Experiment 2, it was established that the manipulation of bundle complementarity was successful for the bundles that were investigated, consisting of electronic devices and it was therefore not included in Experiment 2. However, in Experiment 4 bundles from new industries were evaluated and it was therefore decided to include a measure of complementarity between bundle products as a manipulation check. In Experiment 5, the measure was replicated to increase the generalizability.
The difference in wording between Experiment 2 and Experiment 4 and 5 reflects how my understanding of the relation between bundle products has changed over time. When conducting Experiment 2 for the Licentiate thesis, I had yet not defined the term complementarity as a central concept. Instead, the main focus was on product similarity. Only when doing additional reading after the Licentiate degree, complementarity emerged as an essential aspect and conceptualization of product relation.

The fact that complementarity was measured in different ways in the experiments offers both advantages and disadvantages. The disadvantage is that the results from Experiment 2 on one hand and Experiment 4 and 5 on the other are not comparable straight off. The advantage is that since both ways of measuring complementarity indicate the same effect of perceived complementarity, a robustness of the results is demonstrated.

**How the measures relate to perceived customer value**
To round up and summarize this section, an overview of and discussion about how the variables used in the experiment relate to the overall aim of this dissertation is justified. In Figure 7, all measures are plotted as they relate to the theoretical framework resulting from the literature review. The dependent variables included in the experiments are marked with an asterisk.

![Figure 7. Relation between measures and theoretical framework.](image-url)
Figure 7 shows the relation between different variables and two key concepts of this dissertation: preference and satisfaction. As illustrated, pre-purchase evaluations are influenced by appearance and quality. Quality was measured either by an overall variable or by the variables quality, dependability, and durability. Both measures are here considered as antecedent to expected value and preferences. However, while appearance was treated as a confounding factor in the analyses, quality was used as a measure of preference because of its close relation with preferences and expected value (Zeithaml 1988). Actual preferences were measured by ratings of attractiveness and purchase intention; attractiveness as a direct assessment of preferences and purchase intention as a behaviorally directed measure.

While perceived quality is a relevant measure of expected value, it is not sufficient to explain expectations of value as it is limited to one product feature. Therefore, attractiveness was used as measure of actual preferences allowing for the inclusion of other factors that influence value in participants’ evaluations. Still, as the risk of participants disregarding the monetary aspects of value when rating attractiveness, a measure of purchase intention was included. Taken together, the three measures quality, attractiveness, and purchase intention capture many aspects of expected value and preferences.

Post-purchase evaluations, resulting in experienced value and satisfaction was captured by an overall rating of satisfaction with the purchase of a bundle or product and by a rating of satisfaction if one product in a bundle or a product (in separate product evaluations) could not be used. As illustrated by Figure 7, quality is recognized as an antecedent to satisfaction as well. In this dissertation it is assumed that the pre-purchase evaluation process in itself impacts expected value by the ease or difficulty in evaluation. This aspect was captured by the variables need to think and information helpfulness.

The antecedent to preferences and satisfaction of largest importance in this dissertation is bundle complementarity. Many different kind of complementary bundles were investigated and a number of variables were used in order to be able to determine if the manipulations were effective. The ratings of how much product belong together in Experiment 2 and of complementarity in Experiment 4 and 5 are direct measures of the perceived complementarity. In Experiment 3, which aim was to determine the effect of similarity in level of luxury on evaluations, the two variables exclusiveness and luxury were proposed to be a type of complementarity and measures of perceived product exclusiveness and luxury were included to allow for manipulation check.

It should be noted that the participants were not asked to make an assessment of the overall perceived value of bundles or separate products. Instead, the measures of expected value/preferences and experienced
value/satisfaction are considered as operationalizations of overall customer value. The variables were not used to form an index of overall value, but analyzed separately. Even though the variables largely correlate, which would indicate that they are suitable to index, it was judged relevant for the purposes to be able to distinguish between them.

**Choice of products**

The evaluated bundles were hypothetical but consisted of products that existed on the market at the time. They were composed of two products, partly because these kinds of bundles are common on the market and partly because it simplified the evaluation task and analysis. Commonplace and frequently used products were chosen. Thus, almost everyone had some knowledge of and experience with the products in question, which may increase the external validity of the study.

In all experiments bundles that contained electronic devices were evaluated. This means the effect of complementarity on evaluations were demonstrated five times. In order to increase the generalizability, bundles from two additional industries were included in Experiment 2: groceries and leisure activities. By doing that, the effect of complementarity could be generalized to other industries. It was also deemed important that the bundles covered different kinds of business-to-consumer industries. Bundles exist on business-to-business markets as well but as value arguably has a different meaning in a business-to-business setting and the decision process is different, business-to-business markets were disregarded. To gain diversity in kinds of bundles used in the investigations, both goods and services as well as durable and non-durable products were included. Non-durable products are here assumed to be goods or services that can only be used, consumed, or accessed at one point in time, for example groceries or an entrance fee, compared to durable product that can be used, consumed, or accessed at several times, for example a TV. Research shows that the decision process may differ between durable and non-durable goods, for example regarding the impact of economic considerations (Marell 1998). Likewise, there may be differences between how goods and services are evaluated, for example because the possibility to evaluate features and performance before purchase differs (Parasuraman et al. 1985). Bundle products were chosen so that aspects such as the price level and complexity of the products were comparable and so that consumers in general had knowledge about or experience of the products. However, it proved difficult to identify bundles of durable services that were comparable with the bundles of goods regarding for example price level. Therefore, no durable service bundles were included in the experiment, which impacts the generalizability of the results negatively.
As mentioned, brands are not in the scope of this thesis. Therefore, no information about brands was given for the products and any visible brand names were removed from the pictures. Brands were excluded because they constitute a potentially strong confounding factor as they are value-laden and have large effects on evaluations (Dodds et al. 1991; Grewal et al. 1998). Accordingly, there was a risk that the attitude towards certain brands might overshadow the effects of complementarity in bundle evaluations. Furthermore, products with “anonymous” designs were selected so that participants would not easily recognize the brands of the products by their appearance.

**Participants and data collection**

The participants in the first three experiments were undergraduate students in business administration at Umeå School of Business (USBE), Umeå University. In each experiment 72 (different) students participated by answering a booklet. The experiments were conducted in connection to lectures and the students received SEK 50 for their participation. A convenience sampling was used in that student were easily accessible in classes. The classes were selected on the requirements that they were given in Swedish (since the booklet was in Swedish) and had lectures scheduled at the time of the investigations. A third requirement, added for the latter two experiments, was that the classes had not been selected for any of the prior experiments. After booklets were collected, data was entered into SPSS (Statistical Package for the Social Sciences). Before analyses, the database was scanned for data entry mistakes and random booklets were compared to the data entered into SPSS in order to detect errors.

In the last two experiments, the participants were members of a consumer panel owned by research company NORM. The panel consists of 14,000 individuals, male and female living in Sweden. In Experiment 4, 240 consumers participated and in Experiment 5, 174 consumers participated. As compensation the participants earned points that could be exchanged for lottery or movie tickets. The questionnaires were administered via an e-mail containing a link to a web-based questionnaire. The data from the questionnaire was automatically transferred into SPSS; hence, there were no data entry mistakes besides possible entry mistakes from the participants. The response rate was low in both experiments; ten and nine percent respectively. However, a non-response bias analysis revealed no systematic differences with respect to age, gender, or place of residence (which were the information available about the non-respondents). Moreover, the participants were judged as representative demographically compared to the general Swedish population and the response rates were therefore considered acceptable.
All participants in the experiments, both students and panel members were randomly assigned to groups with different products in the bundles. As a result, individuals with certain characteristics in one group are on average counterbalanced by individuals with comparable characteristics in other groups. However, the equivalence achieved by random assignment is probabilistic. Thus, even a correct randomization procedure can result in groups that differ in some aspects and statistically significant differences will sometimes be obtained by chance alone. Nevertheless, a properly implemented random assignment will usually give comparable groups and reduce threats to internal validity (Cook and Campbell, 1979). The randomization procedure in the first three experiments, using a student sample, was quite straightforward; the booklets were assorted before distribution so that booklets with different target product were approximately evenly distributed. In Experiment 1 and 3, data was collected in several classes. The assortment ensured no student group received only one kind of booklet. In Experiment 4 and 5, the panel members were assigned to groups through a computerized random sampling procedure. Thus, the participants were not selected based on when they last participated or how often they had participated in the past. The data collection procedure is described in more detail in relation to the presentation of each experiment.

**Licentiate versus dissertation**

Writing a dissertation is an interesting and challenging journey. It includes joy, creativity, effort, insights, frustrations, writing and rewriting, cooperation, soul-searching, and more. In the end, you arrive at your final destination when you present and defend your dissertation. The evidence of this journey, your dissertation, shows where you ended up and not the road that took you there; it shows the end result rather than the process. However, in this case there is evidence of my process towards a PhD degree. In February 2007 I defended my licentiate thesis called “The influence of bundling on consumer evaluations” (Knutsson 2007) and this text builds on the licentiate thesis as it deepens the theoretical discussions, extends the empirical investigations, and advances the analyses. Parts of the empirical data in this dissertation was collected for and analyzed, discussed, and presented in the licentiate. In this section, a presentation of what was done for the licentiate and what has been done afterwards is made.

As the title of the licentiate thesis reveals, the main focus on the influence of bundling on consumers’ evaluations was present also at this stage. By comparing the purpose of the licentiate with the main purpose of this study it is clear that the two are closely related; the purpose of the licentiate was to investigate how the composition of bundles influences consumers’ evaluations while the purpose now is to increase the understanding of how bundle composition influences consumers’ preferences for and satisfaction
with bundles. Even though the licentiate and the dissertation have much the same goal, the scope of the dissertation is wider.

For the licentiate, three experiments were conducted that are also included in the dissertation, Experiments 1-3. The experiments are closely related and each experiment builds on the previous, as described above, providing an in depth understanding of how bundle composition influences consumers' preferences. Student samples were used and the students evaluated bundles of electronic devices. The effect of different kinds of relations between bundle products, such as functional relation, price relation, and level of luxury, on pre-purchase evaluations was investigated.

In the dissertation, two additional experiments are included. The experiments add new perspectives to the study. While the results in the licentiate are limited to how composition influences consumers’ preferences, that is, pre-purchase evaluations, the dissertation expands the scope by including post-purchase evaluations and information processing as well. This means that a larger part of the decision making process is included and that a more complete picture of how bundling influences consumers is provided. Besides post-purchase and information processing, investigations of the effect of discount on consumer evaluations are studied. As another way of widening the scope, bundling from new industries and consequently new kinds of bundle product relations are investigated for the dissertation. As a consequence of adding new industries, the generalizability of the results is higher and the effect is amplified by the fact that samples that are more representative were used.

Composition and product relation were approached somewhat differently in the licentiate thesis than it is presently. Based on theoretical studies, product similarity was identified as an important issue for consumer preferences for bundles. Product similarity was initially discussed in terms of functionality and price; and based on the empirical investigations later also as similarity in level of luxury. Similarity has much in common with complementarity as a concept, but it is more limited. Similarity indicates that products have many attributes, features, or usages in common, which in many ways are valid descriptions of product relations that are conceivably attractive to consumers. However, pure similarity may not be the main objective in a bundling setting; products may be too similar to be attractive in combination. Products that are very similar are potentially more likely to replace each other rather than to be used together. A black and a purple cell phone are for instance very similar products, but they are not likely to be used simultaneously (by the same person, that is). Bundles of very similar products are in that sense more closely related to multi-packs, which is not in focus in this study. Because of the limitations with the term similarity, it was decided to use the concept complementarity instead. Here, complementarity recognizes similarity in features or attributes as important
but also hints that products may be used together, side by side. Complementarity thus includes but is not limited to product similarity.

Thus, the understanding of bundle composition and the relation between bundle products developed over time, from similarity to complementarity, and its operationalization developed from functional relation and price similarity to a wider scope. An abductive research approach facilitates these kinds of developments as it allows for terms to emerge and to be further developed. The insight that complementarity rather than similarity was important for the development of the dissertation gave a better understanding of why bundle composition influences consumers and it helps define the underlying causes why some bundles are appealing. It thus contributes to a greater overall understanding of how perceptions of value are formed.
Empirical investigations

In the present chapter, the results of the empirical data collection are presented. In total, five experiments were conducted and they are here presented one by one. Each experiment starts off with a brief introduction leading to the research questions investigated in the experiment. Thereafter, a description of how the experiment was conducted follows. In the result section, data and results from statistical analyses are presented and interspersed with initial interpretations of and questions about the results. Each experiment ends with a summary of the results and thoughts, reflections, and ideas leading to the subsequent experiment.

The experiments largely build on each other, each experiment adding a new perspective on how bundle composition affects consumers’ perceptions of value. The first three experiments focus on pre-purchase evaluations and capture the effects that different degrees and types of complementarity have on consumer preferences. The main contribution of the first experiment is the comparison between preferences for bundles and separate products. In the second experiment purchase plans is added in the exploration of how complementarity affects consumer preferences. The third experiment is an extension of the previous experiments in that it adds another type of complementarity. The main contribution of the fourth experiment is that attention is turned to post-purchase evaluations when consumer satisfaction or dissatisfaction with the purchase of a bundle under different conditions is analyzed. The fifth and last experiment explores the effect of bundle discounts on consumer preferences and satisfaction as price and discounts assert large influences on perception of value.

Experiment 1 – bundle and separate product evaluations

In the first experiment, the basic question of whether bundles can provide value to customers compared to separate products is investigated. Hence, the main research question is:

- How are bundles evaluated in comparison to separate products?

To answer the research question, evaluations of separate products and bundles are compared. Previous research indicates that bundles generate higher purchase intentions than separate products do (e.g. Herrmann et al. 1997). Bundle evaluations are compared to aggregated product evaluations, that is, to averages of evaluations of separate products (Levin and Gaeth 1988; Gaeth et al. 1991). In order to be able to compare mean evaluations of separate products to bundles containing the same products, participants evaluated the bundles and separate products with no purchase context.
However, in addition to this basic question, the effects of different types and degrees of complementarity on consumer evaluations are also studied. Thus, the following research questions are also investigated:

- Can complementarity be placed on a continuum with unrelated bundles in one end and complementary bundles in the other end?
- How do different kinds of complementarity affect consumers’ evaluations of bundles?
- How do different degrees of complementarity affect consumers’ evaluations of bundles?

These research questions are answered by investigating the effect of functional relation and similarity in price level between bundle products, based on the study by Harlam et al. (1995). They operationalized complementarity as functional relation based on how well the products work together. There are three levels of functional relation, in order of decreasing complementarity: functionally related products, products from the same product category but not functionally related, and unrelated. The level of price similarity also varies in three steps: equal (the by-product has the same price level as the target product), small difference (the by-product is a low-budget alternative), or large difference (the by-product is naturally less expensive than the target product). To exemplify price similarity, an exclusive TV may be combined with an exclusive DVD player (equal), a low-budget DVD player (small price difference), or a movie DVD (large price difference).

The effect of the different types and degrees of complementarity on consumers’ preferences is investigated by asking participants to rate their perceptions of quality, attractiveness, and purchase intention for bundles. Separate products are rated on these and three additional measures. A measure of appearance of the separate products is included as a means of controlling if exterior design is a confounding factor. The measure of perceived quality is extended with two additional variables for separate products so that the quality measure for separate products matches that used by Yadav (1994): quality, dependability, and durability. As it is assumed that it is difficult to state how dependable or durable a bundle is, only an overall measure of quality is collected for bundles.

Method

Participants
Seventy-two undergraduates in business administration participated in the experiment, of which 37 individuals or 51% were women. The participants were randomly assigned to three groups with sex approximately balanced.
Each participant answered a booklet that were administered in classes and received SEK 50 in compensation. The average age of the participants was 23 years, the oldest being 34 years old and the youngest 19.

**Design**

As illustrated in Table 3, the experimental design consisted of two within-groups factors, complementarity (functionally related vs. same category vs. unrelated) and price similarity (equal price vs. small price difference vs. large price difference) between bundle products. The bundle composition is described further in the section Material.

**Table 3. Within-groups factors in the experimental design (Experiment 1).**

<table>
<thead>
<tr>
<th>Price of by-product in relation to target product</th>
<th>Relation between target product and by-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Equal</td>
<td>Functionally related</td>
</tr>
<tr>
<td>B Equal</td>
<td>Same product category</td>
</tr>
<tr>
<td>C Equal</td>
<td>Unrelated</td>
</tr>
<tr>
<td>D Lower</td>
<td>Functionally related (Budget alternative of the by-product in A)</td>
</tr>
<tr>
<td>E Lower</td>
<td>Same product category (Budget alternative of the by-product in B)</td>
</tr>
<tr>
<td>F Lower</td>
<td>Unrelated</td>
</tr>
<tr>
<td>G Lower</td>
<td>Functionally related (Inexpensive by-product)</td>
</tr>
<tr>
<td>H Lower</td>
<td>Same product category (Inexpensive by-product)</td>
</tr>
<tr>
<td>I Lower</td>
<td>Unrelated</td>
</tr>
</tbody>
</table>

Note. The letter in front of each bundle, A, B, C, etc., is used to identify the bundles in subsequent tables.

A between-groups factor was type of target product in the bundles (TV, DVD player, or digital camera). The main dependent measures were ratings of quality, attractiveness, and purchase intention, which make up the overall preference measure.

**Material**

Table 4 shows the three groups of bundles that were evaluated. The bundles consisted of in total 14 different separate products, which were also evaluated separately by all participants. The distraction task consisted of a set of unrelated questions about the participants’ subjective well-being.

**Table 4. Description of the bundles (Experiment 1).**

<table>
<thead>
<tr>
<th>TV</th>
<th>DVD player</th>
<th>Digital camera</th>
</tr>
</thead>
<tbody>
<tr>
<td>A TV and DVD player</td>
<td>DVD player and TV</td>
<td>Digital camera and Photo printer</td>
</tr>
<tr>
<td>B TV and Digital camera</td>
<td>DVD player and Digital camera</td>
<td>Digital camera and TV</td>
</tr>
<tr>
<td>C TV and Bicycle</td>
<td>DVD player and Bicycle</td>
<td>Digital camera and Bicycle</td>
</tr>
<tr>
<td>D TV and DVD player</td>
<td>DVD player and TV</td>
<td>Digital camera and Photo printer</td>
</tr>
<tr>
<td>E TV and Digital camera</td>
<td>DVD player and Digital camera</td>
<td>Digital camera and TV</td>
</tr>
<tr>
<td>F TV and Bicycle</td>
<td>DVD player and Bicycle</td>
<td>Digital camera and Bicycle</td>
</tr>
<tr>
<td>G TV and Movie DVD</td>
<td>DVD player and Movie DVD</td>
<td>Digital camera and Camera case</td>
</tr>
<tr>
<td>H TV and Clock radio</td>
<td>DVD player and Clock radio</td>
<td>Digital camera and Clock radio</td>
</tr>
<tr>
<td>I TV and Bath towel</td>
<td>DVD player and Bath towel</td>
<td>Digital camera and Bath towel</td>
</tr>
</tbody>
</table>
The products existed on the market at the time. The target products, TV, DVD player, and digital camera and the bicycle and photo printer had approximately equal price. Similarly, the low-budget alternatives were in the same price level as were the inexpensive products. No products had visible brand names to avoid confounding influence of emotions, identity and other concepts closely connected to brand names.

Procedure
A booklet was administered to the participants. It contained background questions about the participants, and their experience with and knowledge about certain products, evaluations of bundles, evaluations of separate products and a distraction task, see Appendices II-V for illustrations of the different sections. In order to avoid order effects, half of the booklets presented the tasks in the order background questions, bundle evaluations, distraction task, and product evaluations, while the other half of the booklets were in the order background questions, product evaluations, distraction task, and bundle evaluations. Similarly, the order with which the products and bundles appeared within a section was randomized to avoid order effects. Each booklet took approximately 15 minutes to complete. In the evaluation sections there was only one product or bundle on each page and the participants were instructed not to look back on previously answered questions. I and another experiment leader were present in the room to supervise the participants and answer any questions. However, only a few participants had questions.

The background questions included, besides sex and age, ratings of the participants’ knowledge and experience of using the kinds of products that were included in the bundles. The ratings of experience and knowledge were made on nine-step scales. However, no effect of knowledge and experience was detected in the analysis and the results are not presented.

The evaluation tasks of both separate products and product bundles were introduced with the following scenario (translated from Swedish): “Imagine that you have joined a friend in a visit down town. Your friend is going to buy a few goods and you accompany him/her to a couple of stores. While your friend talks to a sales person about his/her purchase you take a look around in the store. Doing this you see the following offerings – what is your opinion about them? Answer the questions following each product.”

The participants evaluated 14 separate products. Each product was presented with a picture, short information about technical specifications, and price. The participants were asked to rate the appearance, quality, durability, dependability and attractiveness of each product and how likely they were to purchase the product on nine-step scales.

Moreover, each participant evaluated nine bundles, containing the products that were also evaluated separately. All bundles consisted of one
target product (TV, DVD player or digital camera) and one by-product. The bundles were presented with pictures and short specifications of the bundle products (the same information as for the separate products) together with information about the price of the bundle and each product in the bundle, which was the same as their price as separate products. The participants were asked to state their evaluations of the quality and attractiveness of the bundles and how likely they would be to purchase such a bundle. These evaluations were all made on nine-step rating scales. Examples showing how separate products and bundles were evaluated are presented in Appendices II-III.

**Results**

A check of the background questions revealed no systematic effect of gender, age, knowledge, or experience on how bundles are evaluated, and these factors are therefore not included in the subsequent presentation of the results. Participants rated the appearance of separate products as it is a potentially confounding factor on preferences. However, no significant effects of product appearance on bundle evaluations were detected and the factor is disregarded in the following analysis.

Means and standard deviations of evaluations of the separate products are presented in Table 5. The ratings of separate products on the three quality scales — quality, durability, and dependability — follow each other closely; the largest difference between these ratings is 0.5 on the scale ranging from 1 to 9. Because of the high correlation of quality measures, only ratings of the variable quality are included in the subsequent analysis. Generally, the ratings of quality are higher than the rating of attractiveness, which in turn is rated higher than purchase intention. However, low-budget products (low-budget TV, -DVD player, -digital camera, -bicycle, and -photo printer) deviate from this main tendency by being rated higher on attractiveness than on quality. Some low-budget products are even perceived as more attractive than their high-quality counterparts are.
In Table 6, the means and standard deviations of the evaluations of bundles are presented. The rating of quality of the bundles was higher than the ratings of attractiveness, which in turn was higher than the ratings of purchase intention.

**Comparison between bundles and separate products**

To compare evaluations of bundles and separate products, ratings of quality, attractiveness, and purchase intentions for the products included in a bundle were aggregated by averaging the separate product evaluations, as argued by Gaeth et al. (1991) and Yadav (1994). These averages were compared to
evaluations of the corresponding bundles. Means and standard deviations of the aggregated product ratings are given in Table 2 in Appendix I.

The results indicated that overall the bundles were less positively evaluated than the aggregated evaluations of the separate products ($M_B = 5.4$ vs. $M_A = 6.2$ for quality, $M_B = 4.1$ vs. $M_A = 4.8$ for attractiveness, and $M_B = 2.8$ vs. $M_A = 3.3$ for purchase intention). Separate $t$-tests showed that all mean differences were significant at $p = .05$. However, as illustrated in Figure 8, some bundles were as positively evaluated as the aggregates. Most functionally related bundles are as positively evaluated as aggregated separate products, and some of the same-category bundles. Unrelated bundles were never as positively evaluated as aggregates.

As can be seen in Figure 8, the evaluations of bundles and aggregated products varied depending on functional relation and price relation. The differences primarily depend on variation in the bundle evaluations as will be discussed further below. It may be noted that for the quality evaluations there is also an expected effect of price level on the aggregated products. That is, the quality ratings are noticeably lower for aggregated products containing a low-budget product in the top middle column, which is a consequence of the lower ratings of quality of low-budget products presented above. It should be noted that bundle evaluations generally are more affected by the relation between products than aggregates are. This is to be expected since participants evaluated separate products; the ratings can therefore not be affected by product relations. Only in order to be used in the statistical analyses, the ratings were averaged.
Figure 8. Three-way interaction (Experiment 1). The effect of functional relation and price similarity between products in bundles and aggregated products on evaluations of quality, attractiveness, and purchase intention.

Overall, evaluations of quality were higher for aggregated products than bundles, except for functionally related products with equal price (the non-significant differences are marked with a circle), indicating that perceptions of quality is negatively affected by bundling. Ratings of attractiveness of and purchase intention for functionally related bundles and same category bundles were generally as high for bundles as aggregated products. The only
exception is bundles with large price difference, when same category bundles were evaluated less positive than aggregated products. A closer look at the results shows that unrelated bundles always were rated lower than aggregated products, on all measures and regardless of price relation between products. Taken together the results indicate that bundles generally are not more preferred than separate products, which contradict the findings from for example Gaeth et al. (1991) and speaks against the general assumption that bundling increases sales.

The effect of complementarity on bundle evaluations
Besides investigating how bundles are evaluated compared to separate product another set of research questions in this experiment concern how complementarity affects bundle evaluations. Results related to these research questions are presented below. The results suggest that bundles consisting of functionally related products were more positively evaluated than bundles consisting of products from the same category or unrelated products ($M_F = 6.1$ vs. $M_c = 5.6$ vs. $M_U = 5.6$ for quality, $M_F = 4.8$ vs. $M_C = 4.3$ vs. $M_U = 4.2$ for attractiveness, and $M_F = 3.3$ vs. $M_C = 2.9$ vs. $M_U = 2.9$ for purchase intention). The main effect of functional relation was significant in a multivariate analysis of variance (MANOVA), $F(6, 63) = 9.03$, $p < .001$, as well as in univariate analyses of variance (ANOVAs), $F(2, 136; \text{Greenhouse-Geisser } \epsilon = .97) = 27.67$, $p < .001$ for quality, $F(2, 136; \text{Greenhouse-Geisser } \epsilon = .89) = 18.15$, $p < .001$ for attractiveness, and $F(2, 136; \text{Greenhouse-Geisser } \epsilon = .91) = 9.62$, $p < .001$ for purchase intention. Bonferroni-adjusted $t$-tests showed that bundles with functionally related products are more appealing than bundles with products that are less complementary. However, the difference between same category bundles and unrelated bundles are not significant. That is, the main effect is that consumers prefer complementarity.

There is also a main effect of price similarity. Bundles with products of equal price were more positively evaluated than bundles with products with a small price difference ($M_E = 6.5$ vs. $M_S = 5.2$ for quality and $M_E = 4.8$ vs. $M_S = 4.5$ for attractiveness). The latter was less positively evaluated than bundles with products with a large price difference on quality ($M_L = 5.6$) but more positively evaluated on attractiveness ($M_L = 4.1$). This main effect reached significance in a MANOVA, $F(6, 63) = 36.85$, $p < .001$, as well as in univariate ANOVAs, $F(2, 136; \text{Greenhouse-Geisser } \epsilon = .94) = 405.46$, $p < .001$ for quality, $F(2, 136; \text{Greenhouse-Geisser } \epsilon = .88) = 53.13$, $p < .001$ for attractiveness. There was no significant difference in purchase intention depending on price relation between bundle products. The quality is judged lower for bundles with low-budget by-products compared to bundles with exclusive or inexpensive by-products. Yet the attractiveness of low-budget bundles is higher than that of inexpensive bundles.
A significant two-way interaction was found between functional relation and price similarity, qualifying the main result that complementarity is preferred $F(12, 57) = 10.45, p < .001$ in MANOVA and $F(4, 272; \text{Greenhouse-Geisser } \epsilon = .88) = 14.96, p < .001$ for quality, $F(4, 272; \text{Greenhouse-Geisser } \epsilon = .82) = 16.55, p < .001$ for attractiveness, and $F(4, 272; \text{Greenhouse-Geisser } \epsilon = .84) = 17.45, p < .001$ for purchase intention in the univariate ANOVAs. The interaction is illustrated by the dotted lines in Figure 8 and implies that functional relation influence evaluations differently depending on the price similarity between the products. The pattern is similar for each dependent variable. Bonferroni-adjusted $t$-tests showed that bundles with equally priced products have significantly lower ratings for unrelated bundles when functionally related bundles or same-category bundles. Thus, equally priced bundles are evaluated in accordance with the expected effect of complementarity - decreasing evaluations with lower degrees of complementarity. Bundles consisting of products with small price difference showed no effect of functional relation. Possibly consumers consider the low-budget bundles as a bargain regardless of the relation between the products. The result that low-budget bundles are as attractive as exclusive bundles speaks in favor of this interpretation. Finally, for bundles consisting of products with large price difference, functionally related bundles differed significantly from same category and unrelated bundles that did not differ. When the by-product is inexpensive consumers may consider by-products that are not complementary as undesirable and not worth taking home. The inexpensive by-products may be suspected to be of very poor quality and thrown in to sell out stock.

Another significant two-way interaction was observed between price relation and target product for purchase intention, $F(12, 128) = 1.85, p = .046$, in the MANOVA and $F(4, 136; \text{Greenhouse-Geisser } \epsilon = .94) = 13.80, p = .004$, in the univariate ANOVA. This interaction, illustrated in Figure 9, is mainly accounted for by the positive evaluations of purchase intentions for a TV combined with a low-budget DVD player.
Figure 9. Two-way interaction (Experiment 1). The effects of price similarity and target product on evaluations of purchase intention.

**Summing up Experiment 1**
The results from previous studies that bundles are preferred over separate products are not confirmed here. Instead, the results show that often aggregated products are more positively evaluated than bundles and in no case were the evaluations of bundles higher than those of aggregated products. Thus, bundles seem to be less valued than separate products on a general level. However, the results show a positive effect of bundle complementarity on evaluations as functionally related bundles often were as positively evaluated as separate products and same-category bundles sometimes were as positively rated. Bundles of unrelated products on the other hand were never as positively evaluated. The positive effect of functional relation was most pronounced for bundles with equally priced products.

In the experiment, bundles were composed of products that covered a range from unrelated to complementary and from large to no price difference, respectively. The relation between bundle products corresponds to a sliding scale of complementarity. As described above, the results indicate that the relation between bundle products has an influence on preferences. This is interesting results from a company perspective as it indicates that the composition of bundles is important and that complementarity between the products influences bundles attractiveness and consumers purchase intention. However, the experiment offers no means of determining whether the participants really perceived the products as complementary to different degrees as no measure of perceived product fit was included. Thus, it would be desirable to include a measure of perceived complementarity the be able to state with certainty that differences in
preferences were actually influenced by differences in perceived complementarity. The issue is addressed in the next experiment.

When evaluating bundles and separate products the participants were asked to imagine they encountered the products while accompanying a friend. That is, they had no stated plan to purchase any of the products. As previous research indicates that prior purchase plans influences how bundles are evaluated (Suri and Monroe 1995) it is possible that consumers in a purchase situation would evaluate bundles differently. In the subsequent experiment, these questions are addressed. Including ratings of how well bundle products belong together, helps determining whether functionally related bundles actually are perceived as complementary and therefore, that the identified effect of complementarity is not caused by confounding factors. Moreover, by formulating the scenarios so that the participants are instructed they need to purchase one of the bundle products, it is possible to investigate the effect of complementarity in a more realistic setting.

**Experiment 2 – adding purchase plans**

The first experiment gave some indications of how price and functional relation influence consumers’ evaluations. The second experiment is basically a replication of the first with some additions to clarify the issues concerning purchase plan and perceived complementarity that were highlighted by the results in Experiment 1.

When consumers encounter bundles in real life, they often intend to buy one of the products in the bundle. For example, they may intend to buy a new TV because the old TV has broken down or is obsolete, but do not, at least initially, have the intention to buy a DVD player, since they already have one. But what happens when they encounter a bundle of a TV and a DVD player in the store? Alternatively, a TV and a bicycle? How attractive are these bundles and how likely are consumers to purchase them? Will the results be different from those in Experiment 1 in terms of the effects of price similarity and functional relation between bundle products? Suri and Monroe (1995) argue that a product for which a consumer has a purchase plan becomes salient and therefore act as an anchor in the evaluation process. Similarly, Yadav (1994) showed that consumers anchor a bundle evaluation on the product perceived as most important and make subsequent insufficient adjustments based on the other bundle product. Indications are that this effect is enhanced by bundle complementarity, as positive evaluations of a bundle product are more easily transferred to the by-product in a bundle offer if the products are complementary (Sheng and Pan 2009). Thus, the anchor product may have a larger impact on preferences when consumers have a purchase plan and the effect may be boosted in complementary bundles.
In Experiment 2, the main contribution is to explore how different types and degrees of complementarity affect consumers’ perception of bundles. As a supplement to the results in Experiment 1, the evaluations are made in a purchase situation.

Hence, the research questions answered in Experiment 2 are:

- How are bundles evaluated in comparison to separate products in a purchase situation?
- How do different types of complementarity affect consumers’ preferences for bundles in a purchase situation?
- How do different degrees of complementarity affect consumers’ preferences for bundles in a purchase situation?

To answer these research questions, participants were asked to imagine that they needed to buy a TV, DVD player or digital camera. Thereby, inducing them to perceive this product as the most important in the bundle, that is, acting like an anchor product. These products are referred to as anchor products to denote that they are the main products in the bundles but not referring to any decision rule, such as anchoring and adjustment (Tversky and Kahneman 1974). Product and bundle evaluations were made with the same measures as in the first experiment to allow for comparisons.

Besides investigating the effects of different types and degrees of complementarity, Experiment 2 further explores how types and degrees of complementarity are perceived. Participants were asked to make pairwise similarity judgments of all products in the experiment, by rating how well two products belong together. The instructions did not specify any attributes to base the comparisons on in order not to influence the participants to judge complementarity on the basis of some specific attribute such as price, appearance, or product type. Specifically, this gives the participants the freedom to specify their own view of how products can belong together. They may define it based on usage situation, manufacturing, or distribution and are not limited to determine it by features or characteristics of individual products.

Method

Participants
Another seventy-two undergraduates (41 or 57% female) studying business administration Umeå University were recruited in classes and answered a booklet in connection with a lecture. They received SEK 50 in compensation for participating. The participants’ average age was 24 years, the youngest being 21 years old and the oldest 33 years old. Participants were randomly assigned to three groups with sex approximately balanced.
Design
The experimental design was identical to that on Experiment 1 and complementarity was operationalized in the same way. The experiments design thus consisted of two within-groups factors, functional relation (functionally related vs. same product category vs. unrelated) and price similarity (equal price of anchor product and by-product vs. small price difference between anchor product and by-product vs. large price difference between anchor product and by-product). A between-groups factor was type of anchor product in the bundles (TV, DVD player, or digital camera). The main dependent variables were ratings of quality, attractiveness, and purchase intention.

Material
The bundles were composed in the same way as in Experiment 1 and included the same products. As in Experiment 1, the participant evaluated all component products separately as well. The similarity judgments were made between the three anchor products (a TV, a DVD player, and a digital camera) and all other products.

Procedure
The booklet consisted of three sections: evaluations of bundles, evaluations of the separate products and judgments of similarity. In addition the participants answered background questions about themselves and their knowledge and experience of different products (see Appendices II-III and V for illustrations).

The booklet took approximately 20 minutes to complete. The order of the three sections was altered so that for half of the booklets the order was bundle evaluations – similarity judgments – product evaluations, while for the other half the order was product evaluations – similarity judgments – bundle evaluations. Thus, the similarity judgments constituted a distraction task between bundle and separate product evaluations. Throughout the booklet, there was only one question on each page. The participants were instructed not to go back once they had turned page. I and another experiment leader were present in the room to supervise that the instructions were followed and to answer any questions.

Each participant evaluated nine bundles, all consisting of one anchor product (TV, DVD player or digital camera) and one by-product. Each bundle was introduced in a scenario that translates into, “Imagine you have decided to buy a [anchor product] and visit a store for electronic devices. In the store you notice an offer to buy an [anchor product] and a [by-product] for XXX SEK. The [anchor product] has a value of XXX SEK and in the bundle and the [by-product] has a value of XXX SEK.” The products in the bundle were presented with pictures and short specifications, together with
information about the price for the bundle and for each product (the price of the bundle being the sum of the values of the separate products). The participants were asked to rate their evaluations of the quality and attractiveness of the bundles and how likely they would be to purchase the bundles on nine-step scales.

All participants also evaluated all products included in any of the bundles separately, in total 14 products. The products were presented with pictures, price information and brief descriptions (the same information and price as when the products were evaluated in a bundle). The participants were instructed to imagine that they had a need of the products in question, “Imagine you need to buy a [product] and goes to a store. In the store you see the following offer.” The participants assessed the products’ appearance, quality, and attractiveness and of how likely they were to purchase the products. Quality was assessed by three measures: quality, durability and workmanship/dependability.

The participants were asked to give estimates of how well two products belong together. The three anchor products; TV, DVD player, and digital camera were used as targets in the similarity judgments. Each target product was compared to all other (13) products. The same information was provided about the products as in the other sections. The question read, “How much do you think [product 1] and [product 2] belong together?” The participants rated the similarity by making a mark on a 150 mm long line (graphic scale) with the target product marked at the left end-point. They were instructed to indicate the degree of similarity - the more similar the products, the shorter the distance between the marks should be.

Results
The participants evaluated the separate products on the dependent variables appearance, quality, durability, dependability, attractiveness, and purchase intention. The ratings of the three quality measures - quality, durability, and dependability - followed each other closely, the mean difference between the measures was 0.2 and the largest difference was 0.7 (see Table 7). Similarly to Experiment 1, only the variable quality was therefore used in the subsequent analyses. Also in accordance with Experiment 1, the influence of appearance on ratings was investigated and no effect was found. Therefore, appearance was disregarded in the following analyses.
Table 7. Evaluations of separate products (Experiment 2).

<table>
<thead>
<tr>
<th>Product</th>
<th>Appearance (M/SD)</th>
<th>Quality (M/SD)</th>
<th>Durable (M/SD)</th>
<th>Dependable (M/SD)</th>
<th>Attractive (M/SD)</th>
<th>Purchase intention (M/SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive TV</td>
<td>6.8/1.4</td>
<td>6.9/1.2</td>
<td>6.7/1.4</td>
<td>6.8/1.2</td>
<td>5.4/1.9</td>
<td>4.3/2.2</td>
</tr>
<tr>
<td>Low-budget TV</td>
<td>4.5/1.7</td>
<td>4.8/1.5</td>
<td>5.5/1.8</td>
<td>5.0/1.7</td>
<td>4.9/2.2</td>
<td>4.3/2.5</td>
</tr>
<tr>
<td>Excl. DVD player</td>
<td>6.6/1.5</td>
<td>7.4/1.1</td>
<td>7.2/1.3</td>
<td>7.1/1.2</td>
<td>4.5/2.1</td>
<td>3.1/2.0</td>
</tr>
<tr>
<td>Low-budget DVD pl.</td>
<td>5.2/1.8</td>
<td>4.6/1.5</td>
<td>4.7/1.5</td>
<td>4.6/1.5</td>
<td>5.0/2.1</td>
<td>4.6/2.3</td>
</tr>
<tr>
<td>Excl. D. camera</td>
<td>6.3/1.9</td>
<td>7.6/1.2</td>
<td>7.5/1.1</td>
<td>7.6/1.1</td>
<td>5.5/2.1</td>
<td>3.9/2.2</td>
</tr>
<tr>
<td>Low-budget D. camera</td>
<td>4.7/2.0</td>
<td>4.1/1.9</td>
<td>4.6/1.7</td>
<td>4.2/1.9</td>
<td>3.9/2.5</td>
<td>3.1/2.4</td>
</tr>
<tr>
<td>Excl. Bicycle</td>
<td>5.5/1.9</td>
<td>6.7/1.3</td>
<td>6.8/1.2</td>
<td>6.5/1.3</td>
<td>4.1/2.0</td>
<td>3.1/2.0</td>
</tr>
<tr>
<td>Low-budget Bicycle</td>
<td>5.2/1.9</td>
<td>4.5/1.6</td>
<td>4.9/1.8</td>
<td>4.6/1.7</td>
<td>5.5/2.3</td>
<td>4.9/2.6</td>
</tr>
<tr>
<td>Excl. Ph. printer</td>
<td>6.9/1.5</td>
<td>7.5/1.1</td>
<td>7.1/1.3</td>
<td>7.1/1.4</td>
<td>4.5/2.2</td>
<td>3.1/2.2</td>
</tr>
<tr>
<td>Low-budget printer</td>
<td>4.5/2.0</td>
<td>5.0/1.6</td>
<td>5.0/1.6</td>
<td>5.0/1.6</td>
<td>5.1/2.0</td>
<td>4.5/2.3</td>
</tr>
<tr>
<td>Movie DVD</td>
<td>5.7/1.8</td>
<td>6.7/1.4</td>
<td>6.2/1.8</td>
<td>6.3/1.7</td>
<td>4.9/2.4</td>
<td>4.2/2.5</td>
</tr>
<tr>
<td>Camera case</td>
<td>5.6/1.7</td>
<td>6.4/1.3</td>
<td>6.8/1.3</td>
<td>6.4/1.3</td>
<td>6.1/2.0</td>
<td>5.7/2.5</td>
</tr>
<tr>
<td>Clock radio</td>
<td>4.5/2.0</td>
<td>5.4/1.7</td>
<td>5.6/1.7</td>
<td>5.1/1.6</td>
<td>4.6/2.2</td>
<td>4.5/2.6</td>
</tr>
<tr>
<td>Bath towel</td>
<td>5.5/1.9</td>
<td>6.5/1.2</td>
<td>6.9/1.2</td>
<td>6.4/1.4</td>
<td>4.7/1.9</td>
<td>4.2/2.2</td>
</tr>
</tbody>
</table>

Generally, the ratings of attractiveness of the products were lower than the ratings of quality, whereas purchase intentions had the lowest ratings. However, low-quality products were evaluated more positively on attractiveness than quality, indicating that participants consider price when evaluating the attractiveness of products.

Evaluations of quality, attractiveness, and purchase intentions for the bundles were compared to evaluations of the corresponding anchor products. Means and standard deviations for the ratings of bundles with different anchor products (TV, DVD, and digital camera) and the evaluations of the anchor products are given in Tables 7 and 8.

Table 8. Evaluations of bundles (Experiment 2).

<table>
<thead>
<tr>
<th>Quality</th>
<th>Attractiveness</th>
<th>Purchase intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>DVD player</td>
<td>Digital camera</td>
</tr>
<tr>
<td>---------</td>
<td>----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Digital camera</td>
<td>TV DVD player</td>
<td>Digital camera</td>
</tr>
<tr>
<td>---------</td>
<td>----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Digital camera</td>
<td>TV DVD player</td>
<td>Digital camera</td>
</tr>
</tbody>
</table>

A: 6.6 1.7 6.9 2.1 6.7 1.8 4.6 2.0 5.6 2.4 5.6 2.1 3.1 1.7 4.2 2.4 3.6 2.1
B: 6.8 1.1 6.9 2.0 6.1 1.8 5.1 1.6 5.0 2.1 4.3 1.9 3.2 1.7 3.0 1.7 3.0 2.0
C: 6.1 1.6 6.3 2.4 4.7 2.1 4.0 1.7 3.5 2.4 3.3 1.9 2.4 1.7 2.6 2.1 2.1 1.8
D: 5.2 1.4 5.5 1.7 5.2 1.8 4.9 1.8 4.0 2.1 4.3 2.0 3.7 2.2 2.9 2.3 3.6 2.2
E: 5.2 1.6 5.4 1.9 4.7 1.8 4.3 1.6 4.3 2.0 3.4 1.9 3.2 2.0 3.0 1.8 2.7 2.1
F: 5.7 1.5 5.8 1.5 4.3 1.7 5.2 2.2 5.0 2.4 3.2 1.8 4.1 2.6 4.0 2.4 2.2 1.3
G: 6.0 1.8 5.6 2.1 6.7 1.7 4.4 2.1 4.4 2.4 5.8 2.2 3.8 2.2 3.4 2.5 5.3 2.6
H: 5.2 1.6 4.5 1.8 4.2 2.1 3.6 1.7 2.8 1.7 2.8 1.8 2.8 1.9 2.0 1.4 2.1 1.6
I: 4.8 2.2 5.1 2.3 3.6 1.8 3.4 1.9 3.3 1.9 2.4 1.5 2.7 1.9 2.5 1.9 1.8 1.2
Comparison between bundle evaluations and anchor product evaluations

The results indicated that the anchor products were more positively evaluated than bundles ($M_A = 7.1$ vs. $M_B = 5.5$ for quality, $M_A = 5.1$ vs. $M_B = 4.2$ for attractiveness, and $M_A = 3.8$ vs. $M_B = 3.0$ for purchase intention). Bundles were only more positively evaluated than the anchor product in some instances when the by-product in the bundle was functionally related to the anchor product. Figure 10 shows that the differences between evaluations of bundles and anchor product evaluations varied with the relation between anchor product and by-product and also it differed between different anchor products (the filled square refers to ratings of anchor product). Generally, the results indicate that in the choice between buying the initially planned product and a bundle offering containing the product, bundles are only rarely preferred.

Bundle evaluations

The suggested degrees of decreasing complementarity between bundle products were supported by the similarity ratings. As may be seen in Table 9, the mean similarity ratings of functionally related bundles were significantly larger than the mean similarity ratings of same-category bundles, which in turn were significantly larger than the mean ratings of unrelated bundles. This indicates that the manipulation was successful in that participants perceived functionally related bundles as most complementary and unrelated bundles as least complementary. Same category bundles were rated in between but slightly skewed towards unrelated bundles.

Table 9. Similarity ratings (Experiment 2).

<table>
<thead>
<tr>
<th>Anchor product</th>
<th>Functionally related products</th>
<th>Same-category products</th>
<th>Unrelated products</th>
<th>$M_F-M_C$</th>
<th>$M_F-M_U$</th>
<th>$M_C-M_U$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$M_1$</td>
<td>$Range_1$</td>
<td>$M_2$</td>
<td>$Range_2$</td>
<td>$M_3$</td>
<td>$Range_3$</td>
<td>$t(df), p$</td>
</tr>
<tr>
<td>TV</td>
<td>29.8</td>
<td>10.0-45.4</td>
<td>91.2</td>
<td>71.5-120.1</td>
<td>122.4</td>
<td>113.3-132.4</td>
</tr>
<tr>
<td>DVD player</td>
<td>20.0</td>
<td>9.8-39.4</td>
<td>97.2</td>
<td>83.9-113.9</td>
<td>127.1</td>
<td>121.0-133.4</td>
</tr>
<tr>
<td>Digital camera</td>
<td>29.8</td>
<td>17.9-40.8</td>
<td>95.4</td>
<td>76.9-118.3</td>
<td>115.2</td>
<td>106.5-126.5</td>
</tr>
</tbody>
</table>

The results of bundle evaluations showed that bundles consisting of functionally related products were more positively evaluated than bundles consisting of somewhat complementary products ($M_F = 6.1$ vs. $M_C = 5.4$ for quality, $M_F = 4.8$ vs. $M_C = 4.0$ for attractiveness, and $M_F = 3.7$ vs. $M_C = 2.8$ for purchase intention). The latter were only marginally more positively evaluated than unrelated bundles ($M_U = 5.2$ for quality, $M_U = 3.7$ for attractiveness, and $M_U = 2.7$ for purchase intention). This main effect reached significance in a MANOVA, $F(6, 64) = 10.21, p < .001$, as well as in
univariate ANOVAs, $F(2, 138; \text{Greenhouse-Geisser } \varepsilon = .98) = 29.89, p < .001$ for quality, $F(2, 138; \text{Greenhouse-Geisser } \varepsilon = .98) = 27.45, p < .001$ for attractiveness, and $F(2, 138; \text{Greenhouse-Geisser } \varepsilon = .92) = 23.32, p < .001$ for purchase intention. Bonferroni-adjusted $t$-tests showed that the evaluations of complementary bundles differed significantly from the other bundles, which did not differ reliably from each other. This means that neither same category bundles nor unrelated bundles are as positively evaluated as complementary bundles. As the similarity ratings in Table 9 show that perceived complementarity of products in somewhat complementary bundles and unrelated bundles are quite similar and relatively less complementary than products in complementary bundles, indications are that it actually is the perceived complementarity that influences evaluations.

There was also a main effect of price similarity restricted to quality and attractiveness. Bundles of products with equal price were more positively evaluated than bundles of products with a small price difference ($M_{E} = 6.3$ vs. $M_{S} = 5.2$ for quality and $M_{E} = 4.6$ vs. $M_{S} = 4.3$ for attractiveness). The latter were more positively evaluated than bundles with products with a large price difference ($M_{L} = 5.1$ for quality and $3.7$ for attractiveness). The main effect of price was significant in the MANOVA, $F(6, 64) = 15.97, p < .001$, and in the univariate ANOVAs, $F(2, 138; \text{Greenhouse-Geisser } \varepsilon = .92) = 36.00, p < .001$ for quality, $F(2, 138; \text{Greenhouse-Geisser } \varepsilon = .94) = 12.71, p < .001$ for attractiveness. In Bonferroni-adjusted $t$-tests, the evaluations of the bundles consisting of products with equal price differed reliably from the other bundles for quality, but only from the bundles with products with large price difference for attractiveness. For attractiveness there was also a significant difference between the bundles with small price differences and bundles with large price differences between the products. Hence, the quality and attractiveness of bundles with two exclusive products were higher than that of bundles with an inexpensive by-product. Bundles with two exclusive products were also perceived as higher in quality than bundles with a low-budget by-product, which is natural. The exclusive bundles were not more attractive, though, which indicates that the participants, as in the previous experiment, consider monetary worth when evaluating the bundles. Similar to the results presented by Harlam et al. (1995), there was no significant difference in purchase intention between bundles with varying levels of price similarity between bundle products.

There were however exceptions to these main effects. Two two-way interactions, functional relation by price similarity and functional relation by anchor product, were significant in the MANOVA, $F(12, 58) = 4.67, p < .001, F(12, 128) = 3.59, p < .001$. These interactions, as well as the three-way interaction functional relation by price similarity by anchor product, were significant in univariate ANOVAs, with one
exception for quality. \(F(4, 276; \text{Greenhouse-Geisser } \varepsilon = .91) = 13.36, p < .001\) for the functional relation by price similarity interaction on quality, \(F(4, 276; \text{Greenhouse-Geisser } \varepsilon = .91) = 14.14, p < .001\) for the functional relation by price similarity interaction on attractiveness, \(F(4, 276; \text{Greenhouse-Geisser } \varepsilon = .87) = 10.25, p < .001\) for the functional relation by price similarity interaction on purchase intention. \(F(4, 138; \text{Greenhouse-Geisser } \varepsilon = .98) = 9.66, p < .001\) for the functional relation by anchor product interaction on quality, \(F(4, 138; \text{Greenhouse-Geisser } \varepsilon = .98) = 7.03, p < .001\) for the functional relation by anchor product interaction on attractiveness, \(F(4, 138; \text{Greenhouse-Geisser } \varepsilon = .92) = 5.92, p < .001\) for the functional relation by anchor product interaction on purchase intention. \(F(8, 276; \text{Greenhouse-Geisser } \varepsilon = .91) = 2.14, p = .032\) for the functional relation by price similarity by anchor product interaction on attractiveness and \(F(8, 276; \text{Greenhouse-Geisser } \varepsilon = .87) = 2.25, p = .024\) for functional relation by price similarity by anchor product on purchase intention. The interactions are mainly accounted for by deviating evaluations for bundles with two specific by-products, the low-budget bicycle and the camera case. As illustrated in Table 7, the low-budget bicycle and the camera case as separate products had the highest ratings of attractiveness and purchase intention of all products. The bundle consisting of a digital camera and a camera case had the highest ratings of quality, attractiveness, and purchase intention of all bundles even though bundles with products with large price differences generally were less preferred. The camera and camera case bundle had very high ratings in Experiment 1 as well; the combination seems to be extra appealing. Bundles containing the low-budget bicycle also had deviating positive evaluations. Contrary to the general finding that bundles with unrelated products are less preferred than functionally related or same-category bundles, bundles with the low-budget bicycle were more attractive and gave stronger purchase intentions. A reason for the positive evaluations of bundles with a low-budget bicycle may be that the participants are students who use bicycles as a major mode of transportation and cannot afford exclusive bicycles. Hence, the very positive evaluations of specific by-products influence bundle evaluations. However, the low-budget bicycle deviated only when combined with the DVD player and TV and not when combined with the digital camera.

Another set of bundle evaluations that differed from expectations were the bundles consisting of a TV and a DVD player. The bundle consisting of a TV as anchor product and an exclusive DVD player as by-product is less positively evaluated than the bundle consisting of a DVD player as anchor product and an exclusive TV as by-product. The meaning of these results is discussed further in the summary of the experiment.
Figure 10. Three-way interaction (Experiment 2). The effects of functional relation and price level between products on evaluations of bundle quality, attractiveness and purchase intention.

Summing up Experiment 2
Confirming the results from Experiment 1, the results showed that bundles generally were not more positively evaluated than the separate anchor product on quality, attractiveness and purchase intention. The positive effect of complementarity between bundle products found in Experiment 1 remained when the participants had purchase plans. Bundles with functionally related products were evaluated more positively on quality,
attractiveness, and purchase intention than bundles with products from the same category and bundles with unrelated products.

In addition, the price similarity had the same effect as in Experiment 1. The results showed that bundles with equally priced products were more positively evaluated than bundles with small and large price difference between products.

The exceptions to the main results were some bundles consisting of products that are functionally related (the DVD player with the expensive TV and the digital camera with the camera case) or have a by-product that in itself is very attractive, in this case the inexpensive bicycle.

Some of the qualifications of the main results are the same as in Experiment 1. However, there were also results that differed from the first experiment. Below a discussion about the similarities and differences in results of the two experiments is presented.

Comparison between Experiments 1 and 2
The participants in Experiment 2 evaluated the separate products as positive as, or more positively than, the participants in Experiment 1 did. This is an expected effect since the participants in Experiment 2 were instructed to evaluate the products as if they had a need for them and this indicates that the manipulation worked. The functional relation and price similarity between bundle products had the same main effects on evaluations regardless of whether or not the participants had purchase plans. Some exceptions to the main effects differed between the two experiments. They are considered interesting because they potentially are the effects of whether or not participants had purchase plans when they made the evaluations.

Evaluations of bundles with an exclusive TV and an exclusive DVD player deviated from expectations in both Experiment 1 and 2. This specific product combination existed with both products as anchor product. In Experiment 1, when participants had no purchase plan, evaluations of the two bundles did not differ significantly. In Experiment 2, however, the participants had purchase plans; in one case the plan was to buy a new TV (TV is anchor product) and consider an offer to include a DVD player (DVD player is by-product). In the other case the plan was to buy a new DVD player (DVD player is anchor product) and consider an offer to include a TV (TV is by-product). If purchase plan has no impact on evaluations, ratings would be the same in this experiment, too. However, the results from Experiment 2 showed that bundle were more preferred when the DVD player was anchor product. Since the bundles consist of the same products, the difference in evaluations are likely to stem from the fact that evaluations were made in the light of different stated purchase plans, in accordance with Suri and Monroe (1995). However, the results contradict previous research regarding how anchor product should influence evaluations in a purchase situation.
According to Yadav (1994), the anchor product should have a larger impact on bundle evaluation than the by-product. However, separate product evaluations show that the TV is more attractive and give higher purchase intention than the DVD player, which implies that the bundle with a TV as anchor should be higher rated. Hence there ought to be another explanation than insufficient adjustment from anchor product evaluation explaining the results. A possible explanation for this difference in evaluations is that in order to enjoy the benefits of a high quality DVD player, for example a sharp picture, a good sound etc., there is a need for a good TV as well. But it is possible to enjoy the benefits of a good TV without having a high quality DVD player, since the superior quality of sound and picture can be enjoyed watching TV shows. This suggestion is supported by the result that evaluations are more positive for bundles with an exclusive TV and low-budget DVD player than the evaluations of bundles with an exclusive DVD player and a low-budget TV. It is less appealing to have a good DVD player without a high quality TV than to have a high quality TV and a poor DVD player. Sheng and Pan (2009) support the idea that the dependence between bundle products may influence evaluations. They showed that the quality of a familiar bundle product influence the quality perceptions of another unfamiliar bundle product and proposes that this effect may be affected by whether the familiar product is dependent or not on the other product in usage.

Bundles with an exclusive TV and an exclusive digital camera also exist with both products as anchor products. In this case there are no significant differences in ratings between bundles with different anchor product, though. This supports the suggestion that it is the dependency between products that determine the effect of anchor product. As there is no dependency between a TV and a digital camera, it does not matter whether the TV or the camera are anchor product.

A result that differed between the experiments was that in Experiment 2, bundle with a low-budget bicycle had higher ratings than expected on attractiveness and purchase intention. However, only bundles with a TV or a DVD player in combination with a low-budget bicycle were rated high. When the bicycle was combined with the digital camera, the bundle evaluations were consistent with the main effect. As the experiment was conducted with a student sample, it can be assumed that an exclusive digital camera is considered a more luxury product than a TV or a DVD player, which more or less are standard products in households. (Especially in 2006 when the experiment was conducted, the market for digital cameras was growing rapidly, and analogue cameras were still on the market.) Conceivably, when consumers have plans to purchase a TV or a DVD player which are basic everyday products, a low-budget bicycle which is also a commonplace product may be more attractive to include in a bundle. On the other hand, if
the plan is to purchase an exclusive digital camera, consumers may have a special interest in photography and may therefore not be interested in a low-budget bicycle in the bundle. The digital camera may be categorized as a luxury product, while the TV, the DVD player, and the bicycle are categorized as utility articles.

The results discussed here were considered large and important enough to warrant for a new experiment as follow up to test the proposed explanations of the results. The specific aim of the experiment was to explore the effect of dependency of anchor product and the effect of similarity in level of luxury on consumer evaluations.

Experiment 3 – exploring findings from previous experiments

In Experiment 3, complementarity is further explored based on the findings from the first two experiments. The results from Experiment 1 and 2 suggested that the level of luxury of the products might influence the evaluation of the bundle. The participants were not interested in a bundle with an exclusive camera and a low-budget bicycle, but they found the bundles with a TV or a DVD player and a low-budget bicycle attractive. The proposed possible explanation is that the digital camera was considered more luxury than the TV and the DVD player. The results could then indicate that bundles with products of matching level of luxury are more attractive than bundles with products with different level of luxury.

A third experiment was conducted to investigate if the proposed explanations for the results hold. Thus, the first research question investigated in this experiment is:

- How do similarity in level of luxury between anchor product and by-product influence consumers' preferences for bundles?

To answer the first question, the exclusive products from the first two experiments were substituted by even more luxury alternatives. Even though the products used in the previous experiment were exclusive, they were not top-of-the-line on the market. The new products had more and better features and were more expensive than in the first two experiments. It is important to recognize that price is a strong indicator of luxury, but the price must be accompanied by other qualities such as top-of-the-line features and design to be considered luxury. Also, brand is an important carrier of values such as luxury. However, no brand information was given for these products either due to the risk of confounding effects. TVs and DVD players exist in almost every household in Sweden but the price, quality, and features vary. It is likely that individuals with different incomes, life situation, etc. spend different amounts of money on electronic devices. What is considered a
luxury product by one individual might only fulfill minimum requirements for another. For example, Piron (2000) argue that a product, such as a mobile phone, can be viewed as necessity in a developed country, but be considered a luxury in developing economies. A TV or a DVD player might need to be more expensive than the ones in the experiment to be considered luxury, while the digital camera in the experiment was considered luxury. It should be noted that other consumer groups might have another price level as cut-off level for experiencing the products as luxury.

Also suggested in the previous experiments is that bundles with an anchor product that is not dependent on the by-product to function are affected differently by the quality of a functionally related by-product than bundles with anchor products that are dependent on the by-product to function. Bundles with a dependent anchor need a by-product with matching level of quality and features to be appealing, while this is not necessary for bundles with an independent anchor product. The issue is further investigated by answering the following research question:

- How do the dependency between anchor product and by-product influence consumers’ preferences for bundles?

The influence of dependency of anchor product is replicated and extended compared to previous experiments by adding evaluations of one more bundle with a dependent anchor product, a photo printer. Based on results from the previous experiment, it is proposed that ratings of bundles with a dependent anchor product (DVD player or photo printer) are positively affected by having an exclusive by-product while bundles with an independent anchor product (TV or digital camera) may as well have a low-budget by-product.

**Method**

**Participants**

In the third experiment yet another seventy-two (39 or 54% female) undergraduates studying business administration at Umeå University were recruited in classes. They answered a booklet and received SEK 50 in compensation. The participants were randomly assigned to three groups with sex approximately balanced. The average age among the participants were 23 years, the youngest being 21 and the oldest 38 years old.

**Design**

The experimental design consisted of two within-groups factors, similarity in level of luxury of bundle products (luxury anchor product and luxury by-product vs. luxury anchor product and low-budget by-product vs. low-budget
anchor product and low-budget by-product) and functional relation between anchor product and by-product (functional relation vs. same category vs. unrelated), see Table 10. One between-groups factor was dependency of the anchor product (independent anchor product vs. dependent anchor product), which is determined by whether or not a product needs another product to function. The bundles were evaluated on three dependent variables: quality, attractiveness, and purchase intention. The separate products were evaluated on appearance, quality, luxury, exclusiveness, attractiveness and purchase intention. As the reliability of the variable quality as an overall measure of perceived product quality had been established in the previous two experiments, only one variable was included in the present experiment. Two measures of luxury were included to increase the reliability: luxury and exclusiveness.

Table 10. Within-groups factors in the experimental design (Experiment 3).

<table>
<thead>
<tr>
<th>Level of luxury of the anchor product</th>
<th>Level of luxury of the by-product</th>
<th>Relation between anchor product and by-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Luxury</td>
<td>Luxury</td>
<td>Functionally related</td>
</tr>
<tr>
<td>B Luxury</td>
<td>Luxury</td>
<td>Same product category</td>
</tr>
<tr>
<td>C Luxury</td>
<td>Luxury</td>
<td>Unrelated</td>
</tr>
<tr>
<td>D Luxury</td>
<td>Low-budget</td>
<td>Functionally related</td>
</tr>
<tr>
<td>E Luxury</td>
<td>Low-budget</td>
<td>Same product category</td>
</tr>
<tr>
<td>F Luxury</td>
<td>Low-budget</td>
<td>Unrelated</td>
</tr>
<tr>
<td>G Low-budget</td>
<td>Low-budget</td>
<td>Functionally related</td>
</tr>
<tr>
<td>H Low-budget</td>
<td>Low-budget</td>
<td>Same product category</td>
</tr>
<tr>
<td>I Low-budget</td>
<td>Low-budget</td>
<td>Unrelated</td>
</tr>
</tbody>
</table>

Material
The bundles used in the experiment are listed in Table 11. The bundles were composed of combinations of 10 different products. The participants also evaluated every product separately. The distraction task consisted of an unrelated task concerning estimations of price changes due to inflation.

Compared to the previous experiments, some of the products in Experiment 5 were new. The exclusive alternatives of TV, DVD player, bicycle, digital camera and photo printer were replaced with more expensive, higher quality products than in the previous experiments. In addition to previous experiments, bundles with a photo printer as anchor product were also evaluated, see Table 11. That is, the participants were asked to imagine they had plans to purchase a photo printer in the scenarios. Like the previous experiments, all products existed on the market at the time and no products had visible brand names.
Table 11. Description of the bundles (Experiment 3).

<table>
<thead>
<tr>
<th>TV</th>
<th>DVD player</th>
<th>Digital camera</th>
<th>Photo printer</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Luxury TV and Luxury DVD player</td>
<td>Luxury DVD player and Luxury TV</td>
<td>Luxury D. camera and Luxury Ph. printer and Luxury D. camera</td>
</tr>
<tr>
<td>B</td>
<td>Luxury TV and Luxury D. camera</td>
<td>Luxury DVD player and Luxury D. camera</td>
<td>Luxury D. camera and Luxury TV and Luxury TV</td>
</tr>
<tr>
<td>C</td>
<td>Luxury TV and Luxury Bicycle</td>
<td>Luxury DVD player and Luxury Bicycle</td>
<td>Luxury D. camera and Luxury Bicycle</td>
</tr>
<tr>
<td>D</td>
<td>Luxury TV and Low-budget DVD player, Luxury TV and Low-budget D. camera</td>
<td>Luxury DVD player and Low-budget TV and Low-budget D. camera</td>
<td>Luxury D. camera and Low-budget TV and Low-budget D. camera</td>
</tr>
<tr>
<td>E</td>
<td>Luxury TV and Low-budget D. camera</td>
<td>Luxury DVD player and Low-budget D. camera</td>
<td>Luxury D. camera and Low-budget TV</td>
</tr>
<tr>
<td>F</td>
<td>Luxury TV and Low-budget Bicycle</td>
<td>Luxury DVD player and Low-budget Bicycle</td>
<td>Luxury D. camera and Low-budget Bicycle</td>
</tr>
<tr>
<td>G</td>
<td>Low-budget TV and Low-budget DVD player, Low-budget TV and Low-budget Digital camera</td>
<td>Low-budget DVD player and Low-budget TV and Low-budget Digital camera</td>
<td>Low-budget D. camera and Low-budget Photo printer and Low-budget D. camera</td>
</tr>
<tr>
<td>H</td>
<td>Low-budget TV and Low-budget D. camera</td>
<td>Low-budget DVD player and Low-budget D. camera</td>
<td>Low-budget Digital camera and Low-budget TV</td>
</tr>
<tr>
<td>I</td>
<td>Low-budget TV and Low-budget Bicycle</td>
<td>Low-budget DVD player and Low-budget Bicycle</td>
<td>Low-budget Digital camera and Low-budget Bicycle</td>
</tr>
</tbody>
</table>

Procedure

The booklet consisted of three sections: evaluations of product bundles, evaluations of separate products and a distraction task. In addition the participants answered background questions about themselves, their knowledge and experience of different products, see Appendices II-III and V for illustrations.

All participants first answered background questions, stated their knowledge of and experience with products and their acquisition order for those products. Half of the participants answered the rest of the questions in the order bundle evaluations – distraction task – separate product evaluations; the other half of the participants answered the questions in the order separate product evaluations – distraction task – bundle evaluations. There was only one bundle or separate product on each page and the participants were instructed not to go back to previously answered questions once they had turned a page. I and one other experimenter were present in the classroom to answer questions and make sure that instructions were followed. The booklet took approximately 15 minutes to complete.

The participants evaluated nine bundles, consisting of one anchor product (TV, DVD player, digital camera or photo printer) and one by-product. The products were presented with a picture, a short specification of features and their economic value in the bundle. The price of the products in the bundle was the sum of the value of the separate products. The participants were presented a scenario: “Imagine you have decided to buy an [anchor product] and visit a store for electronic devises. In the store you notice an
offer to buy a [anchor product] and a [by-product] for XXX SEK. The [anchor product] has a value of XXX SEK in the bundle and the [by-product] has a value of XXX SEK.” The participants rated the bundles on nine-step scales on how they perceived the quality and attractiveness of the bundle and how likely they were to purchase the bundle.

The products included in the bundles were also evaluated separately by all participants. The products were presented in the same way as in the bundles, with a picture, a short specification of features and price. The participants were asked to imagine they needed the products in question by the same scenario as in Experiment 4: “Imagine you need to buy a [product] and goes to a store. In the store you see the following offer.” The products were evaluated on a nine-step scale on the perceived quality, luxury, exclusiveness, attractiveness, and how likely the participants were to purchase them.

In between the evaluations of bundles and separate products the participants answered a distraction task about price changes. They estimated how much sets of products, not related to the experiment, would cost in a year, given their present price and the price one year ago.

Manipulation check
In order to check whether the manipulation was successful, measures of exclusiveness and luxury for exclusive and low-budget products were compared. The results showed that the variables exclusiveness and luxury were always rated significantly higher for exclusive than low-budget products. The ratings of exclusiveness and luxury followed each other closely; on average the difference between them was 0.3, the largest difference in rating being 0.5 on a nine-step scale. Hence, exclusive products were generally perceived as more luxury than low-budget products and in that sense the manipulation was successful.

However, a Paired-Samples t-test showed that not all exclusive products were perceived as equally luxury. The TV was considered less exclusive than the DVD player and the digital camera, but not less luxury. Also, the bicycle was rated lower on both exclusiveness and luxury than the digital camera. Thus, the perceived luxury differed between the products so that the digital camera and the DVD player were perceived as most luxury and the bicycle as least luxury (but still luxury compared to the low-budget bicycle).

Results
The participants evaluated bundles on the dependent variables quality, attractiveness and purchase intention. Bundles with an exclusive anchor product (combined with an exclusive by-product or a low-budget by-product) had higher ratings of quality than of attractiveness, which in turn was rated higher than purchase intention ($M_Q = 6.9$ vs. $M_A = 4.5$ vs. $M_P = 2.5$;
$M_Q = 5.1$ vs. $M_A = 4.0$ vs. $M_P = 2.9$). Bundles with two low-budget products had highest ratings on attractiveness ($M_Q = 3.7$ vs. $M_A = 4.0$ vs. $M_P = 3.6$).

Separate products were evaluated on the same dependent variables as bundles (quality, attractiveness, and purchase intention). Exclusive products were rated higher on quality than on attractiveness, which in turn were higher rated than purchase intention. Low-budget products had highest ratings on attractiveness followed by purchase intention and lowest on quality (see Table 3 in Appendix I for mean values of separate product evaluations). Evaluations of separate products were included mainly to enable manipulation checks for level of perceived luxury. As comparisons between evaluations of bundles and separate products have been made in the previous two experiments, no further analyses of separate products are conducted. Similar to previous experiment, the appearance of separate products were evaluated in order to control if the aesthetics influenced evaluations. Analyses showed that appearance did not have a confounding influence on evaluations and was disregarded in the subsequent analyses. Similarly, knowledge and experience did not seem to influence evaluations and were not included in the analyses.

**Bundle evaluations**

The results of the bundle evaluations showed a main effect of similarity in level of **luxury** between the bundle products restricted to quality and purchase intention. As expected, bundles consisting of two exclusive products were more positively evaluated on quality than bundles with a low-budget by-product, which in turn were more positively evaluated than bundles consisting of two low-budget products ($M_{LL} = 6.9$ vs. $M_{LB} = 5.1$ vs. $M_{BB} = 3.7$). Ratings of purchase intentions were reversed; bundles consisting of two low-budget products had the highest ratings, followed by bundles with a low-budget by-product, which in turn had higher ratings than bundles with two exclusive products ($M_{LL} = 2.5$ vs. $M_{LB} = 2.9$ vs. $M_{BB} = 3.6$). This main effect reached significance in a MANOVA, $F(6, 63) = 39.01, p > .001$, as well as in univariate ANOVAs, $F(2, 136; \text{Greenhouse-Geisser } \epsilon = .80) = 137.93, p < .001$ for quality and $F(2, 136; \text{Greenhouse-Geisser } \epsilon = .88) = 8.65, p < .001$ for purchase intention. The proposition that bundles with products of similar level of luxury would be more positively evaluated was thus not met, in which case bundles with two exclusive or two low-budget products would be more positively evaluated than bundles with one exclusive and one low-budget product. Instead of similarity in level of luxury, it seems like overall level of bundle luxury had the largest effect on bundle evaluations. The results showed that the more low-budget products in the bundles the lower is the perceived quality. As for purchase intention the effect of level of luxury is inverted, that is, the more luxury products the lower purchase intention, demonstrating the importance of price on purchase intentions. It seems like
price level has a larger impact than similarity in level of luxury. The results are possibly influenced by the fact that the participants were students that cannot afford to pay for premium quality. Unfortunately, the manipulation of perceived luxury of the products was not entirely successful, as the perceptions of level of luxury of the luxury products varied quite much. Interpretations of the results should therefore be made with caution.

There was also a main effect of functional relation on quality, attractiveness and purchase intention. The results replicated the results from the previous experiments in that bundles consisting of functionally related products were evaluated more positively than bundles with products from the same category, which in turn were more positively evaluated than bundles consisting of unrelated products ($M_F = 5.4$ vs. $M_C = 5.2$ vs. $M_U = 5.1$ for quality, $M_F = 4.4$ vs. $M_C = 4.3$ vs. $M_U = 3.9$ for attractiveness, and $M_F = 3.1$ vs. $M_C = 3.0$ vs. $M_U = 2.8$ for purchase intention). The results were not significant in the MANOVA but in the univariate ANOVAs; $F(2, 136; \text{Greenhouse-Geisser } \epsilon = .96) = 3.98, p = .021$ for quality, $F(2, 136; \text{Greenhouse-Geisser } \epsilon = 1.00) = 5.54, p = .005$ for attractiveness, and $F(2, 136; \text{Greenhouse-Geisser } \epsilon = .93) = 3.51, p = .033$ for purchase intention.

As expected there was no significant main effect of dependency of anchor product on evaluations. The effect of dependency was expected to interact with level of luxury of by-product and functional relation between bundle products. That is, only bundles of functionally related products were assumed to be influenced by dependency and, in addition, the evaluations were supposed to differ depending on whether the by-product was luxury or low-budget. The results showed the expected three-way interaction between level of luxury, functional relation, and dependency of anchor product, illustrated in the first two columns in Figure 11 and, in addition, a two-way interaction between level of luxury and dependency of anchor product (column three in Figure 11). The interactions were not significant in the MANOVA, but in the univariate ANOVAs with some exceptions. The interaction between level of luxury and dependency was significant for attractiveness and purchase intention, $F(2, 140; \text{Greenhouse-Geisser } \epsilon = .82) = 3.16, p = .046$ for attractiveness and $F(2, 140; \text{Greenhouse-Geisser } \epsilon = .83) = 3.42, p = .036$ for purchase intention. The three-way interaction reached significance only for attractiveness $F(4, 280; \text{Greenhouse-Geisser } \epsilon = .96) = 3.06, p = .017$. To explore the effect of dependency, Bonferroni-adjusted $t$-tests were conducted. They showed no significant differences between functionally related bundles depending on whether the dependent or the independent product was anchor product when both products were luxury. This result differs from the result in Experiment 2, where bundles with a dependent anchor had more positive evaluations. However, when the bundles consisted of a low-budget by-product, the effect of dependency was according to expectations; bundles with a dependent anchor product and a
low-budget by-product were less attractive than bundles with an independent anchor and a low-budget by-product. As the dependent product need the by-product it is important that the quality and features of the by-product match those of the anchor product.

Figure 11. Three-way interaction (Experiment 3). The effects of dependency of anchor product, luxury of products and relation between products on judgments of bundle quality, attractiveness and purchase intention.
There was also an interaction between functional relation and luxury which reached significance in the MANOVA, $F(12, 59) = 3.21, p = .001$ as well as in the univariate ANOVAs, $F(4, 280; \text{Greenhouse-Geisser } \varepsilon = .95) = 3.16, p = .022$ for quality, $F(4, 280; \text{Greenhouse-Geisser } \varepsilon = .96) = 15.53, p < .001$ for attractiveness, and $F(4, 280; \text{Greenhouse-Geisser } \varepsilon = .93) = 5.94, p = .021$ for purchase intention. The interaction chiefly occurs because of a low rating of quality for luxury unrelated bundles, and because of unexpectedly high ratings of attractiveness and purchase intention for bundles consisting of a luxury TV and a luxury digital camera and, in congruity with results from previous experiments, of bundles containing the low-budget bicycle. The luxury TV, the luxury digital camera, and the low-budget bicycle had the highest ratings on attractiveness and purchase intention as separate products as well, which may explain the effect.

**Summing up Experiment 3**

The results again confirmed the positive effect of complementarity on bundle evaluations. However, similarity in level of luxury did not have the expected effect on evaluations. Rather than similarity in level of luxury it seems overall level of bundle luxury influenced evaluations.

There was no main effect of dependency, which means that quality, attractiveness, and purchase intention was the same regardless of whether the bundles had dependent or independent anchor products. This is in accordance with expectations based on results from Experiment 2 as the effect of dependent or independent anchor products is only applicable for functionally related bundles. This interaction also existed. Bundles with one luxury and one low-budget product and an independent anchor were more attractive than corresponding bundle with a dependent anchor when bundle products were functionally related (or from the same product category). For less complementary bundles, there was no difference in attractiveness between dependent and independent anchor products. When bundle products are unrelated, it is unimportant whether or not the anchor product is dependent on another product to function as the products are not used together anyway; dependency only matters for bundles with complementary products.

**Experiment 4 – investigating satisfaction**

Up until now, the effect of different aspects of complementarity on consumer preferences has been investigated. However, in order to get a better picture about whether and how consumers value bundles it is also important to understand how bundling and complementarity affect satisfaction. Therefore, in Experiment 4, consumer evaluations are extended beyond preferences to include consumers’ post-purchase evaluations. Thus, a main
contribution of this experiment is to answer the following research questions:

- How do different types of complementarity influence consumers’ preferences for and satisfaction with bundles?
- How do different degrees of complementarity influence consumers’ preferences for and satisfaction with bundles?

The concept complementarity is further explored by including measures of how well bundle products are perceived to fit together, which will help determine the effect of degree of complementarity on evaluations. The present experiment also tests the strength of previous results as it replicates major parts of the three first experiments in new industries and with a sample more representative of Swedish consumers. The new industries included, other than electronic devices, are groceries and leisure activities and bundles with two different anchor products from each industry are investigated. Instead of using a student sample for the evaluations, members of a consumer panel who are more representative of the Swedish population evaluated the bundles.

Preferences were measured in the same manner as in previous experiments; by ratings of perceived quality, attractiveness, and purchase intention. As ease or difficulty in categorizing has been put forward as a possible explanation to why unrelated bundles are less preferred than complementary bundles. In this experiment, measures of information processing is included as a variable to control if the evaluation process is more fluent for complementary than unrelated bundles.

Participants were also asked to rate the expected satisfaction with a bundle purchase. A strong correlation between stated purchase intention and satisfaction with a purchase should perhaps be expected. However, a reason why purchase intention and satisfaction may not correlate is in case something unexpected happens after purchase. For example, because one product breaks, gets lost, or for some other reason is not used. Linking this reasoning with bundle complementarity, one can argue that not using one product in a complementary bundle may affect satisfaction more negatively than if the products were unrelated. Since complementarity is valued by consumers, and the complementarity disappears if one product in a complementary bundle cannot be used, the added value of that bundle is lost. In comparison, unrelated bundles are not as valued by consumers and, thereby, not using one of the products would not affect satisfaction as much.
**Method**

**Participants**
In Experiment 4, a more representative sample than the previous student sample was used as a means of testing the robustness of previous results. The participants were recruited from a consumer panel owned by a Swedish research company (NORM). The panel consists of 14,000 individuals, both male and female, living in Sweden. In the experiment, the participants answered a web-survey earning points exchangeable for lottery or movie tickets. They were randomly assigned to eight groups of approximately the same size; six groups who evaluated bundles with varying anchor products and two groups who evaluated separate products.

A total of 3,744 panel members were invited to participate, 767 of them started to fill out the questionnaire and 393 completed it, yielding a response rate of 10 per cent. The average age of the participants was 42 years, ranging from 18 to 73 years, and 52 per cent of them were women. About two-thirds, or 69 per cent, were married or living together with their partner. Approximately 75 per cent of the participants worked full or part time, ten per cent studied or did military service, and eight per cent were retired. The sample is representative of the Swedish population with respect to age distribution and living situation but the participants are better educated than the overall population (comparisons made with SCB statistics).

**Design**
Basically the same research design as in previous experiments was used; an experimental design consisting of one within-groups factor, complementarity between products (complementary or unrelated) and one between-groups factor, anchor product (digital camera, TV, pre-made lunch, filet meat, movie tickets, and swimming pool entrance) was employed. Bundles from three industries were included (electronic devises, groceries, and leisure activities) as a way of testing the robustness of previous results. In this experiment, bundle complementarity only varied in two levels in order to simplify the analysis since the previous experiments established that complementarity is not a black-or-white phenomenon. In addition, the question of complementarity as a continuous construct is addressed in the present experiment by ratings of complementarity between bundle products.

The participants evaluated both bundles and separate products in a purchase setting. As fluency in the categorization process is here suggested as a major impact on preferences (Mandler 1982; Schwarz 2004), a measure of the effort put into evaluating separate products and bundles was included. Information processing was examined by means of ratings of how much participants would need to think before making a purchase decision and the extent to which they judge the provided product information helpful in
making a good decision. Pre-purchase evaluations were the same as previously; quality, attractiveness, and purchase intention for both bundles and separate products. In addition, to capture post-purchase evaluations, participants were asked to rate how satisfied they would be if they purchased a bundle/separate product. A second measure of post-purchase evaluations was also included, which was somewhat different for bundles and separate products. Participants rated how satisfied they would be with a bundle purchase if they for some reason could not use the by-product and how satisfied they would be with a purchase of a separate product if it could not be used. In addition, bundles were evaluated on how well the bundle products complement each other.

Table 12. Description of bundles (Experiment 4).

<table>
<thead>
<tr>
<th>Anchor product</th>
<th>Complementary by-product</th>
<th>Unrelated by-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital camera</td>
<td>Photo printer</td>
<td>Bicycle</td>
</tr>
<tr>
<td></td>
<td>Digital photo frame</td>
<td>Duvet</td>
</tr>
<tr>
<td></td>
<td>Memory card</td>
<td>Suitcase</td>
</tr>
<tr>
<td>TV</td>
<td>DVD-player</td>
<td>Bicycle</td>
</tr>
<tr>
<td></td>
<td>Bracket</td>
<td>Duvet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suitcase</td>
</tr>
<tr>
<td>Pre-made lunch</td>
<td>Drink of choice</td>
<td>Light bulbs</td>
</tr>
<tr>
<td></td>
<td>Café latte</td>
<td>Shower gel</td>
</tr>
<tr>
<td></td>
<td>Dessert cookie</td>
<td>Note book</td>
</tr>
<tr>
<td>Filet meat</td>
<td>Sauce mixture</td>
<td>Light bulbs</td>
</tr>
<tr>
<td></td>
<td>Potato croquettes</td>
<td>Shower gel</td>
</tr>
<tr>
<td></td>
<td>Packaged chopped lettuce</td>
<td>Note book</td>
</tr>
<tr>
<td>Movie ticket</td>
<td>Soft drink</td>
<td>Lottery ticket “Sverigelott”</td>
</tr>
<tr>
<td></td>
<td>Popcorn</td>
<td>Round of mini golf</td>
</tr>
<tr>
<td></td>
<td>Savoury snack</td>
<td>Rent-a-workshop</td>
</tr>
<tr>
<td>Swimming pool entrance</td>
<td>Ice cream</td>
<td>Lottery ticket “Sverigelott”</td>
</tr>
<tr>
<td></td>
<td>Time in sunroom</td>
<td>Round of mini golf</td>
</tr>
<tr>
<td></td>
<td>Work out session</td>
<td>Rent-a-workshop</td>
</tr>
</tbody>
</table>

Material
In total 35 two-product bundles, consisting of 32 different products, were evaluated in the experiment. Each product was evaluated separately as well as in combination with other products. All products existed on the market at the time of the experiment. Table 12 shows a description of the bundles. As can be noted, there were only two complementary by-products in the TV bundles because of problems finding suitable products. The digital camera has two less expensive by-products while the TV only has one. In the subsequent analysis of data, optimally the collection of by-products would be similar for the digital camera and the TV. To achieve that one less expensive, complementary by-product would be needed for the TV. As a way to make up for the missing by-product, evaluations of the bundle with a TV and a bracket were given double weight when aggregating the evaluations. This acting has consequences for the subsequent analyses as the bundle with a TV
and a bracket was relatively positively evaluated. The consequences are discussed further in the Results section.

**Procedure**
The participants, who were members of a consumer panel, were contacted through an e-mail in April 2008. Included in the e-mail was a link to a web-based questionnaire. The questionnaire consisted of evaluations of either bundles or separate products followed by background questions about the participants. It was judged as settled in previous experiments that knowledge about and experience with products had no systematic effect evaluations. Therefore, no such ratings were included in the background questions in the present experiment. The order with which the bundles or products appeared was randomized. There was only one bundle or separate product on each page and the participants could not go back to previously answered questions once they had pressed a “next” button. The survey took approximately twenty minutes to complete.

The participants assessed between ten and twelve bundles, consisting of an anchor product and a by-product, or sixteen separate products. As a distraction and to reduce the amount of repetition in the bundle evaluations, each participant evaluated an equal amount of bundles with another anchor product that were not included in the subsequent analyses. That is, each participant evaluated twice the number of bundles included in the analysis. See Table 13 for information about what bundles the groups evaluated (distraction bundles in brackets).

**Table 13. Between-groups information (Experiment 4).**

<table>
<thead>
<tr>
<th>Type of evaluations</th>
<th>Anchor product</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bundle</td>
<td>Digital camera (and pre-made lunch)</td>
<td>30</td>
</tr>
<tr>
<td>Bundle</td>
<td>Movie ticket (and digital camera)</td>
<td>30</td>
</tr>
<tr>
<td>Bundle</td>
<td>Pre-made lunch (and movie ticket)</td>
<td>30</td>
</tr>
<tr>
<td>Bundle</td>
<td>TV (and filet meat)</td>
<td>30</td>
</tr>
<tr>
<td>Bundle</td>
<td>Swimming pool entrance (and TV)</td>
<td>30</td>
</tr>
<tr>
<td>Bundle</td>
<td>Filet meat (and swimming pool entrance)</td>
<td>30</td>
</tr>
<tr>
<td>Separate product</td>
<td>Digital camera, pre-made lunch, and movie ticket</td>
<td>30</td>
</tr>
<tr>
<td>Separate product</td>
<td>TV, filet meat, and swimming pool entrance</td>
<td>30</td>
</tr>
</tbody>
</table>

The bundle products were presented with a picture, brief information about features or materials, and their economic value in the bundle. Any brand name or other information making possible to identify the brand were excluded. The prices of the products were typical for products on the market. The price of the bundle was equal to the sum of the prices of the separate products. The scenario presented to the participants was describes as follows: *Imagine that you need to purchase a [anchor product] and visit a store. In the store you notice an offer to buy a [anchor product] and a [by-
product] for SEK XXX. The regular sales price for the products is higher, but in the bundle the value of the [anchor product] is SEK XXX and the [by-product] SEK XXX.”

Each participant evaluated the bundles by rating perceived product complementarity, how much they would need to think before making a purchase decision, the extent to which the information provided about the bundle products helped them make a good decision, the perceived quality and attractiveness of the bundles, and how likely they would be to purchase the bundles for the stated price. Participants were then asked to imagine that they had purchased the bundle before rating how satisfied they would be with the purchase and their satisfaction if the by-product in the bundle for some reason could not be used. All ratings were made on nine-step scales.

Similar to bundles, separate products were presented with a picture, brief information about features or materials, and price. The participants were instructed to imagine they had a need for the product in question: “Imagine you need to buy a [product] and visit a store. In the store you notice the following offer.” Except for the question about complementarity, which for natural reasons cannot be determined for a separate product, the participants rated separate products on the same variables on the same scales as they did bundles.

**Results**

**Manipulation check**

Partly as a means of determining if the complementary bundles from the new industries included in the experiment were actually perceived as complementarity, participants were asked to rate how much they thought bundle products complemented each other. (The ratings are also used in analyses about the effect of complementarity on evaluations.) The mean ratings of bundles with complementary products were 6.4 compared to 1.9 for bundles with unrelated products, see Table 14. The manipulation complementary vs. unrelated bundles was effective as shown by a significant main effect of complementarity in a 6 (anchor product) by 2 (complementary vs. unrelated by-product) analysis of variance (ANOVA), $F(1, 173) = 952.04, p < .001$. For all anchor products the differences between related and unrelated bundles were significant in Bonferroni-adjusted t-tests at $p = .05$.

However, there was a large difference in perceived complementarity between bundles with different anchor products, which shows that the degree of complementarity of the bundles covers a large span. This main effect was significant in the ANOVA, $F(5, 173) = 12.21, p < .001$.

In addition, the results of the ANOVA also showed that there was a significant interaction between complementarity and anchor product,
interaction effect occurred mainly because of the large differences in ratings between complementary and unrelated TV bundles and the small difference between complementary and unrelated bundles with a movie ticket or swimming pool entrance. This means the manipulation was most effective for TV bundles and least effective for bundles with a movie ticket or entrance to swimming pools.

Table 14. Evaluations of complementarity between products in related and unrelated bundles (Experiment 4).

<table>
<thead>
<tr>
<th>Anchor product</th>
<th>Complementary</th>
<th>Unrelated</th>
<th>All bundles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Digital camera</td>
<td>7.0a/b, a</td>
<td>2.3a/b, b</td>
<td>4.7a, 1.0</td>
</tr>
<tr>
<td>TV</td>
<td>8.0a, a</td>
<td>2.2a/b, b</td>
<td>5.1a, 1.1</td>
</tr>
<tr>
<td>Pre-made lunch</td>
<td>5.6c/d, a</td>
<td>1.4b, b</td>
<td>3.5b, 1.1</td>
</tr>
<tr>
<td>Filet meat</td>
<td>6.4c/d, a</td>
<td>1.4b, b</td>
<td>3.9a, 1.2</td>
</tr>
<tr>
<td>Movie ticket</td>
<td>5.0c/d, a</td>
<td>1.6b, b</td>
<td>3.3a, 1.3</td>
</tr>
<tr>
<td>Entrance to swimming pools</td>
<td>6.1c/d, a</td>
<td>2.7a, b</td>
<td>4.4a, 0.8</td>
</tr>
<tr>
<td>Total</td>
<td>6.4</td>
<td>1.9</td>
<td>4.2</td>
</tr>
</tbody>
</table>

Note. Means in the same column that do not share first subscripts differ at $p < .05$ in independent $t$-tests. Bundle means in the same row that do not share second subscripts differ at $p < .05$ in paired $t$-tests.

Information processing

The effect of relation between bundle products on information processing was investigated with the dependent variable need to think. To test whether a great need to think was due to unclear or insufficient information about the products, an analysis of correlation between need to think and stated information helpfulness was conducted. The results showed that the correlation between the variables were low, varying from .005 to .416, with an average of .188. This indicates that the perceived need to think was not affected by how helpful the provided information was perceived to be.

To test how need to think was influenced by the complementarity between bundle products a 6 (anchor product) by 2 (complementary vs. unrelated by-product) analysis of variance (ANOVA) was conducted. The results showed that the participants estimated need to think before making a purchase decision as higher for bundles with complementary products than bundles with unrelated products ($M_C = 3.4$ vs. $M_U = 2.4$). The effect was significant in the ANOVA, $F(1, 173) = 50.49, p < .001$. Thus, the participants put more effort in making a purchase decision about complementary than unrelated bundles. One possible explanation for this may be that participants evaluate each product and in addition how the products fit together. Potential product fit is not an issue for unrelated bundles as there clearly is no fit between the products. Another explanation is that the participants do not find the unrelated bundle attractive (according to results...
about the effect of complementarity on preferences) and therefore do not bother go through the process of evaluating unrelated bundles thoroughly.

There was also a significant main effect of anchor product, $F(5, 173) = 2.57$, $p = .028$. However, the Bonferroni-adjusted $t$-tests showed no significant differences between the anchor products. Closest to being significant was the difference between bundles with a digital camera and bundles with a movie ticket ($p = .053$) or pre-made lunch ($p = .109$). That is, the participants possibly need to think more before purchasing a bundle with a digital camera than a bundle with a movie ticket or a pre-made lunch ($M_{DC} = 3.8$ vs. $M_{MT} = 2.5$ or $M_{MP-ML} = 2.6$). As bundles with a digital camera are more expensive the decision may be considered more important and hence worth putting effort into. In addition, a digital camera is a more technically advanced product than movie tickets or a pre-made lunch, with more specifications and demanding information to process, which adds to the complexity of evaluation. The results are in line with previous research showing that durable products are evaluated in a more extensive manner. However, as the Bonferroni-adjusted $t$-tests only showed marginal significance, the results are merely indicative.

The main effects were moderated by the two-way interaction complementarity by anchor product that reached significance, $F(5, 173) = 3.00$, $p = .013$. Bonferroni-adjusted $t$-tests showed that the interaction effect is mainly accounted for by the large differences between complementary and unrelated bundles with a TV or pre-made lunch. Specifically, participants need much time to make a decision about complementary bundles with a TV and little time to make a decision about unrelated bundles with pre-made lunch. Conceivably, the effort out into deciding about a purchase mirrors the importance of the decision and complexity of the products included as discussed above concerning the main effect of anchor product.

Table 15. Evaluations of need to think for bundles and separate anchor products (Experiment 4).

<table>
<thead>
<tr>
<th>Separate anchor products</th>
<th>Bundles Complementary</th>
<th>Bundles Unrelated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digital camera</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>4.8a (3.1)</td>
<td>4.1a, a, a (2.2)</td>
</tr>
<tr>
<td><strong>TV</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>5.4a (2.7)</td>
<td>4.2b, a, a (2.1)</td>
</tr>
<tr>
<td><strong>Pre-made lunch</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>2.8a (1.8)</td>
<td>3.4a, a, a (1.7)</td>
</tr>
<tr>
<td><strong>Filet meat</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>3.3a (2.1)</td>
<td>3.0a, a, a (1.4)</td>
</tr>
<tr>
<td><strong>Movie ticket</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>3.3a (2.0)</td>
<td>2.8a, a, a (1.6)</td>
</tr>
<tr>
<td><strong>Entrance to sw. pools</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>3.0a (2.2)</td>
<td>3.2a, a, a (1.8)</td>
</tr>
</tbody>
</table>

Note. Bundle means in the same row that do not share first subscript with the anchor product means differ from anchor product means at $p < .05$ in independent $t$-tests. Means in the same column that do not share second subscripts differ at $p < .05$ in independent $t$-tests. Bundle means in the same row that do not share third subscripts differ at $p < .05$ in paired $t$-tests.
Evaluations of need-to-think for separate products show that the TV and the digital camera was most demanding to make a purchase decision about, see Table 15. Again, as these products are more expensive and technically complex durables and the evaluation task may therefore be more challenging. In addition, a comparison of ratings of need-to-think between separate products and bundles showed that separate products never were less demanding to evaluate than bundles. The need to think was larger for separate products than for unrelated bundles and, with the exception of bundles with a TV, as large as for complementary bundles. Possibly, participants are less interested in purchasing unrelated bundles than complementary bundles or separate products and therefore do not go through the trouble of processing the information thoroughly.

Preferences for bundles
To investigate how bundles are evaluated before purchase, the perceived quality and attractiveness was rated as well as the purchase intention for the bundles. The results showed that bundles consisting of complementary products were evaluated more positively than bundles consisting of unrelated products ($MC = 5.7$ vs. $MU = 2.8$ for quality, $MC = 4.9$ vs. $MU = 2.2$ for attractiveness, and $MC = 4.1$ vs. $MU = 1.8$ for purchase intention). This main effect of complementarity reached significance in a multivariate analysis of variance (MANOVA), $F(3, 171) = 173.81, p < .001$, as well as in univariate ANOVAs, $F(1, 173) = 458.91, p < .001$ for quality, $F(1, 173) = 408.44, p < .001$ for attractiveness, and $F(1, 171) = 274.79, p < .001$ for purchase intention. This means that the positive effect of complementarity on preferences were confirmed in a wider setting, that is, in additional industries and with a representative sample.

The results also showed a main effect of anchor product on quality and attractiveness. The effect was significant in the MANOVA, $F(15, 472.46) = 4.72, p < .001$ and in univariate ANOVAs restricted to quality and attractiveness, $F(5, 173) = 7.58, p < .001$, for quality and $F(5, 173) = 3.38, p = .006$, for attractiveness. Bonferroni-adjusted $t$-tests showed that the perceived quality was higher for bundles with a digital camera or a TV than for bundles with pre-made lunch, filet meat, or a movie ticket and that the perceived quality of bundles with entrance to swimming pools was higher than bundles with a movie ticket. Moreover, bundles with a TV were perceived as more attractive than bundles with pre-made lunch. A possible explanation for the differences in bundle ratings may be that the bundle products, separately, are perceived as high quality and attractiveness. Comparing with the ratings of the anchor products does not confirm this suggestion, though. Instead, it is the bundles that have the highest ratings of complementarity between bundle product that also are evaluated more
positively, which gives further support for the notion that complementarity has a positive effect on preferences.

A significant two-way interaction complementarity by anchor product was found, $F(15, 472.46) = 3.30, p < .001$, in the MANOVA, and $F(5, 173) = 4.30, p = .001$, for quality, $F(5, 173) = 4.56, p = .001$, for attractiveness, and $F(5, 173) = 4.89, p < .001$, for purchase intention in univariate ANOVAs. The interaction effects are illustrated in Tables 16-18. In short, the interaction is mainly accounted for by the large difference in ratings between complementary and unrelated bundles with a TV or filet meat. Bundles with these to anchor products have the largest difference in ratings between complementary and unrelated bundles for all measures; see Table 16 and Table 17. The interaction occurs because the effect of relation differs in strength between bundles with different anchor products and not because the effect of relation is reversed. Therefore, the interaction does not restrict the major results in this and previous experiments of the effect of relation on preferences. Coinciding with the positive pre-purchase evaluations, complementary bundles with a TV had the highest overall ratings of perceived fit between products, partly caused by high ratings of complementarity for bundles with a TV and a bracket. Furthermore, also the positive evaluations of complementary bundles with filet meat are matched by high ratings of product complementarity. See Table 14 for ratings of complementarity between bundle products.

Table 16. Evaluations of quality for bundles and separate anchor products (Experiment 4).

<table>
<thead>
<tr>
<th>Separate anchor products</th>
<th>Bundles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Complementary</td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
</tr>
<tr>
<td>Digital camera</td>
<td>7.0a (1.8)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>TV</td>
<td>6.5a (1.7)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-made lunch</td>
<td>5.1a (1.9)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Filet meat</td>
<td>7.0a (1.7)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Movie ticket</td>
<td>6.3a (1.9)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrance to sw. pools</td>
<td>7.0a (1.6)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Bundle means in the same row that do not share first subscript with anchor product means differ from anchor product means at $p < .05$ in independent t-tests. Means in the same column that do not share second subscripts differ at $p < .05$ in paired t-tests. Bundle means in the same row that do not share third subscripts differ at $p < .05$ in independent t-tests.
Table 17. Evaluations of attractiveness for bundles and separate anchor products (Experiment 4).

<table>
<thead>
<tr>
<th>Separate anchor products</th>
<th>Bundles</th>
<th>Unrelated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Digital camera</td>
<td>4.6a (2.3)</td>
<td>5.3h/a,h,a (1.2)</td>
</tr>
<tr>
<td>TV</td>
<td>5.2a (2.2)</td>
<td>5.6a,a,a,b (2.1)</td>
</tr>
<tr>
<td>Pre-made lunch</td>
<td>4.6a (2.4)</td>
<td>4.5h/a,a,b (1.7)</td>
</tr>
<tr>
<td>Filet meat</td>
<td>6.7a (2.1)</td>
<td>5.2h/a,a,b (2.1)</td>
</tr>
<tr>
<td>Movie ticket</td>
<td>5.0a (2.3)</td>
<td>4.2h,b,b,a (2.0)</td>
</tr>
<tr>
<td>Entrance to sw. pools</td>
<td>6.9a (1.9)</td>
<td>4.7h/b,a,b (1.5)</td>
</tr>
</tbody>
</table>

Note. Bundle means in the same row that do not share first subscript with anchor product means differ from anchor product means at \(p < .05\) in independent \(t\)-tests. Means in the same column that do not share second subscripts differ at \(p < .05\) in independent \(t\)-tests. Bundle means in the same row that do not share third subscripts differ at \(p < .05\) in paired \(t\)-tests.

Table 18. Evaluations of purchase intention for bundles and separate anchor products (Experiment 4).

<table>
<thead>
<tr>
<th>Separate anchor products</th>
<th>Bundles</th>
<th>Unrelated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Digital camera</td>
<td>2.6a (2.0)</td>
<td>3.5h,a,a (1.7)</td>
</tr>
<tr>
<td>TV</td>
<td>3.8a (2.1)</td>
<td>4.8h,a,a (2.3)</td>
</tr>
<tr>
<td>Pre-made lunch</td>
<td>4.4a (2.6)</td>
<td>4.1h,a,a (1.7)</td>
</tr>
<tr>
<td>Filet meat</td>
<td>6.5a (2.2)</td>
<td>4.6h,a,a (2.2)</td>
</tr>
<tr>
<td>Movie ticket</td>
<td>5.5a (2.5)</td>
<td>3.8h,a,a (1.8)</td>
</tr>
<tr>
<td>Entrance to sw. pools</td>
<td>6.7a (2.4)</td>
<td>3.9h,b,a (1.5)</td>
</tr>
</tbody>
</table>

Note. Bundle means in the same row that do not share first subscript with anchor product means differ from anchor product means at \(p < .05\) in independent \(t\)-tests. Means in the same column that do not share second subscripts differ at \(p < .05\) in independent \(t\)-tests. Bundle means in the same row that do not share third subscripts differ at \(p < .05\) in paired \(t\)-tests.

The comparison of ratings of quality, attractiveness, and purchase intention between bundles and separate anchor products showed that with few exceptions, bundle ratings were not more positive than ratings of separate anchor products, as illustrated by Table 16-18. The exceptions were complementary bundles with a digital camera or a TV; the digital camera was significantly more attractive and gave higher purchase intention in a bundle than separately the TV gave higher purchase intention in a bundle than separately. These bundles were also perceived as most complementary. The results are in line with previous experiments, in that bundles, generally, are not more positively evaluated than separate products. However, combining products that fit very well together may make bundles more appealing to consumers than separate products.

**Satisfaction with bundles**

An important contribution of Experiment 4 is the inclusion of a post-purchase measure. To test how the relation between bundle products affects post-purchase evaluations a 6 (anchor products) by 2 (complementary vs. unrelated by-product) MANOVA was conducted. The results showed that
complementarity between bundle products had a positive effect on satisfaction as well (as on preferences as showed above). The participants estimated that they would be more satisfied with bundles consisting of complementary than unrelated products ($M_C = 5.3$ vs. $M_U = 3.2$) and that they would be more satisfied with complementary than unrelated bundles also if the by-product could not be used ($M_C = 2.5$ vs. $M_U = 1.9$). The results were significant in the MANOVA, $F(2, 172) = 136.62$, $p < .001$, and in univariate ANOVAs, $F(1, 173) = 274.02$, $p < .001$, for satisfaction and $F(1, 173) = 37.22$, $p < .001$, for satisfaction when not used. The results indicate that consumers would be less satisfied if the by-product in an unrelated bundle was not used, than if the by-product in a complementary bundle was not used. The interpretation of this should not be that it is worse if an unrelated rather than a complementary by-product is not used. To analyze the results further, the difference in ratings between satisfaction with purchase and satisfaction if the by-product is not used was calculated. A univariate ANOVA showed that satisfaction decreased significantly more for bundles consisting of complementary than unrelated products ($M_C = 2.8$ and $M_U = 1.3$) when the by-product is not used, $F(1, 173) = 129.16$, $p < .001$. The participants are most satisfied with complementary bundles but not being able to utilize both products has a large negative impact on their satisfaction. Because unrelated bundles provide such low initial satisfaction participants are still less satisfied with bundles containing unrelated products. Consumers are even more satisfied with a purchase of a complementary than an unrelated bundle even if the complementary by-product is not used.

There was also a main effect of anchor product restricted to satisfaction with purchase. The effect was significant in the MANOVA, $F(10, 344) = 2.00$, $p = .033$ and the univariate ANOVA, $F(5, 173) = 2.95$, $p = 0.14$. Bonferroni-adjusted $t$-tests showed that bundles with a movie ticket had significantly lower ratings than bundles with a TV ($M = 3.7$ and $M = 4.9$). As can be seen in Table 19, bundles with pre-made lunch also had low ratings on satisfaction ($M = 3.7$) and were close to significant in a $t$-test. This indicates that participants would be more satisfied with a purchase of a bundle with a TV than a bundle with a movie ticket (or pre-made lunch).

A two-way interaction, complementarity by anchor product, that reached significance on satisfaction with purchase in the univariate ANOVA, $F(5, 173) = 2.71$, $p = .022$ qualify the main effect of anchor product, see Table 19. It shows that especially bundles with a TV and a complementary by-product have high ratings of satisfaction. This means that the participants were more satisfied with a purchase of a bundle with a TV than a movie ticket, particularly a complementary TV bundle. However, it should be acknowledged that the positive evaluations of complementary TV bundles partly are caused by the positive evaluations of bundles with a TV and a bracket. The evaluations of bundles with a TV and a bracket are given double
weight in the analyses as described in the Method section. However, the high ratings of satisfaction with TV bundles correlate with equally high ratings of complementarity, indicating that perceived bundle complementarity has an impact on satisfaction. Correspondingly, bundles with a movie ticket (and bundles with pre-made lunch) had overall low ratings of satisfaction (for complementary as well as unrelated bundles). This gives further support for the suggestion that satisfaction is positively affected by bundle complementarity.

Table 19. Evaluations of satisfaction for bundles and separate anchor products (Experiment 4).

<table>
<thead>
<tr>
<th>Separate anchor products</th>
<th>Bundles</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Separate</td>
<td>Complementary (SD)</td>
<td>Unrelated (SD)</td>
<td></td>
</tr>
<tr>
<td>Digital camera</td>
<td>6.1a</td>
<td>5.4b,a/a/a (1.3)</td>
<td>3.3a,b,b (1.7)</td>
<td></td>
</tr>
<tr>
<td>TV</td>
<td>5.8a</td>
<td>6.4a,a,a (1.7)</td>
<td>3.3a,b,b (1.5)</td>
<td></td>
</tr>
<tr>
<td>Pre-made lunch</td>
<td>4.6a</td>
<td>4.7a,b,a (1.6)</td>
<td>2.8a,b,b (1.8)</td>
<td></td>
</tr>
<tr>
<td>Filet meat</td>
<td>6.7a</td>
<td>5.3b,b,a/a (2.2)</td>
<td>3.0a,b,b (1.8)</td>
<td></td>
</tr>
<tr>
<td>Movie ticket</td>
<td>6.2a</td>
<td>4.6b,b,a (2.0)</td>
<td>2.7a,b,b (1.6)</td>
<td></td>
</tr>
<tr>
<td>Entrance to sw. pools</td>
<td>7.0a</td>
<td>5.3b,b,a/a (1.6)</td>
<td>3.7a,b,b (1.6)</td>
<td></td>
</tr>
</tbody>
</table>

Note. Bundle means in the same row that do not share first subscript with anchor product means differ from anchor product means at p < .05 in independent t-tests. Means in the same column that do not share second subscripts differ at p < .05 in independent t-tests. Bundle means in the same row that do not share third subscripts differ at p < .05 in paired t-tests.

A comparison between evaluations of bundles and the corresponding separate anchor products showed that the participants were never more satisfied with bundles than with separate anchor products. Only bundles with a TV or pre-made lunch with complementary by-products were rated as high as separate products on satisfaction, which further supports the suggestion that complementarity is an important factor influencing satisfaction.

Summing up Experiment 4

The present experiment investigated the effect of complementarity between bundle products on consumers’ information processing, preferences for, and satisfaction with bundles. The manipulation of combining products to create complementary and unrelated bundles was successful. The participants rated the products in complementary bundles as more complementary than unrelated bundles. However, the perceived complementarity varied by anchor product, which implies that the manipulation was more effective for some bundles and affected subsequent bundle evaluations.

Information Processing

The results showed that the relation between bundle products has an effect on information processing. The ratings for the need to think before making a decision about buying were higher for technically advanced products such as
a TV, which is in line with previous research stating that durable products are evaluated more extensively. Also, ratings of need to think were higher for bundles with complementary than unrelated products, which was unanticipated. Moreover, participants needed to think more to make a purchase decision about separate products than about unrelated bundles but not as much as they needed to think about complementary bundles. Hence, it takes less effort to decide to buy unrelated bundles than complementary bundles or separate products. Taken together, the results indicate that the effort put into evaluations depend on how important or attractive a bundle or product purchase is perceived to be.

However, there were some questions regarding what was actually measured. Possibly, decision difficulty rather than evaluation difficulty was measured, as discussed in the methodological chapter. The unexpectedly low ratings of need to think for unrelated bundles may thus indicate that a decision rule where an initial judgment of whether or not a bundle is an option for purchase precedes a decision about whether to make an effort to evaluate the bundle.

Pre-Purchase Evaluations
Previous experiments show that complementarity between products in a bundle is appealing to consumers. The present experiment investigated whether these results hold for other bundles from several industries and with a sample that is more representative of the Swedish population than university students are. The results confirm that the complementarity of products in a bundle increases preferences for bundles.

There was a main effect of anchor product and an interaction effect of relation by anchor product that moderated the main effects. Some of the complementary bundles were preferred over others and largely these preferences correlated with the perceived complementarity of the bundles. The results support the main finding of a positive effect of complementarity on evaluations.

Experiment 4 confirms the results from previous experiments that separate products are at least as positively evaluated as bundles. The exceptions from the main result are complementary bundles with a TV or a digital camera, which are as positively evaluated as the separate anchor products. These bundles were also the ones that had the highest ratings of perceived complementarity.

Hence, overall the results confirm the positive influence of complementarity on consumer preferences, as complementary bundle are preferred to unrelated bundles and sometimes even to separate products.
Post-Purchase Evaluations
The results show that post-purchase evaluations are influenced by bundle complementarity. The participants were more satisfied with a purchase of a complementary than an unrelated bundle. If the by-product was not used, the satisfaction dropped more for complementary bundles than for unrelated bundles.

The results also showed that the participants were more satisfied with a purchase of a bundle with a TV than a movie ticket. Specifically, they were satisfied with complementary TV bundles. Generally, there was a positive relation between satisfaction and the perceived complementarity between bundle products, similar to that of pre-purchase evaluations; complementary TV bundles had the highest ratings of complementarity and complementary bundles with a movie ticket or pre-made lunch had the lowest ratings.

Furthermore, the results showed that participants in general were less satisfied with bundles than with separate anchor products, with the exception of complementary bundles with a TV or pre-made lunch that provided the same level of satisfaction as separate anchor products (in the case of pre-made lunch, the same low level of satisfaction).

To sum up, consumers will be more satisfied with a bundle purchase if the products are complementary, but they would be even more satisfied if they bought only the anchor product. Why then do consumers buy bundles - if they are not preferred over separate products and do not provide satisfaction? One reason why the evaluations of bundles are rather negative is that the bundles are not offered at a discount. Many of the bundles contain rather expensive products and result in quite high prices. In real life bundles often come at a discount, to the extent that consumers infer a discount in the absence of actual information in the matter (Heeler et al. 2007). Even though there is a substantial amount of research about pricing strategies for bundles, the knowledge about price and discounts in relation to the complementarity of bundles is scarce/non-existent.

Experiment 5 – the effect of bundle discount
The previous experiments show that complementarity has a positive effect on bundle evaluations. Consumers prefer bundles constituting of complementary products to bundles of unrelated products and are more satisfied with complementary bundles. Still, bundles are neither more preferred nor give more satisfaction than separate products. This may seem somewhat counter intuitive, since bundles are common on the market and it seems as if consumers buy them. Why do they do that? In addition, why do companies adopt a bundling strategy if it does not increase bundle attractiveness, sales, or customer satisfaction? A possible explanation is to be found in the pricing of the bundles in the experiments. In the experiments, evaluations were made of bundles with no explicit discount. Thus, the results
are only valid for bundles that have no price reduction. On the market it is common that bundles are offered with some sort of a discount, for example, vouchers, free-bees, or percentage off. As price reductions have been shown to have a large influence on consumers’ evaluations of products (Alford and Biswas 2002; Grewal et al. 1998a; Nusair et al. 2010) and bundles (Harlam et al. 1995; Herrmann et al. 1997; Foubert and Gijsbrechts 2007) the evaluation of bundles compared to separate products may look different when a price discount is offered for bundles. Hence, a first research question investigated in this experiment is:

- How is consumers’ preferences for and satisfaction with bundles influenced by bundle discount in comparison to separate products?

To answer this question, evaluations of bundles with a price discount were compared to evaluations of separate products without a discount since this is a common choice for consumers on the market. Discount rates varied from none to 45 per cent in order to determine if a large enough discount would yield bundle evaluations to be as positive as evaluations of separate products. Since complementary bundles are rated more positively than unrelated bundles when no discount is offered, a proposition is that a smaller discount would be needed for complementary than unrelated bundles to be rated as positively as separate products. To further investigate this assumption the following research question is formulated:

- What is the effect of discount on consumers’ preferences for and satisfaction with bundles with varying degrees of complementarity?

Price is a strong indicator of quality (Rao and Monroe 1989); low price signals low quality and vice versa. In the previous experiments, bundles of both exclusive and low-budget products have been included and the results confirm the effect of price on perceived quality. Large discounts have also been shown to signal inferior quality to consumers (Raghubir and Corfman 1999; Nusair et al. 2010; Jensen and Drozdenko 2008). Therefore, there is a risk that a large bundle discount has a negative effect of perceived quality. Interesting is also to determine if the effect of a discount varies with the price level of bundle products and therefore it will be investigated how discounts affect consumer evaluations of bundles with different price level. Do the quality indicators enhance each other’s effect? The effects of and relation between price and discount are investigated by answering the following research question:

- What is the effect of discount on consumers’ preferences for and satisfaction with bundles with different price levels?
To answer these research questions, bundles of electronic devices were evaluated on the same measures as in previous experiment and the complementarity (complementary or unrelated) and price level (exclusive or low-budget) of the bundle products varied. Since the effect of industry was investigated in Experiment 4, the bundles were limited to electronic devices.

**Method**

**Participants**

Members of the same consumer panel as in Experiment 4 were recruited via e-mail. The participants answered a web-survey and received points that could be exchanged for lottery or movie tickets. The participants were randomly assigned to one of four different groups.

In total 1869 individuals were invited to participate. 253 individuals started to answer and 174 completed the survey, resulting in a response rate of nine per cent. The average age of the participants were 44 years, ranging from 21 to 62. Of the participants 70 per cent were female, 69 per cent were married or living together with their partner. A vast majority of the participants, 79 per cent, had an employment or was self-employed, and 5 per cent studied or did their military service. Compared to information from SCB statistics about the Swedish population in general, the participants were representative with regard to living and work situation but had a higher level of education.

**Design**

The experimental design consisted of three within-groups factors: anchor product (TV vs. camera), relation between products (complementary vs. unrelated), and price level of the products (exclusive vs. low-budget), see Table 20. In addition there was one between-groups factor, bundle discount rate (0 % vs. 15 % vs. 30 % vs. 45 %). All participants evaluated all separate products. The separate products were not discounted. The participants evaluated bundles and separate products on nine-step scales of perceived quality and attractiveness of the bundles/separate products, the purchase intention, and how satisfied they would be with a purchase.

Table 20. Within-groups factors in the experimental design (Experiment 5).

<table>
<thead>
<tr>
<th>Anchor product</th>
<th>Complementary by-product</th>
<th>Unrelated by-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive digital camera</td>
<td>Exclusive photo printer</td>
<td>Exclusive Bicycle</td>
</tr>
<tr>
<td>Exclusive TV</td>
<td>Exclusive DVD-player</td>
<td>Exclusive Bicycle</td>
</tr>
<tr>
<td>Low-budget digital camera</td>
<td>Low-budget photo printer</td>
<td>Low-budget Bicycle</td>
</tr>
<tr>
<td>Low-budget TV</td>
<td>Low-budget DVD-player</td>
<td>Low-budget Bicycle</td>
</tr>
</tbody>
</table>
Materials
The bundles used in the experiment are presented in Table 20. In total, 8 different bundles consisting of 10 products were evaluated. In addition, each participant evaluated all 10 separate products. As in previous experiments, all products existed on the market at the time. Also, the products were as neutral as possible, for example did no brand name show and products with easily recognizable design were discarded.

Procedure
Participants were invited to participate through an e-mail containing a link to a web-based questionnaire. The questionnaire consisted of evaluations of bundles and separate products, followed by background questions about participant’s demographics. Every participant evaluated eight bundles and 10 separate products. Evaluations of bundles and separate products were made in blocks so that half of the participants evaluated bundles first and half evaluated separate products first. Within each block the order of evaluation was randomized. Each bundle or separate product was evaluated on a separate webpage, and the participants could not go back once they had continued to the next page. The survey took approximately 10 minutes to complete.

Similar to previous experiments, bundles were presented with a picture, a short presentation of features, and their regular sales price. Prices and discount were presented in detail in a scenario: “Imagine that you need to purchase an [anchor product] and visit a store. In the store you notice an offer to buy an [anchor product] and a [by-product] for SEK XXX. The regular price for the products in the bundle is SEK XXX for the [anchor product] and SEK XXX for the [by-product]. That is, the bundle is marked down XX percent, or approximately SEK XXX. The prices of the products were similar to that of products on the market. Participants rated how well the bundle products complement each other, the perceived quality and attractiveness, purchase intention, satisfaction with a purchase, and satisfaction if the by-product cannot not used. The last variable was not included in analyses.

Separate products were also presented with a picture, brief information about product features, and sales price. For separate products, the scenario read as follows, “Imagine that you need to purchase a [product] and visit a store. In the store you notice the following offer:” Similar to Herrmann et al. (1997), the separate products were not discounted. When consumers have plans to purchase a certain kind of product, this is often the choice consumers are confronted with in stores. It was therefore judged appropriate to compare evaluations of discounted bundles to undiscounted separate anchor products. With the exception of ratings of product complementarity
and satisfaction if the product was not used, separate products were evaluated on the same measures as bundles.

**Results**

The participants were asked to state how well they thought the products in the bundles complemented each other. This was partly a manipulation check to see whether the bundles that we put together were actually perceived as complementary and unrelated, respectively. Hence, it would be expected to have an effect of relation on perceived fit, but no effect of anchor product, price level of products in the bundles, or how big price reduction was offered on the bundle. Partly, the complementarity ratings were used to analyze the effect of complementarity on evaluations.

To analyze the effectiveness of the manipulation a 2 (relation: complementary vs. unrelated) by 2 (anchor product: digital camera vs. TV) by 2 (price level: exclusive vs. low-budget) Analysis of Variance (ANOVA) was conducted. The results showed an expected main effect of **complementarity** on perceived fit between bundle products. The effect was significant in the ANOVA, $F(1, 169) = 1161.04, p < 0.001$. All complementary bundles had higher ratings on the variable than unrelated bundles had ($M_C = 6.9$ vs. $M_U = 1.7$). This shows that the manipulation was effective. However, there was also a main effect of **anchor product** in the ANOVA, $F(1, 169) = 34.05, p = .001$. Bundles with a TV as anchor product were perceived as more complementary than bundles with a digital camera.

There was also two two-way interactions, **anchor product by relation** and **anchor product by price level**, and one three-way interaction, **price level by anchor product by relation**, significant in ANOVAs, $F(1, 169) = 62.29, p < 0.001$, $F(1, 169) = 11.60, p = 0.001$, and $F(1, 169) = 4.94, p = 0.028$, that qualifies why anchor product had an effect on product fit. The results show that particularly complementary bundles with an exclusive TV are perceived as complementary and also that the complementarity of bundles with an expensive digital camera was lower than other bundles. To sum up, the manipulation was effective, even though it was more effective for some bundles. There were no interactions between anchor product and discount and no crossover effects. That is, the interactions were not caused by a reversal of the effect of anchor product on complementarity but of a difference in strength of the effect. Therefore, anchor product was excluded from the subsequent analyses.

The participants evaluated bundles and separate products on quality, attractiveness, purchase intention, and satisfaction. Generally, the ratings of quality were higher than those of attractiveness, which in turn were higher than those of purchase intention. Ratings of satisfaction, however, were generally higher than those of purchase intention, see Tables 4 and 5 in Appendix I.
**Effect of complementarity**

The data were analyzed with a 2 (relation: complementary vs. unrelated) by 2 (anchor product: digital camera vs. TV) by 2 (price level: exclusive vs. low-budget) by 4 (discount: 0 vs. 15 vs. 30 vs. 45 %) Multivariate Analyses of Variance (MANOVA) and univariate Analyses of Variance (ANOVAs). Two separate analyses were done, one comparing bundle evaluations and one comparing evaluations of bundles and separate products.

The effect of **complementarity** between products on bundle evaluations was in line with previous studies. The results show that complementary bundles had higher rating on all measures ($M_C = 5.6$ vs. $M_U = 3.3$ for quality, $M_C = 4.9$ vs. $M_U = 2.4$ for attractiveness, $M_C = 3.7$ vs. $M_U = 1.9$ for purchase intention, and $M_C = 5.4$ vs. $M_U = 3.4$ for satisfaction). The effect was significant in a MANOVA, $F(6, 164) = 196.96, p < 0.001$, and in univariate ANOVAs, $F(1, 169) = 248.56, p < 0.001$ for quality, $F(1, 169) = 278.39, p < 0.001$ for attractiveness, $F(1, 169) = 177.81, p < 0.001$ for purchase intention, and $F(1, 169) = 254.99, p < 0.001$ for satisfaction.

![Figure 12. Two-way interaction. The effect of complementarity and price level on evaluations of attractiveness and purchase intention (Experiment 5).](image)

The effect of **complementarity** was modified by the **price level** of the bundle. The effect was restricted to attractiveness and purchase intention, significant in a MANOVA $F(6, 164) = 7.72, p < 0.001$ and in univariate ANOVAs $F(1, 169) = 7.86, p = 0.006$ for attractiveness and $F(1, 169) = 22.82, p < 0.001$ for purchase intention. While the ratings of attractiveness and
purchase intention were as high for exclusive as for low-budget bundles when the bundle products were unrelated, they differed when the bundle products were complementary so that ratings of low-budget complementary bundles were higher than of exclusive complementary bundles, see Figure 12. That is, low-budget bundles were affected more positively by complementarity than exclusive bundles.

No bundle had significantly higher ratings than separate products, though paired sample t-tests showed that the ratings of satisfaction were as high for complementary bundles as for separate products, see Figure 13. This effect, reached significance in a MANOVA, \( F(8, 162) = 56.08, p < 0.001 \), and in univariate ANOVAs, \( F(2, 338, \text{Greenhouse-Geisser } \epsilon = 0.886) = 217.8, p < 0.001 \) for quality, \( F(2, 338, \text{Greenhouse-Geisser } \epsilon = 0.903) = 256.79, p < 0.001 \) for attractiveness, \( F(2, 338, \text{Greenhouse-Geisser } \epsilon = 0.931) = 143.75, p < 0.001 \) for purchase intention, and \( F(2, 338, \text{Greenhouse-Geisser } \epsilon = 0.931) = 167.02, p < 0.001 \) for satisfaction. The results support previous findings and indicate that bundles are not preferred over separate products when no discount is provided.

It has previously been shown that evaluations are affected by price reductions (e.g. Harlam et al. 1995; Herrmann et al. 1997). The results of the present experiment show an expected main effect of bundle discount restricted to quality, attractiveness, and purchase intention, significant in the MANOVA, \( F(12, 504) = 3.34, p < 0.001 \), and in univariate ANOVAs, \( F(3, 169) = 4.03, p = 0.008 \) for quality, \( F(3, 169) = 6.86, p < 0.001 \) for attractiveness, and \( F(3, 169) = 4.46, p = 0.005 \) for purchase intention. Bonferroni-adjusted t-tests showed that the perceived quality and attractiveness was lower for bundles with no price reduction compared to...
bundles with a price cut. However, the magnitude of the price reduction did not influence the perception of quality or attractiveness ($M_0 = 3.7, M_{15} = 4.8, M_{30} = 4.6, M_{45} = 4.8$ for quality and $M_0 = 2.6, M_{15} = 3.9, M_{30} = 3.9, M_{45} = 4.3$ for attractiveness). The purchase intention was lower for bundles with no price reduction than for bundles with 45 per cent price reduction ($M_0 = 2.1, M_{15} = 2.8, M_{30} = 2.8, M_{45} = 3.5$). Hence, the expected positive effect of discount on evaluations is confirmed. Previous studies have shown that there may be a limit to the positive effect of discounts, or a threshold effect, after which increasing discounts lead to deteriorating evaluations because of suspicions of poor quality, last season goods, or other reasons that a product would need a large discount to be sold (Drozdenco 2008; Nusair et al. 2010). The proposition of a threshold effect of discount was not supported, though.

Furthermore, the effect of discount was found to differ depending on bundle complementarity. This interaction effect, complementarity by discount, was significant for all measures except quality, in a MANOVA, $F(24, 492) = 3.24, p < 0.001$ and in univariate ANOVAs, $F(6, 338, \text{Greenhouse-Geisser } \epsilon = 0.903) = 5.50, p < 0.001$ for attractiveness, $F(6, 338, \text{Greenhouse-Geisser } \epsilon = 0.931) = 5.18, p < 0.001$ for purchase intention, and $F(6, 338, \text{Greenhouse-Geisser } \epsilon = 0.931) = 2.37, p = 0.029$ for satisfaction. As illustrated in Figure 14, Bonferroni-adjusted t-tests showed that discount generally had no effect on evaluations of unrelated bundles.

![Figure 14. Two-way interaction. Effect of bundle discount and complementarity on evaluations of attractiveness, purchase intention, and satisfaction (Experiment 5).](image)

The only difference that was significant was the evaluations of attractiveness between unrelated bundles with no discount and with 45 per cent discount. The evaluations of complementary bundles, on the other hand, were affected by the level of discount. The perceived attractiveness was positively affected by the presence of a discount regardless of the size of it; the ratings were
significantly lower for bundles with no discount than bundles with 15 to 45
per cent discount, which did not differ. Purchase intention and satisfaction
were also positively affected by the introduction of a discount and in addition
evaluations were further affected when discount increased to 45 per cent.
(There was no significant difference in evaluations when discount increased
from 15 to 30 percent.)

Furthermore, the results show that unrelated bundles always had lower
ratings than separate products (as well as lower than complementary
bundles). Paired sample t-tests showed that complementary bundles, on the
other hand, were often as positively evaluated as separate products when
they came with a discount. A 15 per cent discount was enough for
complementary bundles to be as positively evaluated as separate products on
quality, while a 30 per cent discount was needed for attractiveness and
purchase intention. For satisfaction, complementary bundles were never less
positively evaluated and with 45 per cent discount bundles were even more
positively evaluated. Hence, there is a distinct difference in how
complementary and unrelated bundles are affected by discount. The results
show that in order for bundles to be as appealing as separate products they
need to be discounted and complementary.

**Effect of discount depending on price level of bundle products**
To investigate the effects of a price reduction further, the effect of discount
on bundles with different price levels, that is, depending on whether the
products were low-budget or exclusive, were analyzed. There was a main
effect of **price level**, restricted to quality, purchase intention, and
satisfaction, significant in a MANOVA, $F(6, 164) = 18.38, p < 0.001$, and in
univariate ANOVAs, $F(1, 169) = 37.49, p < 0.001$ for quality, $F(1, 169) =
20.62, p < 0.001$ for purchase intention, and $F(1, 169) = 30.15, p < 0.001$ for
satisfaction. The perceived quality was higher for bundles with exclusive
products, but the purchase intention was lower. However, once bought the
participants expected to be more satisfied with exclusive bundles, $M_{E} = 4.7$
and $M_{L-B} = 4.3$ for quality, $M_{E} = 2.6$ and $M_{L-B} = 3.0$ for purchase intention,
$M_{E} = 4.6$ and $M_{L-B} = 4.2$ for satisfaction. This supports findings in previous
experiments that participants make economic considerations when
evaluating bundles so that even if quality is high, purchase intention may be
low because of a high price. Even though they may not consider an exclusive
bundle worth the money, participants still expect the high quality products
to provide satisfaction.

To investigate if price reductions have different effects on exclusive and
low-budget bundles, the interaction effect **price by discount** was analyzed.
The results showed that the effect of a bundle discount is different depending
on the price level of the products. The interaction effect was significant in a
MANOVA, $F(18, 498) = 2.40, p = 0.001$, as well as in univariate ANOVAs,
restricted to attractiveness and purchase intention, $F(3, 169) = 6.25, p < 0.001$ for attractiveness and $F(3, 169) = 4.96, p = 0.003$ for purchase intention. Paired sample $t$-tests show that low-budget bundles are more attractive than exclusive bundles when no discount is offered on the price, but that exclusive bundles are more attractive when there is 45 per cent discount. Moreover, purchase intention is higher for low-budget bundles than exclusive bundles when there is no or a 15 per cent discount, but that there is no difference in purchase intention when discount is higher. This means that exclusive bundles are more positively affected by discounts. As illustrated in Figure 15, level of discount has no impact on evaluations or low-budget bundles beyond the positive effect of introducing a discount. Similarly, exclusive bundles are perceived as significantly more attractive when with a discounted than without, while level of discount does not further increase attractiveness. Purchase intention, however, becomes gradually higher with increasing discount levels. Possibly, participants perceive exclusive bundles as more worth their price when they have a substantial discount, while the price worthiness of low-budget bundles is not affected by discount.

**Figure 15. Two-way interaction.** Effect of discount and price level on evaluations of attractiveness and purchase intention (Experiment 5).

**Summing up Experiment 5**
The effect of complementarity found in previous studies was confirmed in the experiment. Bundles consisting of complementary products were more positively evaluated than bundles consisting of unrelated products, and especially low-budget complementary bundles were attractive and induced purchase intention. Still, generally bundles were not more positively evaluated than the separate anchor products with the exception that
complementary bundles gave as much satisfaction as separate products. These results establish the effect of complementarity and show that, without discount, bundles are not highly valued by consumers.

The results showed that discount has a major effect on bundle evaluations. Previous studies have showed that there may be a threshold level for the positive effect of discount after which evaluations are negatively influenced by further discounts (Jensen and Drozdenko 2008; Nusair et al. 2010), but this was not confirmed by the results in the present experiment. Neither evaluations of quality nor other measures dropped at a certain level of discount.

The effect of discount differed between complementary and unrelated bundles. While the perceived value of unrelated bundles are largely unaffected by discounts, there is a large effect of discount on complementary bundles, to the extent that preferences for complementary bundles are as high as for separate products and the expected satisfaction even higher than for separate products when the discount is substantial.

Price is a strong indicator of quality; low prices signal low quality and high prices signal high quality (Zeithaml 1988; Rao and Monroe 1989). This relation is confirmed in the present study. The results show that perceived quality is higher for bundles consisting of exclusive than of low-budget product. Despite the high ratings of quality, purchase intention was lower for exclusive bundles than low-budget, though. However, once bought the participants expected to be more satisfied with exclusive bundles. The results indicate that consumers take economic considerations when making purchase decisions, even in situations where they believe it compromises their subsequent satisfaction. The effect of discount was larger for exclusive than low-budget bundles. Increasing discount rates have a more positive impact on attractiveness of exclusive bundles than on low-budget bundles. While low-budget bundles are higher rated on attractiveness and purchase intention when there is a discount, increasing levels of discount do not increase the ratings further. Exclusive bundles, on the other hand, become more attractive and give higher purchase intention the more discount increases so that exclusive bundles are as attractive as low-budget when the discount rate is 15 per cent and more attractive than low-budget bundles when discount rate is 45 per cent. Similarly, purchase intention is as high for exclusive bundles as low-budget bundles when discount is 30 percent or more.
Analysis

This far, data and initial analyses from the five experiments have been presented experiment by experiment. In the present chapter a summary and overall analysis of the experiments is undertaken. The results are interpreted and discussed based on the purposes of the thesis: (1) to explore what complementarity is, (2) to analyze how complementarity influences consumers’ preferences for and satisfaction with bundles, and (3) to examine how bundle price discounts influence consumers’ preferences for and satisfaction with bundles. Related to each purpose are several research questions developed for the experiments that guide the discussions.

What is complementarity?
The concept complementarity is vital in this thesis. It has previously been identified as an important factor that influences consumer evaluations and has often been equated with functional relation, that is that the products work together and are supposed to be used together (e.g. Gaeth et al. 1991; Herrmann et al. 1997; Harris and Blair 2006b). Yet, few attempts have been made to explain or understand the concept. Different kinds of complementary bundles have been used in empirical studies. Sometimes, the relation between bundle products in these studies is not commented at all (e.g. Burman and Biswas 2002; Hamilton and Koukova 2008). When it is, the bundles are often simply described as “complementary” with no further explanation (Oppewal and Holyoake 2004; Harris 1997; Soman and Gourville 2001), or, in some cases, as functionally related (Estelami et al. 1999; Gaeth et al 1990; Herrmann et al. 1999). However, when inspecting the relation between bundle products it is evident that bundle products can be complementary in many ways besides functional relation. All-inclusive visits to fitness resort (Naylor and Frank 2001), TV channel package (Chae 1992), fast food bundles Estelami (1999), and bundles with electronic and paperback version of a book (Koukova et al. 2008) are examples of bundles that include goods or services that are related, but not functionally related. This observation implies that complementarity is a complex concept and that there are many kinds of complementarity. A review of the bundling literature also shows that complementarity generally is treated as a dichotomous concept; the bundles are considered either complementary or not, even though intuitively it can be assumed to be a question of degrees. Exceptions exist; Venkatesh and Kamakura (2003) and Herrmann et al. (1997) acknowledge that bundles can be complementary to varying degrees. In this text the aspects of varying types and degrees of complementarity was judged as important in order to understand the concept. To increase the knowledge about what complementarity is this dissertation therefore explores the
concept from several different angles: by including bundles with different 
types of complementarity, in different industries, and by investigating 
complementarity on a continuous scale. From the results of the empirical 
investigations it is possible to elaborate on what complementarity is by 
discussing different types and degrees of complementarity. The discussion is 
based on analyses of data from ratings of how well bundle products belong 
together or complement each other (Experiment 2, 4, and 5) and from 
bundle evaluations (all experiments).

The empirical investigations were designed to answer a number of 
research questions about the nature of complementarity. These research 
questions also guide the discussion below. (1) Are there other types of 
bundle complementarity than functional relation that are valued 
by consumers? (2) Can complementarity be placed on a continuum with unrelated bundles in one end and 
complementary bundles in the other end? In this initial part of the 
analysis, complementarity as a concept is discussed with regard to different 
types and degrees of complementarity. The possible effects of 
complementarity on consumers’ preferences and satisfaction are discussed 
in detail in the next section of the analysis.

**Types of complementarity**

Based on the results, the concept complementarity is here widened beyond 
its current focus on functional relation by examining additional types of 
complementarity. Examining the bundles in the present study, a number of 
additional types of complementarity can be identified, such as similarity in 
price, similarity in level of luxury, dependence of other products, common 
usage time, and common usage occasion. Functionally related bundles are 
also included to allow for comparison with previous research. In Table 21 the 
bundles included in the experiments are classified according to how they fit a 
list of types of complementarity composed by Varadarajan (1986).
Table 21. Perceived complementarity of different kinds of relation between bundle products (adapted from Varadarajan 1986).

<table>
<thead>
<tr>
<th>Kind of relation</th>
<th>Bundles in experiments</th>
<th>Similarity (in Exp. 2)</th>
<th>Complement (in Exp. 4,5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perfect use</strong></td>
<td>Excl. TV and bracket (Exp. 4)</td>
<td>n/a</td>
<td>7.7</td>
</tr>
<tr>
<td>complementarity</td>
<td>Excl. TV and excl. DVD player (Exp. 1,2,3,4,5)</td>
<td>10.0</td>
<td>7.4,7.5</td>
</tr>
<tr>
<td></td>
<td>Excl. TV and low-b DVD player (Exp. 1,2,3)</td>
<td>34.1</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Low-b TV and low-b DVD player (Exp. 1,5)</td>
<td>n/a</td>
<td>7.3</td>
</tr>
<tr>
<td></td>
<td>Excl. DVD player and movie DVD (Exp. 1,2)</td>
<td>10.8</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Partial use</strong></td>
<td>Excl. camera and excl. photo printer (Exp. 1,2,3,4,5)</td>
<td>17.9</td>
<td>6.9,6.3</td>
</tr>
<tr>
<td>complementarity</td>
<td>Excl. camera and low-b photo printer (Exp. 1,2,3)</td>
<td>40.8</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Low-b camera and low-b photo printer (Exp. 1,5)</td>
<td>n/a</td>
<td>6.6</td>
</tr>
<tr>
<td></td>
<td>Excl. camera and digital photo frame (Exp. 4)</td>
<td>n/a</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td>Excl. TV and excl. camera (Exp. 1,2,3)</td>
<td>45.4</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Low-b TV and low-b camera (Exp. 1,2,3)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. camera and excl. TV (Exp. 1,2,3)</td>
<td>71.5</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>(Low-b TV and low-b camera) (Exp. 1,2,3)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. camera and low-b TV (Exp. 1,2,3)</td>
<td>82.0</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>(Low-b TV and low-b camera) (Exp. 3)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>(Excl. camera and excl. TV) (Exp. 1,2,3)</td>
<td>76.9</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>(Excl. camera and low-b TV) (Exp. 1,2,3)</td>
<td>91.0</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>(Low-b camera and low-b TV) (Exp. 3)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Use time</strong></td>
<td>Pre-made lunch and drink of choice (Exp. 4)</td>
<td>n/a</td>
<td>7.2</td>
</tr>
<tr>
<td>complementarity</td>
<td>Pre-made lunch and café latte (Exp. 4)</td>
<td>n/a</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Pre-made lunch and dessert cookie (Exp. 4)</td>
<td>n/a</td>
<td>4.4</td>
</tr>
<tr>
<td></td>
<td>Swimming pool entrance and ice cream (Exp. 4)</td>
<td>n/a</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Use occasion</strong></td>
<td>Movie ticket and soft drink (Exp. 4)</td>
<td>n/a</td>
<td>5.9</td>
</tr>
<tr>
<td>complementarity</td>
<td>Movie ticket and savory snack (Exp. 4)</td>
<td>n/a</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Seasonal complementarity</strong></td>
<td>Filet meat and sauce mixture (Exp. 4)</td>
<td>n/a</td>
<td>6.6</td>
</tr>
<tr>
<td>complementarity</td>
<td>Filet meat and potato croquettes (Exp. 4)</td>
<td>n/a</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td>Filet meat and packaged lettuce (Exp. 4)</td>
<td>n/a</td>
<td>6.3</td>
</tr>
<tr>
<td><strong>Newly evolving complementary relationships</strong> through creative promotion of new uses</td>
<td>Excl. DVD player and excl. TV (Exp. 1,2,3)</td>
<td>9.8</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. DVD player and low-b TV (Exp. 1,2,3)</td>
<td>39.4</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Low-b DVD player and low-b TV (Exp. 3)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. photo printer and excl. camera (Exp. 3)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. photo printer and low-b camera (Exp. 3)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Low-b photo printer and low-b camera (Exp. 3)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. camera and camera case (Exp. 1,2)</td>
<td>30.5</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. camera and memory card (Exp. 4)</td>
<td>n/a</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Note. Similarity ratings were made on graphic scales, where 0 means very similar and 150 not at all similar. Complementarity was rated on a nine-step scale, where 1 is the lowest and 9 the highest rating. Bundles in brackets were in the experiments used as non-complementary bundles. However, analyses showed that they were perceived as complementary to some extent.

The results of similarity and complementarity ratings made in the experiments confirm that there are other types of complementarity than functional relation between products that is perceived as complementary. All
complementary bundles had higher ratings of product fit than unrelated bundles, regardless of which kind of complementarity relation the bundle products had. This indicates that the participants recognize different kinds of relation between products as complementarity and that complementarity generalizes to several product categories: electronic devices, groceries, and leisure activities. In which way bundle products from different industries are complementary varies, though. For example, complementary bundles with electronic devices are composed of products that are used together as a unit (TV and DVD player). That is, functionally related - or to use Varadarajan’s (1986) terminology, perfect or partial use complementary or derived demand relationship complementary, see Table 21, while the bundles with a movie ticket are labeled as use occasion complementary, bundles with pre-made lunch as use time complementary, and bundles with filet meat as process complementary. This is not to say that bundles from these industries or with these anchor products only can be complementary in these specific ways. The list of types of complementarity is neither exhaustive nor are the types mutually exclusive as pointed out by Varadarajan. The bundles in the experiments can potentially be referred to other types of complementarity as well and there are other possible product relations than those listed in Table 21.

The ambiguity surrounding the identification and classification of complementary relations can be exemplified by the difficulties in distinguishing between perfect use complementary, partial use complementary, and derived demand relationship complementary bundles. Products in perfect use complementary bundles are often used together as opposed to partial use complementary bundles that may be used together but as often are used alone. Products that have a derived demand relationship need the other product in the bundle to work; otherwise the products are useless. Many of the bundles used in the experiments that are classified as having one of these relations can potentially be classified to one of the other relations. For example, while a bundle with a camera and a memory card is rather clear-cut derived demand complementary because neither product is usable alone, the other bundles defined as derived demand complementary may arguably be classified as perfect or partial use complementary instead. Bundles with a dependent anchor product, for example the DVD player and a TV, were classified as derived demand while the corresponding bundles with the independent product as anchor were classified as partial use complementary to make a distinction based on the usability of the bundles (because the DVD player and photo printer are useless unless combined with a TV or a camera, respectively). A consumer with plans to purchase a DVD player would consider a bundle with a DVD player and a TV as derived demand complementary, as a TV is needed in order to be able to utilize a DVD player. (The bundle may still not be of
interest to purchase for the consumer, though, as he or she may already have
a TV.) A consumer planning to purchase a TV, on the other hand, would
consider the bundle as partial use complementary as the products are used
together but the TV is not dependent on the DVD player to function.

Even though the participants generally perceived complementary bundle
products as more complementary than unrelated bundles, some unrelated
bundles had unexpectedly high ratings of product fit. For example, a bundle
with entrance to swimming pools and a round of miniature golf in
Experiment 4 was assumed to be unrelated, but had high ratings of perceived
complementarity. In retrospect, the bundle products may be considered as
complementary, in the sense that both products are physical activities that
you do for fun. Even though not connected in time or place, the bundle
products have similar features and the relation between bundle products can
be defined as image complementarity. Included in Table 21 is also a bundle
with a digital camera and a TV. The products were combined in Experiment
1, 2, and 3 as an example of somewhat complementary bundle. The similarity
ratings in Experiment 2 showed that the bundle is not considered as
unrelated but somewhere in between complementary and unrelated.

To sum up, the results show that many kinds of relation between products
can be considered as complementary. Compared to Varadarajan’s list, not all
kinds of complementarity was included in the present study. As the above
discussion illustrates, there is a large ambiguity surrounding the
classification of bundles according to type of complementary between
products. Classifying the bundles highlights the multitude of ways that
complementarity can be defined in and it suggests that other product
relations than those studied in this thesis are considered complementary by
consumers.

**Degrees of complementarity**

Intuitively, it can be assumed that complementarity is not a black and white
phenomenon, that is, bundles are not either complementary or non-
complementary even though it is often treated as such in the literature. To
better understand the concept complementarity, the question of whether or
not it is a continuous variable is vital. Herrmann et al. (1997) showed that
with increasing level of complementarity, the purchase intention became
larger. Yet, Herrmann et al. (1997) did not study if the consumers actually
perceived the bundle products to be complementary to varying degrees. In
the present study, this gap is addressed as respondents rated similarity and
complementarity of a number of bundles in several experiments. The results
show that the perceived complementarity varies on a sliding scale from not
at all complementary to very complementary. Experiment 2, which include
bundles with three different levels of complementarity (complementary,
 somewhat complementary, or unrelated) show a distinct difference in
similarity ratings between the different levels of complementarity. Moreover, in Experiment 4 and 5, complementary bundles have significantly higher ratings of similarity and complementarity than unrelated bundles. However, the degree of perceived complementarity between different complementary bundles varies significantly. Presented below, are a number of potential explanations for the differences in perceived degree of complementarity.

As Table 21 shows, the degree of perceived complementarity varies between different types of complementarity. Use time and use occasion complementary bundles are generally perceived as less complementary than perfect use complementary bundles. There is also a difference between how complementary perfect use complementary bundles and partial use complementary bundles are. This may not be surprising since one of the prerequisites for classifying bundles into the different types is how commonly the bundle products are used together. Products in perfect use complementary bundles are always or very commonly used together, for example a TV and a bracket or a DVD player and a DVD movie. Products in partial use complementary bundles, on the other hand, may as often be used separately or together with other products, for example a camera and a photo frame.

Besides the difference in degree of complementarity between different types, there are also differences in complementarity between bundles within the types. For instance, a bundle with a movie ticket and a savory snack is perceived as less complementary than a bundle with a movie ticket and a soft drink or a movie ticket and popcorn even though all three bundles can be classified as use occasion complementary. Similarly, the bundle with pre-made lunch and a drink of choice is perceived as more complementary than the other lunch bundles.

**Distinctiveness, prevalence, and completeness**

In the following, three new constructs that help explain the differences in perceived complementarity within types are introduced: distinctiveness, prevalence, and completeness. These three concepts are characteristics that a bundle can have more or less of depending on the products that are included in a bundle. It is here argued that the extent to which a bundle has these three characteristics influences how complementary it is perceived to be.

The first concept introduced is the *distinctiveness* of the bundle. The word distinctiveness relates to terms such as individuality, uniqueness, and specialness. How distinct a bundle is depends on how typical included products are for that specific bundle. Complementary bundles with products that only are utilized at one specific occasion, illustrated in the experiments by a movie ticket and popcorn or a soft drink, were judged as more complementary than bundles with products that can be used at different times, such as a movie ticket and a savory snack. The specific kind of
popcorn container and soft drink that were evaluated in the experiments are almost exclusively sold at theatres (and circus shows, bazaars, and similar happenings) while a savory snack can be bought elsewhere. Accordingly, the popcorn and soft drink are quite distinctive for a movie theatre experience and when combined with a movie ticket, the bundle is perceived as coherent and typical and hence, as complementary. Thus, even though the relation between the products in the described bundles can be classified as “use occasion complementarity”, the degree of perceived complementarity differs between the bundles because of the distinctiveness of the bundle.

The second concept concerns how commonly the included products are sold in a bundle compared to as separate products, that is, the **prevalence** of the bundle. Bundles consisting of products that more often are sold separately than in bundles, as exemplified by the bundle with swimming pool entrance and ice cream are perceived as less complementary than other bundles. And on the contrary, bundles consisting of products that often are bought as a unit and not framed as a bundle, such as a digital camera and a camera case were judged as very complementary.

A third bundle characteristic that potentially explains why the perceived degree of complementarity varies between bundles is the **completeness** of the bundle. That is, if yet other products are needed to go with the bundle products or not. Consider a bundle with pre-made lunch and a drink of choice and a bundle with pre-made lunch and a dessert cookie, which both can be classified as “use time complementary”. The first bundle is to be considered a complete combination, while the last is incomplete since most people would like a cold drink with their lunch. The participants in the experiments judged products in complete bundles as better complements than the products in incomplete bundles, which illustrates that they are not equally complementary.

A complete bundle can be compared to a product system (Montoya 2006; Wilson et al. 1990). A product system is a group of related, yet diverse, products that are used to achieve a goal. At its’ best products in a product system enhance each other’s effect and provide synergy effects. Montoya (2006) uses the hair care industry to illustrate what product systems are. In the 1990’s the industry changed when focus shifted from providing a solution for a certain type of hair (e.g. oily or dry) to certain benefits sought (e.g. volume or curl-enhancing). In order to obtain these benefits a whole system of products is needed, such as shampoo, conditioner, and styling products, hence “product systems”. Product systems are oriented towards helping consumers solve a problem or reach a goal. This goal-orientation reveals a customer orientation as it emphasizes products use rather than product features and as it is based in trying to serve customer needs (by answering to benefits sought). Very complete bundles can thus be considered as product systems as the reason why the bundles are perceived as complete
is that they provide a full service offer for the customers, similar to the objective with product systems. Product system can arguably be considered a subset of the concept bundle as product systems by definition are complementary and complete while the term bundle covers a wider variety of product combinations, including unrelated and incomplete product combinations. The completeness as such is customer oriented as it is determined by which products customers need to perform the activities that they want.

In conclusion, when discussing and disentangling the concept complementarity, it should be recognized that bundles can be defined as complementary in several different ways and that they can be complementary to varying degrees. Thus, a bundle can be defined as “partial use complementary” but more or less complementary than other partial use complementary bundles depending on how complete, distinct, and prevalent the bundle is compared to the other bundles. This aspect of complementarity is discussed further in the next chapter.

**The effect of complementarity on consumers’ perception of value**
The results show that many kinds of relations are perceived as complementary and that the degree of perceived complementarity varies between and within different product relations. In order to fulfill the purposes of this dissertation, the effect of different degrees and types of complementarity on consumers’ evaluations are discussed. To capture how consumers value bundles, their preferences for and satisfaction with bundles depending on complementarity were measured. Initially, the analysis focuses on how complementarity influences preferences for bundles. Subsequently, the analysis turns to the effect of complementarity on consumer satisfaction.

**Preferences for bundles and separate products**
The analysis of how preferences are affected by complementarity is organized according to the following research questions that also guided the empirical studies: (1) **How do different types of complementarity affect consumers’ preferences for bundles?** and (2) **How do different degrees of complementarity affect consumers’ preferences for bundles?** In order to determine if consumers at all value bundles, bundle evaluations need to be compared to that of separate products, which initially is briefly discussed: (3) **How are bundles evaluated in comparison to separate products?** Consumer preferences were measured by ratings of perceived quality, attractiveness, and purchase intention.

Generally, the results showed that bundles are less preferred than separate products; the perceived quality and attractiveness as well as
purchase intention is lower for bundles than separate products. Bundles were less positively evaluated than both aggregates of separate products (when participants had no purchase plans, in Experiment 1) as well as separate anchor products (that is, separate products for which the participants had purchase plans according to instructions in the scenario, in Experiments 2-5). However, how appealing bundles are compared to separate products is varies with the relation between bundle products. Some bundles with complementary products were as positively rated on attractiveness and purchase intention as separate products (aggregates or anchor products). In a few exceptional cases, for example the bundle with a digital camera and a camera case, complementary bundles were even preferred over separate products. Unrelated bundles, on the other hand, were never preferred over separate products.

One possible reason why separate products are more positively evaluated than bundle can be that they are easier to categorize. Classification of objects into groups can be based on number of shared and unique attributes. Objects within a group should be as similar as possible while as dissimilar as possible from objects in other groups (Rosch 1975; Rosch et al. 1976). As bundles consist of several products, number of attributes is larger and possibly more varied than for separate products. Separate products are therefore likely to be easier to refer to a category. However, the results from Experiment 5 did not confirm the assumption that it is less demanding to evaluate separate products. The participants needed to think as much about the separate anchor products as the complementary bundles and more than about the unrelated bundles before making a purchase decision. The issue is discussed further below. In many instances bundles were less preferred than separate products even when a discount was offered on the bundles (and not on the separate products). Thus, initially it seems like bundles are not preferred over separate products. However, a conclusion that bundles do not provide customer value is precipitous as the discussion below about the effect of bundle complementarity on preferences shows.

**Bundle complementarity and consumer preferences**
When analyzing the effects of relation between bundle products on consumer preferences, the results unambiguously show that complementarity has a positive influence on preferences for bundles, confirming previous studies of for example Herrmann et al. (1997) and Harlam et al (1995). The positive effect of complementarity is valid for all ratings of preferences; quality, attractiveness, and purchase intention and the results are stable over several experiments, varying samples (students and Swedish consumers in general), different industries (electronic devices, groceries, and leisure activities), and varying types of complementarity.
It is here suggested that complementarity has a positive effect on consumer preferences because it simplifies categorization. There are several reasons why complementary bundles are easier to categorize than unrelated bundles. One reason is that an unrelated bundle has more diverse product attributes, which makes it hard to identify one common category that can hold the bundle. Objects that possess ambiguous features are hard to fit into a category because referring them to a category makes the category heterogeneous. Categorization can also be made based on a common goal, that is, a category is created to answer to a current need and connect otherwise unrelated categories to meet a novel goal (Ratneshwar et al. 2001). In order to understand two words together, a specific relation between them need to be established (Wilkenfeld and Ward 2001; Wisniewski 1996) and this often involves identifying a goal-derived, or ad hoc, category (Barsalou 1983). Most likely, it is to create a category based on a common goal or usage for complementary than unrelated bundles. For example, a bundle with a movie ticket and popcorn may be referred to a movie experience category while it is hard to come up with a common goal or usage for products that are unrelated such as a movie ticket and time in a rent-a-workshop.

Ease of categorization has been suggested to have a positive influence on preferences because fluency in processing signals positive states of the environment and successful resolution of problems (Schwarz 2004; 2007). In Experiment 5 the participants rated the need to think before making a purchase decision higher for complementary than unrelated bundles. This contradicts the positive effects of fluency on preferences. A reason for this may be that unrelated bundles are so incongruent to existing category schema that consumers are discouraged from trying to classify them. If consumers know straight away, without much processing, that they do not want to purchase an unrelated bundle, they may not put effort into evaluating them. If this is the case, the need to think is but another measure of purchase intention rather than a measure of how demanding the bundles are to evaluate. As noted in the Method chapter the participants were asked to state how much they needed to think before making a purchase decision, not on how much they needed to think to evaluate or categorize the bundles and products. That is, the question may not be a very good measure of processing ease or difficulty but of decision ease or difficulty. These results indicate that some sort of decision rule is used when evaluating bundles, where an initial assessment of whether or not a bundle is an option for purchase determines whether a more extensive evaluation will take place. For example, the consumer may ask him- or herself if they can see a common usage of the products. If not, the bundle is not an alternative for purchase and will not be evaluated. This is an interesting aspect of the process of bundle evaluation and value formation. However, from the data collected for this dissertation it is not possible to draw any further conclusions.
Type of complementarity and preferences
At the outset of the chapter, different types of complementarity were discussed and it was stated that many kinds of relation between bundle products are perceived as complementary. In the present section, the effects of different types of complementarity on consumer preferences are analyzed. The results show that it is possible to generalize the positive effect of complementarity to many different kinds of relations between bundle products, for example, functional relation, use time, and use occasion. The study thus shows that complementarity is a multifaceted concept that covers many kinds of bundles. Table 22 shows the ratings of attractiveness of all complementary bundles in the experiments classified according to the different types of complementarity identified by Varadarajan (1986). Attractiveness here illustrates consumers’ preferences for bundles. Attractiveness was chosen because it is a direct measure of preferences (in contrast to quality) and because it is less influenced by conceivable monetary constraints than purchase intention.

In the present study, similarity in price level between bundle products was investigated in several experiments as a type of complementarity. While the price level of bundle products was shown to influence preferences, effect cannot unambiguously be referred to similarity in price. In Experiment 3, the effect of similarity in level of luxury was investigated. If similar level of luxury of bundle products is a type of complementarity, the expected result would be that bundles with two luxury or two low-budget products had more positive ratings than bundles with one luxury and one low-budget product. However the results did not confirm this relationship. Instead, number of luxury products determined the evaluations of a bundle; the perceived quality dropped the more low-budget products there were in a bundle (none, one, or two) while the stated purchase intention went up. Similarly, in Experiment 5, bundles with two low-budget products were perceived as lower in quality but gave higher purchase intention compared to bundles with two exclusive products. Instead, the fact that low-budget bundles are preferred suggests that price considerations have a larger impact on consumers’ preferences for bundles than price similarity do. The effect of price considerations of consumer preferences is discussed further in relation to discounts.
Table 22. Preferences for and satisfaction with bundles with different kinds of relation between products (adapted from Varadarajan 1986).

<table>
<thead>
<tr>
<th>Kind of relation</th>
<th>Bundles in experiments</th>
<th>Attractiveness (in Exp. 4,5)</th>
<th>Satisfaction (in Exp. 4,5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect use complementarity</td>
<td>Excl. TV and bracket (Exp. 4)</td>
<td>5.7</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>Excl. TV and excl. DVD player (Exp. 1,2,3,4,5)</td>
<td>4.8, 4.6, 5.2, 5.1, 3.9</td>
<td>4.8, 4.9, 4.8</td>
</tr>
<tr>
<td></td>
<td>Low-b TV and low-b DVD player (Exp. 1,5)</td>
<td>4.0, 4.0</td>
<td>4.0, 4.5</td>
</tr>
<tr>
<td></td>
<td>Excl. DVD player and movie DVD (Exp. 1,2)</td>
<td>4.3, 4.4</td>
<td>4.3, 4.4</td>
</tr>
<tr>
<td>Partial use complementarity</td>
<td>Excl. camera and excl. photo printer (Exp. 1,2,3,4,5)</td>
<td>5.7, 5.6, 4.4, 4.5, 2.4</td>
<td>5.1, 4.7</td>
</tr>
<tr>
<td></td>
<td>Excl. camera and low-b photo printer (Exp. 1,2,3)</td>
<td>4.8, 4.3, 4.3</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. camera and digital photo frame (Exp. 4)</td>
<td>4.2, 4.2</td>
<td>4.2, 4.4</td>
</tr>
<tr>
<td>Use time complementarity</td>
<td>Pre-made lunch and drink of choice (Exp. 4)</td>
<td>5.6, 5.6</td>
<td>5.6, 5.8</td>
</tr>
<tr>
<td></td>
<td>Pre-made lunch and café latte (Exp. 4)</td>
<td>3.4, 3.4</td>
<td>3.4, 3.7</td>
</tr>
<tr>
<td></td>
<td>Pre-made lunch and dessert cookie (Exp. 4)</td>
<td>3.7, 3.7</td>
<td>3.7, 3.9</td>
</tr>
<tr>
<td>Use occasion complementarity</td>
<td>Swimming pool entrance and ice cream (Exp. 4)</td>
<td>3.8, 3.8</td>
<td>3.8, 5.0</td>
</tr>
<tr>
<td></td>
<td>Movie ticket and soft drink (Exp. 4)</td>
<td>4.6, 4.6</td>
<td>4.6, 5.4</td>
</tr>
<tr>
<td></td>
<td>Movie ticket and popcorn (Exp. 4)</td>
<td>5.2, 5.2</td>
<td>5.2, 5.3</td>
</tr>
<tr>
<td></td>
<td>Movie ticket and savory snack (Exp. 4)</td>
<td>3.8, 3.8</td>
<td>3.8, 4.0</td>
</tr>
<tr>
<td>Seasonal complementarity</td>
<td>Filet meat and sauce mixture (Exp. 4)</td>
<td>4.9, 4.9</td>
<td>4.9, 5.3</td>
</tr>
<tr>
<td></td>
<td>Filet meat and potato croquettes (Exp. 4)</td>
<td>5.5, 5.5</td>
<td>5.5, 5.7</td>
</tr>
<tr>
<td></td>
<td>Filet meat and packaged lettuce (Exp. 4)</td>
<td>5.4, 5.4</td>
<td>5.4, 5.6</td>
</tr>
<tr>
<td>Newly evolving complementary relationships through creative promotion of new uses</td>
<td>Sw. pool entrance and work out session (Exp. 4)</td>
<td>5.8, 5.8</td>
<td>5.8, 5.9</td>
</tr>
<tr>
<td></td>
<td>Sw. pool entrance and time in sunroom (Exp. 4)</td>
<td>4.1, 4.1</td>
<td>4.1, 4.6</td>
</tr>
<tr>
<td></td>
<td>(Sw. pool entr. and round of mini golf) (Exp. 4)</td>
<td>4.5, 4.5</td>
<td>4.5, 4.8</td>
</tr>
<tr>
<td>Distribution complementarity</td>
<td>Excl. DVD player and excl. TV (Exp. 1,2,3)</td>
<td>5.2, 5.6, 4.7</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. DVD player and low-b DVD player (Exp. 1,2,3)</td>
<td>4.0, 4.6, 2.9</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Low-b DVD player and low-b TV (Exp. 3)</td>
<td>3.8</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. photo printer and excl. camera (Exp. 3)</td>
<td>4.7</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. photo printer and low-b camera (Exp. 3)</td>
<td>4.1, 4.1</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Low-b photo printer and low-b camera (Exp. 3)</td>
<td>5.3</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. camera and camera case (Exp. 1,2)</td>
<td>5.3, 5.8</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Excl. camera and memory card (Exp. 4)</td>
<td>6.1</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Target market commonality

Directly noncompeting products with common thread

Thematic tie-ins

Events/special occasions tie-ins

Seemingly non-complementary

Note: Attractiveness and satisfaction were rated on nine-step scales, where 1 is the lowest and 9 the highest rating.

A proposition based on findings from the first three experiments is that the dependency of products influences consumers’ preferences for bundles. Bundles with a dependent luxury anchor product, such as a DVD player or a photo printer, and a low-budget functionally related by-product, such as a TV or a digital camera, are less attractive than the corresponding bundle.
when the independent product is anchor product. If a consumer is looking to buy a dependent product, its features and quality must be supported by the by-product in order for a bundle to be attractive to the consumer. If the product the consumer plans to purchase is not dependent on the by-product to function fully, it does not matter if the by-product has less features and worse quality. As the preference for a bundle is determined by whether the by-product functionally supports the anchor product, there is no effect of dependency for unrelated bundles. When bundles are unrelated, the by-product does not support the anchor product regardless of whether the anchor is dependent or not.

Other types of complementarity, such as use time, process, and use occasion complementarity were also investigated and the results show that they have a positive effect on consumer preferences. Taken together many different types of complementarity has been identified and shown to influence consumer preferences for bundles. In order for consumers to perceive bundles as complementary it is important that they understand the relation between bundle products. Research has shown that providing a label (Moreau et al. 2001; Uekermann et al. 2010) or suggesting a usage situation (Koukova et al. 2008; Gibbert and Mazursky 2009) have a positive impact on consumer preferences. The reason is that it proposes a category that the product (or bundle) can be referred to (Gentner and Kurts 2006), which decreases the cognitive load and simplifies categorization. Providing a label or suggesting a usage area helps consumers understand the relationship between bundle products and, thus, the bundle is perceived as more complementary. In a sense, when creating goal-derived categories to hold bundles, consumers have themselves labeled the bundle. Complementarity types such as use time complementarity and process complementarity may enhance the use of goal-derived categorization as the products are used to achieve a common goal rather than having similar features. While unrelated bundles may be hard for consumers to "label", consumers have a better chance of identifying a link or relation between complementary bundle products, such as a usage situation, a usage area. If a suggested usage occasion can be identified for unrelated bundles, they are de facto complementary, even if the bundle products at first glance seem unrelated.

**Degrees of complementarity and preferences**

As discussed, the results from the present study show that the perceived complementarity can vary on a continuous scale. These variations also transfers to consumers’ preferences so that bundles are more preferred the more complementary they are. This is illustrated by, for example, bundles with different degrees of functional relation between products, which were included in all experiments. The results were unambiguous; functionally related bundles were preferred over same category bundles that were
preferred over unrelated bundles. Functionally related bundles had higher ratings than unrelated bundles on all measures. However, the slightly complementary bundles were not rated in-between complementary and unrelated bundles, but alternated between being evaluated as positively as complementary bundles and as negatively as unrelated bundles (yet, most often rated as low as the unrelated bundles). This suggests that the effect of complementarity is not all straightforward. However, looking more closely on the similarity ratings, they show that the level of similarity of slightly complementary bundles were closer to those of unrelated bundles than those of complementary bundles, showing that bundles made up to be slightly complementary, were not perceived as being perfectly in between unrelated and complementary bundles, but rather perceived as more similar to unrelated bundles.

Another issue that highlights the positive effect of complementarity on consumers’ preferences for bundles is the effect of completeness, distinctiveness, and prevalence. These constructs are here highlighted as factors that affect the degree of perceived complementary between bundle products and the results show that they also have a positive influence on consumers’ preferences. Bundles characterized by completeness (e.g. pre-made lunch and drink), distinctiveness (e.g. movie ticket and soft drink or popcorn), or prevalence (digital camera and camera case) were preferred over other complementary bundles. For example, a digital camera and a camera case had particularly positive ratings in Experiments 1 and 2. An examination of the similarity ratings in Experiment 2 showed that this specific bundle had the fifth highest similarity rating (out of 39 combinations), with a rating of 30.5 of a maximum 150, where low rating represents high complementary.

Another illustration of the positive effect of complementarity on preferences is the fact that some unrelated bundles that had unexpectedly high preference ratings also were perceived as more complementary than expected. In Experiment 4, for example, the unrelated bundle consisting of entrance to swimming pools and a round of miniature golf had higher pre-purchase evaluations than other unrelated bundles. The product fit ratings revealed that the manipulations had been unsuccessful and that the participants perceived the bundle as quite complementary.

However, other exceptions cannot be explained by perception of complementarity. Bundles containing a low-budget bicycle were very positively evaluated even though they were not perceived as complementary. Instead, the positive bundle evaluations can be explained by very positive evaluations of the low-budget bicycle as a separate product (possibly due to the sample of university students). The attractiveness of the bicycle as a separate product may have rubbed off onto the bundle and improved the preferences for the bundles.
To sum up, the results confirm previous research that shows or presuppose that bundle complementarity has a positive influence on consumer preferences. Yet, as the overall aim with this dissertation is to increase the understanding of how bundles are valued by consumers, not only preference is considered. Post-purchase evaluations, here operationalized as satisfaction is also of interest as a major part of customer value.

**Satisfaction with bundles and separate products**
Post-purchase evaluations is another important aspect of how bundling influences consumers perception of value. One of the purposes of this thesis is to analyze how bundle complementarity influences satisfaction. The empirical investigations were conducted to answer a number of research questions and the analysis is based on them. Hence, (1) **How do different types of complementarity influence consumers’ satisfaction with bundles?** and (2) **How do different degrees of complementarity influence consumers’ satisfaction with bundles?** Satisfaction was measured by ratings of satisfaction with a hypothetical bundle purchase and satisfaction if one product was not used. A reason why it is considered important to study the effect of complementarity on satisfaction is that satisfaction is closely related to customer value. In order for bundle value to lead to repurchase and loyalty experienced satisfaction is more important than initial preferences from pre-purchase evaluation. Thus, satisfaction is an important aspect of overall bundle value.

Since satisfaction was only measured in Experiment 4 and 5, comparisons can only be made between bundles and separate anchor products because the analyses are based on scenarios inducing a purchase plan. In accordance with the effect of bundling on consumers’ preferences, bundles generally provide less satisfaction than separate anchor products. This result is important as it indicates that not only are bundles less preferred than separate products, they also provide less satisfaction. Purchase intention, as a measure of preferences, can be affected by promotional campaigns and monetary incentives to induce trial. But if an actual trial and use do not render customers satisfaction, is there any value with bundling for consumers? This question will be further addressed in the General discussion.

The results indicate that the value and satisfaction bundles provide can be affected by the composition of bundles. In line with the effect of bundle composition on preferences, complementary bundles are more positively rated on satisfaction than unrelated bundles are. Unrelated bundles always have lower ratings of satisfaction than separate products while complementary bundles sometimes were as positively rated as separate products.
**Bundle complementarity and consumer satisfaction**

Generally, the ratings of satisfaction correlates with perceived complementarity between bundles. For example, the results showed that complementary TV bundles had higher ratings of satisfaction than other complementary bundles. These bundles also had the highest ratings of perceived product fit. Hence, both preferences and satisfaction are positively affected by bundle complementarity and it can thus be inferred that complementary bundles overall provide more value than unrelated bundles.

The results also show that the ratings of satisfaction if the by-product cannot be used were lower for unrelated bundles than for complementary bundles. At first, this result seems rather counterintuitive. The interpretation of this should not be that it is worse if an unrelated rather than a complementary bundle cannot be used. In fact, the decrease in satisfaction in the by-product cannot be used was larger for complementary than unrelated bundles. This indicates that, as expected, not being able to use both products had a larger negative effect for complementary bundles than unrelated bundles. Since one of the major reasons for purchasing a complementary bundle is that the products in some sense are good together, it is expected that satisfaction drop much if one of them cannot be used.

The results may be an indication that consumers have different expectations on complementary than unrelated bundles. Expectations and disconfirmation of expectations have been shown to have large impact on satisfaction (e.g. Oliver and Swan 1989). While consumers have expectations about how each product in a complementary bundle will work separately, they also have plans and expectations about the common usage of the bundle products. Therefore, the decline in satisfaction if a complementary by-product is not used may be larger than if an unrelated by-product is not used, as neither the expectations about the separate product nor the common usage is fulfilled.

Generally however, complementary bundles provide more satisfaction than unrelated bundles. Even when one of the products in a complementary bundle is not used, unrelated bundles do not provide more satisfaction. The fact that complementary bundles provide more satisfaction than unrelated bundles even when the products are not used together is a strong indication of the superior value that complementary bundles provide. This indicates that there is a positive spill-over effect of the evaluations of complementary bundles. Not using one of the products may be considered a case of bad product performance, which has a negative effect on satisfaction (Wirtz and Mattila 2001). However, even a disappointment with a complementary bundle, such as not using one of the products, renders less dissatisfaction for customers than unrelated bundles do.
Type of complementarity and satisfaction

It can thus be concluded that complementarity in general have a positive influence on satisfaction. The analysis has shown that there are different types of relations between bundle products that are perceived as complementary and that they have a positive effect on preferences. In the following the relation between different types of complementarity and satisfaction is analyzed.

Similar to the findings with regard to preferences, similarity in price level of bundle products does not seem to have a positive effect on satisfaction, adding strength to the notion that similarity in price level is not a type of bundle complementarity that is valued by consumers. The results show that it is rather whether bundle products are exclusive or low-budget that influences satisfaction – not whether the bundle products have similar price level. Bundle products' price level influences satisfaction differently than preferences, though. While the effect of price level on preferences is somewhat ambiguous (perceived quality is higher but purchase intention lower for exclusive than low-budget bundles), the effect on satisfaction is straight-forward positive. This may be a rather intuitive finding, indicating that consumers consider financial issues in a purchase situation. However, once bought the participants expected to be more satisfied with bundles with exclusive products. Thus, while preferences for exclusive bundles are lowered by economic considerations the higher quality of exclusive bundles is assumed to provide satisfaction in usage. The results suggest that consumers anticipate exclusive products to be of higher quality and to meet their expectations regarding features and performance after a purchase better than low-budget bundle, thereby providing satisfaction.

The results that exclusive bundles are less preferred but provide higher satisfaction compared to low-budget bundles makes inferences about the overall value of exclusive and low-budget bundles ambiguous. If preferences are too low, consumers are discouraged from purchase. If no purchase takes place, consumers cannot use the products and thus cannot experience satisfaction. Even though the experienced satisfaction is lower for low-budget bundles, higher preferences increase the likelihood that a purchase will take place so that satisfaction can be experienced. This highlights the importance of pricing. In order for value to become, the price of the exclusive bundle should be on a level that is perceived as fair and affordable so that a purchase takes place. Only then can consumer experience satisfaction and the bundle provide value.

Besides price level, bundles with other types of complementarity were investigated in the study. When defining the bundles in the study according to the listing made by Varadarajan (1986), it is evident that different types of complementarity provide satisfaction to varying degrees. Table 22 illustrates that partial use and use time complementary bundles have the lowest ratings
of satisfaction and perfect use, process, and derived demand complementary bundles have the highest. Largely, these evaluations correlate with the perceptions of complementarity for the different types of bundles and are also similar to the evaluations of preferences. This fact suggests that some types of complementarity provide more overall value than others. As both preferences and satisfaction is high for perfect use complementary and derived demand complementary bundles, the overall value of these kinds of bundles is high. However, not all types of complementarity have the same effect on preferences and satisfaction. As discussed above, the effect of bundle exclusiveness has a different effect on preferences than satisfaction, which causes uncertainty about how exclusiveness affects the overall value of bundles.

Degrees of complementarity and satisfaction
Also similar to preferences, there is a difference in how satisfied consumers are with different bundles even though the relation between the bundle products is the same. For example, a bundle with pre-made lunch and a drink provides more satisfaction than the other use time complementary bundles in the study, see Table 22. This suggests that bundle completeness is important also for satisfaction. Similarly, a bundle with a movie ticket and a savory snack provides less satisfaction than the other two use occasion complementary bundles, possibly because the bundle products are less distinctive for a movie experience. Based on the results, also prevalence is suggested to have a positive effect on satisfaction. The bundle with camera and a camera case, which are products that are commonly offered in combination, have high satisfaction ratings. It thus seems as if the completeness, distinctiveness, and prevalence which influences perceived complementarity also transfers to satisfaction and, hence, that the degree of complementarity influences how satisfied consumers are with a bundle.

The effect of discount on consumer evaluations
The results from the first four experiments showed that separate products are preferred and give more satisfaction than bundles. Why then, are bundling strategies such effective tools to increase sales? Why do consumers buy bundles if they do not find them attractive and expect to be less satisfied than with separate products? One explanation is that, typically, bundles in the market are discounted either by percent or money off or by multipack offers such as “buy one get one” (BOGO). The bundles in the first four experiments did not have explicit price reductions. However, as monetary cost is an important aspect of value and in order to better understand how bundling influences consumers’ perceptions of value, the effect of complementarity on consumers’ preferences for and satisfaction with discounted bundles was investigated. The discussion is guided by three
research questions from Experiment 5: (1) “How is consumers’ preferences for and satisfaction with bundles affected by bundle discount in comparison to separate products?” and “What is the effect of discount on consumers’ preferences for and satisfaction with bundles with (2) varying degree of complementarity and (3) different price levels? The investigated bundles either consisted of two exclusive or two low-budget products that varied in complementarity. The effect on consumers’ preferences and satisfaction of three levels of bundle discount, 15, 30, and 45 per cent were compared to undiscounted bundles and undiscounted separate products.

Comparison between discounted bundles and separate products

As expected based on previous research (e.g. Alford and Biswas), there was a positive effect of bundle discount on consumer evaluations. Bundles were more positively evaluated when they were discounted than when they were not. However, the evaluations did generally not improve with increasing discount levels; there was no difference in preferences for and satisfaction with bundles when they had a 15 or 45 per cent discount (except for purchase intention that was significantly higher with a 45 per cent discount than with no discount).

Evaluations of discounted bundles were compared with undiscounted separate product in order to analyze if bundles at all can be more positively evaluated than separate products. This is a common choice for consumers who have plans to purchase one product and encounter it in a bundle offer. In line with the general finding separate products were more positively evaluated on all measures than undiscounted bundles. Still, even when bundles were discounted and separate products were not, bundles were generally never more positively evaluated. However, the effect of discount differed between complementary and unrelated bundles as will be discussed below.

Effect of complementarity of discounted bundles on consumer evaluations

Complementary bundles were always more positively evaluated than unrelated bundles, regardless of discount level. However, the effect of discount was different for complementary and unrelated bundles. Discount only had a mildly positive effect on preferences for and satisfaction with unrelated bundles. Moreover, unrelated bundles were never as positively evaluated as separate products. Evaluations of complementary bundles, on the other hand, were positively affected by discount. Preferences and satisfaction increased when complementary bundles were discounted so that they were as positively evaluated as separate (undiscounted) products. Generally, however, it did not matter how much they were discounted as
long as some discount was offered. The evaluations of quality and attractiveness were as positive regardless of whether the discount rate was 15 per cent, 30 per cent, or 45 per cent while purchase intention and satisfaction increased again when the discount level was raised from 30 to 45 per cent. The results contradict the findings from Sheng et al. (2007a) showing that complementary bundles are less affected by discount.

Studies indicate that there may be a threshold level for discounts, after which product evaluations deteriorate (Raghubir and Corfman 1999; Nusair et al. 2010; Jensen and Drozdenko 2008). However, Herrmann et al. (1997) found no such effect for bundle discounts on up to 20 per cent. Since no threshold level was detected in the present study, indications are that discount level need to be higher than 45 per cent in order for the effect to occur. This is in line with previous (mainly non-bundling) research which shows that discounts of at least 40 per cent up to as high as 80 per cent is needed before it has a negative impact on consumer evaluations (Raghubir and Corfman 1999; Nusair et al. 2010; Jensen and Drozdenko 2008). However, whether this finding is positive in the sense that it means that discounts can be offered without negative consequences on evaluations or that it occurs because evaluations are so low that discounts cannot further lower them is unclear.

Previous research has also suggested that bundle evaluations are influenced by how a discount is presented. Harlam et al. (1995) show that buy-one-get-one (BOGO) offers different effect depending on bundle complementarity. In Experiment 1 and 2, the bundles with an inexpensive by-product (bath towel, clock radio, etc.) may be interpreted as BOGO offers. Research suggests that BOGO offers are more attractive than general discount offers when the risk of bad product performance is low and discounts are preferred over BOGO offers when malperformance risk is high (Lowe 2010). As complementary bundle consist of products that can be used together, arguably the perceived risk of malperformance is lower than for unrelated bundles, which would imply that complementary BOGO offers would be more valued than unrelated BOGO offers. The results in this study confirm this proposition as functionally related BOGO bundles were preferred over unrelated; at the same time contradicting the results of Harlam et al. (1995) who found no effect.

**Effect of price level of discounted bundles**
The price level of bundled products is assumed to signal quality and influence bundle evaluations (Choi 2003). An expensive product is assumed to have higher quality than an inexpensive product (Zeithaml 1988; Grewal et al. 1998a), so that an expensive TV is assumed to be of higher quality than an inexpensive TV, which the results of the present study confirm. As both price and discount may affect consumers’ perception of bundles it i of
interest to study if they interact to enhance or diminish each other’s effect. Is the effect of discount different depending on price level of bundle products?

As discussed, the results confirm that, as expected, bundles with exclusive products had higher perceived quality than bundles with low-budget products. However, attractiveness was not higher for exclusive bundles and purchase intention was lower than for exclusive than for low-budget bundles. Yet, once bought the participants expected to be more satisfied with exclusive bundles. As discussed in relation to how satisfaction is influenced by bundling, this indicates that consumers take financial consideration when making purchase decisions.

Since both discount and price has major impact on the financial terms of an offer, it is not surprising that the effect of discount varied with bundle price level. Preferences increased more when exclusive bundles were discounted than when budget bundles were discounted. Possibly, undiscounted exclusive bundles are too expensive to be attractive for consumers to purchase or at least not worth its price. With a discount, on the other hand, the exclusive bundle may seem like a bargain while a discount on the low-budget products do not offer as much extra value but instead may raise questions about why they need to be discounted (e.g. last season’s goods).

**Summing up - analysis**

The analysis shows that bundles rarely are preferred over separate products and that they only exceptionally provide more satisfaction. However, the results also highlight the importance of composition on bundle evaluations. Generally, complementarity has a positive effect on consumers’ preferences for and satisfaction with bundles and by combining products that are perceived as complementary bundle evaluations can be improved. Another way to improve bundle evaluations is by offering them at a discount. The results show that especially the perception of value of complementary bundles is affected positively by a discount. Still, even discounted complementary bundles are seldom more positively evaluated than separate products. However, the inference of the results should not be that bundles do not provide value to customers. Complementarity is but one aspect that influences consumers’ perception of value. In the process of forming a perception of overall value, consumers make an assessment of the benefits and costs attached to the acquisition and use of the bundle. The results indicate that complementarity is beneficial for consumers, but that the benefits are balanced with costs.

Besides complementarity, reduced risk of purchase and increased convenience are potential benefits for consumers when purchasing a bundle. These aspects were not taken into consideration in the present study. It can be noted, that reduced risk is likely to correlate with complementarity. For a
bundle to reduce the perceived risk of purchase, the products are likely to be related as risk reduction may be caused by for example lowered risk of products not working well together. Also convenience may correlate with complementarity, for example when products offered in a bundle do not need to be self-assembled. However, convenience such as one stop-shopping does not presuppose complementarity as unrelated products may be bundled and sold in a store, thereby offering convenience. However, the risk reduction and convenience aspects of value are likely to have limited influence on the perceived value in the present study, as the bundle evaluations were made in light of instructions that they only needed to purchase one of the products. Thereby, reduced risk or convenience may not be considered as benefits as the alternative to purchasing the evaluated bundle is not to self-assemble separate products or visiting several stores to purchase corresponding products.

One obvious factor that may have been perceived as costs and thus influenced the perceived value of the bundles in the study negatively is the price. In Experiment 2 to 5, bundles were compared to separate products and as bundles consist of more than one product, the monetary outlay for a bundle was always higher than for separate products, even in the presence of discounts (albeit a bundle may be more worth its prize due to the discount).

Based on the results from the present study, it is proposed that complementarity has a positive effect on consumers’ perception of bundle value, but that complementarity is not enough for bundles to provide more value than separate products. Additional benefits, such as lowered risk or increased convenience, or lowered costs, monetary or other, is needed.
General discussion

As opposed to much previous research studying how bundling can benefit firms, the underlying question here is if and how bundling can be beneficial for consumers. Therefore, the general aim here is to increase the understanding of how consumers perceive bundle value. To achieve this goal, insight in consumers’ decision making process is needed, more specifically how consumers evaluate bundles before and after purchase as they form preferences for and experience satisfaction with bundles. Which products that are combined in bundles naturally has a large impact on how a bundle is evaluated compared to separate products and thus, the main purpose of this dissertation was to better understand how bundle composition influences consumers’ preferences for and satisfaction with bundles.

The analysis of data provided an initial understanding about the effect of complementarity on preferences and satisfaction and about the overall value that bundles can provide. Yet, the analysis also gave rise to questions and insights calling for further discussions. In the following, different aspect of how consumers perceive bundle value and the consequences of bundle value is discussed further.

Understanding complementarity

As is evident from the data analyses, composition of bundles has an impact on consumers’ perception of value. More specifically, complementary bundles have a positive impact on consumers’ preferences and provide more satisfaction than unrelated bundles. The analysis shows that complementarity is a wide concept that can be applied on a wide range of product relations, such as usage occasion, process, and derived demand. The analysis also showed that the perceived degree of complementarity could vary within each type depending on the completeness, distinctiveness, and prevalence of the bundle and on whether the anchor product in an offering is dependent or independent. A major aim of this dissertation is to elaborate on what complementarity is in order to understand why and how it influences consumers’ perceptions of bundles. What then is complementarity?

Besides the different types of complementarity investigated in the empirical studies in this dissertation, a large number of additional relations between bundle products have been highlighted as complementary; for example products that have a common target market, are used at a specific season, or for a specific event or occasion (Varadarajan 1986).

Three dimensions of complementarity

The bundles used in the empirical investigations consist of products that are complementary in different ways and they have been classified in accordance
with Varadarajan (1986), see Table 21 or 22. The bundles that are perfect use, partial use, or derived demand complementary share some underlying characteristics as the complementarity between bundle products is based on notions of functional relation. The products are perceived as complementary because they share attributes and have features that fit together. Similarly, the bundles that are use time, use occasion, process, or image complementary have a common denominator in that the perceived complementarity is context dependent. The bundles are perceived as complementarity because they answer to a certain need related to that context, for example a pleasant movie experience or a complete dinner for preparation. Moreover, even though not included in the present study, complementary bundle with thematic tie-ins and events/special occasions tie-ins are context dependent in that they answer to needs in specific situations. This suggests that there are at least two underlying dimensions of complementarity – one based on functional relation and product features and one based on context and consumer needs. Analyzing the remaining proposed types of complementarity (see Table 1 for illustrations of product combinations), newly evolving complementary relationships through creative promotion, distribution, target market commonality, seemingly noncomplementary, and directly noncompeting products with common thread share a common denominator as they are company oriented aspects of bundle complementarity. These types of complementarity are determined by how well the products fit together with regard to how a company is organized, its logistics, market segmentation, promotional efforts, etc. rather than with regard to product attributes or consumer needs.

This suggests that there are different dimensions underlying perceptions of complementarity and that different types of complementarity can be grouped based on their underlying characteristics. These groups denote different dimensions of complementarity and the perceived complementarity is driven by different factors. The company dimension of complementarity has a firm perspective and selling orientation and is determined by how a company is organized. The context dimension of complementarity, on the other hand, is largely based on a consumer perspective with consumer needs and practices in center. The functional dimension of complementarity can arguably be applied with both a consumer and a company perspective. From a consumer perspective the functional dimension is relevant in relation to how products work together and thereby offer convenience. From a company perspective, a functional dimension of complementarity may for example be related to product development.

In a brand name extension setting, Chakravarti et al. (1990) highlighted three dimensions that judgments of fit can be based on. The first is number of shared/unique features, which is similar to the functional dimension identified here. The second base for fit is shared benefits, which means that
focus is on a common goal that items are linked to (such as things to eat on a
diet) rather than shared physical features, similar to the context dimension
identified here. The company dimension identified here has no parallel in
the dimensions identified by Chakravarti et al. (1990). Instead, they point to
usage complementarity as a third dimension, which they define as when “the
joint benefits of the two products [are] higher than the sum of their benefits
viewed individually” (p. 911). Compared to the dimensions of complementarity
identified here, Chakravarti et al. (1990) focus solely on consumers’ perception of complementarity, which the absence of a company
dimension of complementarity illustrates. Intuitively, one can assume that
dimensions based on consumers’ needs and perceptions are those that
provide value for customers. As no bundles with company-oriented
dimension of complementarity was included in the present study, no
conclusion can be drawn in the matter.

Both the empirical and theoretical observations in this dissertation
indicate that there are several ways to define and discuss complementarity.
 Compared to the ones discussed this far, there potentially are still other
kinds and dimensions of relations between products that may be considered
complementary. However, it can also be argued that it is neither feasible nor
fruitful to identify all prospective types of complementarity that may
influence consumers’ perceptions of bundle value; there are simply too
many. Is it instead possible to identify the types that have the largest impact
on consumers’ perceptions of value? Based on the empirical investigations,
derived demand, use occasion, and process complementarity have the largest
effect on preferences and satisfaction. Yet, to conclude that these types are
the most important at all times is to make too-reach[ing inferences. For one
thing, many kinds of complementarity are not investigated in this study.
There are no bundles with products which relation may be referred to the
company dimension of complementarity, for example, target market
commonality or distribution complementarity. Another reason why the most
valued type of complementarity cannot be defined based on the current
results is that the type of complementarity that is most valued by consumers
may differ depending on the occasion, the individual, and the kinds of
products included. Consider, for example, which relation that would be
suitable when creating a complementary bundle of goods (e.g. a TV)
compared to services (e.g. a movie ticket). In the first instance,
complementarity based on functional relation, such as derived demand or
perfect use complementarity, would probably be attractive while it would not
in the latter; it is questionable what functional relation even means in
relation to a movie ticket. Thus, which kind of product relation that is most
important may vary depending on industry, which products that are
included in the bundle, market segment, etc. The effect of complementarity
is thus most likely context dependent.


**Degree of complementarity influenced by bundle distinctiveness, prevalence, and completeness**

Yet another reason why defining the most important types of complementarity is not fruitful is that perceived complementarity is not only a matter of type of product relation. The perceived complementarity varies much within different dimensions and kinds of complementarity and consequently consumer preferences and satisfaction may vary between bundles even though the kind of complementarity is the same. For example, a bundle with pre-made lunch and a drink of choice and a bundle with pre-made lunch and a cafe latte are both use time complementary, yet the bundle with a lunch and a drink of choice were more preferred and gave higher satisfaction. As discussed above, the completeness of the bundle offer, how distinctive the bundle products are for the specific bundle, and how prevalent the combination of products is, influences the perceived degree of bundle complementarity and consequently consumer preferences and satisfaction.

Distinctiveness, prevalence, and completeness are new concepts that previously have not been discussed in relation to bundle complementarity. It is here argued that all bundles have these characteristics to a larger or smaller extent and that they work as “controls” that increase or decrease the perceived complementarity of a bundle. In Figure 16, three bundles that are be defined as perfect use complementary illustrate how the perceived complementarity may differ. The completeness of the bundle with a TV and a DVD player is quite high albeit not maximum if not a cable to connect the TV and DVD player is included. The distinctiveness is rather low as the TV may as well be used separately (even though the DVD player cannot). Even though a bundle with a TV and a DVD player is not so common as to be considered a unit rather than a product combination, bundles of this kind is not uncommon on the market and the prevalence is thus fairly high.

![Figure 16. Types and degrees of complementarity in bundles.](image)

A bundle with a TV and a bracket, in comparison, is to be considered both complete (if screws etc. are included), distinctive (the bracket is never combined with anything else but a TV), and prevalent (the bracket may be
considered as an attribute to the TV and the bundle thus as a unit). A bundle with a DVD player and a movie DVD are characterized by yet another combination of the three constructs. The completeness of such a bundle is rather high, even though a TV is needed in order to be able to watch the movie. The distinctiveness is rather high, as the products need to be used together. The prevalence of the bundle is low as movie DVDs most commonly are rented rather than purchased.

The reason why these three factors have a positive influence on perceived complementarity may be that they simplify categorization. Distinctiveness may be considered as a kind of typicality that simplifies categorization (Loken et al. 2008). The more specific the included products are to a certain season or occasion, the easier they are to refer to a category because there are fewer attributes that also fit into other categories and they are thus more typical. It would also be easier to create a goal-derived category that fits the occasion or season is the products are only used at that occasion. Bundles consisting of products that may as well be bought and consumed at other occasions than together with the other bundle product is not perceived equally similar to a category as products that are exclusive to that occasion. The savory snack in a bundle with a movie ticket is not exclusive to the “movie experience” category, while the kind of popcorn depicted in the experiments is. Since a category should be as dissimilar to other categories as possible, bundles with products that are exclusive to one category are easier to refer to that category than bundles containing products that may also belong to other categories.

Goal-derived categories are created on the go and are not firmly rooted in schema structures in memory. However, if used many times a goal-derived category becomes well established in memory (Barsalou 1983). This may explain why bundle prevalence had a positive effect on perceptions of bundle complementarity. Products that are commonly sold together in bundles are likely to have been encountered and categorized before. The more times a bundle have been categorized, the more established and salient the (goal-derived) category is in memory and, hence, the easier the categorization becomes. Lane (2000) and Klink and Smith (2001) showed that repeated exposure of information increased the likelihood of referring a slightly dissimilar product to the specified category.

The completeness of a bundle influence categorization ease in a similar manner; arguably, the more complete a bundle is, the more typical it is as many attributes match the other objects in a specific category. At the same time, it decreases the number of attributes the bundle has in common with other categories. As categories ideally are composed of products that have many features in common and share as few features as possible with products in other categories, complete bundles are easier to classify. Consider, for example an incomplete lunch bundle, such as a pre-made dish.
and a dessert cookie, which is not as similar to other objects in the lunch category as a bundle consisting of a pre-made lunch and a drink. The former bundle may share as many features with the “café” or “birthday party” categories as with the “lunch” category. Similarly, the dependability of anchor product can be linked to the perceived completeness of a bundle. A bundle with an exclusive independent anchor product may be perceived as more complete, in that it can be fully utilized straight away regardless the exclusiveness of the by-product. A bundle with an exclusive dependent anchor product, on the other hand, would need a by-product of matching quality to be able to fully utilize, see Figure 17. Sheng and Pan (2009) recognize that if products are dependent or independent has the potential to influence the categorization process of bundles and ask for more research in the area.

<table>
<thead>
<tr>
<th>High</th>
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<tr>
<td>Complete-ness</td>
<td>Distinctiveness</td>
</tr>
<tr>
<td>Exclusive TV + low-budget DVD player</td>
<td>Exclusive DVD player + low-budget TV</td>
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*Figure 17. Perceived complementarity of bundles with dependent and independent anchor product.*

**Customer perspective needed**

Considering the multitude of relations that describes complementarity, that the different kinds of complementarity can differ in strength and, hence, the difficulties to find the most valued type of complementarity, how can we know anything about what complementarity is? How can we predict which products that are considered complementary and thereby offer value to consumers when it is not possible to identify all kinds of complementarity or to pinpoint the most valued types of complementarity? Is there a common denominator to the different types of complementarity that can help us conceptualize and understand what kind complementarity that is valued by customers? According to Lawless (1991, p. 272) a “successful commodity bundle is coherent from the buyer’s perspective, since it serves related needs”. Can this be a part of the answer? Maybe a conceptualization of complementarity should not be based on products or product features but instead on whether the bundle products together offer consumers a solution to a specific need? Bundle value is something *experienced* by consumers, a question of personal opinion and perceptions of a bundle offering. These
opinions are based on the perceived benefits the bundle offers, of which complementarity is one example. This way of viewing complementarity puts the consumer in center and the consumers’ perceptions about the bundle. This indicates that in order for bundles to be complementary, consumers must understand which need the bundle answers to, that is, the use they may have for the bundle. Thus, bundle complementarity would be defined in relation to what consumers do, their practices, and different situations where the bundle products are needed.

A definition based on consumer needs and usage can be related back to research showing that bundles are more positively evaluated when companies are perceived to have consumers best in mind when composing them (Hamilton and Koukova 2008) and that surcharges that are perceived as fair increases the purchase intention for bundles compared to separate products (Sheng et al. 2007b).

Moreover, Koukova et al. (2008) demonstrate that information about common usage increased the perceived complementarity of two seemingly substitutable products (an electronic and paperback version of the same book). They showed that highlighting how the substitute products may serve related needs in different situations, such as being able to read the print edition while travelling and search the electronic edition for specific information, positively influenced the perceived complementarity and value of a bundle including the two products. Similarly, the literature about hybrid products shows that explanations about when and how to use a hybrid product, for example a mobile phone and a glucose level monitor, has a positive influence of consumer evaluations (Gibbert and Mazursky 2009).

Seemingly non-complementary bundles can be perceived as complementary when provided with information about how the bundle is coherent from a consumer perspective. It highlights how the products in combination serve customer needs, and how they support the customers in their activities. As in the above example, by being able to place a drop of blood on a test strip and insert it into the mobile phone, which has an application that calculates and displays the glucose level or even forwards the information to a parent, physician, etc.

Having a customer perspective on complementarity rather than defining it by product features makes awareness and knowledge about consumer needs and demands imperative. Consumer needs and demands, in turn, are linked to consumer practices, that is, what consumers want to do and what products (goods or services) they believe will help them carry out these activities. Grönroos (2008) emphasize knowledge about customer practices as a key to understand how value is created. He argues that value is “created by customers in their practices and, therefore, a thorough understanding of people’s everyday practices has to be the starting-point for developing a customer-centric offering...” (p. 307). Creating an understanding of what
complementarity is from a consumer perspective thus puts emphasis on the activities that consumers perform and the needs and desires that can be fulfilled by using bundle products. This aspect of the value of complementarity has been illustrated by two separate focus group studies about positive aspects of bundling. The participants emphasized how bundles in different ways simplify everyday practices, for example by only having to deal with one company and having one bill for both Internet and mobile phone services (Agarwal and Chatterjee 2003) or not having to assemble a stereo equipment bundle (Harris and Blair 2006a).

Having a customer perspective on bundle complementarity thus put focus on the value that customers experience in the use of products. It suggests that in order for a bundle to be perceived as complementary it should offer the consumer value in use of the bundle products. Vargo and Lusch (2004; 2008) recently brought up the term value-in-use as an important concept in the service marketing literature. It emphasizes that a purchase in itself does not provide value; instead value is created in use - when eating food, watching TV, or talking on the phone. Indirectly it means that goods cannot provide value, instead value is embedded in goods by the services that they offer in use (Grönroos 2008; Vargo and Lusch 2004). For example, a TV in itself does not provide value; it is when watching TV shows that value becomes. The term value-in-use also implies that value is something that is actively experienced and co-created and not passively received by consumers. Hence, companies cannot create value for customers; they can only make an offering, a value proposition (Vargo and Lusch 2004) that influences consumers’ expectations of value-in-use and in turn determine whether or not they buy the product. Adopting this view means considering a bundle to be a value proposition that consumers can accept or reject based on the value-in-use they expect it to provide.

**The relation between value-in-use and complementarity**

Expected or experienced value-in-use is thus suggested as a common denominator for bundles that provide value for customers. However, this is not to say that complementarity and value-in-use is the same concept. Some factors have the same effect on perceived complementarity as on value-in-use, but complementarity and value-in-use are two distinguishable concepts. Below, some issues relating to complementarity and value-in-use are highlighted.

Describing complementarity based on value-in-use has implications for the understanding of the effect of dependency of anchor product on consumers’ preferences and satisfaction. (Keeping in mind that the effect of product dependency/independency on preferences is determined by whether the customer is looking to purchase the dependent or the independent product.) The results showed that when consumers are looking to purchase a
dependent product, such as a DVD player, and find it in a bundle together with an independent product, such as a TV, it is important that the quality and features of the TV match the qualities and features of the DVD player. Otherwise the customer cannot enjoy all features (resolution, etc.) of the DVD player, which would have a negative effect on perceived value-in-use. As stated before, a bundle with an independent anchor product can be considered as more complete. Generally, complete bundles contain all products needed to perform a certain activity and thus can be expected to provide high value-in-use. Hence, when bundle completeness is high, both value-in-use and perceived complementarity is positively influenced.

Relating value-in-use and completeness by highlighting the individual consumer’s practices and use of the products grants a further insight. If consumer practices change so that one specific product is no longer needed or so that additional products are used for a specific task, consumers’ needs change and, in turn, what is perceived as a complete bundle. For example, as Internet connections have become faster and cheaper, more consumers want to have video conversations using their computer. Thereby, computer bundles today are perceived as more complete and offer more value-in-use when a webcam is included, which arguably was not a prerequisite before.

It should be noted, however, that value-in-use and complementarity cannot be used interchangeably. The two concepts have differentiating characteristics. For example, the effects of distinctiveness (the degree to which the products are used only in that bundle, and not in other bundles or as separate products) and prevalence (how commonly the products are bundled as compared to sold separately) are not the same for complementarity and value-in-use. While distinctiveness and prevalence are positively related to perceived complementarity of a bundle, they are not directly linked to value-in-use. The degree to which the bundle products are encountered in other settings (other bundles or as separate products) and how commonly the products are bundled do not influence how well they answer to consumers’ practices and use of the products and therefore do not influence the value-in-use of the products. Complementarity, on the other hand, is positively influenced by these factors as they simplify the categorization task.

Another aspect that differentiates the concepts complementarity and value-in-use is that value-in-use is affected by product quality while complementarity is not. The quality of bundle products does not directly influence the perceived complementarity of a bundle. Two products can be considered as complementary even though one product is of higher quality than the other. However, low quality products are more likely to have inferior or lacking features or even to break and by that to influence the value-in-use. Low-quality bundle products may therefore be very complementary but still have low value-in-use.
The effect of value-in-use on categorization

Value-in-use as such offers value to consumer. But value-in-use may also have implications for the categorization process. The types of complementarity investigated in this study offer consumers' value-in-use; by perfect or partial use complementarity, common usage situation, time of use, etc. In the text it has been argued that complementarity have a positive influence on preferences for bundles because it simplifies categorization. Value-in-use is determined by how the bundle answers to consumer practices and usage situations, which is easily transferable into goal-derived categories. For example, a perfect use complementary bundle such as a TV and a DVD player, which offers value-in-use when watching a movie, fits into the goal-derived category “things that facilitates watching a movie”.

Generally, it can be assumed that value-in-use is easily transferred into goal-derived categories. Goal-derived categories cross many traditional product category boundaries and are actively created by consumers to answer to a specific goal based on a situation of a personal demand (Ratneshwar et al. 2001). The situation or personal demand that determines the creation of a category is the same situation or demand that the bundle provide value-in-use by meeting. When consumers understand the value-in-use of a bundle it is thus also easy for them to categorize the bundle to a goal-derived category.

Based on a reasoning that value is created in use and that a decision to purchase is based on expectations of value-in-use (Vargo and Lusch 2004), it is imperative that customers understand how to use a bundle and which needs it fulfills in order for value to become. Hence, the more apparent the value-in-use of a bundle is, the more positively it is evaluated. One way for firms to elucidate how bundle products create value-in-use together is by labeling or suggesting a usage occasion for the bundle. For example, by highlighting how two seemingly substitutable products in a bundle may be used for different purposes and in different situations (Koukova et al. 2008) customers understand the value-in-use of the bundle. Labeling and suggesting usage improve bundle evaluations because the categorization process is simplified. Often, highly complementary bundles do not need a label or illustration of usage situation for consumers to understand the value-in-use. The categorization process itself serves as a suggestion or demonstration of potential value-in-use. By the mere fact that the products are coherent enough to be referred to a common taxonomical or goal-derived category, such as “vacation trip”, “movie experience” or “dog accessories”, the customers can understand the value-in-use.

Complementarity and overall value

Even though it has been shown that complementarity has a large impact on overall perception of value, it is not the sole determinant of perceived bundle
value. A large number of factors influence the value of a bundle (Zeithaml 1988; Woodall 2003), for instance functionality, appearance, quality, price, time, and search costs. Thus, complementary bundles are not by default valued by consumers, but determined by a trade-off between the value-in-use offered by complementary bundles and different costs. In the following section possible trade-offs are highlighted.

A major factor that influences the perception of overall value is price. Consumers make trade-offs between expected value-in-use and costs before making a purchase decision, that is, in forming preferences (e.g. Zeithaml 1988). This trade-off is indicated by the results of the present study; bundles with low-budget and therefore less expensive products had higher ratings on purchase intention than bundles with exclusive products even though the expected satisfaction after purchase was higher for bundles with exclusive products. As the price of the bundles is higher the more exclusive products that were included, the result illustrate how consumers take financial considerations when making a purchase decision. Presumably the expected value-in-use is higher for bundles with exclusive products (based on the high ratings of satisfaction with exclusive bundles if they were bought) since they are likely to have additional or better features compared to low-budget alternatives.

Another aspect of the trade-off between costs and value-in-use is illustrated by the positive effect of discounts when forming a judgment of overall bundle value. Both preferences for and satisfaction with bundles increased when a discount was offered on a bundle. If value-in-use was the only important aspect for consumers when evaluating the value of a bundle, evaluations would not change by offering a discount; neither complementary nor unrelated bundles would become more appealing to consumers when offered with a discount if this trade-off was not made.

Another indication that other aspects than value-in-use are influential on overall perceptions of bundle value is the finding that one of the few bundles that were as positively evaluated as separate products consisted of a DVD player and a TV (in Experiment 2). These products are heavily reliant on compatibility to be of value for customers. Consequently, this may be an indication that when there is a risk that products do not work well together, bundling is more attractive compared to separate products, which is supported by previous research showing that bundles are attractive compared to separate products when there is a perceived risk of functional incompatibility between products (Harris 1997; Harris and Blair 2006b). Hence, even though the bundles may offer lower value-in-use than separate products would, the value-in-use is traded off for reducing the risk of product incompatibility.

As mentioned above, complete bundles offer value-in-use because they contain all products needed to perform a certain activity. This is also
important for the perceptions of overall value. However, the overall value may also be positively influenced by complete bundles because of the convenience they offer. When choosing a separate product or an incomplete bundle, consumers are forced to continue the shopping in the present store, visit another store, or continue the shopping at a later point in time. Hence, by choosing a complete bundle, the time and search costs are lowered. Thus, complete bundles offer consumers value not only by their value-in-use, but also by the convenience that they offer.

Moreover, the value of complete bundles is affected by the price the customer is willing to pay. If the price difference between a complete and an incomplete bundle is too big, the customer may prefer the hassle of buying additional products or not having all needed products to paying the extra money. Consider an all-inclusive vacation bundle that may not be considered as worth its money by some people, even though they would enjoy the comfort it gives. Complete bundles that are derived demand complementary (that is, one product is a necessity for the other product to work), for example, a bundle with a digital camera and a battery would be less price sensitive since the “missing” product must be purchased separately if not in the bundle in order to be able to use the camera. Other kinds of complementarity, such as a lunch and a drink would be more price sensitive since the lunch can be enjoyed without a drink. Furthermore, some bundles need to include a large number of products to be considered complete. For example, a bundle of filet meat and potato croquettes is arguably not a complete meal and, hence, not perceived as a complete bundle. Most people would agree that a complete meal includes a drink, maybe a sauce, and/or a salad. However, including all these products in a bundle is not necessarily appealing to consumers as the bundle becomes more expensive and the consumers potentially do not want all products or have some of the products in stock at home. Taken together, even though the completeness of bundles influence the perceived complementarity and value-in-use it is not by default preferred over less complete bundles or over separate products due to financial concerns.

Yet another factor that may be traded off against the value-in-use when an overall judgment of value is formed is the salience of bundle offerings. As bundles often are part of promotional campaigns, they are highly salient and thereby influence consumers’ decision largely. Salience has been shown to change consumers’ attention about the importance of different factors (Wathieu et al. 2004; Lalwani and Monroe 2005) so that it has a disproportionate effect on their judgments (Taylor et al. 1979). Hence, the increased salience of bundle campaigns may direct the attention from the value-in-use provided by the bundle so that price is disproportionally important in the trade-off between value-in-use and price (Taylor and Thompson 1982). This may be negative for long-run satisfaction as bundles
that have low value-in-use may be chosen over bundles that offer more value-in-use because of relatively small differences in price.

The above discussion shows that value is an overall measure that takes many aspects into consideration. The discussion highlights the fact that composing bundles should be made with thoughtful consideration. In order to compose bundles that are valued by consumers, the value-in-use it provides should be considered, but it should also be recognized that this is not the only determinant of bundle value; issues such as pricing, if the bundle reduces the perceived risk or is convenient for consumers are also important. The discussion also highlights that there is no one way for companies to act. Even though the present study shows that bundle complementarity has positive effect on consumers’ perceptions of value, bundle complementarity is not the only way to provide value for customers. Bundles may be valued by consumers even when they are not complementary, because both products happened to be needed (though not for common usage), the price was attractive, or because of personality traits such as variety seeking or a desire to minimize time and effort spent, just to mention a few reasons.

**Customer value through bundle composition**

Composing complementary bundles when complementarity is viewed from a consumer perspective means putting emphasis on the value-in-use bundles can offer. This puts demands on companies; their organization, way of working, and view of what they do and which business they are in.

On a general level, being customer oriented and striving to provide customers with value-in-use augment the need for firms to have knowledge about customers’ everyday practices. Companies’ offerings should assist consumers in these practices and, therefore, companies first need knowledge about these practices and secondly to develop goods or services that facilitate them. The better a company can meet consumer needs and adapt to changes in demand, the higher the perceived value (Grönroos 2008). In order to adapt to customers’ needs and practices, new products can be developed or existing products can be geared, for example by adding features as a way to adapt to consumers’ practices, or by combining goods and/or services into bundles.

The knowledge companies need about consumers’ demands and practices should not be limited to the things that customers ask for; in which case we would not have microwave ovens or text messages (sms). Instead, all possible knowledge about the things customers do in their everyday life that the company can serve is of interest. This highlights an important aspect of bundle composition – the customer is not always the best judge of or has the knowledge and capacity to determine what is good to include in a bundle. This is true especially for complex bundles, such as bundles containing many
products or abstract or technically advanced products. Consider, for instance, programs that are offered at business schools. The programs, courses and modules are combined in order to offer students an educational bundle that will give them knowledge and competencies in different areas in business management. Programs are put together with the goal of transferring the knowledge and skills of researchers and teachers in the business school. Thus, based on the expertise the organization possesses educational bundles are composed that offer students value-in-use by preparing them for the challenges they will meet in work life.

Hence, the skills and knowledge (of employees) in firms is central when creating bundles that offer value for customers. This is a major point made by Vargo and Lusch (2004) when they argue for a service dominant logic of marketing; based on employees’ skills and knowledge, companies can make offerings (propositions) which will provide value-in-use for consumers. A bundling strategy can thus be used by the company as a way to create offers that provide value-in-use for customers by using the skills, knowledge, and expertise that exists in the company. By applying the knowledge, they have about customers’ practices and their expertise about which goods or services that offer the most value in combination, companies may be assumed to be able to create bundle offerings that provide value-in-use.

Based on this notion, it is here argued that bundling as such should be seen as a service provided by companies. The act of combining goods and/or services into bundles is a service to customers as customers do not need to gain the knowledge or expertise to put products together so that their needs in their everyday practices are met. That is, companies perform a service when they compose bundles that consumers need based on the knowledge and competencies the companies possess in the area (computers, insurances, travelling, etc.). Food delivery services that customers subscribe to illustrate how companies can use knowledge about consumers’ everyday practices to offer bundles that are services. The business idea is to deliver a week’s meals for a family to the front door. The bundle offering, or the service proposition using a service dominant logic terminology, consists of recipes for a week’s meals, the groceries needed, and home delivery. The groceries delivered are goods but the bundle offer as such is a service; including the composing of recipes for meals as well as the assembling and delivery of groceries. The bundle offer is based on knowledge about customer needs and practices as the customers want home cooked meals without putting time and effort into deciding what to eat, making shopping lists, and go shopping. In addition, there are a number of different offerings meeting different customer needs with varying number of meals included, offerings for weight loss, breakfast, ecological meals, and gluten or lactose free meals.

To sum up, it is here emphasized that in order for bundles to offer value and thereby being beneficial for customers it is important that companies
adapt their way of working. It has been highlighted that the organization needs knowledge about their customers’ needs and practices even beyond current practices and existing needs. Customers may not be able to determine which combination of products they need because of a lack of knowledge, time, or cognitive resources. Customer oriented companies should thus use their expertise and customer knowledge to compose bundles that help customers in their everyday practices.

**Complementary bundle or separate product?**
The discussion about complementary bundles, value-in-use, and how bundling can be considered a service highlights an area that was touched upon in the introduction – what is a bundle? In this dissertation, a bundle has been described as two or more products offered together, but that are also possible to purchase separately. As mentioned previously there is no established definition of what a bundle is, and the concept is closely related to product attributes or ingredient branding.

To offer consumers value-in-use, the offerings should assist the consumers in their everyday practices. After having identified practices, companies can develop goods or services that facilitate these practices. This can be done by developing new product or gearing existing products, for example by adding features (Payne et al. 2008), or by combining goods and services into bundles. With this perspective bundle composition has similarities with new product development.

It has also been highlighted that complementary bundles that are prevalent on the market and consist of products that are distinctive for the bundle, such as a digital camera and a camera case, are considered more complementary than less prevalent bundles. As the products have been encountered in a bundle many times, consumers may not even think about the camera and the camera case as a bundle, but deem the camera case to be a part of the camera. Hence, the limit between what is to be considered a bundle and what is a product with a set of attributes may not be clear. A product can consist of many parts but still be considered a product rather than a bundle, for example a car (in a study by Herrmann et al. 1997, bundles were operationalized as a set of car add-on attributes). This illustrates that the boundaries between products and bundles are not clear-cut.

Consider the market today that is characterized by increasing specialization; what was before manufactured by one person/company are now outsourced and only assembled by the company (Vargo and Lusch 2008). Normann, R. (2001), even refers to the increased specialization of today's market as “unbundling” which allows outsourcing. For example, a car that consists of many parts, is manufactured by many different companies, and assembled by for example Volvo PC. Is a Volvo a bundle offer? With potential to customize the offer based on individual customer needs? With
this view of complete products as bundles of service offers, the border between (product) attribute and bundle is even fuzzier. Consider full service providers versus customers self-assembling. Is this a case of mixed bundling, where customers can choose between purchasing a bundle offering or buying the separate products? Similarly, with reference to the example of educational programs as bundles - compare the educational programs with students’ opportunity to combining courses themselves. When is an offer a bundle and when is it a product consisting of different features and add-ons for increased customization and value-in-use? Arguably the more bundling is used as a strategic rather than as a promotional tool, the more companies focuses on composing complementary bundles and bundles that offer value-in-use, the more difficult it is to distinguish bundles from separate products. When composing unrelated bundles on the other hand, the distinction between bundles and separate products is more clear-cut. As the bundle products in unrelated bundles do not serve a common goal or need, they are unmistakably separate products combined in an offer.

**Additional reflections about how bundling influences consumer behavior**

In this dissertation the value of bundles has been investigated. From the results it cannot be inferred that bundles provide much value to consumers compared to separate products. Often, separate products seem to provide more value than bundles, and only when bundle complementarity is high, bundles seem to be as valued as separate products by consumers. However, as discussed above complementarity is not the only thing that influences value and, furthermore, value is not the only thing that influences consumers behavior. When analyzing the results, some thoughts and ideas emerged that are not directly inferred from results. Below, some of these thought are discussed.

**Sales increases versus perceived value**

Bundling is often used as a way to increase sales and one supposition is that they do so because they are valued by consumers. This effect of bundling is not confirmed by the results in this dissertation. On the contrary, the results show that preferences for and satisfaction with bundles are lower for bundles than for separate products. If consumers do not find bundles appealing or experience satisfaction with bundles compared to separate products why would bundling induce sales? An important distinction to make when discussing the issue is that between large quantity sales and satisfied customers.

For one thing, bundling can increase sales is by offerings of multiples of the same good. Buying in bulk has been shown to increase consumers’ variety seeking behavior (Simonson and Winer 1992; Read and Loewenstein
1995) and overall consumption (Chandon and Wansink 2002; Wansink 1996; Steenhuis et al. 2009). Multi-pack bundles arguably offer little extra value compared to a separate product besides eventual price reductions. Potential effects of the bundle offering on sales and satisfaction are thus largely caused by monetary savings. For the purpose of this dissertation, to explore how bundle composition influences consumers’ preferences and satisfaction, the effect of multi-pack offerings on sales and satisfaction is not central.

Another reason why bundling may increase sales is because the bundles are used in promotional campaigns, which generally stimulates brand switching, purchase acceleration, and stockpiling (Gupta 1988). Thus, bundles may increase sales for other reasons than satisfaction and a customer that buys much is not equal to a satisfied customer. On the contrary, consumers may feel lured into over-spending, over-consuming, buying unwanted by-products, or products of wrong brand or with unwanted or lacking features. For instance, an offer to buy four yoghurts of choice at a reduced price may induce customers to buy four yoghurts even if they intended to buy less (or none at all) and to try flavors they otherwise would not have bought (Simonson 1990; Simonson and Winer 1992). Consumers may not even use all of the products in a bundle. Trocchia and Janda (2002) identified a number of motives for purchasing products and subsequently not using them that also are potential motives to purchase bundles, for example, low cost, persuasive promotion, and unwillingness to invest effort in search process. Thus, increases in sales due to bundling are not a good measure of consumer satisfaction.

Yet another reason for caution regarding the positive effects on sales of bundling is that a return customer is not by default a satisfied customer. Customers may choose to stay loyal to a firm because the cost of switching supplier is too high (Lawless 1991; Burnham et al. 2003). Burnham et al. (2003) identified five kinds of switching costs that impact consumer intentions to stay with an incumbent supplier: perceived product complexity, perceived provider heterogeneity (that is, how dissimilar providers on the market are), breadth of product use (that is, if the customer uses many kinds of products, features, and functions from one provider), and little experience with alternative providers or with switching as such. Applying a bundling strategy gives rise to several of these switching costs (Lawless 1991). A vacation bundle, for example, containing flight, hotel, and half board encourages consumers to use a variety of a firm’s products, the complexity of the offering is high, and the firm’s offerings is differentiated from competitors. Hence, bundling may promote high perceived switching costs and thus high repurchase intentions. A positive effect of bundling on repurchases is thus not unambiguously a consequence of satisfaction but may also occur due to lock-in effects. However, it should be noted that Meng
and Elliot (2009) found no relation between high perceived switching costs and consumer dissatisfaction. In addition, Burnham et al. (2003) argue that switching costs may even lead to satisfaction over time since it inhibits consumers to change supplier immediately after a dissatisfying experience. Thereby the product or service provider has a chance of making up for the bad experience. An extreme lock-in strategy is to offer only pure bundles, that is, only offer the products in bundles. By doing so, consumers are forced to buy all products included in the bundle. For example, customers may be loyal to one bundle product and locked-in to the other product(s).

As demonstrated, there are numerous conceivable causes for increased sales other than customers’ perception of bundle value. Lock-in strategies may be profitably employed by companies but it does not ensure customer value. This is not to say that bundles composed to provide value-in-use cannot give rise to lock-in effects, by for example familiarity that makes the bundle attractive compared to other less familiar products that would require extensive information search (Lawless 1991). Customer oriented companies striving to obtain satisfied customer and long-term loyalty need to be aware that purchase and repurchase are not good measures of customer satisfaction.

### Long-run effects on consumption patterns

Regardless of whether return customers are locked-in or loyal, it is conceivable that bundling has more far-reaching effects on consumer behavior than to increase sales for the moment. Bundles can have long-run effects by changing consumption patterns. Consumption patterns may for example change due to bundling because bundles work as suggestions about how you “should” combine products, as Brie cheese and fig marmalade, a crib and a baby monitor, or a chartered trip and travel insurance. In this way bundling highlights and emphasizes social norms and may change consumption patterns due to social pressure on how to act or consume (Bearden and Etzel 1982; Bearden et al. 1989; Childers and Rao 1992) based on the logic that the common usage of the products must be well established for them to be offered in a bundle.

A possible negative effect for companies of the consumption changing capacities of bundles may occur if discounts are used too often on bundle offerings. Frequent use of bundle discounts may cause consumers to change their reference price for the bundled products, and only purchase the products when they are on sale. If the reference price for a product falls, the product is considered expensive when it is sold without discount (Krishna 1991). This is negative for companies as it reduces profits and the risk is most prominent for multi-pack bundles.

Another potential negative effect of frequent use of bundle discounts is that brand loyalty is decreased. Consumers may buy the product from
whichever manufacturer that has the lowest price at the moment. Thus, bundle discounts may make consumers loyal to bundles as such because of the reduced price they offer instead of loyal to products or brands. This effect is also most pronounced for multi-pack bundles and may be reduced by bundling unrelated products. Unrelated bundles may more easily be considered one-time offers and thereby have less influence on consumers’ reference price. Compared to multi-pack bundles, unrelated bundles are harder to refer to one category and the risk that a change in reference price for the bundle reflects back at the reference price for one of the bundle products is therefore smaller.

Bundling may also influence customer behavior in the long run by creating habits. For example, if consumers often buy two packages of coffee in multipack bundle offers, they may get accustomed to purchasing two packages at a time and become used to having one extra package in stock at home. Therefore, they may buy two packages of coffee even when there is no bundle offer. Considering the increased consumption that has been found to be an effect of stockpiling (Chandon and Wansink 2002), this behavioral pattern is of importance for firms. Similarly, a consumer who usually buys a pre-made taco bundle of a certain brand containing taco shells, spices, and sauce, he or she may by default buy the same taco ingredients of the same brand even when there is no taco bundles available. In both examples, the presence of bundles in the market has given the consumer a purchase and consumption habit.

Research shows that this kind of habit formation is common; consumers buy the same amount at a given retail store across repeat visits (Vogel et al. 2008). Habits are learned as people repeat everyday activities. When an action is performed frequently as a response to a goal in a certain context (e.g. when buying bundles of coffee or tacos at the super market), the context can come to trigger the behavior without reflection (Wood and Neal 2009), that is, consumers buy the same amount of groceries even when there is no bundle offer. Habits make consumers less attentive to new information and courses of action (Aartiz et al. 1997) and their information search tends to be biased towards confirming the habitual option (Verplanken and Wood 2006). In addition, strong habits reduce how much information consumers consider before acting and decrease the complexity of consumers’ decision making in favor of noncompensatory decision strategies, which means that even if other options display better features these positive attributes do not outweigh features of the object of habit (Aartiz et al. 1997). In that sense, habits work as a decision strategy that favors the current behavioral pattern.

This tendency to go with what one normally goes for also provides companies with the opportunity to use bundling as an introduction strategy (which is demonstrated in numerous studies, e.g. Simonin and Ruth 1995; Sheng and Pan 2009). Bundling a new product with a product that
consumers habitually buy increases trial of the new product as experience with a product reduces the perceived risk of purchase (Sarin et al. 2003).

Bundling may also be used as a strategy to change consumer behavioral patterns because of its impact on new product trial and habit formation. A company that wants to persuade consumers to shift from one of their products to another (e.g. due to profit margins, easier distribution, manufacturing factors, or to provide more value-in-use) may use bundling to change consumer behavior and practices. New flavors of chocolate or yoghurt can be bundled with established flavors and new ingredients or flavors can be introduced in a Taco-mix bundle.
Concluding reflections

At the outset of writing this dissertation, a central issue was the feeling that bundling strategies were practiced and studied much in their capacity as creators of benefits for companies: for their ability to create profit by working as entry barriers, inducing switching costs, etc. The benefits with bundling for consumers seemed more ambiguous; bundles may reduce the perceived risk and increase convenience, but they may on the other hand encourage consumers to purchase and stimulate over-consumption. The amount of research focusing on increasing the knowledge about how companies should act with regard to pricing, presentation of prices and discounts, and to which extent to force versus attract customers (pure or mixed bundling) highlights this feeling. In Table 1 in Appendix I, an overview of the bundling literature is presented, stating my assessment of whether consumer or company interests are in focus. Thus, a gap in the literature was identified with regard to research about bundling from a consumer perspective; more specifically about if and how consumers can benefit from bundle offerings. The issue was addressed in the thesis by the overall aim to increase the understanding of how consumers perceive bundle value.

The results showed that composition of bundles has an influence on the perceived value of bundles. Most often, the perceived value of bundles is not higher than that of separate products. However, the more complementary bundles are perceived to be (as opposed to unrelated bundles), especially when offered at a discount, the more valued they are and in some instances they may even be more valued than (undiscounted) separate products. Unrelated bundles, on the other hand, were never as valued as separate products, even with substantial discounts. Therefore, it is concluded that bundle complementarity has a positive effect on perceived bundle value.

It can also be concluded that financial considerations impacts the perceived value of bundles, illustrated partly by the effect of discount on perceived value, partly by the positive evaluations of bundles consisting of low-budget products compared to exclusive products. The perceived value of bundles with two exclusive products were more positively influenced by increasing discounts than bundles consisting of one exclusive and one low-budget product.

The study elucidates that complementarity is a multifaceted concept, which varies in strength and type and cannot easily be described based on product attributes. Instead, it is suggested that the positive effect of complementarity on perceived value best is understood by the value-in-use complementary bundles offer consumers. The importance of viewing complementarity from a consumer perspective in order for bundles to
provide value for customers is highlighted. However, even though bundling has the potential to offer customers value, it is emphasized that due to the nature of bundles, attention needs to be paid to whether consumers are loyal due to experienced value and thus satisfaction or because of lock-in effects.

The results of this dissertation provide the basis for conclusions and implications of both a theoretical and practical nature. In the following, a number of contributions and practical implications are highlighted before limitations and suggestions for future studies are discussed.

**Theoretical implications**

Consumer perceptions of value are central in this text. Investigating the effect of bundling on consumers’ perceptions of value is a contribution in itself as, as this rarely has been done before (e.g. Naylor and Frank 2001). While much research has been conducted about how bundling can benefit companies by considering monetary aspects of value and the effect of bundling on purchase intentions and willingness to pay, research has only scratched on the surface of understanding how bundling can benefit consumers. Here, value is approached as an overall assessment that includes more than monetary aspects; it is acknowledged that the perception of value is created throughout the decision making process. This dissertation contributes to a more holistic view of bundle value and how bundling affects consumers by focusing on the consumers’ overall perceptions of value in a bundling setting. More specifically, this dissertation adds to the knowledge about how preferences and satisfaction are influenced by bundling.

On a general level, product evaluations are influenced by a number of factors such as appearance, design, brand, function, etc. Bundle evaluations are affected by the same antecedents. However, bundle evaluations include at least one additional factor, not relevant in separate product evaluations - the relation between bundle products. This relation, here operationalized as complementarity, was in the present study found to impact both pre-purchase and post-purchase evaluations significantly and positively. The effect of bundle complementarity on preferences has been studied before, but this thesis contributes by methodologically varying the included products and the kinds of complementarity between bundle products and thus demonstrates the stability of the effect and increases generalizability.

The complementarity of bundles is assumed to have a positive effect on preferences because it simplifies the evaluative task. The more complementary bundle products are the more likely the bundle is to be able to refer to an existing category rather than to be evaluated attribute by attribute. Ease of categorization has been shown to have a positive influence on preferences (Schwarz 2004; 2007). Yet, previous research has mainly focused on products that clearly belong to one specific category, such a beverages (Meyers-Levy and Tybout 1989) or bugs (Yamauchi and Markman...
The results of this study show that also in the case of more complex products that has not clear (taxonomical) category belonging, ease of processing has a positive effect on preferences. By this, the present study confirms previous research showing that hybrid products are possible to refer to a common category if consumers understand the common usage of the products (Rajagopal 2004).

This dissertation also adds to the bundling literature by highlighting the effect of bundle complementarity on consumer satisfaction, a field that previously largely has been ignored. The present study shows that bundle complementarity has a positive impact on satisfaction and that satisfaction decreases more when a product in a complementary bundle is not used than when a product in an unrelated bundles is not used. Products in complementary bundles are expected to work or be used together while products in unrelated bundles are not. Therefore, to experience satisfaction, it is more important that both products actually are used in complementary than unrelated bundles, otherwise one of the major reasons for purchasing the bundle is lost. Thus, a bundle product that is not used and hence does not perform impacts satisfaction negatively. The intuitive relationship between product performance and satisfaction has previously been established in research (Oliver 1981) and is here illustrated in a bundling setting.

A major contribution of this study is that it demonstrates the multifaceted nature of the concept complementarity. While the collected body of bundling research is comprised of bundles with different kinds of complementarity, this study is the first to compare different kinds of bundles and demonstrate that they actually are perceived as complementary albeit to different degrees. Thus, the present study adds to the existing knowledge by making it possible to generalize the positive effect of bundle complementarity on consumers' perception of bundle value to many different types, for example, functional relation, use time, and process complementarity. The different types of complementarity can be divided into three different dimensions of complementarity: the functional dimension, the contextual dimension, and the company dimension. These dimensions increase the understanding of the concept as they emphasize the multifaceted nature of complementarity.

However, the results also showed that the perceived complementarity varied within each type. This highlights another important contribution of this thesis with regard to increasing the understanding of the concept complementarity; perceived complementarity is not only a question of different types of relations between bundle products, it is also a question of different degrees of complementarity. This confirms the notion of complementarity as a continuous measure. Bundles with the same kind of relation between products were perceived as complementary to different degrees and completeness, distinctiveness, and prevalence of the bundles are
here introduced as possible explanatory factors. These concepts have not previously been discussed in a bundling setting or in relation to complementarity. The results add to the understanding of what complementarity is and illustrate that it should not be limited to objective measures of product features, but that perceived complementarity is closely related to consumers’ needs, practices, and evaluations of bundles. For bundles to be perceived as complete, they need to be coherent and serve a certain need or usage.

In the elaboration about complementarity, the importance of considering consumers’ needs and usage is stressed. In order for bundles to provide value for customers, bundles should be complementary and complementarity should be defined from a consumer perspective. The bundles that are perceived as most complementary are also the bundles that provide most value-in-use. A common denominator for bundles that are considered complementary is that they include products that from a consumer perspective serve related needs. Value-in-use relates to how and why consumers use goods and services and how well products facilitate these practices and meet consumers’ needs. By relating complementarity and value-in-use, the understanding of why consumers value complementarity increases. Complementary bundles offer consumers value-in-use by simplifying their everyday practices or improving product performance and the act of bundling as such may be thought of as a service. Adopting a view of complementarity from a consumer perspective rather than from a product attribute perspective has major implications for how companies use bundling, which will be discussed further under managerial implications.

Applying a value-in-use perspective on bundle complementarity adds insights to why complementarity may simplify categorization. Much literature about categorization assumes that the whether or not products are perceived as similar are determined by how well they are matched on surface-level, for example similarity in product features (Ratneshwar et al. 2001). Stressing the value-in-use and serving of related needs when discussing bundle complementarity shows that similar product features are not enough to determine how classification is performed. This study suggests that complementarity may facilitate a categorization based, top-down, evaluation based on consumers’ goals is common. As value-in-use as such is concerned with usage situation and needs, a bundle that offers value-in-use is also easy to refer to a goal-derived category and the uses in themselves can be translated into goal-derived categories. This implies that how a bundle is categorized to a large extent depends on the individual and the context or purpose of evaluating the bundle. Hence, complementarity between bundle products is likely to promote goal-derived rather than taxonomical categorization. Goal-derived categories are often not established in category schema and thus do not conform to existing category structures. Because
new cross category relations are established, category structures are changed and relations between existing taxonomical categories are affected. Insights into goal-derived classification and goal-derived categories are important from marketing theory perspective, as it connects the concept of goal-derived categories to very fundamental benefit-segmentation variables. Individual differences, such as life-style and sub-cultural belonging, influence individuals’ goals and desired benefits and thereby preferences and product demand. Therefore they are appropriate bases for market segmentation.

The completeness, prevalence, and distinctiveness of bundles are also likely to have an effect on categorization ease or difficulty. Even though goal-derived categories are commonly not established in existing category structure, research show that if they are activated often, they eventually become established in memory (Barsalou 1991). The more often consumers encounter bundles with a specific type of complementarity, the more likely it is that the category and the kind of relation become established in consumers’ schema structure. Thus, the more often a consumer has encountered a specific bundle, that is, how prevalent the bundle is, the more likely it is that there is an established goal-derived category for the bundle. Similarly, the more complete or distinctive a bundle is the more attributes it shares with a category in relation to other categories and the easier it is to refer the bundle to that specific category.

**Managerial implications**

Besides the theoretical and methodological contributions of this study, the conclusions have a number of practical implications, several of them from a managerial perspective. As bundling is a common marketing strategy, knowledge about how to compose bundles is important for companies. The empirical results shed light on the effect of composition on consumers’ perception of bundle value and may assist marketers in creating more appealing and useful bundles and thus have more satisfied customers. This study illustrates the importance of bundle composition for consumers’ perceptions of value, insights which especially customer oriented companies may be interested in. Adopting this view of how to compose bundles means changing the view of what bundling is. The concept bundling develops from being a part of the operative price and promotion decisions to being a strategic tool and a way to offer customers service solutions.

Bundling strategies can be used by every company regardless of strategic orientation. The objective for bundling may differ between companies and thereby how bundles are composed. Companies may apply a bundling strategy mainly to increase sales or profit with little consideration paid to customer value. In this case, the relation between bundle products is less important and unrelated products may be bundled. However, it should be noted that prices in this case must be low, since unrelated bundles otherwise
are not particularly appealing to consumers and give very low purchase intentions. Another consequence of bundling unrelated products is that high quality and long product life may not be important features. The results showed that satisfaction does not drop much if one of the products in an unrelated bundle cannot be used. Thus, companies have little to gain by including high quality products in unrelated bundles. If consumers will not be very satisfied by the unrelated bundle either way, why invest in good quality products?

One major motive for companies to apply a bundling strategy may be the conviction that long-term survival for a company is best obtained by providing product offerings (goods or service) that are valued by consumers. In this case, bundles are preferably composed of complementary products. By composing bundles with high perceived value, bundling can have a positive influence on companies’ revenue by allowing for larger profit margins compared to unrelated bundles. The results of the present study also showed that there is a positive spill-over effect of complementarity on satisfaction, so that even when customers cannot use one of the products in complementary bundles, complementary bundles provided more satisfaction than unrelated bundles. Thus, if bundling is used as a long-term strategic tool, complementary bundles are preferable as they provide consumers with value.

The type of complementarity that is most appealing to consumers may differ in degrees and between industries. Therefore, companies should strive to make sure that consumers understand the value-in-use of a bundle offering. Each company thus need knowledge about how their target consumers perceive the value-in-use (including the completeness, distinctiveness, and prevalence) of different product combinations. Thus, customer oriented companies that strive to provide value for their customers have much to gain by viewing complementarity from a consumer perspective, where value-in-use is an important aspect. This also has implications for their actions. Defining complementarity as value-in-use means the companies need more knowledge about their customers than if complementarity is defined from a product attribute perspective. Hence, applying a customer perspective of bundling offers changes the demands on the company. To be able to provide customers with value, knowledge about customers’ needs and practices is vital. Grönroos (2008) states that goods and services are consumed as services in customers’ self-service processes and that companies therefore should focus on understanding their customers’ everyday practices and value-generating processes. He further argues that, by understanding how they can assist customers’ value creation by supplying goods and services that support customers’ creation of value, companies reach success. This indicates that companies should consider how consumers use products when offering them in bundles. Arguably, bundling
is one way to develop offers that provide value-in-use for customers in their every day practices.

The conclusion that complementary bundles are valued by companies because categorization is simplified has implications for managers as well. It means that the value-in-use of an offering needs to be clear in order for it to be appealing to consumers. Either this can be done by combining products that have an obvious common denominator, such as usage occasion or enhanced performance, or by clearly communicating the value-in-use to consumers, through labeling, advertising, providing in-store information, etc. Communicating the value-in-use is especially important when the value-in-use provided by the bundle is less salient, as for example a bundle with a toaster, a mobile phone subscription, and a home insurance, which can be labeled a “fly-the-nest” bundle for students moving to their first own place (promoted by a major actor on the home electronics market in the fall 2010). These insights are valuable for managers when creating a label or suggesting a usage in market communication as discrepancies between message and what is observed are negative for categorization ease and thus consumer preferences (Uekermann et al. 2010).

Even though complementary bundles provide value for consumers, they are in many cases less preferred than the separate anchor products. Therefore, companies should apply bundling strategies with caution and carefully analyze which products to combine in a bundle offering. Indications are that consumers prefer to purchase separate products for financial reasons. For one thing, purchasing one separate product is less costly than purchasing a bundle (as it consists of more than one product). Even when bundles are offered at a discount separate products are more valued by consumers, at least if the discount is not greater than 45 per cent. Thus, from a profit margin perspective, it is questionable whether products at all should be bundled. Since bundles do not give higher purchase intentions or satisfaction than separate products even with substantial discounts, it seems questionable whether companies can benefit by applying bundling strategies. However, such a conclusion is too far reaching as argued in the General discussion. There are several factors not included in this study that influence the perceived value of bundles compared to separate product, for instance salience in store, convenience, and reduced risk. The major conclusion drawn is instead that composition of bundles should be made with care and prices should be set with caution.

The results have further implications regarding the pricing of bundles. On a general level, the results indicate that a discount is an effective way to improve preferences and satisfaction. Unrelated bundles are less affected by discounts and need a large discount to be more preferred or to provide more satisfaction than when offered without a discount. Complementary bundles on the other hand are more affected by discounts. Purchase intention for
complementary bundles increases the larger the discount is while attractiveness and satisfaction mainly depend on the presence of a discount, regardless of size. These findings suggest that different pricing strategies may be needed for unrelated and complementary bundles. A sizable discount is recommended for unrelated bundles, while a smaller discount is sufficient for complementary bundles. However, companies should be aware that there is a risk that customers who buy heavily discounted bundles feel lured into purchase. This risk is especially large when bundle products are unrelated since the risk of dissatisfaction is larger for unrelated than complementary bundles according to the results of this study. In addition, companies’ strategic orientation may determine the pricing strategy used. Companies prioritizing sales over customer value may choose to offer bundles at a large discount regardless of whether or not bundles are complementary as purchase intention increases with growing discounts. Companies aiming at providing customer value, on the other hand, should offer complementary bundles possibly at a lower discount rate.

Another important pricing question for companies is how to present discounted bundles. Previous research has shown contradictory results regarding the effect on consumer evaluations of combining two products with large difference in price, so that the bundle is perceived as a buy-one-get-one (BOGO), that is, one product is included in the bundle for free (Harlam et al. 1995; Gaeth et al. 1991; Munger and Grewal 2001). The present study show an effect of product complementarity on how appealing BOGO offers are; while preferences for unrelated BOGO offers are low, complementary BOGO offers have high preference ratings. Based on these results it is not recommended to combine products with a large price difference unless the products are complementary.

Another recommendation based on the results of the present study is that decisions to bundle high quality products are made after careful consideration of whether the company can charge consumers for the premium quality. The results show that bundles with two exclusive products may demand large discounts in order to be appealing to consumers.

Furthermore, when creating bundle offerings, managers may consider whether the anchor product is dependent or independent. Of course, managers cannot control which product (the dependent or the independent) the consumers intend to purchase. Generally, the results suggest that it is better to combine an exclusive independent product and a low-budget dependent product than an exclusive dependent product and a low-budget independent product because of the lack of supporting features in the latter case. The company may consider communicating through for example advertising that the independent product is the anchor product, for example by how the bundle is presented. Emphasizing that customers get a (low-budget) dependent product at a discount when purchasing an (exclusive)
independent product may enhance the notion of the independent product as anchor product.

**Public policy and consumer implications**

Arguing that bundles to be beneficial for customers should offer value-in-use brings the question of whether bundle composition ought to be regulated to the fore. In order to protect customers it is tempting to regulate what kind of bundle offers that are allowed on the market. Up until 1996 Swedish law stipulated bundle components to be related (Svensson 2010). However, defining bundle complementarity and bundle value based on value-in-use makes it difficult to carry such legislation through. To be able to determine what is to be considered as “related products” the relation is defined based on objective product attributes rather than usage situations. The difficulty of determining what is considered as relation was also why bundling legislation in Sweden changed to emphasizing information about the bundle constituents, terms, and conditions. The results of this study thus underlines that regulation of bundle composition based on product relation is not a fruitful way of governing consumer interests.

Understanding which, if any, benefits bundling can offer consumers is interesting from a consumer as well as a company perspective. In the thesis, the consumer and consumer evaluations are in center and the emphasis is on how consumers value bundles. As such, the study is of importance for consumers as it highlights the consumer side of bundling and puts customers in center.

Notwithstanding that companies benefit from the knowledge gained about how consumer value bundles, the results also benefit consumers. Indirectly, increased understanding of how consumers value bundles is beneficial for consumers as there potentially will be more valued bundle offerings to choose from on the market. In addition, the risk of feeling tricked into purchasing unwanted products will possibly be lower, since complementary bundles offer additional value compared to purchasing the products separately.

**Reflections and methodological considerations**

Writing a dissertation means making a lot of decisions; decisions about which theories to adopt, how to collect and analyze data, and how to present the results, just to mention a few. When in retrospect reflecting over the choices that were made it can be concluded that some were subseeded by extensive thought and discussions while others were made in an instant and yet others were not even made consciously. All decisions influence the research process and work together to create the end result - the dissertation. If other choices had been made, the process and the outcome would inevitably have been different. In the following, I will reflect on some
issues concerning the choices that were made and the consequences of those choices as well discuss how the dissertation would have been affected if other decisions had been made. Reflecting over the consequences of the different choices is one way to gain awareness of the benefits and drawbacks with the present dissertation. Some of the reflections give ideas about how the research area can be further explored in future research.

Taking an abductive and exploratory approach in this study has been manifested by for example the many theoretical tracks that has been considered and either adopted or dispelled. Yet other theoretical paths that could have provided insights may have been overlooked. One development of the theoretical framework that have had a large impact on the final results is that an initial focus on consumer decision making evolved to also comprise customer value. While this development did not change how the study was conducted, it impacted the framing of the results and the conclusions made, by elucidating my aspiration to make a contribution for increased consumer benefits. Consumer decision making was a natural starting point for me in outset of writing this dissertation and it is still an important part of the theoretical framework, though now intertwined with theories about customer value. By including customer value, the theoretical chapter is a better reflection of my objective with the study. It more distinctly relates to the question that initially raised my interest in the area, “Can bundling be beneficial for consumers too?” and hence to the underlying research problem which is to increase the understanding of how consumers value bundles. To me, having a pure decision making focus leads to conclusions with a more objective orientation; for example, to determine how consumers act and how their behavior is influenced by bundling. Including value highlights a desire to gear the discussions and conclusions towards consumer benefits and thus reveals an underlying interest in and ambition to contribute to improved conditions for consumers on the market. By having knowledge about how bundles should be composed to provide value for customers, bundles that are beneficial for consumers can be composed and offered on the market. (While not disregarding that companies also benefit from knowledge about how consumers value bundles by increased sales and loyalty.)

Value is a concept that can be defined in many ways, as described in the introduction and in the theoretical chapter. The view taken here is that value is something more than mere utility but still a uni-dimensional construct, excluding for example hedonic or social aspects of value. If another conceptualization of value had been chosen, the outcome of the study would have been very different (as would the operationalization of variables and possibly the overall research design). Utility is connected with notions of consumer rationality and is often operationalized in monetary terms. In this dissertation such a focus would be limiting as the basic interest in how bundles can be of value for consumers have a larger scope. Many aspects
besides price is therefore of interest, and value is thus treated as a composite construct converging many factors in an overall judgment. Value could also have been treated as a wider construct in this dissertation, separating and investigating different kinds of value such as hedonic or social value. Knowledge about if and how bundles can provide hedonic or social value for customers would increase the understanding of how bundles could be of value for consumers. It would provide a deeper understanding of why bundles may be valued by consumers and is an interesting avenue for future research. To include these aspects in the present study would mean asking a whole different set of questions and would probably shift the focus from the value-decision making relation to a strictly value framework. This would contribute to increasing the understanding of value. However, as described above, value is in this dissertation the underlying reason for why the study is conducted rather than the major focus of investigation. Therefore, it was judged as sufficient to settle with a less elaborate definition of value as it would otherwise dominate the central aspect of bundle complementarity.

Every research problem can be approached in a number of ways and there are many ways to conduct a study. For this dissertation, an experimental method was chosen and the experiments were conducted in a “laboratory” setting in the meaning “not field setting”. There are of course other possible strategies that could have been adopted and that would have provided increased understanding of how consumers perceive bundle value. In the following, alternative strategies to shed light on how consumers perceive bundle value and on the effect of bundle composition on consumer value is discussed. By reflecting over alternative strategies to study the problem area, it is possible to gain a larger awareness of the advantages and disadvantages with the chosen strategy, which kind of conclusions that can be drawn, and which kind of knowledge that is possible to gain from the study.

One alternative strategy to study the problem would have been to study how consumers evaluate bundles in a real life environment, with actual consumers evaluating real bundles. This could be done by approaching consumers in a store about their perceptions about the bundle offerings for sale by asking questions about how appealing different bundles are and why a certain bundle is appealing or not. Satisfaction with an actual bundle purchase could be investigated in a follow up study after purchase and use, in order to capture the overall value that a bundle provides. Preferably, participants that purchased a bundle would be contacted again after some time to talk about their experiences and satisfaction.

One advantage with this strategy is that it provides opportunities to ask follow up questions, for example about why a certain bundle is appealing or not. By this, information that goes beyond the mere outcome of the evaluations is provided, for example concerning the underlying process of value formation. It thus gives a deeper understanding of how bundles
influence preferences and satisfaction and why. Another advantage is that the external validity, more specifically the effects application, would be higher because of the authentic research setting and the representative sample. External validity would also be positively affected as this strategy allows for satisfaction to be studied after actual use. Satisfaction is by definition depending on actual use and consumption and compared to the present study, where participants may find it difficult to determine their satisfaction with bundles that they never actually used.

In relation to the purposes with this study, however, the strategy has a few limitations. As the purposes concerns what complementarity is and how it (along with discount) affects preferences and satisfaction, the aspect of value formation that is in center here is rather directed towards the outcome of the evaluation process than on the process in itself. To conduct the research in accordance with the purposes, it is important to be able to determine which factors actually cause the effects on preferences and satisfaction. When conducting an empirical study in a real life setting, this becomes difficult. For example, in a real life setting it may be difficult for consumers to disregard product brands when evaluating the bundles. Attitudes towards brands have a large impact on preferences for and satisfaction with a bundle and possibly outweigh the effect of relation between bundle products. Other factors that potentially impacts evaluations in a real life setting are the presence of sales people or a busy store environment that may impose stress and negative feelings that rubs off on the bundle offerings or individual knowledge and expertise that may affect evaluations because it determines how easily a consumer can assemble and use the products. These issues have a negative influence on the internal validity of the study, as it is hard to determine which factors that actually caused the stated preferences for and satisfaction. Another problematic issue in relation to this strategy is that the number of relations between bundle products that is possible to study would be limited. In a store, the number of bundle offerings is limited and it is not likely that all kinds of relations are present at one point in time in a store. It would also be hard to study how much satisfaction unappealing bundles provide. Consumers are unlikely to purchase unappealing bundles and therefore no purchase would take place and no post-purchase evaluation would be made.

As the discussion illustrates, this alternative way of conducting a study is not optimal when studying causal relationships. The data obtained is less suitable for determining causality because there are many confounding factors and too few bundles to be able to test different kinds of relations. Instead, adopting this kind of strategy would provide valuable insights about the underlying reasoning behind bundle evaluations. The possibility for participants to elaborate on and explain their views of bundles beyond predetermined variables and scales would provide a rich set of information
about how consumers value bundles and how they think and argue when evaluating bundles before and after purchase. Thus, while there are major drawbacks with this strategy as a way to determine the effect of different factors on bundle value, it is valuable as a way to provide knowledge about how the process behind value formation looks. This kind of knowledge adds another perspective to the understanding of how consumers perceive bundle value compared to the present study and could therefore be a valuable complement and a fruitful avenue of future research.

Another possible strategy, which is even more process oriented, is to make in-depth interviews where consumers’ opinions about and their experience with bundles are discussed. The discussion could be based around bundles in general and what consumers look for in a bundle offering or around a set of bundles. In-depth interviews allow for consumers to extensively describe their thoughts about bundles and elaborate about and explain why they prefer one bundle over another and why they experience satisfaction or dissatisfaction with a bundle. The data would provide data that could help paint a rich and nuanced picture of how consumers perceive bundles and insights into why they perceive bundles this way. Adopting this strategy increases the understanding of which kind of value that consumers seek and as there is openness as to which kind of information that comes up, the results may point to unexpected relationships or processes.

This kind of study may shed light on the results from the present study, indicating that consumers possibly avoid effortful bundle evaluation by using some sort of decision, where decision to evaluate a bundle is based on an initial assessment of whether or not a bundle is an option for purchase. In in-depth interviews this issue can be highlighted by discussions about how the decision making and evaluation process look, how purchase decisions are made, and why they perceive a bundle to be appealing or not.

With a strategy to conduct in-depth interviews to fulfill the general aim, more focus would be on the underlying process and a deeper understanding of how the process looks would be gained. With this strategy a more inductive approach is taken on the problem and a different set of research questions would be asked, for example: What is an appealing bundle? What is important for a bundle to provide satisfaction? What kind of value can bundles provide? Under which circumstances are bundles to be preferred over separate products? With this kind of strategy the influence of specific factors on consumer evaluations is not sought for, which is a major difference from the present study. Instead focus is on the underlying reasons why composition/complementarity influences consumers and on how consumers think about bundle value. The strategy is more process oriented and would provide increased understanding about consumers’ decision making and would highlight and add understanding to the relation between the decision making process, the evaluation process, and value formation.
Building on the results from the present study, which confirm that bundle complementarity affects bundle value and that composition is an important aspect of bundle value, this would be an exciting path to follow in future research to deepen the understanding of the process behind value formation.

**Limitations and future research**

Based on the results of the present study a number of suggestions for future studies have been identified. Some of the suggestions are based on interesting findings in the study. When analyzing and discussing the results, ideas and thought emerged about how increase the knowledge and understanding of how bundling influences consumers’ perception of value. These suggestions for future research builds further on the present results by for example pointing to new theoretical fields that add new perspectives to the understanding of value. These suggestions for future research are presented first. Thereafter another set of suggestions for future research is presented. These suggestions are based on areas where the present study leave room for improvement or specification, for example due to methodological limitations. These suggestions are presented in the second part of the section.

One important issue to disentangle based on the results of this dissertation is the effect of including more products to create complete bundles. In the study, some of the bundles with a complementarity relationship between products were perceived as more complementary than others and bundle completeness is here suggested as an explanation for this. In the experiments, bundles containing two products were evaluated. Some of them would be more complete with the addition of yet other products. For example, a bundle with a movie ticket and popcorn would be more complete if it also contained a soft drink. In the present study, bundle completeness was identified as a positive factor for both perceptions of complementarity and value. On the other hand, including more products in a bundle potentially makes the bundle more complex and thus harder to categorize (Gregan-Paxton et al. 2005; Swait and Adamowicz 2001) due to the risk of information overload caused by numerous attributes to evaluate (Scheibehenne et al. 2010; Thompson et al. 2005). Previous research shows that too many bundle products makes decisions more difficult (Agarwal and Chatterjee 2003) and decreases evaluations (Herrmann et al 1997). Studying how the positive effects of bundle completeness and the negative effects of increased complexity is balanced in consumer evaluations would increase the understanding of consumers’ decision making process as well as the knowledge of how to compose appealing bundles is an exciting new avenue of research.

In the present research, bundles with several types of complementarity were evaluated. However, all bundles were either complementary based on a
functional dimension or a consumer need dimension. However, a possible third dimension of complementarity was identified; a company based dimension. As a means of increasing the understanding of what complementarity is and how it influences consumers’ perception of value, investigations can proceed by studying this third dimension of complementarity. Since this dimension is based on companies’ needs, capabilities, and organization, it may be proposed based on the results of the present study that bundles with this type of complementarity are less appealing to consumers. The results would provide a base for a wider interpretation of complementarity and it would add a perspective as to under which circumstances bundle complementarity is of value for customers.

In the present study a choice was made not to include brand information in the evaluative tasks. The reason for this decision was that as consumers often have well established expectations and attitudes related to brands, there was major risk of confounding effects. However, specifically because of the strong impact of brand on preferences and satisfaction, it would be interesting to investigate the effect of brand on bundle evaluations in relation to bundle complementarity. How strong is the effect of brand attitudes compared to that of complementarity? Many aspects of branding relates to perceptions of bundle complementarity, such as brand personality, brand equity, brand image, or brand associations. To determine how strong the influence of these factors are on preferences and satisfaction compared to the effect of complementarity has major implications for the understanding of how consumers value bundles. It is also important knowledge for companies applying bundling strategies as it determines which strategies will be applied and the effect of operations.

Moreover, a review of the bundling literature revealed a gap in knowledge about whether there can be a maximum level of discount after which bundle evaluations deteriorate. Much bundling research focuses on pricing and presentation of bundle price and discounts. Yet, no bundling studies exist that investigate the possibility of a threshold level for bundle discounts. The results from the present study show that discount influences bundle value and also indicate that increased discount rates are not indisputably positive. However, it cannot be concluded whether evaluations fall when discounts go above a certain level, since the discount levels in the present experiment were too low.

One limitation to the present study is that the participants in the experiment evaluated bundles with a hypothetical scenario rather than in an actual purchase situation. The difference in context when evaluating bundles in a booklet or on a computer screen and in real life (with busy purchase environment, sales-people, competing product offerings, promotions, etc.) may affect evaluations. Research indicates, for example, that price promotions have larger effect in a laboratory setting than in a grocery store
The results in the present study showed limited effects of discount on consumer evaluations. If the effect is even smaller in a real life setting, indications are that bundle discount would have close to no effect on purchase intention in a real life purchase situation. Therefore, one suggestion for future research is to investigate the effect of the relation between bundle products on consumer evaluations in more realistic purchase situations. This would foremost be of interest to determine optimal pricing strategies for bundles, but it would also provide a test of the robustness of the present results in a different evaluation context.

Despite the potential limitations of using scenarios when evaluating bundles with regard to which analyses and conclusions that can be made, overall the results suggest that the manipulation in the scenarios was successful. Each experiment had a scenario presenting a situation where the participants were asked to evaluate bundles and separate products. In four of the experiments, a plan to purchase one of the bundled products was stated in the scenario. In one experiment, though, no plan to purchase was stated in the scenario. Evaluations were higher in the experiments where purchase plans were induced, which is consistent with the instructions. A consumer who intends to buy a product is likely to be more sympathetic to the product and make more positive assessments than a consumer than is not looking to buy such a product. The result implicates that participants actually read and understand scenarios, which is an imperative aspect in these kinds of experimental designs.

Also studying post-purchase satisfaction in a more realistic setting may be fruitful. The ratings of satisfaction followed the pattern of pre-purchase evaluations: complementary bundles have higher ratings than unrelated bundles, but lower than separate products. This is perhaps to be expected since the participants were asked to estimate how satisfied they expected they would be with a purchase. Thus, they did not make the evaluation after an actual purchase and although the results are suggestive, satisfaction with an actual purchase may differ. Possibly, estimated satisfaction correlate with stated purchase intention to a larger extent than satisfaction with an actual purchase does. Therefore, it would be of interest to investigate consumer satisfaction with bundles after an actual purchase, to see if the results are still valid. However, the influence of experience affecting the individual consumer’s ability to assemble products, attitudes towards brand etc. would influence satisfaction and would be hard to control for.

Another issue related to how satisfaction was measured is that participants rated how satisfied they expected to be with a purchase overall and if one of the products was not used. In a sense, this can be considered a measure of satisfaction with product performance. However, the variable can only be seen as an indirect measure of (mal)performance as the question did not state that the product malfunctioned and therefore was not used. Hence,
the variable is by no means a perfect measure of performance (and it was not intended to be). In addition, there are many other drivers of satisfaction, such as disconfirmation, expectations, and perceived equity (Oliver and Swan 1989; Szymanski and Henard 2001) that were not included in the study. By including these measures, a fuller picture of how bundling affects satisfaction would be provided. This would increase the understanding of satisfaction and how satisfaction is formed and experienced. By including more measures of how bundling influences satisfaction the understanding of why bundling affects satisfaction would increase. Moreover, increasing the understanding of the drivers of satisfaction also adds to the overall understanding of the process behind value formation and as such it is an important contribution to the understanding of how bundle composition may provide value.

Similarly, as pointed out in the method, there were limitations to other measures in the study, too. The measures of preference; quality, attractiveness, and purchase intention, were measured by one variable each which limits the reliability. Developing these variables into multi-item measures by including additional variables would increase the validity of the results and strengthen the findings. Moreover, there are question marks about the variable need to think, as there is a risk that it did not capture processing difficulty is intended, but decision difficulty. The results suggested that unrelated bundles may be so incongruent from existing categories that consumers are deterred from attempting to classify them, which is implied by the unexpectedly low ratings of need to think before making a purchase decision. That is, unrelated bundles are so unappealing that consumers want to avoid putting effort into evaluating them. Even though unrelated bundles may be difficult to evaluate consumers avoid the effort by not processing information about them. An indication that the suggested explanation holds, would be if a forced purchase or forced evaluation would render high ratings of need to think. These results indicate that some sort of decision rule is used to avoid effortful evaluation of unappealing bundles. Bundling has previously been suggested as a decision rule (Harris and Blair 2006b) in the sense that consumers choose to buy bundles. However, to study if bundling and the relation between the bundle products may function as a decision rule determining which products not to buy is an interesting idea for future research.

Adscript
Lastly, a note about the research that is presented here. The present dissertation makes a contribution to research by increasing the understanding about bundling, how bundles influence consumers’ perception of value, what bundle complementarity is, and how it influences consumers. However, it is my conviction that no one study can ever provide
full knowledge or understanding about a phenomenon or prove a theory. Instead, I believe theories and knowledge develop over time and that each study is but a piece in a large puzzle of knowledge. Each insight leads to new questions and each finding can be further explored. In the present text these aspects are emphasized in the methodological discussion and highlighted in the final reflections and suggestions for future research. Though the present study increases the knowledge in the area, there are many exciting directions for future research that would further increase the understanding about bundling and about how perceptions of value are formed.

This is my piece to the large knowledge puzzle. From the results of the study I have gained some knowledge, from the process of conducting the study I have learnt a lot. And I guess this is what research is all about.

Erika
Stockholm, September 29th 2011
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Simonin, Bernard L. and Julie A. Ruth (1995), Bundling as a Strategy for New Product Introduction: Effects on Consumers’ Reservation Prices for the


Appendices

Appendix I. Table
Table 1. Overview of published studies about the effects of bundling*

<table>
<thead>
<tr>
<th>Reference</th>
<th>Main aim</th>
<th>Method</th>
<th>Measures</th>
<th>Kind of bundle</th>
<th>Main results</th>
<th>Company/consumer focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams and Yellen (1976), Commodity bundling and the burden of monopoly.</td>
<td>Demonstrate that bundling can be used profitably as a way to segment the market.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Monopolists can use bundling as a strategy to maximize prices charged. Bundling can lead to over-or undersupply and to the wrong people consuming each good.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Agarwal and Chatterjee (2003), Complexity, uniqueness, and similarity in between-bundle choice.</td>
<td>Investigate sources of decision difficulty in choosing between multiple bundles.</td>
<td>Experiment with 159 New York households, ANOVA</td>
<td>Similarity of bundle pairs, choice between pairs, and perceived decision difficulty</td>
<td>Residential service bundles (varying level of bundle complementarity)</td>
<td>Larger bundles and similar bundles make decisions more difficult, more unique services increases difficulty for small but not large bundles.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Andrews et al. (2010), The effect of incentives on customer evaluations of service bundles.</td>
<td>Investigate the effects of service bundle incentives on perceived value, search intentions, and switching intentions.</td>
<td>2 experiments with 293 consumers and 135 students, ANOVA</td>
<td>Perceived value (nine items), switching intention (four items), search intention (three items)</td>
<td>Tele-communication service bundles</td>
<td>Bundling is an effective form of promotion for service products. Convenience of one bill gives rise to as much switching intention as free upgrades and discounts.</td>
<td>Company</td>
</tr>
<tr>
<td>Ansari et al. (1996), Pricing a bundle of products or services: The case of nonprofits.</td>
<td>Determine how nonprofit organizations optimally should price bundles to maximize usage.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>Multiple products, event tickets</td>
<td>Nonprofit organizations benefit most from a mixed bundling strategy, followed by a pure bundling strategy and last an unbundling strategy.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Arora (2008), Price bundling and framing strategies for complementary products.</td>
<td>Explores the effects of price bundling and message framing on consumers’ attitudes and purchase intentions.</td>
<td>Experiments with 231 students, ANOVA, and in-depth interviews</td>
<td>How good, beneficial, and desirable bundle is, and likelihood of use and recommendation to others</td>
<td>Complementary bundles with dental care products</td>
<td>With negatively framed messages, bundled pricing had positive effects on attitude, purchase intentions, and intentions to recommend. No, or negative effects when message is positively framed.</td>
<td>Company</td>
</tr>
<tr>
<td>Reference</td>
<td>Main aim</td>
<td>Method</td>
<td>Measures</td>
<td>Kind of bundle</td>
<td>Main results</td>
<td>Comp/cons</td>
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<tr>
<td>Burman and Biswas (2007), Partitioned pricing: Can we always divide and prosper?</td>
<td>Identify boundary conditions in consumers' processing of pricing information.</td>
<td>7 experiments with 85+92+69+106+26+96+104 students, ANOVA</td>
<td>Perceptions of offer value, willingness to purchase</td>
<td>Complementary bundles with airline tickets, DVD player, camera, PDA, or MP3 player plus handling and shipping.</td>
<td>People with high need for cognition value partitioned versus combined pricing different from people with low need for cognition. Perceived fairness of surcharge influence evaluations.</td>
<td>Company</td>
</tr>
<tr>
<td>Burstein (1960), The economics of tie-in sales.</td>
<td>Develop a model of under which circumstances bundling is profitable for companies.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>Complementary and unrelated bundles</td>
<td>Complementarity of the tied and the tying good is not necessary for bundling to be profitable.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Carbajo et al. (1990), A strategic motivation for commodity bundling</td>
<td>Show that imperfect competition creates a strategic incentive for companies to bundle.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Bundling may be profitable because it causes rivals to act less aggressively.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Chae (1992), Bundling subscription TV channels: A case of natural bundling.</td>
<td>Study pricing and production decisions in markets characterized by economies of scope of bundling.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>Bundles of TV channels (multiple products)</td>
<td>A pure bundling strategy should be used when costs are low and a mixed bundling strategy when costs are high.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Chakravarti et al. (2002), Partitioned presentation of multicomponent bundle prices: Evaluation, choice and underlying processing effects.</td>
<td>Examine the effects of bundle price presentation on consumer evaluations.</td>
<td>2 experiments with 480+528 students, ANOVA</td>
<td>Desirability of bundles, choice likelihood of bundles, and choice between two bundles</td>
<td>Complementary refrigerator bundles.</td>
<td>Partitioned pricing more favorably evaluated than consolidated pricing.</td>
<td>Company</td>
</tr>
<tr>
<td>Chang, Seokjoo Andrew and Giri Kumar Tayi (2009), An analytical approach to bundling in the presence of customer transition effects.</td>
<td>Examine optimal bundling and pricing strategies for subscription-based service bundles.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>As bundle retention rate increases, companies can reduce prices to attract new customers. The high retention rate will compensate for the lower price by increasing customer loyalty.</td>
<td>Company</td>
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<td>Reference</td>
<td>Main aim</td>
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<td>Choi, Jay Pil (2003), Bundling new products with old to signal quality, with application to the sequencing of new products.</td>
<td>Provide a rational for bundling based on informational leverage.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Sequential introduction of new products allows for use of informational leverage, and thus makes it possible for both products to be introduced even when neither of them is viable on its own.</td>
<td>Company</td>
</tr>
<tr>
<td>Chu et al. (2011), Bundle-size pricing as an approximation to mixed bundling.</td>
<td>Examine optimal bundle pricing for companies with customers that may purchase more than one and possibly all of the company's products.</td>
<td>Numerical experiments and case study</td>
<td>n/a</td>
<td>Tickets to theater plays or musicals</td>
<td>Bundle-size pricing, setting a price that only depends on the size of the bundle, is as profitable as and more practical than setting separate prices for all possible bundle combinations. Bundle-size pricing is more profitable than component pricing.</td>
<td>Company</td>
</tr>
<tr>
<td>Chung and Rao (2003), A general choice model for bundles with multiplecategory products: Application to market segmentation and optimal pricing for bundles.</td>
<td>Explore how choice is affected by bundles composed of products from multiple categories.</td>
<td>Experiment with 136 students</td>
<td>Choice between purchase or not</td>
<td>Complementary PC systems</td>
<td>Identifies market segments for bundles with products from multiple categories, to estimate optimal bundle prices for different segments.</td>
<td>Company</td>
</tr>
<tr>
<td>Dansby and Conrad (1983), Commodity Bundling</td>
<td>Show that bundling may benefit both buyers and sellers and suggest which kinds of bundling activities that should be legal.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Argue that the bundling process may add value to consumers too so that a bundle is more valued than the sum of its parts. Suggest that the legality of bundling should include an assessment of potential added value of the bundling process.</td>
<td>Consumer (Economics)</td>
</tr>
<tr>
<td>Drumwright (1992), A demonstration of anomalies in evaluations of bundling.</td>
<td>Investigates if bundling makes consumers purchase more than they ordinarily would.</td>
<td>Experiment with 74 students</td>
<td>Preferences for and choice between bundles</td>
<td>Complementary car bundles</td>
<td>Bundling influence consumers' choice and some support for increased purchasing from bundling.</td>
<td>Consumer</td>
</tr>
<tr>
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<td>Eppen et al. (1991), Bundling – new products, new markets, low risk.</td>
<td>Offer guidelines for creating competitive bundles and successfully implementing them.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Bundles should be considered as new products. Bundling should be used as a general corporate strategy and bundles created by general managers, not just by marketing department.</td>
<td>Company</td>
</tr>
<tr>
<td>Estelami (1999), Consumer savings in complementary product bundles.</td>
<td>Map the potential savings of complementary mixed bundling offers for consumers.</td>
<td>Mapping of 480 advertised prices of bundles in three categories</td>
<td>n/a</td>
<td>Complementary bundles with fast food, photographic equipment, or personal computers</td>
<td>On average, consumers save 8% by purchasing bundles. In 9% consumers paid surcharges.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Foubert and Gijsbrechts (2007), Shopper response to bundle promotions for packaged goods.</td>
<td>Investigate how bundle promotion affects consumer shopping behavior.</td>
<td>Model test using consumer panel data and promotion activity information</td>
<td>n/a</td>
<td>Multi-product mixed bundles in the snack chip category</td>
<td>Bundle promotions (discount offered when a certain number of products are purchased) are more effective at inducing switching than boosting sales. That is, increased sales are not caused by light users being converted to heavy users but by heavy users switching brands.</td>
<td>Company</td>
</tr>
<tr>
<td>Gaeth et al. (1991), Consumer evaluation of multi-product bundles: An information integration analysis.</td>
<td>Examine the process of evaluating bundles.</td>
<td>Experiment with 27 individuals</td>
<td>Quality, willingness to pay, likelihood to purchase, rebate needed to induce purchase intention for bundles and separate products</td>
<td>Complementary VCR bundles and unrelated typewriter bundles</td>
<td>Evaluations of primary product and tie-in product are averaged when evaluating bundles. Tie-in product had larger impact on evaluations than would be expected from its monetary worth.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Guiltinan (1987), The price bundling of services: A normative framework.</td>
<td>Identify the demand conditions under which price bundling can be an effective marketing tool.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>Complementary</td>
<td>Type of bundle complementarity, bundle form, and strategic marketing objectives influence companies pricing decisions.</td>
<td>Company</td>
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<td>Hamilton and Koukova (2008), Choosing options for products: The effects of mixed bundling on consumers' inferences and choices.</td>
<td>Examine how mixed bundling affects consumers' inferences about and choices of bundle alternatives.</td>
<td>3 experiments with 89+101+52 students, repeated measures GLM, ANCOVA, ANOVA</td>
<td>Importance of option, effort and difficulty in making a choice, choice between options, perceptions of discount</td>
<td>Complementary computer or car bundles</td>
<td>Mixed bundling more favorably evaluated than unbundling when sellers' motives for bundling are not perceived to be negative for consumers.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Harlam et al. (1995), Impact of bundle type, price framing and familiarity on purchase intention for the bundle.</td>
<td>Examine which types of products to bundle and how to present the price of the bundle.</td>
<td>Interactive computer experiment with 83 students, ANOVA</td>
<td>Purchase intention</td>
<td>Complementary and unrelated VCR or shampoo bundles. Effect of relation investigated.</td>
<td>Higher purchase intent for bundles composed of complements. More sensitive to price increase than price decrease. No support for bundles of equally priced products being more attractive than of unequally priced products.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Harris (1997), The effects of promotional bundling on consumers' evaluations of product quality and risk.</td>
<td>Assess the effects of bundling on perceptions of quality and perceived risk with purchase.</td>
<td>Experiment with 153 students, ANOVA</td>
<td>Likelihood of purchase, quality, and perceived risk with purchase</td>
<td>Complementary cereal bundles</td>
<td>Perceived quality is increased and perceptions of risk decreased when a new product in a bundle is not a brand extension. When the new product is a brand extension, the effects are inverted.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Harris and Blair (2006a), Consumer preference for product bundles: The role of reduced search costs.</td>
<td>Examines how reduced search and assembly costs influence consumers' preferences for bundles.</td>
<td>Focus group discussions and 2 experiments with 40+117 students</td>
<td>Choice</td>
<td>Complementary stereo equipment bundles</td>
<td>Preference for bundles is greater when bundle choice will reduce search effort than when it will not, particularly among consumers who are less motivated to process information.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Harris and Blair (2006b), Functional compatibility risk and consumer preferences for product bundles.</td>
<td>Examine the effects of functional compatibility risk of consumers' preference for bundles versus separate products.</td>
<td>Experiment with 90 students</td>
<td>Choice between bundle or separate products</td>
<td>Complementary stereo equipment bundles</td>
<td>Preferences for bundles increased when risk functional incompatibility was highlighted.</td>
<td>Consumer</td>
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<td>Heeler et al. (2007), Bundles = discount? Revisiting complex theories of bundle effects.</td>
<td>Explores whether consumers infer a saving in absence of bundle discount information.</td>
<td>2 experiments with 152+86 students</td>
<td>Expected price of bundle or separate products</td>
<td>Complementary car or ski lift ticket bundles</td>
<td>In the absence of explicit information about bundle savings, consumers infer a saving when presented with a bundled offer.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Herrmann et al. (1997), Product and service bundling decision and their effects on purchase intention.</td>
<td>Examine how a number of factors affect consumers’ purchase intentions.</td>
<td>2 experiments with in total 540 car owners on the market to buy a new car, ANOVA</td>
<td>Purchase intention</td>
<td>Complementary and unrelated car bundles. Effect of relation investigated.</td>
<td>Pure bundling, functional complementarity, and discount are positively related to purchase intention. Five component bundles give higher purchase intent than three or seven.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Janiszewski and Cunha, Jr. (2004), The influence of price discount framing on the evaluation of a product bundle.</td>
<td>Investigate why consumers perceive a price discount on one product in a bundle as more appealing than an equivalent price discount on another product in the bundle.</td>
<td>6 experiments with 89+100+67 students and 37+ 31+65 non-student participants, repeated measures</td>
<td>Preference between bundles</td>
<td>Complementary bundles with fast-moving consumer goods, e.g. fast food and groceries</td>
<td>People place more weight on the value of the less attractive product in a bundle. When people clearly know which product is more important or when there is a high degree of utility dependence between the products, the focal product has more weight in evaluations.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Johnson et al. (1999), The effects of price bundling on consumer evaluations of product offerings.</td>
<td>Examine whether, and to what degree, the bundling of price-related information influences consumer evaluations.</td>
<td>Experiment with 30 individuals on the market to make a car repurchase, ANOVA</td>
<td>Satisfaction with offer, likelihood of recommending, and likelihood of repurchasing</td>
<td>Complementary car bundles</td>
<td>Evaluations are positively affected by price information is bundled and price discount information is debundled.</td>
<td>Company</td>
</tr>
<tr>
<td>Kaicker et al. (1995), Component versus bundle pricing. The role of selling price deviations from price expectations.</td>
<td>Investigate the effect of discrepancies between price expectations and selling prices.</td>
<td>Experiments with 214 students</td>
<td>Perceived value for money, choice between bundle or separate products</td>
<td>Complementary CD player bundles</td>
<td>Consumers derive greater value from component pricing than bundle pricing when price is lower than expected.</td>
<td>Company (consumer)</td>
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<tr>
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<td>Kamins et al. (2009), Promotional bundles and consumers' price judgments: When the best things in life are not for free.</td>
<td>Examine how consumers' willingness to pay are affected by different ways of framing a bundle.</td>
<td>Experiment with 180 bidders on online auctions, 187+246 students</td>
<td>Willingness to pay for bundles, focal, or supplementary product when sold alone.</td>
<td>Coin bundles, complementary or multi-pack shampoo bundles</td>
<td>Freebie bundle offers reduces the price consumers are willing to pay for the separate bundle products, but not for the bundle.</td>
<td>Company</td>
</tr>
<tr>
<td>Kim et al. (2009), Price Bundling and Travel Product Pricing Practices Used by Online Channels of Distribution</td>
<td>Determine if price bundling by online travel agents results in monetary savings for consumers.</td>
<td>Observation of prices of bundled offerings, ANOVA</td>
<td>Price of 240 bundles and corresponding 240 unbundled services</td>
<td>Travel bundles</td>
<td>Consumers save money by buying bundle offerings from travel agents compared to purchasing the services from individual service providers, most when purchasing the bundle one month ahead of travel date, followed by three and six months ahead.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Koukova et al. (2008), Product form bundling: Implications for marketing digital products.</td>
<td>Explores how awareness of the advantages of a bundle influence purchase intentions.</td>
<td>2 experiments with 406+134 students, ANOVA, Logistic regressions</td>
<td>Choice likelihood and perceived complementarity</td>
<td>Complementary book, newspaper, margarine, or coffee bundles</td>
<td>By highlighting usage situation, perceptions of complementarity can be influenced and mixed bundling can be profitably adopted.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Lawless (1991), Commodity bundling for competitive advantage: Strategic implications.</td>
<td>Model the managerial issues surrounding bundling and the potential advantages with bundling.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Bundling has potential to differentiate a company from competitors and to generate larger returns from a market segment.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Mankila (2004), Retaining students in retail banking through price bundling: Evidence from the Swedish market.</td>
<td>Investigate price bundling as a way to retain student.</td>
<td>Survey with 386 students, conjoint and cluster analyses</td>
<td>Choice between bundles</td>
<td>Retail banking bundles</td>
<td>Three customer segments were identified who have different profiles and demands, which may serve as suggestions on how to compose retail banking bundles.</td>
<td>Company</td>
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<tr>
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<td>Martin (1999), Strategic and welfare implications of bundling.</td>
<td>To demonstrate the strategic and welfare implications of bundling on competition.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Bundling in an oligopoly is profitable, reduces competitors profit and welfare, and may drive competitors from the market.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Matutes and Regibeau (1992), Compatibility and bundling of complementary goods in a duopoly.</td>
<td>Present a model of compatibility and bundling of products into product systems.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>Complementary bundles</td>
<td>Firms should be better off if they offered mixed bundles without discounts.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Naylor and Frank (2001), The effect of price bundling on consumer perceptions of value.</td>
<td>Examine whether inclusiveness and expectations of inclusiveness of a bundle impacts perceptions.</td>
<td>Longitudinal study, 218 surveys answered by guests before and after visit, regression analysis</td>
<td>Expected benefits and costs, value and quality perceptions, costs, performance and importance of benefits</td>
<td>Complementary all-inclusive fitness resort bundles</td>
<td>All-inclusive price packages are valued by first time consumers even if monetary outlay is higher compared to separate charges.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Nguyen et al. (2009), Consumer perceptions of bundles.</td>
<td>Test inferred bundle savings versus loss aggregation as explanations of consumer evaluations of bundles.</td>
<td>3 experiments with 88+95+105 students</td>
<td>Overall satisfaction and likelihood to recommend, purchase intention, transaction value (price-worthiness)</td>
<td>Complementary car bundles</td>
<td>Actual or inferred savings give favorable bundle evaluations and when the bundle is known to be undiscounted the evaluations are negative.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Oppewai and Holyoake (2004), Bundling and retail agglomeration effects on shopping behavior.</td>
<td>Examine the effects of bundling and retail agglomeration on consumer purchase behavior.</td>
<td>Experiment with 202 students</td>
<td>Choice between different shopping patterns</td>
<td>Complementary travel bundles</td>
<td>Information about components increases likelihood of purchasing individual products. Competitors nearby do not increase likelihood of purchasing components, but instead consumers do not purchase at all or purchase bundles.</td>
<td>Consumer</td>
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<td>Reference</td>
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<tr>
<td>Paun (1993), When to bundle or unbundle products.</td>
<td>Discuss factors that favor a bundling versus unbundling strategy.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Companies should consider and analyze customer, environmental, firm, and product factors when deciding on a bundling or unbundling strategy.</td>
<td>Company</td>
</tr>
<tr>
<td>Popkowski Leszczyc et al. (2008), Why more can be less: An inference-based explanation for hyper-subadditivity in bundle valuation.</td>
<td>Explore how bundles are valued compared to separate products.</td>
<td>3 experiments with 136 + 156 + 100 students</td>
<td>Bid in auction, willingness to pay for bundle and separate products, quality perceptions</td>
<td>Unrelated (i.e., non-substitutes and non-complements)</td>
<td>Bundles are under certain circumstances valued lower than any of the included products (hyper-subadditivity).</td>
<td>Company</td>
</tr>
<tr>
<td>Popkowski Leszczyc and Häubl (2010), To bundle or not to bundle: Determinants of the profitability of multi-item auctions.</td>
<td>Explore the profitability of bundling in auction markets.</td>
<td>3 experiments with 168 + 144 + 288 real-life auctions</td>
<td>Winning bid, number of bids, number of unique bidders</td>
<td>Bundles with sets of collectable stamps, bundles with complementary or substitute services or goods</td>
<td>When products are non-complementary or substitutes it is less profitable to bundle in auctions. When products are complementary bundling is on average 50% more profitable than separate auctions. The effect is more pronounced for services that for goods.</td>
<td>Company</td>
</tr>
<tr>
<td>Raghubir (2005), Framing a price bundle: The case of “buy/get” offers.</td>
<td>Explore how perceived production cost affect willingness to pay for bundles.</td>
<td>2 experiments with 74 + 146 students, ANOVA</td>
<td>Willingness to pay</td>
<td>Bundles with earrings and necklace, or fragrance and body mist</td>
<td>BOGO-offer less attractive than bundled offer and consumers less willing to pay for the “free” product as a separate product.</td>
<td>Company</td>
</tr>
<tr>
<td>Sarin et al. (2003), Strategic use of bundling for reducing consumers’ perceived risk associated with the purchase of new high-tech products.</td>
<td>Explore what factors in a bundle that help reduce consumers’ perceived risk.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>Bundles of a new high tech product and existing technology</td>
<td>When bundling high tech products factors such as credible brand name, low level of innovation of new product, and discount are proposed to have a positive influence on perceived risk. The new product should be the tie-in rather than the anchor.</td>
<td>Consumer (Company)</td>
</tr>
<tr>
<td>Schmalensee (1984), Gaussian demand and commodity bundling.</td>
<td>Explore the effect of bundling on profitability.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Pure bundling reduces buyer diversity and makes consumers worse off than unbundled sales. Mixed bundling is more profitable than pure or unbundled sales.</td>
<td>Company (Economics)</td>
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<tr>
<td>Reference</td>
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<td>Sharpe and Staelin (2010), Consumption effects of bundling: Consumer perceptions, firm actions, and public policy implications</td>
<td>Better understanding of how bundling influences purchase behavior.</td>
<td>Experiment with 215 adult members of an online panel.</td>
<td>Choice between different drink sizes, different fry sizes, and between two complete meals</td>
<td>Fast food bundles</td>
<td>Bundling provides utility beyond the value of separate products and discount, which is attributed to reduced cost of ordering. Bundling increases price sensitivity because bundles are viewed as price promotions. Taxation, pricing, and portion size strategies aimed at reducing the caloric intake are presented.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Sheng and Pan (2009), Bundling as a new product introduction strategy: The role of brand image and bundle features.</td>
<td>Examine how a new brand can benefit from bundling with a strong brand.</td>
<td>2 experiments with 191 + 147 students, ANOVA and pairwise t-test</td>
<td>Favorability, quality, and image of brand, complementarity and quality of products</td>
<td>Complementary and unrelated surround sound receiver bundles. Effect of relation investigated.</td>
<td>Quality perceptions of new brand is affected by the brand of the bundled partner, stronger when products are complementary and when a discounted price is presented for the bundle as a whole compared to on the new brand only.</td>
<td>Company</td>
</tr>
<tr>
<td>Sheng et al. (2007a), The effects of price discount and product complementarity on consumer evaluations of bundle components.</td>
<td>Examine how bundle discount and complementarity influences evaluations of separate products.</td>
<td>3 experiments with 183 + 152 + 122 students, ANOVA</td>
<td>Perceived bundle price, quality, and complementarity. Transaction value (satisfaction with financial terms, goodness of deal)</td>
<td>Complementary and unrelated bundles with clothes washer, grill, car radio tuner, or electronic fish finder. Effect of relation investigated.</td>
<td>Bundle price discounts hurt evaluations of the discounted product, but bundle complementarity decreases the negative effects.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Sheng et al. (2007b), Partitioning or bundling? Perceived fairness of the surcharge makes a difference.</td>
<td>Examine whether a partitioned or bundled pricing strategy is most profitable in the presence of surcharges</td>
<td>3 experiments with 82 + 104 + 77 students, pair-samples t-tests</td>
<td>Likelihood of purchase, perceived fairness of surcharge</td>
<td>Complementary bundles with online products (CD Walkman, digital watch, or laptop) and shipping and handling surcharge</td>
<td>When a surcharge is perceived as fair purchase intention is higher for bundled than unbundled pricing.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Reference</td>
<td>Main aim</td>
<td>Method</td>
<td>Measures</td>
<td>Kind of bundle</td>
<td>Main results</td>
<td>Comp/cons</td>
</tr>
<tr>
<td>-----------</td>
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<td>----------------</td>
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<td>-----------</td>
</tr>
<tr>
<td>Simonin and Ruth (1995), Bundling as a strategy for new product introduction: Effects on consumers’ reservation prices for the bundle, the new product, and its tie-in.</td>
<td>Investigate the effect of bundling on reservation prices of bundles and separate products.</td>
<td>Experiment with 180 students, regression analyses</td>
<td>Attitudes towards bundle, perceptions of product fit, and reservation price for bundle and separate products</td>
<td>Complementary and unrelated tooth paste bundles</td>
<td>Prior attitudes affect the evaluation of the bundle and reservation prices for the bundle and its components.</td>
<td>Company</td>
</tr>
<tr>
<td>Soman and Gourville (2001), Transaction decoupling: How price bundling affects the decision to consumer.</td>
<td>Explore the effects of post-purchase consumption behavior in a bundling setting.</td>
<td>3 experiments with 80+150+480 students, ANOVA, Historic field study of transactions and attendance</td>
<td>Likelihood of consumption, likelihood of repurchase, acceptable refund</td>
<td>Complementary ski-vacation bundles, multi-product ticket bundles</td>
<td>Bundles may have a negative effect on consumption as they increase the likelihood of non-consumption of some of the bundle items.</td>
<td>Company</td>
</tr>
<tr>
<td>Stremersch and Tellis (2002), Strategic bundling of products and prices: A new synthesis for marketing.</td>
<td>Answer to three shortcomings of the present bundling literature: the lack of definition, discussion about the legality, and framework for when different bundling strategies are recommended.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>n/a</td>
<td>Defines bundling as the sale of two or more products in one package, where separate products are products that at least some buyers want to buy separately. Provides a number of propositions about optimal bundling strategies under varying circumstances.</td>
<td>Company</td>
</tr>
<tr>
<td>Suri and Monroe (1995), Effect of consumer’ purchase plans on the evaluation of bundle offers.</td>
<td>Explore how consumers’ perceptions of bundle savings are influenced by purchase plans.</td>
<td>Experiment with 205 students, ANOVA</td>
<td>4 item transaction value measures and 7 total transaction value measures, estimated saving</td>
<td>Bundles with luggage items (bags)</td>
<td>Prior intentions to purchase influence the perceptions of savings of bundle offerings.</td>
<td>Company (Consumer)</td>
</tr>
<tr>
<td>Reference</td>
<td>Main aim</td>
<td>Method</td>
<td>Measures</td>
<td>Kind of bundle</td>
<td>Main results</td>
<td>Comp/cons</td>
</tr>
<tr>
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<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>-----------------------------------------------</td>
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<td>-----------</td>
</tr>
<tr>
<td>Tanford et al. (2010), Price transparency of bundled vacation packages.</td>
<td>Explores how price and discount should be presented to be attractive to consumers.</td>
<td>Experiment with 115 students, logistic regression</td>
<td>Choice, how appealing bundle is, value for money, impression of bundle, and fairness of price</td>
<td>Complementary vacation bundles</td>
<td>When a bundle is discounted the price should be presented for each component, when bundle is undiscounted, price should be presented for the bundle as a whole.</td>
<td>Company</td>
</tr>
<tr>
<td>Telser (1979), A theory of monopoly of complementary goods.</td>
<td>Model how profit can be maximized by a monopolist bundling complementary goods.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>Complementary bundles</td>
<td>A monopolist can increase net return by selling at least one of the component products below its marginal cost and by selling different complementary bundles to different market segments.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Venkatesh and Kamakura (2003), Optimal bundling and pricing under a monopoly: Contrasting complements and substitutes from independently valued products.</td>
<td>Develop a model that addresses which bundling strategy that is most effective and how they should be priced.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>Complementary and substitute bundles</td>
<td>Marginal cost levels and degree of complementarity or substitutability determines if an unbundling, pure or mixed bundling strategy is optimal.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Venkatesh and Mahajan (1993), A probabilistic approach to pricing bundles of products or service.</td>
<td>Determine how to optimally price a bundle.</td>
<td>Survey responses from 119 individuals</td>
<td>Reservation price</td>
<td>Multi-product ticket bundles to music/dance performances</td>
<td>A mixed bundling strategy is more profitable than unbundling or pure bundling strategies.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Wilson et al. (1990), Unbundling of industrial systems.</td>
<td>Examine the bundling option for companies selling multicomponent industrial systems.</td>
<td>Conceptual</td>
<td>n/a</td>
<td>Complementary bundles</td>
<td>As industries mature, unbundling becomes more likely because of the diffusion of technology and the evolution of standards between firms.</td>
<td>Company (Economics)</td>
</tr>
<tr>
<td>Yadav (1994), How buyers evaluate product bundles: A model of anchoring and adjustment.</td>
<td>Examine the process of evaluating bundles.</td>
<td>2 experiments with 153+140 students</td>
<td>Excellence of bundles and products, product importance, order of examination</td>
<td>Complementary computer or furniture bundles</td>
<td>People examine bundle products in a decreasing order of importance and make adjustments to form their overall evaluation of the bundle.</td>
<td>Consumer</td>
</tr>
<tr>
<td>Reference</td>
<td>Main aim</td>
<td>Method</td>
<td>Measures</td>
<td>Kind of bundle</td>
<td>Main results</td>
<td>Comp/cons</td>
</tr>
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<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Yadav (1995), Bundle evaluation in different market segments: The effects of discount framing and buyers’ preference heterogeneity.</td>
<td>Explores how consumers’ evaluations are affected by which product in a bundle that is discounted.</td>
<td>Survey to 64 students, Conjoint analysis</td>
<td>Choice of bundle and interest, willingness to pay, preference for separate magazines</td>
<td>Bundles of sports and entertainment magazines</td>
<td>When two unequally preferred items were bundled, evaluation was most positive when the most preferred item was discounted.</td>
<td>Company</td>
</tr>
<tr>
<td>Yadav and Monroe (1993), How buyers perceive savings in a bundle price: An examination of a bundle’s transaction value.</td>
<td>Examine buyers’ perceptions of savings in a bundle offer.</td>
<td>Laboratory experiment with 270 students, ANOVA</td>
<td>Transaction value for bundles and separate products</td>
<td>Bundles of luggage items</td>
<td>Savings presented as additional savings on a bundle have a greater impact on perceptions of transaction value than savings offered on the separate products.</td>
<td>Company</td>
</tr>
</tbody>
</table>

*The articles that are included are published in peer-reviewed journals. Included in the overview are all journal articles about bundling that are referred to in the text. This means that consumer oriented articles are somewhat overrepresented in comparison with the collected body of research in the area. The assessment of consumer or company focus is based on the general aim with the study. Hence, it is not whether consumers are investigated in the empirical study that determines if the article has a company or consumer focus but the kind of data that is collected and how it is analyzed and discussed.*
### Table 2. Mean evaluative ratings of aggregated separate products (Experiment 1).

<table>
<thead>
<tr>
<th>Quality</th>
<th>Attractiveness</th>
<th>Purchase intention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M  SD</td>
<td>M  SD</td>
</tr>
<tr>
<td>TV</td>
<td>A</td>
<td>6.1</td>
</tr>
<tr>
<td>DVD player</td>
<td>B</td>
<td>6.6</td>
</tr>
<tr>
<td>Digital camera</td>
<td>C</td>
<td>6.0</td>
</tr>
<tr>
<td>DVD player</td>
<td>D</td>
<td>5.0</td>
</tr>
<tr>
<td>Digital camera</td>
<td>E</td>
<td>4.5</td>
</tr>
<tr>
<td>DVD player</td>
<td>F</td>
<td>4.9</td>
</tr>
<tr>
<td>Digital camera</td>
<td>G</td>
<td>5.8</td>
</tr>
<tr>
<td>DVD player</td>
<td>H</td>
<td>5.2</td>
</tr>
<tr>
<td>Digital camera</td>
<td>I</td>
<td>5.9</td>
</tr>
</tbody>
</table>

### Table 3. Mean evaluative ratings of separate products (Experiment 3).

<table>
<thead>
<tr>
<th>Quality</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive TV</td>
<td>7.1</td>
<td>1.3</td>
<td>6.7</td>
<td>1.5</td>
<td>6.3</td>
<td>1.8</td>
<td>5.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Low-budget TV</td>
<td>3.5</td>
<td>1.6</td>
<td>2.2</td>
<td>1.2</td>
<td>1.9</td>
<td>1.0</td>
<td>3.2</td>
<td>1.8</td>
</tr>
<tr>
<td>Excl. DVD player</td>
<td>7.5</td>
<td>1.1</td>
<td>7.1</td>
<td>1.6</td>
<td>6.7</td>
<td>1.7</td>
<td>4.5</td>
<td>1.9</td>
</tr>
<tr>
<td>Low-budget DVD player</td>
<td>3.7</td>
<td>1.4</td>
<td>2.4</td>
<td>1.2</td>
<td>2.4</td>
<td>1.2</td>
<td>4.1</td>
<td>2.0</td>
</tr>
<tr>
<td>Excl. Digital camera</td>
<td>7.5</td>
<td>1.1</td>
<td>7.1</td>
<td>1.3</td>
<td>6.8</td>
<td>1.6</td>
<td>5.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Low-budget D. camera</td>
<td>4.0</td>
<td>1.5</td>
<td>2.8</td>
<td>1.3</td>
<td>2.5</td>
<td>1.3</td>
<td>4.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Excl. Photo printer</td>
<td>7.4</td>
<td>1.1</td>
<td>6.8</td>
<td>1.5</td>
<td>6.5</td>
<td>1.6</td>
<td>4.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Low-budget Ph. Printer</td>
<td>3.8</td>
<td>1.5</td>
<td>2.9</td>
<td>1.3</td>
<td>2.7</td>
<td>1.3</td>
<td>4.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Excl. Bicycle</td>
<td>7.4</td>
<td>1.2</td>
<td>6.6</td>
<td>1.6</td>
<td>6.3</td>
<td>1.7</td>
<td>4.4</td>
<td>2.0</td>
</tr>
<tr>
<td>Low-budget Bicycle</td>
<td>4.1</td>
<td>1.4</td>
<td>2.8</td>
<td>1.3</td>
<td>2.4</td>
<td>1.3</td>
<td>4.7</td>
<td>2.1</td>
</tr>
</tbody>
</table>

### Table 4. Mean evaluative ratings of separate products (Experiment 5).

<table>
<thead>
<tr>
<th>Quality</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
<th>M  SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive TV</td>
<td>6.3</td>
<td>1.8</td>
<td>5.4</td>
<td>2.1</td>
<td>4.1</td>
<td>2.4</td>
</tr>
<tr>
<td>Low-budget TV</td>
<td>5.8</td>
<td>2.0</td>
<td>5.6</td>
<td>2.3</td>
<td>4.8</td>
<td>2.7</td>
</tr>
<tr>
<td>Excl. Digital camera</td>
<td>6.3</td>
<td>1.8</td>
<td>5.2</td>
<td>2.1</td>
<td>3.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Low-budget D. camera</td>
<td>5.6</td>
<td>1.8</td>
<td>5.4</td>
<td>2.1</td>
<td>4.3</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Note. Only anchor products were evaluated the Experiment 5.
Table 5. Mean evaluative ratings of bundles (Experiment 5).

<table>
<thead>
<tr>
<th></th>
<th>Quality M</th>
<th>Quality SD</th>
<th>Attractiveness M</th>
<th>Attractiveness SD</th>
<th>Purchase intention M</th>
<th>Purchase intention SD</th>
<th>Satisfaction M</th>
<th>Satisfaction SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excl. TV and excl. DVD player</td>
<td>6.1</td>
<td>2.0</td>
<td>5.2</td>
<td>2.5</td>
<td>3.9</td>
<td>2.6</td>
<td>5.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Excl. camera and excl. printer</td>
<td>5.8</td>
<td>2.0</td>
<td>4.4</td>
<td>2.5</td>
<td>2.8</td>
<td>2.2</td>
<td>5.6</td>
<td>2.1</td>
</tr>
<tr>
<td>Low-b. TV and Low-b. DVD player</td>
<td>5.5</td>
<td>2.2</td>
<td>5.3</td>
<td>2.6</td>
<td>4.5</td>
<td>2.5</td>
<td>5.4</td>
<td>2.9</td>
</tr>
<tr>
<td>Low-b. camera and Low-b. printer</td>
<td>5.3</td>
<td>2.1</td>
<td>4.9</td>
<td>2.4</td>
<td>3.7</td>
<td>2.4</td>
<td>5.0</td>
<td>2.2</td>
</tr>
<tr>
<td>Excl. TV and excl. bicycle</td>
<td>3.5</td>
<td>2.3</td>
<td>2.4</td>
<td>1.8</td>
<td>1.9</td>
<td>1.7</td>
<td>3.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Excl. camera and excl. bicycle</td>
<td>3.6</td>
<td>2.6</td>
<td>2.5</td>
<td>1.9</td>
<td>1.9</td>
<td>1.7</td>
<td>3.8</td>
<td>2.3</td>
</tr>
<tr>
<td>Low-b. TV and Low-b. bicycle</td>
<td>3.2</td>
<td>2.0</td>
<td>2.4</td>
<td>1.8</td>
<td>2.0</td>
<td>1.6</td>
<td>3.2</td>
<td>1.8</td>
</tr>
<tr>
<td>Low-b. camera and Low-b. bicycle</td>
<td>3.1</td>
<td>2.0</td>
<td>2.4</td>
<td>1.7</td>
<td>1.9</td>
<td>1.6</td>
<td>3.2</td>
<td>1.9</td>
</tr>
</tbody>
</table>
**Appendix II. Evaluations of bundles**

*Example from Experiment 1.*

<table>
<thead>
<tr>
<th>Exklusiv DVD-spelare</th>
<th>DVD köpfilm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRIS FOR KOMBINATIONEN: 7 649 kr</strong></td>
<td></td>
</tr>
</tbody>
</table>

- **DVD-spelare**
  - Inspeelbare DVD 250GB hårddisk - plats för upp till 711 timmars inspelning
  - Dual layer recording på DVD-R ger upp till 24 timmars inspelning på en DVD-skiva.
  - Mycket bra bildkvalitet
  - Stödjer de flesta avspelningsformat
  - Avspelning region 2 (Europa)
  - Fjärrkontroll
  - **VÄRDE I KOMBINATIONEN: 7 490 kr**

- **Köpfilm på DVD**
  - Valfri DVD-film från de 20 mest sålda filmerna just nu.
  - **VÄRDE I KOMBINATIONEN: 159 kr**

---

**Vilken kvalitet bedömer du att erbjudandet har?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
</table>

**Hur attraktiv tycker du att erbjudandet är?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls attraktivt, 9=mycket attraktivt).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
</table>

**Hur troligt är det att du skulle köpa den här produktkombinationen för det angivna priset?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls troligt, 9=mycket troligt).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
</table>
Tänk dig att du behöver köpa en TV... 
...och går till en elektronikaffär. Där visar det sig att de har ett erbjudande att köpa en TV och en cykel för 8 985 kr. TV:n värderas i kombinationen till 7 995 kr och cykeln till 990 kr.

**Exklusiv TV**

- 32 tum widescreen-TV
- Realaffär BLS bildrör med mycket bra bildkvalitet, vid betraktningsvinkel och minimalt med reflektioner.
- Sexkanalsljud för surroandsound
- 3 scartutgångar
- 1 500 sidors text-tvminne
- Fjärrkontroll
- BxHxD: 907x553x535 mm, vikt: 52 kg

**Enkel cykel**

- 28 tum hjul
- Inga växlar
- Skärmar lås ingår
- Finns i både herr- och dammode

**PRIS FÖR KOMBINATIONEN: 8 985 kr**

**Vilken kvalitet bedömer du att erbjudandet har?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Mycket hög</th>
<th>9</th>
</tr>
</thead>
</table>

**Hur attraktivt tycker du att erbjudandet är?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls attraktivt, 9=mycket attraktivt).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Mycket hög</th>
<th>9</th>
</tr>
</thead>
</table>

**Hur troligt är det att du skulle köpe den här produktkombinationen för det angivna priset?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls troligt, 9=mycket troligt).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Mycket hög</th>
<th>9</th>
</tr>
</thead>
</table>
Example from Experiment 3.

Tänk dig att du behöver köpa en fotoskrivare…


<table>
<thead>
<tr>
<th>Exklusiv fotoskrivare</th>
<th>Exklusiv digitalkamera</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bläckstråleskrivare med kantfri utskrift.</td>
<td>Systemkamera med 3,5 tums LCD-skärm</td>
</tr>
<tr>
<td>Högkvalitativ pigmentbläck och hög upplösning (5760x1440 dpi) ger detaljrika och skarpa bilder.</td>
<td>10 megapixels upplösning.</td>
</tr>
<tr>
<td>Hållbarhetsgaranti på utskriften 100 år.</td>
<td>15x optisk zoom</td>
</tr>
<tr>
<td>Papperstypen från 10x15 (vykort) till A3+, utskrift på CD- och DVD-skivor.</td>
<td>4x digital zoom</td>
</tr>
<tr>
<td>Utskrift direkt från minneskort.</td>
<td>Manuell och 7-punkts automatisk fokus.</td>
</tr>
<tr>
<td>Uttrycksstyrka 66 s/foto</td>
<td>Fokuseringsavstånd 10 cm till oändlighet.</td>
</tr>
<tr>
<td>inkluderad minneskapacitet 64 MB</td>
<td>32 MB minne, ytterligare minne går att köpa.</td>
</tr>
<tr>
<td>VÄRDE I KOMBINATIONEN: 9 195 kr</td>
<td>VÄRDE I KOMBINATIONEN: 9 895 kr</td>
</tr>
</tbody>
</table>

Vilken kvalitet bedömer du att erbjudandet har? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Mycket hög</th>
</tr>
</thead>
</table>

Hur attraktiv tycker du att erbjudandet är? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls attraktivt, 9=mycket attraktivt).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Mycket hög</th>
</tr>
</thead>
</table>

Hur troligt är det att du skulle köpa den här produktkombinationen för det angivna priset?

Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls troligt, 9=mycket troligt).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Mycket hög</th>
</tr>
</thead>
</table>
Example from Experiment 4.


Färdigrätt
Välj mellan ett antal färdiglagade lunchrätter: husmanskost (kött- eller fiskrätt), sallad, pasta, ris eller vegetarisk. 
VÄRDE I KOMBINERINGEN: ca 45 kr

Valfri dryck
Välj mellan ett antal sorter lån, mineralvatten, fika, mjölk eller lättöl. 25 – 33 cl.
VÄRDE I KOMBINERINGEN: ca 9 kr

I vilken utsträckning tycker du att produkterna i kombinationen kompletterar varandra? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls, 9=mycket stor utsträckning).

inte alls 1 2 3 4 5 6 7 8 9 
mycket stor utsträckning

Vilken kvalitet bedömer du att erbjudandet har? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

mycket låg 1 2 3 4 5 6 7 8 9

Hur attraktiv tycker du att erbjudandet är? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls attraktivt, 9=mycket attraktivt).

inte alls 1 2 3 4 5 6 7 8 9


inte alls 1 2 3 4 5 6 7 8 9


skulle inte behöva tänka efter alls 1 2 3 4 5 6 7 8 9
skulle behöva tänka efter mycket

I vilken utsträckning anser du att informationen du har fått om produktblandningen hjälper dig att fatta ett bra beslut? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls, 9=mycket stor utsträckning).

inte alls 1 2 3 4 5 6 7 8 9


inte alls nöjd 1 2 3 4 5 6 7 8 9

Tänk nu hur det visar sig att du slängde drycken utan att dricka något av den - hur nöjd tror du att du skulle vara med köpet av kombinationserbjudandet? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls nöjd, 9=mycket nöjd).

inte alls nöjd 1 2 3 4 5 6 7 8 9

Mycket nöjd
Example from Experiment 5.


**TV-apparat**
- 42" LCD-TV med inbyggd digitalmottagare.
- 16:9 bildformat.
- HD-klar, upplösning 1920x1080 pixlar.
- 178° betraktningsvinkel.
- Sexkanalsljud för surroundsound.
- Medföljer text-tvinnare
- Fjärrkontroll.
- Mått: 1058x748x286 mm
- Vikt: 17 kg.
- Färdigpris: 9 980 kr

**DVD-spelare**
- Inspelningsbar DVD
- 500 GB hårddisk – upp till 1400 timmars inspelning.
- Stödjer de flesta avspelningseformat.
- Inbyggd digital TV-mottagare
- Progressive scan för högsta bildkvalitet.
- Inbyggd kortläsare – direkt överföring av bilder från digitalkamera.
- Inspelningsstöd från digital videokamera till DVD.
- Timerinspelning, chase-play-funktion (titta, spola fram och tillbaka i programmet samtidigt som du spelar in), automatic commercial advance (hoppar över reklampauser vid inspelning) m.fl. funktioner.
- Fjärrkontroll.
- Färdigpris: 9 795 kr

**I vilken utsträckning tycker du att produkterna i kombinationen kompletterar varandra?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls, 9=i mycket stor utsträckning).

<table>
<thead>
<tr>
<th>Inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mycket stor utsträckning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Vilken kvalitet bedömer du att erbjudandet har?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

| Mycket låg | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Mycket hög |   |   |   |   |   |   |   |   |   |

**Hur attraktiv tycker du att erbjudandet är?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls attraktiv, 9=mycket attraktiv).

| Inte alls attraktiv | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Mycket attraktiv |   |   |   |   |   |   |   |   |   |

**Hur troligt är det att du skulle köpa den här produktkombinationen för det angivna priset?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls troligt, 9=mycket troligt).

| Inte alls troligt | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Mycket troligt |   |   |   |   |   |   |   |   |   |

**Tänk dig att du köper kombinationen - hur nöjd tror du att du skulle vara med köpet?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls nöjd, 9=mycket nöjd).

| Inte alls nöjd | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Mycket nöjd |   |   |   |   |   |   |   |   |   |

**Tänk dig nu att det har gått en tid och det visar sig att du inte använder DVD-spelaren - hur nöjd tror du att du skulle vara med köpet av kombinationserbjudandet?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls nöjd, 9=mycket nöjd).

| Inte alls nöjd | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Mycket nöjd |   |   |   |   |   |   |   |   |   |
Appendix III. Evaluations of separate products

Example from Experiment 1.

**Exclusive cycle**
- 28 tums wheels
- 27 gears
- Foot- and hand brakes
- Rack, package holder, lock and stand included
- Available in both men's and women's models

**Price:** 7,195 kr

*How appealing do you find the appearance of the product?* Ring in the number that you think best fits between 1 and 9 (1=not at all appealing, 9=very appealing).

*How do you rate the quality of the product in the offer?* Ring in the number that you think best fits between 1 and 9 (1=very low quality, 9=very high quality).

*How do you rate the durability of the product in the offer?* Ring in the number that you think best fits between 1 and 9 (1=very poor durability, 9=very good durability).

*How do you rate the suitability of the product in the offer?* Ring in the number that you think best fits between 1 and 9 (1=not at all suitable, 9=very suitable).

*How do you rate the attractiveness of the offer?* Ring in the number that you think best fits between 1 and 9 (1=not at all attractive, 9=very attractive).

*How likely is it that you would buy this product at the given price?* Ring in the number that you think best fits between 1 and 9 (1=not at all likely, 9=very likely).
Example from Experiment 2.

Tänk dig att du behöver köpa en badhandduk…

… I affären ser du följande erbjudande:

**Badhandduk**

100 % öglad bomullsfrrotté
Valfri färg
50 x 150 cm.

PRIS: 159 kr

Hur tilltalande tycker du att utseendet på produkten är? Rings in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls tilltalande, 9=mycket tilltalande).

<table>
<thead>
<tr>
<th>Inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mycket</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vilken kvalitet bedömer du att produkten i erbjudandet har? Rings in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mycket hög</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hur bedömer du att hållbarheten på produkten i erbjudandet är? Rings in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket dålig hållbarhet, 9=mycket bra hållbarhet).

<table>
<thead>
<tr>
<th>Mycket dålig</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mycket bra</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hur välgjord bedömer du att produkten i erbjudandet är? Rings in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls välgjord, 9=mycket välgjord).

<table>
<thead>
<tr>
<th>Inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mycket</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hur attraktivt tycker du att erbjudandet är? Rings in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls attraktivt, 9=mycket attraktivt).

<table>
<thead>
<tr>
<th>Inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mycket</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mycket</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tänk dig att du behöver köpa en fotoskrivare…

…och går till en butik. Där ser du följande erbjudande:

**Enkel fotoskrivare**
- Bläckstråleskrivare
- Pappersformat 10x15 cm.
- Upplösning på utskrift 4800x1200 dpi.
- Utskriftshastighet 90 s/foto.
- Inkluderad minneskapacitet 32 MB.

**PRIS:** 990 kr

**Vilken kvalitet bedömer du att produkten i erbjudandet har?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

Mycket låg: 1 2 3 4 5 6 7 8 9

**Hur lyxig tycker du att produkten är?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

Inte alls lyxig: 1 2 3 4 5 6 7 8 9

**Hur exklusiv tycker du att produkten är?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

Inte alls exklusiv: 1 2 3 4 5 6 7 8 9

**Hur attraktivt tycker du att erbjudandet är?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls attraktivt, 9=mycket attraktivt).

Inte alls attraktiv: 1 2 3 4 5 6 7 8 9

**Hur troligt är det att du skulle köpa den här produkten för det angivna priset?** Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls troligt, 9=mycket troligt).

Inte alls troligt: 1 2 3 4 5 6 7 8 9
Example from Experiment 4.

Tänk dig att du ska besöka ett badhus. När du kommer till badhuset visar det sig att de har följande erbjudande:

| Badhusbesök | Tillgång till bassäng för motionssimning, varmbassäng, barnbassäng, bubbelpool, bastu, och relaxavdelning. PRIS: 50 kr |

Vilken kvalitet bedömer du att produkten i erbjudandet har? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

| Mycket låg | 1 2 3 4 5 6 7 8 | Mycket hög | 9 |

Hur attraktiv tycker du att erbjudandet är? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls attraktiv, 9=mycket attraktiv).

| Inte alls attraktiv | 1 2 3 4 5 6 7 8 | Mycket attraktiv | 9 |


| Inte alls troligt | 1 2 3 4 5 6 7 8 | Mycket troligt | 9 |


| Skulle inte behöva tänka efter alls | 1 2 3 4 5 6 7 8 | Skulle behöva tänka efter mycket | 9 |

I vilken utsträckning anser du att informationen du har fått om produkten skulle hjälpa dig att fatta ett bra beslut? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls, 9=mycket stor utsträckning).

| Inte alls | 1 2 3 4 5 6 7 8 | Mycket stor utsträckning | 9 |


| Inte alls nöjd | 1 2 3 4 5 6 7 8 | Mycket nöjd | 9 |


| Inte alls nöjd | 1 2 3 4 5 6 7 8 | Mycket nöjd | 9 |
Example from Experiment 5.

Tänk dig att du ska köpa en TV och går till en butik. När du kommer till butiken visar det sig att de har följande erbjudande:

<table>
<thead>
<tr>
<th>TV-apparat</th>
</tr>
</thead>
<tbody>
<tr>
<td>42&quot; LCD-TV med inbyggd digitalmottagare.</td>
</tr>
<tr>
<td>16:9 bildformat.</td>
</tr>
<tr>
<td>HD-skärn, upplösning 1920x1080 pixlar.</td>
</tr>
<tr>
<td>178° betraktningvinkel.</td>
</tr>
<tr>
<td>Sekskanalldjup för surroundsound.</td>
</tr>
<tr>
<td>1000 sidor text-tvminne</td>
</tr>
<tr>
<td>Fjärrkontroll.</td>
</tr>
<tr>
<td>Mål: 1058x748x286 mm</td>
</tr>
<tr>
<td>Vikt: 17 kg.</td>
</tr>
<tr>
<td>Pris: 9 980 kr</td>
</tr>
</tbody>
</table>

Vilken kvalitet bedömer du att produkten har? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=mycket låg kvalitet, 9=mycket hög kvalitet).

<table>
<thead>
<tr>
<th>Mycket låg</th>
<th>Mycket hög</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 3 4 5 6 7 8 9</td>
</tr>
</tbody>
</table>

Hur attraktiv tycker du att produkten är? Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=inte alls attraktivt, 9=mycket attraktivt).

<table>
<thead>
<tr>
<th>Inte alls attraktiv</th>
<th>Mycket attraktiv</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Inte alls troligt</th>
<th>Mycket troligt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Inte alls nöjd</th>
<th>Mycket nöjd</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
</tbody>
</table>
Appendix IV. Similarity ratings

Hur mycket tycker du att DVD-spelaren och kameraväsken hör ihop?
Markera med ett streck på linjen nedanför bilderna på produkterna. Ju mer du tycker att produkterna hör ihop, desto närmare markeringen längst till vänster placerar du ditt streck.

<table>
<thead>
<tr>
<th>Exklusiv DVD-spelare</th>
<th>Kameraväska</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVD-spelare</td>
<td></td>
</tr>
<tr>
<td>Inspelningsbar DVD</td>
<td></td>
</tr>
<tr>
<td>250GB hårddisk - upp till 711 timmars inspelning</td>
<td></td>
</tr>
<tr>
<td>Dual layer recording: 24 timmars inspelning på en DVD-skiva</td>
<td></td>
</tr>
<tr>
<td>Mycket bra bildkvalitet</td>
<td></td>
</tr>
<tr>
<td>Stödjer de flesta avspelningsformat.</td>
<td></td>
</tr>
<tr>
<td>Avspelning region 2 (Europa)</td>
<td></td>
</tr>
<tr>
<td>Fjärrkontroll</td>
<td></td>
</tr>
<tr>
<td>PRIS: 7 490 kr</td>
<td>PRIS: 199 kr</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DVD</th>
<th>Kameraväska</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Svart kameraväska med avtagbar axelrem.</td>
</tr>
<tr>
<td></td>
<td>Allväderskyddad</td>
</tr>
<tr>
<td></td>
<td>Insidan klädd med tyg av vattentåligt microfiber.</td>
</tr>
<tr>
<td></td>
<td>Inbyggd väska för minneskort.</td>
</tr>
<tr>
<td>PRIS: 7 490 kr</td>
<td>PRIS: 199 kr</td>
</tr>
</tbody>
</table>

PRIS: 7 490 kr

PRIS: 199 kr
Hur mycket tycker du att digitalkameran och DVD-filmen hör ihop?

Markera med ett streck på linjen nedanför bilderna på produkterna. Ju mer du tycker att produkterna hör ihop, desto närmare markeringen längst till vänster placerar du ditt streck.

<table>
<thead>
<tr>
<th>Exklusiv digitalkamera</th>
<th>DVD köpfilm</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIS: 7 395 kr</td>
<td>PRIS: 159 kr</td>
</tr>
</tbody>
</table>

- **Digitalkamera**
  - 3.5 tums LCD-skärm
  - 8 megapixels upplösning
  - 15x optisk zoom
  - 4x digital zoom
  - 32 MB minne, ytterligare minne går att köpa
  - Automatisk blixt, självutlösare, röda-ögon-reducering,
  - seriebildtagning 10 bilder/s m.fl. funktioner.
  - PRIS: 7 395 kr

- **Köpfilm på DVD**
  - DVD-film på topp-20-listan med de mest sålda filmerna just nu
  - PRIS: 159 kr
Hur mycket tycker du att TV:n och DVD-spelaren hör ihop?
Markera med ett streck på linjen nedanför bilderna på produkterna. Ju mer du tycker att produkterna hör ihop, desto närmare markeringen längst till vänster placerar du ditt streck.

<table>
<thead>
<tr>
<th><strong>Exklusiv TV</strong></th>
<th><strong>Enkel DVD-spelare</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Exklusiv TV" /></td>
<td><img src="image2.png" alt="Enkel DVD-spelare" /></td>
</tr>
<tr>
<td>PRIS: 7 995 kr</td>
<td>PRIS: 499 kr</td>
</tr>
</tbody>
</table>

**TV-apparat**
- 32 tum widescreen-TV
- Realflat BLS bildrör med mycket bra bildkvalitet vid betraktningsvinkel och minimalt med reflektioner
- 6 kanalsljud för surroundsound
- 1 500 sidors text-tvminne
- Fjärrkontroll
- HxrxxD: 907x553x535 mm
- Vikt: 52 kg
- PRIS: 7 995 kr

**DVD-spelare**
- Stödjer avspelning av de vanligaste formaten såsom DVD, VCD, SCVD, MP3, JPEG och DivX
- Avspelning region 2 (Europa)
- Kan ej spela in
- Fjärrkontroll
- PRIS: 499 kr
Appendix V. Background questions

Example from Experiment 1.

Inledningsvis vill jag att du besvarar två korta bakgrundsfrågor om dig själv.

Kön

- Man
- Kvinna

Födelseår: ________________

HUR VÄL DU KÄNNER TILL OLIKA TYPER AV PRODUKTER?

De två följande frågorna handlar om hur väl du känner till ett antal produkter i allmänhet.

Ange vilken erfarenhet du har av att använda följande typ av produkter. Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=ingen erfarenhet alls 9=mycket stor erfarenhet).

<table>
<thead>
<tr>
<th>Produkt</th>
<th>1</th>
<th>2</th>
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<tr>
<td>TV-apparater</td>
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<td>Klockradioapparater</td>
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</table>
Ange hur stor kunskap du har om följande typ av produkter. Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=ingen kunskap alls 9=mycket stor kunskap).

<table>
<thead>
<tr>
<th>Produktytype</th>
<th>Ingen erfarenhet alls</th>
<th>Mycket stor erfarenhet</th>
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<tbody>
<tr>
<td>TV-apparater</td>
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<td>DVD-spelare</td>
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<td>Klockradioapparater</td>
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</tbody>
</table>
Example from Experiment 4.

Bakgrundsinformation

Är Du

☐ Man
☐ Kvinna

Vilket är ditt civilstånd?

☐ Ensamstående
☐ Gift/Sammanboende

Vilket är du född? _____________

Vilken är din högsta genomförda utbildning?

☐ Grundskola
☐ Gymnasieskola
☐ Högskola, universitet
☐ Annat, nämligen ______________________________________

Vilken är din huvudsakliga sysselsättning?

☐ Förvärvsarbete, heltid eller deltid
☐ Studerande, militärtjänstgöring
☐ Hemarbetande, föräldraledig
☐ Sjukpensionär, pensionär
☐ Arbetssökande
☐ Annat, nämligen ______________________________________

Hur stor är den sammanlagda inkomsten (lönn, studiemedel, pension, bidrag m.m.) för ditt hushåll före skatt under ett år?

☐ Mindre än 120 000 kr
☐ 120 001 – 240 000 kr
☐ 240 001 – 360 000 kr
☐ 360 001 – 480 000 kr
☐ 480 001 – 600 000 kr
☐ 600 001 – 720 000 kr
☐ Mer än 720 000 kr
Ange vilken erfarenhet du har av att använda följande produkter eller tjänster. Ringa in den siffra som du tycker stämmer bäst mellan 1 och 9 (1=ingen erfarenhet alls 9=mycket stor erfarenhet).

<table>
<thead>
<tr>
<th>Produkt</th>
<th>Ingen erfarenhet</th>
<th>Mycket stor erfarenhet</th>
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<tbody>
<tr>
<td>Digitalkameror</td>
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<tr>
<td>Fotoskrivare</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>Minneskort till digitalkamera</td>
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<tr>
<td>Digitala fotoramar</td>
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<td>Cyklar</td>
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<td>Take-awaykaffe</td>
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<td>Glödlampor</td>
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<tr>
<td>Gör-det-själv-hallar för underhåll av bilar</td>
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Anga hur stort kunskap du har om följande produkter eller tjänster. Ringa in den siffran som du tycker stämmer bäst mellan 1 och 9 (1=ingen kunskap alls 9=mycket stor kunskap).

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</table>
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