A cross-country study of consumer innovativeness and technological service innovation

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ABSTRACT

The current literature suggests that the concept of consumer innovativeness is universally applicable. Innovators are believed to be novelty seekers and risk takers independent of their national identity, and therefore to be attracted to similar characteristics of an innovation across most countries. However, research in intercultural marketing has shown that cultural norms and values have varying influences on the adoption of innovation, a finding that seems to contradict the assumption that the relationship between consumer innovativeness and adoption of innovation is universally uniform. This research investigates the effects of consumer innovativeness on attitude toward a service-based innovation across three European countries. The results of a multi-group structural equation modeling show that the relationship between consumer innovativeness and attitude toward innovation varies across the three dimensions of perceived novelty, perceived value, and perceived risk.

1. Introduction

The process of globalization has led to the increasing belief among marketing managers that consumer behaviors in different nations are converging into general common patterns that may serve as a common ground for predicting the adoption of an innovation (Yalcinkaya, 2008). The success of some recent new products tends to confirm this belief, as millions of Apple’s iPhones, Nintendo’s Wiis, and Asus computers have been sold in many countries with different value systems. However, innovations do not all succeed in the same manner, and in fact, most new products and services tend to fail in the market (Gourville, 2006), often because they have not been adapted to local markets (Meng et al., 2009; Yalcinkaya, 2008).

Since national values and norms strongly determine motivation and behavior (Markus and Kitayama, 1991; Park et al., 2012; Yeniyurt and Townsend, 2003), consumers in different countries have differing perceptions, preferences, and values that influence their intention to adopt an innovation (Dwyer et al., 2005; Suh and Kwon, 2002; Yang and Jolly, 2009). One evidence of these differences is the varying technology adoption rates of countries that share similar economic situations (Erumbana and de Jong, 2006; van Everdingen and Waarts, 2003). For example, one of the main explanations of the varying adoption rates of broadband within the European Union lies in cultural and social factors (Fife and Pereira, 2002).

However, even if the literature shows evidence of the influence of cultural values and norms on adoption behavior (Hofstede, 2001; Steenkamp et al., 1999), few studies have investigated the validity of adoption models across nations (Yalcinkaya, 2008). Instead, research using popular adoption models such as the technology acceptance model (Davis et al., 1989) and the unified theory of acceptance and use of technology (Venkatesh et al., 2003) attempts to generalize consumer behavior at an international level. One important assumption of these models is that the relationships between the predicting and predicted variables are universal.

Consumer innovativeness determines one’s tendency toward novelty-seeking and risk-taking behavior (Hirschman, 1980). The concept often implies that innovators hold the same profile independently of their national culture. For example, innovators are universally believed to be novelty-seekers, risk-takers and independent judgment-makers (Midgley and Dowling, 1978; Rogers, 2003). However, this assumption overlooks the influence of cultural values and norms on consumers’ behavior toward innovation—an influence that is especially critical to the concept of consumer innovativeness since innovators play a central role by adopting the innovation earlier and diffusing it to subsequent segments of the population.

Because of the centrality of innovators to the adoption process, investigation of how consumer innovativeness may differ across cultures in its influence on perceptions, attitude, and adoption of innovation is particularly important to understanding how new products should be adapted to local differences (Fowler and Bridges, 2010). This importance underlies the increased attention cross-national study of adoption behavior has been receiving.

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from both academics and practitioners (Yalcinkaya, 2008). Thus, although studies have provided evidence of variation in consumer innovativeness across countries (Tellis et al., 2009) and of differences in how national culture affects innovativeness (Steenkamp et al., 1999), little if any research has validated the influence of consumer innovativeness on perceptions and adoption behavior. This disregard is particularly apparent in the context of services, as most research so far has focused on products.

Many researchers seem to have assumed that the pattern by which consumer innovativeness influences perceptions and attitudes is similar across countries. Therefore, the objective of this research is to investigate the role of culture in moderating the relationships between consumer innovativeness, perceptions, and attitudes toward an incremental product innovation in a service context. Given the novelty of the product under study, we used attitude instead of adoption in order to better capture consumer initial evaluation of the new product. A structural model was tested using data collected in the UK, France, and Germany. Results show that consumer innovativeness influences perceptions differently across countries and that perceptions produce dissimilar effects on attitude across countries. For marketing managers, this finding illustrates the importance of taking into account the influence of culture on the attitude toward service-based technological innovations, and the corresponding need to adapt retailing strategies, to increase the chances of success of a new product or service in the local market.

2. Literature review

2.1. Consumer innovativeness

Beyond testing the commonly accepted assumption that innovators possess a propensity to adopt new products earlier than the average consumer (Rogers and Shoemaker, 1971), the major challenges of research in consumer innovativeness lie in the conceptualization and measurement of consumer innovativeness itself (see Vandecasteele and Geuens, 2010). Early research in this area employed time-of-adoption proxies to segment consumers into innovators and non-innovators (see Midgley and Dowling, 1978 for examples of temporal measures of innovativeness). However, time of adoption as a measure of innovativeness had several fundamental weaknesses. Primarily, it largely ignored the complex social dynamics that surround the purchase of new products or services, but it also lacked the ability to predict buying behavior. Therefore, some researchers argued that innovativeness should be assessed at a more abstract level and developed personality-related measures.

Midgley and Dowling (1978) proposed innate innovativeness as “the degree to which an individual makes innovation decisions independently of the communicated experience of others.” An underlying assumption is that innovators are independent decision makers who are driven by their personality rather than by others’ opinions of the new product. Hirschman (1980) conceptualized innovativeness as one’s desire to acquire information about the new product, which is strongly related to novelty-seeking behavior. Since innovators are not likely to adopt all new products, Goldsmith and Hofacker (1991) argued that consumers’ perceptions and interests often vary across product categories and developed domain-specific measures of innovativeness. Flynn and Goldsmith (1993) subsequently proposed a distinction between domain-specific innovativeness and global innovativeness.

More recent literature suggests that consumer innovativeness often includes multi-dimensional motivations such as functional, hedonic, social, and cognitive factors (Baumgartner and Steenkamp, 1996; Tian et al., 2001; Voss et al., 2003). For example, to better account for the consumer–product relationships in adoption, Vandecasteele and Geuens (2010) included functional, hedonic, social, and cognitive motivations in their innovativeness measure.

2.2. Adoption of innovation

Understanding consumer adoption behavior is fundamental to the innovation process (Roberts et al., 2005). With respect to innovation adoption, two streams of research seem to co-exist, each addressing a distinct type of innovation: technological innovation and information technology acceptance. Researchers in technological innovation use innovativeness as a predictor of adoption but tend to prefer to use domain-specific innovation rather than global innovation, as technological innovation is considered to be radically different from that of general consumer goods. In particular, technological innovations have a shorter product life-cycle (Temporal and Lee, 2000; Winkler, 1999; Zajas and Crowley, 1995), require technical savviness for evaluation (Tripat and Lei, 2009; Truong, 2011), and face saturation in nearly all markets (Hamann et al., 2007). Given the technical nature of technological innovations, researchers investigating adoption have extensively explored the role of perceived risk (see Hirunyawipada and Paswan, 2006) and technology convergence (see Gill and Lei, 2009). As a result of the weight of these characteristics, the predictive power of global innovation tends to be low in such a specific product category (Leonard-Barton and Deschamps, 1988), while domain-specific innovation has proven to be a very good predictor of adoption (Roehrich, 2004).

In the field of information technology acceptance, researchers have focused on the perceptions of new technologies as predictors of acceptance and then adoption. The technology acceptance model (TAM) (Davis et al., 1989), which builds on the theory of reasoned action Ajzen and Fishbein (1980), assumes that individuals’ adoption decision results from their attitude toward the use of the new technology. In this case, attitude is influenced by perceived usefulness and perceived ease of use. Researchers in both marketing and psychology have used the TAM extensively to predict attitude, which is believed to determine intention and decision. However, investigations relying on the TAM have neglected the role of consumer innovativeness in technology acceptance, even though personal innovativeness seems to play a mediating role between perceptions and attitude toward a new technology (Agarwal and Prasad, 1998).

Although consumer innovativeness concepts and the TAM have both been used to predict adoption of technological innovation, consumer innovativeness has more often been used to forecast adoption of mainstream consumer goods and services (Roehrich, 2004), most likely because its construct is individual-related (predisposition) and not product- or service-related (perceived usefulness and perceived ease of use of the product or service). Since consumer innovativeness is more relevant to the study of innovators as individuals than is the TAM, especially in the context of cultural differences across countries, this construct was chosen as a predictor of perceptions of and attitude toward a new service.

Past research has suggested that cultural values and norms can explain the differences in levels of innovativeness across countries (Steenkamp et al., 1999; Tellis et al., 2009), but has not examined how the same cultural values and norms can moderate the effects of consumer innovativeness on perceptions and attitude toward innovation. Specifically, the literature suggests that individuals who score high in innovativeness have a higher propensity to seek novelty, capture value, and accept risk than the average consumer (Roehrich, 2004; Rogers, 2003). However, an assumption that the relationship between innovativeness, novelty, value, and risk is stable across countries would contradict
existing theory of variation in cultural dimensions and their effect on behavior (Hofstede, 2001). A study of global innovativeness in 15 countries showed that the shared commonality of risk-taking was relatively low (Tellis et al., 2009), a finding that implies that each culture or group of cultures has a different approach to risk-taking. Another study found that perception of price often varies across countries and depends on many dimensions, including national price sensitivity and value consciousness (Watchravesringkan et al., 2008). Finally, a study of novelty-seeking behavior in culinary experience found that consumers’ culinary exploration behavior was strongly related to their culture's level of uncertainty avoidance (Tse and Crotts, 2005). From the foregoing,

H1: The relationship between consumer innovativeness and perceived novelty of a technological innovation is moderated by culture.

H2: The relationship between consumer innovativeness and perceived value of a technological innovation is moderated by culture.

H3: The relationship between consumer innovativeness and perceived risk of a technological innovation is moderated by culture.

Given the hypothesis that consumer innovativeness affects perceived novelty, perceived value, and perceived risk in different manners across countries, these three variables can also be expected to produce different effects on attitude toward the innovation. Therefore,

H4: The relationship between perceived novelty and attitude toward a technological innovation is moderated by culture.

H5: The relationship between perceived value and attitude toward a technological innovation is moderated by culture.

H6: The relationship between perceived risk and attitude toward a technological innovation is moderated by culture.

3. Methodology

3.1. Construct development

3.1.1. Consumer innovativeness

Innovativeness has often been measured in terms of adoption of a new product or service earlier than the average (Rogers, 2003). However, in some instances, the levels of involvement and interest are also very good indicators of innovativeness, especially when the new product or service is new to the world (Hirunyawipada and Paswan, 2006). For this reason the study used an adapted version of the domain-specific innovativeness scale, which is a popular measure of consumer innovativeness for technological innovations (Goldsmith and Hofacker, 1991; Klink and Athaide, 2010).

3.1.2. Perceived novelty

Newness is one of the most salient attributes of innovations. This variable is adapted from research that has differentiated between two dimensions of perceived innovation newness: novelty, the degree to which a product or service is perceived as unusual, different, or unique compared with other products, and recency, the length of time a product has been available on the market (Blake et al., 1970, 1973). Novelty was retained as it matches the research objective and has been used in many studies as a principal trait of innovativeness (Hirschman, 1980).

3.1.3. Perceived value

At a general level, perceived value is a judgment or valuation by the customer of the benefits or utility obtained from a product, service, or relationship, and the corresponding perceived sacrifices or costs (Agarwal and Teas, 2001; Zeithaml, 1988). However, perceived value is a multidimensional construct that includes functional value, social value, quality value, and monetary value. The most relevant dimension for this study is perceived monetary value, which refers to the price that one pays to obtain a product (Dobbs, 1999). As price is critical to adoption in the case of high-tech products, investigating perceived monetary value is particularly important. Also, price is a critical issue in innovations, especially in the case of technological innovations, since firms initially want to amortize their R&D costs and sell most new products at a higher price. The construct was adapted from Dobbs (1999).

3.1.4. Perceived risk

While consumers always perceive some risk when making decisions about the purchase of a product, they are especially risk-conscious in the case of high-tech products, which incorporate new technologies that may cause disruption. Like value, perceived risk has several dimensions, including physical, functional, social, psychological, and financial risks (Jacoby and Kaplan, 1972). In the case of technological innovations, innovators distinguish themselves from the majority by their self-confidence in technical skills. Innovators are often willing to try a new technology not only because they are curious about it but also because they believe they can cope with its technical aspects. Therefore, when purchasing technological innovations, consumers tend to evaluate the level of technical skills needed to use the product or service, which is similar to Davis's (1989) construct of ease of use. The construct perceived risk was developed in a focus group of 20 consumers.

3.1.5. Attitude toward technological innovation

This construct measures the respondent's level of interest. Recent studies have suggested that many of the conventional adoption dimensions are not always relevant to technological innovations (e.g., Hirunyawipada and Paswan, 2006). Therefore, this study assesses respondents' interest in this new service, which is related to attitude and not adoption since they are not required to make a purchase decision. This construct was developed in a focus group of 20 consumers.

3.2. Study context

The context of the study is that of a new service, a streaming video-on-demand (VOD) service made available through a high-capacity broadband set-up box. Respondents were shown a short video of how the service would operate in a home. Then, a short description including a price (19 euros per month) was provided before the respondents addressed the questions. VOD service was a suitable choice because it was relatively new in all three countries and therefore was perceived by the respondents as an innovation. Table 1 shows the items used for the constructs investigated.

3.3. Data collection and analysis

Data were collected through a survey which was distributed to 450 consumers drawn randomly from a panel of 200,000 consumers by an online panel company in three countries: the UK, France, and Germany. Quota sampling was used to generate samples that were representative of the population. The online survey method was preferred to alternative options (face-to-face,
mailing, or convenience sampling) owing to its greater cost efficiency. Design of the questionnaire relied on Puleston's (2011) guidelines to improve online data collection.

The UK, France, and Germany served as the countries of study because they share similar cultural values and norms (Hofstede, 2001) and are among the largest and most advanced countries in Europe in terms of VOD services, as evidenced by the higher penetration rates of broadband internet (OECD, 2011). The choice of a broadband-based service for study is also appropriate given the lack of cross-national studies in this industry sector (Roy and Ghose, 2006). Finding differences across countries with a similar cultural background would allow us to make a more convincing argument than conducting the same study across countries that differ greatly in cultural background. Moreover, using countries

| Table 1 |
| Constructs and items. |

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer innovativeness</td>
<td>● Overall, I'm interested in the latest technology in VOD ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td></td>
<td>● I often visit the TV and set-up-box section of a department store or a supermarket ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td></td>
<td>● I know more about VOD than other people do ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td></td>
<td>● If I need to use a VOD service, I would buy the latest one available ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td>Perceived novelty</td>
<td>● How novel is this service to you? ○ Not novel–very novel</td>
</tr>
<tr>
<td></td>
<td>● How original is this service to you? ○ Not original–very original</td>
</tr>
<tr>
<td></td>
<td>● How innovative is this service to you? ○ Not innovative–very innovative</td>
</tr>
<tr>
<td>Perceived value</td>
<td>● The service is a very good buy for the money ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td></td>
<td>● I would consider this service to be a good value ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td></td>
<td>● The price for this service is: (sacrifice) ○ Much more than expected–much less than expected</td>
</tr>
<tr>
<td></td>
<td>● The price of this service is a lot of money to spend (sacrifice) ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>● I may ask for some help when using this service ○ Strongly agree–strongly disagree</td>
</tr>
<tr>
<td></td>
<td>● I'm not sure I can make this service work ○ Strongly agree–strongly disagree</td>
</tr>
<tr>
<td></td>
<td>● This service seems very technical ○ Strongly agree–strongly disagree</td>
</tr>
<tr>
<td>Attitude toward technological innovation</td>
<td>● Overall, this service is interesting ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td></td>
<td>● I would like to try this service ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td></td>
<td>● I would probably take a look at this service in a store ○ Strongly disagree–strongly agree</td>
</tr>
<tr>
<td></td>
<td>● Overall, I like this service ○ Strongly disagree–strongly agree</td>
</tr>
</tbody>
</table>
with highly disparate cultural backgrounds could introduce significant biases into our sample, which may limit the possibility to generalize the findings. Finally, even though the three countries are culturally close, differences in consumption habits still exist and warrant further investigation.

In total, 456 questionnaires were completed (approximately 150 in each country). The quota sampling method was useful as the three samples’ demographics were similar in terms of income (average income of 25,000–30,000 euros), gender (70% male and 30% female), and education (35% university degrees, 50% high school degrees, and 15% no degrees). An analysis of the average innovativeness of the three samples using independent sample t-test found no significant statistical difference between the groups. These data are generally representative of the population that uses broadband internet service in the three countries under study (OECD, 2011).

We used structural equation modeling to analyze the data and present the structural model representing the relationships between the independent and dependent variables in Fig. 1. We used SPSS 18 for confirmatory factor analysis (CFA) and a multigroup method of analysis in AMOS 16 for the SEM. Multigroup analysis allows the comparison of regression coefficients between several models to detect significant differences in relationships when a moderating variable (country) is introduced. The main advantages of using SEM over multiple regressions or analysis of variance (ANOVA) lie in the possibilities of estimating fit indices and accounting for measurement errors (Kline, 1998). In general, SEM is the most suitable method for analyzing relationships between latent variables (Schumacker and Lomax, 2004).

4. Results

4.1. CFA and model fit

The Kaiser–Meyer–Olkin test (> 0.80) and Bartlett’s test of sphericity (p < 0.01) confirmed that the data were appropriate for factor analysis (Schumacker and Lomax, 2004). Using principal component analysis and varimax rotation, we found that the 18 items loaded correctly with their corresponding factor, with all loadings above 0.70 except one item for perceived value. We therefore decided to remove this item, after which the outcome satisfied the requirement for sufficient homogeneity and validity in structural equation modeling that at least three items measure each factor (Byrne, 2001). Reliability was also satisfactory for all factors as all Cronbach’s alphas were above 0.70. Table 2 shows the items and their corresponding factors as provided by SPSS 18. Following Hu and Bentler (1999) and Byrne (2001), we used a combination of relative indices (IFI and TLI), CFI, a noncentrality-based index (RMSEA), and an absolute fit index (SRMR) to assess the fit of the structural model. This combination provided a solid ground for assessing model fit using some of the most reliable and sample size-independent indices. All indices met the recommended threshold: IFI (0.93), TLI (0.90) and CFI (0.93) were above 0.90, RMSEA (0.05) was below 0.60, and SRMR (0.07) was below 0.80 (Byrne, 2001). As a consequence, the model presented good fit and thus acceptable configural invariance. To test metric invariance, we observed the chi-square difference between a constrained versus an unconstrained model in AMOS, and found that the difference was non-significant. Therefore, we concluded that the measurement was invariant across the three groups.

4.2. Hypothesis testing

Assessment of the relationships between the three models was performed by a multigroup analysis procedure in AMOS 16. The results of the analysis appear in Table 3. All regression coefficients were significant at the 0.05 level except the effect of perceived

---

**Table 2** Item loadings.

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness</td>
<td>.808</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.801</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.770</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.764</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novelty</td>
<td>.817</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novelty</td>
<td>.787</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novelty</td>
<td>.807</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value</td>
<td>.761</td>
<td>.704</td>
<td>.764</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value</td>
<td>.761</td>
<td>.704</td>
<td>.764</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>.818</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>.835</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>.820</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*loading was below 0.50.

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**Table 3** Results of multigroup analysis.

<table>
<thead>
<tr>
<th>Relationships</th>
<th>SReg.</th>
<th>C.R.</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness -&gt; Perceived novelty</td>
<td>.473</td>
<td>4.581</td>
<td>***</td>
</tr>
<tr>
<td>Innovativeness -&gt; Perceived value</td>
<td>.266</td>
<td>2.700</td>
<td>.007</td>
</tr>
<tr>
<td>Innovativeness -&gt; Perceived risk</td>
<td>-.380</td>
<td>-3.439</td>
<td>***</td>
</tr>
<tr>
<td>Perceived novelty -&gt; Attitude</td>
<td>.490</td>
<td>5.183</td>
<td>***</td>
</tr>
<tr>
<td>Perceived value -&gt; Attitude</td>
<td>.298</td>
<td>3.247</td>
<td>.001</td>
</tr>
<tr>
<td>Perceived risk -&gt; Attitude</td>
<td>-.161</td>
<td>-2.322</td>
<td>.020</td>
</tr>
</tbody>
</table>

*Model 1 (UK)*

| Innovativeness -> Perceived novelty | .372  | 4.081 | ***     |
| Innovativeness -> Perceived value | .287  | 2.134 | .033    |
| Innovativeness -> Perceived risk | -.366 | -3.942| ***     |
| Perceived novelty -> Attitude | .386  | 4.620 | ***     |
| Perceived value -> Attitude | .433  | 2.509 | .012    |
| Perceived risk -> Attitude | -.032 | -.555 | .579    |

*Model 1 (France)*

| Innovativeness -> Perceived novelty | .182  | 1.855 | .050    |
| Innovativeness -> Perceived value | .445  | 3.935 |       |
| Innovativeness -> Perceived risk | -.402 | -3.256| .001    |
| Perceived novelty -> Attitude | .388  | 4.014 |       |
| Perceived value -> Attitude | .329  | 3.223 | .001    |
| Perceived risk -> Attitude | -.282 | -2.826| .005    |

*** p < 0.000
risk on attitude for the French sample. We used the critical ratios computed by AMOS to compare the regression coefficients between the three models (two-tailed z-test). As a critical ratio above 1.96 implies that the difference between two regression coefficients is significant at 0.05 level (Byrne, 2004), we used the critical ratios to test our six hypotheses. On the relationship between consumer innovativeness and perceived novelty, the difference between the three regression coefficients was significant. Consumer innovativeness had a greater effect on perceived novelty of a technological innovation in all three countries and no significant differences were found across the three countries, implying that novelty is a salient attribute of innovation in all three countries. This finding is particularly consistent with the consumer innovativeness literature which assumes that novelty is a universally important attribute of innovation. However, perceived novelty was found to be significant in Germany but not in France. Regarding the moderating role of culture in explaining attitude toward innovation, that is, how innovators' perceptions of and attitude toward innovation may differ across countries. The overall hypothesis for this investigation was that, even though innovators may share general characteristics such as novelty-seeking and risk-taking behavior, they value different dimensions of innovation differently across countries (H1).

We found similar results for the relationship between consumer innovativeness and perceived value. Perceived value was a stronger determinant of attitude in Germany than in the UK and France. However, current research examining the adoption of innovation has rarely investigated the role of culture in moderating the relationship between consumer innovativeness and adoption behavior, that is, how innovators' perceptions of and attitude toward innovation may differ across countries. The overall hypothesis for this investigation was that, even though innovators may share general characteristics such as novelty-seeking and risk-taking behavior, they value different dimensions of innovation according to their culture (Hirschman, 1980; Rogers, 2003). Therefore, the objective of this research was to fill this gap by exploring the influence of culture in perceptions and attitude toward innovation.

Using SEM as a statistical procedure, we found that culture moderated the relationship between consumer innovativeness, perceived novelty, perceived value, perceived risk, and attitude toward innovation. Specifically, perceived novelty was more salient in the UK, while perceived value was more salient in Germany. Additionally, perceived risk was found to be significant in the UK and Germany but not in France. Regarding the moderating role of culture in the relationship between perceived novelty, perceived value, perceived risk, and attitude toward innovation, no significant difference was found across the three countries, suggesting that novelty is an important determinant of attitude in all three countries. This finding is particularly consistent with the consumer innovativeness literature which assumes that novelty is a universally important attribute of innovation. However, perceived value was found to be a stronger determinant of attitude in France, while perceived risk played an important role in Germany.

Part of the explanation for the differing importance of perceived value and risk may reside in each culture's consumer preferences. For example, a recent study from the French lifestyle observatory shows that perceived value of a product is important to French consumers in the evaluation stage (Corcos and Moatt, 2008). Similarly, one can also infer that Germany's engineering driven culture is prone to risk aversion when evaluating a technological innovation. Therefore, even though novelty, value, and risk may play an important role in the countries under study, their importance may vary significantly depending on the specific cultural traits of each country.

For academics, this investigation brings further insights into the moderating role of culture in explaining attitude toward innovations. It uses consumer innovativeness as a conceptual framework to show the differing importance of novelty, value,
and risk in consumers’ evaluation of a new service, and demonstrates that while consumer innovativeness may be applicable in a cross-cultural context it tends to affect perceptions and attitude differently. For this reason, international studies of consumer innovativeness should incorporate the cross-cultural aspect as one of its components.

This investigation also offers practitioners insights into the specific factors that influence attitude toward a new service in each of the three countries studied. Results imply that managers launching a new service in the UK should allocate more resources to marketing the novelty aspect of the service, whereas value for money is crucial for French and German consumers. Further, technical risk is particularly important in Germany but not in France, with the result that strong after-sales service and service information are needed to reassure German consumers. These results show that even though their profiles may share some common characteristics, consumers do not evaluate new services on the same ground.

There are four main limitations to this study. First, because the study was conducted in the UK, France, and Germany, generalizing the findings to distant cultures should be done with great care. Second, as the study context was that of a technological service innovation, the findings may not apply in the case of products since the intangible nature of services affects consumer evaluation differently (Pleger Bebko, 2000). Future research can obviously investigate the validity of the findings in other countries, especially those that are distant in terms of cultures. Additionally, future investigations might develop the model to include more dimensions of consumer innovativeness and more stages of adoption behavior. Third, using self-reports as a survey method often leads to over-scoring from respondents. Finally, even though the panel from which the sample was drawn is relatively large, it may still not be entirely representative of the population.

6. Implications for marketing managers

Before launching and distributing a new product or service, marketing managers often study the behavior of innovators to assess perceptions and attitude toward the innovation. This task is critical, as innovators can greatly influence the behavior of mainstream consumers. Although both existing theory and current practice show that Rogers’ (2003) concept of consumer innovativeness is assumed to produce a uniform influence on attitude, some authors (Steenkamp et al., 1999; Tellis et al., 2009) have questioned its applicability in a cross-cultural context.

This research provides evidence that consumers (including innovators) from different countries do not necessarily value the same characteristics of an innovation, which affects their attitude toward the innovation. Therefore, to optimize the chances of success of the new product or service in a local market, researchers and practitioners should take into account this variability in perceptions and attitude and adjust the retailing strategy accordingly. For example, attributes that are most critical to local consumers can be highlighted at the retail place and even incorporated into the unique selling proposition in order to increase positive perceptions at a very early stage of product consideration. By focusing on the most salient attributes of the new product for local consumers, retailers can create and increase favorable attitude which is an antecedent of adoption.

References


