“Spoiled for Choice: Consumer Confusion in Internet-Based Mass Customization”

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SPOILED FOR CHOICE: CONSUMER CONFUSION IN INTERNET-BASED MASS CUSTOMIZATION

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Abstract

Companies are challenged to shift production and marketing strategies from focusing on market segments to making individually customized offers. Mass customization, however, leads to a tremendous extension of the configuration possibilities and in turn choice. As a consequence, customers can easily be overwhelmed with choice and information which can negatively affect decision behavior. In marketing literature, this phenomenon has been described as consumer confusion. It leads to coping strategies such as to abandon the purchase decision, postpone the purchase, seek additional information, delegate the decision, etc. In this paper, we investigate the impact of the consumer's product knowledge and of the vendor's usability of the website on consumer confusion in the context of internet-based mass customisation. Then, the impact of consumer confusion on five coping strategies (share/delegate the decision, seek additional information, narrow down the choice set/choose the standard model, abandon the purchase, and choose low-price offers) is tested using structural equation modelling (SEM) with Partial Least Squares (PLS). We report the results of an experiment (N=180), where subjects were confronted with an online-buying situation of a mass-customized product (laptop) using a configuration tool of the vendor.

Kew words: Mass customisation, configuration tools, consumer confusion, coping strategies, usability, product knowledge.

1. Introduction

Over the past decade, companies have been increasingly challenged to shift production and marketing strategies from focusing on market segments to making individually customized offers (Simonson 2005) while at the same time they have been forced to reduce production and logistics costs. Envisioned by Alvin Toffler in his book "Future Shock" (1971), mass customization became a new paradigm for industries to provide individualized products and services while maintaining near mass production efficiency (Jiao et al., 2003). The term was coined by Davis (1987) and the idea attained wide popularity with Pine's (1993) book "Mass Customization".

Mass customization is enabled by new manufacturing technologies (CIM, flexible manufacturing systems) which reduce the trade-off between variety and productivity (Franke and Piller, 2003). This phenomenon, described as the "customization-responsiveness squeeze" (McCutcheon et al., 1994), is addressed with four basic approaches: product design (e.g. modularity), process design (e.g. cellular manufacturing), demand management (e.g. improved forecasting procedures) and supply chain management (e.g. the company alters purchasing contracts to provide for quick delivery). The main characteristic of mass customization is the interaction with the customer to obtain specific information, and to translate the customer's needs and desires into a concrete product or service (Zipkin, 2001). Here, the interaction systems, known as configurators, choice boards, design systems, toolkits, or co-design platforms (Franke and Piller, 2003) are of primary importance as they guide the user through the configuration process.

Whereas the technological aspects and implementation issues are relatively well researched (Jiao et al., 2003; Salvador and Forza, 2004), marketing researchers are just beginning to explore mass customization from a consumer perspective (Dellaert and Stremersch, 2005; Liechty et al., 2001).

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The basic research questions are how consumers handle choice and how they experience the integration into configuration, and what determines their satisfaction with mass customizations. From a marketing perspective, there are two major issues that need to be addressed in mass customization.

First, marketing needs to clearly identify the customers' preferences. Recent research in marketing suggests that buyers often do not have well-defined preferences before the buying situation, preferences instead are often constructed when customers are faced with the need to make a decision (Bettman et al., 1998). Preferences are constructed and contingent on the framing of options (e.g. Levin and Gaeth, 1988), the characteristics of the decision task (e.g. Tversky et al., 1988), and the choice context (Huber et al., 1982). This simultaneously poses a threat and an opportunity to product configuration activities. Simonson (2005) argues that the fact that customers' preferences are often constructed rather than revealed has some implications for the effectiveness of customizing offers to individual tastes. Offering individualized products is of greatest value to the customer, when "(1) customers have well-defined and reasonably stable preferences, (2) when customers themselves cannot easily define their precise preferences or identify the available options that offer them the best fit; (3) by gathering information about individual customers, marketers can reveal preferences and use the information to customize their offers given those preferences; and (4) customers can recognize and respond favourably to offers that fit their revealed preferences" (Simonson, 2005). However, especially when customers do not have stable, well developed preferences and have no clear insight into preferences, uncertainty about the customers' (latent) needs can easily lead to an overwhelming number of attributes and characteristics.

This leads to the second challenge in mass customisation: Configuration without confusion. A situation where requirements are not clearly and explicitly defined can induce the vendor to include too many attributes with too many characteristics and consequently to overextend the customers' ability to deal with the offer. Audi's car configurator, for example, contains 64 decision layers (e.g. engine, wheels, seats) for which there are a large number of options to choose from (Herrmann and Heitmann, 2005). Choice seating gallery, a customized sofa shop, lets consumers choose from 500 styles, 3,000 fabrics, and from 350 leathers which can be combined into the individualized sofa with about 150,000 different fabric sofas and 17,500 leather sofas (Huffman and Kahn, 1998). If all the possible variations of Idtown.com watches were displayed in a shop, this shop would have the size of Luxembourg and if all variants of Customatix.com sport shoes should be displayed, one would need 7,000 planets of the size of the earth (Franke and Piller, 2003). Hence, mass customization leads to a tremendous extension of the configuration possibilities and in turn choice (Huffman and Kahn, 1998). As a consequence, customers can easily be overwhelmed with choice and information. The high similarity and the enormous amount of product-related information can produce information overload, which decreases the customers' ability to make a good purchase (Jacoby et al., 1974; Rudolph and Schweitzer, 2003; Walsh, 2002). Huffman and Kahn (1998) argue that in mass customization this phenomenon is particularly relevant and label it "mass confusion" (see also Piller et al., 2005).

We expect that the phenomenon of consumer confusion is particularly relevant in mass customization. Therefore, this paper will investigate the impact of a construct we lable "configuration overload" on five coping strategies. Configuration overload occurs when consumers perceive to be confronted with too many options in the configuration task, when consumers feel that the variety offered overextends their ability to make a decision and as a consequence feel that they are not able to make a reasonable decision.

In the following section we briefly review the literature on consumer confusion. We then adapt the concept of consumer confusion to mass customization where confusion is primarily caused by the enormous amount of configuration possibilities. We discuss consumers' product knowledge and the configurator's usability as antecedents of configuration overload and consumer's reactions to confusion. The hypotheses are then tested in an experiment, where an online configuration and buying situation were simulated.

2. Consumer Confusion

In the last years, products and services have proliferated at an enormous rate. Customers have more options available than ever. The emergence of the Internet, as a new distribution channel, even supported the extension of assortments and product lines. Due to its information-intensity, the Internet also presents a fundamentally different environment for consumers (Hoffman and Novak, 1996). Some researchers argue that the Internet helps consumers to analyze large quantities of product-related information, enables comparison shopping and ultimately leads to better decision making (Evans and Wurster, 1999).

Research in psychology (e.g. Miller, 1956) and marketing (e.g. Jacoby et al., 1974) however, suggests that the processing capacity of human memory is limited. In his seminal study, Miller (1956) argues that the processing capacity of short-term memory is limited to the magical number seven (plus or minus two) chunks of information. If more than these seven chunks of information are provided, the information processing level begins to decrease. Hence, if information becomes excessive, it negatively influences decision-making (Jacoby et al., 1974; Malhorta, 1982).

Also, the notion of the modern society "the more choices, the better" is increasingly questioned in psychological studies (Iyengar and Lepper, 2000). An average small American supermarket carries 285 varieties of cookies, 85 flavors and brands of juices, and 95 varieties of chips. Customers there face 230 soup offerings, 120 different pasta sauces, 275 varieties of cereal, and 175 types of tea bags. Overall, supermarkets carry more than 30,000 items, and 20,000 new products are introduced each year (Schwartz, 2004). Schwartz concludes that some choice is undoubtedly better than none, but more choice is not always better than less. When consumers are exposed to excessive choice and excessive product related information, they can get confused and react with feeling of stress, frustration and sub-optimal decision making (Mitchell and Papavassiliou, 1999).

Turnbull, Leek and Ying (2000) define customer confusion as "consumer failure to develop a correct interpretation of various facets of a product/service, during the information processing procedure. As a result, this creates a misunderstanding or misinterpretation of the market" (p. 145). Figure 1 shows a basic SOR-model for the construct (adapted from Rudolph and Schweitzer, 2003), which has also been tested in online-settings (Matzler et al., 2005; Matzler and Waiguny, 2005).

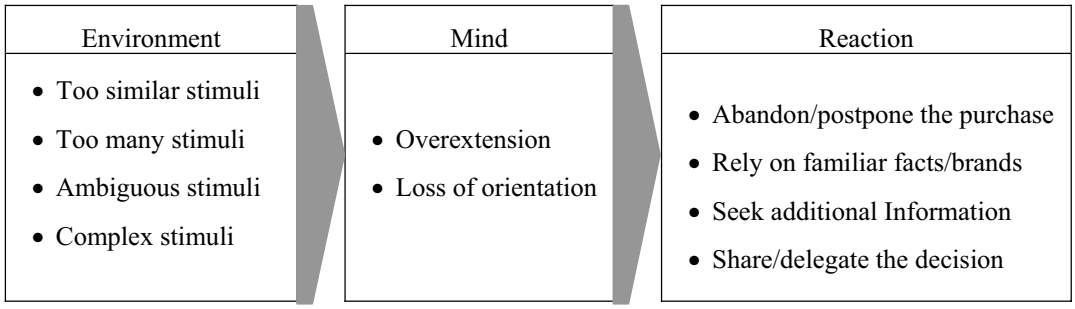

Fig. 1. Basic model of consumer confusion (adapted from Rudolph and Schweitzer, 2003)

A situation where consumers are swamped with information and lose orientation can be provoked by too similar, too complex, too ambiguous, and too much of products/services and information on them, e.g. advertisements, product descriptions etc. (Rudolph and Schweizer, 2003). Literature suggests that there exist three dimensions of consumer confusion (Mitchell and Papavassiliou, 1999; Mitchell et al., 2004; Walsh, 2002; Wiedmann et al., 2001):

- similarity confusion,
- overload confusion, and
- unclarity confusion.

Similarity confusion is defined as "a lack of understanding and potential alteration of a consumer's choice or an incorrect brand evaluation caused by the perceived physical similarity of products or services" (Mitchell et al., 2004). Similarity confusion can be provoked by brand similarity (Walsh and Hennig-Thurau, 2002) when competitors imitate the brand or when quality or product attributes of different alternatives are identical. Furthermore, similarity confusion is also a result of similarity in advertisements and commercial messages, i.e. in information provided (Kent and Allen, 1994; Poiesz and Verhallen, 1989).

Overload confusion relates to the fact that consumers are confronted with an overly information rich environment. This information overload inhibits the customer to process the information and to fully understand, and be confident in the purchase situation (Mitchell et al., 2004). Information overload is caused by the increase of alternatives and an increase of decision-relevant information on these alternatives.

Unclarity confusion finally, occurs when customers are "forced to re-evaluate and revise current beliefs or assumptions about product or purchasing environment" (Mitchell et al., 2004). Unclarity confusion, for example, emerges when customers receive new, valid or false information that is contradictory or does not coincide with present knowledge. Here, it is quality of information not the quantity of information that leads to customer confusion (Wiedmann et al., 2001). Unclarity confusion is typically the result of ambiguous, unclear or contradictory information (Mitchell et al., 2004; Turnbull et al., 2000) about the products or too complex products (Cohen, 1999; Rudolph and Schweizer, 2003).

In mass customization, customers are often confronted with an enormous amount of product attributes and product-related information. If there are too many, too similar, ambiguous or unclear options, customers can be confused within the configuration task, a phenomenon we describe here as "configuration overload". For the purpose of our study, we conceptualize configuration overload is a consumer's perception of a configuration task where (1) the configuration task is too complex, (2) the information provided is not clear, (3) the information or options are unsettling, and (4) information or options are too similar and the customer lacks the ability to discriminate between them. There are too important drivers of configuration overload: The usability of a website and the customer's product knowledge.

The influence of the attributes of a website on buying behavior has been the focus of several studies and it has been shown that perceived usability can strongly influence shopping behavior (e.g. Flavián et al., 2005; Pavlou, 2003) and consumers' satisfaction (Kim and Eom, 2002). In this study, we define usability as the perceived ease of navigating the site and the unambiguous presentation of information. If a website is structured in a way that makes it difficult to handle and to find the information a customer is looking for, it will lead to a higher level of consumer confusion, thus we propose:

H1: Usability of a website is negatively related to configuration overload.

As has been stated above, consumer confusion is given in a situation where consumers are swamped with information and lose orientation. This can be provoked by too similar, too complex, too ambiguous, and too much of products/services and information about them, e.g. advertisements, product descriptions etc. (Rudolph and Schweizer, 2003). Hence, it can be concluded that consumers with little product knowledge will easier get confused than consumers with extensive product knowledge. Consumers that have little product-related knowledge will find it more difficult to select relevant information, understand the information, and integrate the information into their cognitive schemata and compare product-related information. Therefore we expect that

H2: Product knowledge is negatively related to configuration overload.

Customers respond to confusion, whether it is conscious or unconscious, with several confusion reduction strategies. It is to note that customers who are aware that they are confused are feeling a higher risk within the purchase decision (Turnbull et al., 2000). Hence, confusion reduction strategies and risk reduction strategies are employed (Turnbull et al., 2000; Wiedmann et al., 2001).

Mitchell & Papavassiliou (1997) investigated confusion reductions strategies for the watch market in the UK and Drummond (2004) for the market of higher education. Eight forms of reduction strategies were found: 1) do nothing and ignore confusion, 2) abandon the purchase, 3) postpone the purchase, 4) clarify the buying goals, 5) seek additional information, 6) narrow down the choice set by important criteria, 7) share the decision, 8) delegate the decision. Other studies found that consumer confusion influences post purchase behaviour such as loyalty, satisfaction, and trust (Walsh and Hennig-Thurau, 2002).

Mitchell & Papavassiliou (1999) argue that some of the reduction strategies are highly interrelated: "confused consumers can often involve another person (i.e. spouse, family member, friend) in the purchasing decision or even delegate the task to them completely)" (p. 329). Therefore, in our study we did not distinguish between decision sharing and delegating. "Do nothing" obviously can not be considered as a reduction strategy because a person will do nothing only if the confusion is felt below the level of what is tolerable (Mitchell and Papavassiliou, 1997). In a product configuration setting, "postpone the purchase" and "abandon the purchase" can be subsumed into one coping strategy as both options result in the decision not to buy at this moment. "Narrow down the choice set by important criteria" basically means that customers rely on familiar brands (Rudolph and Schweizer, 2003). Considering the specific task in our case, relying on familiar brands seemed not to be a relevant option as customers can not choose between brands, but only between components. "Narrow down the choice set" therefore could mean that customers reduce the choice set by focussing on the lowest or highest price or choose the default model. Therefore, in our study we relable this reduction strategy to "choose the low price components" and "choose the default model". In our study, we focus on behavioural outcomes of customer confusion. "Clarify the buying goal" is a cognitive reaction to confusion and leads either to abandon the purchase, search additional information, delegate the decision or narrow down the choice set. Thus we investigate five reduction strategies and propose the following hypotheses:

H3: Configuration overload is positively related to sharing the decision.
H4: Configuration overload is positively related to additional information seeking.
H5: Configuration overload is positively related to choosing the standard model.
H6: Configuration overload is positively related to abandon the purchase.
H7: Configuration overload is positively related to choosing the lowest priced components.

3. Study

Method, sample and measures

To test the dimensions of customer confusion and the coping strategies, an experiment has been carried out. To guarantee homogeneity among subjects a sample of 180 students from different faculties was chosen: most students came from business administration 58%, followed by journalism students (11%), information management students (10%), computer science students (9%) and psychology students (6%). Among others (6%) are students from mathematics, pedagogy and literature studies. 43% of all test persons were female and 57% male, with an average age of 23 years. 77.3% of all subjects assessed their own computer skills with very good or good and 80.3% rated their internet skills with very good or good, therefore the homogeneity of the sample can be regarded as fulfilled.

The experiment was carried out in computer labs of an Austrian university, where students had to configure their own notebook on the internet homepage of a notebook provider. The execution time for the experiment was scheduled with forty minutes and students received a payment of 5€ for their participation. Trained investigators introduced the students to the situation and gave the instructions for the procedure: First, students had to read the written task which has been handed out in advance at the computer desks, saying that they were in the situation to have just begun their studies at university and were now faced with the necessity of having an own notebook which they would have to buy from the savings they earned at a job during the vacations. A friend mentioned

the website of Chiligreen, a personal computer provider, where they could configure their own notebook.

In a typical configuration process customers may choose from 17 different notebook series and from each series at least two basic models are available. This means that customers already at the notebook level have a vast variety of options, in our case 38 options of basic models. Entering in one of the basic models, customers can configure their own notebook by choosing different components to add or to leave aside. 8 of 17 notebook components were flexible providing at least 2 options each. Furthermore customers can choose to include also several accessories for the notebook. All variations from the basic model have impact upon the basic price, in the right column the price change is directly indicated by showing the additional amount of the chosen component.

Students had 10 minutes time to browse the website of the vendor. After that they were invited to change the homepage and to fill out the online questionnaire. The first part of the questionnaire was dedicated to the measurement of applied coping strategies according to Walsh et al. (2004) on a 5-point Likert-scale, phrased in "After testing and experiencing the configuration possibilities at Chiligreen.at, what would you do now?" The second part was focused to capture the perceived confusion evoked during the configuration process. These questions were mainly borrowed from Walsh et al. (2004) and all answers were assessed on a 5-point Likert-scale anchored with "strongly agree" to "strongly disagree". Product knowledge was measured on 5-point Likert-scales with six questions like "I know thus much about notebooks that I could give advice someone when purchasing a notebook" or "I would characterize myself as an expert in notebooks". Usability was assessed with questions that measured whether the website was fast and it was easy to get orientated, whether the design of the website was confusing or contained elements that had a disturbing effect and whether it was easy to handle. Product knowledge as well as usability-items were anchored with "strongly agree" to "strongly disagree". The wordings of all items of the questionnaires are contained in Table 1.

In the last part of the questionnaire, demographic data and information about the internet and computer skills of students were collected. Students were also asked whether they considered the situation to be realistic and whether or not the task was easily understandable to them – both questions were confirmed by the majority of participants with 93.3% considering the situation as very realistic or realistic, and to 95.5% the task was very easily or easily understandable.

Data Analysis and Results

The relationships among the constructs were analyzed through structural equation modelling using the Partial Least Squares (PLS) approach. The software used was SmartPLS (Hansmann and Ringle, 2004). A PLS model is usually analyzed and interpreted in two stages (Hulland, 1999). At the first stage, the measurement model was tested by performing validity and reliability analyses on each of the measures of the model. At the second stage, the structural model was tested by estimating the paths between the constructs in the model, determining their significance as well as the predictive ability of the model. This sequence is followed to ensure that reliable and valid measures of the constructs are used before conclusions about the nature of the construc relationships are drawn (Hulland, 1999).

Reliability and validity

Reliability and validity were tested looking at: 1) individual item reliabilities, (2) the convergent validity of the measures associated with individual constructs, and (3) discriminant validity.

The item loadings are reported in Table 1. All items have loadings above .5, and only five out of 27 items have a loading lower than .7. Thus, item reliabilities are high. Convergent validity was measured using Fornell and Larcker's (1981) measure of internal consistency, which is superior to Cronbach Alpha since it uses the item loadings obtained within the nomological network. Internal consistency (IC) is reported in Table 1 and with values above .7 for each construct, convergent validity is very satisfying. Also Average Variance Extracted (AVE), with the lowest value being .49 (usability, see Table 1) indicates high convergent validity of all the measures used:

Share/delegate the decision (IC=.90, AVE=.74), Additional information search (IC=.76, AVE=.53), Buy the standard models (IC=.90, AVE=.82), Abandon the purchase (IC=.77, AVE=.53), Choose lowest priced components (IC=.85, AVE=.74), Configuration overload (IC=.84, AVE=.58), Usability (IC=.80. AVE=.49), and Product knowledge (IC=.95, AVE=.75). Hence, also convergent validity is satisfying.

Table 1

Reliabilities and convergent validity (AVE)

Constructs and items	Mean	S.D.	Loading
Product knowledge (Internal Consistency = .95; AVE = .75)			
1. I know much about notebooks	2.98	1.10	.91
2. I keep myself up-to-date about notebooks	3.37	1.19	.84
3. I know thus much about notebooks that I could give advice someone when purchasing a notebook	3.52	1.34	.91
4. I know what to look for when purchasing a notebook	2.52	1.16	.84
5. I could easily refer to at least five criteria which are important to look at when purchasing a notebook	2.58	1.27	.82
6. I would characterize myself as an expert in notebooks	3.95	1.23	.88
Usability *(Internal Consistency = .80; AVE = .49)*			
1. It's fast and easy to get orientated on this webpage	1.81	1.03	.70
2. The design of the web page www.chiligreen.at looks confusing to me (reverse Item)	4.06	0.95	.64
3. This web page contains elements which have a disturbing effect on product configuration (reverse Item)	3.92	1.02	.75
4. This web page is easily to handle	1.53	0.70	.70
Configuration overload *(Internal Consistency = .84; AVE = .58)*			
1. Notebooks are thus complex that configuration is very difficult	2.93	1.12	.75
2. The meaning of the used abbreviations (e.g. PCI, DDR-Ram etc.) is not always clear	2.67	1.47	.78
3. The terms used within the configuration tool for notebooks are unsettling	3.18	1.94	.77
4. Some consultation would be necessary to get aware of the differences between the notebooks	2.67	1.25	.74
Delegate/Share the decision *(Internal Consistency = .90; AVE = .74)*			
1. I wouldn't buy the notebook immediately. Rather I would first ask a friend of mine who is notebook literate, and would rely on his decision	1.72	1.15	.84
2. Before buying the notebook I would ask friends for advice	1.92	1.12	.90
3. Before buying the chosen offer, I would discuss it with my friends	2.46	1.16	.85
Additional information search *(Internal Consistency = .76; AVE = .53)*			
1. I would gather more information about notebooks in other media (TV, magazines)	2.46	1.20	.63
2. I would gather additional references and reports from magazines	2.39	1.20	.53
3. I would demand further consultation from specialized electronic traders	2.54	1.42	.96

Table 1 (continued)

Constructs and items	Mean	S.D.	Loading
Chose standard models *(Internal Consistency = .90; AVE = .82)*			
1. I would buy one of the pre-set default models of this vendor, because these will meet best the standard requirements of a notebook	3.49	1.15	.90
2. Overall I would adopt the pre-set default components for my notebook, because these will best satisfy the requirements of my notebook	3.07	1.27	.91
Abandon the purchase *(Internal Consistency = .77; AVE = .53)*			
1. In fact of the provided information, it is totally clear to me which product I'd like and I would buy immediately (reverse Item)	2.28	1.13	.90
2. I could imagine buying the configured notebook now (reverse Item)	3.18	1.16	.59
3. I would not buy the notebook immediately	1.77	1.03	.66
Chose low price components *(Internal Consistency = .85; AVE = .74)*			
1. I would configure a cost-saving notebook and then order it	3.90	1.13	.94
2. On the whole I would choose the cheapest components	3.23	1.20	.76

Discriminant validity was assessed from the latent variable correlations matrix (Table 2), where the square root of the average variance extracted values calculated for each of the constructs along the diagonal is reported. The correlations between the constructs are reported in the lower left off-diagonal elements in the matrix. Fornell and Larcker (1981) suggest that average variance shared between a construct and its measures should be greater than the variance shared between the constructs and other constructs in the model. Discriminant validity is given, when the diagonal elements (square root AVE) are greater than the off-diagonal elements in the corresponding rows and columns. As can be seen from Table 2, discriminant validity is very satisfactory. Overall, all the measures show very good psychometric properties.

Table 2

Latent variable correlation matrix

	Share, delegate	Additional info search	Default models	Abandon purchase	Low price	Config overload	Usability	Product knowledge
Share, delegate	**.86**							
Additional info search	.45	**.73**						
Default models	.30	.22	**.90**					
Abandon purchase	.31	.35	.03	**.73**				
Low price	-.04	-.05	.34	-.17	**.85**			
Config overload	.42	.32	.44	.31	.12	**.76**		
Usability	-.03	-.11	-.14	-.26	.04	-.35	**.70**	
Product knowledge	-.51	-.30	-.41	-.38	-.17	-.68	.29	**.87**

Square root of AVE is on the diagonal.

Path coefficients and predictive ability

Figure 2 reports the path coefficients, their significance level and the R^2 values. The significance of the structural coefficients was calculated based on the bootstrapping method (Efron and Gong, 1983). Standard errors of parameters were computed on the basis of 500 bootstrapping runs. Six paths are significant at $p < .001$ level, one path (configuration overload – chose lowest priced components) is not significant. R^2 values of the endogenous constructs are .49 (configuration overload), .18 (share/delegate the decision), .10 (additional information search), .20 (choose standard models), .10 (abandon the purchase), and .02 (chose lowest priced components). Thus, it can be concluded that the hypothesized model is confirmed by the data. Figure 2 shows the path coefficients, their significance level and the R^2 values of the endogenous variables.

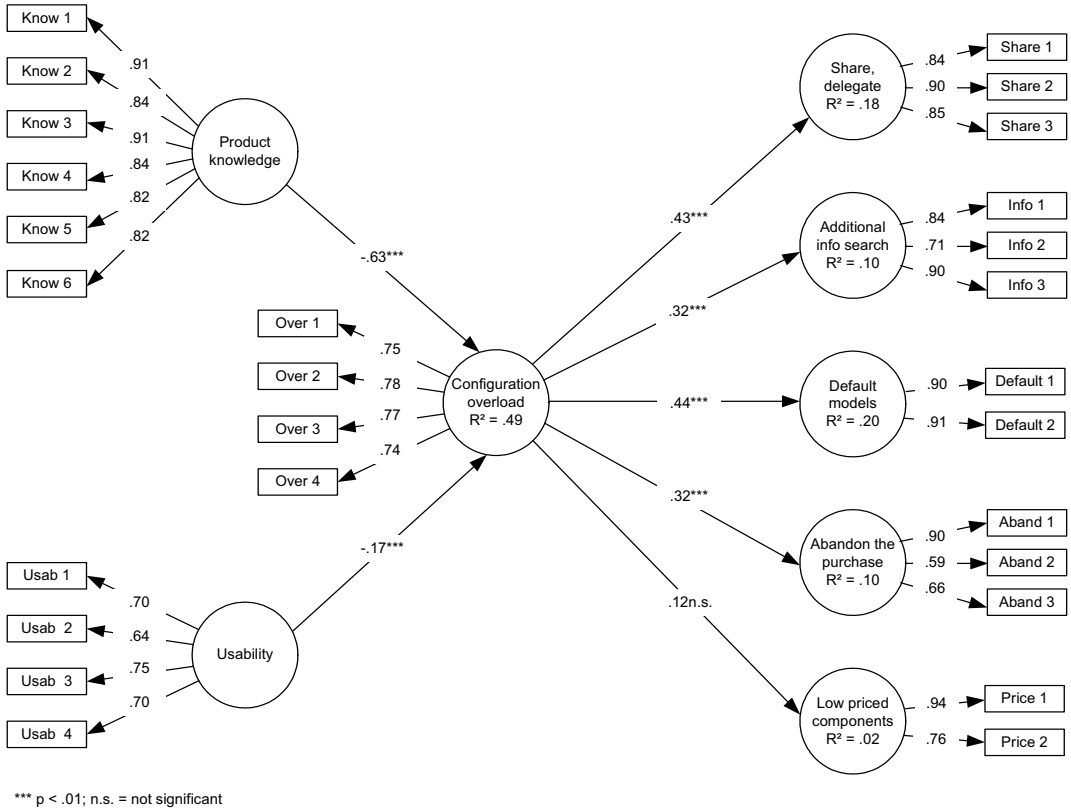

Fig. 2. Antecedents and consequences of configuration overload

4. Discussion and implications

The results of the study show that consumer confusion, i.e. configuration overload in the context of internet-based mass-customization, can actually be found and it is significantly related to several consumers' coping strategies. Configuration overload is strongly influenced by product knowledge (β=-.63, $p<.001$) and usability (β=-.17, $p<.001$). Thus, hypotheses 1 and 2 are confirmed.

The five-factorial solution of reduction strategies and the regression paths clearly indicate a need of customers for coping mechanisms against configuration overload.

Of particular interest might be the evidence that pre-configured default models (β=.44, $p < 0.001$; R^2=.20) seem to be an important measure to minimize configuration complexity and while low-priced components (β=.12, n.s.; R^2=.02) are not. This suggests that customers find it more comfortable, insuring and/or trustworthy to rely on pre-configured default-settings which are recom-

mended by the internet retailer. Therefore retailers in the internet with customization options should provide a default-setting for customers. Configuration overload, as hypothesized, is significantly related to additional information search (β=.32p < 0.001; R^2=.10) and abandoning the purchase (β=.32p < 0.001; R^2=.10). Decision sharing is another important coping strategy (β=.43, p < 0.001; R^2=.18). Customers would contact friends and relatives they trust before deciding and buying. This can have some important implications for marketing. If online providers, for an instance, use trustable testimonials that have bought before, customers could more easily build trust and decide to buy from the vendor. Another strategy to stimulate purchase is the use of online reviewing systems as used by Amazon.com or e.bay.com. Furthermore, the vendor should try to keep the customer's interest and make sure that after asking friends for help in the decision, the customer comes back and buys. The vendor could, for an instance, assist the customer in forwarding the offer to friends. This would not only increase brand awareness but also help the customer to make the decision.

The limitations of our study can be seen in the homogeneous sample, which on the other hand allowed us to reduce other sample-related and non-observable effects. Furthermore students were given only a limited amount of time in order to complete the configuration task which in reality would certainly last longer. Finally, R^2 is relatively low. This could be attributed to the research design, as although subjects considered the situation to be realistic and that the task was easily understandable, experiments can lack the ability to simulate real life situations. Nevertheless, the main goal to demonstrate the effect of product knowledge and usability on configuration overload and to identify coping strategies was achieved.

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