

[Refereed Article]

Psychological Processes Involved in Consumer Categorization of More Than One Brand into a Consideration Set

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Abstract

Consumers categorize more than one brand into a given consideration set. However, the psychological processes involved have not been fully characterized. The current study focuses on two independent pathways: the pathway from a perceived difficulty in quality evaluation via intent to procrastination of decision-making, and the pathway from the homogeneity of perceived quality via the perceived attractiveness of alternatives. Furthermore, this study examines whether there were differences in the magnitude of each pathway's impact across product categories based on "think and feel" product classification. Structural equation modeling showed positive influences of difficulty in quality evaluation on intent to procrastinate decision-making, homogeneity of perceived quality on perceived attractiveness of alternatives, and perceived attractiveness of alternatives on the tendency to categorize more than one brand into a given consideration set. In contrast, the results showed a negative influence of intent to procrastinate decision-making on the tendency to categorize more than one brand into a given consideration set. Furthermore, the results confirmed that these tendencies were common for both think and feel products.

Introduction

Consumers do not evaluate all available brands in the market when they encounter purchasing situations. They regard several alternatives as acceptable brands, and then select a brand for purchase from among these alternatives. The set of brands that consumers consider purchasing is called a consideration set (Shocker et al. 1991). Because understanding the composition of consideration sets could contribute to marketing strategies, many studies have examined consideration sets (for review, see Hauser 2014).

Among the myriad factors related to consideration sets, set size is particularly important. If a consumer has only one brand in their consideration set, they have a strong preference for that brand. This makes it challenging to convince them to categorize new brands into their consideration set. By contrast, consumers who categorize multiple brands into their consideration sets are likely to have a low commitment to a particular brand. It should be less challenging to convince these consumers to categorize new brands into their consideration

sets. It is vital to understand the consideration set sizes of consumers when formulating marketing strategies; consequently, many studies have investigated consideration set size. Prior research indicates that the average sizes of consideration sets depend on product categories and that the overall average size range is 2.0 to 8.1 (Hauser and Wernerfelt 1990). Furthermore, previous research has examined whether various factors positively or negatively influence consideration set size. In this regard, consumers with large awareness sets (i.e., sets of brands of which consumers are aware) have larger consideration sets (Brown and Wildt 1992). In contrast, typical aspects of consumers that negatively influence consideration set size are brand commitment (Desai and Raju 2007), consumer innovativeness (Jung and Kim 2005), consumer involvement (Belonax and Javalgi 1989), and level of satisfaction with the brand purchased previously (Lapersonne et al. 1995; Sambandam and Lord 1995). Furthermore, some aspects of consumers have a complex influence on consideration set size. For instance, familiarity with usage context has an inverse U-shaped relationship with consideration set size (Aurier et al. 2000).

While many studies have examined consideration sets, it is unclear why consumers often categorize more than one brand into a consideration set. Although previous research has shown the positive influence of difficulty in quality evaluation and the perceived attractiveness of alternatives on individual hesitation about decision-making in the context of choosing a destination for domestic travel (Kikuchi 2020), these findings do not adequately explain the psychological processes by which consumers categorize more than one brand into a consideration set in brand selection situations in general. In light of the above, based on Kikuchi (2020), we establish two independent pathways that include two factors (difficulty in quality evaluation and perceived attractiveness of alternatives) in an exploratory manner, and then examine their impact on the tendency to categorize more than one brand into a consideration set. The first pathway is from the difficulty in quality evaluation to the intent to procrastinate decision-making; this pathway refers to a situation in which consumers tentatively maintain more than one brand in a consideration set because of difficulty in assessing brand quality. The other pathway is from the homogeneity of perceived quality to the perceived attractiveness of alternatives; this pathway refers to a situation in which consumers categorize more than one brand into a consideration set because brands in a given product category are homogeneous and equally attractive.

The current study's first objective was to clarify whether these two pathways influence the tendency to categorize more than one brand into a given consideration set for products in general. Furthermore, this study assumed that the strength of the impact of these pathways varied among product categories. In this study, the hypotheses were derived based on the "think and feel" product classification, and comparisons were made between product categories. Through these examinations, we present new insights into the study of consideration sets.

The remainder of the paper is as follows. We first review the literature regarding the concepts used in the psychological pathways, and then derive hypotheses. Subsequently, we present empirical results and summarize our contributions to the field.

Empirical model and development of hypotheses

Model used in this study

The model used in this study is depicted in Figure 1. Based on the assumption that consumers consider more than one brand during a single purchase for various reasons, this model focuses on two independent pathways that may lead to the tendency to categorize more than one brand into a given consideration set.

One pathway pertains to the situation where consumers faced with difficulty in quality evaluation are likely to tentatively categorize more than one brand into a consideration set by postponing decision-making. The other pathway pertains to the situation where consumers faced with homogeneity of perceived quality are likely to categorize more than one brand into a consideration set by accepting the appeal of many brands. This model allows simultaneous examination of how these two pathways affect the tendency to categorize more than one brand into a given consideration set for products in general. Furthermore, differences in the impacts of these pathways across product categories are examined based on this model. Significantly, these two pathways may be related in a complicated manner. However, this study first derives hypotheses according to this basic model.

Hypotheses about products in general

First, we focus on the causal link between difficulty in quality evaluation and the intent to procrastinate decision-making. Specifically, do consumers procrastinate decision-making when they face difficulty in quality evaluation? Procrastination can be defined as behavior to postpone tasks that must be done (Lay 1986). Many studies in social psychology indicate that people tend to procrastinate when tasks are challenging (e.g., Giner-Sorolla 2001; Steel 2007). As the degree of challenge increases, people are more likely to procrastinate. Moreover, in

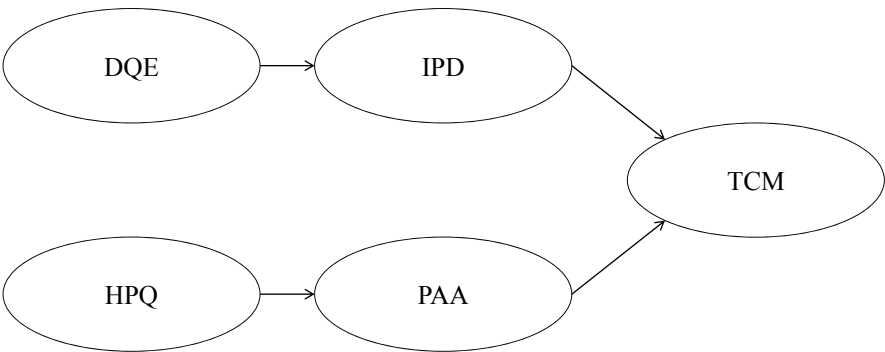


Figure 1 Model used in this study

Acronyms: DQE, difficulty in quality evaluation; IPD, intent to procrastinate decision-making; HPQ, homogeneity of perceived quality; PAA, perceived attractiveness of alternatives; TCM, tendency to categorize more than one brand into a given consideration set. These acronyms are also used in Figure 2 and Tables 2-4.

the context of consumer behavior, consumers who are faced with difficult decisions or tasks tend to postpone their choices (Chernev et al. 2015; Etkin and Ghosh 2018; Novemsky et al. 2007; Townsend and Kahn 2014). In summary, consumers who perceive difficulty in quality evaluation are expected to procrastinate the final decision. Hence, we derive the following hypothesis.

H 1

Difficulty in quality evaluation has a positive influence on the intent to procrastinate decision-making.

We now consider the influence of intent to procrastinate decision-making on the tendency to categorize more than one brand into a given consideration set. In examining this causal relationship, this study uses the construal level theory proposed in the field of social psychology. This theory indicates that individual interpretations of an issue are dependent on psychological distance (Trope and Liberman 2000, 2003; Trope et al. 2007). When psychological distance (e.g., spatial, temporal, or social distance) decreases (i.e., the object is psychologically proximal), low-level construal prevails whereby individuals consider the issue more concretely (Trope and Liberman 2000, 2003; Trope et al. 2007). Conversely, when the psychological distance increases (i.e., the object is psychologically distant), high-level construal prevails, and individuals consider the issue more abstractly (Trope and Liberman 2000, 2003; Trope et al. 2007).

According to this theory, procrastinated decision-making leads to high-level construal because the psychological distance (here, temporal distance) becomes greater. In the context of high-level construal (i.e., when consumers evaluate alternatives abstractly), consumers tend to focus on the similarity of alternatives within a category (Day and Bartels 2008; Goodman and Malkoc 2012; Lamberton and Diehl 2013). Given such perceived similarity, it becomes more challenging to reduce the number of brands for categorization into a given consideration set. As a result, consumers may tentatively and roughly evaluate brands at this point, categorize more than one brand into a given consideration set, and postpone the final choice immediately before purchase. In summary, we suggest that procrastination of decision-making will mitigate the challenge of detailed brand evaluation and cause consumers to categorize several brands into a consideration set. Based on this perspective, we derive the second hypothesis.

H 2

Intent to procrastinate decision-making has a positive influence on tendency to categorize more than one brand into a given consideration set.

We now consider the pathway beginning with the homogeneity of perceived quality. Similar to the difficulty in quality evaluation mentioned above, perceived quality also influences various aspects of consumer behavior, such as the purchase intention and price-

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quality associations of consumers (Bao et al. 2011; Yang et al. 2019). However, there is insufficient knowledge regarding whether consumers categorize more than one brand into a consideration set because of the homogeneity of perceived quality. In this study, we examine this causal pathway with the addition of a new factor, i.e., the attractiveness of alternatives, defined as “customer perceptions regarding the extent to which viable competing alternatives are available in the marketplace” (Jones et al. 2000, 262) to further elaborate on this causal relationship.

Concerning the causal link between homogeneity of perceived quality and perceived attractiveness of alternatives, it is important to mention that homogeneity of perceived quality implies the absence of differences in features and performance among brands (Lam et al. 2013). In this context, selection risk decreases (Miura and Ito 2000). Accordingly, increased homogeneity of perceived quality may cause consumers to be more likely to tolerate brands other than their most favorite brand. Thus, the homogeneity of perceived quality will increase the attractiveness of alternative brands, leading to the following hypothesis.

H 3

Homogeneity of perceived quality has a positive influence on the perceived attractiveness of alternatives.

Finally, we address the causal link between the perceived attractiveness of alternatives and the tendency to categorize more than one brand into a given consideration set. In prior studies, the perceived attractiveness of alternatives reduced loyalty toward a favorite alternative (Chuah et al. 2017; Patterson and Smith 2003). In this context, consumer loyalty to a particular brand will decrease (Picón et al. 2014; Temerak 2016), such that more than one brand is likely to be categorized into a given consideration set. Previous research has also shown that low brand commitment leads to a larger consideration set (Desai and Raju 2007). Furthermore, this logic is consistent with findings that the perceived attractiveness of alternatives increases individual hesitation about choosing from among multiple alternatives (Kikuchi 2020). In summary, consumers are expected to categorize their favorite brand and other brands into a given consideration set when the perceived attractiveness of alternatives is high. Based on this point, we derive the following hypothesis.

H 4

Perceived attractiveness of alternatives has a positive influence on the tendency to categorize more than one brand into a given consideration set.

Hypotheses about differences among product categories

Additionally, this study examines whether there are differences in the strength of pathway coefficients across product categories. For this investigation, we focus on the think and feel product classification. Previous research suggests that “think” products constitute products that are mainly evaluated based on attributes with objective evaluation criteria, while “feel”

products constitute products that are mainly evaluated based on attributes without objective evaluation criteria (Dhar and Wertenbroch 2000; Hoyer and Stokburger-Sauer 2012; Miura and Ito 2000; Ratchford 1987). Even though the psychological process involved in categorizing more than one brand into a given consideration set is common across product categories, the magnitudes of the pathway coefficients in our model may differ between the two product categories. Accordingly, we derive hypotheses about the strength of pathway coefficients between these two product categories.

First, we consider the magnitude of the impact of the pathway from difficulty in quality evaluation via intent to procrastinate decision-making to the tendency to categorize more than one brand into a given consideration set by product category. This pathway is expected to have a greater impact if the target is a think product. Considering objective differences in features and performance between brands for think products (Carter and Gilovich 2010; Dhar and Wertenbroch 2000; Miura and Ito 2000), there may be a risk of choosing an option that does not meet the desired functionality level. While comprehensive brand evaluations effectively reduce selection risk, such evaluation involves a large information-processing load (Payne et al. 1993). Hence, considerable effort is required to reduce the selection risk for think products, which may cause substantial difficulty in quality evaluation. Then, because consumers are more likely to face this difficulty in quality evaluation, they are more likely to have greater intent to procrastinate decision-making. Consequently, given the intent to procrastinate decision-making, consumers are more likely to categorize more than one brand into a given consideration set. In contrast, for feel products, there is a relatively low need for comprehensive brand evaluation to reduce selection risk because performance across the brands does not vary greatly (Miura and Ito 2000). Thus, for feel products, the pathway from difficulty in quality evaluation via intent to procrastinate decision-making to the tendency to categorize more than one brand into a given consideration set is less active than for think products. From the above discussion, the following two hypotheses can be derived.

H 5

The influence of difficulty in quality evaluation on the intent to procrastinate decision-making is greater for think products than for feel products.

H 6

The influence of intent to procrastinate decision-making on the tendency to categorize more than one brand into a given consideration set is greater for think products than for feel products.

Next, we consider the magnitude of the impact of the pathway from the homogeneity of perceived quality via perceived attractiveness of alternatives to the tendency to categorize more than one brand into a given consideration set by product category. This pathway is expected to have a greater impact if the target is a feel product, compared to the pathway that begins with difficulty in quality evaluation. By definition, there is no functional difference

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between brands for feel products. In this context, each brand carries an equal functional value (Miura and Ito 2000). Hence, the homogeneity of perceived quality is greater in feel products with this feature. Because of this greater homogeneity of perceived quality, consumers are more likely to experience greater perceived attractiveness of alternatives. Accordingly, consumers are likely to categorize more than one brand into a given consideration set. This is consistent with the results of previous research, which have shown that variety-seeking is more likely to occur for feel products (Kushwaha and Shankar 2013). Conversely, for think products, the homogeneity of perceived quality is expected to be less pronounced than feel products. This is why consumers tend to judge brands to be superior or inferior based on objective criteria (Carter and Gilovich 2010; Dhar and Wertenbroch 2000; Miura and Ito 2000). Hence, for think products, the pathway from the homogeneity of perceived quality via perceived attractiveness of alternatives to the tendency to categorize more than one brand into a given consideration set is less active than for feel products. From this consideration, we derive the following two hypotheses.

H 7

The influence of homogeneity of perceived quality on the perceived attractiveness of alternatives is greater for feel products than for think products.

H 8

The influence of perceived attractiveness of alternatives on the tendency to categorize more than one brand into a given consideration set is greater for feel products than for think products.

These considerations can be summarized as follows. For products in general, both the pathway from difficulty in quality evaluation via intent to procrastinate decision-making and the pathway from the homogeneity of perceived quality via perceived attractiveness of alternatives positively influence the tendency to categorize more than one brand into a given consideration set. Furthermore, the former pathway is substantially activated for think products, while the latter pathway is substantially activated for feel products.

Empirical study

Participants and procedure

To test our hypotheses, we commissioned a Japanese research company to conduct an online questionnaire survey in June 2020. The questionnaire included digital cameras as think products and sneakers as feel products, based on definitions proposed in previous studies (Dhar and Wertenbroch 2000; Hoyer and Stokburger-Sauer 2012; Miura and Ito 2000; Ratchford 1987). Digital cameras tend to be differentiated in terms of function; in this respect, they are typical of think products. In contrast, sneakers were regarded as a feel product in this study because consumers are expected to evaluate them based on subjective attributes, such as

design. In the current study, data were collected from 2,000 individuals residing in Japan, aged 20 to 59 years (mean age, 39.9 years; 50% male), registered with the research company. Of those 2,000 individuals, 1,000 responded to questions about digital cameras, and the other 1,000 to questions about sneakers. Thus, the sample comprised the 2,000 individuals who answered all items.

The items to measure the five latent variables (i.e., difficulty in quality evaluation, intent to procrastinate decision-making, homogeneity of perceived quality, perceived attractiveness of alternatives, and tendency to categorize more than one brand into a given consideration set) are presented in Table 1. To measure difficulty in quality evaluation, we based the items on a survey conducted in Kikuchi (2020). The measurement items related to intent to procrastinate decision-making were set based on Lay (1986). The items for measuring homogeneity of perceived quality were set with reference to Dodds et al. (1991), Lam et al. (2013), Netemeyer et al. (2004), and Parasuraman et al. (1988). In measuring perceived attractiveness of alternatives, the items used in Jones et al. (2000) were adjusted and set to fit the context of this study. Then, we set new measurement items for the tendency to categorize more than one brand into a given consideration set, referring to Kikuchi (2020). All items were measured with a seven-point scale, ranging from strongly disagree (1) to strongly agree (7). No ceiling or floor effects were found in any items.

Table 1 Measurement items and Cronbach's α

	Cronbach's α
Difficulty in quality evaluation	.86
Substantial information is needed to determine the quality of a product.	
Substantial time is needed to determine the quality of a product.	
Judging the quality of a product requires substantial effort.	
Intent to procrastinate decision-making^a	.63
I will decide which brand is best for me later.	
I prefer to place comparisons between brands "on the back burner."	
I cannot bring myself to perform a detailed examination of each brand's characteristics at this time.	
Homogeneity of perceived quality	.88
I feel that there is no difference in quality between brands.	
Each brand has similar functional characteristics.	
I feel that there is no difference in reliability between brands.	
I feel that all brands have similar characteristics.	
All brands have similar ease of use.	
Perceived attractiveness of alternatives^a	.79
There are other good candidates when a brand change is needed.	
I can be convinced of quality in brands other than my favorite brand.	
The quality of other brands is similar to that of my favorite brand.	
Tendency to categorize more than one brand into a given consideration set	.84
There are several brands that I would be willing to purchase.	
I have two or more than two favorite brands.	
I cannot easily choose between two or more brands.	

^a One item not listed here has been excluded from analysis to improve model fit.

It should be noted that all of the data were collected from a single sample, so common method bias was a possibility. Therefore, before testing the hypotheses, we performed the Harman's single-factor test; this post-hoc test quantifies common method bias (Podsakoff et al. 2003). We performed an exploratory factor analysis on all observed variables using the principal factor method without rotation, then extracted four factors with eigenvalues of 1 or more. The first factor alone explained 27% of the variance in the observations. Thus, as the proportion of the variance explained by this factor, which had the highest eigenvalue, was less than 50%, it was clear that common method bias was not severe.

To test our hypotheses, we adopted a two-step approach to structural equation modeling based on the study by Anderson and Gerbing (1988). The first step involved the use of confirmatory factor analysis to assess measurement model fit and examine consistency reliability, convergent validity, and discriminant validity. The second step involved the use of structural equation modeling to establish a structural model for determining the directions and strengths of relationships among constructs. When testing hypotheses 1 through 4, we merged respondent data assigned to digital cameras with respondent data assigned to sneakers into one dataset. When testing hypotheses 5 through 8, we used multiple group structural equation modeling. The method of parameter estimation was maximum likelihood estimation in each analysis.

Measurement model assessment

To verify consistency reliability, we adopted composite reliability (CR), which should exceed .60 (Bagozzi and Yi 1988). Convergent validity was determined based on whether the average variance extracted (AVE) for each construct was greater than .50 (Fornell and Larcker 1981). For discriminant validity, we compared the square roots of AVEs to correlation coefficients between constructs. If the square roots of AVEs were greater than the correlation coefficients, the discriminant validity was considered sufficient (Fornell and Larcker 1981).

As shown in Table 2, all CRs exceeded .60. Hence, reliability was confirmed. Four of the five constructs showed AVE values indicative of convergent validity, which indicated that convergent validity was almost confirmed. Regarding discriminant validity, the square roots of AVEs were greater than correlation coefficients between two constructs, except for the correlation coefficient between the perceived attractiveness of alternatives and the tendency to categorize more than one brand into a given consideration set. Thus, discriminant validity was almost confirmed.

Table 2 CR, AVE, and correlation coefficients between constructs

Construct	CR	AVE	DQE	IPD	HPQ	PAA	TCM
DQE	.87	.69	.83				
IPD	.65	.38	.11	.62			
HPQ	.88	.60	.02	.61	.78		
PAA	.80	.57	.24	.31	.23	.76	
TCM	.85	.65	.22	.08	.02	.69	.80

Note: Values in bold indicate square roots of AVEs.

In terms of measurement model fit, the result of the χ^2 test was statistically significant ($\chi^2(109) = 1478.732, p < .01$). The measurement model fit was then examined using root mean square error of approximation (RMSEA) and comparative fit index (CFI). Values of RMSEA less than .10 were considered to indicate acceptable fit (MacCallum et al. 1996), while values of CFI greater than .90 were considered to indicate acceptable fit (Hu and Bentler 1999). The results showed that RMSEA and CFI were .079 and .916, respectively, which confirmed acceptable measurement model fit.

Testing hypotheses 1 through 4

Regarding structural model fit, the result of the χ^2 test was statistically significant ($\chi^2(114) = 2133.548, p < .01$). The structural model fit was then examined using RMSEA and CFI, with thresholds of .10 for RMSEA and .90 for CFI. The results showed that RMSEA was .094, while CFI was .876. Thus, the RMSEA supported model fit, while the CFI was slightly below the thresholds to support model fit. Therefore, the structural model fit may be acceptable with some reservations.

Next, we examined the pathway coefficients. Focusing on the pathway from difficulty in quality evaluation via intent to procrastinate decision-making to the tendency to categorize more than one brand into a given consideration set, difficulty in quality evaluation exerted a significant positive influence on the intent to procrastinate decision-making, which supported H1 ($\beta = .06, p < .05$). However, intent to procrastinate decision-making exerted a significantly negative influence on the tendency to categorize more than one brand into a given consideration set, which did not support H2 ($\beta = -.10, p < .01$). Regarding the pathway beginning with the homogeneity of perceived quality, the homogeneity of perceived quality exerted a significant positive influence on the perceived attractiveness of alternatives, which supported H3 ($\beta = .21, p < .01$). Furthermore, the perceived attractiveness of alternatives exerted a significant positive influence on the tendency to categorize more than one brand into a given consideration set, which supported H4 ($\beta = .69, p < .01$). These results are summarized in Table 3.

Table 3 Results of testing hypotheses 1 through 4

Hypothesis	Pathway	β
H1	From DQE to IPD	.06 ($p < .05$)
H2	From IPD to TCM	-.10 ($p < .01$)
H3	From HPQ to PAA	.21 ($p < .01$)
H4	From PAA to TCM	.69 ($p < .01$)

Testing hypotheses 5 through 8

In comparing pathway coefficients across product categories based on multiple group structural equation modeling, we first considered the configural invariance of the model to examine the extent to which the same construct numbers and patterns best represent the data for both product categories (Byrne 2016). Estimation of the model with no invariant

parameters across product categories ($\chi^2(228) = 2371.348, p < .01$; RMSEA = .069; CFI = .868) indicated that the RMSEA met the criteria proposed by MacCallum et al. (1995), while the CFI was inadequate based on the criteria suggested by previous research (Hu and Bentler 1999). This result confirmed configural invariance with some reservations.

To test the measurement invariance of the model, using Byrne (2016) as a reference, we estimated the model in which all factor loadings were constrained to be equal between two product categories ($\chi^2(240) = 2412.811, p < .01$; RMSEA = .067; CFI = .866). We then compared CFI values between the model with no invariant parameters across product categories and the model with invariant factor loadings across product categories. A difference of CFI values equal to or less than .10 was presumed to indicate that the model with invariant factor loadings across product categories was acceptable, thereby confirming measurement invariance (Cheung and Rensvold 2002). The results showed that the difference was .002. Furthermore, parsimonious fit indices showed better values for the model with invariant factor loadings across product categories. The values of parsimonious goodness of fit index, parsimonious CFI, and parsimonious non-normed fit index for the model with no invariant parameters across product categories were .654, .728, and .718, respectively. The corresponding values for the model with invariant factor loadings across product categories were .686, .764, and .754, respectively. Moreover, RMSEA for the model with invariant factor loadings across product categories met the desired level. Taken together, the findings confirmed the measurement invariance and configural invariance of this model. Hence, this study tested hypotheses 5 through 8 based on the model with invariant factor loadings across product categories.

The results of multiple group structural equation modeling showed that the coefficients were significant for all pathways and that their signs were consistent with the analysis for products in general. Therefore, the coefficients of pathways from difficulty in quality evaluation to intent to procrastinate decision-making ($\beta = .09, p < .05$ for digital cameras; $\beta = .11, p < .01$ for sneakers), from homogeneity of perceived quality to perceived attractiveness of alternatives ($\beta = .24, p < .01$ for digital cameras; $\beta = .19, p < .01$ for sneakers), and from perceived attractiveness of alternatives to tendency to categorize more than one brand into a given consideration set ($\beta = .71, p < .01$ for digital cameras; $\beta = .67, p < .01$ for sneakers) were positive. In contrast, the coefficient of the pathway from intent to procrastinate decision-making to tendency to categorize more than one brand into a given consideration set was negative ($\beta = -.08, p < .05$ for digital cameras; $\beta = -.14, p < .01$ for sneakers). However, no differences in pathway coefficients were identified between product categories at the 5% level for any pathways. Thus, hypotheses 5 through 8 were not supported. Table 4 summarizes these results, and the overall results of model analyses are depicted in Figure 2.

Table 4 Results of testing hypotheses 5 through 8

Hypothesis	Pathway	β		Difference
		Digital cameras	Sneakers	
H5	From DQE to IPD	.09 ($p < .05$)	.11 ($p < .01$)	NS
H6	From IPD to TCM	-.08 ($p < .05$)	-.14 ($p < .01$)	NS
H7	From HPQ to PAA	.24 ($p < .01$)	.19 ($p < .01$)	NS
H8	From PAA to TCM	.71 ($p < .01$)	.67 ($p < .01$)	NS

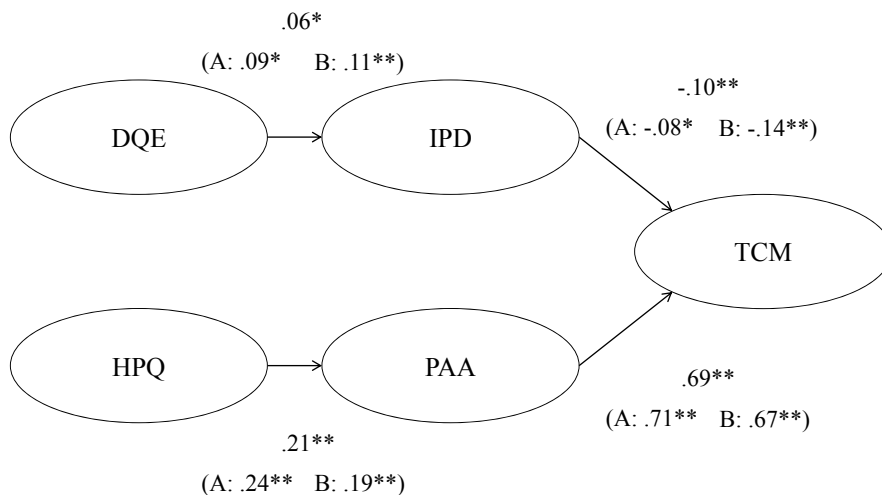


Figure 2 Overall model results

$\chi^2 (114) = 2133.548, p < .01$; RMSEA = .094; CFI = .876 for analysis of products in general.

$\chi^2 (240) = 2412.811, p < .01$; RMSEA = .067; CFI = .866 for multiple group analysis.

Note 1: Numerical values in the figure are standardized pathway coefficients (above: products in general, A in parentheses: digital cameras, B in parentheses: sneakers).

Note 2: ** and * indicate significance at the 1% and 5% levels, respectively.

Note 3: At the 5% level, there was no difference in coefficients between product categories for any pathways.

Discussion

Summary of findings

This study focused on the psychological processes underlying consumer categorization of more than one brand into a given consideration set. Two psychological pathways that may lead to this tendency were derived based on prior research. One of the pathways ran from difficulty in quality evaluation, via intent to procrastination of decision-making, to the tendency to categorize more than one brand into a given consideration set. The other pathway ran from homogeneity of perceived quality, via the perceived attractiveness of alternatives, to the tendency to categorize more than one brand into a given consideration set. Furthermore, it was assumed that the magnitude of the pathway coefficients varied

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between think and feel products. The results indicated that the coefficient sign on three of the four pathways was positive. In contrast, the sign of the remaining pathway (from intent to procrastination of decision-making to the tendency to categorize more than one brand into a given consideration set) was negative. Moreover, no differences in these trends were identified between product categories.

The pathway beginning with the homogeneity of perceived quality supports the hypotheses. As discussed above, when the perceived quality of alternatives is homogeneous, consumers will find other brands attractive, in addition to their favorite ones. Higher perceived attractiveness of alternatives leads to reduced loyalty to the favorite brand. Therefore, multiple brands are more likely to be categorized into the consideration set. This pathway represents a form of consumer psychology in which there is no difference among brands.

The pathway beginning with difficulty in quality evaluation supported the hypothesis regarding the effect of difficulty in quality evaluation on intent to procrastinate decision-making. This result implies that, as suggested by previous studies, an individual faced with a challenging task will procrastinate.

Based on the construal level theory, this study assumed that consumers would categorize more than one brand into a consideration set of tentative purchase candidates because they perceived similarity among brands, due to their increased likelihood to procrastinate decision-making. However, the effect of intent to procrastinate decision-making on the tendency to categorize more than one brand into a consideration set was contrary to our expectations. It may be that consumers who procrastinate their decision-making are effectively procrastinating with respect to their brand evaluation. Accordingly, consumers procrastinate in terms of the formation of the consideration set itself, and thus the number of brands that are categorized into the consideration set is zero. The findings of this study regarding the pathway beginning with difficulty in quality evaluation are as follows. Consumers who face difficulty in quality evaluation procrastinate their decision-making, which causes them to procrastinate in terms of the formation of the consideration set itself. Therefore, the tendency to categorize more than one brand into a consideration set is less pronounced for such consumers.

Hypotheses 5–8, which focused on the differences between think and feel products, were not supported; this implies that the above findings are robust, regardless of product category. An alternative interpretation is that the participants may have perceived both digital cameras and sneakers as think or feel products, contrary to our assumption. For example, let us assume that all digital cameras meet the functionality requirements of the consumers. In that scenario, the consumer's attention may shift to subjective attributes (e.g., design). In this case, consumers will regard the digital camera as a feel product (Miura and Ito 2000; Ratchford 1987). If we had compared other think and feel product categories, differences in path coefficients between them may have been observed.

Contribution and implications

The main theoretical contribution of this study is that it helps clarify why consumers

categorize more than one brand into a consideration set. While existing studies extensively analyzed factors that influence consideration set size, they have not examined why some consumers categorize more than one brand into a consideration set. Our findings that the intent to procrastinate decision-making due to the difficulty in quality evaluation suppresses this tendency, while the perceived attractiveness of alternatives due to homogeneity in perceived quality promotes it, partially fills the research gap mentioned above, thus facilitating consideration set research. Furthermore, our results indicate that the above tendencies are common across think and feel products, i.e., are not product-specific. Demonstrating that the psychological process of categorizing more than one brand into a consideration set is robust, regardless of think and feel product classification, represents another theoretical contribution of this study, although this finding should be validated using other product categories.

There are implications of the analyses of pathways beginning with the difficulty in quality evaluation and homogeneity of perceived quality. First, the results suggest that consumers procrastinate with respect to consideration set formation itself when procrastinating decision-making increases with difficulty in quality evaluation. Accordingly, when the difficulty in quality evaluation is high, consumers are likely to decide which brand to purchase only at the final purchasing point, such as in the store. Thus, it would be useful to increase the weight assigned to in-store marketing for consumers who find it difficult to evaluate quality.

Concerning the pathway beginning with the homogeneity of perceived quality, let us assume that the company's brand is categorized into the consideration set. In this scenario, if a competitor's brand is similar to the company's brand, the competitor's brand is also likely to be categorized into the consideration set. Therefore, marketing that differentiates a brand from potential competitors will lead to the desirable situation whereby only the company's brand is categorized into the consideration set. In contrast, if the company's brand is currently not categorized into the consumer's consideration set, its brand is more likely to be considered for purchase if consumers perceive it as similar to competing brands currently categorized into the consideration set. Thus, marketing that emphasizes the similarity of a company's brand to competing brands categorized into the consideration set will be effective. This suggestion is consistent with the findings of previous studies, in which brands with similar characteristics were more likely to be categorized into the consideration set (Chakravarti and Janiszewski 2003).

Limitations and future research

This study had some limitations that should be mentioned. First, data were collected without consideration of consumer demographics. For example, all respondents lived in Japan. Thus, there may have been some cultural bias. In particular, certain cultural characteristics influence the purchase intentions of consumers (Gilal et al. 2020). Because of this, the factors underpinning the tendency to categorize more than one brand into a given consideration set may vary among different cultures. Hence, our results should be interpreted with caution. Second, although the fit, convergent validity, and discriminant validity of the proposed model

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were almost acceptable, they were not perfect. Again, the results should be generalized only with caution.

Future research targets include further elucidating the psychological processes involved in categorizing more than one brand into a consideration set. This study focused on only two distinct pathways that influence the tendency to categorize more than one brand into a consideration set; however, the actual situation is more complex. For example, adding a pathway from the homogeneity of perceived quality to intent to procrastinate decision-making to the model used in this study for multiple group analysis improved the model fit ($\chi^2(238) = 1916.773, p < .01$; RMSEA = .059; CFI = .897). Furthermore, the pathway coefficients were statistically significant for both product categories ($\beta = .64, p < .01$ for digital cameras; $\beta = .60, p < .01$ for sneakers), implying complexity in terms of the psychological processes involved in the categorization of more than one brand into a consideration set. Elaboration and validation of the model should be performed in future work.

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