Consumer Innovativeness and Adoption of Technological Innovation:

A Cross Country Study

Yann Truong
ESC Rennes School of Business

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Abstract

The current literature suggests that the concept of consumer innovativeness is considered to be universally applicable. Innovators are believed to be novelty seekers and risk takers independently of their national identity, and therefore would be attracted to similar characteristics of an innovation across most countries. Though, research in intercultural marketing has long shown that cultural norms and values produce different effects upon adoption of innovation, which seems to contradict the universal assumption about the nature of the relationship between consumer innovativeness and adoption of innovation. This research attempts to bridge the gap by investigating the effects of consumer innovativeness on adoption of a service-based innovation across three European countries. The results of the multi-group structural equation modeling show that the relationship between consumer innovativeness and adoption of innovation does vary across the three dimensions under study (perceived novelty, perceived value and perceived risk).

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 which may be used as a common ground for predicting the adoption of an innovation (Yalcinkaya, 2008). Some of the most recent new products tend to confirm this belief as millions of Apple’s Iphone, Nintendo’s Wii and Asus computers have been sold in many countries with different value systems. Though, not all innovations succeed in the same manner, and in general, most new products tend to fail in the market (Gourville, 2006). One important reason is that some of these new products and services could have been adapted to local markets (Yalcinkaya, 2008; Meng et al., 2009). Since national values and norms are strong determinants of motivation and behavior (Markus and Kitayama, 1991; Yeniyurt and Townsend, 2003), consumers in different countries have different perceptions, preferences, and values that influence their intention to adopt innovation (Dwyer et al., 2005; Suh and Kwon, 2002). One evidence of these differences can be observed in the varying technology adoption rates of countries which share similar economic situations (Erumbana and de Jong, 2006; van Everdingen and Waarts, 2003). For example, one of the main explanations of the different adoption rates of broadband within the European Union was found to be cultural and social factors (Fife and Pereira, 2002). However, even if the literature shows sufficient 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 in popular adoption models such as Davis’ (1989) Technology Acceptance Model (TAM) and Venkatesh’s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT) 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. Another striking example is that of consumer innovativeness which 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. Innovators are believed to be universal novelty seekers, risk-takers and independent judgment makers (Rogers, 2003; Midgley and Dowling,
This assumption neglects the influence of cultural values and norms on consumers’ behavior toward innovation. This is especially critical to the concept of consumer innovativeness as innovators play a central role in adopting the innovation earlier and diffusing it to subsequent segments of the population. For this reason, investigating how consumer innovativeness may differ across cultures in terms of its influence on perceptions, attitude and adoption of innovation is particularly important to understand how new products should be adapted to local differences. This explains why cross-national studies in adoption behavior has been gaining growing interest from both academics and practitioners (Yalcinkaya, 2008). Thus, although research has shown evidence of variation in consumer innovativeness across countries (Tellis et al., 2009) and differences in how national cultures affect innovativeness (Steenkamp et al., 1999), we found little if no research that validates the way consumer innovativeness influence perceptions and adoption behavior, particularly in the context of services as most research so far has focused on products. The pattern by which consumer innovativeness influence perceptions and attitude has appeared to be assumed by many researchers to be 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 attitude toward innovation in the context of a new service-based innovation. A structural model was tested using data collected in three countries: UK, France and Germany. An overview of our results shows that consumer innovativeness influence perceptions in different ways across countries, and similarly, perceptions produce different effects on attitude across countries. This finding illustrates the importance for both marketing and market research managers to account for the influence of culture on adoption behavior of technological innovations, and hence the necessity to adapt the communication strategy to increase the chances of success of a new product or service in the local market.

Literature Review
**Consumer innovativeness**

Beyond the commonly accepted assumption that innovators possess a higher propensity to adopt new products relatively 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 (see Vandecasteele and Geuens, 2010). Early research in this area used 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, using time-of-adoption as a measure of innovativeness presented several important weaknesses: it largely ignored the influence of the complex social dynamics around the purchase of new products or services, and lacked the ability to predict buying behavior. Therefore, some researchers argued that innovativeness should be 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.” The general assumption is that innovators are independent decision makers who are driven by their personality rather than by others’ opinion about 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, Flynn and Goldsmith (1993) proposed a distinction between global innovativeness (GI) and domain-specific innovativeness (DSI), and Goldsmith and Hofacker (1991) argued that consumers’ perceptions as well as interests often very across product categories and therefore developed domain-specific measures of innovativeness. The more recent literature on innovativeness suggests that consumer innovativeness often includes multi-dimensional motivations such as functional, hedonic, social and cognitive factors (Tian et al., 2001; Voss et al., 2003; Baumgartner and Steenkamp, 1996). For example, Vandecastele and Geuens (2010) included functional, hedonic, social and cognitive motivations into their innovativeness measure in order to better account the consumer-product relationships in adoption.
Adoption of innovation

In innovation adoption, two streams of research seem to co-exist as they address two different types of innovations. First, researchers in technological innovation use innovativeness as a predictor of adoption but tend to prefer to use DSI over GI as this type of innovations is considered radically different than general consumer goods: technological innovations undergo shorter product life-cycle (Zajas and Crowley, 1995; Winkler, 1999; Temporal and Lee, 2000), require technical savviness for evaluation (Tripat and Lei, 2009), face saturation in nearly all markets (Hamann et al., 2007). Given the technical nature of technological innovations, researchers have extensively investigated the role of perceived risk (see Hirunyawipada and Paswan, 2006) and technology convergence (see Gill and Lei, 2009) in adoption. As a result of these characteristics, the predictive power of GI tends to be low in such a specific product category (Leonard-Barton and Deschamps, 1988), while DSI has proven to be a very good predictor of adoption (Roehrich, 2004). Second, in the specific field of information technology acceptance, researchers rather focus on the perceptions of new technologies as predictors of acceptance and then adoption. Davis et al.’s (1989) and Venkatesh et al.’s (2003) Technology Acceptance Model (TAM), which builds upon Ajzen and Fishbein’s (1980) Theory of Reasoned Action (TRA), 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 (perceived utility of the new technology) and perceived ease-of-use (perceived required effort to use it). TAM has been used extensively in both marketing research and psychology research to predict attitude which in turns is believed to determine intention and decision. However, TAM has relatively neglected the role of consumer innovativeness in technology acceptance, even though Agarwal and Prasad (1998) proposed that personal innovativeness plays a mediating role between perceptions and attitude toward the new technology.

Although both consumer innovativeness concepts and TAM have been used in parallel to predict adoption of technological innovation, the former has more often been used as a predictor for
adoption for 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 in the study of innovators as individuals than TAM, especially in the context of cultural
differences across countries, we chose to use this construct as a predictor of perceptions 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 neglected 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 (Rogers, 2003; Roehrich, 2004).
Nevertheless, assuming that the relationship between innovativeness, novelty, value and risk is
stable across countries would be in contradiction with existing theory in the variation of cultural
dimensions and these latter’s effect on behavior (Hofstede, 2001). One evidence was proposed by
Tellis et al. (2009) who studied global innovativeness in 15 countries and found that the shared
commonality of risk-taking was relatively low, which implies that each culture or group of cultures
can have a different approach to risk-taking. Another study found that perception of price often
varies across countries depending on many dimensions such as national price-sensitivity and value-
consciousness (Watchravesringkan et al., 2008). Finally, in a study of novelty-seeking behavior in
culinary experience, Tse and Crotts (2005) found that consumers’ new culinary exploration behavior
was strongly related to their culture’s level of uncertainty avoidance. Consequently, we hypothesize
that:

**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

Since we hypothesize that consumer innovativeness affect perceived novelty, perceived value and perceived risk in different manners across countries, we can also expect these latter variables to produce different effects on attitude toward the innovation. As such, we also hypothesize that:

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

Methodology

Construct development

- **Consumer innovativeness**: Innovativeness has often been measured in terms of adoption of a new product or service relatively earlier than average (Rogers, 2003). Though, in some instances, the level 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). We therefore decided to use an adapted version of DSI which is a popular measure of consumer innovativeness for technological innovations (Goldsmith and Hofacker, 1991; Klink and Athaide, 2010).
- **Perceived novelty**: Newness is one of the most salient attributes of innovations. This variable is adapted from Blake, Perloff, and Heslin (1970) and Blake, Perloff, Zenhausern, and Heslin (1973) who have differentiated between two dimensions of perceived innovation newness: (1) “novelty”–the degree a product or service is seen to be unusual, different, unique compared with other products, and (2) “recency”–the length of time a product is seen to have been available on the market. We retained novelty as it matches our research objective and has been used in many studies as a principal trait of innovativeness (Hirschman, 1980).

- **Perceived value**: At a general level, perceived value is defined as a judgment or a valuation by the customer of the comparison between the benefits or utility obtained from a product, service or relationship, and the perceived sacrifices or costs (Zeithaml, 1988; Agarwal and Teas, 2001). However, Perceived value is a multidimensional construct which 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). Price being 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 as most new products are sold at a higher cost, especially in the case of technological innovations as firms initially want to amortize their R&D costs. The construct was adapted from (Dobbs, 1999).

- **Perceived risk**: Consumers always perceive risk when making decisions about the purchase of a product, especially in the case of high-tech products as these latter incorporate new technologies that may disrupt consumers. Just like value, there are several dimensions to perceived risk including physical, functional, social, psychological, and financial risks (Jacoby and Kaplan, 1972). In the case of technological innovations, what differentiates innovators from the majority is the former's self-confidence in technical skills. Innovators are often
willing to try a new technology because they are curious about it and also because they believe can cope with the technical aspects of it. Therefore, when purchasing technological innovations, consumers tend to evaluate the level of technical skills to use the product or service, which is similar to Davis’ (1989) construct of "ease of use". The construct "perceived risk" has been developed in a focus group of 20 consumers.

- **Attitude toward technological innovation**: This construct measures the level of interest from the respondent. Recent studies have suggested that many of the adoption dimensions are not always salient in the technological innovations (e.g. Hirunyawipada and Paswan, 2006). Therefore, we assess respondents' interest in this service, which is related to intention to use but without the risk of "forcing" them to make a decision. This construct was developed in a focus group of 20 consumers.

The context of the study involves a new service which consists in 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 were directed to the questions. This service was particularly interesting as 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 above constructs.

**Table 1**: Items used for the constructs.

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**Data collection and analysis**
Data was 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: UK, France and Germany. Quota sampling was used in order to generate samples that are representative of the population. Online survey method was preferred to alternative options (face-to-face, mailing, or convenience sampling) due to its higher cost-efficiency. For the design of the questionnaire, we attempted to follow Puleston’s (2011) guidelines to improve online data collection. We chose these three countries 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 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 point than conducting the same study across countries which differ greatly in cultural background. Moreover, using countries with large differences in cultural background may introduce important biases in our sample. In total, 456 questionnaires were filled (approximately 150 in each country). The quota sampling method was useful as the three samples’ demographics were relatively similar in terms of income (average income of 25-30,000 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 also demonstrated that there was no significant statistical difference between the three samples. These data are relatively representative of the population that uses broadband Internet in the three countries under study (OECD, 2011). We use Structural Equation Modeling to analyze the data. The structural model representing the relationships between the independent and dependent variables is presented in figure 1. We used SPSS 18 for confirmatory factor analysis (CFA) and a multigroup method of analysis in AMOS 16 for the SEM part. Multigroup analysis is SEM 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 possibility to estimate fit indices and account for measurement errors (Kline, 1998). In general SEM is the most suitable method for analyzing relationships between latent variables (Schumacker and Lomax, 2004).

**Results**

**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, the 18 items loaded correctly with their corresponding factor, with all loadings above 0.70 except one “perceived value” item. We therefore decided to remove this item, after which the outcome satisfied the requirement for sufficient homogeneity and validity in structural equation modelling that there are at least three items to measure each factor (Byrne, 2001). The reliability was also satisfactory for all factors as Cronbach alphas were all 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), 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) and TLI (0.90) 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 a good fit.
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 are shown in Table 3. All regression coefficients were significant at 0.05 level except the effect of Perceived 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). A critical ratio above 1.96 implies that the difference between two regression coefficients is significant at 0.05 level (Byrne, 2004). Therefore, 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 in the UK and France than Germany. This result supports the hypothesis that consumer Innovativeness influence Perceived Novelty differently across countries (H1). Similar results were found for the relationship between Consumer Innovativeness and Perceived Value. Perceived value was more salient in Germany than UK and France. H2 which hypothesized that Consumer Innovativeness influence Perceived Value differently across countries is also supported. For Risk, Consumer Innovativeness had a negative effect on Perceived Risk in the UK and Germany, but the relationship was found insignificant in France. The hypothesis that Consumer Innovativeness influence Perceived Risk differently across countries is partially supported. Perceived Novelty had an important effect on Attitude toward innovation in all three countries and no significant differences were found. This result implies that novelty is a salient determinant of attitude in all three countries. Thus, H4 which hypothesized that Perceived Novelty influences Attitude differently across countries is not supported. On the effect of Perceived Value as a determinant of Attitude, it was significantly stronger in France than UK and Germany. H5 which hypothesized that Perceived Value influences Attitude differently across countries is supported. Finally, differences in the influence of Perceived Risk on Attitude were significant in all three countries. Perceived Risk was a stronger determinant of Attitude in Germany than UK and France. In France, Perceived Risk did not seem to affect respondents’ attitude toward
the new service. H6 which hypothesized that Perceived Risk influences Attitude differently across countries is therefore supported. Table 4 summarizes the hypotheses, results and findings.

INSERT TABLE 3 ABOUT HERE

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**Discussion**

Although consumer innovativeness has often been conceived to hold a universal applicability (Midgley and Dowling, 1978; Rogers, 2003), some researchers have found that it may influence perceptions and adoption of innovation differently across countries (Tellis et al., 2009; Steenkamp et al., 1999). For managers, understanding how adoption behavior varies across countries and cultures is critical to foreign market entry strategies (Yalcinkaya, 2008). However, current research in the area of adoption of innovation has rarely investigated the role of culture in moderating the relationship between consumer innovativeness and adoption behaviour, that is, innovators’ perceptions of and attitude toward innovation differ across countries. The overall hypothesis was that innovators value different dimensions of innovation according to their culture, even though they may share general characteristics such as novelty seeking and risk-taking behaviour (Hirschman, 1980; Rogers, 2003). Therefore, the objective of this research was to fill this gap by conducting a study to investigate 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, perceive value, perceived risk and attitude toward innovation. Specifically, perceived novelty was more salient in the UK, while perceived value was more salient Germany. Moreover, perceived risk was found salient 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. Nevertheless, perceived value was found to be a stronger determinant of attitude in France, while perceived risk
played an important role in Germany. These findings show that the importance of novelty, value and risk varied significantly across the three countries. For academics, this study brings further insights into the moderating role of culture in adoption behavior of innovation. It uses consumer innovativeness as a conceptual framework to show the different importance of novelty, value and risk in consumers’ evaluation of a new service. The results show that consumer innovativeness may be applicable in a cross-cultural context but tends to affect perceptions and attitude differently. As such, international studies of consumer innovativeness should incorporate the cross-cultural aspect in their component. Practitioners also gain insights into the specific factors that influence the adoption behavior of a new service in each of these three countries. Launching a new service in the UK implies that managers should allocate more resources to market the novelty aspect of the service, while value for money is crucial for French and German consumers. Technical risk is particularly important in Germany but not in France, which means that a strong after-sales-service and service information are needed to reassure German consumers. These results show that consumers do not evaluate new services on the same ground, even though they may be share some common characteristics in their profiles.

The limitations of this study are mainly two-fold: 1) The study was conducted in the UK, France and Germany, thus generalizing the findings to distant cultures should be done with great care; 2) The context was that of a technological service innovation, which implies that the findings may not apply in the case of products, as the intangible nature of services affect 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. Another recommendation includes developing the model to include more dimensions of consumer innovativeness and more stages of the adoption behavior.

**Implications for market researchers**
When launching a new product or service, both marketing managers and market researchers often study the behaviour of innovators to assess these latter’s perceptions and attitude toward the innovation. This is a critical task as innovators can greatly influence the behaviour of mainstream consumers. Both existing theory in this area and current practice show that Rogers’ (2003) concept of consumer innovativeness is assumed to produce a uniformed influence on attitude, whereas some authors (Tellis et al., 2009; Steenkamp et al., 1999) have questioned its applicability in a cross-cultural context. The finding of this research shows 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, market research and marketing practitioners should account for this variability in perceptions and attitude and adjust the communication strategy accordingly in order to optimize the chances of success of the new product or service in a local market. The overall recommendation is to conduct market research on innovators’ and mainstream consumers’ characteristics in more than one country should the new product or service be launched internationally.
References


OECD 2011. OECD Broadband Portal. OECD.


<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
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| Consumer Innovativeness       | • Overall, I’m interested in the latest technology in VOD<br>   o Strongly disagree - strongly agree  
|                               | • I often visit the TV and set-up-box section of a department store or a supermarket <br>   o Strongly disagree - strongly agree  
|                               | • I know more about VOD than other people do<br>   o Strongly disagree - strongly agree  
|                               | • If I need to use a VOD service, I would buy the latest one available<br>   o Strongly disagree - strongly agree  |
| Perceived Novelty             | • How novel is this service to you?<br>   o Not novel - very novel  
|                               | • How original is this service to you?<br>   o Not original – very original  
|                               | • How innovative is this service to you?<br>   o Not innovative - very innovative  |
| Perceived Value               | • The service is a very good buy for the money<br>   o Strongly disagree - strongly agree  
|                               | • I would consider this service to be a good value<br>   o Strongly disagree - strongly agree  
|                               | • The price for this service is: (sacrifice)<br>   o Much more than expected - much less than expected  
|                               | • The price of this service is a lot of money to spend (sacrifice)<br>   o Strongly disagree - strongly agree  |
| Perceived Risk                | • I may ask for some help when using this service<br>   o Strongly agree - strongly disagree  
|                               | • I’m not sure I can make this service work<br>   o Strongly agree - strongly disagree  
|                               | • This service seems very technical<br>   o Strongly agree - strongly disagree  |
| Attitude toward technological innovation | • Overall, this service is interesting<br>   o Strongly disagree - strongly agree  
|                               | • I would like to try this service<br>   o Strongly disagree - strongly agree  
|                               | • I would probably take a look at this service in a store<br>   o Strongly disagree - strongly agree  
|                               | • Overall, I like this service<br>   o Strongly disagree - strongly agree  |
Table 2 Item loadings

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*loading was below 0.50
Table 3 Results of multigroup analysis

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<tr>
<td><strong>Model 1 (France)</strong></td>
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<td>Innovativeness -&gt; Perceived Novelty</td>
<td>.372</td>
<td>4.081</td>
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<tr>
<td>Innovativeness -&gt; Perceived Value</td>
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<td>2.134</td>
<td>.033</td>
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<td>Innovativeness -&gt; Perceived Risk</td>
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<td>-3.942</td>
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<td>Perceived Novelty -&gt; Attitude</td>
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<td>4.620</td>
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<td>Perceived Value -&gt; Attitude</td>
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<td>Perceived Risk -&gt; Attitude</td>
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<td>Innovativeness -&gt; Perceived Value</td>
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<td>Perceived Novelty -&gt; Attitude</td>
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<td>4.014</td>
<td>***</td>
</tr>
<tr>
<td>Perceived Value -&gt; Attitude</td>
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<td>.001</td>
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<td>Perceived Risk -&gt; Attitude</td>
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***p<0.000
<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Results</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1:</strong> The relationship between consumer innovativeness and perceived novelty of a technological innovation is moderated by culture</td>
<td>Supported</td>
<td>Consumer Innovativeness had a greater effect on Perceived Novelty in the UK and France than Germany</td>
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<tr>
<td><strong>H2:</strong> The relationship between consumer innovativeness and perceived value of a technological innovation is moderated by culture</td>
<td>Supported</td>
<td>Perceived value was more salient in Germany than UK and France</td>
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<tr>
<td><strong>H3:</strong> The relationship between consumer innovativeness and perceived risk of a technological innovation is moderated by culture</td>
<td>Partly supported</td>
<td>Consumer Innovativeness had a negative effect on Perceived Risk in the UK and Germany, but the relationship was found insignificant in France</td>
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<td><strong>H4:</strong> The relationship between perceived novelty and attitude toward a technological innovation is moderated by culture</td>
<td>Not supported</td>
<td>Perceived Novelty had an important effect on Attitude toward innovation in all three countries and no significant differences were found</td>
</tr>
<tr>
<td><strong>H5:</strong> The relationship between perceived value and attitude toward a technological innovation is moderated by culture</td>
<td>Supported</td>
<td>Perceived Value had a stronger effect on Attitude in France than UK and Germany</td>
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<tr>
<td><strong>H6:</strong> The relationship between perceived risk and attitude toward a technological innovation is moderated by culture</td>
<td>Supported</td>
<td>Perceived Risk was a stronger determinant of Attitude in Germany than UK and France. In France, Perceived Risk did not seem to affect respondents’ attitude toward the new service</td>
</tr>
</tbody>
</table>
Figure 1 Structural model

- Consumer Innovativeness
- Perceived Novelty
- Perceived Value
- Perceived Risk
- Attitude toward innovation