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Attribute Resemblance and Preference for Products: Moderating Effect of Attribute Familiarity

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Abstract

This research examines how consumer preferences for products are affected by attribute resemblance, which refers to the degree to which a product is similar with other products that are being evaluated together. It is expected that the influence of attribute resemblance on attitude and choice is moderated by attribute familiarity, which is tested in three empirical studies. Studies 1 and 2 examine the effects on the attitude toward the product and show that the positive influence of attribute resemblance on attitude is stronger when attribute are less (vs. more) familiar. Study 3 tests the effects on choice for which attribute resemblance can have a negative influence because of the increase in the competition with similar options. For choice, the attribute resemblance has a positive influence when attributes are less familiar but has a negative influence when attributes are more familiar.

Keywords: Attribute resemblance, Similarity, Typicality, Attitude toward the product, Choice

1. Introduction

One of the most important decisions for marketers is about the product attributes. For example, designing a new car involves decisions on product attributes such as engine power, gas mileage, and safety features. Traditional theories on the attitude toward the product suggest that the attributes of a product affect the preference for the product, independent of the attributes of other similar products. For example, the multi-attribute attitude model (Fishbein 1967; Kleine III, Kleine, and Brunswick 2009) and conjoint analysis (Green and Srinivasan 1978; Rao 2014) propose that the evaluation of a product is determined by consumer's beliefs the product's own attributes. Another stream of research, on the other hand, suggests that consumer preference for a product is also strongly influenced by the attributes of other products that are being evaluated together. The existing literature on categorization (Loken and Ward 1990; Moreau, Markman, and Lehmann 2001), competition (Hauser and Shugan 1983; Covin, Slevin, and Heeley 2000), positioning (Carpenter and Nakamoto 1989; Sayman, Hoch, and Raju 2002), and choice set composition (Huber, Payne, and Puto 1982; Simonson 1989)

suggests that preference for a product is also affected by the level of the similarity with others.

Given that it is more common that consumers evaluate products in a joint-evaluation mode in which multiple products are simultaneously examined and compared (Hsee 1996), it is essential for marketers to understand how consumer evaluation of a product is affected by the attribute resemblance, which is defined as the extent to which a product has similar attributes to others in terms of the attribute possession and levels. A marketer's decision on the product attributes should consider not only the utilities of the product's own attributes (e.g., utility of gas mileage of the car under development), but also the degree to which the attributes of the product resemble those of its competitors (e.g., gas mileages of competing products). There are two broad positioning strategies that marketers can take in terms of the (dis)similarity with competitors. One strategy is positioning a brand to be dissimilar from competitors, and the other is positioning a brand to be similar with others. The strategies of having attributes that are similar or dissimilar to competitors affects product categorization, attitude, and competition, which in turn affect consumer purchase decisions. Because both strategies have their

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own advantages and limitations, a decision maker should consider the tradeoffs.

Depending on the research stream, some research addresses the positive influences of attribute resemblance, whereas other research focuses more on the negative influences. The existing literature, however, does not present clear solution to the decisions on attribute resemblance. According to categorization theories, attribute resemblance can have positive effects on preference for a product. A product that resembles others tends to be perceived as more typical, which leads to positive evaluation (Loken and Ward 1990). On the contrary, empirical choice models suggest that attribute similarity increases competition among similar products, resulting in a negative effect on choice (Chintagunta 1992; Tversky 1972).

The goal of this research is to reconcile the two competing views and to investigate the moderating role of attribute familiarity in the influence of attribute resemblance on product attitude and choice. An overall similarity of a product with others can serve as an extrinsic cue, implying that the product's attributes are desirable or preferred by most consumers. This influence of the attribute resemblance on preference for products is stronger when consumers are less familiar with the attributes, because they tend to rely more on decision heuristics. Therefore, we expect that the influence of attribute resemblance on product preference is moderated by attribute familiarity, with a greater positive influence for consumers with lower (vs. higher) level attribute familiarity.

The remainder of the paper is organized as follows. The next section reviews the existing literature on attribute resemblance, perceived typicality, and preference for the product. Then, we develop hypotheses about the moderating role of attribute familiarity in the influence of attribute resemblance on attitude and choice. Then, we present three laboratory experiments to test the hypotheses. Finally, we provide discussions and conclusions.

2. Theory and hypotheses

2.1. Attribute resemblance

Attribute resemblance refers to how similar the attributes of a product are to those of others, in terms of attribute distances or overlaps. In psychology, similarity is a key variable that determines how objects are categorized (Sloutsky 2003). Categorization of an object is based on the degree to which the object is similar with the category prototype or exemplars. Similarity is determined by common and distinctive features shared by other objects (Tversky 1977). Two products are perceived to be more similar

Table 1. Attribute overlaps of hypothetical product options.

		Product options		
		Option A	Options B	Option C
Attributes	Attribute X	X1	X1	X2
	Attribute Y	Y1	Y1	Y2
	Attribute Z	Z1	Z2	Z1
Attribute resemblance (Average attribute overlap)		1.5	1.0	0.5

when they share more common features and to be dissimilar when they have more distinctive features. The similarity model by Tversky (1977) explains how similarity is defined when features are discrete (i.e., absence or presence of an attribute). For attributes with continuous levels (e.g., gas mileage of a car), attribute similarity is defined by the distances of attribute levels.

For categorical attributes, resemblance is determined by the attribute overlaps. Categorical attribute levels refer to the existence of certain attributes or qualitative differences in the attributes. An example of an existence-type attribute for digital cameras is image stabilization, and an example of a qualitative attribute is exposure mode (e.g., programmed, automatic, manual, etc.). The example presented in Table 1 shows the attribute overlaps of three hypothetical product options (A, B, and C) that are described on three attributes (X, Y, and Z). Each attribute has two levels (e.g., X1 and X2 for attribute X). Option A shares two common attributes with option B (X1 and Y1) and one common attribute with option C (Z1). On average, option A shares 1.5 attributes with the other options. Options B and C do not share any common attributes, so on average, option B shares 1.0 attribute with other options. Option C shares 0.5 attribute on average. The average attribute overlap can serve as an index of the attribute resemblance of the options, with a higher number indicating more attributes that overlap with others.

For continuous attributes, attribute resemblance is defined in terms of the distance between attribute levels. For example, if the product weights of options A, B, and C are 375, 390, and 420 grams, respectively, then based on the distances among the weight attribute levels, Options A and B are the closest in attribute distance, whereas options A and C are the farthest. An option has a higher resemblance level if its attributes are closer in distance to the attribute levels of other options.

2.2. Attribute resemblance and perceived typicality

Attribute resemblance can have an impact on both attitude and choice of a product. However, the

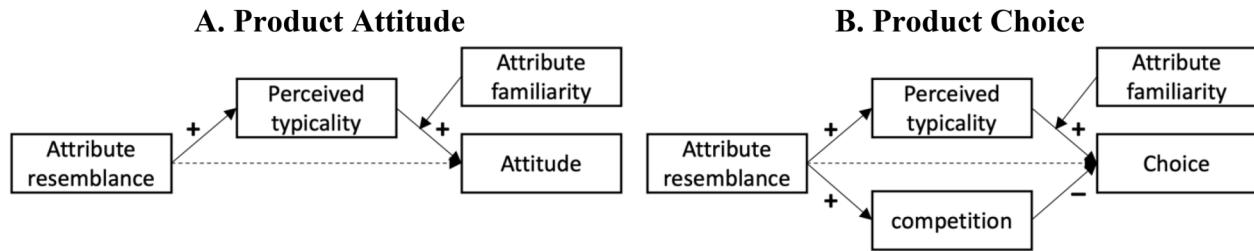


Fig. 1. The influence of attribute resemblance on product attitude (A) and choice (B).

underlying process of the attribute resemblance differs in its influence on attitude and choice. Overall, attribute resemblance has a positive influence on attitude because consumers tend to evaluate typical products more favorably than less typical products (Fig. 1A). On the other hand, attribute resemblance can have both positive and negative influences on choice. While it has a positive influence on product attitude, it also increases competition with similar options, resulting in a negative influence on choice (Fig. 1B).

In addition, we suggest that the impact of attribute resemblance on product preference can be moderated by attribute familiarity. Attribute familiarity refers to the extent to which consumers have knowledge or experience with the attribute information (Mitchell and Dacin 1996). The level of familiarity with attributes is closely related to consumer information processing and decision-making (Alba and Hutchinson 1987). When consumers are familiar with the attributes, their decisions are more strongly influenced by the utility of the attributes themselves. However, when the attributes are less familiar, consumer decisions tend to rely more on heuristics and are affected by various extrinsic cues or decision contexts.

2.2.1. Attribute resemblance and attitude

We propose that the influence of attribute resemblance on product attitude is moderated by attribute familiarity, as illustrated in Fig. 1A. According to existing literature on categorization, the influence of attribute resemblance on attitude can be mediated by perceived typicality. Previous research has found a positive relationship between typicality and preference in various domains, including product preference (Veryzer and Hutchinson 1998), aesthetic judgment (Martindale, Moore, and West 1988), and color preference (Martindale and Moore 1988). As a result, we expect a positive relationship between attribute resemblance and attitude, as a product with more common attributes is likely to be perceived as more typical and thus preferred over atypical products.

We propose that the mediating role of typicality on attitude can differ depending on attribute familiar-

ity. The source of information that influences product evaluation varied depending on the level of familiarity or knowledge that consumers have with the products (Bettman and Park 1980; Carlson et al. 2009). Consumers who are more familiar with product attributes tend to be capable of processing intrinsic cues that are more directly related to the quality or performance of the product (Schumann et al. 2012). Therefore, the influence of extrinsic cues on product evaluation is weaker as the attributes are more familiar (Alba and Hutchinson 1987; Schumann et al. 2012). In contrast, consumers who are less familiar with the attributes are more likely to rely on decision heuristics when evaluating a product, and we expect a stronger effect of attribute resemblance on product evaluations. For example, consumers who are less familiar with product attributes rely more on extrinsic cues such as product categories (Sujaan 1985) and prices (Rao and Monroe 1988). Previous research has shown that perceived typicality can serve as an extrinsic cue that implies product superiority, and the influence of typicality on product attitude is stronger when familiarity is lower (Loken and Ward 1990). Studies on conformity also suggest that a product's similarity-dominance is used as a heuristic for indicating popularity (Burnkrant and Cousineau 1975; Venkatesan 1966), suggesting that attribute resemblance can be an important extrinsic cue. Therefore, we predict that when attribute familiarity is low, attribute resemblance influences attitude toward the product, which is mediated by perceived typicality. However, when attribute familiarity is high, the influence of attribute resemblance on attitude is weaker. The proposed effect on attitude is presented in Fig. 1A.

H1. *The influence of attribute resemblance on attitude is moderated by attribute familiarity. Specifically, the positive influence of attribute resemblance on attitude is stronger when the attribute familiarity is lower than higher.*

H2. *The mediation effect of the perceived typicality in the influence of attribute resemblance on attitude is stronger when the attribute familiarity level is lower compared to higher.*

2.2.2. Attribute resemblance and choice

Product choice has properties distinctive from those of attitude formation in terms of the process through which the final decision is made (Suk and Yoon 2012). One of the most important differences in terms of the influence of attribute resemblance is that the product's attribute resemblance increases competition among the choice options, exerting a negative influence on choice. When competitors are similar to the target product, the level of competition increases, resulting in a reduced likelihood of the target product choice (Dubin 1986; Suk 2008).

Attribute resemblance has both positive and negative influences on choice. The positive influence is similar with the effects on attitude. Attribute resemblance increases the attractiveness of the option when the attributes are unfamiliar (vs. familiar). Therefore, the positive influence of attribute resemblance on choice is more salient when attributes are unfamiliar. The negative influence on choice that is caused by increased competition with similar options. Therefore, it is expected that the effects of attribute resemblance on choice vary depending on the levels of attribute familiarity. The positive (negative) influence of attribute resemblance on choice is stronger when the attributes are less (more) familiar. The proposed effect is presented in Fig. 1B.

H3. *The effect of attribute resemblance on product choice is moderated by attribute familiarity. The positive (negative) influence of attribute resemblance on choice is stronger when the attribute familiarity level is lower (higher).*

3. Study 1: Attribute resemblance and attitude

Study 1 intends to present initial evidence on the moderating role of attribute familiarity in the influence of attribute resemblance on attitude. As suggested by H1, it is expected that the positive influence of attribute resemblance on the attitude toward the product is stronger when the attribute is less (vs. more) familiar.

3.1. Method

A total of 118 undergraduate students (36.4% female, $M_{\text{age}} = 23.3$) participated in a 2 (attribute

resemblance: low vs. high) \times 2 (attribute familiarity: low vs. high) mixed-design experiment. Attribute resemblance was a within-subjects variable, and attribute familiarity was a between-subjects variable. Smart watches were chosen as the experimental stimuli.

Attribute resemblance was manipulated by varying the degree of attribute overlap among the presented product options. Descriptions of a context product and two target products were created. The context product was a non-target option that is not evaluated but was included to manipulate the attribute resemblance of the two targets. The target products differed in the level of attribute resemblance and were evaluated by the participants. One target product had higher resemblance, while the other had lower resemblance. Each of the three products was defined on four attributes. The low-resemblance target product had one common attribute with the context product, whereas the high-resemblance product had three common attributes with the context product. The two target products did not share any attributes. Table 2 presents the attributes used in Study 1.

Attribute familiarity was manipulated by whether explanations about the attributes were provided or not. In the low attribute familiarity condition, no additional explanation about the presented attributes was provided. In the high attribute familiarity condition, participants were presented with information that explained the attributes, which was intended to increase familiarity and comprehensibility. For example, for the attribute of EDA stress detector, a description such as “the electrodermal activity (EDA) sensor detects tiny electrical changes on your skin and tracks changes in your stress level” was provided.

The study was conducted in a classroom using a paper-and-pencil method. Participants were grouped in sessions of 10 to 15 and were informed that they would evaluate smart watches. They were given a booklet that included the description of the context product on the first page, followed by the description of the low and high resemblance products on the next page. The participants rated their attitude toward each of the two target products on a 7-point scale (1 = unfavorable, 7 = favorable). Then, on the following page, perceived similarity was measured to check the manipulation of attribute resemblance. Specifically,

Table 2. Experimental stimuli in Study 1.

Context product	Low resemblance product	High resemblance product
Heart rate monitor	GPS	Heart rate monitor
EDA stress detector	Solar battery	EDA stress detector
Skin temperature sensor	Water resistance to 50 meters	Skin temperature sensor
Calorie burned tracking	Calorie burned tracking	Lithium-ion polymer battery

similarity was measured on a 7-point scale (1 = very dissimilar, 7 = very similar) for three possible pairs of products. A product's resemblance score was computed as the average similarity rating of the pairs that included the product.

3.2. Results

3.2.1. Manipulation check

A 2 (attribute resemblance) \times 2 (attribute familiarity) repeated-measures ANOVA on the resemblance scores of the target products showed that only the main effect of attribute resemblance was significant ($F(1, 116) = 472.05, p < .001$), indicating that the high resemblance product was perceived to be more similar with other products than the low resemblance product ($M_{\text{high}} = 4.04$ vs. $M_{\text{low}} = 2.66$). Neither the main effect of attribute familiarity ($F(1, 116) = 0.61, p = .806$) nor its interaction with attribute resemblance ($F(1, 116) = 1.01, p = .318$) was significant. This result showed that the manipulation of attribute resemblance was successful.

3.2.2. Attitude

A 2 \times 2 repeated-measures ANOVA on attitude toward the target products showed that the main effect of attribute resemblance was significant ($F(1, 116) = 79.22, p < .001$). The attitude toward the high resemblance target ($M = 5.58$) was more favorable than that of the low resemblance target ($M = 4.12$). The main effect of attribute familiarity was only marginally significant ($M_{\text{low}} = 4.74$ vs. $M_{\text{high}} = 4.99$; $F(1, 116) = 3.28, p = .073$). More importantly, the interaction between attribute resemblance and attribute familiarity was significant ($F(1, 116) = 10.79, p = .001$). Planned contrasts showed that in the low attribute familiarity conditions, attitude toward the high resemblance product ($M = 5.71$) was significantly higher than the low resemblance product ($M = 3.78$; $F(1, 116) = 74.29, p < .001$). The difference was also significant in the high familiarity condition ($M_{\text{high resemblance}} = 5.44$ vs. $M_{\text{low resemblance}} = 4.54$; $F(1, 116) = 15.82, p < .001$). However, the significant interaction between attribute resemblance and attribute familiarity indicated that the difference in attitude was smaller in the high (vs. low) knowledge condition, supporting H1. The results are presented in Fig. 2.

3.3. Discussion

The results of Study 1 suggest that attribute resemblance can have a significant impact on attitude toward the product. The study found that participants had a more favorable attitude toward the high resemblance target compared to the low resemblance

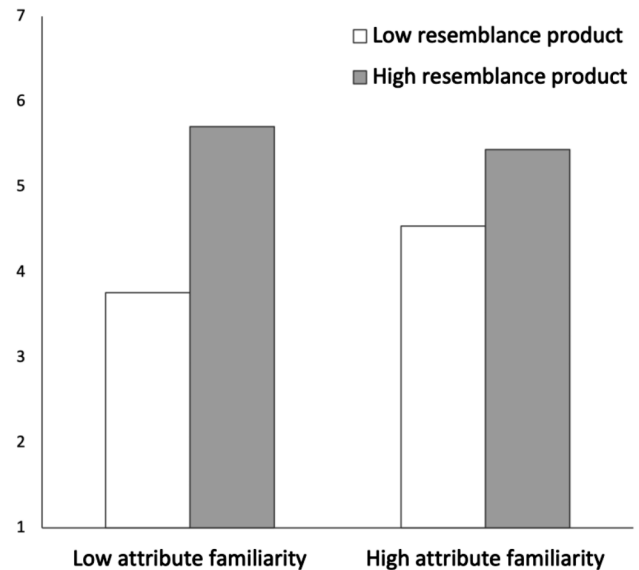


Fig. 2. Product attitudes in Study 1.

target. One possible explanation for this result is that attribute resemblance may serve as an extrinsic cue that suggests the attributes are preferred by most consumers. Furthermore, Study 1 found that the effect of attribute resemblance on attitude was more pronounced when the attributes were unfamiliar. This suggests that attribute resemblance may be more influential when consumers have limited knowledge or experience with the product category. However, Study 1 did not test the underlying mechanism behind the effect of attribute resemblance on attitude. Thus, Study 2 intends to replicate the findings of Study 1 and test the proposed underlying process (H2) using different stimuli and a different operationalization of attribute familiarity.

4. Study 2: Attribute resemblance, typicality, and attitude

The goals of Study 2 are twofold. First, we test the underlying process of the attribute resemblance effect as proposed by H2. Specifically, we test the mediation of typicality perceptions in the influence of attribute resemblance on attitude. Second, we test the generalizability of the attitude resemblance effect by employing different stimuli and operationalizations. Attribute levels used in Study 2 are continuous (e.g., product weight), and attribute resemblance is manipulated by presenting participants with different numbers of high price-quality tiers and low price-quality tiers. Overall attribute resemblance is higher (lower) when the evaluation set includes a larger (smaller) number of similar price-quality tiers, as attribute resemblance is manipulated as the dominance

of similar types of products in terms of price and quality. Additionally, attribute familiarity is operationalized as consumers' product-class knowledge, as commonly done in previous research, because the same attributes are more familiar when consumers have higher-level product knowledge (Mitchell and Dacin 1996).

4.1. Method

4.1.1. Design and participants

A total of 142 (47.6% female, $M_{\text{age}} = 21.4$) undergraduate students enrolled in an introductory marketing course participated in a 2 (product dominance: low price-quality dominance vs. high price-quality dominance) \times 2 (target option: low price-quality vs. high price-quality) mixed design experiment. Product dominance was a between-subjects variable and type of target option was a within-subjects variable.

4.1.2. Stimuli

The experimental stimuli were the digital camera product category. Seven digital camera descriptions were generated, and each option was defined on nine attributes, including price, pixel size, digital zoom, and optical zoom (Table 3). To increase the ecological validity, the options were described with multiple attributes including price. The generated digital camera options included three low price-quality tiers (price range: \$139.95 to \$159.00), three high price-quality tiers (price range: \$339.99 to \$359.00), and one moderate price-quality tier (price: \$249.88). The attribute levels were determined based on product descriptions obtained from online stores. The overall attribute levels were determined to be similar among the same price-quality tiers, and the attributes of higher priced digital camera were superior to those of lower priced digital cameras, considering

that in general, price and quality are positively related (Lichtenstein and Burton 1989).

A low-tier option and a higher tier option were selected as the evaluation target options. The low (high) tier target was one of the low (high) price-quality options (option D and option E in Table 3). The evaluation set consisted of five digital cameras. The two target options were included in all conditions, but the composition of non-target options varied across the options dominance conditions. In the low price-quality dominance condition, the choice set consisted of three low tier options (A, D, and F), the high price-quality target (E), and the moderate tier (B). In the high price-quality dominance condition, the choice set consisted of three high price-product options (C, E, and G), the low price-quality target (D), and the moderate tier (B).

Attribute resemblance level of the low and high target options, therefore, varied depending on the product dominance condition. In the low price-quality dominance conditions, the low (high) price-quality target was higher (lower) in attribute resemblance, whereas in the high price-quality dominance conditions, the high (low) price-quality target had a higher (lower) attribute resemblance.

4.1.3. Procedure

Study 2 was conducted in a classroom using a paper-and-pencil method. The study was conducted in groups of approximately 10 participants. Participants were informed that the goal of the study was to understand consumers' digital camera preferences. Participants were randomly given one of two versions of a folder (low vs. high dominance) that contained the description of five digital cameras. The description of each digital camera option was printed on a separate piece of paper. Participants were given three minutes to read the descriptions of the digital

Table 3. Experimental stimuli in Study 2.

Attributes	Low price-quality tiers			Moderate tier	High price-quality tiers		
	Option A	Option D*	Option F	Option B	Option C	Option E*	Option G
Price (\$)	139.95	149.88	159.00	249.88	339.99	349.00	359.00
Mega pixels	2.0	2.0	2.1	2.0	3.0	3.2	3.2
Weight(lbs.)	0.44	0.36	0.42	.39	.57	.47	.46
LCD (inch)	1.6	1.5	1.6	1.5	1.5	1.5	1.8
Digital zoom	2.0	2.0	2.5	3.5	5.0	3.2	3.3
Optical zoom	None	None	None	2.5	3.0	3.0	3.0
Dimensions (w \times h \times d)	4.3 \times 2.5 \times 1.6	4.4 \times 2.7 \times 1.7	4.9 \times 2.6 \times 1.6	3.4 \times 2.2 \times 1.1	4.7 \times 2.3 \times 1.3	4.0 \times 2.5 \times 1.3	4.0 \times 2.5 \times 1.3
Shutter speed (sec.)	1/ 1,000	1/ 1,200	1/ 2,000	1/ 1,500	1/ 2,000	1/ 2,000	1/ 2,000
Exposure mode	Automatic	Automatic	Automatic, Manual	Program, Automatic	Automatic, Manual	Automatic, Manual	Automatic, Manual

Notes: *target options.

cameras. Afterward, participants were given a questionnaire that measured attitude, perceived typicality, pairwise similarity of the presented options, and knowledge about the digital camera category. Participants were allowed to freely read the descriptions of digital cameras while answering the questions.

4.1.4. Measures

Attitudes toward the presented options were measured using two questions on a 7-point scale (1 = undesirable, unfavorable, 7 = desirable, favorable). Perceived typicality of each option was measured using a question asking the extent to which the option represented the entire digital camera category on a 7-point scale (1 = very atypical, 7 = very typical). Similarity was measured to check the manipulation of attribute resemblance. Specifically, perceived similarity of all possible option pairs was measured on a 7-point scale (1 = very dissimilar, 7 = very similar). The attribute resemblance score of each option was calculated as the average of the score of the similarity pairs that included the option. Participants' subjective knowledge about digital cameras was measured using five questions on a 7-point scale ($\alpha = .91$). This measure included familiarity with digital cameras, overall knowledge of digital cameras, knowledge of digital cameras relative to the rest of the population, knowledge about which digital camera characteristics are important in providing maximum usage satisfaction, and interest in digital cameras.

4.2. Results

4.2.1. Manipulation check

For manipulation check, we regressed attribute resemblance of the target option on product dominance (−1 = low dominance, 1 = high dominance), target type (−1 = low target, 1 = high target), mean-centered knowledge ($M = 3.92$, $SD = 1.31$), and interactions among the independent variables. The result showed that only the 2-way interaction between product dominance and target type was significant ($b = 0.54$, $t(276) = 10.16$, $p < .001$). Figure 3 presents the pattern. The results indicated that the resemblance of the target was affected by the number of similar tiers, with higher (lower) resemblance scores when there were more similar (dissimilar) options. Moreover, the resemblance perception was not affected by knowledge level. Therefore, this result showed that the manipulation of attribute resemblance was successful.

4.2.2. Attitudes

A regression analysis tested the influences of product dominance, target type, mean-centered knowledge, and their interactions on attitude toward the



Fig. 3. Family resemblance of the target options (Study 2).

target option. The results are presented as Model 1 (omnibus effects) in Table 4. The main effect of target type was significant ($b = 0.35$, $t(276) = 4.49$, $p < .001$), indicating that evaluation of the high price-quality target was more favorable than that of the low price-quality target. A 2-way interaction between product dominance and target type was also significant ($b = 0.35$, $t(276) = 4.56$, $p < .001$), indicating that the difference in attitude between the high and low targets was greater when the high price-quality products were dominant. In addition, a 2-way interaction between target option and knowledge was significant ($b = 0.13$, $t(276) = 2.15$, $p = .033$). This result indicated that the preference for the high target to the low target was stronger for consumers with higher knowledge. Except for these effects, on other effect was significant ($t(276) < 1.13$, $p > .261$).

Table 4. Regression beta coefficients (standard errors) in Study 2.

Predictors	<i>b</i> (SE)
Model 1: Omnibus effects	
Target option [1]	0.35 (0.08)**
Product dominance [2]	−0.08 (0.08)
Knowledge [3]	−0.01 (0.06)
Target [1] × Dominance [2]	0.35 (0.08)**
Target [1] × Knowledge [3]	0.13 (0.06)*
Dominance [2] × Knowledge [3]	−0.02 (0.06)
3-way interaction: [1] × [2] × [3]	−0.07 (0.06)
Constant	4.50 (0.08)
Model 2: Low knowledge (−1 SD)	
Target option [1]	0.18 (0.11)
Product dominance [2]	−0.05 (0.11)
Target [1] × Dominance [2]	0.44 (0.11)**
Constant	4.51 (0.11)
Model 3: High knowledge (+1 SD)	
Target option [1]	0.51 (0.11)**
Product dominance [2]	−0.05 (0.11)
Target [1] × Dominance [2]	0.26 (0.11)*
Constant	4.49 (0.11)

Notes: Standard errors are in parentheses. * $p < .05$, ** $p < .01$.

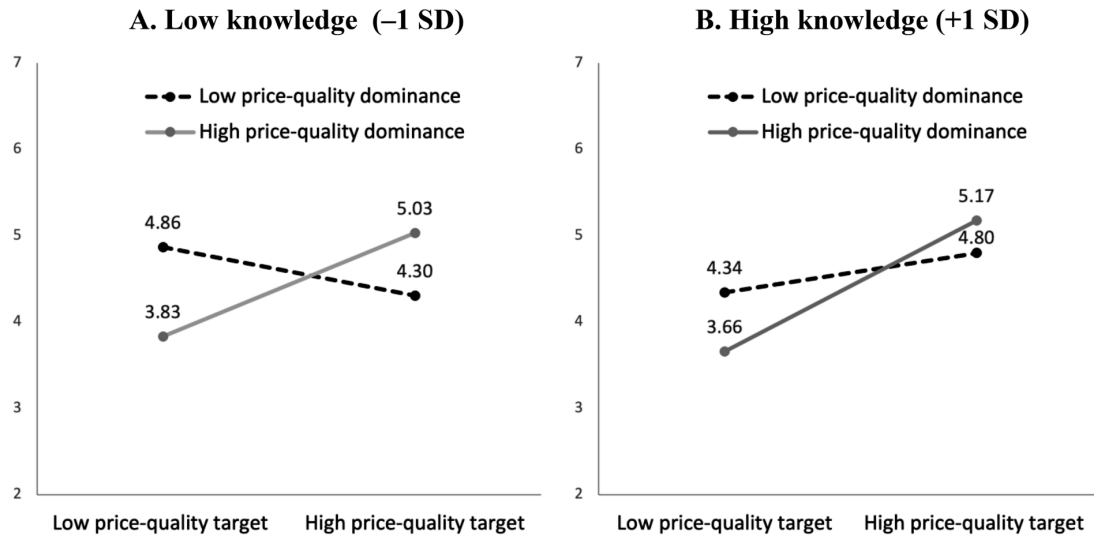


Fig. 4. Attitudes toward the options in Study 2.

We further investigated the effects of product dominance and target type separately for lower knowledge and higher knowledge levels by changing the coding of knowledge as suggested by Spiller et al. (2013). Specifically, knowledge score that was one standard deviation below or above the mean (3.92 ± 1.31) was coded as zero for analyses for the lower knowledge and the high knowledge levels. The results for lower knowledge (Model 2) and higher knowledge (Model 3) were presented in Table 4.

For lower knowledge level, the interaction between target type and product dominance was significant (Fig. 4A). In the low dominance condition, the participants tended to prefer the low target to the high target. When the high price-quality options were dominant, the preference was opposite and the high (vs. low) target was preferred. These findings indicated that for the participants with lower-level knowledge, attitude toward the target option was more positive when the option's attribute resemblance was high.

For the higher knowledge level, the interaction between product dominance and target type was also significant. However, the pattern differed from that of the lower knowledge level and did not show that the higher resemblance option is favored. More importantly, the main effect of target type was significant, showing that expert consumers tended to have intrinsic preferences for high priced-quality target (Fig. 4B). Overall, the results supported H1.

4.2.3. Perceived typicality and mediation test

A regression analysis tested the influence of product dominance, target type, knowledge, and their interactions on perceived typicality of the target. The result

showed that only the interaction between product dominance and target type was significant ($b = 0.31$, $t(276) = 3.67$, $p < .001$). This result indicated that an option that shared more attributes with others was judged to be more typical.

We also conducted the mediating role of perceived typicality in the influence of independent variables on attitude toward the option. We used the Hayes method (Model 14) that tests the moderated mediation effect of the typicality rating in the influence of attribute resemblance on and attribute familiarity on attitude. Specifically, the mediation model included attribute resemblance as the independent variable, attitude toward the target as the dependent variable, perceived typicality as the mediator, and attribute familiarity as the moderator. Attribute resemblance was operationalized as low and high based on the manipulation of the product dominance and target type ($-1 = \text{low resemblance}$, $1 = \text{high resemblance}$). Figure 5 presents the mediation model. The results showed that the mediating role of typicality varied for low versus high knowledge levels. The mediation effect of perceived typicality was significant ($b = 0.06$, 95% CI [0.01, 0.13]) at the low knowledge level (-1 SD), whereas the mediation effect was not significant ($b = 0.03$, 95% CI [-0.03, 0.10]) at the high knowledge level ($+1$ SD). These results supported H2.

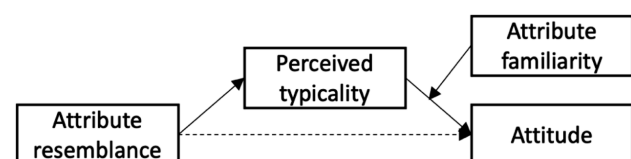


Fig. 5. Mediation test model in Study 2.

Table 5. Attributes and their pretest ratings in Study 3.

Low attribute familiarity		High attribute familiarity	
Air sealing system	5.50	Air sealing system protects wine from air inflow	5.30
Anti-vibration technology	5.40	Anti-vibration technology preserves wine taste from vibration	4.90
Automated thermostatic control	5.60	Automated thermostatic control maintains a constant and consistent temperature	5.80
Dual temperature-zone	5.40	Dual temperature-zone for both long-term and ready-to-drink storage	5.10
Quiet operation	5.10	Quiet operation prevents vibrations causing wine sediment disturbance	5.10
Triple-paned glass door	4.90	Triple-paned glass door protects wine from harmful UV	5.10

4.3. Discussion

The results of study 2 presented additional evidence on the moderating role of attribute familiarity in the influence of the attribute resemblance on attitude. Consumers with lower-level knowledge tended to prefer the option with higher resemblance, which was mediated by perceived typicality. For the consumers with higher-level knowledge, however, attribute resemblance did not affect attitudes.

5. Study 3: Attribute resemblance and choice

Study 3 aims to investigate the impact of attribute resemblance and attribute familiarity on choice. The study tests H3, which proposes that attribute familiarity moderates the effect of attribute resemblance on choice, such that the positive (negative) influence of attribute resemblance is stronger when attributes are less (more) familiar.

5.1. Method

5.1.1. Pretest

Wine fridges were chosen as stimuli for the study, as they were considered to be a product that participants would be less familiar with. A pretest ($n = 20$) was conducted to assess familiarity levels and to select the product attributes to be used in the main study. Participants were asked to rate their knowledge level of wine fridges on a scale from 1 (do not know well) to 7 (know very well), with an average score of 1.90 ($SD = 1.07$), indicating a low level of familiarity with the product.

We selected the attributes that would be used in the main study based on the evaluations of the wine fridge attributes measured in the pretest. The participants were presented with either detailed ($n = 10$) or undetailed ($n = 10$) descriptions of wine fridge attributes. Depending on the pretest condition, the same attribute was presented as more or less detailed. For example, the same information was presented as “quiet operation prevents vibrations causing wine sediment disturbance” in the detailed description condition or as just “quiet operation” in the unde-

tailed description condition. The participants rated their preference for the attributes on a 7-point scale (1 = not desirable, 7 = very desirable). Six attributes were selected based on the following two criteria: (1) positive attribute ratings (i.e., higher than 5.0) and (2) no difference in evaluation between the detailed and undetailed presentation. A 2 (attribute presentation) \times 6 (attributes) repeated-measures ANOVA on evaluation of the selected attributes revealed that the main effects of attribute presentation ($F(1, 18) = .17, p > .68$) and attributes ($F(5, 90) = .65, p > .66$), and their interaction ($F(5, 90) = .40, p > .96$) were not significant, qualifying our selection criteria. Table 5 presents the selected attributes and their ratings.

5.1.2. Main study

A total of 55 undergraduate students were randomly assigned to either the low or high attribute familiarity condition. The participants were presented with the three wine fridge options and selected one they wanted to purchase. In low attribute familiarity condition, the attribute information was presented without explanations, whereas in the high attribute familiarity condition, product attributes were presented with more detailed explanation (Table 5).

The three wine fridge options were described on three attributes, as shown in Table 6. The level of attribute resemblance varied across the three choice options with high, moderate, and low resemblance levels. The high resemblance option shared two attributes with the moderate resemblance option and one attribute with the low resemblance option. Therefore, the high resemblance option shared on average 1.5 attributes with the other options in the choice set. The moderate resemblance option shared two attributes with the high and no attribute with the low resemblance options, with the average resemblance scores of 1.0. The low resemblance choice option shared only one attribute with the high resemblance option, with the resemblance scores of 0.5.

The participants were presented with the three option and selected one that they wanted to purchase. Then, perceived similarity of three product pairs was measured on a 7-point scale (1 = very dissimilar, 7 = very similar), and the perceived resemblance score

was computed as the average similarity rating. Lastly, easiness to understand the attribute information was measured for a manipulation check for attribute familiarity (1 = very easy, 7 = very difficult).

5.2. Results

5.2.1. Manipulation checks

Manipulation of the attribute resemblance was tested by a 2 (attribute familiarity) \times 3 (choice option) repeated-measures ANOVA on the perceived resemblance score of the choice options. The result showed only the main effect of choice option was significant ($F(2, 106) = 79.41, p < .001$), indicating that the resemblance scores differed among the three choice options ($M_{\text{high}} = 4.62$ vs. $M_{\text{moderate}} = 3.76$ vs. $M_{\text{low}} = 3.16$). A test on the manipulation of attribute familiarity showed that the attributes were judged to be easier to comprehend in the high (vs. low) attribute familiarity condition ($M = 5.35$ vs. $4.08; F(1, 53) = 38.43, p < .001$). These results indicated that the manipulations of the attribute resemblance and attribute familiarity were successful.

5.2.2. Choice

The influence of attribute resemblance on choice was tested by a 2 (attribute familiarity) \times 3 (choice options) chi-square test. The result was significant ($\chi^2(2) = 8.83, p = .012$), indicating that the choice shares the three options differed between the low and high resemblance conditions. In the low attribute familiarity condition, the choice of the high resemblance option was the highest (55.2%), followed by the moderate (24.1%) and the low (20.7%) resemblance options. In the high attribute familiarity condition, on the contrary, the choice share of the low resemblance option was the highest (53.8%), followed by the moderate (26.9%) and the high (19.2%) resemblance options. Figure 6 presents the results.

5.3. Discussion

The results of Study 3 indicate that attribute familiarity moderated the influence of attribute resemblance on choice. When the attributes were unfamiliar, attribute resemblance had a positive influence on choice, and the option that resembled the other

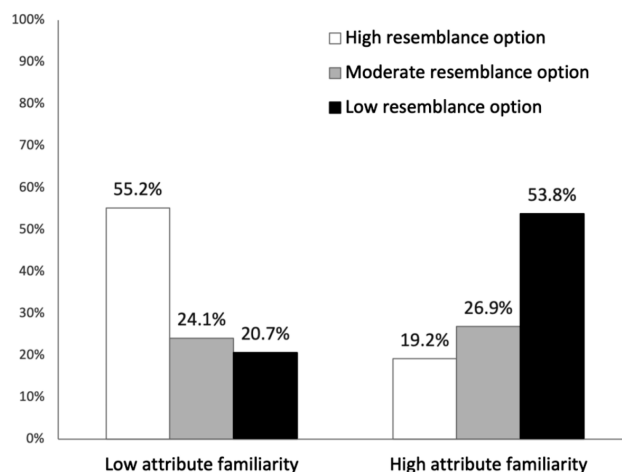


Fig. 6. Choice share in Study 3.

options the most was more likely to be chosen. On the other hand, when the attributes were familiar, attribute resemblance had a negative influence on choice, which can be explained by a higher level of competition. These findings suggest that overall similarity can be a reason for choice when individuals are uncertain about attributes, but attribute competition may decrease choice likelihood when attributes are familiar. The results of Study 3 supported H3.

6. General discussion

The results of three empirical studies consistently showed that the influence of attribute resemblance on product preference was moderated by the levels of attribute familiarity. When the attributes were not familiar, attribute resemblance had a positive influence on attitude and choice. These results imply that a product's overall similarity with others can be an extrinsic cue which suggests that the attributes of the product are desirable or preferred by most people. When the attributes were familiar, attribute resemblance had a differential impact on attitude and choice. The influence of attribute resemblance was positive on attitude but negative on choice.

6.1. Theoretical contributions

This research integrates different views on the influence of attribute resemblance on preference for

Table 6. Product options and attributes in Study 3.

High resemblance option	Moderate resemblance option	Low resemblance option
Triple-paned glass door	Triple-paned glass door	Automated thermostatic control
Air sealing system	Air sealing system	Quiet operation
Dual-temperature zone	Anti-vibration technology	Dual-temperature zone
Resemblance score: 1.5	Resemblance score: 1.0	Resemblance score: 0.5

the product from categorization theories and choice modeling. The findings of the current research show that attribute resemblance can have both positive and negative influence on preference. The directions of the effect differ depending on the levels of attribute familiarity and the types of decision. The positive influence of attribute resemblance on preference was more prominent when the attributes were less familiar and the decision was about the attitude toward the product. The detrimental influence of attribute resemblance was observed when the attributes were more familiar and the decision was making a choice. Therefore, this research contributes to the existing literature by presenting the boundary conditions of the positive and negative impacts of a product's attribute resemblance.

Another contribution of this research was testing the mediating role of typicality. Attribute resemblance has a positive influence on perceived typicality of a product regardless of the attribute level familiarity. However, the influence of typicality on preference was moderated by attribute familiarity, with a stronger mediation effect when the attributes were less familiar. This result indicates that the advantages of the typical option in preference vary depending on how well consumers comprehend the values and desirability of the attributes.

6.2. Practical implications

The findings of this research also suggest important practical implications for product development. Developing new products or improving existing products requires decisions on the attribute levels. According to the results of this research, the utility of an attribute level is not only determined by the feature or performance of the product's own attributes but also determined by the similarity with those of other products. Decisions about whether to design a product to be unique from or to be similar with other competitors should take the level of attribute familiarity into consideration. Differentiating attribute levels should be more desirable when the attribute familiarity level is high, whereas making the attribute levels similar with those of existing products can be a viable strategy when the attribute familiarity level is low. For example, some Chinese automobile manufacturers have introduced electric car models that were copycats of Tesla, one of the best-selling electric cars (Electrek 2020). As many consumers may not have extensive experience with driving electric cars, their familiarity with attributes may be low. Based on the findings of this research, the copycat strategy employed by the Chinese startups can be a viable strategy for new product development.

This research also presents implications for brand positioning. The finding of this research suggests that in some circumstances, positioning a brand as being similar to existing competitors is desirable, despite the higher level of competition. For example, in the early stages of a product life cycle, most consumers are not knowledgeable about a new product. Thus, given that consumers do not have pre-defined brand preferences, consumers' evaluation of the brand with higher resemblance would be more favorable. Our findings also suggest that marketers can create preferences for a particular type of brand just by presenting more versions of similar brands to consumers who lack the ability to evaluate brands solely based on their attributes.

6.3. Limitations and future research

One of the limitations of the current research is low ecological validity because all empirical studies were conducted in a laboratory setting. Future research may test the effect with real consumer purchase data or product sales data. Choice modeling that analyzes consumer purchase data can test the key finding of this research, such as the differential influence of attribute resemblance of products for people with lower versus higher levels of expertise. The positive influence of attribute resemblance on choice should be higher for people with lower-level knowledge or experience, whereas the influence is weaker or negative for people with higher-level knowledge or experience. This finding suggests the importance of considering heterogeneity of consumer.

Conflict of interest

There is no conflict of interest.

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