



An empirical analysis of the factors raising the interest in new shopping destinations



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ABSTRACT

The relationship among the factors in the rising interest in new alternatives is empirically investigated in the context of shopping destination choice behavior. The hypothetical causal relationship is that the rising interest in new alternatives requires both active information search and considerable benefit, which is supported by the results of the mixture structural equation models using a data set containing revealed shopping behaviors and attitudes toward shopping destinations in the Tokyo metropolitan area: a lower level of satisfaction with the current choice set incites external information search for all subjects; however, the benefit of adding new alternatives affects the interest in new alternatives only in the group that engages in active information search.

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1. Introduction

The importance and difficulty of specifying the choice set in the destination choice are widely recognized in the literature of marketing and transportation science (for a review, please refer to Thill (1992)), and significant work has been done toward developing operational models that employ a two-stage characterization with a choice set generation and choice among the choice set (Manski, 1977; Horowitz, 1991) or an integrated choice model in which the choice set generation is embedded (Horowitz and Louviere, 1995; Swait, 2001). Fotheringham (1983, 1986, 1988) developed the competing destination choice model where a hierarchical decision process in the destination choice is assumed. Destination choice is different from other discrete choices such as mode choice in that the choice set becomes very large; thus, the alternatives are clustered by location. Then, it is assumed that the cluster is chosen in the first process and that the destination is chosen within the cluster in the second process. In the competing destination choice model, the cluster is called a choice set, which means that the choice set generation is regarded as embedded in the integrated choice model as mentioned above. The same

concept is also applied in Sinha (2000) and Pellegrini and Fotheringham (2002). Sinha (2000) developed a nested logit model representing a two-stage process where consumers first select a region or suburb and next select a store within the region, and Pellegrini and Fotheringham (2002) applied the competing destination choice model in the context of migration.

In this approach, however, the dynamic process of choice set generation is not explicitly represented. Entered into the choice set of consumers is the basic premise that a new destination could be visited. Furthermore, in the transportation field, a better understanding of the cognitive processing of new alternatives is required to forecast the induced travel demand for new destinations, such as new shopping malls and recreational sites. Thus, it is worthwhile to explicitly explore the dynamics and cognitive processes of choice set generation, and significant work has been done on this subject. Golledge and Timmermans (1990) provided a literature review on the application of behavioral research to the spatial choice problem from the cognitive point of view.

As one stage of the decision-making process, Howard and Sheth in 1969 introduced the concept of a choice set, which they called “evoke set” and which they defined in their conceptual model of the decision-making process. Though Howard and Sheth (1969) explained the concept of a choice set with the learning theory, this notion is further developed by the information-processing theory and later by the cost–benefit approach. In the information-processing theory, the EBM (Engel–Blackwell–Miniard) model (Engel et al., 1995)

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is a conceptual model of the decision-making process including the formation of a choice set, which expresses a comprehensive process including need recognition, information search, evaluation, purchase and consumption. Factors and psychological functions affecting the process are considered minutely in their model. The level of information search is determined by variables such as personality, social class, income, experiences, and satisfaction. Consumers may repurchase the brand that they currently use with little information search activity, making it more difficult for competitive products to catch consumers' attention. If consumers are dissatisfied with their current brands, the search expands to include other alternatives. Once need recognition occurs, consumers first begin an internal search for information and solutions to satisfy their unmet need; only if there were no satisfying outcomes will external information search be performed. Thus, if the internal information search results in a satisfactory solution, external information search would not be performed. Recently, Maity et al. (2014) provided the literature review on the antecedents and moderators of consumer information search. The relationship between the level of satisfaction obtained from internal search and the engagement in external search has been investigated by many studies (Moorthy et al., 1997; DeSarbo and Choi, 1999). The information obtained by the search includes the attribute values of the alternatives in the choice set as well as the new alternatives; thus, these studies are not specific to choice set generation.

In contrast, in the cost–benefit approach, some studies addressing choice set generation are reported (Hauser and Wernerfelt, 1990; Roberts and Lattin, 1991, 1997). The aspect of these studies is the optimal size or the precise content of the choice set. The conceptualization is based on the notion that decision makers compare the cost of search against the benefit of adding a new alternative to the choice set. Because the benefit of adding a new alternative is believed to decline and the costs of search are relatively constant, there is an optimal number of alternatives that could be searched for by decision makers. To quantify the benefits as well as costs, the logit model was used to evaluate the total expected benefit associated with any consideration set (Roberts and Lattin, 1991). Under the assumptions of the logit model, the expected maximum utility obtained from choice set C , $EU(C)$, is given by

$$EU(C) = \ln \left\{ \sum_{j \in C} \exp(V_j) \right\} \quad (1)$$

where V_j represents the systematic component of the utility of alternative j (Ben-Akiva and Lerman, 1985). Therefore, the benefit of adding a new alternative j' , $B(j')$, could be written as

$$B(j') = EU(C \cup j') - EU(C). \quad (2)$$

An important characteristic of the approach is its view that decision makers are rational and maximize their utility when forming the choice set. However, the assumption of absolute rationality has been criticized by many studies (Simon, 1997; Rubinstein, 1998). The criticism means that the models using the cost–benefit approach need to be complemented with other approaches, such as the understanding of the information search process. However, the idea of describing benefits by the expected maximum utility remains an important contribution to the research on choice set generation, which made it possible to operationally compute the benefit of adding a new alternative.

In the spatial choice context, Meyer (1980) developed a theoretical model of dynamics in destination choice using learning. It is assumed that the individual gains more familiarity with the destinations visited earlier, and by using the improved information, the individual can refine his expectations of the attributes of still unfamiliar destinations. Then, alternatives that

meet certain conditions form the choice set from which a destination will be selected on that occasion. Richardson (1982) also developed a theoretical model of search and choice set generation. In this model, the individual does not have a choice set prior to the choice but an alternative is searched until the choice is made; thus, the choice set is the result of the search process. The end of the search is determined by the expected gain and the search costs similar to the cost–benefit approach.

Research regarding the consumer spatial search problem by Miller (1993, 1994) and Miller and Finco (1995), based on the cost–benefit approach, used a nested logit model to represent the process of a consumer's estimation of alternatives. The authors stated that the consumer is confronted with a set of alternatives with known locations but imperfectly known attributes, and their models postulated that the spatial searcher maximizes the frequency with which the maximum utility will be achieved over a multi-trip horizon. Furthermore, Arentze and Timmermans (2005) induced some factors of information search progress into a discrete choice model, though the estimation of parameters in their model is based on a simulation, not real survey data.

Summarizing the previous studies with an information search approach, it could be supposed that individuals who have a lower level of satisfaction with the current set of well-known alternatives would have a higher probability of engaging in external information search and that the external information search activity would induce a higher level of interest in new alternatives that are not well known yet. Studies with a cost–benefit approach, however, indicate that the higher benefits of adding new alternatives to a choice set have a positive effect on the level of interest in new alternatives. Based on these previous works, we hypothesize that the rising interest in new alternatives requires both active information search and considerable benefit.

To represent the constructed hypothetical causal relationship, structural equation model (SEM) approaches are applied in this study. SEM is an extremely flexible modeling technique that can handle multiple endogenous and exogenous variables as well as latent variables (Golob, 2003). To represent the causal relationship among endogenous variables, an endogenous variable in an equation can be treated as an exogenous variable in other SEM equations. In this study, the relationship among the considerable benefit, the information search, and the rising interest in new alternatives is investigated by SEM.

This paper aims to offer an empirical analysis for this hypothesis. The cognitive state of ordinary consumers toward large shopping areas in one region perfectly fits the situation indicated by Miller and Finco (1995). For example, in Tokyo, there are 16 large commercial areas and 23 large railway terminals (in Japan, in general, large terminals are also commercial spaces), and almost everyone knows about the existence of these popular shopping destinations; however, few people know all these destinations well. The set of well-known destinations is considered the choice set in this study. Our interest here is not in the size or the precise content of the choice set but rather in the factors determining the change in the choice set; thus, the focus of this study are the factors related to the process in which the still unfamiliar alternatives could enter the decision maker's choice set.

2. Methodology

2.1. Structure of the model

A model encompassing the key concepts of the two approaches is developed in this study. Four latent variables are introduced into our model. Three of these variables, “satisfaction with the current choice set”, “external information search”, and “interest in new

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