

The Influence of Cognitive Innovativeness on the Behavior and Style of Consumer Adoption: Implications for Electronic-Banking Service Adoption

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Abstract

Cognitive Innovative consumers are an important market segment for marketers. Revenue from new products adopted by innovative consumers plays a pivotal role for many firms. Hence having a correct understanding from the behavior and style of their purchase helps the firms to create and implement effective marketing plans for the new products. The current study investigates the behavior and shopping style of cognitive innovative consumers in electronic banking services through a hierarchical perspective. This research is quantitative and is practical in terms of the purpose. Yet it is a field study in terms of data gathering. The statistical population of this research includes the students of Azad University of Qazvin in Iran and the sample size is 384 persons. The resulted findings from this research, verify the hierarchy perspective of consumer innovativeness, specially the fact that cognitive innovativeness and domain-specific innovativeness are the best combination of predicting the adoption of new product behavior. Moreover the adoption behavior of these consumers follows the quality consciousness style. Results show that banks should target the cognitive innovative customers in order to have a successful marketing in regards with attracting customers and increasing the revenues from selling the electronic banking services.

Keywords: adoption behavior, cognitive innovativeness, hierarchy of consumer innovativeness, shopping style

1. Introduction

The concept of innovativeness refers to the interpersonal differences and categorization of people's response to the new things. Innovativeness is the degree to which an individual is relatively earlier in adopting an innovation than others (Rogers & Shoemaker, 1971). Innovation and presentation of new products are essential for growth and profitability of companies and also providing competitive advantage for them and help the companies in the battle of strategic positioning (Vandecasteele, 2010).

Usually for starting a successful marketing, the innovative consumers are targeted. This topic is important from two aspects: 1) The early adopters help the primary selling of the new products in the market and 2) These early adopters help the marketers through the word of mouth advertising in order to lead the late adopters who buy the products of the company later than the product launch to purchase the products. Finding the innovative consumers and the buyers who adopt the new products early, leads to diffusion of innovativeness and the number of consumers of the new product increases with a greater speed, it also helps firms enhance the effectiveness of their new product marketing efforts such as segmentation, targeting, positioning, and the four Ps (Kumar & Krishna, 2002).

Midgley & Dowling (1978) were from the first people to investigate the nature of innovativeness and evaluated it in various levels. The purpose of these two researchers was to investigate the innovativeness of the consumer and its relation with adopting and accepting the new product. They stated that the consumer innovativeness can be regarded as the highest level of abstractness and leads to emergence of tangible and evident behavior in the innovative consumer through a process.

Two other researchers called Venkatraman & Price (1990) showed that the innovativeness has two dimensions including cognitive and sensory. These two researchers stated that the cognitive innovativeness is the tendency to adopt and employ the new products which leads to stimulation and excitement of the consumer mind, versus the sensory innovativeness which is the tendency of the consumer to employ the products which might stimulate the sensory excitement in him.

From the other hand the important issue which is worth investigating in addition to the behavioral dimension and the type of innovative consumers performance is the way they perform in the purchasing process of new products which is called the decision making styles of accepting and adopting a new product. The decision making styles of the consumer are the same as intellectual styles and mental styles which lead to selecting different ways for employing the products during the years or decades in all the decision making fields that are consistent now (Sproles & Kendall, 1986). In other words the decision making styles of the consumer is a mental orientation which describes the consumer approach is choosing. Sproles & Kendall (1986) presented a list of shopping styles of the consumers including 8 different decision making styles for purchasing. One of the consequences of differentiating cognitive and sensory innovativeness is that consumers who have these different predispositions may have different adoption behavior and decision-making styles (Venkatraman & Price, 1990).

Identifying the cognitive' behavior and shopping styles as one of the two groups of innovators, will have significant role in the success of marketing strategies. This study focuses on cognitive innovative consumers and investigates their adoption behavior from a hierarchical perspective. Also it aims to determine shopping styles of them. In the other words this study tries to provide new insights into the adoption behavior and shopping patterns of these consumers.

2. Concepts and Theoretical Foundation

2.1 Consumer Innovativeness

Consumer innovativeness is considered as the tendency to willingly embrace change and try new things (Cotte & Wood, 2004). Consumer innovativeness is often viewed as a personality trait reflecting a willingness to change (Park, Yu, & Zhou, 2010). It can be stated that consumer innovativeness has been purported to differentiate early adopters from general consumers (Manning, Bearden, & Madden, 1995). Extant literature broadly defines consumer innovativeness as the desire to seek out arousal and novelty from new products (Hirschman, 1984).

2.2 The Hierarchy Perspective of Consumer Innovativeness

Many of the researchers have tried to define and recognize innovativeness as a construct and personality trait for predicting the new product adoption behavior (Mowen, Christia, & Spears, 1998). The researches show that a chain hierarchy structure exists in related to consumer innovativeness which adopting new product can be more transparent through this (Bartels & Reinders, 2011). This hierarchy viewpoint about the innovativeness has three levels: 1) Innate innovativeness or general innovativeness 2) Domain-specific innovativeness of products 3) Innovative behavior (Midgley & Dowling, 1978).

In this hierarchy as we get closer from level one to level three the degree of abstractness and subjectivity decreases and the degree of behavior and objectivity increases (Hirunyawipada & Paswan, 2006). Previous researches have seen the consumer innovativeness as a chain which starts from the personality and ends to the behavior, in other words this chain starts from the innate innovativeness and passes through domain-specific innovativeness and ends to the innovative behavior (Bartels & Reinders, 2011). The various levels of consumer innovativeness are shown in the Figure 1.

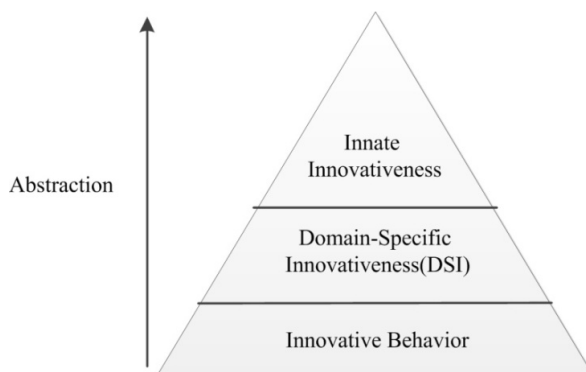


Figure 1. Levels of consumer innovativeness

Hirunyawipada & Paswan (2006) showed that cognitive and domain-specific innovativeness makes up the best potential combination of determinants to innovation adoption. Lee & Mano (2014) showed that innovativeness as a chain starts from the attributes and personality traits and ends to the innovative behavior; they stated that domain-specific innovativeness can act as a mediator between the cognitive innovativeness and innovative behavior of adopting new products. They also stated that when the constructs in the hierarchy model, become more distant, the relation become weaker which means the impact of cognitive innovativeness on the domain-specific innovativeness is greater than the impact of cognitive innovativeness on the adoption of new product behavior. The findings from the study of Lee & Mano (2014) verify the research findings of Hoffmann & Soyez (2010).

2.3 Innate Innovativeness

Innate innovativeness is a personality trait which includes the response of the individual to a new thing. The difference between these responses is organized in a manner that comprises from the very positive attitude to the very negative attitude. In fact this innovativeness is the tendency of the consumer to engage the mind and is the degree of which he is stimulated and based on search for new product or avoids it (Goldsmith & Foxall, 2003). In previous studies, equivalent names are employed for innate innovativeness which includes: open innovativeness (Josef & Vyas, 1984), public innovativeness (Clark & Goldsmith, 2006), independent innovativeness (Steenkamp & Gielens, 2003).

Since the innate innovativeness is a personality trait at the highest level of abstraction, it does not depend much on a specific context or field of the consumed product (Midgley & Dowling, 1978). This level of innovativeness is the base and foundation of consumer innovativeness and more than any variable affects that in order to persuade the consumer to adopt the new product. Innate innovativeness causes the consumer to acquire new information related to the new product and tendency to buy it (Im, Bayus, & Mason, 2003).

In some studies, the researchers define the innate (public) innovativeness a unit construct and argue for it, but many others received it as a two sided phenomenon which includes the cognitive innovativeness and sensory innovativeness. Two researchers named as Venkatraman & Price (1990) introduced the two-sidedness issue of the innate (public) innovativeness.

Hirunyawipada & Paswan (2006) argued that Consumers with high cognitive innovativeness enjoy evaluating information, and learning how products function and how to use them. Actual adoption of relevant products provides the ideal opportunity. While sensory innovativeness also stimulates a desire for knowledge, attaining information is the main objective and the intention to adopt does not necessarily ensue. It is noted that sensory innovators are attracted to advertisements, product trials, demonstrations and other context where information can be acquired without any obligation to purchase. Hirunyawipada & Paswan (2006) stated that these dimensions of innovativeness trait underlie the disparate lists of activities and purchase behavior.

2.4 Domain-Specific Innovativeness of the Products (DSI)

Domain-specific innovativeness aims to explicate the narrow facets of human behavior within a person's specific interest domain (Midgley & Dowling, 1993). It captures the individual's predisposition toward the product class, and refers to the tendency to acquire new products or related information within a specific domain (Goldsmith & Hofacker, 1991). This level of innovativeness is in the middle of hierarchy of innovativeness and has less abstraction than the innate innovativeness and in contrary the subjective and behavioral aspects are seen more (Agarwal & Prasad, 1998; Flynn & Goldsmith, 1993; Goldsmith & Hofacker, 1991; Roehrich, 2004).

This tendency is perhaps a consequence of the interaction between global innovativeness and strong interest in product category (Midgley & Dowling, 1978). Robertson (1971) asserts that consumer innovativeness is consistently found within product categories and occasionally between related product classes.

Product category innovators tend to be more knowledgeable than non-innovators (Foxall, 1995). They are more inquisitive, and search more widely for information (Rogers & Shoemaker, 1971). Midgley & Dowling (1978) stated that some people have a higher degree of innovativeness on a specific domain of products and exhibit more innovative behavior, that this innovativeness has been called domain-specific innovativeness.

Domain-specific innovativeness plays an important role in the innovativeness hierarchy by providing additional predictive power (Hirschman, 1980; Hirunyawipada & Paswan, 2006).

2.5 Innovative Behavior

Actualized innovativeness is the extent to which consumers are relatively early in adopting new products than other members of their societies (Bartels & Reinders, 2011; Rogers, 2003). In fact the innovative behavior refers

to the time that it takes for the consumer to show the behavior based on the adoption of new product and is the main criterion to distinguish between the early adopters and late adopters (Midgley & Dowling, 1978).

This level of innovativeness is in the lowest level of abstraction in the hierarchy of consumer innovativeness in which the innovative consumer shows objective behavior from himself (Baumgartner & Steenkamp, 1996; Chao, Reid, & Mavondo, 2012; Christia, 2014; Lee & Mano, 2014; Wang & Shih, 2015).

Christia (2014) stated that the meaning of new product adoption is selecting a product as the decision of a person constantly. According to Rogers (1983), the innovation-decision process is the process through which an individual or group passes from first knowledge of an innovation to forming an attitude toward the innovation, to a decision to adopt or reject. Then, the process is followed by implementation of the new idea and confirmation of the decision. With regards to the previous researches, innovative behavior of consumer has two dimensions, one is the adoption of new product and the other is acquiring novel information about the new product (Bartels & Reinders, 2011; Hirunyawipada & Paswan, 2006).

a) Actual adoption of new product: In this behavior, the innovative consumer buys and adopts the product in order to use that product (Hirschman, 1980; Zhang, Li, & Sun, 2014).

b) Acquisition novel information about new product: In this behavior, the innovative consumer, acquire the novel information related to the new product. In fact this behavior define as the extent to which consumers acquire (or seeks) new products' novel information with or without actual adoption. (Hirschman, 1980; Zhang et al., 2014). Another names of the innovative behavior are: the ownership of new product (Im et al., 2003), variety seeking behavior (Baumgartner & Steenkamp, 1996).

2.6 Shopping Styles of the Consumer in Adoption the Product

Consumer decision-making styles are the mental characteristic way that a consumer approaches the purchase and consumption experience (Sproles & Kendall, 1986). Consumer decision-making styles described as "this is a patterned, psychological and cognitive alignment which continually dominates the choice of consumers during shopping" (Sproles & Kendall, 1986; Batool, Ahmed, Umer, & Zahid, 2015).

Sproles & Kendall (1986) suggested that decision-making styles in shopping can be characterized in a three-dimensional pattern: the lifestyle approach; the psychological (attribute) approach; and the typology (general consumer types) approach. Distinctions between three approaches appear to have brought diverse findings because of different bases for conceptualizing and operationalizing shopping orientations. Sproles and Kendall (1986) combined these and additional traits to develop a consumer decision-making styles (CDMS) list, the so-called CSI. This is an early attempt to systematically measure shopping orientations. The CSI categorizes decision-making styles of shoppers into eight categories: quality consciousness, price consciousness, confused by over-choice, brand consciousness, fashion consciousness, recreational consciousness, impulsive shopping, and brand loyalty/habitual. These eight adoption and shopping approaches, are the most essential mental specifications of the consumers in decision making for adoption and shopping. From that time, various researches in different societies have been conducted for investigating and verifying these shopping styles. In some countries all the styles and in some countries a number of the styles are been verified. For instance the research of Park et al. (2010) in China, Mishra (2015) in India, Tarnanidis, Frimpong, Nwankwo, & Omar (2015) in Greece, Lysonski, Durvasula, & Zotos (1996) in four countries of Greece, New Zealand, India and the United States as a comparative study can be mentioned.

3. Hypotheses Development

3.1 The Relation between the Various Levels of Consumer Innovativeness

Hirunyawipada & Paswan (2006) stated that the cognitive innovativeness has good impact on adoption and shopping of the new product, cognitive innovators feel more comfortable by adopting new products because using these products allow them to work with the product and so they can gather more information. They also have shown that domain-specific innovativeness has significant effect on adoption and shopping of new products. In the consumer innovativeness hierarchy, the cognitive innovativeness is a wide level but the domain-specific innovativeness is regarded very limited. Hence domain-specific innovativeness can better predict the adoption and shopping of new product behavior.

Chao et al. (2012) showed that the positive and proper relation exists between the domain-specific innovativeness and innovative behavior of adoption new product which stated that the consumers, who have more powerful relation with specific group of products, adopt the product sooner than the others. This study verifies the previous researchers such as (Citrin, Sprott, Silverman, & Stem, 2000) and (Goldsmith, Freiden, & Eastman, 1995).

Chao et al. (2012) stated that the domain-specific innovativeness can better predict the adoption and shopping of new product behavior than the cognitive innovativeness. Their results show that a weak direct relation exists between the cognitive innovativeness and adoption of new products.

Goldsmith & Hofacker (1991) stated that firstly cognitive innovativeness is more related to the domain-specific innovativeness than new product adoption; second domain-specific innovativeness is more related to the behavior of adoption new product than the cognitive innovativeness. Third item states that domain-specific innovativeness mediates the relationship between cognitive innovativeness and new product adoption.

Lim & Park (2013) show that the cognitive innovativeness has significant effect on the domain-specific innovativeness; also domain-specific innovativeness can predict the behavior of new product adoption.

Christia (2014) showed that the relation between the cognitive innovativeness and domain-specific innovativeness is more than the relation between the cognitive innovativeness and the probability to adopt new product.

Citrin et al. (2000) show that domain-specific innovativeness has positive and significant impact on emergence of innovative behavior of new product adoption, also domain-specific innovativeness has the facilitator and resonator role in the relation between the cognitive innovativeness and adoption of the new products on the internet.

Wang & Shih (2015) showed in their research that with reference to the impact of consumer innovativeness on the shopping of new computer games online, cognitive innovativeness and domain-specific innovativeness have direct effect on shopping of the new games online, also the Variety Seeking Behavior (domain-specific innovativeness) has significant impact as the mediator between the cognitive innovativeness and the behavior of new product adoption and causes that the prediction power of adoption behavior increases dramatically in the cognitive consumer.

Lee & Mano (2014) showed that the domain-specific innovativeness acts as the mediator between the cognitive innovativeness and the innovative behavior of adopting new product in way that these two kinds of innovativeness increase the prediction power of adoption behavior of new product together.

Therefore based on the literature review, we propose three hypotheses about the impact of innovativeness hierarchy in predicting and determining the adoption behavior of new products by the cognitive innovative consumer:

H1: Cognitive innovativeness has direct and significant effect on the actual adoption of new product.

H2: Domain-specific innovativeness has the mediating and facilitating role in the relation between the cognitive innovativeness and the innovative behavior of actual adoption of new product.

H3: Domain-specific innovativeness has significant effect on the adoption behavior of new product.

3.2 The Relation between the Consumer Innovativeness and the Decision Making Styles of Adoption

Park et al. (2010) stated that the cognitive innovators stimulate their minds more about finding and researching for new products based on their tendency and they gather more information about the product specifications. Therefore, consumers with the higher tendency of cognitive innovativeness will show quality and price consciousness and confusion by over choice in their shopping styles.

Mishra (2015) stated that the Consumer Styles Inventory (CSI) which has been verified earlier, cannot be extended wholly in other countries and need some kinds of modification. Mishra showed that based on the studies which were conducted in India, the cognitive innovators tend to choose the decision making styles such as: quality consciousness, price consciousness, dissatisfied shopping consciousness and confused by over-voice.

Batool et al. (2015) investigated the influence of consumer innovativeness on shopping styles in Pakistan. They showed that the consumers who have tendencies towards cognitive innovativeness are persuaded to have decision making styles of quality consciousness, price consciousness and confused by over choice. They stated according to shopping styles of cognitive innovativeness, marketers should devise proper strategies.

Dabestani, Heydarzadeh and Amirshahi (2011) showed in their research in the Sciences and Researches branch of Islamic Azad University of Iran that the cognitive innovativeness has direct relation with the shopping style of quality consciousness which show the academic society of Iran has innovative students who seek quality products in shopping new products.

For these reasons, it is highly probable that consumers who display cognitive innovativeness will demonstrate quality consciousness, price-value consciousness and confused by over-choice in their shopping styles. Thus, it

is hypothesized:

H4: Cognitive innovativeness has significant effect on choosing the quality consciousness shopping style.

H5: Cognitive innovativeness has significant effect on choosing the price-value consciousness shopping style.

H6: Cognitive innovativeness has significant effect on choosing the confused by over-choice shopping style.

With regard to the above mentioned explanations, the research model of this paper is adapted from Hirunyawipada & Paswan (2006) and Park et al. (2010) study as it is shown in the Figure 2.

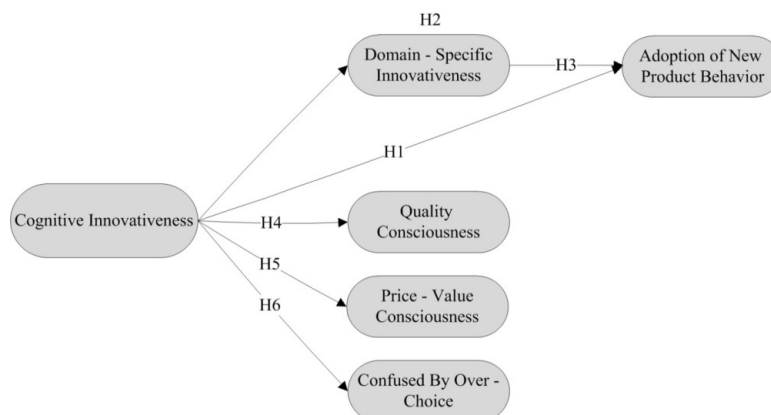


Figure 2. Research model

4. Method

This study is a field research and data collection method is questionnaire. Since the questionnaire is distributed and collected through the target population, it is a descriptive and survey research. Also it should be mentioned that in terms of the purpose is an applied research.

In this research, Stratified sampling proportional to size is being used and for the measurement, Likert scale and Binary Option scale are being used.

4.1 The Context and Statistical Population

The current research context is electronic banking services which are among the most recent services existing in banking industry of Iran and is a good field for investigating the extent of consumer innovativeness.

The statistical population of the research includes the students of Islamic Azad University of Qazvin who share some specifications such as being student, studying in the city of Qazvin and the common age range. But the reason of selecting this statistical population in the current research was the following items:

- 1) Many studies and researches in the field of marketing use students as sample for testing the theories.
- 2) Students are always avant-garde in using the electronic banking service (research context) and tend to employ these services more than other groups.
- 3) Islamic Azad University of Qazvin is one of the prominent universities in the field of providing mechanized university services in Iran; therefore the students of this university are familiar with new electronic services.
- 4) With regards to the fact that the demographic variables such as age, the level of education, income and gender have significant effect on the innovative behavior of adopting new products (Bartels & Reinders, 2011; Hirunyawipada & Paswan, 2006), using a sample of students in this research because all of them are almost homogeneous in this regard, helps to remove the effects of demographic variables as the intervening variable.

4.2 Sample

In this research, the stratified sampling proportional to size has being used. With regard to the fact that the statistical population is the Islamic Azad University of Qazvin which has several departments and as the number of students in each department varies but students in each department form a homogeneous group, so using stratified sampling proportional to size is appropriate. The sample size from each faculty is shown in the Table 1.

Table I. The sample from each faculty

No	Faculty	Sample Size
1	Management and Accounting	95
2	Architecture	60
3	Electrical and Computer	85
4	Mechanical and Industrial	74
5	Civil	70
Total		384

In this research the size of sample for pre-test is 30 students of Islamic Azad University of Qazvin, also for the main study with regards to the size of population which is 30 thousand students; the number 384 was selected based on the Korjesy-Morgan table.

4.3 Measures

In this research for gathering data, the tool of questionnaire has been used, the questionnaire of this research has two sections, the first section include questions for measurement of the variables, in this section 30 items measure six variables. In the second section the demographic questions such as age, gender, level of education, marital status and employment are asked.

In the first section of the questionnaire for measuring the variable cognitive innovativeness, eight items (Venkatraman & Price, 1990), for measuring domain-specific innovativeness, four items (Goldsmith & Hofacker, 1991), for measuring the variable adoption of new product, five items (Hirunyawipada & Paswan, 2006), for measuring the variable quality consciousness, six items (Sproles & Kendall, 1986), for measuring the variable price consciousness, four items (Sproles & Kendall, 1986) and for measuring the variable confused by over-choice, four items (Sproles & Kendall, 1986) have been used. The questions were first translated by the researcher from English to Persian and then reviewed by an English expert. In the next step the questions were translated from Persian to English by another translator, in other words, the back translation technique was used in order to ensure the good translation of the questions.

In this research for measuring the variables cognitive innovativeness, domain-specific innovativeness, quality consciousness, price consciousness and confused by over-choice the five point Likert scale was used. Also for measuring the items related to innovative behavior of adoption new product, in most of the researches the cross-sectional technique has been used. In this method, a list of new products is presented to the respondent and ask him to identify that in a specific time period (e.g., six months or two months, etc.) how many of the products in the list will be adopted and used.

The more item that respondent chooses the extent of innovativeness behavior is higher. In this method it is necessary to insert one or two non-innovative product in the list to predict the behavior and shopping style of the innovative consumers.

It should be mentioned that in this research, the questionnaire is distributed by two methods: direct (face to face) and via internet among 432 respondents from which 384 respondent provide comprehensive and usable responses. From these 384 people, 185 persons which is equal to 48.2% were women and 199 persons which is equal to 51.8%, also in terms of education, 17 persons which is equal to 4.4% were pre bachelors students, 97 persons which is equal to 25.3% were bachelors students, 229 persons which is equal to 59.6% were masters students and 41 persons which is equal to 10.7% were PhD candidates.

4.3.1 Validity and Reliability

In order to evaluate the validity of the questionnaire in this research the content validity and face validity methods have been used.

For investigating the face validity, the questionnaire was presented to 25 students and their comments about the questions of the questionnaire were collected and the modification was made.

In order to measure the content validity, the Lawshe method was employed. The questionnaire with 33 questions about the six variable were presented to 20 experts including professors, PhD candidates and masters degree holders of the marketing field in the Islamic Azad University and with their help the content validity of the questionnaire was calculated. The acceptable value for the content validity for each item based on the presence of 20 experts is 0.42. In the first stage the content validity coefficients for all the questions of the questionnaire excluding five questions were higher than 0.42 so the necessary modifications in the text and translation of these five questions were made and for the second time the questionnaire was presented to the experts. In this stage

with regards to the modifications, the coefficients of content validity for all the questions were higher than 0.42 so all the items have the necessary content validity.

In this research in order to measure the reliability the internal—consistency reliability (Cronbach's Alpha and, split-half) method is being used.

In the pre-test stage with regards to the data of the 30 respondents, the Cronbach's Alpha was calculated by the SPSS software and the value was 0.55 which was not acceptable. According to the SPSS software' offer to remove questions 11,12 and 19 to increase alpha coefficient above 0.7, these questions were eliminated; after removing questions 11,12 and 19, the Cronbach's Alpha was calculated again and the value reach 0.72 which was acceptable and can be seen in the Table 2.

Table 2. Cronbach's Alpha coefficient

Type of Test	Coefficient	Sample Size
Pre-Test	0.72	30
Main Study	0.75	384

For measuring reliability by split-half method with the software the value reached 0.79 which can be seen in the Table 3 that shows proper reliability of the tool.

Table 3. Split-half coefficient

Type of Test	Coefficient	Sample Size
Pre-Test	0.79	30
Main Study	0.81	384

5. Results

The data analysis of this research is conducted in four stages:

5.1 Investigating the Normality of the Data Distribution

In the first stage the normality of the data distribution is evaluated by Colmogrof-Smirnof test with SPSS software, the hypotheses are as follows: H0: The sample has normal distribution. H1: The sample does not have the normal distribution.

As the Table 4 shows, the Sig values are always higher than 0.05 which verifies the H0 hypothesis. In other words, it can be said that the normality of the data distribution in the error level of 0.05 is verified.

Table 4. The normality of the data distribution

Variable	T-Value	Sig	Result
Cognitive Innovativeness	0.51	0.95	Normal Distribution
Domain-Specific Innovativeness	0.82	0.50	Normal Distribution
Quality Consciousness	0.92	0.35	Normal Distribution
Price-Value Consciousness	0.74	0.63	Normal Distribution
Confused by Over-Choice	0.47	0.97	Normal Distribution
Innovative Behavior of Actual Adoption	1.42	0.23	Normal Distribution

5.2 Using the Confirmatory Factor Analysis Technique (CFA)

In the second step the confirmatory factor analysis is employed for evaluating the suitability of the items in measurement of each variable in the Amos software environment. In this regard the results of the confirmatory factor analysis for each independent, mediator and depended variables are as follows:

Cognitive innovativeness: In all the questions the t value was higher than 1.96 and the significant level were 0.00 (excluding the question 8 which was 0.01) so in all the questions the cognitive innovativeness variable with confidence level of 99 percent is verified.

Domain-Specific innovativeness: In all the questions the t value was higher than 1.96 and the significance level was 0.00 so all the questions are verified in the confidence level of 99 percent. The t value and factor loading show that the questions are negative are designed in reverse.

Innovative behavior of adoption of product: In all the questions the t value was higher than 1.96 and the significance level was 0.00 so all the questions are verified in the confidence level of 99 percent.

Quality consciousness: In all the questions except the question 18 the t value was higher than 1.96 and the significance level was 0.00 so all the questions except the question 18 were verified in confidence level of 99 percent.

Price consciousness: In all the questions except the questions 20 and 21 the t value was higher than 1.96 and the significance level was 0.00 so these questions were deleted. Deletion of the questions 20 and 21 (with regard to 3 items for measuring this variable) leads to deletion of the price consciousness variable. With regard to the cheapness of electronic services in Iran the omission of this variable seems natural.

Confused by over-choice: In all the questions the t value was higher than 1.96 and the significance level was 0.00 so all the questions are verified in the confidence level of 99 percent. The conceptual model after the confirmatory factor analysis is shown in the Figure 3.

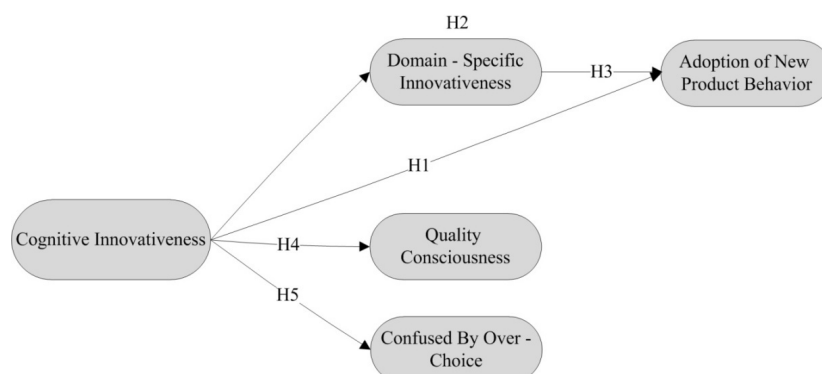


Figure 3. Research model after CFA

5.3 Investigating the Fitness of the Research Model

In the third step, the fitness of the research model was investigated by Structural Equation Modeling test in the Amos software environment. In this investigation the Relative Fit Index (RFI) was 0.74 which is between zero and one, the Comparative Fit Index(CFI) was 0.87 which is roughly equal to 0.9, the Parsimonious Comparative Fit Index (PCFI) was 0.78 which is higher than 0.6, the Root Mean Square Error of Approximation (RMSEA) was 0.04 which is lower than 0.06, the Parsimony Ratio (PRATIO) was 0.9 which is between zero and one, therefore the Goodness of fit indexes show that the gathered data are compatible with the proposed model and the model has good fitness.

5.4 Hypotheses Testing

In the fourth step the hypotheses are being tested with Structural Equation Modeling in the Amos software. The below finding in the Table 5 are based on the Structural Equation Modeling and are summary of the research findings related to hypotheses testing:

Table 5. The final results of the test hypotheses

Title	T-Value	Path Coefficient	Sig	R ²	Results
H1	0.52	0.01	0.60	0.000	Not Supported
H2 (Impact of cognitive on domain-specific)	-4.04	-.30	0.000	0.09	Supported
H2 (Impact of domain-specific on Innovative behavior of actual adoption)	3.13	0.22	0.002	0.04	Supported
H3	3.13	0.22	0.002	0.04	Supported
H4	4.42	0.24	0.000	0.05	Supported
H5	-1.87	-0.13	0.06	0.01	Not Supported

Figure 4 shown the relations between the independent, mediator and dependent variables of the research:

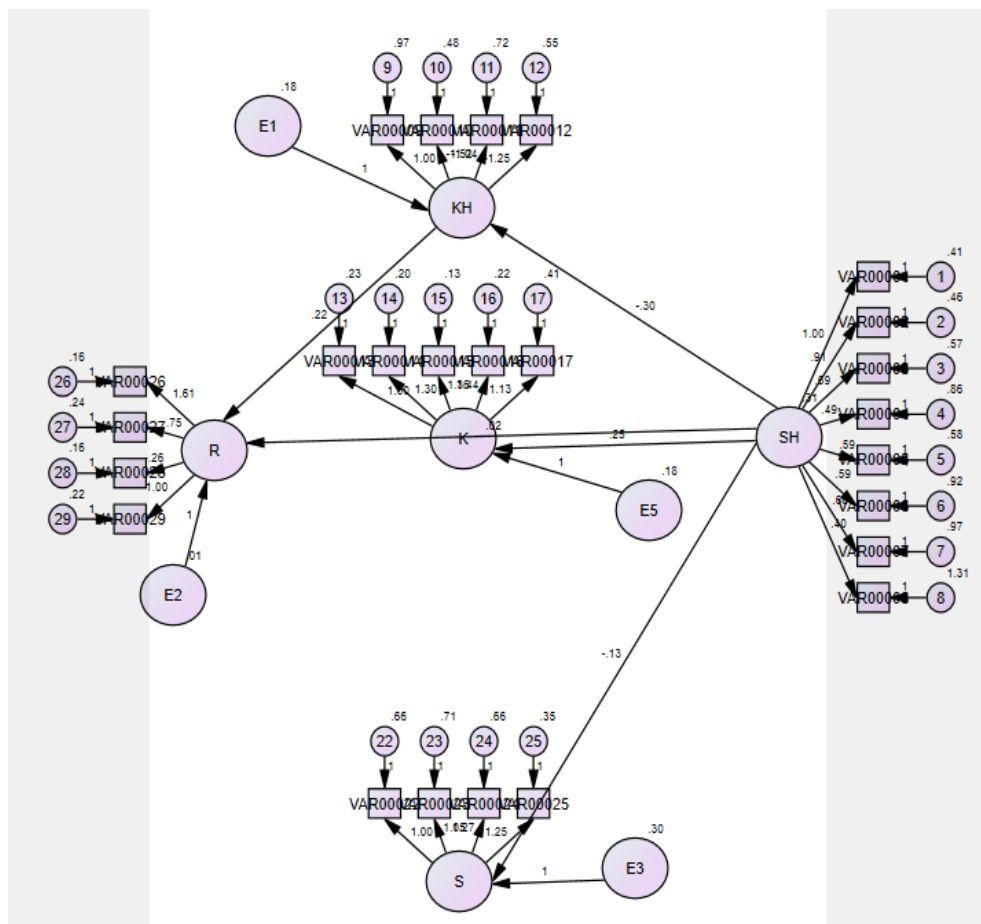


Figure 4. Structural equation modeling with T-Values

Note. Cognitive Innovativeness (SH), Domain-Specific Innovativeness (KH), Quality Consciousness (K), Confused by Over-Choice (S), Innovative Behavior of Actual Adoption of New Product (R).

6. Discussion

With regards to the findings from the Structural Equation Modeling and hypotheses testing, it is concluded that the hypotheses two, three and four are verified and the hypotheses one and five are rejected. In other words:

- 1) There is no relation or a weak relation between the cognitive innovativeness and innovative behavior so that cognitive innovativeness cannot directly predict the adoption of new product behavior.
- 2) Domain-specific innovativeness in relation between the cognitive innovativeness and innovative behavior of actual adoption of new product has the mediator and facilitator role.
- 3) Domain-specific innovativeness has significant effect on the innovative behavior of actual adoption of new product. Verification of this hypothesis has two important aspects, first as the consumer innovativeness to domain-specific product increase, the prediction power of the innovative behavior increases. Second the importance of domain-specific innovativeness and existence of hierarchy chain is verified.
- 4) Cognitive innovativeness has significant effect on the quality consciousness shopping style and the hypothesis is verified. Verification of this hypothesis shows that cognitive innovative consumers seek the high quality products.
- 5) Cognitive innovativeness has no significant impact on the confused by over-choice shopping style and the hypothesis is rejected. Probably the rejection of this hypothesis is due to the fact that students are keen to acquire knowledge in relation to new products and on the other hand the electronic banking services are presented

cheaply in Iran. Hence the students use and compare the electronic services of various banks and next select the best; so do not get confused.

6.1 Managerial and Practical Implications

The findings of this research show that banks should target innovative customers in order to increase their profitability from sale of electronic banking services. Also with regard to the fact that innovative customers are classified into two categories of cognitive and sensory and each are affected by different factors of innovativeness, Banks should know the preferences of these two groups and devise strategies and targeting according to their differences; for instance in dealing with cognitive customers, the bank should use informative brochures which show the capabilities of the banking electronic services and in dealing with sensory customers the bank should use romantic advertisements which represent the high sense of using these services for the customers.

The findings of this research show that with regards to the fact that cognitive innovative consumers are keen to analyze the product information, the banks should hold exhibitions and seminars annually in the field of electronic banking and present the new services of the company. Also in the exhibition provide the conditions that cognitive innovative consumers be informed from new electronic banking services and the features and functionality of them.

Another result of the research show that with regard to the fact the domain-specific innovativeness has important role in prediction of new product adoption and with cognitive innovativeness in the innovativeness chain, guarantee the buying of the product, banks should identify these domain-specific customers. For instance present their services on the internet or on mobile phone platform.

With regard to the verification of the hypothesis three it is proposed that the banks focus on the customers who have used the electronic banking services before because they are innovative customers in the context of electronic banking.

With regards to the verification of the fourth hypothesis it is necessary for banks to focus on the qualitative aspects of the electronic banking services. For example when designing the service, they should investigate and analyze the similar services from other competitive banks. It should be mentioned that alignment of electronic banking services with the need of the cognitive innovative customers leads to satisfying them in terms of quality. The ease of use of service and the fact that the customer can reach the service in the shortest time, is considered as a quality parameter. Paying attention to beautiful design of the service (e.g., beautiful design of the bank website pages) is another method for enhancing the quality level of the electronic banking services.

Finally with regards to the importance of quality in banking service, banks should update their services periodically and enhance them and employ new technologies in the electronic services.

6.2 Suggestions for Future Researches

Innovativeness literature shows that consumer innovativeness perspective is not a sole theoretical explanation of new product adoption and that other intervening variables may confound this relationship (Midgley & Dowling, 1993; Roehrich, Florence, & Ferrandi, 2002). One of the inhibiting factors is the risk of using the product, this risk can be price (because the price of the product is high), the risk of novelty of the product, technical risk and the risk of product support (Mitchell, Davies, Moutinho, & Vassos, 1999). With regards to the effect of these factors on the consumer innovativeness hierarchy model, it is proposed that this topic will be studied and investigated in future researches.

In future researches other product groups such as high-tech products or clothing can be investigated to achieve more universality and generalizability about the research model.

According to some of the previous researches, cognitive innovativeness is reported as a direct influencing factor in predicting the consumer adoption behavior and in some others the direct relation is rejected and only through the domain-specific innovativeness. Hence the consumer innovativeness hierarchy model needs further clarification.

According to previous researches, demographic variables such as age, gender, level of education, etc have impact on the innovative behavior of adopting new product as moderator which can accelerate or slow down the adoption of new product (Bartels & Reinders, 2011). So it is suggested that in future researches this topic will be studied in the model.

This study only has investigated the behavior of cognitive innovators, with regards to the fact that innate innovativeness has two aspects of cognitive and sensory, it is suggested that sensory innovators will be studied in future researches.

According to previous researches the variables product knowledge, product usage and product involvement as the moderator variables, affect the domain-specific innovativeness in the consumer innovativeness hierarchy model (Girardi, Soutar, & Ward, 2005; Goldsmith, Hauteville, & Flynn, 1998; Grewal, Mehta, & Kardes, 2000) so it is suggested that this subject will be investigated in future researches.

6.3 Research Limitations

- 1) The first limitation of this research is related to sample framework, the current research is only conducted among a group of university students, so it is necessary to evaluate other samples in the next studies in order to extend the universality and generalizability of the results.
- 2) The second limitation is related to the context of the research which is in the electronic banking services and in the next researches other fields can be studied.
- 3) The third limitation of the research is the fact that the consumer innovativeness hierarchy model needs more theorizing, specially the effect of cognitive innovativeness on the innovative behavior and the effect of moderating variables that have significant impact on the adoption behavior.
- 4) The fourth limitation of the research is that the student sample is a homogeneous sample that all the people have nearly the same age range and income; also according to the previous studies, demographic variables such as age and income influence the innovative behavior, hence this matter have changed the results to some extent.

References

- Agarwal, R., & Prasad, J. A. (1998). Conceptual and operational definition of personal innovativeness in the domain of information technology. *Inform Syst Res*, 9(2), 204-215. <http://dx.doi.org/10.1287/isre.9.2.204>
- Bartels, J., & Reinders, M. J. (2011). Consumer Innovativeness and Its Correlates: A Propositional Inventory for Future Research. *Journal of Business Research*, 64, 601-609. <http://dx.doi.org/10.1016/j.jbusres.2010.05.002>
- Batool, S., Ahmed, M. A., Umer, M., & Zahid, Z. (2015). Impact of Consumer innovativeness on shopping styles; A Case of Pakistan. *International Journal of Business and Management Invention*, 4(2), 19-28.
- Baumgartner, H., & Steenkamp, J. E. M. (1996). Exploratory consumer behavior: conceptualization and measurement. *Int J Res Mark*, 13(2), 121-137. [http://dx.doi.org/10.1016/0167-8116\(95\)00037-2](http://dx.doi.org/10.1016/0167-8116(95)00037-2)
- Chao, C. W., Reid, M., & Mavondo, F. T. (2012). Consumer innovativeness influence on really newproduct adoption. *Australasian Marketing Journal*, 20, 211-217. <http://dx.doi.org/10.1016/j.ausmj.2012.02.001>
- Christia, J. (2014). The Effect of Alliance Image on the Relationship between Consumer Innovativeness and New Product Adoption. *Int. J. Technology Marketing*, 4(4), 765-778.
- Citrin, A. V., Sprott, D. E., Silverman, S. N., & Stem, D. E. (2000). Adoption of internet shopping: the role of consumer innovativeness. *Industrial Management & Data Systems*, 100(7), 294-300. <http://dx.doi.org/10.1108/02635570010304806>
- Clark, R. A., & Goldsmith, R. E. (2006). Interpersonal influence and consumer innovativeness. *Int J of Consumer Studies*, 30(1), 34-43. <http://dx.doi.org/10.1111/j.1470-6431.2005.00435.x>
- Cotte, J., & Wood, S. L. (2004). Families and innovative consumer behavior: a triadic analysis of sibling and parental influence. *Journal of Consumer Research*, 31(1), 78-86. <http://dx.doi.org/10.1086/383425>
- Dabestani, F., Heydarzadeh, K., & Amirshahi, M. (2011). The Influence of Consumers' Innovativeness on their Shopping Decision Making Styles. *NMRJ*, 1(3), 1-26.
- Flynn, L. R., & Goldsmith, R. E. (1993). A validation of the Goldsmith and Hofacker innovativeness scale. *Educ Psychol Meas*, 53, 1105-1116. <http://dx.doi.org/10.1177/0013164493053004023>
- Foxall, G. R. (1995). Cognitive styles of consumer initiator. *Technovation*, 15(5), 269-288. [http://dx.doi.org/10.1016/0166-4972\(95\)96600-X](http://dx.doi.org/10.1016/0166-4972(95)96600-X)
- Foxall, G. R., & Goldsmith, R. E. (2003). The Measurement of innovativeness. In L. V. Shavinina (Ed.), *The International Handbook on Innovation* (pp. 321-328). Cambridge, UK: Elsevier Science Ltd.
- Girardi, A., Soutar, G. N., & Ward, S. (2005). The validation of a use innovativeness scale. *Eur J Innov Manag*, 8, 471-481. <http://dx.doi.org/10.1108/14601060510627830>

- Goldsmith, R. E., & Hofacker, C. F. (1991). Measuring consumer innovativeness. *Journal of Academy of Marketing Science*, 19(3), 209-221. <http://dx.doi.org/10.1007/BF02726497>
- Goldsmith, R. E., Freiden, J. B., & Eastman, J. K. (1995). The generality / specificity issue in consumer innovativeness research. *Technovation*, 15(10), 601-612. [http://dx.doi.org/10.1016/0166-4972\(95\)99328-D](http://dx.doi.org/10.1016/0166-4972(95)99328-D)
- Goldsmith, R. E., Hauteville, F., & Flynn, L. R. (1998). Theory and measurement of consumer innovativeness. *European Journal of Marketing*, 32(3), 340-353. <http://dx.doi.org/10.1108/03090569810204634>
- Grewal, R., Mehta, R., & Kardes, F. R. (2000). The role of the social-identity function of attitudes in consumer innovativeness and opinion leadership. *J Econ Psychol*, 21, 233-252. [http://dx.doi.org/10.1016/S0167-4870\(00\)00003-9](http://dx.doi.org/10.1016/S0167-4870(00)00003-9)
- Hirschman, E. C. (1980). Innovativeness, novelty seeking, and consumer creativity. *Journal of Consumer Research*, 7(3), 283-295. <http://dx.doi.org/10.1086/208816>
- Hirschman, E. C. (1984). Experience Seeking: A Subjectivist Perspective of Consumption. *Journal of Business Research*, 12(1), 115-136. [http://dx.doi.org/10.1016/0148-2963\(84\)90042-0](http://dx.doi.org/10.1016/0148-2963(84)90042-0)
- Hirunyawipada, T., & Paswan, A. K. (2006). Consumer innovativeness and perceived risk: implications for high technology product adaption. *Journal of Consumer Marketing*, 23(4), 182-198. <http://dx.doi.org/10.1108/07363760610674310>
- Hoffmann, S., & Soyez, k. (2010). A cognitive model to predict domain-specific consumer innovativeness. *Journal of Business Research*, 63, 778-785. <http://dx.doi.org/10.1016/j.jbusres.2009.06.007>
- Im, S., Bayus, B. L., & Mason, C. H. (2003). An empirical study of global consumer innovativeness, personal characteristics, and new-product adoption behavior. *Journal of Academy of Marketing Science*, 31(1), 61-73. <http://dx.doi.org/10.1177/0092070302238602>
- Joseph, B., & Vyas, S. J. (1984). Concurrent validity of a measure of innovative cognitive style. *Journal of the Academy of Marketing Sciences*, 12(1), 159-175. <http://dx.doi.org/10.1007/BF02729494>
- Kumar, V., & Krishnan, T. V. (2002). Multinational diffusion models: an alternative framework. *Marketing Science*, 21(3), 318-331. <http://dx.doi.org/10.1287/mksc.21.3.318.139>
- Lee, K., & Mano, H. (2014). Beyond Simple Innovativeness: A Hierarchical Continuum and Thinking and Feeling Processing Modes. *Social Behavior and Personality*, 42(4), 597-614. <http://dx.doi.org/10.2224/sbp.2014.42.4.597>
- Lim, H., & Park, J. S. (2013). The effects of national culture and cosmopolitanism on consumers' adoption of innovation: A cross-cultural comparison. *Journal of International Consumer Marketing*, 25(1), 16-28. <http://dx.doi.org/10.1080/08961530.2013.751793>
- Lysonski, S., Durvasula, S., & Zotos, Y. (1996). Consumer decision-making styles: a multi-country investigation. *European Journal of Marketing*, 30(12), 10-21. <http://dx.doi.org/10.1108/03090569610153273>
- Manning, K. C., Bearden, W. O., & Madden, T. J. (1995). Consumer innovativeness and the adoption process. *Journal of Consumer Psychology*, 4(4), 329-345. http://dx.doi.org/10.1207/s15327663jcp0404_02
- Midgley, D. F., & Dowling, G. R. (1978). Innovativeness: the concept and its measurement. *Journal of Consumer Research*, 4(4), 229-242. <http://dx.doi.org/10.1086/208701>
- Midgley, D. F., & Dowling, G. R. (1993). A longitudinal study of product form innovation: the interaction between predispositions and social messages. *Journal of Consumer Research*, 19(4), 611-625. <http://dx.doi.org/10.1086/209326>
- Mishra, A. A. (2015). Consumer innovativeness and consumer decision styles: a confirmatory and segmentation analysis. *The International Review of Retail, Distribution and Consumer Research*, 25(1), 35-54. <http://dx.doi.org/10.1080/09593969.2014.911199>
- Mitchell, V., Davies, F., Moutinho, L., & Vassos, V. (1999). Using neural networks to understand service risk in the holiday product. *Journal of Business Research*, 46(2), 167-180. [http://dx.doi.org/10.1016/S0148-2963\(98\)00020-4](http://dx.doi.org/10.1016/S0148-2963(98)00020-4)
- Mowen, J. C., Christia, J., & Spears, N. (1998). Consumer innovativeness: A general consumer trait or a product category specific trait. In R. C. Goodstein & S. B. Mackenzie (Eds.), *AMA Educators' Proceedings: Enhancing Knowledge Development in Marketing* (p. 144). Chicago, IL: American Marketing Association.

- Park, J. E., Yu, J., & Zhou, J. X. (2010). Consumer innovativeness and shopping styles. *Journal of Consumer Marketing*, 27(5), 437-446. <http://dx.doi.org/10.1108/07363761011063330>
- Robertson, T. S. (1971). *Innovative behavior and communication*. New York, NY: Holt, Rhinehart and Winston.
- Roehrich, G. (2004). Consumer innovativeness Concepts and measurements. *Journal of Business Research*, 57(6), 671-677. [http://dx.doi.org/10.1016/S0148-2963\(02\)00311-9](http://dx.doi.org/10.1016/S0148-2963(02)00311-9)
- Roehrich, G., Florence, P. V., & Ferrandi, J. M. (2002), *An exploration of the relationships between innate innovativeness and domain specific innovativeness*. Se'rie Recherchel. Universite' Pierre Mende's-France.
- Rogers, E. M. (2003). *Diffusion of innovations*. New York, NY: The Free Press.
- Rogers, E. M., & Shoemaker, F. F. (1971). *Communication of innovation: A cross-cultural approach*. New York: Free Press.
- Sproles, G. B., & Kendall, E. L. (1986). A Methodology for Profiling Consumers' Decision-Making Styles. *Journal of Consumer Affairs*, 20(2), 267-278. <http://dx.doi.org/10.1111/j.1745-6606.1986.tb00382.x>
- Steenkamp, J. B. E. M., & Gielens, K. (2003). Consumer and market drivers of the trial probability of new consumer packaged goods. *J Consum Res*, 30, 368-384. <http://dx.doi.org/10.1086/378615>
- Tarnanidis, T., Frimpong, N. O., Nwankwo, S., & Omar, M. (2015). A Confirmatory factor Analysis of Consumer Styles Inventory: Evidence from Greece. *Journal of Retailing and Consumer Services*, 22, 164-177. <http://dx.doi.org/10.1016/j.jretconser.2014.07.001>
- Vandecasteele, B. (2010). *Innovative consumers: Who, why, and how to target?* A Doctor Dissertation. Ghent University.
- Venkatraman, M. P., & Price, L. L. (1990). Differentiating Between Cognitive and Sensory Innovativeness. *Journal of Business Research*, 20(4), 293-315. [http://dx.doi.org/10.1016/0148-2963\(90\)90008-2](http://dx.doi.org/10.1016/0148-2963(90)90008-2)
- Wang, T., & Shih, E. (2015). The role of player innovativeness in adopting new online games: bidimensional and hierarchical perspectives. *International Journal of Technology Marketing*, 10(3), 236-247. <http://dx.doi.org/10.1504/IJTMKT.2015.070654>
- Zhang, R., Li, G., & Sun, Z. (2014). Relationship between Consumer Innovativeness and Internet Banking Acceptance. *International Conference on Management Science & Engineering (21th)*. <http://dx.doi.org/10.1109/ICMSE.2014.6930245>

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