

New Product Creativity Antecedents and Consequences: Evidence from South Korea, Japan, and China*

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Creativity in new products is highly coveted by firms. However, businesses are faced with questions of how to inject creativity into new products, and whether it pays off in stronger product performance. To address these questions, a survey on key antecedents and consequences of creativity was conducted among new product managers. Based on gaps identified in the new product literature, this study examines several organizational culture (market orientation), leadership (top management involvement and risk-taking encouragement), and national culture (secularism and survivalism) antecedents, along with new product performance consequences. Importantly, to uncover potentially complex nuances in creativity dynamics that may have been previously overlooked, the creativity construct is decomposed into novelty and meaningfulness dimensions, and the possibility of curvilinear relationships with antecedents and consequences are investigated. The study is also one of the first creativity studies based on a geography rather than a single country, specifically the cluster of South Korea, Japan, and China.

In terms of antecedents, this study finds customer orientation, cross-functional integration, top management involvement, and cultural secularism have positive linear effects on creativity's meaningfulness component, whereas top management risk taking and cultural survivalism have a negative effect. In contrast, cross-functional integration and top management risk taking have a negative curvilinear influence on creativity's novelty component. Similar to meaningfulness, cultural secularism and survivalism have positive and negative impacts on novelty, respectively. Regarding consequences, meaningfulness has a positive linear influence on new product performance, while novelty's contribution reflects an inverted U-shaped relationship. This finding is notable in light of previous studies that question whether novelty is helpful at all. These findings explain prior mixed results on creativity based on simple linear and aggregated effects, as well as discover new drivers and outcomes. The article concludes with theoretical and managerial implications about how firms can enhance and benefit from creativity.

Practitioner Points

- Firms should pursue creative new products because they are more successful in general, based on surveys to examine innovation efforts among South Korean, Japanese, and Chinese businesses.
- Managers have to avoid a one-size-fits-all approach when working on creative new products, given that meaningfulness and novelty have distinct determinants and outcomes.
- To develop a creative new product, managers should attend both to the product's meaningfulness and novelty, increasing the first and arriving at a high but not excessive level of the second.
- The meaningfulness and novelty dimensions of a new product requires different levels of market orientation, managerial involvement and risk-taking encouragement, and national culture secularism and survivalism to achieve, representing a complex challenge.
- Greater meaningfulness in a new product will improve its success, but greater novelty will result in success up to a moderate point, after which it hurts the product's performance.

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Introduction

In its annual review of innovation, the Boston Consulting Group named Apple the most innovative company in the world for the eleventh year in a row (Ringel, Taylor, and Zabilt, 2015). Apple has had a string of remarkable new product successes—from the iPod to iPhone, and from the iPad to MacBook Air—and continues to foment its creative juices to deliver distinctive, user-centric innovations. Named the second most innovative company is Samsung, the South Korean firm. Samsung has developed creative new products in a host of industries, tallying an impressive track record in recent years. Its smartphones, including the first

“phablet” that combines a tablet with a mobile phone, have helped make the firm the global leader in smartphone sales. Samsung also designs and delivers new home entertainment products such as the bendable ultra-high definition TV, as well as medical devices and energy-saving LED technologies (Wagner, Foo, Zablitz, and Taylor, 2013).

Both Apple and Samsung excel at introducing creative new products. But how do firms do this, and is creativity necessarily rewarded by the market? In other words, what are the drivers of new product creativity and does creativity enhance product performance? This study reviewed the new product literature and determined that while some valuable insights into creativity’s antecedents and consequences have been made (see Table 1), there are still critical gaps of understanding that merit research attention.

One of these gaps is the equivocal findings on the role of market orientation on creativity. According to creativity theory, an organizational culture such as market orientation is among the most potent drivers of creative undertakings (Amabile, 1988, 1996). Yet in one of the few studies that examined the impact of market orientation, Im and Workman (2004) determined that many of the elements of market orientation either make no contribution to creativity’s two components of novelty and meaningfulness or in some instances detract from them. For example, the customer orientation dimension of market orientation has a negative effect on novelty and no impact on meaningfulness. The competitor and cross-functional dimensions were likewise found to have absent or contradictory influences between the two dimensions. That study underscores the importance not only of treating creativity as a multidimensional rather than simple construct, but also of theorizing and examining anew the ties from market orientation to creativity.

A second gap in the literature is the lack of understanding about leadership and national culture in relation to new product creativity. Top management characteristics are believed to be essential antecedents of creativity, helping to articulate, structure, and reinforce the organizational priority on creativity (Amabile, 1988; Amabile, Schatzela, Monetaa, and Kramerb, 2004). However, leadership aspects have not been studied as determinants of new product creativity despite their likely role. The same is true of national culture. While it is generally understood that new product development is culturally influenced (Henard and Szymanski, 2001; Kirca, Jayachandran, and Bearden, 2005; Rubera and Kirca, 2012), creativity dynamics have been investigated in isolation of

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culture. How national culture affects new product creativity, if at all, is an unanswered question.

The third critical gap in the literature is the performance consequences of creativity. Although past works hypothesized that greater creativity leads to better performance outcomes, studies have produced mixed results. Yang and Liu (2006) found a surprising negative impact of creativity on new product financial performance, Tu (2010) determined new product creativity produces no gains in external product quality for consumer firms, and Im and Workman (2004) concluded the meaningfulness dimension of creativity advances market and financial performance while novelty fails to do so. Given these contradictory findings, the issue of whether or not firms should pursue new product creativity is not clearly resolved.

To address these critical gaps, a study is conducted of key antecedents and consequences of new product creativity. Key antecedents and consequences are drivers and outcomes of theoretical importance that either have not been studied or have been studied but deserve

re-examination due to ambiguous findings. More specifically, this study examines three organizational culture factors (customer orientation, competitor orientation, cross-functional integration), two leadership characteristics (top management involvement, top management risk-taking encouragement), two national culture dimensions (traditional–secular and survival-expression) as possible antecedents, and one performance outcome (new product performance) as a consequence.

Scholars are recognizing crucial distinctions between and complex relationships surrounding the novelty and meaningfulness components of creativity (Im and Workman, 2004; Rubera, Ordanini, and Griffith, 2011). Therefore, in this study creativity is conceptualized as having these two components with potentially differentiated and/or curvilinear relationships, contrary to prior studies that assume creativity is either a unidimensional construct or has only simple ties (see Table 1). Furthermore, since a literature review showed that creativity has been investigated thus far as a single country phenomenon, creativity is studied here in the context of a wider geography, namely South Korea, Japan, and China. These countries have together become a global epicenter of new product development, challenging the traditional innovation leadership of North America and Western Europe (Bloomberg, 2015). The three nations are the world's top patent holders along with the United States and Germany (Bloomberg, 2015), and are responsible for the majority of new product activities in East Asia (Global Innovation Index, 2015). Studying this cluster may thus provide important lessons about the management of creativity.

The expected contributions of this study are twofold. First, an aim is to better understand what propels and results from new product creativity. By including both meaningfulness and novelty but treating them as separate dimensions, and considering more subtle linkages to and from them where theoretically warranted, the study sheds new light on how creativity is enhanced and benefits firms. Second, the study aims to generate insights on the dynamics of new product creativity in the context of three East Asian countries, a region of growing importance as new product capabilities globalize.

Theoretical Framework

New Product Creativity

There is agreement in the literature that new product creativity is made up of two components: meaningfulness and novelty (Amabile, 1983; Im and Workman, 2004;

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Table 1. New Product Creativity (NPC) Literature^a

Study	Country Conducted	Unidimensional v. Multidimensional NPC and Linear v. Nonlinear NPC Linkages	NPC Antecedents Examined	NPC Consequences Examined
Akgun, Dayan, and Benedetto (2008)	U.S.	Unidimensional, Linear	Team intelligence	
Cheng, Tsai, and Krumwiede (2013)	Taiwan	Multidimensional, Linear	Online brand community creativity climate, Online brand community capabilities	
Chuang, Morgan, and Robson (2015)	China	Unidimensional, Linear	Customer oriented learning, Competitor oriented learning	
Citrin, Lee, and McCullough (2007)	India	Unidimensional, Linear	Conceptual information use, Instrumental information use	
Cokpekin and Knudsen (2012)	Denmark	Unidimensional, Linear	Organizational motivation, Resources, Freedom, Idea time	
Dayan and Colak (2008)	Turkey	Unidimensional, Linear	Procedural justice climate	
Dayan and Di Benedetto (2011)	Turkey	Unidimensional, Linear	Intuitive cognitive decision-making	
Ganesan, Malter, and Rindfleisch (2005)	U.S.	Unidimensional, Linear	Product knowledge, Process knowledge, Noncodified knowledge	
Gao, Xie, and Zhou (2015)	China	Unidimensional, Linear	Novel info sharing, Buyer-seller relational strength, Supplier network density, Technological diversity	
Henneke and Luthje (2007)	Canada	Unidimensional, Linear	Educational heterogeneity, Environmental scanning, Strategic openness	
Im and Workman (2004)	U.S.	Multidimensional, Linear	Market orientation	Market performance, Financial performance
Kim, Im, and Slater (2013)	U.S.	Multidimensional, Linear	Knowledge complexity, knowledge tacitness, technological orientation, consolidated market orientation	Product differentiation, Customer satisfaction
Pullen, de Weerd-Nederhof, Grown, and Fisscher (2012)	Netherlands	Unidimensional, Linear		Innovation performance
Salge, Farchi, Barrett, and Dopson (2013)	U.K.	Unidimensional, Linear	Search openness	
Tu (2010)	Taiwan	Unidimensional, Linear		Industrial product quality, Consumer product quality
Yang and Liu (2006)	China	Unidimensional, Linear	Adoption of innovation diffusion	New product financial performance

^aA sample, rather than exhaustive compilation, of recent NPC literature.

Rubera et al., 2011). Meaningfulness is the extent to which a new product is appropriate and useful relative to competitors', while novelty is the degree to which it is unique relative to competitors' (Amabile, 1983). Only something that is meaningful as well as novel can be characterized as creative—rather than bizarre. Thus, in this study both components are investigated but independently. From a theoretical point of view, this approach is consistent with findings by Im and Workman (2004, p. 127), who recommend that “novelty and meaningfulness should be examined separately rather than combined into a single creativity construct.” From a managerial view, this approach is more helpful to new product developers

deciding whether to invest more in novelty or meaningfulness to maximize product performance.

Organizational Culture and Top Management Leadership Antecedents

Amabile proposes that chief among drivers of creativity is organizational culture, without which employees are unwilling to engage in the complex coordination demanded by creative acts (Amabile et al., 1996). Because customer orientation, competitor orientation, and cross-functional integration are organizational

culture elements promotive of innovation efforts (Kirca et al., 2005), this paper examines these three individual factors as antecedents of new product creativity. Critically, Im and Workman (2004) investigated these relations as simple main effects with some mixed results, so this study looks at the possibility of nonlinear ties.

Along with organizational culture, Amabile (1996) emphasizes the pivotal role of top management leadership in fostering the creativity of subordinates. She argues that creativity hinges on leaders' engagement in creative undertakings and risk-taking propensities (Amabile et al., 2004). Studies indicate leadership is critical to innovation in Asia, such as Japan (Yagci, 1996) and Singapore (Engelen, Lackhoff, and Schmidt, 2013). Yet leadership factors have been generally overlooked as influences on new product creativity (see Table 1). Therefore, this study examines leadership, focusing on the impact of two previously unstudied factors: top management involvement and top management risk taking encouragement.

National Culture Antecedents

National culture has been theorized as a prominent influence on innovation (Nakata and Sivakumar, 1996). Employees bring values, inclinations, and mindsets reflective of their surrounding society to work, shaping how they carry out new product development (NPD) tasks. Past research supports the notion that national culture affects NPD (Henard and Szymanski, 2001; Tellis, Prabhu, and Chandy, 2009). Despite the fact that Amabile (1983) emphasizes that the external environment influences creative outcomes, there has been a lack of research on external environmental factors such as national culture in new product creativity. One of the most widely used interpretations of national culture is Hofstede's five culture factors (Hofstede, 1980, 2001). Yet Hofstede's framework has been questioned due to its basis in one multinational firm and assumption of culture as relatively static, among other limitations (McSweeney, 2002; Triandis, 1993). An alternative culture theory is offered by Inglehart (1997). Inglehart and his colleagues have carried out the World Values Survey among persons from all walks of life, including managers (www.worldvalues-survey.org). It is the largest, most inclusive, and longest ongoing investigation of human values (Gaston-Breton and Martin, 2011), representing 85% of the world's population in 81 societies over 30 years

(Inglehart and Welzel, 2005, p. 48). Unlike Hofstede's surveys, Inglehart's data claim sample representativeness and capture changes in cultural values through regular survey intervals every five years since 1981 that have encompassed 400,000 individuals. This study selects Inglehart's theory given its methodological rigor, managerial relevance (Steenkamp and de Jong, 2010), as well as the opportunity to apply it for the first time to an NPD research. In this way, another contribution is made to the new product literature.

Based on the data, Inglehart (1997) posits that societal values are linked to economic development, in particular modernization. Two culture continua and their indices reflect this evolution: traditional–secular and survival–self-expression. Traditional values are associated with agrarian societies, where religion often plays a central role, accompanied by a high regard for authority. Survival values are prevalent, such that people are concerned with existential security and materialistic interests are strong. As societies industrialize, traditional values are supplanted by secular ones such as relativism and openness (Inglehart and Baker, 2000). Self-expression and the pursuit of personal freedom take hold (Inglehart and Welzel, 2005, pp. 54–56). Given that national culture has not been studied in relation to the creativity of firms, this study considers how traditional–secular and survival–self-expression may influence creativity.

Performance Consequences

Among potential consequences of creativity, new product performance is of prime interest. Practitioners and scholars want to know if resources directed toward developing creative new products yield market and financial rewards. The handful of studies on this matter has produced equivocal results. Pullen, de Weerd-Nederhof, Grown, and Fisscher (2012) determined no significant effect of creativity on performance; Im and Workman (2004) concluded meaningfulness has a positive influence whereas novelty has no impact; and most curiously Yang and Liu (2006) found creativity undermines performance. The reason for these contradictory results may be twofold. First, the studies do not consistently follow the recommended treatment of creativity as a two-dimensional construct with each component having potentially distinct outcomes (Im, Montoya-Weiss, and Workman, 2012; Rubera, Ordanini, and Mazursky, 2010). Second, the investigations consider only simple, linear effects and not the

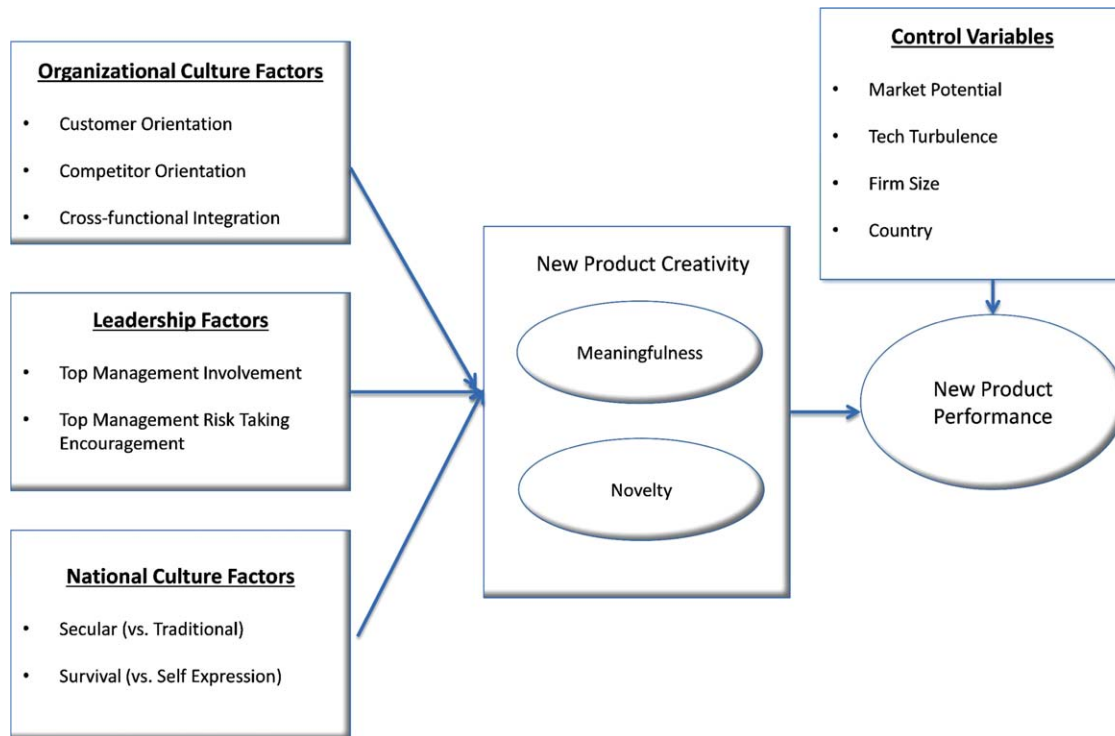


Figure 1. Conceptual Framework of New Product Creativity. [Color figure can be viewed at wileyonlinelibrary.com]

possibility of complex, i.e., nonlinear, relationships. Nonlinear relationships can accommodate and reveal opposing positive and negative pulls, whereas linear effects can only indicate one or the other. This study therefore argues it is worthwhile re-examining the creativity–performance link by separating the two creativity components and studying curvilinear relationships. It may be that creativity’s impact on performance is masked by assumptions of a single dimension with only simple effects. Figure 1 summarizes the conceptual framework, which reflects this study’s theorization from the creativity, culture, and NPD literatures.

Research Hypotheses

Organizational Culture Antecedents

Amabile (1996) posits that an organizational culture that values new ideas and breaks the status quo spurs creativity. This culture enables understanding customer needs and exploiting rivals’ weaknesses, while bringing diverse functions together to satisfy ever-evolving market demands. One particular demand is for creative new products. The market orientation culture—composed of customer orientation, competitor orientation, and cross-functional integration—is understood to aid

innovation generally, but findings in relation to creativity specifically are conflictual or ambiguous (Im and Workman, 2004; Kirca et al., 2005).

Customer orientation. Customer orientation is the degree of understanding target buyers in order to create superior value (Narver and Slater, 1990). With respect to meaningfulness, greater customer orientation should lead to creating new products that are more appropriate for buyers. A high level of customer orientation aids this process by amplifying the voice of the customer, specifying what the market wants in terms of functionality and new product utility (Christensen, 2006). Such specification guides the development of new products that “solve a problem, fit the needs of a given situation, and accomplish some recognizable goals” for customers (Rubera et al., 2010, p. 194). Studies indicate valuable and suitable ideas implemented in new products are sought by customer-focused businesses (Gatignon and Xuereb, 1997). Hence greater customer orientation is posited to lead to higher meaningfulness.

In relation to novelty, however, customer orientation’s impact may be more nuanced. Initially, focusing on customers enables learning about and delivering market preferences in new ways, such as through

radical innovations (Joshi, 2016). This focus enables firms to create products that more fully satisfy unique needs and provide higher value in relation to existing products (Chen, 2015). Yet beyond a certain point, the focus becomes detrimental in two ways as suggested in research on radical innovation. One way is that an increasingly tight coupling with customers narrows the field of vision to standards already favored by the market (Danneels, 2007). Another way is that excessive slavishness to customers veers firms away from investing in disruptive technologies forming the basis of novel products (Christensen and Bower, 1996). Hence customer orientation may have increasing then decreasing contributions to novelty.

H1: Customer orientation has an (a) positive linear relationship with new product meaningfulness, and (b) negative curvilinear relationship with new product novelty.

Competitor orientation. Competitor orientation is the degree of understanding the short-term strengths and weaknesses and long-term capabilities and strategies of competitors, and possessing the ability and willingness to respond to competitors' moves (Narver and Slater, 1990). A primary goal of competitor orientation is to achieve a market advantage by differentiating the firm's wares from rivals' (Luo, Rindfleisch, and Tse, 2007). Differentiation—achieved by offering new benefits, whether by feature, function, or value—is deemed crucial for customer satisfaction.

Competitor orientation, by virtue of its focus on benefit differentiation for buyers, should elevate meaningfulness. As competitor-centered firms engage in benchmarking against rival offerings (Day and Wensley, 1988), they formulate new products or improve existing ones to elevate market attractiveness. This emphasis translates into increasing benefits and thereby meaningfulness of new products. Integrating a desirable feature of a rival's into a new product, configuring a product to provide more functions than a competitor's, or designing a new product so it offers superior cost performance are all ways of providing added meaning through benefits (Karakaya and Yannopoulos, 2010). Therefore, it is expected that competitor orientation enhances new product meaningfulness in a linear fashion.

However, the effects of competitor orientation on new product novelty may differ. At lower levels of competitor focus, firms are relatively content with

what they offer. As the orientation increases, they become more mindful that some competitors have more advantageous products. So in the effort to gain parity or close the gap, firms engage in imitating rivals, avoiding the high costs and delayed payoffs from R&D (Ofek and Turut, 2008). Businesses take the short cut of mimicking as a quick way to catch up with rivals (Luo, Sun, and Wang, 2011). Nonetheless, the approach undermines the development of breakthrough innovations (Lukas and Ferrell, 2000).

As competitor orientation increases, an inflection point may be reached where imitation is recognized as sufficient for parity with, but not for surpassing, competitors. By thrusting firms into the position of reactive followers, imitation limits opportunities to grow and control the market. At this stage some firms shift from imitating to inventing by investing in original design work to put them ahead of the curve. This has been an observed pathway for East Asian firms that compete early on by mimicking Western firms and later move to creating unique products that reduce vulnerability to commodification and downward price pressures (Yu, Wai-Kee, and Kwan, 2014). In sum, competitor orientation may reflect a U-shaped relationship with novelty, first decreasing and later increasing.

H2: Competitor orientation has an (a) positive linear relationship with new product meaningfulness, and (b) positive curvilinear relationship with new product novelty.

Cross-functional integration. Cross-functional integration is the degree of coordinated efforts among functions toward value-creating activities (Narver and Slater, 1990). Integration, which relies on an openness to collaborate to achieve a collective end, is known to strengthen NPD by increasing the frequency and volume of shared information (Troy, Hirunyawipada, and Paswan, 2008). The resulting information flows form a common understanding about the new product, and yield greater consistency in NPD decision-making (Sethi, Smith, and Park, 2001).

Cross-functional integration may benefit new product meaningfulness. The sharing and combining of different knowledge sources through integration help to ensure product superiority, an outcome of meaningfulness (Tepic, Kemp, Omta, and Fortuin, 2013). Furthermore, studies suggest that distributing NPD responsibilities across functions improves efficiencies, which enable the identification and formulation of

meaningful new product attributes (Valle and Vazquez-Bustelo, 2009). This study therefore theorizes that as integration moves from lower to higher levels, meaningfulness improves correspondingly.

Cross-functional integration, however, may have nonlinear effects on novelty. At low but increasing levels, it may strengthen novelty. This improvement results from the knowledge heterogeneity of multiple functions working together, a diversity that generates more unique solutions to customer problems (Tsai, Baught, Fang, and Lin, 2014). Integration can be potent in novel projects, where tasks are less routine and sensitive information handling is needed to generate insights, clarify procedures, and launch products (Tepic et al., 2013). Yet as integration heightens, pressures mount through group think to agree in order to expedite tasks (Moorman and Miner, 1997). Group-think can erode the loose coupling of individuals and processes, pushing aside novel ideas in favor of consensual choices. Furthermore, as exchanges intensify, the distinct thought worlds of groups can collide, undermining the tenuous support for original ideas across the functional expanse (Pelled, Eisenhardt, and Xin, 1999). The above, along with prior findings of a nonsignificant simple effect (Im and Workman, 2004), leads us to consider an inverted U relationship.

H3: Cross-functional integration has an (a) positive linear relationship with new product meaningfulness, and (b) negative curvilinear relationship with new product novelty.

Top Management Leadership Antecedents

Amabile (1996) theorizes that creativity dies on the vine if not promoted by involved top managers, who must provide “enthusiastic support for the work of the individuals as well as the entire group” (p. 54), directing them toward risk-taking activities. Consequently, this article examines the impacts of top management involvement and encouragement to take risks on creativity.

Top management involvement. Top management involvement is the degree to which executives are actively involved in NPD, as reflected by process monitoring and new product emphasis (Im and Nakata, 2008). To the degree top managers are involved, greater new product meaningfulness likely results. Research points to management involvement yielding

increased generation, dissemination, and responsiveness to market knowledge (Jaworski and Kohli, 1993). Such knowledge captures customer preferences on product usefulness and features, and translates into functional new products. Past investigations indicate top management involvement is essential in product design initiatives, which flounder otherwise (Wan and Chen, 2008). Importantly, due to the emphasis on near-term returns, designs that are more apparent, i.e., appropriate for and relevant to buyers, may garner higher involvement. The above suggests a positive linear influence of involvement on meaningfulness.

In relation to novelty, top management involvement may be helpful. Research shows that senior executive emphasis on new products has a significant impact on the adoption of creative ideas (Srinivasan, Lilien, and Rangaswamy, 2002). Novel products are often viewed by leaders as critical strategic undertakings that ensure the firm’s long-term viability, especially in more uncertain and turbulent settings (Cooper and Schendel, 1976). Leaders apply environmental scanning skills as well as externally oriented marketing and R&D expertise to spot new opportunities and engage the organization in experimentation (Braam and Nijssen, 2011).

At the same time, the literature suggests the effect of top management involvement on novelty may plateau or decline after rising. At very high levels of involvement, managers have been found micromanaging NPD projects through detailed and bureaucratic oversight; once this occurs, workers are stripped of their discretion to pursue novel ideas (Bonner, Ruekert, and Walker, 2002). In other words, intense involvement leads managers to exert excessive control and reject the ideas of others, even with evidence of value (Leonard-Barton, 1992). Thus, the very ability of top managers to push through novel ideas by virtue of their hierarchical perch can paradoxically stymie pursuit of original concepts at lower levels. This study therefore proposes involvement helps novelty initially until it reaches the apex, after which it becomes unhelpful.

H4: Top management involvement has an (a) positive linear relationship to new product meaningfulness, and (b) negative curvilinear relationship to new product novelty.

Top management risk-taking encouragement. Top management risk-taking encouragement is the degree to which senior managers understand the hazards

associated with innovation and urge employees to take risks in NPD (Amabile, 1988). Top management encouragement to take risks has been recognized as a key factor in NPD activities (Jaworski and Kohli, 1993). Yet in relation to new product meaningfulness it may have a dampening effect. Asking employees to take more chances on creating risky, provocative products generally runs counter to having them work on what is viable, useful, and practical. A risk-taking message from the upper echelon can be interpreted by lower levels as abandoning what the market readily recognizes as valuable, in favor of pursuing unknown, resource-consuming inventions. Research indicates that managerial prods for risk taking diverts organizational attention from relevant, within-reach NPD projects (Clark and Fujimoto, 1991); additionally, such pushing does not necessarily produce greater financial and marketplace rewards (Covin and Slevin, 1998). Thus, it is posited here that a negative linear relationship between risk-taking encouragement and meaningfulness.

Compared to meaningfulness, novelty may have a more complex tie to risk-taking encouragement. From low to moderate degrees, encouragement to take risks, such as through verbal communications or a reward system, creates a risk-embracing culture to pursue untested ideas (Amabile, 1988). Past research suggests that risk-taking directives from executives spur employees to pursue tangential ideas (Amabile et al., 2004). Yet in high degrees “go for broke” directives may be perceived as reckless and wasteful. Organizational resistance can build out of preference for the safety of near-term, sure-fire successes. Studies indicate that a risk-taking posture per se does not discriminate between more versus less successful firms, despite the requirement of some risk taking to gain market advantage (Covin and Slevin, 1998). Consequently, this study considers the possibility that encouragement to take risks assists novelty at lower but not higher levels.

H5: Top management risk-taking encouragement has an (a) negative linear relationship with new product meaningfulness, and (b) negative curvilinear relationship with new product novelty.

National Culture Antecedents

An emergent understanding is that creativity is contextually situated and socially constructed. Thus, what is interpreted as creative in one society is not necessarily

embraced as such in another. Western standards and measurements of creativity have not been found to apply well in East Asian settings for example (Niu and Sternberg, 2002). Culture as an environmental element has been theorized as especially influential, impacting the way creativity is regarded and broached (Abbas Elliot and Nakata, 2013). Suggestive of culture’s shaping of creativity are studies showing national culture as a determinant of NPD processes and outcomes (e.g., Song and Parry, 1997).

Viewing creativity through a cultural lens, this study considers how Inglehart’s two national culture dimensions may influence creativity. The first of these dimensions is traditional–secular. Traditional societies are religiously anchored. In East Asia, prevalent religions are Confucianism, Taoism, and Buddhism. Notions of right and wrong are reinforced such that moral absolutes prevail. The family holds sway, and for most people obeying their parents and caring for children are unquestioned duties. Social conformity and passive rule following are widespread. Secular societies by contrast embrace the opposite values (Inglehart and Baker, 2000). Divorce, abortion, euthanasia, and women’s rights are accepted (Inglehart and Welzel, 2005, pp. 52–53). Bureaucratization that accompanies industrialization replaces the central roles of religion and family, shepherding in values that are rationally and scientifically based. Thus through bureaucratization one form of hierarchy (family and religion) is replaced by another (organization and science) (Steenkamp and Geyskens, 2012).

In relation to creativity, it is expected that, of the two ends of this values pole, secularization propels creativity and its two components. Because secularization strongly regards scientific and industrial progress, it spurs the pursuit of creative endeavors as forms of achievement. Secularization may therefore positively influence new product meaningfulness by prioritizing products that are useful, functional, and superior, consistent with the secular emphasis on systematic advancement (Steenkamp and Geyskens, 2012). Studies suggest secular societies embrace new products that promise to save money, deliver ease, and enhance quality of life (Steenkamp and Geyskens, 2014). In the same vein, secularization may contribute to new product novelty insofar as unique, distinctive products are symbols of a society’s industrial prowess. Countries and regions high in secularization foster independent thinking and actions, including the pursuit of entrepreneurial opportunities. Empirical studies linking

secularization with entrepreneurial mindsets and behaviors suggest novelty is an aim (Turkina and Thai, 2015).

H6: Secular culture has an (a) positive linear relationship to new product meaningfulness, and (b) positive linear relationship to new product novelty.

The second Inglehart culture dimension is survival–self-expression. Countries and regions that are survival focused prioritize securing material possessions. Existential needs are not taken for granted since life is precarious. Under such conditions, interpersonal trust and tolerance for diversity are low, while authoritarianism is high in order to better ensure social welfare and predictability. In contrast, geographies centered on self-expression possess “an emancipative ethos, emphasizing autonomy and choice” (Inglehart and Welzel, 2005, p. 54). Since survival is no longer questioned, there is a gravitational pull toward change, variety, equality, new ideas, and acceptance of others. A humanistic culture takes root, where individual freedom has primacy.

It is thus expected based on the differing inclinations of the two ends of this continuum that the survival focus (contrary to the self-expressive) dampens new product creativity in terms of both the meaningfulness and novelty dimensions. Since the interest of survivalism lies foremost in self-preservation through the acquisition and conservation of resources (Steenkamp and Geyskens, 2012), it produces a reluctance to expend resources—with uncertain payoffs—in creative pursuits: better instead to safeguard and accumulate assets. More particularly, the survival focus eschews meaningfulness in new product creativity and more broadly creativity. Since the preoccupation is meeting needs low on the Maslow hierarchy, resources are not risked and potentially squandered in creative pursuits (Inglehart and Baker, 2000).

Similarly, the survival focus likely rejects novelty. Societies girded by survivalism prefer known solutions to problems, and remove the role of autonomous judgment. Critically, “creativity typically does not thrive in hierarchical, regimented structures,” common in survivalist geographies (Steenkamp and Geyskens, 2012, p. 258). By reining in human imagination, survivalism inhibits novel concepts, including ideas that challenge established ways of doing and being. Survivalism also undermines human agency, as people engaged in novel undertakings are caught in the vice of social

conformity (Welzel and Inglehart, 2010). Additionally, low tolerance for out-groups characteristic of survivalist societies lead to rejecting diverse views and collaboration, which are necessary for creative output (Morgeson, Mithas, Keiningham, and Aksoy, 2011).

H7: Survival culture has an (a) negative relationship to new product meaningfulness, and (b) negative relationship to new product novelty.

New Product Performance Consequences

New product performance is the degree to which a new product achieves success in terms of profits, ROI, market share, and sales relative to major competitors (Page, 1993). The assumption is that more creative new products garner greater market and financial success because creativity provides customers with sought-after benefits they willingly pay for. This promise of rewards is the primary reason organizations pursue new product creativity. However, the few studies on this issue have produced perplexing results. For example, Pullen et al. (2012) examined medical device firms in the Netherlands, and determined no linkage between creativity and performance. On the other hand, Im et al. (2013) found that new product meaningfulness, but not novelty, enhances new product performance. Should firms then not bother with creativity? In view of the importance of this question, this article looks afresh at the creativity–performance relationship again, but attempts to distinguish between creativity’s two components as well as their potential nonlinear relationships.

With respect to meaningfulness, studies suggest that meaningfulness contributes to new product performance in a positive linear way. Li, Zhang, and Wang (2014) found that buyers perceive and evaluate the usefulness of a product more easily than originality. Moreover, if a product is useful, it is deemed more compatible with buyers’ needs and thus increases buying intent. By comparison, an original product may draw attention due to salience but lower buying intent, unless it fits into usage settings. Here it is thus expected that as a product’s meaningfulness, which encompasses usefulness, elevates so does performance (Evanschitzky, Eisend, Calantone, and Jiang, 2012).

Regarding the effects of novelty, uniqueness is needed to generate initial interest from buyers. The logic goes that greater product differentiation provides higher value to customers, who reward the firm with

purchases (Gatignon and Xuereb, 1997). Meta-analyses lend some support to this notion with findings of a product advantage–product performance link (Henard and Szymanski, 2001). Yet as novelty increases, it may reach a point of becoming so unfamiliar that the product is perceived as very risky by buyers (Li et al., 2014). Very novel products tend to be rejected because they signal uncertainty (Goldenberg, Lehmann, and Mazursky, 2001). They are also associated with premium pricing, which lowers purchase interest if more affordable, practical options exist (Rodrigues, Maccan, and Lenzi, 2012). In sum, it is posited that novelty is valued in the market at lower levels, since newness stands out and enough familiarity is present to propel sales. Yet as novelty rises, it reaches a point of diminishing returns in relation to product performance as buyers perceive the product as too alien and hesitate to adopt it.

H8: (a) New product meaningfulness has a positive linear relationship, and (b) new product novelty has a negative curvilinear relationship, to new product performance.

Methodology

Sample and Data Collection

To test the proposed creativity model in the context of multiple countries as a geographic cluster, South Korea, Japan, and China were selected due to their recent advances and successes in innovation. The sampling frame was created by obtaining a commercially available database of product managers in manufacturing firms listed on the Korea Stock Exchange, Nikkei Stock Exchange, and Shanghai Stock Exchange. Drawing each country sample from the respective national stock exchange better ensured the representativeness of Korean, Japanese, and Chinese firms (Song and Montoya-Weiss, 2001). The total sample reflected a diversity of industries, from consumer products such as food and beverages to industrial goods such as machinery and tools. The questionnaire was first developed in English by applying or adapting measures. The questionnaire was next translated into Korean, Japanese, and Mandarin using parallel and double translation methods to accurately capture the original meanings (Song and Parry, 1997). Per Douglas and Craig's (1983) recommendations for cross-cultural research, assuming emic concepts were etic was

avoided by conducting interviews with product managers in the three target countries. If certain terms or words were unclear or failed to convey intended meanings, the problematic parts were rephrased to ensure conceptual and linguistic equivalence by the research team's bilingual members.

In China and South Korea, the questionnaire was hand delivered along with a cover letter to managers. Each questionnaire was personally collected on the spot after managers confirmed survey participation by phone. Because targeted firms were concentrated in the capital cities of Beijing and Seoul, this collection method was followed for a higher response rate (Hoskisson, Eden, Lau, and Wright, 2000). In China, a total of 121 responses were collected out of 168 distributed questionnaires. After excluding 12 questionnaires, 109 were deemed usable for analysis, producing an effective response rate of 64.8%. In South Korea, 157 out of 199 questionnaires were collected. Ten were discarded due to missing information, leaving 147 for an effective response rate of 73.8%. In the case of Japan, 344 questionnaires were mailed to product managers after phone participation confirmation. The mail survey method was chosen in Japan because the sample of firms was widely dispersed, making in-person data collection infeasible. After 11 incomplete surveys were removed, a total of 147 usable surveys remained for the final data analysis, representing a 42.7% response rate. All respondents were nationals or natives of the country surveyed.

Measurement Scales

The measurement scales were drawn from the existing literature and adapted for the new product project, followed by validity and reliability tests specified by Churchill (1979) and Gerbing and Anderson (1988). A confirmatory factor analysis (CFA) was performed using each of the three country samples as well as the combined, or regional, sample. Cronbach's alphas for the individual country samples were higher than .70 or Nunnally's cutoff, suggesting acceptable reliabilities. It was also determined that all average variance explained (AVE) values in the country samples and combined regional sample were over .50 and higher than the R^2 values for subjective constructs. The only exception was the AVE value of top management risk taking for China (.46). Though the AVE was close to .50, chi-square difference tests confirmed that all pairs of risk taking and other constructs exhibited significant

Table 2. Regional or Combined AVEs, Sample Means, Standard Deviations, and Correlations

	AVE	Mean	Std. dev.	1	2	3	4	5	6	7	8	9	10	11	12
1. New prod novelty	.83	4.83	1.16	.81											
2. New prod meaningfulness	.87	5.58	.87	.48*	.86										
3. New prod performance	.90	4.58	1.37	.33*	.33*	.92									
4. Customer orientation	.84	4.97	1.14	.37*	.37*	.35*	.89								
5. Competitor orientation	.85	4.78	1.14	.33*	.29*	.33*	.74*	.85							
6. Cross-functional integration	.89	4.61	1.26	.38*	.36*	.36*	.73*	.70*	.89						
7. Top mgmt risk taking	.82	4.45	1.29	.32*	.18*	.28*	.56*	.58*	.59*	.81					
8. Top mgmt involvement	.84	5.21	1.14	.35*	.33*	.29*	.57*	.65*	.62*	.63*	.83				
9. Firm size	-	2295.08	7990.92	.01	.09	.01	-.06	.00	-.01	-.08	.01				
10. Market potential	.77	4.93	1.10	.41*	.35*	.27*	.42*	.39*	.40*	.27*	.43*	-.24*			
11. Technological turbulence	.83	4.39	.91	.16*	.20*	.27*	.42*	.40*	.40*	.27*	.27*	.19*	.01		
12. Secularism	-	1.17	.62	.05	-.19*	-.30*	-.25*	-.31*	-.29*	-.20*	-.27*	-.45*	-.25*	-.19*	
13. Survivalism	-	.48	.48	-.01	.24*	.30*	.40*	.44*	.48*	.43*	.44*	.35*	-.82*	.24*	.01

Note: The coefficient alphas appear on the diagonal.

* $p < .05$.

differences at the .05 level in favor of unrestricted models (i.e., correlations freely estimated) over restricted models (i.e., correlations fixed at 1). These results provided evidence of discriminant validity for risk taking (Anderson and Gerbing, 1988). The measures thus possessed desirable psychometric properties as reflected by high reliabilities and good convergent and discriminant validities (Fornell and Larcker, 1981). Correlations, descriptive statistics, reliabilities, and AVEs for the combined, or regional, sample appear in Table 2.

To check for common method variance across the samples, all variables were loaded onto one factor to examine the fit of the confirmatory model (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). The confirmatory factor analysis showed that the single-factor model did not fit the data well: χ^2 (df) = 7381.17 (2364), $p = .01$, goodness of fit index (GFI) = .49; comparative fit index (CFI) = .49; normed fit index (NFI) = .40; root mean squared area of approximation (RMSEA) = .82. The results therefore suggested common method variance was not an issue. Second, in light of possible limitations of Harman's one-factor test, the partial correlation procedure of including a marker variable in the model was employed. Lindell and Whitney (2001) argued that common method variance can be assessed by identifying a marker variable (i.e., a variable that is not theoretically related to at least one other variable in the study). A country's trade balance was used as the marker variable. The marker variable was not related to any of the variables in the model in any of the two groups. This result provided further evidence that common method variance was not a serious problem.

In the survey, respondents were asked to consider their organizational culture and top management for the measures of antecedents, and to refer to a particular new product and NPD team for questions on new product creativity and new product performance. All constructs were measured using 7-point Likert-type scales (see Appendix A for measurement items).

Customer orientation. Narver and Slater's (1990) measure of customer orientation was used. Following Churchill's (1979) widely applied method of measurement purification, all but one item loaded as expected in all country and combined regional samples. The item was then removed from the measure, resulting in a reliable measure with Cronbach's alphas above .80.

Competitor orientation. Narver and Slater's (1990) measure of competitor orientation was used. All four items were retained. The measure across samples exceeded .80 reliability.

Cross-functional integration. The measure was adopted from Narver and Slater (1990). As with competitor orientation, one item was removed due to low item-to-total correlation. The resulting 4-item measure surpassed .80 in reliability in country and regional samples.

Top management involvement. Sethi et al. (2001) created a 4-item measure for involvement in new product projects. The reliability for all samples was above .77.

Top management encouragement to take risks. The 4-item measurement scale from Jaworski and Kohli (1993) was adapted for the NPD context. One item from the original was removed due to a low item-to-total correlation. The resulting 3-item measure had a Cronbach's alpha exceeding .80 for the combined and individual country samples except for China (.68). However, the reliability for China was close to the cut-off rate of .70 and was considered acceptable.

New product novelty and meaningfulness. Im and Workman's (2004) two 4-item scales were used to estimate new product novelty and meaningfulness, respectively. Reliabilities of each measure surpassed .80 across samples.

Secular and survival values. The indexes of the traditional–secular and survival–self-expression dimensions for China, Japan, and Korea were obtained from Inglehart's World Values Survey (www.worldvalues-survey.org). To ensure appropriateness for a study of managerial phenomena, indexes were selected based only on the manager subsample of Inglehart's data. Prior studies examining the role of culture have used the Inglehart indexes on pooled multicountry data (e.g., Morgeson et al., 2011; Steenkamp and de Jong, 2010; Steenkamp and Geyskens, 2014). The indexes among the three countries ranged on the two dimensions, and were used on the combined data to understand cultural patterns within this geographic cluster.

New product performance. A 4-item scale was created by adapting existing measures. The measure captured performance as reflected by market share, sales, return on investment and profitability relative to competing products in the market (e.g., Montoya-Weiss and Calantone, 1994). The well-accepted approach of a subjective measure was applied (e.g., Song and Parry, 1997). Studies show a high correlation between subjective and objective performance measures (Wall et al., 2004). The Cronbach's alphas were above .88, indicating good reliability.

Control variables. Two environmental variables (market potential and technological turbulence) that commonly influence new product performance were used as control variables. Market potential, defined as the potential demand for the new product in the target market, was measured by a 4-item scale from Song and Parry (1997). Technological turbulence, defined as a rapid rate of technological change, was measured by

a 4-item scale from Jaworski and Kohli (1993). The scales exhibited reliabilities over .74. Additionally, firm size as indicated by the number of employees was used as a control, as product performance may be higher in larger, more resourced firms than smaller ones. Finally, country dummy codes were inserted as control variables on performance to account for all other noncultural sources of variation, consistent with prior multicountry studies (e.g., Bstieler, 2005).

Analysis and Results

Data Pooling Across Countries

To test the research framework, the three country samples were combined into one to represent a geographic cluster. Data pooling is appropriate when the unit of analysis is a wider geography such as a region. Additionally, since the culture measures used are indexes, determining the influence of culture requires testing at the combined country, *not* the individual country, level (Inglehart and Welzel, 2005). This study followed prior research in examining (1) the role of national culture using the Inglehart indexes on pooled multicountry data (e.g., Morgeson et al., 2011; Steenkamp and de Jong, 2010; Steenkamp and Geyskens, 2012), and (2) endogenous organization-level variables such as top management involvement, alongside exogenous country-level variables such as national culture as key determinants of innovation (e.g., Troy et al., 2008).

Before proceeding with the pooling, the validity of pooling was checked in two ways. First, metric invariance was controlled among the three countries. Following Steenkamp and Baumgartner (1998), full metric invariance was first tested by constraining the matrix of factor loadings to be invariant across countries. Since there was a significant increase between the configural model and full metric model invariance ($\Delta\chi^2(62) = 118.03, p = .01$), full metric invariance was not supported. However, partial metric invariance is sufficient to establish cross-national equivalence (Steenkamp and Baumgartner, 1998; Tellis et al., 2009). Hence the difference between each pair of factor loadings was examined to identify the source of variance. Only 15% (14 of 93) of the pairs differed across countries with no clear patterns, a proportion consistent with Steenkamp and Baumgartner (1998) and much lower than Tellis et al. (2009). Next partial metric invariance was tested by freeing up the constraints on those identified pairs. The resulting model did not differ significantly from

the configural model ($\Delta\chi^2(40) = 45.66, p > .05$), indicating that partial metric invariance exists.

This first step provided evidence of cross-national equivalence in the survey measures, and thus support for pooling. In the second step, all of the antecedents of novelty and meaningfulness were interacted with two dummies: one that takes on value 1 when the data comes from China and 0 otherwise, and another dummy that takes on value 1 when the data comes from Japan and 0 otherwise; South Korea was used as the reference country. Since none of these interactions terms were found significant, it was concluded that pooling is valid.

Model Testing

Once the data were pooled, three sets of model testing were carried out. The approach reflected a decomposed analysis of creativity. The first set of models focused on the antecedents of meaningfulness (Table 3a), the second on novelty (Table 3b), and the last on consequences of creativity on new product performance (Table 4). As the data on novelty, meaningfulness, and performance were nested within countries, hierarchical linear modeling was employed, which accounts for the lack of independence across cases (Raudenbush and Bryk, 2002). An incremental model-building approach was used, which allowed sequential model testing. To estimate the models the “xtmixed” procedure in STATA was employed with a restricted maximum likelihood estimation. To facilitate the interpretation of the results, the variables were mean-centered around their respective country means.

Antecedents of meaningfulness. Three models of antecedents to meaningfulness were run. Model 1 looks at random effects, model 2 inserts the culture variables, and model 3 examines the simple effects of the five organizational and leadership factors. The results of model 3, which explore all the proposed antecedent relationships and explain 24% of variance in meaningfulness, are presented in Table 3a. It had been posited that all market orientation dimensions and top management factors (H1a–H4a) have a positive linear relationship with meaningfulness, except for top management risk taking (H5a), which is expected to have a negative linear tie. The results from main effects testing in model 3 reveal that customer orientation ($\gamma = .18, p < .001$), cross-functional integration ($\gamma = .16, p < .01$), and top management involvement

Table 3a. Antecedents of New Product Meaningfulness

Independent and Control Variables	Meaningfulness
Fixed effects	
Intercept	−8.84
Customer orientation (H1a, supported)	.18***
Competitor orientation (H2a, not supported)	−.01
Cross-functional integration (H3a, supported)	.16**
Top management involvement (H4a, supported)	.16***
Top management risk taking (H5a, supported)	−.09*
Secular (H6a, supported)	5.77*
Survival (H7a, not supported)	54.78
Random Effects	
Country-level (τ_{00})	.01
Residuals (σ^2)	.67*
Incremental $\Delta\chi^2(\Delta df)$	114.81(5)***

* $p < .05$; ** $p < .01$; *** $p < .001$.

($\gamma = .16, p < .001$) have the theorized effects on meaningfulness in support of H1a, H3a, and H4a, respectively. Furthermore, H5a is supported in that it was found that top management risk taking ($\gamma = −.09, p < .05$) has the predicted negative effect. However, competitor orientation ($\gamma = −.01, p > .05$) has no effect on meaningfulness and therefore H2a is rejected. Further testing was performed separately for possible quadratic effects of the antecedents on meaningfulness (though not hypothesized), but none were found significant. Last, it had been hypothesized that secular culture values would have a positive effect on meaningfulness (H6a), whereas survival culture values would be negative (H7a). Support was found for H6a ($\gamma = 5.77, p < .05$), but not H7a ($\gamma = 54.78, p > .05$).

Antecedents of novelty. Four models were run sequentially, with the last model including all fixed and random effects. Model 1 examines random effects, model 2 adds culture variables, and model 3 presents the simple main effects of the posited antecedents on novelty. Model 4 is all inclusive, adding quadratic effects. The results of model 4 are provided in Table 3b. Model 4 explains 25% of the total variance in novelty (calculated as $[1 - (.001 + 1.04)] / (.26 + 1.13)$). The addition of quadratic effects explained 22.1% ($[1.04 - .81] / 1.04$) more of the firm’s novelty variation *within* countries over the simple effects only model, indicative of the value of investigating nonlinear relationships.

It had been posited that customer orientation (H1b), cross-functional integration (H3b), top management involvement (H4b), and top management risk taking (H5b) have negative curvilinear effects on novelty.

Table 3b. Antecedents of New Product Novelty

Independent and Control Variables	Novelty
Fixed effects	
Intercept	74.58***
Customer orientation	.04
Competitor orientation	.20***
Cross-functional integration	.12 [†]
Top management involvement	.05
Top management risk taking	.05
Customer orientation ² (H1b, marginally supported)	-.06 [†]
Competitor orientation ² (H2b, not supported)	.01
Cross-functional integration ² (H3b, supported)	-.10*
Top management involvement ² (H4b, not supported)	.03
Top management risk taking ² (H5b, supported)	-.09*
Secular (H6b, supported)	26.40***
Survival (H7b, supported)	-259.57**
Random effects	
Country-level (τ_{00})	.001
Residuals (σ^2)	.81*
Incremental $\Delta\chi^2$ (Δdf)	16.58 (5)***

[†] $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$.

The results revealed that customer orientation has a marginal negative, quadratic effect ($\gamma = -.06, p < .10$), while cross-functional integration ($\gamma = -.10, p < .05$), and top management risk taking ($\gamma = -.09, p < .05$) have significant negative, quadratic effects. Thus, H1b is marginally supported, and H3b and H5b are fully supported. However, because competitor orientation ($\gamma = .01, p > .05$) and top management involvement ($\gamma = .03, p > .10$) were found to have no quadratic effects, H2b and H4b are rejected. Finally, it had been theorized that secular culture values promote novelty (H6b), while survival culture values dampen it (H7b). The findings support both the role of secular values (H6b, $\gamma = 26.40, p < .001$) and survival values (H7b, $\gamma = -.259.57, p < .01$).

Consequences of meaningfulness and novelty on new product performance. Four models were sequentially tested to determine the effects of novelty and meaningfulness on new product performance. Model 1 examines random effects, model 2 adds control variables, model 3 presents the simple main effects of meaningfulness and novelty, and model 4 includes curvilinear effects. Table 4 reports the last model's estimation results for new product performance. The model in the left column presents these results and explains 43.5% of the total variance of product performance. In testing the main effects, novelty was found to have no linear effects ($\gamma = .78, p > .05$), while meaningfulness positively influences firm performance, as predicted by H8a ($\gamma = 2.14, p < .05$). For possible

quadratic effects of novelty and meaningfulness on performance, the results showed as predicted in H8b that novelty has negative curvilinear relationship with performance ($\gamma = -1.49, p < .05$), while meaningfulness has no quadratic tie to performance ($\gamma = .25, p > .05$). Novelty in this way indeed contributes to performance, contrary to earlier findings (Im and Workman, 2004), but in a nonlinear rather than linear fashion. The quadratic effect is an important finding. Among control variables, market potential and country influence performance ($\gamma = .60, \gamma = 1.37, p < .05$, respectively). All other control variables (technological turbulence, firm size) have no effect.

To gain deeper insight on consequences of creativity on performance, one more model was tested, namely with a possible interaction between novelty and meaningfulness. The rationale for the test was that rather than independent contributions to performance, the two components of creativity may be synergistic with one another. Further, including interaction and quadratic effects in the same equation reduces the probability of Type I and Type II errors (Ganzach, 1997). As presented in the right column of Table 4, the interaction effect is marginally significant ($\gamma = 6.18, p < .10$). Importantly the posited independent linear and curvilinear effects of meaningfulness and novelty, respectively, remain. In sum, the majority of hypotheses found support.

Table 4. Consequences of New Product Meaningfulness and Novelty on New Product Performance

Independent and Control Variables	New Product Performance	New Product Performance w/ Meaningfulness-Novelty Interaction
Fixed effects		
Intercept	16.26***	16.30***
New product novelty	.78	.59
New product meaningfulness (H8a, supported)	2.14*	2.23*
New product novelty ² (H8b, supported)	-1.49*	-3.90*
New product meaningfulness ²	.25	-3.55
New product novelty \times Meaningfulness		6.18 [†]
Market potential	.60*	.64*
Technological turbulence	-.16	-.18
Firm size	.05	.08
Random Effects		
Country-level (τ_{00})	1.37*	1.50*
Residuals (σ^2)	5.01*	4.98*
Incremental $\Delta\chi^2$ (Δdf)	6.12(2)*	3.26 (1) [†]

[†] $p < .1$; * $p < .05$; *** $p < .001$.

Discussion

The purpose of this study is to understand key antecedents and consequences of new product creativity in the context of multiple countries as a geographic cluster. More specifically, the study examines drivers and outcomes either not previously investigated or investigated with equivocal results. Importantly, unlike prior works, creativity is treated as a multidimensional construct with possibly distinct, nonlinear ties, in order to gain fuller insight on the nuanced ways firms build and benefit from creative new product efforts. Furthermore, the study is conducted in three countries that comprise an epicenter of global innovation. Overall results indicate much of the proposed framework held up under empirical scrutiny.

Theoretical Implications

The first theoretical implication is that this study extends creativity theory by explicating antecedents exogenous and endogenous to the firm as well as product performance consequences of creativity. By parsing creativity consistently with Amabile's conceptualization, examining distinct and independent dynamics by component, and detailing linear and nonlinear relationships, new insights are generated on creativity to advance NPD knowledge. In so doing, certain controversies in the literature are resolved surrounding creativity, such as whether creativity leads to successful new products. Notably, this study examines these constructs and relationships in the context of a cluster of countries, specifically South Korea, Japan, and China, thereby illuminating creativity dynamics beyond the confines of the single, typically Western, country setting applied in prior research.

A second theoretical implication is addressing a critical gap in the new product literature, namely the role of market orientation in creativity. While previous research determined that contrary to theory many of the elements of market orientation either make no contribution to novelty and meaningfulness or in some instances detract from them (Im and Workman, 2004), this study found that market orientation influences creativity but in intricate ways. Customer orientation and cross-functional integration, for instance, spur meaningfulness in a linear fashion, whereas cross-functional integration has a negative nonlinear influence on novelty. Therefore, market orientation contributes to

creativity in nuanced ways not previously conceived or tested.

Creativity theory and NPD meta analyses (Amabile, 1983; Henard and Szymanski, 2001; Rubera and Kirca, 2012) suggest leadership and culture factors likewise impact creativity, but these effects have till now not been investigated. A third implication of this study is highlighting the influences of leadership and national culture on creativity, thereby filling another important knowledge gap. As with market orientation, the leadership and culture variables were found to have a mix of positive, negative, simple, and quadratic effects on creativity. All told, these varied impacts underscore the delicacy of creativity, in that it does not materialize readily and can be easily hindered by the insufficiency, excess, absence, or presence of certain factors.

The findings of national culture's effects are worth noting in light of the three countries studied. The findings underscore the potency of national culture, and counter East Asian cultural stereotypes of quiet acquiescence to the status quo, where traditionalism and conformity govern NPD activities. It demonstrates that even in this region, secularism and self-expression drive creativity. Furthermore, a contribution is made through this study to the debate about what type of national culture influences innovation within firms: organizational versus national culture (Tellis et al., 2009). While prior studies have reported the dominance of the former over the latter (Tellis et al., 2009), this work finds that national culture still plays a powerful role. The fact that a relatively novel framework is used here to assess national culture, namely Inglehart's (1997), might partially explain the different findings. In this way, this article points to the importance of using a culture view other than one traditionally employed in NPD studies.

Insofar as consequences of creativity, very different ties for meaningfulness versus novelty were discovered. Greater meaningfulness produces stronger product performance, consistent with views that a product's usefulness is pivotal for market acceptance, whereas novelty's outcomes are negatively curvilinear. This is a useful finding that helps to explain the lack of novelty's direct contribution to performance in earlier research (e.g., Pullen et al., 2012). The curvilinear effects of novelty reveal why some creative products fail in the market. By determining that creativity's components move in differing directions, the mystery of creativity's performance impact is unraveled as a final theoretical implication.

Managerial Implications

There are several practical implications of this study for the management of innovation. Chief is the need for product developers to carefully tease apart and manage the two aspects of creativity, mindful that these elements work autonomously and differently. Given that meaningfulness and novelty have distinct determinants and outcomes, it behooves developers to avoid a one-size-fits-all approach when working on creative new products. The temptation may be to emphasize one dimension over another, such as novelty to the exclusion of meaningfulness, and to push both toward increasing degrees. The simplicity and appeal of this approach may explain why creativity efforts rarely strike gold.

The second implication is to cultivate the drivers of each component at the proper level. Meaningfulness generally benefits from the more is better principle. Therefore, managers should pull the organizational culture and leadership levers of customer orientation, cross-functional integration, and top management involvement to achieve greater degrees of meaningfulness. Novelty in contrast is a more subtle and finicky driver. Based on the findings here, firms should emphasize customer orientation, cross-functional integration, and top management risk taking to a certain degree but then avoid increasing them without limit. In the case of top management risk taking, directives to subordinates to embrace risk can initially inspire divergent thinking and unusual product ideas. If elevated too much, however, the push dampens novelty by entering a zone of recklessness.

A third implication for product developers is to find ways of tapping into Inglehart cultural values that facilitate new product creativity. One possible way is to form teams with more members from geographies with high secular values and/or low survival values. Within Asia, sample countries are China and Taiwan. Outside this region, Sweden, Norway, the Netherlands, and Australia are some of the nations with low survival and high secular values. To ensure some heterogeneity of outlook, which can foster a greater range of ideas, global teams can be assembled from several regions, such as from China (East Asia), Sweden (Northern Europe), and Canada (North America).

Last, managers should pursue creativity due to its contributions to higher product performance. Yet optimal results come from applying bifocals in a sense, keeping an eye on novelty and meaningfulness at the same time. The naïve view may be to pursue novelty

alone, since what is different grabs market attention and is more immediately labeled “creative.” This study shows nonetheless that very novel products risk rejection for being “too way out there.” The other tact is to pursue meaningfulness alone since it is more concrete. However, meaningfulness in the absence of novelty does not beget creativity. Hence managers must develop creative new products with a delicate hand on both meaningfulness and novelty, mindful that these qualities are cultivated in distinct ways.

Limitations and Future Research

In terms of limitations, only three countries in one region were studied. More countries or a another region would permit a stronger test of hypotheses. This study is perhaps the first creativity investigation on a cluster of countries. Future research can investigate whether or not the findings from this study hold for other countries in Asia, including perhaps India, Taiwan, and Singapore, thereby extending the Asian cluster examined here. Other clusters may be studied to identify distinct regional models, say, for Latin America and Western versus Eastern Europe. Once several regional models are developed, they can be compared. As evidenced in regional comparative NPD studies (e.g., Ernst, Dubiel, Prabhu, and Subramaniam, 2014; Markham and Lee, 2013), there are likely to be both similarities and differences. Finding similarities would aid in building a universal and global model of creativity, whereas identifying differences would permit the development of distinctive regional models, both of value to scholars.

A second limitation is the cross-sectional nature of the data. Longitudinal data is needed to assess fully the relationships proposed. Another limitation is that only certain antecedents were studied. Other organizational level variables worthy of investigation include autonomy, reward systems, and team structure. Consequences beyond new product performance can also be examined, such as product superiority and differentiation as intermediate outcomes of creativity. In light of the finding here of the influence of both meaningfulness and novelty to performance, future research may look at how to achieve optimal levels of both, which may differ by category of products or product life cycle. In other words, what should the relationship of meaningfulness to novelty be as managers develop creative products? How much meaningfulness should be targeted compared to novelty? There may be a ratio of

novelty to meaningfulness that is considered optimal for new products. There may be a ratio of novelty to meaningfulness that is considered optimal for new product performance, and factors such as product category may determine that ratio. Despite these limitations, the hope is that this work has illuminated creativity dynamics, and will motivate others to do so as well.

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Appendix A: Measures^a

	Factor Loading
<i>New Product Creativity Meaningfulness (4-item scale, Im and Workman, 2004)</i>	
Compared to your competitors, the new product you selected...	
is relevant to customers' needs and expectations.	.809
is considered suitable for customers' desires.	.815
is appropriate for customers' needs and expectations.	.724
is useful for customers.	.896
<i>New Product Creativity Novelty (4-item scale, Im and Workman 2004)</i>	
Compared to your competitors, the new product you selected ^b	
is really "out of the ordinary."	.737
can be considered as revolutionary.	.796
is stimulating.	.830
shows an unconventional way of solving problems.	.800
<i>New Product Performance (4-item scale, Montoya-Weiss and Calantone, 1994)</i>	
Relative to competing products in the market, this product is very successful in terms of...	
Sales	.896
Market share	.873
Return on investment	.843
Profits	.856

(Continued)

<i>Customer Orientation (5-item scale, Narver and Slater, 1990)</i>	
Our business objectives are driven primarily by customer satisfaction.	
We constantly monitor our level of commitment and orientation to serving customers' needs.	.716
Our strategy for competitive advantage is based on our understanding of customers' needs.	.869
Our business strategies are driven by our beliefs about how we can create greater value for customers.	.806
We measure customer satisfaction systematically and frequently.	.799
We give close attention to after-sales service.*	.654
<i>Competitor Orientation (4-item scale, Narver and Slater, 1990)</i>	
Our salespeople regularly share information within our business concerning competitors' strategies.	.789
We rapidly respond to competitive actions that threaten us.	.845
Top management regularly discusses competitors' strengths and strategies.	.779
We target customers where we have an opportunity for competitive advantage.	.875
<i>Cross-Functional Integration (4-item scale, Narver and Slater, 1990)</i>	
Our top managers from every function regularly visit our current and prospective customers.*	.654
We freely communicate information about our successful and unsuccessful customer experiences across all business functions.	.883
All of our business functions are integrated in serving the needs of our target markets.	.757
All of our managers understand how everyone in our business can contribute to creating customer value.	.804
All functional groups work hard to thoroughly and jointly solve problems.	.844
<i>Top Management Encouragement to Take Risks (3-item scale, adapted from Jaworski and Kohli, 1993)</i>	
Top management encourages new product teams to play it safe in their new product projects. ^{(†)*}	.587
Top management expects employees to take risks when they propose new ideas for new products.	.731
Top management believes that the higher financial risks involved in new product projects are worth taking for higher rewards.	.759
Top management encourages the development of innovative marketing strategies, knowing well that some will fail.	.821
<i>Top Management Involvement (4-item scale, adapted from Sethi et al., 2001)</i>	
Top management is very actively involved in new product projects.	.814
Top management very closely monitors the progress of new product projects.	.867
Top management emphasizes that this organization's success depends on developing new products.	.783
Top management often tells employees to be sensitive to the new products of our competitors.	.723
<i>Market Potential (4-item scale, adapted from Song and Parry, 1997)</i>	
There are many potential customers for this product to provide a mass-marketing opportunity.	.791
Potential customers have a great need for this class of product.	.788
The dollar size of the market (either existing or potential) for this product is very large.	.707
The market for this product is growing very quickly.	.745
<i>Technological Turbulence (4-item scale, Jaworski and Kohli, 1993)</i>	
The technology in our industry is changing rapidly.	.717
Technological changes provide big opportunities in our industry.	.821
A large number of new product ideas have been made possible through technological breakthroughs in our industry.	.823
Technological development in our industry are rather minor. ^(†)	.783

[‡]All items are measured by seven-point Likert-type scales, except for firm size.

*These items were removed from the final analysis due to their low item-to-total correlations.

^(†)Reverse-coded.