



Consumer perceptions of product creativity, coolness, value and attitude



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ARTICLE INFO

Article history:

Received 23 October 2012

Received in revised form 11 March 2014

Accepted 13 March 2014

Available online 13 April 2014

Keywords:

Novelty

Meaningfulness

Coolness

Hedonic value

Utilitarian value

Attitude

ABSTRACT

Of the two dimensions of creativity, novelty and meaningfulness, the importance of novelty is mixed in empirical managerial research. This study extends creativity research to consumers. The model first proposed that perceived value mediates the relationship between creativity and product attitude. When early research revealed that product novelty does not influence perceived value and attitude directly and that consumers value novelty only if it leads to perceptions of coolness, the proposed model added coolness as a mediator. Results show that novelty influences coolness, which affects hedonic value which in turn, impacts consumers' attitude whereas meaningfulness influences attitude by affecting utilitarian value. Thus, for customers to appreciate a new product, it must either be meaningful or if novel, it must also be cool.

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1. Introduction

Enhancing creativity in new products is critical to the growth and survival of a firm (cf., Schumpeter, 1934). Also, creativity embedded in new products offers superior value to customers which can lead to higher profitability (Andrews & Smith, 1996; Kleinschmidt & Cooper, 1991; Robertson & Gatignon, 1986).

Academic research in business has paid scant attention to creativity until fairly recently (Amabile, 1983, 1988). Within marketing, such issues as the organizational characteristics related to new product creativity (Andrews & Smith, 1996; Im, Montoya-Weiss, & Workman, 2013; Moorman & Miner, 1997; Sethi, Smith, & Park, 2001) and the role of new product creativity as a predictor of new product performance (Im & Workman, 2004) dominate the creativity research stream. Based on Amabile's (1983, 1988) work, these researchers conceptualize new product creativity as the degree to which a new product is perceived to be uniquely different from competitors' products in a manner that it is meaningful to target customers. In other words, new product creativity comprises the dimensions of novelty and meaningfulness. Despite general support for the notion that creativity can lead to new product success, some anecdotal evidence suggests the opposite. Take for example, the smokeless cigarette, which cost RJ Reynolds \$325 million to

develop. The idea was novel and the promise of a "cleaner" alternative to cigarettes seemed meaningful to smokers. Yet it failed. So why do some creative products, judged by their novelty and meaningfulness, fail, even as others succeed? The answer may partly lie in the decisions of consumers to adopt or reject the new product. Surprisingly, despite this rather obvious point, most of the research so far examines new product creativity and its role in new product success as perceived by managers and largely ignores the customer's perspective. In two exceptions, Rubera, Ordanini, and Mazursky (2010) observe that consumers value novelty or meaningfulness depending on their level of product involvement and knowledge and Rubera, Ordanini, and Griffith (2011) note differences between American and Italian consumers in how strongly novelty and meaningfulness influences purchase intentions. Thus, consumer perspectives clearly hold promise for understanding creativity and its dimensions and their effect on new product evaluation.

Secondly, reports about the impact of creativity on new product outcomes are inconsistent. Most researchers assert that creativity leads to positive outcomes such as product performance, competitive advantage and differentiation (Amabile, 1988; Andrews & Smith, 1996); yet Im and Workman (2004) show that only meaningfulness influences new product performance. Further research is therefore necessary to understand this ambiguity; perhaps, the explanation lies in some intervening variables that influence the creativity–outcome relationship.

To address these issues, this study empirically examines the mediating variables that potentially influence the creativity–outcome relationship in the consumer context. In the proposed model, consumers'

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assessment of a new product's creativity affects their perceptions of the product's value (comprising the dimensions of utilitarian and hedonic value), which in turn determines their attitude toward the new product. This model parallels the dual routes suggested by March's (1991) theory of exploitation and exploration, such that novelty affects perceived hedonic value while meaningfulness influences perceived utilitarian value, and the two value dimensions influence attitude toward the product. Consumer attitude is the final dependent variable in this model because it typically presages a new product's adoption and sales, outcomes desired by new product managers. The focus on value follows the observation that while managers constantly try to enhance new product creativity in their quest to seek a competitive advantage, consumers are not enamored by a new product's creativity per se but will like and adopt a new product only if they find value in it. The mediating effect of value may perhaps be one explanation for the lack of consistency in the creativity–outcome relationship noted in managerial studies.

This study also introduces a new construct, new product coolness as a potential additional intervening variable in the creativity–outcome relationship. Pretest observations indicating that meaningfulness, but not novelty, influenced consumer attitudes led to a qualitative study to understand why consumers did not value novelty. Participants in the study did not care for novelty per se but appreciated a product with novel features that were also “cool.” Further investigation led to the conceptualization of the construct “new product coolness” as the degree to which a new product has trendy, hip, appealing, fascinating and attractive features. Novelty seemed like a prerequisite for coolness because cool features must start as new, unique and different ones. Additionally, participants said that a product's coolness made them experience positive emotions ranging from pleasant surprise to excitement. These positive affective responses suggest that coolness may be an important intermediary factor in the relationship between novelty and hedonic value.

To summarize, this study contributes to current literature by extending current, managerially-oriented new product creativity research to the consumer domain and testing a model of new product creativity and evaluation, in which (1) coolness is an intermediary variable between novelty and hedonic value and (2) hedonic and utilitarian values are intervening variables between coolness and meaningfulness on the one hand and attitude toward the product on the other. Furthermore, the addition of these intervening variables may help shed light on inconsistencies in the link between creativity and product outcomes noted in prior research. Finally, the present article introduces the concept and a measure of new product coolness which has the potential to clarify the relationship between a new product's creativity and its acceptance in the marketplace.

2. Theoretical background

2.1. Creativity in psychology, management, and marketing literature

For some time, psychology researchers have been interested in understanding creativity and its dimensions (Besemer & O'Quin, 1986; Besemer & Treffinger, 1981; Mumford & Gustafson, 1988). One popular theory of creativity, Amabile's, presents novelty and meaningfulness as its two dimensions. Organizational behavior researchers have also been exploring the nature of creativity and its relationship with various organizational variables and outcomes (Gumusluoglu & Ilsev, 2009; Koberg & Chusmir, 1987; Oldham & Cummings, 1996).

Recently, some marketing scholars have been investigating creativity in the context of new product development (Im & Workman, 2004; Sethi et al., 2001) and marketing programs (Andrews & Smith, 1996). In this research stream, creativity, comprising the dimensions of novelty and meaningfulness, has been rated by new product managers. Despite the dominant argument that creativity positively influences new product outcomes such as differentiation and profitability (e.g., Andrews & Smith,

1996; Moorman & Miner, 1997), a recent study by Im and Workman (2004) argues that of the two creativity dimensions, only meaningfulness enhances new product performance.

2.2. Consumers' perceptions of new product creativity and product evaluations

Researchers have shown little interest in consumers' perspective of the creativity of new products and in particular, how consumer creativity assessment influences outcomes such as perceived value or attitude toward the product. However, because the fate of new products ultimately depends on consumers, examining how their creativity perceptions drive product evaluations should be important for practitioners. Some studies speculate that novelty and meaningfulness result in superior perceived product value (Andrews & Smith, 1996; Kleinschmidt & Cooper, 1991). And in one of the few relevant consumer-centric creativity studies, Rubera et al. (2010) find that novelty is more relevant in consumers' assessment of creativity when they are very involved or have little knowledge of the product whereas meaningfulness is more important when consumer involvement is low or their knowledge high. However, their research focuses on the interaction between the two dimensions of creativity and does not consider how creativity affects other consumer product evaluations. Also, Rubera et al. (2011) find a greater influence of novelty on purchase intentions among U.S. consumers relative to Italians, but a greater influence of meaningfulness in Italy compared with the U.S. This study attempts to fill this gap in the new product creativity literature through empirical research in the consumer domain.

Managers tend to think of a product in terms of features and attributes and how these give them a competitive advantage but consumers are not interested in the creativity of the attributes or features per se but rather in how the attributes translate into benefits that help satisfy their needs. Consumer perceptions of a product's value in turn drives attitude formation. To summarize, consumers' assessment of a new product's creativity is expected to influence judgment of its value which then influences attitude toward it. The following section describes a pretest which examines the general validity of the proposed relationships and assists in developing construct measures.

3. Pretest

3.1. Study design

The pretest with university student subjects used two product categories — sports shoes and cell phones. These product categories would be appropriate in the context of this study because of their familiarity to the subjects and their frequent addition of features. Each product category had four hypothetical new products with a new feature not yet available in the market. In the sports shoes category, the four new features were greater durability, automatic deodorizer, fire resistance and colored insoles. In the cell phone category, the four new features were greater durability, free from radiation, fire resistance and changeable color keypads.

Im and Workman's (2004) paper and a focus group in an MBA class at a U.S. university inspired the scales measuring new product novelty and meaningfulness. Six measurement items each represented the constructs of novelty and meaningfulness and each item had seven-point Likert-type scales (1 = strongly disagree, 7 = strongly agree). The utilitarian and hedonic value scales were adapted from Voss, Spangenberg, and Grohmann (2003) and used five seven-point semantic items each. To measure overall attitude toward the new product, the survey asked participants to evaluate their attitudes toward the described new product on two seven-point semantic scales (1 = very unfavorable, 7 = very favorable; 1 = very negative, 7 = very positive) and to indicate whether they agreed with the Likert statement “I like this product very much.” Appendix A contains details of the questions.

The surveys were distributed to 79 undergraduate business students who had joined a subject pool at the university. Students are an appropriate sample because they are very familiar with sport shoes and cell phones and fit well with the exploratory nature of this research. Respondents first read a description of each hypothetical, recently introduced product. For example, the description of the sports shoes with automatic deodorizer read: “The new product being introduced is a pair of sports shoes with automatic deodorizer. These shoes are made with special materials that can automatically deodorize the odor caused by sweat.” Next, participants assessed the product’s novelty and meaningfulness, hedonic and utilitarian values, and their attitude toward it. Each participant answered questions about two products in each product category and the order of these products varied randomly across the questionnaires. Thus each product was evaluated by between 29 and 40 respondents.

3.2. Scale validation

A factor analysis using principal components with Varimax rotation revealed that the measurement items representing novelty and meaningfulness loaded on separate factors for all eight products, in support of the unidimensionality of these scales. Across the eight products in the pretest, all multi-item scales for the major constructs exhibited good internal consistency, as reflected by Cronbach’s alphas of at least .81, which supported the calculation of mean ratings for the constructs.

3.3. Relationship among variables

Bivariate correlations affirmed the expected relationships among the constructs. In particular, meaningfulness correlates significantly ($p < .05$) with utilitarian value for all eight products and novelty correlates significantly with hedonic value for four products: the more durable sports shoes, the more durable cell phone, radiation-free phone, and phone with changeable keypads. Utilitarian and hedonic value both significantly correlate with attitude for all eight products. Furthermore, meaningfulness correlates with attitude for all eight products and novelty with attitude for only five of them.

Although these correlations do not indicate causal relationships among the constructs, the findings suggest that novelty is not consistently related to either perceived hedonic value or attitude. Therefore, exploring variables that potentially intervene in or mediate the relationship between novelty on the one hand and perceived value and attitude on the other is important.

3.4. Qualitative research to probe novelty effects: coolness as a potential mediator

To investigate the inconsistent effects of novelty on hedonic value and attitude, two focus groups were conducted with 30 participants in MBA classes at the same U.S. university. These participants were asked what words, ideas or images came to mind upon first hearing the description of each new product, same as the ones used in the pretest.

Participants appreciated some new product features as meaningful because they provided value or useful benefits. However, they expressed little interest in new product features that were only novel, unique, or different from existing products. Further probing revealed that participants were pleased with the novel features of new products only if those features were also seen as cool. When questioned further about what cool features meant, participants used adjectives such as trendy, hip, appealing, attractive and fascinating. They conveyed that only novel features can be cool, suggesting that novelty is a prerequisite for coolness and that coolness leads to positive affective reactions, including positive surprise and, in extreme cases, a wow response. Products that are merely novel but not cool elicited a “so what?” response. In other

words, to be cool, the product has to be novel but not all novel products are cool.

4. Hypotheses

The theory, the pretest results and insights from the focus group suggest a dual path model of the consumer creativity–attitude relationship in new product evaluations (see Fig. 1).

Unlike managers who typically view a product as a bundle of features or attributes, consumers perceive a product as a set of benefits that is related to their purchase goals. Neither theoretical arguments nor empirical research suggests that consumers value creativity for its own sake. Therefore, when consumers see a new product and assess its creativity, that is, its novelty and meaningfulness, the assessment will influence how they value it. Numerous authors posit that consumers perceive value in both utilitarian and hedonic product dimensions (e.g., Babin, Darden, & Griffin, 1994; Chiu, Hsieh, Li, & Lee, 2005, and Dhar & Wertenbroch, 2000). Utilitarian value refers to a product’s functional, instrumental or practical benefits whereas hedonic value refers to a product’s aesthetic, experiential or sensory benefits (Chitturi, Raghunathan, & Mahajan, 2008; Dhar & Wertenbroch, 2000; Voss et al., 2003).

With new products, in the absence of prior knowledge, hedonic and utilitarian values may come from the product’s novel and meaningful features or characteristics, respectively. The meaningful dimension emphasizes the product’s functionality, usefulness, relevance and ability to fulfill needs. This process of judging meaningfulness usually requires extensive cognitive effort because it involves assessing whether a product solves a specific consumption problem (e.g., Rubera et al., 2010). Such a cognitive assessment tends to lead to the evaluation of the product’s utilitarian value.

The novelty dimension of a new product, on the other hand, emphasizes qualities such as the product’s newness and uniqueness. Assessing a product’s novelty is far easier and quicker as consumers only need to consider how unusual or different the product is (Rubera et al., 2010). Jackson and Messick (1965) suggest that creative products produce a distinct set of responses such as surprise, stimulation and savoring in observers. Also, exposure to novel stimuli can generate an affective response (Duckworth, Bargh, Garcia, & Chaiken, 2002; Zajonc, 1968). Yet, as noted in qualitative research to probe novelty effects, any impact of novelty may matter only if the new product features are also cool. For these reasons, assessing a product’s novelty and the resulting possible coolness may by focusing more on the sensory and experiential dimension of the new product, lead to evaluation of the hedonic value of the product.

Consumer behavior literature affirms that customers’ evaluation of or attitude toward a product and ultimate decision to adopt depends on their perceptions of the product’s value (e.g., Baker, Parasuraman, Grewal, & Voss, 2002; Bolton & Drew, 1991; Zeithaml, 1988). To summarize, product novelty and coolness are expected to affect the product’s perceived hedonic value and product meaningfulness to influence the product’s perceived utilitarian value. Utilitarian and hedonic values, in turn, are expected to impact attitude toward the product.

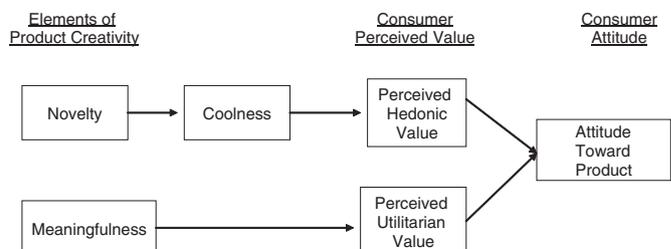


Fig. 1. Conceptual framework.

This model is also similar in approach to the dual routes suggested by March's (1991) theory of exploratory and exploitative learning, in that the two dimensions of creativity, novelty and meaningfulness, follow two different paths leading to perceived hedonic and utilitarian values, respectively. In March's view, two contrasting, complementary paths of learning are exploration (i.e., seeking new knowledge by exploring tacit, unknown information through a divergent process) and exploitation (i.e., seeking new knowledge using existing information through a convergent process). Evaluating novelty may trigger the exploration route whereas assessing meaningfulness may trigger the exploitative route.

Based on the rationale in the previous paragraphs, the hypotheses are:

H1. (a) Product coolness mediates the impact of product novelty on perceived hedonic value, and (b) perceived hedonic value mediates the impact of coolness on attitude toward the product.

H2. Perceived utilitarian value mediates the impact of product meaningfulness on attitude toward the product.

5. Method

5.1. New product stimuli and measures

The same eight new products from the pretest appeared in the main study. The lack of an existing measurement scale for coolness meant that one had to be developed. A literature review and one-on-one exploratory interviews with 22 student participants provided insights for the development of such a scale. When asked to describe cool products, students used the terms trendy, hip, appealing, fascinating, and attractive most commonly. Seven-point semantic differential scales (1 = not at all, 7 = very) that featured these five adjectives were therefore used to represent coolness.

Next, 37 graduate students were prompted to think of a product that they believed was cool and express their opinion of it on the five-item coolness scale. The Cronbach's alpha of the scale was .89, with high item-to-total correlations, implying that the five items had good

internal consistency. Therefore, the five-item scale appeared to provide a reliable, valid measure of new product coolness. The measures for new product novelty, meaningfulness, hedonic and utilitarian values and attitude were the same as in the pretest.

5.2. Data collection

A survey containing all these measures was administered to undergraduate students in another subject pool at the same university. The survey was similar to the one in the pretest, with the exception of the addition of the coolness measurement scale. Each survey contained descriptions of four new products, in varying orders. Of the 278 submitted surveys, 270 were usable. Each product was evaluated by between 70 and 81 respondents. Table 1 displays the means and standard deviations for the key variables as well as the correlation matrix for all products combined.

A confirmatory factor analysis was conducted to assess the validity of the measurement model of all the constructs. The value and significance of the χ^2 statistic ($\chi^2 = 4778.14$, $df = 405$, $p < .01$) perhaps suggests a lack of fit of the model with the data. However, due to the sensitivity of the χ^2 statistic to sample size and the number of indicator variables, Hair, Black, Babin, and Anderson (2010) recommend the use of other goodness-of-fit indices. Incremental goodness-of-fit indices, the Normed Fit Index (NFI = .94), the Incremental Fit Index (IFI = .95), the Tucker–Lewis Index (TLI = .94) and the Comparative Fit Index (CFI = .95), indicate a good fit of the model (Bagozzi & Yi, 1988; Bagozzi, Yi, & Phillips, 1991; Hair, Black, Babin, & Anderson, 2010). In addition, the two absolute goodness-of-fit indices, the Root Mean Square Error of Approximation (RMSEA = .07) and the Standardized Root Mean Square Residual (SRMR = .07) also suggest good model fit.

The convergent validity of each of the constructs was assessed in many ways. For all constructs, the factor loadings were statistically significant, positive and greater than .7, indicative of convergent validity (Anderson & Gerbing, 1988; Bagozzi et al., 1991). Similarly, in further support, the average variance extracted (AVE) values were greater than .50 (Fornell & Larcker, 1981) for all constructs (see Table 1, Panel b diagonal, first of two figures). Finally, CR values for all products ranged from .81 to .90 (see Table 1, Panel b diagonal, second of two figures),

Table 1
Descriptive statistics for key variable results.

a. Means (standard deviations)												
	Novelty		Meaningfulness		Coolness		Hedonic value		Utilitarian value		Attitude	
<i>Sports shoes</i>												
More durable	4.2	(1.0)	5.5	(1.0)	4.3	(1.4)	4.0	(1.1)	5.2	(1.2)	5.1	(1.3)
Deodorizer	5.9	(1.0)	5.5	(1.1)	4.4	(1.4)	4.3	(1.5)	5.1	(1.2)	5.2	(1.5)
Fire-resistant	5.4	(1.1)	2.9	(1.3)	2.7	(1.3)	2.9	(1.4)	3.4	(1.5)	3.2	(1.4)
Color insoles	3.0	(1.6)	2.5	(1.5)	3.3	(1.9)	3.4	(1.8)	2.6	(1.6)	3.1	(1.6)
<i>Cell phones</i>												
More durable	4.5	(1.3)	5.7	(1.2)	4.6	(1.1)	4.3	(1.5)	5.7	(1.1)	5.1	(1.4)
Radiation-free	6.0	(1.0)	5.9	(1.1)	4.9	(1.6)	4.3	(1.4)	5.6	(1.3)	5.7	(1.3)
Fire-resistant	5.3	(1.1)	3.3	(1.6)	3.2	(1.4)	3.3	(1.6)	3.7	(1.6)	3.4	(1.6)
Color keypads	3.1	(1.4)	3.1	(1.4)	4.1	(1.8)	3.8	(1.8)	2.8	(1.4)	3.5	(1.6)
b. Correlations												
	Novelty		Meaningfulness		Coolness		Hedonic		Utilitarian		Attitude	
Novelty	.50/.82^a											
Meaningful	.50 ^b		.63/.90									
Coolness	.38		.60		.55/.83							
Hedonic	.36		.53		.82		.67/.82					
Utilitarian	.52		.85		.62		.61		.68/.85			
Attitude	.46		.80		.73		.66		.81		.62/.81	

^a The first number on the diagonal represents the average variance extracted (AVE) value and the second number represents the construct reliability (CR) value for each variable.

^b All correlations are significant at $p < .01$ level (two-tailed test).

indicative of good reliability (Hair et al., 2010). The results from these three tests are therefore, good indicators of the convergent validity of the major constructs used in this study (Hair et al., 2010).

Following Hair et al. (2010), the discriminant validity of the constructs was assessed by comparing construct AVE values to the corresponding interconstruct R^2 values. Twenty four of the possible thirty pairs of constructs passed this stringent test but six did not. Therefore, a more traditional procedure of χ^2 difference tests was used. Pair-wise χ^2 difference tests were conducted to assess the statistical significance at the .05 level of the fit of an unrestricted model (i.e., correlations between constructs freely estimated) and a restricted model (i.e., correlations fixed at 1) (Anderson & Gerbing, 1988). All comparisons exhibited significant χ^2 differences in favor of unrestricted models, offering support for construct discriminant validity. Overall, the goodness-of-fit, reliability and convergent and discriminant validity test results suggest that the measurement model used in the study is good (Bagozzi et al., 1991; Fornell & Larcker, 1981; Hair et al., 2010).

6. Results

To test the mediation effect hypotheses, regression analyses were conducted separately for each product, following Baron and Kenny's (1986) test of mediation (see Table 2). Firstly, regression equations with multiple independent variables were examined for potential multicollinearity issues. VIF values ranging between 1.1 and 4.4 and Condition Indexes between 3.9 and 17.5 imply little multicollinearity. Next, in a test of the mediating effect of coolness (H1a), the effect of novelty on coolness is significant for seven of eight products and the effect of coolness on hedonic value is significant for all products (see Table 2, Panel a). The effect of novelty on hedonic value is attenuated and becomes almost zero for all eight products when coolness is added as an explanatory variable (see Table 2, Panel a), which suggests that coolness partially mediates the effect of novelty on hedonic value. The insignificant relationship between novelty and coolness arises only for the fire-resistant sports shoes. Although the mean novelty score for

Table 2
Mediation effects test results (regression coefficients).

a. Coolness mediating the novelty–hedonic value relationship					
Products	I.V. → mediator	Mediator → D.V.	I.V. → D.V.	I.V. and mediator together → D.V.	
	Novelty → coolness	Coolness → hedonic	Novelty → hedonic	Novelty → hedonic	Coolness → hedonic
<i>Sports shoes</i>					
More durable	0.36 ^a	0.56 [*]	0.19	−0.01	0.57 [*]
Deodorizer	0.51 [*]	0.78 [*]	0.46 [*]	0.08	0.73 [*]
Fire-resistant	0.17	0.79 [*]	0.22	0.09	0.77 [*]
Color insoles	0.61 [*]	0.87 [*]	0.61 [*]	0.12	0.80 [*]
<i>Cell phones</i>					
More durable	0.66 [*]	0.85 [*]	0.62 [*]	0.12	0.76 [*]
Radiation-free	0.65 [*]	0.73 [*]	0.47 [*]	0.01	0.72 [*]
Fire-resistant	0.28 [*]	0.80 [*]	0.19	−0.04	0.81 [*]
Color keypads	0.52 [*]	0.87 [*]	0.56 [*]	0.14	0.80 [*]
I.V. = independent variable, Mediator = mediating variable, D.V. = dependent variable					
b. Hedonic value mediating the coolness–attitude relationship					
Products	I.V. → mediator	Mediator → D.V.	I.V. → D.V.	I.V. and mediator together → D.V.	
	Coolness → hedonic	Hedonic → attitude	Coolness → attitude	Coolness → attitude	Hedonic → attitude
<i>Sports shoes</i>					
More durable	0.56 ^a	0.45 [*]	0.56 [*]	0.44 [*]	0.20
Deodorizer	0.78 [*]	0.67 [*]	0.75 [*]	0.57 [*]	0.23 [*]
Fire-resistant	0.79 [*]	0.73 [*]	0.74 [*]	0.43 [*]	0.39 [*]
Color insoles	0.87 [*]	0.66 [*]	0.66 [*]	0.37 [*]	0.34 [*]
<i>Cell phones</i>					
More durable	0.85 [*]	0.60 [*]	0.70 [*]	0.68 [*]	0.03
Radiation-free	0.73 [*]	0.68 [*]	0.72 [*]	0.49 [*]	0.32 [*]
Fire-resistant	0.80 [*]	0.55 [*]	0.69 [*]	0.70 [*]	−0.01
Color keypads	0.87 [*]	0.73 [*]	0.69 [*]	0.24	0.52 [*]
I.V. = independent variable, Mediator = mediating variable, D.V. = dependent variable					
c. Utilitarian value mediating the meaningfulness–attitude relationship					
Products	I.V. → mediator	Mediator → D.V.	I.V. → D.V.	I.V. and Mediator together → D.V.	
	Meaningful → utilitarian	Utilitarian → attitude	Meaningful → attitude	Meaningful → attitude	Utilitarian → attitude
<i>Sports shoes</i>					
More durable	0.66 ^a	0.47 [*]	0.49 [*]	0.32 [*]	0.27 [*]
Deodorizer	0.79 [*]	0.84 [*]	0.80 [*]	0.36 [*]	0.55 [*]
Fire-resistant	0.64 [*]	0.81 [*]	0.72 [*]	0.39 [*]	0.52 [*]
Color insoles	0.84 [*]	0.73 [*]	0.75 [*]	0.46 [*]	0.34 [*]
<i>Cell phones</i>					
More durable	0.70 [*]	0.69 [*]	0.67 [*]	0.36 [*]	0.44 [*]
Radiation-free	0.72 [*]	0.83 [*]	0.80 [*]	0.42 [*]	0.53 [*]
Fire-resistant	0.78 [*]	0.74 [*]	0.76 [*]	0.45 [*]	0.39 [*]
Color keypads	0.68 [*]	0.74 [*]	0.56 [*]	0.11	0.67 [*]
I.V. = independent variable, Mediator = mediating variable, D.V. = dependent variable					

^a Standardized coefficients.

^{*} Significant at $p < .05$ (two-tailed test).

this product is quite high (5.4), indicating that the fire-resistant feature seems very out of the ordinary, the coolness score is not high (2.7), indicating that the feature is not seen as trendy, hip, fascinating and attractive enough to result in any pleasant surprise or excitement among consumers.

Secondly, in a test of the mediating effect of hedonic value in the relationship between coolness and attitude (H1b), the effects of coolness on hedonic value and of hedonic value on attitude are significant across all eight products (see Table 2, Panel b). Introducing hedonic value as an additional explanatory variable weakens the effect of coolness on attitude (compare columns 2 and 3 in Table 2, Panel b) for seven of the eight products. The exception is the fire-resistant cell phone, which, like fire-resistant shoes, appears novel (mean = 5.3) but not cool (mean = 3.2). The mediating effect test thus indicates that hedonic value partially mediates the effect of coolness on attitude.

Thirdly, the effects of meaningfulness on utilitarian value and of utilitarian value on attitude are significant for all eight products; the effect of meaningfulness on attitude is attenuated with the addition of utilitarian value as an explanatory variable (see Table 2, Panel c). Thus, utilitarian value partially mediates the effect of meaningfulness on attitude.

The results of these mediation analyses cumulatively provide evidence of the existence of dual routes: 1) novelty → coolness → hedonic value → attitude and 2) meaningfulness → utilitarian value → attitude, as predicted by the hypotheses. Thus, the consumer creativity effects model proposed in this study generally receives good support based on empirical data.

7. Discussion

7.1. Contributions to theory

Previous research has demonstrated the importance of new product creativity as a predictor of new product success. However, Im and Workman (2004) note that only the meaningfulness dimension of creativity but not the novelty dimension, influences the success of new products. They speculate that consumers may appreciate meaningful products that offer clear benefits. Consumers may not appreciate novel products perhaps due to inertia arising from their comfort with existing products and resistance to change. However, like most studies in this field, Im and Workman (2004) base their research on input from new product managers, not on the views of end consumers. This study seeks to enhance theoretical understanding of new product creativity by shifting the focus to creativity perceptions of consumers who are ultimately the decision makers in new product adoption. The model proposed in this paper rests on the assumption that consumers do not appreciate a new product's creativity for its own sake but try to relate a product's meaningfulness and novelty to its utilitarian and hedonic value, respectively, which then forms the basis for their attitude toward the product. The study finds that of the two dimensions of creativity, novelty does not consistently affect hedonic value or attitude, providing some support for Im and Workman's (2004) observations.

In addition, this study observes that consumers sense a product's hedonic value only when the novel features lead to the perception of coolness. Some products with merely novel features are sometimes considered weird or absurd (like the fire-resistant phone in this study) whereas novel products that lead to coolness elicit positive surprise, excitement or a wow response. The iPhone and iPad exemplify products that are not just novel but also cool; their hedonic value and favorable evaluations are hardly in doubt. A product's novelty does not directly affect its hedonic value but indirectly through product coolness. Thus, this study confirms the existence of dual paths by which consumer perceptions of creativity lead to attitude formation: (1) novelty → coolness → hedonic value → attitude and (2) meaningfulness → utilitarian value → attitude.

The results also suggest the need for further research to explain why consumers do not appreciate mere novelty. Perhaps novel features increase consumers' costs, confusion and risk perceptions and demand increased investment of time to learn new behaviors (Lee & O'Connor, 2003; Mick & Fournier, 1998). Mukherjee and Hoyer's (2001) study casts some light on this issue: they find that for complex new products, consumers' inference of high learning costs trumps the inference of added value and results in lower product evaluation. The intervening role of coolness observed in this study suggests that coolness may reduce consumer inertia and risk perceptions by getting customers to focus on psychological benefits such as excitement and delight and appreciating the product's hedonic value.

7.2. Managerial implications

The conventional wisdom among managers is that adding novel features helps to differentiate new products from existing products, leading to consumer adoption. However, this study suggests a limited role for novelty, implying that managers should not seek to make a product novel for novelty's sake. Rather, they should introduce novel features that have the potential to be cool (i.e., trendy, exciting) enough to create perceptions of hedonic value and positive affective consumer reactions and enable consumers to overcome their concerns about new product risk and costs.

From a broader perspective, managers should recognize the presence of dual routes to positive attitudes toward a new product. Managers need to undertake consumer research prior to product launches to understand if consumers view new product features as meaningful or if their novel features prompt perceptions of coolness.

7.3. Limitations and further research

The results from separate regression analyses using the same models with product category knowledge and perceived product complexity as control variables did not reveal any direct impact of these variables on attitude and no significant change in the effect of the creativity variables. However, further research should investigate other variables, such as consumer involvement, innovativeness and perceived risk as potential moderators and mediators in the relationship among novelty, meaningfulness, coolness, perceived value and attitude. Because of the use of subjective judgment in creating hypothetical new product features in this study, future research can examine whether the model in the study applies to different types of new product features and particularly to radical new products. Using larger nonstudent samples might be informative as well. Considering the lack of rigorous empirical research about coolness, a range of research avenues remains for increasing the understanding of this concept and its role in consumer adoption of new products. Additionally, because of the model fit issue potentially related to the smaller sample size in this study, a study with a larger sample size may be useful to confirm the findings. Such a study can be designed to fine-tune the measures in this study to achieve even better fit and stronger discriminant validity (where the construct AVE values are higher than their corresponding interconstruct R^2 values).

Appendix A. Measurement items

New product novelty

Compared with *other competing products*, this product...

1. is radically different.
2. can be considered as revolutionary.
3. is really "out of the ordinary."
4. provides something not commonly found.
5. incorporates new ideas/concepts.
6. has unique features.

New product meaningfulness

Compared with *other competing products*, this product...

1. is appropriate for customers' needs.
2. fits customers' needs.
3. is useful for customers.
4. increases value to customers.
5. is relevant to customers' needs.
6. serves a purpose for customers.

New product coolness

Compared with *other competing products*, how do you feel about this product? This product is...

1. not at all trendy–very trendy.
2. not at all hip–very hip.
3. not at all appealing–very appealing.
4. not at all fascinating–very fascinating.
5. not at all attractive–very attractive.

Utilitarian value

Please evaluate your attitude toward this product for the following items: This product is...

1. ineffective–effective.
2. not helpful–helpful.
3. not functional–functional.
4. not necessary–necessary.
5. impractical–practical.

Hedonic value

Please evaluate your attitude toward this product for the following items: This product is...

1. not fun–fun.
2. dull–exciting.
3. not delightful–delightful.
4. not thrilling–thrilling.
5. not at all enjoyable–enjoyable.

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