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An empirical study of variety and bundling effects on choice and satisfaction: New telecommunication and media services

By

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"DEBUSSY – Designing business models for value creation in heterogeneous network services"

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PREFACE

This report presents a discussion of literature on how variety and bundling – and characteristics of variety and bundling – influence choice and post-choice variables. An empirical study is also reported on effects of variety and bundling on choice and post-choice variables for Triple play and TV services. The report is written as a part of the SNF-project 6255 – Debussy ("Designing Business Models for Customer Value in Heterogeneous Network Services". The introduction and theoretical discussion is also reported in SNF Working Paper no. 33/08. The report is written by Per Egil Pedersen and Herbjørn Nysveen. The authors share the responsibility for the introduction, literature review and research questions, while Pedersen has written the empirical part of the report.

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ABSTRACT

The purpose of this report is twofold; 1)to review consumer behavior literature on how assortment variety and bundling influence choice related variables, and 2)to present results from an empirical study investigating effects of assortment variety and bundling on choice related variables for TV and Triple play services. Literature related to the characteristics of assortment/bundle, perception of the assortment/bundle, perception of the choice situation, choice, perception of the choice, and experience with the chosen option is reviewed with focus on assortment and bundling. The review is based on an open literature search using keywords as "assortment size", "assortment variety", "bundling" and "unbundling" in databases as ISI and Ebsco. In addition, manual reviews of references used in the articles revealed from the databases have also been used to make sure we cover as many relevant articles as possible.

The empirical study included five manipulations. First, service categories chosen are TV and Triple play services. Second, the services were offered both "a la carte" and bundled value proposition. Third, the assortments were presented in large and small size. Four, prices were also manipulated as high and low, and finally, five, lock in (subscription) were manipulated as no binding and 12 months binding. Effects of the manipulations were studied on variables such as perceived freedom of choice, choice versus no choice, satisfaction with choice, perceived regret, etc. A sample of 1509 people was recruited from a Norstat Internet panel, representing the population of Internet users in Norway. The results indicate several main effects of assortment size, price, and bundling versus "a la carte". Some main effects were revealed for service category (TV versus Triple play) while only one main effect (on choice) was found for

binding. In addition, several situational and individual factors were found to moderate the main effects.

The report is closed with a summary and discussion of the results. Additionally, potentially implications of the results are proposed, pointing in particular to the importance of developing a more holistic model including mediating and moderating effects of individual and situational factors when explaining the main effects reported here.

1. INTRODUCTION

When studying the effects of value proposition designs on customer perceived value in early 2008, we found that value proposition variations were not easily reflected in manipulation checks of value proposition perceptions (Pedersen et al., 2008). We also explicitly tested the effects of offering variety as a particular value proposition, and found that variety was not easily reflected in consumers' value proposition perceptions (Pedersen and Nysveen, 2009). These findings led to an investigation of the topic of variety in value proposition design in telecommunications and new media services. It then became apparent that the topic of variety is highly relevant to both value proposition design and to regulation of such services.

At least six different service areas could be identified where variety is a "hot topic" among managers and regulatory authorities in telecommunications and new media services. One topic is the importance of *variety in regulation of consumer markets in traditional telecommunications services*. What is discussed is the effect of variety in service plan offerings to competition in these markets. A second topic is an ongoing debate on *bundling and a la carte choice in TV-channel networks*. According to Rennhoff and Sefres (2008), consumers increasingly complain about rising cable television prices, and a la carte offerings is suggested to contribute to lower prices, but it will also both affect variety and represent a difference in assortment variety to consumers. A third topic is that of *open access networks and variety in the service offerings of these networks*. It is discussed whether next generation access networks (e.g. Caio, 2008) should be regulated in ways similar to fixed copper networks and/if these networks should be forced to include a variety of offerings from diverse service

providers. Such regulation would increase the variety of services offered through these networks and most likely affect competition, prices, innovation, and consumer behavior. A fourth topic is that of how *consumers cope with the increasing hyperchoice offerings* - offerings where assortments reach several thousand options, of online music and video services. Findings from Brynjolfsson, Hu and Smith (2003) suggest that consumer surplus from hyperchoice may be as much as ten times that of lower prices in online book stores. Online video and music stores are characterized by the same hyperchoice but we know relatively little of how consumers cope with this hyperchoice. Recent research by Brynjolfsson, Hu and Siemester (2007) suggest that search tools and recommendation agents are the reasons why consumers are able to create value from the enormous variety of content. A fifth topic is how business models should be designed for *mobile Internet and -applications markets*. So far, experiences with such services range from success stories in some Asian markets (e.g. Henten et al, 2004) to failure stories in Europe (e.g. Methlie and Gressgård, 2004). One of the reasons sometimes mentioned for this difference is that of quality controlled/moderate variety versus open/high variety value propositions on the complements platform for services (Henten et al., 2004). Studies of consumer reactions to moderate versus high variety value propositions in the mobile Internet and applications markets, however, have hardly been reported, if at all. The final topic that originally proved the basis for the research project that this paper is linked to was that of *variety in new heterogeneous access networks services*. For example, it has been suggested that next generation networks would offer a variety of services accessible through a variety of access networks, all based on the same or very similar underlying standards – Internet standards. Research projects, such as the "Ambient Networks" project has even suggested that access should be controlled by much more end-user involvement in handling this variety (Ho, Markendahl and Berg, 2006), but again, hardly any studies on consumer reactions and consumer

behavior consequences of such a large variety proposition has been published. For example, in the "Ambient Networks" project, we were unable to find any consumer studies among the deliverables of the project that discussed the fundamental assumption that consumers will want and are able to handle such a scenario in a value enhancing way (increasing consumer value and consumer surplus).

The situation described above has made us suggest that an inquiry into the consumer behavior literature on assortment variety and bundling could cast new light on many of the implicit assumptions of consumer behavior made in telecommunications and new media value propositions and regulatory guidelines. Recent findings in consumer behavior literature, however, offer somewhat conflicting results on the effects of variety on consumer choice and satisfaction. Whereas earlier studies of the effects of variety on choice and satisfaction indicated that variety increases consumption, probability of choice, market share and customer satisfaction (see Lancaster, 1990), recent studies have started to question these simple relationship. Some studies suggest that variety in the form of assortment reduces the probability of choice in general (Iyengar and Lepper, 2000), while other suggest that this relationship is not universal but depend on other moderating conditions (e.g. Chernev, 2003; Scheibehenne, Greifeneder, and Todd, 2010). Furthermore, other studies suggest that even if there is a positive relationship between assortment variety and choice, there may be a negative or inverse U-shaped relationship between variety and customer satisfaction (e.g. Schwartz et al., 2002). Markus and Schwartz (2010) revealed results indicating that the significance of choice depend on cultural factors. Thus, a number of problems should be addressed regarding the consumer behavior literature on variety as well as its applicability and implications for telecommunications and new media services.

1.1 Approach, method and organization

In the first part of this report a review of literature on assortment effects on choice and post-choice evaluations are presented. The first part of the review focuses assortment in general while the second part has a particular focus on bundling as a characteristic of assortment. Both parts of the reviews follow a consumer's choice process, starting with a description of relevant assortment/bundle characteristics and consumers' perception of relevant variety/bundle characteristics and choice situations, followed by a review on how these characteristics influence consumers' choice and their perception of the choice. Finally, effects on post-choice experiences with the chosen option are presented. Based on the review, research questions are proposed for the purpose of illuminating some of the controversies in the literature, particularly focusing the applicability of consumer choice literature for telecommunication and new media services. The methodological part describes a study investigating effects of assortment variety (bundled versus a la carte, assortment size, price, lock-in effects) for TV and Triple play services on a number of dependent variables. Main effects of the manipulations are presented in the Result section. In line with prior studies suggesting effects are influenced by moderating variables (Chernev, 2003; Scheibehenne, Greifeneder, and Todd, 2010), the results were controlled for several potential moderating variables. The report is closed by a discussion of managerial implications and a discussion of paths for future research.

2. ASSORTMENT, CHOICE AND SATISFACTION

2.1 Assortment in general

The economics literature on the product assortment focuses the effects of product variety on consumer choice, preferences and surplus. The general conclusion is that product variety benefits consumers (consumer surplus (Lancaster, 1990)), and that more product variety is preferred by consumers (Kahn and Lehmann, 1991). Both in the literature assuming sequential choice and the literature on hierarchical choice, assortment attributes are of relevance. For example, in hierarchical models of choice, assortment size is valued due to it better capturing the heterogeneity of consumer preferences (Lancaster, 1990). In sequential models with uncertain future preferences, assortment size may be valued when postponing a choice due to greater later flexibility (Simonson, 1990). It has also been argued that assortment size is valued because consumers have an inherent preference for variety (variety seeking) and feeling of decision freedom (self-determination). Thus, assortment size is preferred due to preference fit, increased flexibility and consumers' inherent preference for variety. The literature on consumer surplus also suggests increasing consumer surplus as an effect of product variety (e.g. Brynjolfsson, Hu and Smith, 2003), but consumer surplus effects are not the main focus of this review (see e.g. Guiltinan, 2002).

Marketing literature has often supported the conclusions of beneficial effects of product variety, but more recent research has now started questioning these relationships as universal. Three lines of reasoning may be identified. One line of reasoning suggests that the need for cognition leads to cognitive overload in processing large assortments (e.g. Huffman and Kahn, 1998). Another line of reasoning suggests consumers vary in how developed their preferences are, and that consumers with less well developed preferences are affected negatively by

large assortments leading to lower choice probability and further weakening of their preferences (Chernev, 2003; Iyengar and Lepper, 2000). A third line of reasoning suggests that variety may attenuate negative emotions related to choice, in particular, if the choice is between negative options (Amir and Ariely, 2007, see Botti and Iyengar, 2006).

All these three lines of reasoning suggest that product variety adversely affects choice, but choice is a complex concept including the question of choice versus non choice, the formation of preferences, the quality of choice, confidence of choice, and regret, just to mention some of the dimensions of choice. Thus, to state that product variety adversely affects choice, one must also establish which dimensions of choice are affected and how these effects are moderated and mediated. Our presentation of the relevant literature on assortment-choice relationships is organized first by looking at different independent variables related to assortment size and variety. Next, we turn to the different dependent variables that have been investigated for effects.

The independent and dependent variables may be organized along a choice model. At the left hand side of this choice model are the stages of the assortment, the perception of the assortment and the perception of the choice situation. At the right hand side of this model are the stages of choice, post-choice perceptions of the choice and the experiences with the choice.

Starting with the independent variables, three characteristics of the assortment have been investigated; assortment size, organization of the assortment and assortment variety, which is a special case of organization of the assortment. As another special case of organization of the assortment we find the issue of bundling, which is treated in a separate review in section 3. In addition, a

number of moderating and mediating variables have been investigated. We discuss these in relation to the dependent variables.

2.1.1 Assortment characteristics

Assortment size has been investigated by several authors (e.g. Kahn and Lehmann, 1991 and Botti and Iyengar, 2006), in some studies without paying particular attention to variety of options along particular attributes. The number of options in assortment effect studies are typically manipulated as being small (2-10) or large (10-80) (see Scheibehenne, 2008 for an excellent review). Assortment studies vary from studying simple consumer goods (e.g. jam) to studying services (e.g. restaurants), but most of the studies focus simple consumer goods. Assortment organization includes assortment variety, but focusing other variables related to assortment organization first, variables such as assortment *presentation* (Huffman and Kahn, 1998), assortment *structure* (Hoch, Bradlow and Wansink, 1999) and assortment *categorization* (Chernev, 2005; Gourville and Soman, 2005) have been studied. The literature on assortment size and structure is also related to both the literature on brand extensions and mass customization (e.g. Syam, Krishnamurthy and Hess, 2008), but this is seldom explicitly acknowledged in the literature on assortment – choice relationships.

2.1.2 Perceptions of the assortment

Variety is sometimes considered equivalent to assortment size, but some studies are more explicit on the fact that assortment size may not necessarily imply assortment variety (Ratner, Kahn and Kahneman, 1999; Oppewal and Koelmeijer, 2005). Acknowledging this fact, some studies focus perceived variety rather than just implicitly assuming that assortment size implies assortment variety (Hoch, Bradlow and Wansink, 1999). Some studies use *perceived variety* as a mediating rather than a traditional independent variable

(Mogilner, Rudnik and Iyengar, 2008). As an example, Mogilner, Rudnik and Iyengar (2008) suggest that perceived variety mediates the effect of assortment size on choice, but that the effect of assortment size on perceived variety is moderated by assortment organization and symmetry. The study is one of the few offering an explicit model of the assortment-choice relationship. The lack of explicit models has also been acknowledged by Scheibehenne (2008), suggesting that "*a precise and testable model of the underlying psychological processes and mechanisms would be highly desirable*" (p. 41).

2.1.3 Perceptions of the choice situation

Studies often take the perception of the choice situation as a choice between options for given, but a choice situation may include more than a choice between options. For example, it may be perceived as possible to reject choosing between traditional options or to *defer* choice and choose between options at a later stage (procrastination) (Ariely, 2008). Issues of deferred choice and procrastination are treated in section 2.4. A few studies, however, have suggested that there may be variables of relevance to the outcome of the choice situation that may stem from the perception of the choice situation itself. For example, consumers may perceive varying degree of enjoyment with the choice situation (Radner at al., 1999). This issue is only briefly discussed in the assortment literature. More attention has been paid to the perception of the degree of *self-determination* and freedom of choice in the choice situation. Mogilner, Rudnick and Iyengar (2008) suggested that the number of categories in an assortment increases perceived variety which affects perceived self-determination and thus, satisfaction with choice. In their study, perceived self-determination was found to explain the negative effects of assortment size on choice and satisfaction. Perceived self-determination may also be related to another characteristic of the perception of the choice situation – anticipated regret. For example, Heitmann, Herrmann and Kaiser (2007) suggested that a

negative effect of variety may be explained by a mediating anticipated regret and high perceived evaluation costs. Thus, it seems plausible that perceptions of the choice in form of perceived effort and the anticipated outcome before the choice is made affect perceptions of the chosen option after the choice has been made.

2.1.4 Choice

We now shift our focus from traditional independent variables to the dependent variables of the assortment literature. This also means we now focus more directly on the identified relationships between assortment, choice and satisfaction and the proposed mediating and moderating variables of these relationships. As we suggested in section 2.3, choice may involve more than a choice between options.

The most extensively studied issue, however, is that of *choice versus no-choice* (i.e. if consumers choose). As presented in the introduction to section 2 it is usually assumed that the choice probability will at least not be reduced as a consequence of assortment size and variety due to, for example, better match to the heterogeneity of consumer preferences. A number of studies have questioned this assumption. These studies have now been found to have a rather long history (Scheibehenne, 2008), but we will illustrate the typical findings by briefly presenting one of the large number of recent studies questioning this standard assumption. Iyengar and Lepper (2000) report three studies, but only two of these are traditional consumer choice studies, one on consumers' choice of jam and one on their choice of chocolate. The jam study was conducted in a field setting in a store where a large (24 jams) and a small (6 jams) were displayed at a tasting booth. Consumers were given 1$ off-the-price-coupons when tasting jams. In the jam study, 30% of those tasting jams from the small assortment used their coupons whereas only 3% of those tasting jams from the

large assortment did. Thus, the proportion of no-choice was largest in the large assortment group. Similar findings were made in a controlled lab setting with large (30 chocolates) and small (6 chocolates) assortments. Scheibehenne (2008) replicates the jam study as closely as possible, but failed to reproduce the findings of Iyengar and Lepper (2000).

Similar experiences have led most researchers to believe that a general effect of assortment size or variety is difficult to find and that a valid explanation of the negative effect of assortment size or variety and choice should include specific mediating or moderating variables. Thus, most studies of this relationship include a number of such mediating variables. We have already mentioned the mediating variable of *perceived variety* (Mogilner, Rudnik and Iyengar, 2008; Heitmann, Herrmann and Kaiser, 2007). Heitman, Herrman and Kaiser (2007) further investigated the mediating effect of anticipated product utility, anticipated regret and evaluation costs, and found that of these, *anticipated regret* and *evaluation costs* were the most important mediating variables when explaining the negative effects of assortment size on purchase probability. Investigating hyperchoice situations – situations where assortments reach several thousand options, Brynjolfsson, Hu and Simester (2007) explained the positive consumer surplus effects of hyperchoice by the mediating effect of search costs. Because online stores provide search and recommendation tools, consumers increase their consumption in larger assortment size online stores when compared to offline stores. In addition, Brynjolfsson, Hu and Simester (2007) identify Internet experience as an additional moderator further increasing the effects of search and recommendation tools on consumption.

Instead of focusing only on mediating variables, most recent studies have introduced a number of moderating variables on the relationship between assortment characteristics and choice. Scheibehenne (2008) applies the idea laid

out by Simon (1990) that moderated variables in decision making behavior may be found in attributes of the *individual* or in characteristics of the decision *situation*. Both these lines of reasoning have been applied when studying the mediated and moderated effects of assortment on choice.

Of the *situational* characteristics that have been studied are mainly those reflecting other characteristics of the assortment than assortment size. For example, Huffman and Kahn (1998) found that *attribute based presentations* increased choice in large assortments when compared to alternative based presentations. Dhar (1997) found that the tendency to defer choice increased when the options were presented as more *similar*. Using such findings to suggest moderators in the relationship between assortment size and choice, Chernev (2005) found that feature *complementarity* reversed the usually positive impact of the size of the choice set on purchase likelihood. A similar set of findings were made by Gourville and Soman (2005), who found that when option attributes where not *alignable*, the usually positive effect of assortment size on market share was reversed. Thus, to avoid negative effects of assortment size, options should be alignable or non-complementary, and presentations should be attribute based. This corresponds to the findings of studies using combinations of options and attributes as the basis for moderator studies, such as those using measures of *choice entropy* (van Herpen and Pieters, 2002). Although they apply a rather different approach, Berger, Draganska and Simonson (2007) found that assortments with *compatible* options were perceived to be of a higher quality, and thus preferred more often.

Most of the moderator studies, however, have investigated *individual* characteristics or personality traits as the moderating variables of the effects of assortment size on choice. For example, Chernev (2003a) found that the negative effect of assortment size was moderated by the explicitness of

consumer preferences. Thus, consumers with articulated *preferences* were not negatively affected by assortment size in the same way as those with less articulated preferences (Chernev, 2003a, b). Among the individual characteristics or personality traits that has been used are *domain familiarity or expertise* (Mogilner, Rudnik and Iyengar, 2008), *the need for cognition* (NFC) (Lin and Wu, 2006), *individualistic versus collectivistic* culture (Herrmann and Heitmann, 2006), failure to adapt or adjust individual *decision making heuristics* (see Scheibehenne, 2008 for a number of studies), tendency to *variety seeking* (Ratner, Kahn and Kahneman, 1999) and, most of all, the tendency to *maximize* (Schwartz et al., 2002). Of these, the desire to maximize, or what Schwartz et al. (2002) term "maximizing" has been given most focus. Schwartz et al. (2002) suggest that a new personality concept operationalized by their *maximization scale* is one of the most promising moderators when explaining recent findings in the relationship between assortment variety, choice and satisfaction. Their basic idea is that maximizers tend to seek more variety, engage more in comparisons, and be more sensitive to regret due to self-blame in choices with negative experiences. Also, interactions of situational and individual variables have been used as moderator variables. For example, Chernev (2006) found that future flexibility as a particular *decision focus* leads to overestimating the value of the larger assortments. Thus, the value of large assortments seems to be overestimated in particular when the consumers' decision focus is that of having flexibility in subsequent choices.

In general, the findings of these moderated studies support the hypothesis that a negative or inverse U-shaped relationship between assortment size and choice is moderated by both *individual and situational factors* and is not a consistently general and stable relationship. Research has shown that not only the question if consumers choose is influenced by assortment characteristics, but also *what they choose*. For example, a recent study by Sela, Berger and Liu (2009) concluded

that larger assortments made consumers choose options that were easier to *justify*. For example, this means that consumers tend to choose options that focus utilitarian attributes rather than hedonic attributes when the assortment size increases.

A third dependent variable category that has been shown to be affected by assortment characteristics and that is closely related to choice is *how much* is chosen/consumed. For example, Kahn and Wansink (2004) found that perceived variety increased consumed quantities through anticipated consumption utility. While not directly related to the assortment characteristics focused here, Vale, Pieters and Zeelenberg (2008) found that for hedonic products that were believed to require self control, small-package assortments increased consumption. This relationship was not found for utilitarian products. Another, more obscure finding is that of Chernev (2008) indicating that consumers that has or are given a specific purchase quantity apply a quantity matching heuristic that makes them more often choose the assortment where the number of options matches the purchase quantity.

2.1.5 Perceptions of the choice

A choice situation is not only a discrete choice between options where no-choice is one of the options. A choice situation may also be prolonged or include a hierarchical or sequential process where the consumer may also reason over her own behavior at different phases of the process. This has not been given very much attention in the assortment literature, but recent studies have at least started to investigate relevant concepts such as preference or choice stability, choice confidence, repeated choice and the most recent ideas on choice as a tiring process including research on ego depletion in choice. Among these studies is a study of the moderating effects of *preferences* by Chernev (2003b), who also offered the subjects to switch their choice. Thus, Chernev (2003) was

not only interested in choice or no-choice, but what he termed the "strength of consumer preferences". In a fourth experiment in this study, he also included a dependent variable termed "decision confidence" which maps perceptions of the choice. His findings of preferences moderating the too-much-choice effect are consistent across all these dependent variables. Also, Lin and Wu (2006) used propensity to switch as their dependent variables, suggesting that the negative effect of assortment size also is found for the preference for the chosen option.

A line of research that has recently been proposed to be influential to consumer research is that of self-control, ego depletion and choice (e.g. Baumeister et al., 2008; Mick, 2008). Focusing here on the *ego depletion* concept, this research investigates choice in the context of multiple choices. This is a large literature, and we only briefly mention it here due to the concept of ego depletion. With ego depletion it is suggested that choice is depleting and that hyperchoice may attenuate the depleting effects of choice. While this concept can not explain the too-much-choice effects in single choice studies, it may be used to explain similar effects in real life consumer choice settings.

2.1.6 Experience with the chosen option

Traditional economics literature on choice typically assumes that choices are made to maximize utility, leaving variables such as satisfaction and other perceptions of post-choice experiences of less relevance. In the consumer behavior literature on assortment effects, however, post-choice experiences and perceptions have been given more attention in recent studies. In particular, a considerable number of studies have focused assortment effects of satisfaction, happiness and subjective well being as part of a research stream questioning whether contemporary markets of hyperchoice contributes to increasing well being or not.

In the assortment literature, *regret* is one of the more obvious post-choice variables to study. The variable has been treated as a traditional dependent variable (discussed in Botti and Iyengar, 2006) as well as a mediating and moderating variable in the relationship between choice and satisfaction (Schwartz et al., 2002). For example, Botti and Iyengar (2006) suggested that perceptions of regret are most dysfunctional when choice is associated with negative emotions. It has also been suggested that regret is associated with ease of comparison and likelihood of missed opportunities (see Amir and Ariely, 2002). Thus, assortment size may attenuate comparison and increase the perceived likelihood of missed opportunities. Schwartz et al. (2002) suggested that the tendency to regret is an individual attribute, and found that sensitivity to regret was positively correlated with the tendency to maximize.

Enjoyment was studied by Ratner Kahn and Lehman (1999) who found that individuals choose less-preferred alternatives to increase the variety of what is consumed. Furthermore, they also showed that retrospective global evaluations of enjoyment were greater among those that consumed a greater variety than among those that consumed only the most-preferred options. The context of this study is music, somewhat limiting its external validity.

Satisfaction is the post choice experience variable most studied in the assortment literature. Both satisfaction with the assortment and satisfaction with the chosen option have been studied. Hoch, Bradlow and Wansink (1999) found that consumers were more satisfied with larger and organized assortments. Also, Chernev (2006) measured assortment satisfaction in his study identifying a moderated effect of decision focus (flexibility seeking) on the relationship between assortment size and satisfaction with the assortment.

Of more relevance here is the effect of assortment characteristics on satisfaction with the chosen options. For example, Huffman and Kahn (1999) found that attribute based presentations of assortments increased satisfaction when choosing from large assortments. Similar findings were made for preference expression. One of the first too-much-choice studies, that of Iyengar and Lepper (2000), also found adverse effects of assortment size on satisfaction (and regret). Botti and McGill (2006) found that when options were more differentiated, choice increased satisfaction with positive and dissatisfaction with negative outcomes. Thus, pre choice variety attenuates post choice experience. The reason, Botti and McGill (2006) suggest, is due to an increasing tendency to self-credit and self-blame when options are more differentiated. Finally, Mogilner, Rudnik and Iyengar (2008) found that assortment categorization influences satisfaction positively. This is what Mogilner, Rudnik and Iyengar (2008) termed the "mere categorization effect". While the negative effect of assortment size on satisfaction has been replicated in several consumer good domains (e.g. Lenton, Fasolo, and Todd, in Press; Haynes and Olson, 2007), Scheibehenne (2008) was unable to replicate the general effect.

Happiness and satisfaction with life was studied in Schwartz et al (2002), who found that maximization is negatively correlated with happiness and satisfaction. Furthermore, they found that maximizers are less satisfied with their choice than satisfizers. Schwartz et al. (2002) did not, however, manipulate assortment size and variety in these studies.

2.2 Bundling of assortment

In addition to assortment size and variety, bundling of the assortment influences consumers in different ways. In this chapter we will look deeper into how bundle characteristics influence consumers, how consumers perceive various types of bundles in various choice situations, and how bundle characteristics

may also influence consumers' post purchase evaluations. The review presented here is limited to articles published after 1989. Although some of the articles presented here do not necessarily fit very well into the six stage process used as a structure for this report's chapter 2.1, the articles are organized by and presented in the stage we find most relevant.

2.2.1 Bundle characteristics

Bundles are offered both as *pure and mixed bundles*. Pure bundling is when "only a bundle of items or components is available for purchase" (Herrmann, Huber and Coulter, 1997, p. 99) while mixed bundling "gives buyers the option of purchasing either the bundle, or any of all of the individual components" (Herrmann, Huber and Coulter, 1997, p. 99). The results from the study of Herrmann, Huber and Coulter (1997), conducted in an automobile and automobile service context, indicate that consumers prefer pure bundles to mixed bundles – preference measured as purchase intention.

The effect of the *number of items bundled* is another bundle characteristic studied. In a study by Herrmann, Huber and Coulter (1997), purchase intentions among consumers were revealed to be higher for five component bundles than for three and seven component bundles. Estelami (1999) found a positive correlation between the number of items in complementary bundles and consumer savings for fast food bundles and photo equipment bundles (but no such correlation was found for personal computer bundles). Thus, the relationship between numbers of items bundled and purchase intention/consumer saving range from an inverted U relationship via a positive relationship to a non existing relationship.

Furthermore, effects of the *complementarity of the products in a bundle* have been studied. Complementary bundles refer to bundles where the items in the

bundles are functionally related while non-complementary bundles are bundles where the items are not functionally related (Estelami, 1999). It was revealed by Harlam et al (1995) that consumers had a higher purchase intention for bundles consisting of complementary items than for bundles with unrelated items. This is also supported by Herrman, Huber and Coulter (1997) who found that very related bundle items in automobile bundles and automobile service bundles resulted in a higher purchase intention than bundles of moderately or not related items.

Items information (or amount of information about the items or products in a bundle) differs a lot between bundles, and we have found one study that has looked into how item information may influence consumers' perception of the bundle. Studying purchase of a beach holiday, Oppewal and Holyoake (2004) found that consumers would rather purchase single items than bundles when they had more information about the items.

Several studies are conducted on effects of *price information* and *price discount information*. A rather intuitive results was revealed by Herrman, Huber and Coulter (1997), finding that greater price discounts of bundles were preferred to a lesser one. This is further supported by Janiszewski and Cunha jr (2004) who found that respondents "preferred the bundle with the discount on the tie-in product more when the discounted price was 100% of the market price as opposed to 50% of the market price" (p.538). In their study, Janiszewski and Cunha jr (2004) also found that consumers are more sensitive to discounts on the less important and less valued item compared to the most important and most valued item in a bundle. However, the value of the discount given is found to depend on consumers' reference price. This is also revealed by Charavarti et al (2002) who found that when the price of the focal product in a bundle is higher relative to the comparison option, evaluation of the bundle will be more

negative and choice proportion lower. In a study of an automobile offer, Johnson, Herrmann and Bauer (1999) found that satisfaction with the offer, likelihood of recommending, and likelihood of repurchase increased when price information was bundled and when information on price discount was debundled. Harlam et al (1995) hypothesized that bundles consisting of items of similar price level would increase purchase intention compared to bundles consisting of dissimilar price level, but did not find support for this hypothesis. They did, however, find support for the prediction that consumers are more sensitive to increases in bundle prices than to decreases in bundle prices.

Bundle presentation format, or framing, refers to different ways of describing a bundle (Harlam et al, 1995). In their study, Harlam et al (1995) found that framing a bundle as "Buy X and Y together at Z$" contributed to a higher level of purchase intention than framing the bundle as "Buy X for A$ and Y for B$" and "Buy X for Z$ and get Y for free". Also, Gilbride, Guiltinan and Urbany (2008) revealed support for what they call a joint integrated model ("Pay $X when you buy both product A and product B") compared to a joint segregated model ("Pay $Y for A and $Z for B when you buy both") and a leader segregated model ("Pay $W for B when you buy A at the regular price"). Results from a study by Chakravarti et al (2002) contrasted this result. They found that a bundle of a refrigerator was perceived as most desirable and had a higher choice proportion when the price of the bundle was presented partitioned. However, the evaluation and choice of the bundle depended on which items that were partitioned. When a consumption-related item (icemaker) was partitioned, evaluation of the bundle was more positive than when a performance-related item (warranty) was partitioned. The authors' theoretical explanation for this is that consumers focus was directed to the additional consumption value when the icemaker was partitioned while their attention was directed to the possible risks of product failure when the performance related item was partitioned. In a study

by Yadav and Monroe (1993), three different frames of bundle offers were presented. 1)The savings presented as the difference between the rebated component prices and the price of the bundle – 20$ savings, 2)the savings presented as the difference between the original price of the components and the rebated price of the components – 20$ savings – in addition to the difference between the rebated component prices and the price of the bundle – 20$ savings (which means a total saving of 40$), and 3)the difference between the original price of the components and the price of the bundle – 40$ saving. The study found reasonable support for frame 2, that saving is perceived as a combination of the rebate on the components and the rebate of the bundle compared to the rebated price of the components. Sheng, Bao and Pan (2007) stressed the importance of *perceived fairness of the surcharge* when partitioning a bundle price. In their article they use surcharge as the denotation for the price of the tie-in product and base price as the denotation for the focal product. Their results show that when the surcharge is relatively low compared to the base price, partitioned pricing generates a higher level of purchase intention compared to an equivalent bundled price. They also found that consumers perceived low surcharges as more fair, and that this perceived fairness increased purchase intention. So when the surcharge is perceived as fair, partitioned pricing generates higher purchase intentions than an equivalent bundled price.

2.2.2 Perceptions of the bundle

Sarin, Sego and Chanvarasuth (2003) developed a theoretical framework for how to bundle a new high-tech product with an existing technology. One of their main proposals is that an existing technology can help reduce *perceived risk* of the new technology. They argue that risk reduction can be attained successfully if one of the two products in the bundle has a *brand name that is perceived as credible*, or preferably, if both of the two products in the bundle have credible brand names. In particular, it is important to introduce the new high-tech product

together with a product with a credible brand name in a bundle if the level of innovation of the new high-tech product is radical. They also argue that the level of perceived risk related to purchasing the new high-tech product will be lower if the new product is included as a tie-in product in the bundle compared to when it is introduced as the focal product (anchor product) in the bundle. Finally, they relate the perception of risk to discount, and their main hypothesis is that perceived risk will be lower when the new product bundle is offered with a discount than when it is offered without any discount. The importance of *perceived risk* is further investigated by Harris and Blair (1999; 2006) who found that perceived compatibility-risk when purchasing single hi-fi components increased the chance of purchasing a hi-fi bundle (a home theater package). This result was particularly significant when consumers uncertainty regarding information about alternatives and about which alternatives to choose was high. In a study of cereal bars, Harris (1997) found that "for a new product that is not a brand extension of an established product, promotional bundling with the established product can increase perceptions of product quality and decrease perception of risk among buyers of the established product". The opposite effect was revealed for a new product that is a brand extension. The effects were only significant among respondents that were already buyers of the established product.

Consumers' *perception of the value of each of the items* in the bundle influences their valuation of the bundle (Leszczyc, Pracejus and Shen, 2008). They underline the importance of the interaction effect between consumers' perception of the value of the items and their *certainty of the item evaluation* on the valuation of the bundle. The authors discriminate between what they call superadditivity; "where the value of the bundle is greater than the sum of its parts" (Leszczyc, Pracejus and Shen, 2008, p. 235) and subadditivity; "where the value of the bundle is less than the sum of its parts" (Leszczyc, Pracejus and

Shen, 2008, p. 235). An example of subadditivity is when the two items in a bundle are partly substitutes, as for example in a bundle of a snowboard and a pair of skis. Leszczyc, Pracejus and Shen (2008) argue for the possibilities of hyper-subadditivity and superadditivity. Both situations are, according to the authors, a function of consumers' certainty about the items in a bundle and their perception of the value of the items in the bundle. Their point is that the value of the certain item is often used to infer the value of the uncertain item. If the value of the certain item is low, this can lead to a low valuation of an objectively high value item in the bundle because of consumers' uncertainty about this item. Thus, the valuation of the bundle will be very low – hyper-subadditivity. On the contrary, if consumers are certain about the value of the objectively high value item, their valuation of the low value and high uncertainty item will be inflated, leading to a very high valuation of the bundle – superadditivity. This effect is revealed by Leszczyc, Pracejus and Shen (2008) even without complementarity between the two items studied.

Results from Gaeth et al (1990) indicate that the evaluation of the core product and the add-on product in a bundle is averaged or balanced to form an overall rating of the bundle. In their study they found that the *quality* differences between three quality categories of a VCR and a typewriter was evaluated to be higher when consumers evaluated the two products alone than when they were evaluated together with a tie-in product (tape was a tie-in product for the VCR and calculator was the tie-in product for the typewriter). Furthermore, they found that "attributes of the tie-in product had a much larger effect on the evaluations of product bundles than would be expected on the basis of their monetary worth alone" (Gaeth et al, 1990, p. 47). They also compared the relative advantage of bundling as a marketing strategy to pure cash rebates and found that bundling was the most effective strategy, in particular when the bundle included a high-quality tie-in product.

Based on prospect theory, Kaicker et al (1995) investigated effects of *discrepancies between expected prices and real prices* on consumers' preferences for purchasing products as a bundle or separately. Five scenarios were tested. 1)Multiple gains – when both X and Y had a positive value, consumers preferred to purchase the two components individually because the value function for gains is concave (value(X) + value(Y) > Value(X+Y)). 2)Mixed gains – when the value of X is positive and the value of Y is negative (and X > Y) consumer preferred to purchase the two components as a bundle (because" the loss function is steeper than the gain function, value(X) + value(-Y) is less than the value(X-Y)" (Kaicker at al, 1995, p. 232). 3)Mixed losses/Low net loss – This means that the gain on one outcome is slightly less than the loss on the other outcome, and consumers prefer to purchase the products as a bundle (because value(X) < value (X-Y) – value(-Y)). 4)Mixed losses/High net loss – This means that the gain on one outcome is much less than the loss on the other outcome, and consumers prefer to purchase the products individually (because value(X) > value (X-Y) – value(-Y)). The explanation for this is that "segregation allows the consumer to feel better about a relatively large loss by also considering a small gain (Kaicker at al, 1995, p. 232). 5)Multiple losses - when both X and Y had a negative value, consumers preferred to purchase the two components as a bundle because the value function for loss is convex (value(-X) + value(-Y) < Value-(X+Y)). The five scenarios presented above represents the authors' hypotheses, and they revealed support for all of the hypotheses with an exception for the Multiple loss hypothesis.

Heeler and Adam (2004) studied perception of bundle prices, and revealed that consumers presented with a bundle perceive that the price of similar unbundled components are 10,2 percent higher than the bundled price. However, when

consumers were informed that the price of the bundled and the unbundled components were equal, they actually evaluated the unbundled alternative more positively than the bundled one.

While most of the existing research has focused on bundles of products distributed in similar forms (or sold through the same channel), Koukova, Kannan and Ratchford (2008) look at product form bundles, meaning that a product is distributed through two or more channels. They propose that, for example, a book distributed in a traditional physical format and an electronic format often are perceived as substitutes and that consumers, therefore, often buy the book in only one of the two formats. They point to the importance of emphasizing the relative advantage of the two formats to increase the attractiveness of a bundle offering the product in both formats. The two formats may have relative advantages in different usage situations. For example, a physical book may be the best alternative for ordinary reading while the online format will probably be better for locating specific parts or sequences of the book. In their study they found support for their ideas – that the manipulation of different usage situations increased consumers' intention to purchase a bundle of both a physical book and an electronic version of the book (given that the second item is discounted).

2.2.3 Perceptions of the choice situation

In addition to characteristic of the bundle and consumers perceptions of the bundle, consumers' perception of the choice situation may also influence their evaluation and behavior to bundling. Oppewal and Holyoake (2004) proposed that purchasing a beach holiday in a shopping centre (*retail agglomeration*) would reduce the chance of purchasing a bundle (because it was easy for the consumers to shop around for the components among several travel agencies located in the shopping centre). However, they actually found that consumers

are more likely to purchase bundles if there are many competitors nearby. Furthermore, they revealed that situational factors as *time pressure* increased the chance of purchasing bundles. Finally, they also found that *purchasing with a partner* increased the chance that components were purchased while consumers preferred bundles while purchasing alone on behalf of a group. Simonin and Ruth (1995) looked into effects of *prior attitudes* toward the components in a bundle of dental care products and found that consumers prior attitude towards components' brands influenced the evaluation of the bundle positively. Harris and Blair (2006) found support for the hypothesis that preferences for a bundle of stereo components are more positive when bundle choice reduces search efforts. The effect is particularly significant among consumers who are less motivated to process information. Consequently, situational factors as *motivation to search for information* and *motivation to process available information* influence preferences for bundles.

2.2.4 Choice

Drumwright (1992) found some support for the hypothesis that consumers will purchase more with bundling than they would if the products were offered individually. For situations with mixed bundling, she found some support for economic theory, predicting that consumers only will purchase bundles with positive consumer surplus. For pure bundling, she found some support for what she calls behavioral theory – "*bundles create contexts that prompt consumers to cancel losses against gains*" (Drumwright, 1992, p. 314). Her explanation is that consumers in specific contexts may use noncompensatory decision rules like conjunctive, disconjunctive or lexiographic decision rules.

In an article by Foubert and Gijsbrechts (2007), effects on choice of bundles of similar products are studied. This means special offers like "Pick 2, get $.50 off" or "Buy one, get one for free" (Foubert and Gijsbrechts, 2007, p. 648). They

found that "When a consumer's total purchase quantity in the category equals or exceeds the bundle quantity requirement, the bundle discount has a positive impact on a bundle item's choice probability" (Foubert and Gijsbrechts, 2007, p. 648). However, they also found that even in situations where consumer's purchase quantity is lower than the quantity requirement, the bundled still has a positive impact on choice. They explain this through a "discount communication effect" (Foubert and Gijsbrechts, 2007, p. 649), meaning that the promotion for the bundle of products increase the sale of the product also on an individual basis. When it comes to quantity requirement, the authors report that there is a critical point for the quantity requirement, meaning that an increase in the quantity requirement has a positive effect on choice up to a critical point. Above this critical point the effect of increasing the quantity requirement has a negative impact on choice.

2.2.5 Experience with the chosen option

An interesting study by Soman and Gourville (2001) looked into differences in *actual usage* of a service when the service was purchased as a bundle and when it was purchased as individual items. Their study showed that consumers purchasing a bundled four day ski pass rather than four one day ski tickets, used the skiing facilities to a lesser degree the fourth day than consumers purchasing four individual tickets. Their explanation for this is *transaction decoupling* – decreasing consumers' attention to sunk costs. In a situation of scarce resources, this result indicates that overbooking through bundling can be safe because all of the consumers who have purchased a ticket will not show up if the tickets are sold as a bundle.

In a study of a service bundle at a health and fitness resort, Naylor and Frank (2001) found that first-time guests to the resort who expected that the package price would cover most of their expenses, but discovered after they arrived that

this did not happen, reported lower *perception of value* than guests whose expectations were met. Customers, it appears, would rather pay more for an all-inclusive package than deal with separate charges. This remains the case, even when customers would save money by paying for services separately, outside the bundle (Naylor and Frank, 2001, p. 280). The study underlines the importance of meeting consumers' expectations of both monetary costs and hassle costs to attain high valuation of a bundle. Mankila (2004) proposed effects of bundling bank services on intention to stay with the bank. In a student sample, she hardly found any such effects, indicating that bundles do not strengthen consumers' *loyalty or retention*.

In a theoretical paper, Bodily and Mohammed (2006) discuss impacts of music *genre* and *usage occasion* for music as important antecedent for how to bundle an offer to get satisfied consumers. They pinpoint that consumers preferring various types of music should be considered as different segments and that different tie-ins should be prioritized for different genres. For example, among consumers preferring modern rap, sampling of new related music may be a suitable tie-in while consumers preferring classic rock may rather prefer historic information about old bands as a tie-in. Bundles may also be constructed based on usage situations. Consumers may differ in their preferences for music depending on whether they are exercising, driving their car, or relaxing after an exam.

Finally, a study by Chong, Hentschel and Saavedra (2007) shows that consumers who received two or more offerings of public services increased their consumption more than consumers receiving public services one and one. The authors interpret the finding as a positive effect of bundling public services on consumers' welfare. Estalami (1999) found that consumers savings from

purchasing complementary bundles ranged from -18 percent to 57 percent with an average saving of 8 percent.

3. RESEARCH QUESTIONS

A number of interesting problems have been touched in the literature review. Choice is a complex concept including the question of choice versus no-choice, the formation of preferences, quality of choice, confidence of choice, and post choice responses, just to mention some of the dimensions of choice. The review shows that many factors influence choice and other choice related variables. Based on the importance of the various antecedents discussed in chapter 2.1 and 2.2, we focus five main antecedents of choice related variables in the continuation of the report. They are *situational factors* such as service characteristics (e.g. Kahn and Lehmann, 1991; Botti and Iyengar, 2006), bundling (e.g. Herrmann, Huber and Coulter, 1997), and assortment size (e.g. Iyengar and Lepper, 2000; Scheibehenne, 2008), and the two *individual factors* experience - or related constructs such as familiarity and expertise (Mogilner, Rudnik, and Iyengar, 2008), and tendency to maximize (Schwartz et al, 2002). The review illustrates the complexity and the interplay among these variables in how choice related variables are influenced.

Although marketing literature proposes positive effects of *assortment size* on perceived variety, choice, and satisfaction with choice, more recent literature are questioning this proposition. As discussed in chapter 2.1, Huffman and Kahn (1998) discuss cognitive overload in processing large assortments as a mechanism that may influence perceived variety, choice, and satisfaction with choice negatively. Chernev (2003) and Iyengar and Lepper (2000) claim that consumers with less developed preferences may be affected negatively by large assortments, while Amir and Ariely (2007) suggest that variety may lead to negative emotions related to choice. Although the relationship between assortment size and choice related variables traditionally is supposed to be positive, we find it reasonable to have a new look at this well established relationship.

Several characteristics of *bundles* are reviewed in chapter 2.2, and the review illustrates how these characteristics influence perceived variety and choice relative to an "a la carte" assortment. The number of items bundled and the complementarity of the items in a bundle typically influence consumers' intention to choose (Herrmann, Huber, and Coulter, 1997). Furthermore, price information and bundle presentation format (framing) are among other characteristics revealed to influence choice related variables. There seems to be a lack of research on potential effects of bundling on post choice variables as for example satisfaction. In a study of bundling effects on loyalty and retention, Mankila (2004) only revealed marginal support for this relationship. However, bundling is an important factor influencing perceived variety and choice, and the lack of research on effects of bundling on post choice variables makes studies on effects of bundling on choice related variables interesting.

Most of the assortment studies focus simple consumer goods. Choice related effects of *service areas* may therefore be an interesting path for future research. It seems likely that perceived variety differs considerably across service areas. If consumers are able to handle the variety of online bookstore assortments of several thousand options, it seems odd that they have problems deciding when assortments include only 30-40 options, as suggested in the "too-much-choice" literature (Scheibehenne, 2008). In particular, one may raise the question if assortment characteristics influencing perceived variety differ between products and services, and in particular between traditional products and digital services.

Experience (or related constructs such as expertise and familiarity) has been studied as an individual factor influencing choice related variables. Although often studied as a moderating variable, consumers with a high level of experience usually have relatively realistic expectations and therefore choose

products and services that are in accordance with their preferences – they know what to choose. This individual trait may therefore influence the choices made and the post choice evaluations of the consumers.

Consumers' tendency to *maximize* is an individual factor that has received a lot of attention in choice studies the last decade (Schwartz et al, 2002). The tendency to maximize typically influences consumers' choice in the direction of trying to make more "rational" choices.

Based on the discussion above, the following research question (RQ) is raised:

RQ 1: How do situational characteristics such as 1)service area, 2)bundling versus a la carte, 3)assortment size, and individual characteristics such as 4)experience, and 5)tendency to maximize influence choice and post choice variables?

Recent studies have suggested a number of variables moderating the relationships between assortment characteristics and choice. Scheibehenne (2008) applies the idea laid out by Simon (1990) that variables moderating effects of antecedents of decision making behavior may be found in attributes of the *individual* or in characteristics of the decision *situation*.

Potential moderating effects of situational variables

While we consider assortment size as mainly having a direct effect on choice related variables, the other situational factors discussed above may also have moderating effects. Although the literature reviewed mainly investigates direct effects of bundling on choice related variables, bundling of an assortment may moderate how assortment size influences perceived variety and choice. For example, bundling may reduce the positive effects of assortment size on

perceived variety compared to an "a la carte" assortment. We also raise the question if effects of assortment size on perceived variety and choice differs between products and services, and in particular between traditional products and digital services - which may be differentiated with very low costs. Also, Devlin (2007) refers to service complexity as a variable moderating the effects of choice criteria on assessments and choice of offerings, underlining the importance of service characteristics as a potential situational moderating variable. The second research question is therefore:

RQ 2: How do the situational characteristics interact with each other in how they influence choice and post-choice variables?

Potential moderating effects of individual variables

Direct effects of consumer experience and their tendency to maximize are proposed in research question 1. However, consumer experience and consumers' tendency to maximize also influence the choice related variables through their moderating influence of the direct effects proposed. For example, Schwartz et al. (2002) suggest that consumers' tendency to maximize is one of the most promising moderators when explaining recent findings in the relationship between assortment variety, choice and satisfaction. Their basic idea is that maximizers tend to seek more variety, engage more in comparisons, and be more sensitive to regret due to self-blame in choices with negative experiences. In addition, consumers' experience (and related constructs such as domain familiarity or expertise – Mogilner, Rudnik and Iyengar, 2008) may influence consumers' perception of assortment size and perception of bundling, and consequently, also how assortment size and bundling influence the choice related variables. The inclusion of individual factors like for example consumers' experience is therefore of vital importance to reveal a nuanced

picture of the complexity of consumers' choice and post choice evaluations. The third research question we raise is the following:

RQ 3: How do the individual characteristics (experience and tendency to maximize) interact with each other and the situational characteristics in how they influence choice and post-choice variables?

For the purpose of illustration, the model presented in Figure 1 shows some of the relationships we aim to illuminate.

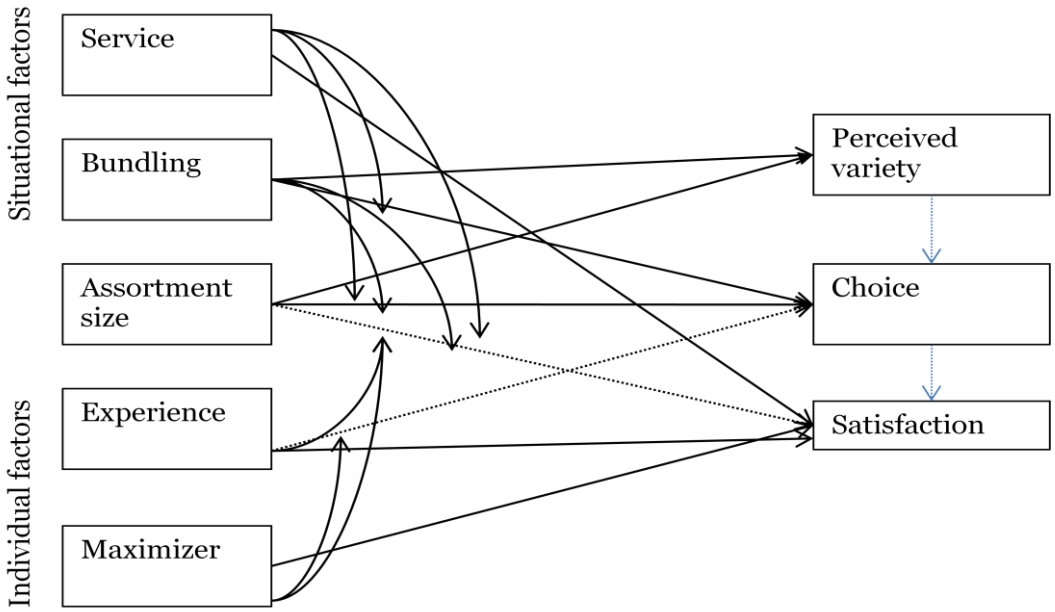

Figure 1: Illustrating model.

The model shows some of the relationships of interest for the study. The situational- and individual characteristics are all proposed to influence one or more of the choice related dependent variables. The model also illustrates the choice process by including (and studying the relationships between) assessments of choice characteristics, choice decisions, and post-choice

evaluations. Finally, the model gives examples of potential interactions between the situational- and individual factors proposed to influence the choice related variables. The intention is not to give a complete picture of all of the direct and moderating effects of interest, but just to illustrate how, in principle, we are thinking in relation to the complexity of how choice related variables are influenced.

4. METHOD

In this chapter, the method of our study is presented. The general research design and manipulations are presented in section 4.1, the procedure in section 4.2, the samples in section 4.3, and finally, the measures are presented and analyzed in section 4.4.

4.1 Manipulations and general design

To study the effects of variety as a value proposition element and the effects of variety on choice and satisfaction, a quasi-experimental design was developed. The design included five manipulations. First, two services were studied; TV-services and triple play services. The services were selected due to the context of the project funding this study and due to the differences in complementarity or alignment of the options of these two services.

Second, these services were offered in both a bundled and "a la carte" value proposition. The bundles were based on the bundles of providers offering the smallest and largest assortment in the Norwegian market for TV and triple play services. The "a la carte" offerings were designed by opening these bundles to the choice of individual components of these bundles. A number of practical adaptations had to be made due to the particular competitive situation in the Norwegian TV and triple play services markets. For example, TV2 were at the time of the study transformed from a "must carry" channel into a regular offering. In this study, however, this was handled by designing a minimum package of reasonably priced "must carry" channels including TV2. All such adaptations were done to make the offering as realistic as possible and were guided by the advice of the providers participating in the study. These providers had first-hand experience from serving the TV and triple play service markets. A separate brand, "SimpleNet" was created under which all offerings were presented and "marketed" in the study.

Third, the offerings were presented with both a large and a small assortment. As mentioned above, the small and large assortments were based on unbundling the smallest and largest assortments offered in the Norwegian market for TV and triple play services. The number of options in each offering is shown in table 1.

Table 1. Assortment sizes (number of options)

	Small	Large
TV-bundled	3	11
TV-a la carte	18	74
Triple play - bundled	9	38
Triple play – a la carte	11	32

As seen from table 1, the assortment size varied more for TV-services than for triple play services. Due to the complementarity of TV-channels it is difficult to design comparable assortments of bundled and unbundled channels. Consequently, there is an interaction between the service manipulation and the assortment size manipulation that must be controlled during analysis.

To control for price effects, both a low price and a higher price offering were offered. The prices were set by looking at the current pricing of bundled services in the Norwegian TV and triple play services markets. Because we wanted our offering in general to be attractive, this was considered the high price alternative. A low price alternative was then designed with prices around 20% lower than the high price alternative. When unbunbling the offering, prices were set with two different approaches: High prices were set to be realistic prices of an unbundled offering where the provider could set prices freely. The price of each TV-channel unbundled was based on the popularity of the channel. Low prices were set with a potential regulation in mind. The prices we designed were discussed with TV and triple play service providers and adjusted accordingly. In particular, care was taken to set prices realistically with reference to the

provider's cost structure and the provider's beliefs about consumer and competitor reactions. The principles for setting the prices in the potentially regulated scenario were discussed with representatives from the regulatory authorities.

Finally, potential lock-in effects were controlled by offerings with both a long and a short binding period. The maximum binding period allowed in Norway for the studied services is 12 months, and thus, 12 months and no binding period were used as the two alternatives. By combining 2 alternatives for 5 manipulated conditions, the quasi-experiment may be characterized as a 32-group factorial design.

A pretest was conducted with 15 respondents per group for 3 of the manipulations (assortment size, price and service category). Manpulation checks were made and effect sizes and required sample sizes were estimated based on the pretest.

4.1.1 Procedure

A procedure was used where respondents were given one of the 32 different manipulations by random. A website was used for all measures and manipulation presentations. The website was developed by Norstat and included an opening page where respondents were introduced to the experiment. Next, a number of pretest measures were made. Then, the stimulus was presented in the form of the service offering and its corresponding assortment. The respondents were asked to study the offering carefully, but were at this point not asked to make any decisions regarding choice of alternatives. Instead, a number of measures capturing the respondents' considerations of the offering was presented. After these considerations had been reported, the respondents were again shown the offering, and were now asked to choose from the assortment as

if it was an alternative to their current service provider. Respondents were also given an opportunity to change their decisions in a way similar to that used by Chernev (2003). Finally, after the final choices had been made, the respondents were presented to a number of measures capturing posttest experiences as well as personality traits and other control variables. Personality traits were measured at the end of the procedure to avoid sensitation. Other potentially sensitizing measures were also placed at the end of the procedure. Finally, respondents were thanked for their participation and given a reward corresponding to the length of the experiment in the Norstat panel reward system.

4.1.2 Samples

A representative sample frame of Norwegian consumers identified by the largest online panel data provider in Norway, Norstat was used. The panel currently includes 65000 respondents from which two sample frames were designed to represent the Norwegian consumer population of age 15+. To make samples representative, Norstat controls the sampling frame by age, sex, education, geography, income and some non-disclosed consumer-related variables. From this sample frame, the sample offered to participate was randomized with 800 participants in the TV-channel study and 800 different respondents in the triple play study. Respondents were self-selected respondents from a random sample of a representative population of Norwegian consumers aged 15+ (In Norwegian: 15+, landsrepresentativt). As indicated above, respondents were allocated by random to one of the 32 service offerings that had been designed.

The number of invitations sent out to recruit subjects was 2936 for the TV study and 4320 for the triple play study. Of these, 1049 and 1546 decided to participate and 884 and 801 respondents completed. Due to some counter issues at Norstat it was impossible to identify the group that 65 of the respondents completing the TV study had been allocated to. Thus, 818 and 801 subjects,

respectively completed the study. This indicates response rates of 30.1% for the TV study and 18.5% for the triple play study. This suggest it was much easier to recruit respondents to the TV-study suggesting that the context of this study was considered much more motivating than the triple play study. This is not surprising considering the attention that the population pays to TV-channel choice in general and that particular attention media has put to a la carte TV-channel choice recently. It may also suggest that the choice of triple play services is less motivating and perhaps also is considered more complex. Further control has to be conducted in our analyses to ensure that these context differences have not systematically affected our results, but a test of the difference in experience with evaluating each type of service did not show that the more "reluctant" respondents were more experienced. In fact, the respondents, as expected, perceived themselves less experienced in evaluating broadband services (triple play) than TV services ($F=32.25$, d.f.=1507, $p<0.01$). We also tested if there were differences in these respondents differed in their frequency of Internet use ($F=0.87$, d.f.=1507) and their broadband provider ($\chi 2=12.21$, d.f.=15).

Data were analyzed for careless response setting a minimum completion time of 300 seconds for completing the entire study. In addition a criterion was applied considering respondents with no variance in the last 20 items in the final questionnaire of the study to be careless. The final number of respondents in each sample after removals for careless response using these two criteria was 783 for the TV study and 726 for the triple play study. Again, we see a somewhat more keen interest to seriously complete the TV study than the triple play study. Consequently, an overview of the sample characteristics of these two studies may reveal potential systematic bias in the samples. This overview is shown in table 2.

Table 2: Sample characteristics – demographic attributes

Attribute	TV, N/x	TV, %	Triple, N/x	Triple %/ $\chi 2$/F
Male	404	51.6	389	53.6
Female	379	48.4	337	46.4
Gender - total	783	100	726	100 ($\chi 2$=0.59)
Primary	34	4.5	35	5.0
Secondary	263	34.6	226	32.1
University L	260	34.2	228	32.4
University H	204	26.8	215	30.5
Education - total	761	100	704	100($\chi 2$=2.99)
Mean age	44.2		45.5	F=2.81

As seen from table 2 there are no significant differences in sample demographics between the two samples. Also, these samples seem to share the demographic characteristics of the population of Internet users in Norway. This is due to the panel being an Internet panel. Thus, population differences between the Internet population and the general population of Norwegian citizens 15+ apply (see e.g. http://www.ssb.no/emner/07/02/30/medie/sa106/ internett.pdf).

Due to potential interactions between the service manipulation and the other four manipulations, we tested if there were sample differences between respondents recruited to the other four experiment group categorizations (assortment size, price, binding period and bundling). Results showed no significant differences in gender, education and age for assortment size ($\chi 2$=3.35, $\chi 2$=2.47, F=0.71), price ($\chi 2$=0.06, $\chi 2$=4.28, F=0.00), binding period ($\chi 2$=0.04, $\chi 2$=0.38, F=0.04) and bundling ($\chi 2$=0.76, $\chi 2$=1.10, F=1.36). Thus, we conclude that there are no systematic errors resulting from the sampling procedure used to randomize stimuli.

4.1.3 Measures

Single item measures were designed to capture concepts that could be used as manipulation checks. The following concepts were measured by these items (m=manipulated): Perceived monetary costs (m), perceived switching costs (m), perceived assortment size (m), perceived assortment organization (m) and perceived experientiality and/or complexity (m). The following concepts were measured using single item measures: Perceived assortment variety, perceived freedom of choice, anticipated preference matching, perceived assortment satisfaction, anticipated disappointment, anticipated frustration and perceived frustration. Multiple measures were designed to capture the following theoretical constructs (number of items): Experience (3), assortment complementarity/alignment (3), anticipated satisfaction (3), anticipated regret (3), perceived satisfaction (3-5), cognitive effort (4), maximization (3), perceived regret (3), self attribution (credit/blame) (3). In addition, four choice-related variables were calculated including choice, number of options to choose, number of options chosen and relative percentage of possible options chosen (consumption).

Some of these measures have been used in previous assortment studies. There is a rather long tradition in this area for applying single item measures, particularly as manipulation checks. Our measure of perceived assortment organization is based on the assortment organization measure of Hoch, Bradlow and Wansink (1999) used in several assortment studies. Perceived service cost was measured using a cost perception measure that we had previously tested (Pedersen et al, 2008). Perceived switching costs was measured as an overall single-item measure capturing the overall costs and efforts of changing service provider (Bell et al, 2005). Perceived assortment size was measured applying the measure used by Chernev (2006) and perceived assortment variety was measured in the same way as Hoch, Bradlow and Wansink (1999). This measure has also been

used by Chernev (2003a, b) and Scheibenenne (2008), among others. Perceived freedom of choice has also been termed perceived selectivity and has been measured in the same way as we do by Lin and Wu (2006). We measured perceived preference matching by applying a measure based upon Diehl and Poynor (2009). AN additional item was applied from Diehl and Poynor (2009) to be used as an additional preference matching measure or as part of the multiple item measure of expected satisfaction.

Perceived assortment satisfaction or satisfaction with the assortment was measured in the same way as Hoch, Bradlow and Wansink (1999) and Chernev (2009). Anticipated emotions such as anticipated disappointment, regret and frustration were captured using the principles applied in Connolly and Butler (2006). They captured anticipated regret, happiness, disappointment, elation, sadness, and rejoicing in a very efficient scale. The scale was modified somewhat to fit the context of our study and to capture anticipated disappointment, frustration and regret. To cover both drop and keep regret, the regret items were somewhat more complex (see below). To capture the perceptions of the services as experiential or utilitarian, a simple measure of perceived experientiality was inspired from the categorization and measurement scale used in Stafford and Day (1995). Choice was measured by the respondents indicating which offerings they would choose. In accordance with Chernev (2003 a, b) respondents were also prompted for a second reconsideration where they were asked to indicate if the chosen options were to be chosen in a natural wetting or if they then would prefer to stay with their current provider.

Experience with the service category was measured using three items partly adapted from Bruner and Kumar (2000) that we have used and tested in previous studies of Internet service adoption and consumer behaviour (Nysveen and Pedersen, 2004; Nysveen and Pedersen, 2005). Assortment

complementarity/alignment is usually manipulated (Chernev 2003) and often the manipulation is not checked. Due to the context of this study, assortment complementarity was not artificially but naturally manipulated and measured with a three-item scale developed from and tested in Pedersen et al. (2009). The composite measure showed low reliability and indicating that complementarity/alignment could not be captured in a composite measure. Instead, it seems necessary to treat and measure the constructs of comparability, complementarity and option alignment measured in earlier studies as separate constructs.

As mentioned above, the measure of anticipated satisfaction was adapted from Diehl and Poynor (2009) and the measure of anticipated regret was designed by using three items covering general regret, drop regret and keep regret in the anticipated emotions scale using the principles and scale type applied by Connor and Butler (2006).

After the choice had been made, perceived satisfaction was measured in a 5-item scale of satisfaction combining the items used by Huffman and Kahn (1998), Sceibehenne (2008) and Diehl and Poynor (2009). Three of these items had been used and tested in our own earlier studies.

Cognitive effort was measured by designing a measure covering choice difficulty, decision difficulty, mental effort and traditional cognitive effort through four items adapted from Chernev (2003), Scheibehenne (2008) and Van Gerven (2003). Reactance was measured with three items adapted from White et al (2008).

The maximization (Schwartz et al., 2002) measure was designed by applying thee items from the shortened maximization scale developed by Nenkov et al.

(2008). Their shortened maximization scale included 6 items, but they also tested a 3-item scale. When pretesting our scale, we found that acceptable reliability scores could be obtained when chosen a somewhat different set of items from the 6-item scale than Nenkov et al. (2008) had used in their 3-item scale.

Instead of using a single-item regret measure, we combined the single-item regret measures of Chernev (2003), Lin and Wu (2006) and Scheibehenne (2008) into a somewhat more complex 3-item measure. Finally, self attribution in the form of self credit and self blame was measured by collecting a self blame and a self credit measure from Botti and McGill (2006) and by adding a more general item covering internal versus external attribution as suggested by Meuter et al. (2000). The measure was designed to be used as a composite scale or individual items may be used. Analysis of the composite scale, however suggested that the items measured separate constructs and that, even though self blame, self credit and attribution are related, they cannot be combined into a composite measure of general self attribution. This is also supported by Botti and McGill (2006). Thus, self credit, self blame and external attribution are treated as separate constructs measured by single item measures.

Gender, age and education were measured with single item measures as part of the background demographic information collected by Norstat. Other background information provided includes county, personal income, household income, telephony provider, TV-provider, broadband/Internet access provider use of the Internet.

4.2 Analysis of measures

The research design calls for validation of the data and our operations. Operations may be validated as traditional single and multiple item measures

and as manipulated operations. In section 4.2.1 we investigate the reliability and validity of measures, whereas in 4.2.2, we do the same for manipulated operations.

4.2.1 Analysis of measures – validation

Most of the above items have previously been used in assortment and regular consumer behaviour studies. A few of the items were modified to the context of the study and all items were designed so that they could be applied with the same wording in both the TV-service and triple play services contexts. All items are shown in Appendix X (in Norwegian). The reliability of the multiple item measures is reported in table 3.

Table 3 Multiple item measures, items and reliability

Construct	Original items	Final items	Alpha
Assortment complementarity/alignment	3	Single	na
Anticipated satisfaction	3	3	0.79
Anticipated regret	3	3	0.76
Perceived satisfaction	5	3	0.92
Cognitive effort	4	3	0.89
Perceived regret	3	2	0.80
Reactance	3	3	0.84
Maximization	3	3	0.68
Experience	3	3	0.87
Self attribution	3	Single	na

As seen from table 3, the reliability of the measures is acceptable. The maximization scale has a somewhat low coefficient alpha, but this should be considered acceptable for a compact scale like the one applied here.

To investigate the conceptual structure of the items used to capture the multiple item measures, exploratory factor analysis was used. The analysis showed that the 23 items could be represented by 7 factors. This analysis indicated unclear

pattern of factor loadings for the two regret items. Looking more closely at the eigenvalues, we found that the eigenvalue of factor seven is 1.11, factor eight is 0.94 and factor nine is 0.67. This indicates a steep drop in eigenvalue after eight factors. An exploratory analysis should thus be conducted with eight factors corresponding to the number of theoretical constructs. The results of this analysis are shown in table 4.

Table 4: Exploratory factor analysis.

	F1	F2	F3	F4	F5	F6	F7	F8
Anticipated satisfaction 1	0,12	-0,08	-0,01	-0,25	0,84	-0,17	0,03	0,00
Anticipated satisfaction 2	0,16	-0,07	-0,01	-0,24	0,85	-0,15	0,03	-0,02
Anticipated satisfaction 3	0,06	-0,10	0,01	-0,08	0,70	0,17	-0,03	0,14
Anticipated regret 1	-0,11	0,14	0,01	0,17	-0,23	0,78	0,11	-0,05
Anticipated regret 2	0,02	0,19	-0,01	-0,01	0,04	0,80	0,01	0,03
Anticipated regret 3	-0,05	0,00	-0,04	0,06	0,04	0,82	0,06	-0,08
Perceived satisfaction 1	0,88	-0,10	0,04	-0,07	0,11	-0,05	0,04	0,18
Perceived satisfaction 2	0,90	-0,04	0,02	-0,18	0,10	-0,04	-0,02	0,09
Perceived satisfaction 3	0,91	-0,10	0,01	-0,13	0,13	-0,05	0,00	0,13
Cognitive effort 1	-0,10	0,83	-0,10	0,18	-0,08	0,12	0,11	-0,10
Cognitive effort 2	-0,06	0,87	-0,09	0,10	-0,12	0,13	0,06	-0,13
Cognitive effort 3	-0,08	0,85	-0,01	0,14	-0,07	0,10	0,14	-0,16
Perceived regret 1	0,15	-0,17	0,08	-0,02	0,07	-0,04	0,04	0,88
Perceived regret 2	0,22	-0,17	0,04	-0,03	0,06	-0,06	0,03	0,86
Reactance 1	-0,19	0,09	0,04	0,84	-	0,09	0,11	0,02

					0,27			
Reactance 2	-0,17	0,09	0,06	0,87	-0,23	0,09	0,10	0,02
Reactance 3	-0,06	0,27	0,05	0,73	-0,10	0,03	0,01	-0,10
Maximization 1	-0,01	0,34	-0,09	0,04	0,03	0,10	0,71	-0,01
Maximization 2	-0,02	0,04	0,21	0,07	-0,01	0,03	0,78	0,02
Maximization 3	0,03	0,00	0,08	0,06	0,00	0,04	0,81	0,04
Experience 1	0,05	-0,06	0,89	0,05	0,00	-0,02	0,09	0,05
Experience 2	0,01	-0,02	0,90	0,03	-0,01	0,02	0,05	0,01
Experience 3	0,00	-0,09	0,87	0,04	0,00	-0,04	0,08	0,06
% Variance	23,45	12,41	10,59	8,14	7,24	6,27	4,81	4,08
Eigenvalue	5,39	2,85	2,43	1,87	1,66	1,44	1,11	0,94

As seen from table 4, the factor pattern corresponds well with the theoretical constructs measured. The highest cross loading is only 0.34 between the first maximization item and the cognitive effort factor and the second highest 0.27 between the third reactance item and cognitive effort and -0.27 between the first reactance item and the anticipated satisfaction factor. This suggests acceptable convergence and discriminant validity of the multiple item measures. These consistent findings for the multiple item measures also suggest that the reliability and validity if the single item measures are acceptable.

4.2.2 Analyses of manipulations - validation

As described in section 4.1, the procedure included five manipulations at two levels each resulting in a 32-factor quasiexperimental design. Three of the manipulations were proposed as operations of theoretically well founded concepts including assortment size, monetary costs and switching costs. These concepts are well founded and studied in several previous studies. The other two manipulations were partly determined by the contextual requirements of the

study and by the requirements of the project's business partners. The manipulation of bundling versus a la carte does not constitute an operation of an obvious theoretical construct, but is closely related to assortment organization. This suggests the manipulation should be tested as a potential operation of several assortment organization constructs. The manipulation of TV services versus triple play services is even more the result of the contextual actuality of the study. As such, the manipulation could be treated as a way to avoid mono-operationalization of the stimulus context of the study or it could be tested as a potential operation of several service characteristics constructs. Of these, it seems obvious that the options of TV-services and triple play services differ most with respect to the alignability or complementarity of the options. Consequently, the manipulation should be tested as an operation of several alignability-type constructs. As mentioned above, the measures of manipulation checks were designed to capture a potential variety of operations for these two manipulations.

Starting with the theoretically most well-founded manipulations, manipulation checks in the form of analysis of variance were conducted. The results are reported in table 5.

Table 5. Manipulation checks, assortment size, price and binding period

	Mean manip.	Mean other	F; d.f.
Assortment size (large/small)	3.68	3.10	174.05**, 1507
Perceived monetary costs (high/low)	3.19	2.94	22.38**, 1507
Perceived switching costs (high/low)	2.93	2.85	4.65*, 1507

* Indicate significance at $p<0.05$ and ** at $p<0.01$

As seen from table 5, all three manipulation checks shows that our manipulations were perceived as intended. For assortment size and perceived monetary costs, the effects are extremely large, whereas for perceived switching costs, the effect is relatively small, but significant at the 5% level.

The other two manipulations were investigated with a number of potential manipulation checks. The significant results of these checks are reported in table 6 for bundling versus a la carte and in table 7 for TV versus triple play.

Table 6: Manipulation checks – bundling versus a la carte

A la carte (u)/ bundling (b)	Mean manip.	Mean other	F; d.f.
Assortment organization (u/b)	3.42	3.23	21.85**, 1507
Option independence (c/a) (u/b)	3.31	3.20	9.49**, 1507
Quality assessment (e/u) (u/b)	2.90	2.71	7.20**, 1507
Assortment size (u/b)	3.44	3.34	4.74*, 1507
Assortment variety (u/b)	3.40	3.24	13.74**, 1507

* Indicate significance at $p<0.05$ and ** at $p<0.01$

As expected, bundling versus a la carte is perceived as a manipulation of assortment organization. However, the direction is in favour of the a la carte offering where respondents consider the a la caret offering to be better organized than the bundled assortment. We also see that the manipulation of a la carte versus bundling seem to represent an operation of option independence, an item used in the assortment complementarity/alignment measure and of the ease of which quality assessments can be made, a part of the experiential versus utilitarian service measure. The other two manipulation checks that were significant are assortment size and variety. Thus there is an interaction between bundling and assortment size that we partly expected. Bundling, could thus perhaps not be considered a simple operation of anything else than just this,

bundling. However, it represents a manipulation of assortment organization that is understandable.

Table 7: Manipulation checks – TV versus triple play

TV versus Triple play service(tv/t)	Mean manip.	Mean other	F; d.f.
Assortment organization (tv/t)	3.42	3.22	26.45**, 1507
Perceived monetary costs (low) (tv/t)	2.97	3.21	26.98**, 1507
Perceived switching costs (high) (tv/t)	2.83	2.95	9.42*, 1507
Option alignment (tv/t)	3.00	3.08	4.07*, 1507
Option complementarity (tv/t)	3.25	3.16	5.22*, 1507
Option independence (tv/t)	3.31	3.20	9.56**, 1507
Assortment size (tv/t)	3.31	3.48	13.58**, 1507
Quality assessment (e/u) (tv/t)	2.98	2.69	44.05**, 1507

* Indicate significance at $p<0.05$ and ** at $p<0.01$

Even though the main reason for manipulating TV and triple play services were contextual and to avoid mono-operationalization, we see that it also as some interesting operational characteristics. Most of these are related to the differences in perceptions of and attitude towards the two services, such as a tendency to consider triple play services to be more reasonably priced but result in higher switching costs. The manipulation also affects assortment organization and assortment size, and these interaction effects with other manipulations (size and bundling/a la carte) should be taken into consideration in further analyses. Of most interest as pure manipulation checks are the findings for option alignability, complementarity and independence as well as for the quality assessment part of the experiential versus utilitarian measure. The first three findings are not easily interpreted. TV services are at the same time considered less alignable, more complementary and more independent. The first two findings seem reasonable here, but oppose the third finding. This illustrates the complexity of the option complementarity/alignment concept in assortment

studies. Finally, it seems to be easier to assess the quality of TV services then triple play services. This is at odds with our prior expectations were we considered the quantitative characteristics of the Internet access and broadband telephony parts of the triple play offering to result in triple play services quality being more easily evaluated. The opposite finding can only be explained by the increased complexity of combining the three services of the triple play offering. Thus, it seems that the triple play service is a more complex service and that it consequently is more difficult to assess the quality of the service. This is clearly supported by a quick test for cognitive effort. Triple play service choice is considered to require significantly more cognitive effort than TV service choice ($F=32.35$, $p<0.01$, d.f.=1507).

Consequently, we can conclude as follows when it comes to our manipulations: The larger assortments are considered larger, the higher priced services are considered more costly, the longer binding periods are considered to give higher switching costs, a la carte offerings are considered to be better organized and triple play services are considered more complex than TV services.

5. RESULTS

In this chapter, the results from analyzing the data set of our study are presented. The chapter focuses assortment size effects with the main effects in section 5.1. Next, interaction effects are investigated in section 5.2. While our manipulations represent situational factors, individual factors may also effect choice. In section 5.3 these individual factors are studied with a focus on size effects. A number of separate analyses based on the more complex conceptual model presented in chapter X are presented in section 5.4. In section 5.5, we briefly analyze some of the effects that are not related to assortment size. Finally, the main results are summarized in section 5. 6

5.1 Main effects, situational factors

A number of dependent variables have been designed in this study. The variables are discussed in chapter 4. The variables may be organized along the choice process into assortment perception variables, choice variables and post-choice variables. Among the assortment perception variables we find assortment variety, perceived freedom of choice, assortment satisfaction, anticipated preference matching, anticipated disappointment, anticipated frustration, anticipated satisfaction and anticipated regret. Among the choice variables we find the two most relevant to be: Choice, measured as if the offering given to the respondent was chosen or not when compared to their current offering, and consumption as the percentage of options offered that were chosen regardless if the offering was actually preferred to their current offering. Finally, post choice dependent variables included perceived satisfaction, perceived regret, cognitive effort and reactance.

Each of the manipulations were analysed for potential effects on these variables using analysis of variance. The results are reported separately for each

manipulation starting with assortment size in table 8. Both significant and insignificant findings are reported throughout.

Table 8: Main effects assortment size

Assortment size	Small	Large	F; d.f.=1507
Assortment variety	3.08	3.56	129.28**
Perceived freedom of choice	3.03	3.40	69.12**
Assortment satisfaction	2.93	3.17	31.41**
Anticipated preference matching	3.16	3.30	10.18**
Anticipated disappointment	2.34	2.30	0.81
Anticipated frustration	2.37	2.38	0.07
Anticipated satisfaction	3.08	3.23	15.97**
Anticipated regret	2.50	2.51	0.04
Choice	0.31	0.38	7.68**
Consumption	41.08	31.99	23.39**
Perceived satisfaction	3.46	3.52	2.55
Perceived regret	2.34	2.35	0.14
Cognitive effort	2.57	2.67	5.56*
Reactance	3.19	2.93	36.94**

* Indicate significance at $p<0.05$ and ** at $p<0.01$

Because choice is a dichotomous variable, it was also tested using a chi square test. It corresponded to the analysis of variance indicating a higher percentage choosing the offering from the larger assortment ($\chi 2=7.62$**, 37.6% versus 30.8%). As we see from table 8, larger assortments lead to higher perceived variety and freedom of choice. They are more satisfied with the assortment and anticipated satisfaction is greater. Large assortments do not lead to the anticipation of negative feelings. The percentage choosing the offering is larger for the larger assortment, but the percentage of the options offered is smaller. Surprisingly, we see no effects of assortment size on final satisfaction and regret. We do, however see that larger assortments require more cognitive processing and that it leads to less reactance. To summarize, our results indicate that most main effects of large assortments are positive when seen from the consumer point of view.

Corresponding results for the manipulation of price are shown in table 9.

Table 9: Main effects price

Price	Low	High	F; d.f.=1507, $\chi 2$
Assortment variety	3.34	3.29	1.42
Perceived freedom of choice	3.25	3.18	2.20
Assortment satisfaction	3.10	2.99	6.28*
Anticipated preference matching	3.30	3.16	9.28**
Anticipated disappointment	2.27	2.38	5.56*
Anticipated frustration	2.32	2.43	4.31*
Anticipated satisfaction	3.21	3.10	8.73**
Anticipated regret	2.47	2.54	3.20
Choice	0.38	0.30	9.57**, 9.53**
Consumption	37.52	35.52	1.11
Perceived satisfaction	3.52	3.46	2.00
Perceived regret	2.30	2.39	6.26**
Cognitive effort	2.57	2.68	6.74**
Reactance	3.03	3.09	2.23

* Indicate significance at $p<0.05$ and ** at $p<0.01$

From table 9 we see that lower prices lead to more satisfaction with the assortment, higher anticipated preference matching, less anticipated negative feelings, more anticipated satisfaction and more choice. However, consumption is not affected. Surprisingly, consumers are not more satisfied despite their anticipation when seeing the assortment. They do, however, perceive less regret and less cognitive effort. Thus, it may seem that lower prices require less cognitive processing to decide. There are, however, no effects of price on reactance.

Corresponding results for the manipulation of binding period are shown in table 10.

Table 10: Main effects binding period

Binding period	None	Long	F; d.f.=1507, $\chi 2$
Assortment variety	3.32	3.32	0.02
Perceived freedom of choice	3.20	3.23	0.32
Assortment satisfaction	3.06	3.04	0.40
Anticipated preference matching	3.25	3.21	0.61
Anticipated disappointment	2.31	2.34	0.43
Anticipated frustration	2.36	2.39	0.46
Anticipated satisfaction	3.16	3.14	0.24
Anticipated regret	2.49	2.53	1.19
Choice	0.37	0.32	3.76*, 3.76*
Consumption	37.11	35.95	0.37
Perceived satisfaction	3.49	3.50	0.06
Perceived regret	2.33	2.37	1.18
Cognitive effort	2.59	2.65	1.88
Reactance	3.04	3.07	0.58

* Indicate significance at $p<0.05$ and ** at $p<0.01$

From table 10 we see that the only significant effect of the binding period is the tendency that a somewhat larger percentage of respondents choose the offering. There are some tendencies in the expected direction, such as for anticipated regret, but these effects are far from significant. It is also necessary to keep in mind that the manipulation check for this variable was also only significant at the 5% level. Thus, it does not seem that removing binding periods has any large effects on consumer perceptions and choice.

Table 11: Main effects bundling versus a la carte

Bundling versus a la carte	Bundle	A la carte	F; d.f.=1507, $\chi 2$
Assortment variety	3.24	3.40	13.74**
Perceived freedom of choice	3.06	3.37	46.64**
Assortment satisfaction	3.00	3.10	4.29*
Anticipated preference matching	3.18	3.28	4.24*
Anticipated disappointment	2.35	2.30	1.24
Anticipated frustration	2.41	2.34	2.07
Anticipated satisfaction	3.11	3.19	3.68
Anticipated regret	2.54	2.48	2.48
Choice	0.32	0.37	4.43*, 4.43*
Consumption	42.16	31.10	34.91**
Perceived satisfaction	3.47	3.51	1.47
Perceived regret	2.35	2.34	0.10
Cognitive effort	2.70	2.55	11.63**
Reactance	3.19	2.93	39.87**

* Indicate significance at $p<0.05$ and ** at $p<0.01$

From table 11 we see that the a la carte offering has larger perceived variety and freedom of choice. Preference matching and satisfaction with the assortment is higher. There are no differences in the anticipated feelings, neither positively nor negatively. A la carte leads to more choice but lower consumption rates. Surprisingly, bundling requires more cognitive processing and as expected increases reactance.

Finally, the main effects of TV versus triple play were investigated. The results are shown in table 12.

Table 12: Main effects TV versus triple play

TV versus triple play	TV	Triple	F; d.f.=1507, $\chi 2$
Assortment variety	3.30	3.34	0.73
Perceived freedom of choice	3.24	3.18	1.79
Assortment satisfaction	3.05	3.05	0.00
Anticipated preference matching	3.25	3.21	1.03
Anticipated disappointment	2.33	2.32	0.06
Anticipated frustration	2.38	2.37	0.02
Anticipated satisfaction	3.18	3.12	3.01
Anticipated regret	2.52	2.49	0.42
Choice	0.36	0.32	2.75, 2.75
Consumption	18.89	55.56	497.68**
Perceived satisfaction	3.55	3.43	9.18**
Perceived regret	2.31	2.39	4.95*
Cognitive effort	2.50	2.75	32.35**
Reactance	3.05	3.06	0.08

* Indicate significance at $p<0.05$ and ** at $p<0.01$

From table 12 we see that there are no differences in the perceptions of the assortment for the two services. This suggests that we have managed to make the assortments and offerings comparable across services. There are, however, great differences in the choice and post-choice variables. We see that despite no differences in choice between the two services, the percentage of options consumed for TV-services is significantly smaller. This is due to the complementarity of the TV-services and the substitutability of the triple play service options. More surprising is that the perceived satisfaction for TV services is higher, perceived regret is lower and cognitive effort, as we have seen in above, is lower for TV-services. Thus, it seems that despite no differences in assortment offerings, TV services are perceived as simpler and more satisfactory to choose from in general. This is also supported by our findings that it was much easier to recruit respondents to the TV-service manipulation. Consumers seem more educated and more interested in TV-services and consider triple play services to be more complex and difficult to decide on.

5.2 Interaction effects, situational factors

Interaction effects may be studied at many levels with the large data set of this study. There is also a considerable number of dependent variables that may be included. To manage this complexity, we suggest reporting a full interaction effect model of all five-factor manipulations, but for a limited set of dependent variables. The following variables have been selected based on the most interesting findings in the main effect analyses above: Assortment variety, perceived freedom of choice, assortment satisfaction, anticipated satisfaction, anticipated regret, choice, perceived satisfaction, perceived regret, cognitive effort and reactance. In the following, only significant interaction effects are reported since the main effects are reported in section 5.1. For assortment variety, the following interaction effects are identified in table 13.

Table 13: Interaction effects – assortment variety

Interaction / Assortment variety	F d.f.=1477	Comment/direction
Size * A la carte	3.42*	Effect of a la carte greater for large ass.
Size * Service	5.60**	Effect of complex service (triple) positive for small, negative for large
A la carte * Service	13.21***	Effect of complex service (triple) positive for bundle, negative for a la carte

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

We see that there are interaction effects of assortment size, bundling versus a la carte and TV versus triple play services. For perceived freedom of choice and satisfaction with the assortment, the effects are exactly the same as for assortment variety. These findings suggest there are optimal assortment sizes for each of the service if the purpose is to maximize satisfaction with the

assortment. Also increases in the satisfaction with the assortment are obtained in different ways for the two services. The highest positive effect on satisfaction with the assortment is obtained by unbundling the large assortment for TV services, whereas unbundling the small assortment for this service leads to no or small negative effects. For triple play services, no effects are obtained by unbundling the assortment, here it is the size of the assortment that gives the assortment satisfaction effect.

For anticipated satisfaction there is only one interaction effect, the effect of size, bundle versus a la carte and TV versus triple play ($F=2.84$, $p<0.10$). The effect is only significant at the 10% level, but it is interesting to note that there are no 2-way interactions, only the 3-way interaction for this variable. It is even more extreme than the findings above in that it suggest that the only unbundling or a la carte effect that can be obtained on anticipated satisfaction is for TV services in large assortments. Almost all other effects are close to zero.

For anticipated regret the interaction effects are shown in table 14.

Table 14: Interaction effects – anticipated regret

Interaction / Anticipated regret	F d.f.=1477	Comment/direction
A la carte * Service	21.6***	Anticipated regret reduced by a la carte for triple play and increased for TV
Size * Price * A la carte * Service	2.80*	Effect of complex service (triple) positive for small, negative for large

* Indicate significance at $p<0.10$, ** at $p<0.05$ and *** at $p<0.01$

From table 14 we see that by offering a la carte for TV, anticipated regret is increased whereas it is reduced by the same change in assortment for triple play

services. This is regardless of assortment size. Consequently, it is important to notice that a la carte offerings have different effects on anticipated regret for different services. The 4-way interaction in table X is very complex but is caused by some of the same effects as that reported for the 3-way interaction above suggesting that in the high price situation, anticipated regret is even more sensitive to the unbundling of TV services in large assortments. This may be due to the dilemma between the positive effects on satisfaction with the assortment of the a la carte offering and the negative effects on anticipated regret of the same offering when the price risk is higher.

For choice, we find four interaction effects illustrated in table 15.

Table 15: Interaction effects – choice

Interaction / Choice	F d.f.=1477	Comment/direction
Price * Binding period	4.67**	Negative effect of binding occurs only at higher prices
A la carte * Service	3.79**	Negative effect of bundling occurs only for triple play
Price * Binding period * A la carte	3.79**	High price and no binding gives negative effect of a la carte, positive when binding is long.
Price * Binding period * Service	4.10**	Choice of triple play services suffers extremely from binding and high price

* Indicate significance at $p<0.10$, ** at $p<0.05$ and *** at $p<0.01$

From table 15 it is interesting to note that none of the interaction effects has anything to do with assortment size. The 2-way interactions are easy to interpret, but the two 3-way interactions are more difficult to explain. They, however, indicate that the high price/long binding situation should be paid specific attention to, particularly for triple play services.

As seen from the analysis of main effects, consumption shows different results than choice. For consumption, there are so many interaction effects, that for explanatory clarity we limit us here to 2-way interactions significant at the 5% level or lower. These are shown in table 16.

Table 16: Interaction effects – consumption

Interaction / Consumption	F d.f.=1477	Comment/direction
Size * A la carte	6.94***	The reduction in consumption from a la carte is larger for large assortments
Size * Service	7.90***	The reduction in consumption from large assortments is larger for TV
Price * A la carte	10.76***	The reduction in consumption from a la carte is larger for high price
A la carte * Service	94.48***	The reduction in consumption from a la carte is larger for TV

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

From table 16 we see that the negative effects on consumption of a la carte and large assortments are particularly obvious in two situations, for TV services and for high price situations.

Recall that for perceived satisfaction, only service produced a main effect. For perceived satisfaction, two interesting interaction effects are, however, found in table 17.

Table 17: Interaction effects – satisfaction

Interaction / Satisfaction	F d.f.=1477	Comment/direction
Size * A la carte	4.38**	Positive effects of a la carte is only obtained for large assortments
Size * A la carte * Service	12.36***	Negative effects of large assortments are obtained for small assortment bundled TV and large assortment a la carte triple play

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

While we found no effects of assortment size, positive or negative, of large assortments, we now see that this is nuanced as we find positive effects, but only for a la carte assortments. We also see that we find negative effects of large assortments, but only for bundled TV services and for a la carte triple play services. This is the first signs of negative choice effects we have identified that strongly suggest that negative choice effects are moderated.

For perceived regret, only one interaction effect was found, the 4-way effect of size, binding period, a la carte and service. It is difficult to interpret such higher order effects in other ways than that there are unique effects on regret from particular services in particular offerings.

For cognitive effort, two 3-way interactions were found. These are reported in table 18.

Table 18: Interaction effects – cognitive effort

Interaction / Cognitive effort	F d.f.=1477	Comment/direction
Price * Service* Binding	6.64***	Low price TV offerings without binding has low effort, not for triple
Price * Service* A la carte	4.09**	Low price bundled TV offerings has low effort (familiar), not for triple

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

The findings in table 18 suggest that TV offerings with low prices and without binding period or in familiar bundling packages seem very familiar and require little cognitive effort. Any deviation from this situation requires considerably more cognitive processing.

Finally, the interaction effects on reactance are shown in table 19.

Table 19: Interaction effects – reactance

Interaction / Reactance	F d.f.=1477	Comment/direction
Size * A la carte	4.71**	Reduction in reactance from a la carte greater in large assortments
Service* A la carte	31.88***	Only TV has a reduction in reactance from a la carte

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

As seen from table 19 we find that the reduction in negatively perceived reactance from offering services a la carte is greater when the assortment is large. In addition, we see that TV services are rather unique. The reduction in reactance that is obtained from offering this service a la carte cannot be obtained by doing the same with triple play services.

5.3 Main and interaction effects, individual factors

To perform more specific analyses on the effects of our manipulations on choice and to identify potentially moderating effects more systematically, the number of relevant independent variables must be reduced. We suggest focusing on four choice variables for now: A new variable capturing perceived variety by three items, the single item variable assortment satisfaction, choice and perceived satisfaction. The perceived variety variable showed a coefficient alpha of 0.87 and fitted well when introduced into the conceptual structure of the multi-item variables shown in table X.

Two individual factors have been focused in our study, experience and the maximization trait. A separate analysis of these factors is reported in tables X through X using analysis of variance. We here focus on three of the dependent variables listed above, perceived variety, choice and perceived satisfaction. All analyses are conducted on median split individual variables.

Perceived variety is naturally affected by assortment size ($F=129.53$, $p<0.01$). Looking at potential moderating effects of experience or maximization, we found no interaction effects with assortment size. We did, however, find an interaction effect of maximization and experience ($F=2.75$, $p<0.1$) indicating that experienced maximizers and inexperienced satisfizers are the least sensitive to perceived variety. Thus it seems that convincing these two very different consumer groups that variety is high is most difficult. Experienced maximizers may require extremely large assortments and inexperienced satisfizers perhaps "just don't care". However, this effect is not strong.

The effects of experience, maximization and assortment size on choice are reported in table 20. Only significant effects are reported.

Table 20: Individual effects – choice.

Interaction / Choice	F d.f.=1477	Comment/direction
Size	5.13**	Main effect of size
Experience	3.18*	Main effect of experience
Size*Maximization*Experience	4.57**	Among satisfiers size affects choice positive for experienced, negative for inexperienced. Among maximizers size affects choice positively regardless of experience

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

As seen from table 20 we find main effects on choice only for assortment size and experience. There are no 2-way interactions, but a very interesting 3-way interaction is found indicating that among satisfiers, size affects choice positively for experienced consumers and negatively for inexperienced consumers. Thus, negative choice effects are found only for inexperienced consumers not characterized by maximization. Among maximizers, assortment size affects choice positively regardless of experience.

For perceived satisfaction, we only found one main effect, the effect of experience (F=10.74, p<0.01). There are no interaction effects. Thus, potentially negative effects of assortment size on perceived satisfaction could not be explained by or be moderated by individual factors. This suggests a combination of situational factors and individual factors are required for negative effects of assortment size to be found on satisfaction.

5.4 Model based analyses of situational and individual effects on choice

The first step in our analysis is to look at the relationship between assortment size and perceived variety and assortment satisfaction. These relationships may

be moderated by situational as well as well as individual factors. We found that the situational factors affecting perceived variety were service and a la carte. Neither price nor binding period could affect these relationships. The main effects were only from assortment size and a la carte. An analysis of variance was used resulting in a model explaining 12.3% of perceived variety. Using median split, we tested the direct and moderating effects of experience and maximization on perceived variety together with situational factors. Maximization had no effects whatsoever on perceived variety, and experience had no main effects on perceived variety, but considerable interaction effects. The significant effects from this analysis are shown in table 21.

Table 21: Situational and individual effects – perceived variety

Interaction / Perceived variety	F d.f.=1477	Comment/direction
Size	159.14***	Main effect of size
A la carte	26.29***	Main effect of a la carte
Size * Service	7.97***	Positive size effect much greater for TV
A la carte * Service	17.94***	A la carte effect only for TV
Size * A la carte * Experience	10.23***	Experienced users extremely sensitive to small assortments, particularly when bundled. Inexperienced insensitive to a la carte when assortment is small

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

In table 21 we find the same size and a la carte effects as above in addition to the 2-way interaction effects found above. We do, however find an additional 3-way effect of experience suggesting that experienced and inexperienced react differently to a la caret offerings when the assortment is small. Experienced consumers react negatively (when it comes to perceived variety) on small, bundled assortments whereas the inexperienced do not react to unbundling when

the assortment is small. Experienced consumers are also less sensitive to unbundling when the assortment is large. This, it seems that the experienced consumers are more sensitive on the negative side of the perceived variety scale than on the positive side.

Looking at assortment satisfaction, as for the analyses in sections 5.1 and 5.2, we find the same effects as for perceived variety. The relationship between assortment satisfaction and perceived variety is also very strong, perceived variety explaining 46% of the variance in assortment satisfaction ($t(b)=36.15$, $p<0.01$).

For choice we found main effects of all situational variables except service. When adding individual factors to the analysis, the analysis would include 7 two-level factors. This would result in rather small cell sizes ($1509/2^7= 11.8$). Thus, the analysis becomes somewhat unstable. A possible solution is to restrict the analysis to 2-way or 3-way interactions, thereby better controlling the number of degree of freedom. As an exploratory analysis, we have, however, used the full factorial model. Significant effects from this exercise are shown in table 22.

Table 22: Situational and individual factors – choice

Interaction / Choice	F d.f.=1477	Comment/direction
Size	3.18*	Situational main effect
Price	6.11**	Situational main effect
Binding period	2.92*	Situational main effect
A la carte	6.66***	Situational main effect
Service	3.2*	Situational main effect
Price * A la carte	3.19*	Situational 2-way interaction
A la carte * Service	6.59***	Situational 2-way interaction
Size * Experience * Maximization	2.95*	Higher order includes individual effects
Price * Service * Maximization	7.49***	Higher order includes individual effects
Binding * A la carte * Max.	3.05*	Higher order includes individual effects
Binding * Experience * Max.	5.02**	Higher order includes individual effects
A la carte * Service * Max.	3.14***	Higher order includes individual effects
Service * Experience * Max.	3.05*	Higher order includes individual effects
A la carte * Service * Experience	2.72*	Higher order includes individual effects
Price*Binding*A la carte*Max.	2.90*	Higher order includes individual effects
Size*Price*Service*Max.*Exp.	3.37*	Higher order includes individual effects
Size*Binding*Service*Max*Exp.	3.06*	Higher order includes individual effects

* Indicate significance at $p<0.10$, ** at $p<0.05$ and *** at $p<0.01$

One should be extremely careful in interpreting the individual effects here. We have instead used this analysis as an indication of what effects to include in a full choice model including situational and individual effects. We see that all situational factors are represented among the significant main effects and no individual factors (5 effects). Furthermore, we see that there are two significant 2-way interactions, both are situational factors only. Finally, we see that there

are 10 significant higher order effects, all of these include at least one individual factor. Thus, the interactions of individual factors are at the higher order and they are complex.

Consequently, we decided to investigate these effects by adding each of the situational factors to the model including size, experience and maximization. When adding price to the model, the results shown in table 23 could be reported.

Table 23: Situational and individual factors – choice, adding price

Interaction / Choice	F d.f.=1477	Comment/direction
Size	4.66**	Situational main effect
Price	7.73***	Situational main effect
Experience	3.45*	Individual main effect
Size * Experience * Maximization	3.89**	Same effect as in section X.3

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

From table 23 we see that the effects are only main effects and the same interaction effect as found in section 5.3. Thus, there are no interaction effects of size, price and individual factors on choice.

When adding binding period to the model, we find the results reported in table 24.

Table 24: Situational and individual factors – choice, adding binding period

Interaction / Choice	F d.f.=1477	Comment/direction
Size	4.50**	Individual main effect
Experience	2.88*	Individual main effect
Binding * Maximization	3.84**	Maximizers more sensitive to binding
Size * Experience * Maximization	4.55**	Same effect as in section X.3
Binding * Experience * Max.	9.59***	Experienced satisfizers react positively to binding and experienced maximizers react extremely negatively

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

As seen from table 24 we see that the maximizers are more sensitive to binding periods, but we also see that the experienced satisfizers are an "odd sort" because they actually react positively to binding period. However, these effects are independent of assortment size where we only find the same interaction effect of size, experience and maximization as in section 5.3.

When adding a la carte to the model we find the results reported in table 25.

Table 25: Situational and individual factors – choice, adding a la carte

Interaction / Choice	F d.f.=1477	Comment/direction
Size	5.47**	Situational main effect
A la carte	4.86**	Situational main effect
Experience	2.80*	Individual factor main effect
Size * Experience * Maximization	4.83**	Same effect as in section X.3
Size * A la carte * Experience	3.81*	Experienced very sensitive to size under bundling, inexperienced very sensitive to size under a la carte

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

From table 25 we see that the main effects and one of the interaction effects are well known from earlier analyses. We find one additional effect indicating that experienced and experienced users are sensitive to assortment size (positively) under different situational conditions. Inexperienced appreciate large assortments primarily in a la carte offerings, whereas experienced consumers appreciate large assortments so much that they are less sensitive to whether these assortments are offered in bundles or a la carte.

Finally, when adding service to the analysis of size and individual factors, the results are as shown in table 26.

Table 26: Situational and individual factors – choice, adding service

Interaction / Choice	F d.f.=1477	Comment/direction
Size	4.18**	Situational main effect
Size * Experience * Maximization	3.57*	Same effect as in section X.3

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

We see from table 26 that the same effects that we found without including service are found. Thus, there are only interaction effects of service and size when other situational factors are introduced at the same time.

We found in section 5.2 that satisfaction was influenced by service only in the analyses of main effects. Thus, following the principles applied for perceived variety above, we focus on the potential interaction effects of size, service and individual factors. This analysis showed only significant main effects of service and experience. Thus, the effects of assortment size on satisfaction are much more complex. Testing the full model with all situational and individual factors, we find that a number of complex interaction effects are significant. This analysis is as mentioned above highly unstable due to small cell sizes. More thorough analyses of each individual service could thus be conducted.

5.5 Findings unrelated to assortment size effects

Of the main effects observed above, the effects of binding period stand out as rather different. Because this manipulation is particularly interesting with respect to the importance of the mediating mechanisms of anticipated regret and reactance in choice, we also elaborate somewhat more on this variable in this section.

From section 5.2 we found that there were no other main effects of binding period than a negative effect on choice. Looking at the interaction effects, however, several observations of interest were made. All these, however, also included size effects. In this section we will focus on the interaction effects without their interaction with size effects. Because many of the situational interactions have already been analyzed in section 5.3, we start with the individual factors and focus on choice and satisfaction effects.

The significant effects in the analysis using choice as the dependent variable are shown in table 27.

Table 27: Individual factors – choice and binding

Interaction / Choice	F d.f.=1477	Comment/direction
Experience	3.37*	Experience main effect
Binding * Maximization	4.06**	
Binding * Experience* Max.	9.81***	

* Indicate significance at p<0.10, ** at p<0.05 and *** at p<0.01

As seen from table 27 we find the main effect of experience also identified in section 5.3. In addition, we find two very interesting interaction effects. First, we find that maximizers are much more sensitive to long binding periods. Second, we found this effect to be strongly moderated by experience in that experienced satisfizers *increase* their tendency to choose when the binding period is longer whereas experienced maximizers strongly reduced their tendency to choose. The inexperienced consumers generally reduced their tendency to choose under longer binding period conditions, but not so very much. We also tested if adding price to the model changed these findings, but the findings were just the same. Thus, it seems this is a finding that is explained by the personality trait captured by maximization. The explanatory mechanism, though, is still unresolved, for example, if this is something that is explained by regret mechanisms or reactance mechanisms. Adding anticipated regret to the model shows significant main effects and adds 47% to the explained variance whereas adding reactance adds 367% to the explained variance and gives a model with 7.9% explained variance. The relationship between maximization and anticipated regret is positive and strong (t=21,72, p>0.01, R^2=2.8%) and even stronger for reactance (t=22.26, p>0.01, R^2=3.7%). Further analysis of the moderated mediation of binding period through anticipated regret and reactance

should be conducted, but this is beyond the scope of this report and will be reported in individual papers.

Looking a satisfaction, we the strong main effect of experience also reported above. We find no interaction effects with individual factors and binding on satisfaction. Combining the individual factors with other situational factors except size (analyzed in section 5.3), we find an interaction effect of price and maximization ($F=3.93$, $p<0.05$) suggesting that maximizers' satisfaction is more sensitive to price. We also find interaction effects of a la carte, experience and maximization. First it suggests experienced value a la carte much more than inexperienced ($F=3.56$, $p<0.1$) and experienced maximizers value a la carte positively whereas inexperienced satisfizers value a la carte negatively ($F=2.99$, $p<0.1$). We do, however also find an interaction of a la carte, binding and maximization ($F= 4.01$, $p<0.05$), showing that the positive effects of increasing the binding period reported above are obtained for a la carte offerings to satisfizers and that increasing the binding period for bundled offers to maximizers has no effect on satisfaction. Finally, we also find an interaction effect of maximization service and binding period ($F=3.07$, $p<0.1$) showing that the positive effect of binding period on satisfaction is obtained particularly for satisfizers in the TV market and, to a much less extent though, for maximizers in the triple play market. This suggests mechanism of ego depletion may also be involved when trying to explain these results (Baumeister, et al. 2008).

6. CONSLUSIONS AND IMPLICATIONS

In chapter 4 and 5 we report the method and findings of a 5-factor quasi-experimental study of assortment size effects on assortment perceptions, choice and post-choice satisfaction. Analysis of applied and developed measures showed acceptable reliability and validity. The manipulations used in the 5-factor study proved to be operationalizations of the intended constructs for four of the manipulations, whereas the service manipulation used mainly to avoid mono-operationalization could also be interpreted as a manipulation of service complexity. The manipulated variables were all situational variables. A number of individual traits were measured that could be used as moderators in analyses of assortment effects.

Research question 1

Most analyses were conducted applying analysis of variance. For the situational factors manipulated in the study we found that assortment size had a positive main effect on assortment perceptions and choice, but no effect on post-choice satisfaction. Price had no effect on perceptions of assortment variety but influenced assortment satisfaction negatively. It also affected choice negatively, but had no effect on post-choice satisfaction. It did, however, affect cognitive effort and perceived regret positively (more effort and regret for higher prices). Binding period only affected choice and the effect was rather weak. Finally, a la carte offerings affected both assortment perceptions and choice positively, but again had no effect on post-choice satisfaction. It did however affect cognitive effort and reactance negatively (less need for cognition and less reactance for a la carte). Thus, it did not seem that size and a la carte offerings affected choice and cognitive effort in the negative ways suggested by some of the "too-much-choice" literature. We also tested the effect of service and found that assortment perceptions and the general tendency to choose did not vary systematically between our services. Satisfaction and cognitive effort, however, varied between

the two services. Thus, the two services seem well suited to investigate moderated effects of assortment size.

Research question 2

Interaction effects were investigated separately for situational (manipulated) factors and individual factors. The analyses focused on assortment perceptions, choice and post-choice satisfaction. For assortment variety perceptions we found that the service and the a la carte situational factors interacted with size to produce perception effects. For example, we found that the complexity of the service moderated the assortment size effects on perceived variety. We also found that size effects on perceived variety depended on whether the service was offered bundled or a la carte.

For choice we found no interaction effects of assortment size and other situational factors. Thus, even though many interesting interaction effects of the situational factors could be identified, we could not conclude that any negative assortment size effects could be obtained through situational moderation. We did, however find several moderated negative effects of size on consumption defined as the relative number of options chosen from the presented assortment. Even though the consumption measure was relative we could not conclude that these negative effects of size were opposing traditional microeconomic theory of choice as proposed in many "too-much-choice" studies.

For post choice satisfaction, we found interaction effects of size and a la carte offerings. The 2-way interaction between the variables did not produce a "too-much-choice" effect on satisfaction, but when controlling for service such an effect could be observed. For example, when comparing small and large assortments for bundled TV services and for a la carte offered triple play services, negative effects of large assortments on satisfaction could be observed.

Research question 3

The individual factors were tested in a similar way for interaction effects. Here, we found no interaction effects including assortment size on perceived variety. Thus, we could not establish that perceived variety was moderated by experience and maximization.

Looking at choice we found an interaction effect of assortment size, experience and maximization. It showed that "too-much-choice" effects could be observed for inexperienced satisfizers. For all other groups, choice was unaffected or affected positively by assortment size. Thus, we found a moderated "too-much-choice" effect for these individual traits combined. On satisfaction, we found no interaction effects of individual factors. Thus, potential negative effects of assortment size on satisfaction are only moderated by situational factors.

Other interaction effects

Combining situational and individual factors produces very complex models and interaction effects. We did find a number of interaction effects combining situational and individual effects on perceived variety. Thus, it seems that while individual factors alone did not moderate the effect of size on perceived variety, it does so in combination with situational factors, in our case the offering of a la carte assortments versus bundled assortments.

For choice we found a number of higher order interaction effects including a combination of situational and individual factors. These effects are extremely complex and call for further investigation of the individual services we have studied. When conducting separate analyses of some of the effects, we could not find easily observable "too-much-choice" effects. A number of other interaction effects, such as experienced satisfizers reacting positively to increasing binding

periods, could be found, but for effects including assortment size, they added little explanatory help beyond that found by analysing individual factors and size alone. The similar pattern appeared when trying to investigate the higher order effects of situational and individual factors on post-choice satisfaction. Again, this calls for separate analyses of each service and treatment condition in our quasiexperiment.

The scope of this report limits our opportunity to explore all these issues, but we analyzed some of the non-size effects that could be observed for manipulations in binding period. We found that there were consumers that valued longer binding periods measured by both their tendency to choose and their perceived satisfaction. These consumers were also particularly sensitive to other situational factors, in particular the offering of services a la carte versus in bundles.

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