EXTENDED ABSTRACT

In understanding how consumers evaluate or choose among product options, it is important to consider the situations where the decision and the experience are temporally separated. One of such situations takes place when the consumption of the product is delayed. Consumers often face situations where the purchase decision is immediate but the consumption of the product is in the future. For instance, one can purchase a book in order to start reading it in the very near future (e.g. in the coming week). Similarly, one can buy a book to read in an undetermined time in the future (e.g. when she is finishes reading the books she already bought before). Does the consumer decision making process differ depending on the consumption immediacy? Will the changes in time horizon for consumption systematically affect the way consumers represent and evaluate the options?

There has been ample amount of research on how consumers make choices and form preferences, most of which concerning immediate consumption scenarios. A well-accepted answer to this question suggests that consumers represent options by their attributes and then compare these attributes in order to determine their preference (Bettman, Johnson and Payne 1991). It has been found that when evaluating alternatives, consumers mostly rely on attributes that are shared by alternatives (alignable differences) and mostly ignore attributes that are identical (commonalities) or that do not have a correspondence in other alternatives (non-alignable differences) (Gennier and Markman 1994).

However, characteristics that are unique to representation of future events can lead these results to be inapplicable. Temporal construal theory (Liberman and Trope 1998, Trope and Liberman 2000) suggests that distant future events have more abstract, general and de-contextualized representations (high-level construal) that relate to desirability considerations, whereas near future events have more concrete, specific and contextual representations (low-level construal) that are feasibility oriented. Therefore, product options that are considered for future consumption will have more abstract representations. This abstraction in the representation would enable the use of holistic (alternative-based) strategies and creation of abstract level attributes in the evaluation process (Johnson 1984). Consequently, in constructing abstract features or creating a holistic evaluation for each option, consumers are as likely to use non-alignable differences as they use alignable differences.

We hypothesize that the relative importance of non-alignable differences will be higher for choices in the distant future relative to choices in the near future. We tested this hypothesis with an experiment, by manipulating time horizon (tomorrow vs. six months from now) between subjects with the following scenario.

"Imagine that you have been chosen to be the part of the group who is going to prepare the end of classes party this year, which going to take place tomorrow night (six months from now). You have been given the responsibility of choosing and buying the microwave popcorns for the party."

Following this, descriptions of two popcorn brands were presented (in a counterbalanced order), which had equal overall attractiveness ratings (Zhang and Markman 2001). Brand P is designed to be better in alignable attributes, while Brand Q is designed to be better in non-alignable attributes. Hence, a shift in preference between these brands in different time horizons will reflect the different attention given to alignable and non-alignable differences. Participants were asked to indicate their preference (11-point scale anchored Prefer P and Prefer Q, with a neutral point of indifference), allocate 100 points between the brands and provide thought listings.

We expected to find a preference toward the alignable-better brand in near future, and a shift toward the non-alignable-better brand in distant future, since consideration of the non-alignable attributes would make non-alignable better brand as much or more attractive than the alignable-better brand. Thus, finding participants to be either indifferent or have a preference toward the non-alignable better brand in distant future, would be an evidence for increased attention to non-alignable attributes.

As expected, alignable-better brand was preferred by 77% (68 out of 88) of the participants in near future, but only by 65% (58 out of 89) in distant future (Z=1.78, p<.05). In contrast, 23% (20 out of 88) of the participants were either indifferent or preferred non-alignable better brand in near future, as opposed to 35% (31 out of 89) in distant future (Z=.30, p>.05). Similarly, mean number of points allocated to the non-alignable-better brand was greater in distant future (M=43.38) than in near future (M=37.80); (F(1, 177)=4.816, p<0.05).

Lastly in thought listings, which were coded by an independent rater who was blind to the hypotheses, we expected to find a greater mention of the alignable attributes in near future, but not in distant future. As expected participants mentioned alignable attributes (M=1.40) more than the non-alignable attributes (M=0.77) in near future (F(1, 176)=3.799, p<.05), but not in distant future (M_{A}=1.08, M_{NA}=0.90; F(1, 176)<1 , p>.1), suggesting more emphasis on alignable difference in near future, but a more balanced consideration to both types of differences in distant future.

The results of the experiment provide support for the hypothesis that the representation and evaluation of alternatives are systematically different for situations with varying consumption immediacy. Specifically, we find that consumers put more emphasis on the non-alignable differences when the expected consumption is in distant future as compared to being immediate. This result is consistent with our prediction that people’s representations of the options in future time framing does lead to a more abstract and holistic processing.

Current findings add to the understanding of how consumers evaluate and chose among alternatives when the consumption is in the future, by demonstrating a systematic shift in attention paid to different types of attributes for immediate versus future consumption scenarios.

The findings in this paper also extend the structural alignment theory (Medin, Goldstone, & Markman 1995), by addressing the issue of when and how the contextual factors promote the processing of the non-alignable attributes, which have been found to be effortful and difficult. Specifically, we have showed that the differences in time horizon can moderate the effect of alignability on preference formation.

References


Improving Attribute-Importance Measurement; A Reference-Point Approach

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EXTENDED ABSTRACT

Abstract

Despite the importance of identifying the hierarchy of product attributes that drive judgment and choice, the many available methods remain limited regarding their convergent validity and test-retest reliability. To increase the validity and reliability of attribute-importance measurement, we focus on the central antecedent of the importance of product attributes in judgment and choice: consumers’ valuation curve of an attribute—the idiosyncratic valuation of an attribute at different attribute levels relative to consumers’ reference points. We propose two new attribute-importance measures that reflect the determinance and the relevance of an attribute respectively, and show that accounting for the effects of reference points increases the predictive validity of attribute-determinance measures.

Introduction

Identifying product attributes that are important in judgment and choice is a key objective of consumer research. A wide variety of methods to identify important attributes have been proposed and examined (Van der Pligt et al. 2000). However, the convergent validity among these methods is low, and sometimes replications even yield inconsistent results (Jaccard, Brinberg, and Ackerman 1986).

The objective of this research is to improve the efficiency, validity, and reliability of attribute importance measurement. We propose that valid and reliable attribute-importance measures can be obtained by focusing on the central antecedent of attribute importance: the consumers’ valuation curve of an attribute. This valuation curve reflects the idiosyncratic valuation of an attribute at different attribute levels, relative to consumers’ reference points (Tversky and Kahneman 1991). Building on reference-dependent theory (Kahneman and Miller 1986, Tversky and Kahneman 1991), we show that the importance of product attributes in consumer judgment and choice depends on reference points. We introduce two new attribute importance measures that explicitly include the reference point concept and compare them against existing importance measures. The proposed approach helps explain the lack of validity among and reliability of existing methods, and yields valid and reliable attribute-importance measures that account for the effects of reference points and loss aversion. The approach allows for the determination of two dimensions of attribute importance: the determinance of an attribute in a judgment task (the importance of an attribute in judgment and choice), and the relevance of an attribute, independent of a product space (the importance of an attribute for a consumer) (Myers and Alpert 1968). Furthermore, the approach can be used for a variety of attributes and in different contexts, an important property, as both factors affect the importance of attributes in judgment and choice (Tversky, Sattath, and Slovic 1988).

Theoretical Background

The determinance of attributes reflects the importance of attributes in judgment and choice. It is generally calculated based on the difference in valuation of different attribute levels (e.g., conjoint method). Research on the determinance of attributes generally ignores the use of reference points. However, we hypothesize that the determinance of an attribute is larger when its attribute levels are perceived as losses, relative to reference point, than when these levels are perceived as gains (cf., Bell and Bucklin 1999).

To understand the effect of reference points and loss aversion on attribute importance, following Fishbein and Ajzen (1975), we assume that attribute-valuation curves drive judgment and choice additively. The attribute-valuation curve of an attribute reflects the valuation of attribute at different levels, related to products, relative to the related reference point. We assume that consumers’ reference point of an attribute is determined by the level of the attribute of the product they currently use and that all alternatives in a specific product space are compared to this point (Briesch et al. 1997). The basic shape and properties of attribute-valuation curves are determined by three assumptions (Tversky and Kahneman 1991). First, it is assumed that the valuations of attribute levels are gains or losses relative to a reference point (reference dependence). Second, it is assumed that, as losses loom larger than corresponding gains, consumers weigh losses more heavily than gains (loss aversion). Third, it is assumed that the marginal valuation of both gains and losses decreases with their size (diminishing sensitivity). The assumptions produce an asymmetric S-shaped valuation curve, concave above the reference point and convex below it.

If consumers’ reference points influence the determinance of attributes, we should account for this effect in calculating the determinance of attributes and develop more valid and reliable determinance measures. By testing the predictive validity of a new determinance measure that accounts for the effects of reference points and loss aversion, we can gain some initial insights into the validity of this proposition.

Attribute-valuation curves reflect both the determinance as well as the relevance of the attribute. By correcting the attribute-valuation curve for the difference in weights of losses and gains, as well as for the effect of diminishing sensitivity, the relevance of the attributes, the importance of the attribute for consumers, can be calculated as well.

Method

We examine and test the proposed approach in a controlled field experiment, involving 396 weekend visitors to an academic open-house at a Midwestern University. Assuming that attribute-valuation curves drive judgment and choice additively, we measure consumers’ valuations of specific attribute levels as well as their valuations of the reference point related to the attribute under consideration using full factorial conjoint (1-9 Likert scale). Next, using the assumptions of reference dependence, loss aversion, and diminishing sensitivity, we examine the effect of reference points on attribute importance, and calculate two new attribute importance measures: the determinance and relevance of attributes.

Results and Conclusions

First, the results show that the determinance of attributes depends on the consumers’ reference point, and on whether the attribute levels in the product space represent gains or losses relative to that reference point. The determinance of an attribute is
larger when the attribute levels represent losses compared to the consumers’ reference point than when they represent gains. This effect is found both for the price and the taste attribute.

Second, building on this finding of the effects of reference points and loss aversion on the attribute determinance, we propose a new attribute-determinance measure, which explicitly accounts for the effects of reference points and loss aversion. The results suggest that the predictive validity of this new measure is higher than that of attribute-determinance measures that ignore the effects of reference points and loss aversion.

Third, we show that focusing on the attribute-valuation curve not only allows for the calculation of the determinance, but also for the relevance of attributes. By correcting the attribute-valuation curve for the difference in weights of losses and gains, as well as for the effect of diminishing sensitivity, the relevance of the attributes, the importance of the attribute for consumers, can be calculated as well. Reference points do not seem to influence the relevance of the attributes studied. Because the proposed approach generates two attribute-importance measures (with minimal burden on respondents), we conclude that the proposed approach is relatively efficient compared to methods that require respondents to execute two tasks to ascertain both the determinance and the relevance of an attribute.

References

A Multidimensional Approach to Measuring Attribute Importance
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EXTENDED ABSTRACT

Abstract
Identifying product attributes that are important in consumer judgments is a key objective of consumer research. Unfortunately, the many available methods to identify important attributes often lack convergent and nomological validity. The objective of this research is to gain a better understanding of the determinants of this lack of validity and to outline a framework that will provide convergence for future studies. As such, this research is an important first step in identifying and developing methods that enable both practitioners and scholars to improve the validity of attribute importance measurement.

Introduction
Identifying product attributes that are important in consumer judgment and choice is a key objective of consumer research, both for practitioners and for scholars. Although there are a wide variety of methods to identify important attributes, the convergent validity among and nomological validity of different methods is often low (e.g., Jaccard, Brinberg, and Ackerman 1986; Heeler, Okechuku, and Reid 1979). Low levels of validity can cause serious empirical and practical problems. Investigating consumer decision-making and behavior (as well as developing new products) strongly depends on understanding the importance of attributes.

Theoretical Background
Research on attribute importance measurement generally takes a unidimensional approach to attribute importance (e.g., Van der Pligt et al. 2000). Building on the work of Meyers and Alpert (1968), we provide a multidimensional research framework of attribute importance for understanding the lack of convergent validity among and nomological validity of methods for identifying important attributes. The research framework differentiates between three dimensions of attribute importance: the salience, the relevance and the determinance of attributes (Myers and Alpert 1968, 1977). Salience reflects the degree of ease with which attributes come to mind when thinking about or seeing a certain product. The relevance of attributes reflects the general importance of attributes for consumers, and is largely determined by consumer desires. The determinance of attributes reflects the importance of attributes in judgment and choice.

The rationale for taking a multidimensional approach is that we expect that there is lack of convergent validity among and nomological validity of available methods for identifying important attributes because they identify different dimensions of attribute importance.

1Convergent validity identifies whether different measurements reflect the same construct (i.e., are positively correlated). Nomological validity examines whether measures are related to other constructs in a theoretically meaningful way (i.e., predictive accuracy).

2We use the term “relevance” instead of “importance,” as proposed by Myers and Alpert (1968), and use this latter term to reflect the general concept of attribute importance.

We use the framework to formulate hypotheses regarding which method identifies which specific dimension(s) of attribute importance. We focus on twelve common methods for identifying important attributes: 1) direct-ranking method,* 2) direct-ranking method,* 3) point-allocation method,* 4) analytical hierarchy process,* 5) means-end chain method,* 6) multiattribute-attitude model, 7) trade-off method, 8) swing-weight method, 9) free-elicitation method,* 10) conjoint method, 11) information display board,* and 12) the use of verbal protocols* (due to space limitations, we cannot discuss each method in detail in this abstract). We hypothesize that the methods marked with an “*” identify attributes that are salient and valuable to consumers. The other methods are hypothesized to identify determinant attributes.

Method, Results and Conclusions
Our hypotheses are subsequently tested through a critical and integrative review of seemingly divergent findings in the literature. In line with hypotheses, the results suggest that there is convergent validity among and nomological validity of methods that identify the same dimension(s) of attribute importance. For instance, Srivastava, Connolly, and Beach (1995) report convergent validity among the direct-rating (1) and the analytical-hierarchy process methods (4), both of which we hypothesized that they identify salient and valuable attributes.

Additional evidence for our proposition was obtained by investigating the discriminant validity between methods that are hypothesized to identify different dimensions of attribute importance. In line with expectations, we find evidence for discriminant validity between methods that identify different dimensions of attribute importance. For instance, the lack of convergent validity among the direct-rating method (1) and the trade-off method (7) in Fischer’s study (1995) may be attributed to the fact that the direct-rating method identifies salient and valuable attributes, while the trade-off method identifies determinant attributes.

Overall, we conclude that there is convergent validity among and nomological validity of methods that identify the same dimensions of attribute importance, while there is discriminant validity between methods that identify different attribute-importance dimensions. These results suggest that taking a multidimensional approach to attribute importance, and relating these dimensions to different methods, may actually be a first step toward more valid attribute importance measurement.

References


Keeney, Ralph L. and Howard Raiffa (1976), Decisions with Multiple Objectives: Preferences and Value Tradeoffs, Wiley and Sons, New York.


EXTENDED ABSTRACT

With a few simple clicks, consumers can navigate the World Wide Web, move from site to site, access and examine vast amounts of information unconstrained by time and place which have traditionally restricted consumer behavior in the physical marketplace. At least, that is according to theory. Information search on the Internet should, therefore, increase since search costs are reduced. But empirical evidence seems to suggest otherwise. Why aren’t consumers searching for more information? Although the Internet reduces the cost of physical effort in moving from store to store, it may not reduce the cognitive cost of moving from site to site. Further, if consumers’ motivation to shop online is to reduce effort and save time, why should one expect consumers to search for more information even if the search costs are relatively lower?

Several reasons suggest that conventional economic theories do not adequately explain consumer behavior in this new marketspace. First, the fundamental premise of economic theory is that information search will increase when search costs are reduced (Stigler 1961). Empirical evidence, however, has shown otherwise. Johnson et al. (2000) found that the levels of search across three product categories are fairly low, ranging from 1.1 stores for books to 1.8 stores for travel-related products. Another study by Jansen et al. (2000) revealed a similar pattern from the analysis of transaction from 18,113 users of Excite.com. Results show that Web queries are short. Most users had only few queries per search and 76% of users did not go beyond their first and only query.

Second, it is cognitive, not only physical effort, that affects online search behaviors. According to the Roper Starch Survey, it takes about 12 minutes on average before a user gets frustrated when searching the Internet. Although physical efforts (e.g., going to stores) have been reduced to finger clicks, the cognitive challenges of interacting with computers and online information remain that limit consumer information search within and between sites. This study is one of the first attempts to provide a systematic investigation of consumers’ search behavior in the Web-based marketspace that provides some explanation for the discrepancy of theoretical proposition and empirical findings.

The study draws relevant theoretical perspectives from economics, psychology, and the wayfinding paradigm to investigate information search in the Web-based marketspace. The economics of information identifies two types of search costs that influence information search—external and cognitive. The costs of resources consumers invest in search, such as monetary costs, are externally determined. Such costs are information rich Web-based environment, consumers need to be transposed as computer users as well (Koufari et al., 2001). They must be able to identify the location of information and employ efficient search techniques, hence, personal variables such as domain and system expertise are likely to affect consumers’ search for information. Further, coupled with personal variables, system factors such as interruption and information load unique to the online environment are likely to impose search costs on consumers and influence the amount of information search.

Results from the pre-experimental survey show two different perceptions of search costs between the physical and online environments. Perceived external search cost is lower in the physical environment whereas perceived cognitive search cost is higher in an online environment. In the four 2 x 2 online experiments, using a custom-designed Web browser, domain expertise was found to be relatively related to perceived cognitive search cost, thus affecting information search between and within sites. In addition, subjects with a lower level of domain expertise search for more information among brick-and-click retailers. System expertise was found to significantly affect information search between sites only in the interruption experimental condition. No significant main effect of system variables—information load and interruptions—on information search was found. Overall, these findings suggest that although physical efforts have been reduced to finger clicks, the cognitive challenge of interacting with computers and online information limits consumer information search in the Web-based marketspace.

References


Advances in Consumer Research Volume 31, © 2004


