

## Consumer Innovativeness Leading to Innovation Adoption

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### Abstract

With the changing trends in this world, innovative economy is the emerging idea that is vital for the economies, countries and organizations to grow and sustain. Innovation is the key to success and the innovators need to be influenced for adoption. For that reason, there is need of market analysis if consumers are ready for adopting the innovations that are offered to them, do they possess the necessary traits to understand the benefits of innovation in their lifestyles. This insight has given an opportunity to this research for analyzing the consumer market empirically for the traits that are necessary for the adoption of innovation. This study it further identify the market segment that are inclined possess the trait of innovativeness higher than the others. A survey questionnaire was adopted from literature; data was collected from almost 481 consumers belonging to Karachi from the age bracket of 15 to 54. The factor analysis, correlation, regression and 2SLS method was applied; results showed that consumer innovativeness is strongly influenced by personality traits such as intelligence, rationality and self-efficacy and socialization by interconnectedness, cosmopolitanism and subjective norm. The study reveals the insight that consumers are ready to adopt the innovation and possess the trait of innovativeness that has the capabilities to intellectually and rationally evaluate the innovative offering.

**Keywords:** Consumer innovativeness, Innovation adoption, smart phones

### Introduction

Understanding the consumer's decision process for innovative market offering is the most critical challenge for the marketer, because consumers who are exposed to innovation not necessarily enter into the adoption process (Arts, Frambach, & Bijmolt, 2011). Innovation designers put their efforts in designing the product and marketer launch with innovation message creating or hitting a latent need therefore, to increase the effectiveness of the message, identifying innovators in any market is essential for proper segmentation and market analysis, as these innovators not only play the major role in adoption, but they also accelerate the diffusion and penetration of innovation in the society.

The adoption of innovation is not a mere act, instead it is a process (Vandecasteele & Geuens, 2010) that initiates from possessing knowledge about the innovation, followed by persuasion, decision and confirmation to adopt and use the innovation, during this process a consumer has many stages where the relationship between the innovation and the individual is created through experiences, rational, intuition and authority (Miettinen & Virkkunen, 2005). Globally the innovation is at its hype, the global economy is converting into an innovative economy; the innovation is fastest in technology, consumer technology, medicine, software industry, finance, Food Industry, cosmetics, automobiles, restaurants, shopping stores as compared to other sectors. Pakistan is also becoming a hub for innovations, many entrepreneurs and companies are coming up with innovative ideas, products and processes to shift the economy from knowledge-based to innovation-based.

International as well as local innovative offerings are present in our environment however, for effective marketing process and successful penetration, the companies need to understand their consumer, so the innovation adoption has three main determinants innovation attributes, characteristics of the adopters, and features of the social environment. This research has opted to mainly focus on the adopters categories because as suggested by (E. M. Rogers, 2010) it is the consumer who need to be convinced, this profits to gain the insights of the consumer, the identification of the characteristics that make them more innovative leading them to the innovators category.

The smartphone idea was conceptualized in 1973 and the actual combination of PDAs and telephony was done by IBM in 1992 with the name of Simon. The year of 1997 was when the terminology of smartphone evolved from the Ericson company followed by Nokia that ruled the market (Kenney & Pon, 2011). The initial market from 2002 till 2004 was ruled by Blackberry, Palm One, Sony Ericson, HTC and Nokia with their initial

smartphones. The market for smartphone was hit by a huge revolution when Apple stepped into the market with its first smartphone in year 2007. The mobile phone industry is facing shift from ordinary cellphones to smartphones since 2010, making it one of the largest and fastest growing market in the world. The smartphone stakes has manufacturers, application designers, software companies, equipment providers, internet companies, network operators, government bodies etc. They all play vital role in the smartphones development, acceptance and innovation. (Kenney & Pon, 2011).

### ***Research Problem and Purpose***

The prospecting of innovators in market for penetration of innovative offering is necessary; the innovation acceptors can only be segmented through demographic, psychographic and personality traits analysis. This research will be exploring these factors for Pakistani society. It will help the companies identify the potentials adopters of innovation. “The purpose of this study is to investigate the innovation adoption decision through the consumer innovativeness. It will further explore the effects of personal, social and psychographic factors on this relationship.”

### ***Research Objectives***

- To identify the impact of consumer innovativeness on innovation adoption
- To ascertain the impact of personality traits on consumer innovativeness
- To determine the impact of personality traits on consumer innovativeness with the interplay of socio-economic status
- To identify the impact of socialization towards the consumer innovativeness
- To investigate the impact of socialization towards the consumer innovativeness with the moderating effect of socio-economic status

### ***Justification***

Fewer researches have been conducted about the innovativeness and innovation adoption behavior of Pakistani consumer society. A comparative analysis is possible to be performed based on the innovation adoption of Pakistan and other countries where these models have already been applied. The marketers and companies are able to identify the estimated rate of diffusion, consumers’ expectations, marketing strategies and segmentation demographics.

### ***Limitations and Scope***

This study is considering smart phones innovation from the list of consumer innovative products and services, as the market is overwhelming with these innovations and the adoption rate is high in this consumer innovation category. Survey is conducted from the residents of Karachi due to time and cost constraints. This study is focusing on the psychographic aspect of consumer behavior and profiling consumers on the basis of their inherent innovativeness trait leading to innovation adoption. This study has only focused on the concepts that are philosophically quantifiable such as socio-economic status, intelligence, self-efficacy, subjective norm, rationality, social interconnectedness and cosmopolitaness.

### ***Literature Review***

Innovation is the creation of novelty or newness in the idea, process, or product. E. M. Rogers (2010) defines innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption”. Novelty is the key for businesses to stay competitive in the market; (Corso & Pellegrini, 2007) further classified the innovation into three types: continuous, dynamically continuous and discontinuous or disruptive innovation. The continuous innovation denotes to existing product with some changes to features and functionalities rather than a complete newness, dynamically continuous innovation has a significant change in the product design keeping the base functionality same just a digital camera, these dynamic changes are more supported by the technology usually these innovation do not affect the consumption patterns much. Disruptive innovation is the novelty or newness modifying the consumption pattern, market competition and users’ lifestyles, such innovations require great deal of learning and intellect. The diffusion of innovation is based on three main components innovation itself, social system, time and communication.

Understanding the consumer’s perceptions and market behavior is essential, especially when the consumer goods are based on the technology innovation that has lower product life cycle (Roberts, Baker, & Walker, 2005). Various theories have been developed on the consumer’s decision processes. The “theory of reasoned action (TRA) (Ajzen & Fishbein, 2004), diffusion of Innovation (E. M. Rogers, 2010) and, Technology Acceptance model (Venkatesh, Thong, & Xu, 2012)” are the major ones that are being discussed and used by various researchers to predict the adoption process and consumer’s decision behavior for the target market. E. M. Rogers (2010) has discovered various factors that affect the diffusion and adoption of innovation followed by

various researchers who have tested impact of certain variables on innovation adoption, such as the product attributes consumer personality traits, consumer's innovativeness, and products' related characteristics. The studies in literature shows that the researchers have tried to understand the innovation adoption behavior such that they tested the Rogers (2010) five innovation characteristics "relative advantage, complexity, compatibility, observability and trialability" and found a positive correlation amongst relative advantage, compatibility and innovation adoption (Venkatesh, Brown, Maruping, & Bala, 2008). Cotte and Wood (2004) used the cognitive and sensory innovativeness attributes and concluded that consumer innovativeness does affect innovation acceptance depending upon the product type. The success of the innovative product relies on its acceptance in the targeted segment as it becomes the critical issue, as mentioned in some of the researches that one out of five new products are successful hence 80% failure rate has been observed (Blackwell, Miniard, & Engel, 2006). If the innovation fails then the resources allocated to the manufacturing process are wasted; also, complementing to the idea that the consumer might not have accepted due to certain factors e.g. either they are inferior to the existing products, marketing strategies were ineffective etc. Hence marketers were not able to understand the insights and requirements the consumers demand.

Not everyone in a social system adopts the innovation; there are certain categories of individuals who adopt the innovation. Innovativeness trait is given much importance due to its significance in various researches about consumer behavior and novelty adoption. This trait depicts the consumer's inherent behavior and it can be updated or changed by the change agents of the innovation inventors (Muzinich, Pecotich, & Putrevu, 2003). It is also defined as a hidden desire for new different and innovative experiences (Roehrich, 2004). The innovativeness is further defined by Strutton, Lumpkin, and Vitell (2011) as the extent to which the individual is relatively early adopter of innovative offering, than other members of his communal system. Innovativeness is an innate or inherent trait that depends upon various factors discussed by (Tidd & Bessant, 2011) discusses the influences of cognitive innovative which is the intellectual abilities of a consumer to deal with the complexity of the innovation and individual is much confident, and possesses logical and rational thoughts this is defined by Rogers [20] as Intelligence. The second influence is the Sensory that is where the consumers are more innovative for inner satisfaction or achievement such as thrilling experiences, fantasies and adventures can be termed as achievement motivation.

The emerging changes and innovations in the world is effecting the lifestyles, skill sets and global economy, and the need of today's world is to be innovative and adopt the innovation to be competitive and stay for a longer period in the market. Many technological and non-technological innovations have been offered in the market to the complex consumer who has his own pattern of thinking (Vandecasteele & Geuens, 2010). Therefore, there is a need of analyzing the consumer so that correct ideologies can be used to target and control the market. Figure 2.1 shows the theoretical framework opted by this study. The Innovation Adoption is considered as dependent variable that will be tested through consumer innovativeness discussed by Rogers (2010). This variable is considered because the major objective is to analyze the aspect of psychographic and innovativeness is widely tested in literature to estimate the rate of diffusion in any consumer market and consumer profiling can be done through this variable in the spectrum of innovators, early adopters, early majority, and late majority to laggards. Innovativeness (Kim, 2008) is an inherent personality trait that is created due to various factors; he has identified a long list of variables verified and adopted from different studies. The most evident factor according to the number of studies and strength of confirmation were socio-economic variables such as income and upward social mobility, in case of personality trait cognitive intelligence and rationality was given much consideration and it has been tested by the researchers that if a person has intellectual abilities for innovation and understandability of its utility then he is more likely to be the innovator (Vandecasteele & Geuens, 2010), therefore these variables are considered by taking the dimension of cognitive intelligence and rationality. To cope with uncertainty, confidence and ability to learn are other variables discussed in Rogers Model analysis of these will be done through the reliable and widely used construct of Self-Efficacy which is discussed and analyzed by Bandura (1999).

As explained in meta-analysis research that consumer psychographics attribute such as involvement, opinion leadership and innovativeness plays a vital role in predicting the innovation adoption decision (Arts et al., 2011) opinion leader and effects of change agent which can be further explored through the construct of Subjective Norm from the Theory of Reasoned Action (Ajzen & Fishbein, 2004). World today is socializing more and more and everyone seems to be interconnected as researched by E. M. Rogers (2010). Social interconnectedness and cosmopolitanism also shows positive correlation with the innovativeness however, the reason of considering these variables are due to the fact that Pakistani are very active on the social platforms and almost 30m internet with almost 10m on Facebook as data given by ISPAK, the cosmopolitanism is considered because it is more related to developing countries where the individuals who are travelling abroad more get used to the innovations recent statistics shows that there are 1.2m travellers from Pakistan to UK each year for different types of visa showing a good percentage of travellers from SEC class A and B towards the west as discussed by Khan (2013) in The News article.

Therefore, this study has aimed to test cognitive intelligence, social interconnectedness, cosmopolitanism, self-efficacy, subjective norm and rationality towards consumer inherent innovativeness leading to innovation adoption moderated by demographic factors such as age, gender, qualification and income level.

H1: Cognitive Intelligence, Social interconnectedness, Cosmopolitanism, Self efficacy, subjective norms, rationality impacts the consumer innovativeness

H2: Higher the innovativeness, more consumers are inclined to adopt the innovation

H3: There is a significant difference between gender, age, income level, education levels and innovativeness leading to innovation adoption

### Research Methodology

The study is empirically identifying the relationship between innovation adoption and innovativeness with further investigation of personality variables and socialization behavior. Questionnaire is adopted from literature for all the conceptual constructs based on their reliability scores Cronbach Alpha  $\alpha \geq .6$ ; the adopted scale was then added with the consumer's demographic and smartphone demographics leading questionnaires inquiring about the self-efficacy (Bandura, 1999) with nine statements, Cognitive Intelligence (Vandecasteele & Geuens, 2010) with seven items, cosmopolitanism (Rogers, 2010) three items, Interconnectedness (Rogers, 2010) five items, Consumer Innovativeness (Doughfous, Petrof, & Pons, 1999) on six items, subjective norm (Hannu, 2010) with three items, rationality (Lee, K., Cheung, M., & Chen, 2007) on four items and decision to adopt (Hannu, 2010) the innovation on four items likert scale as it is easy to follow and measure the behaviors of respondents.

The population considered for this study includes consumer from Karachi (22m). The estimated size of the population is 544,016 calculated from the Pakistan Statistic Bureau 2012 data. The sample size is 384 at 5% margin of error and 95% confidence interval (Saunders, Lewis, & Thornhill, 2003). A pilot study was conducted to confirm the contextual reliabilities of all the constructs later questionnaires were distributed by convenience sampling method.

### Analysis and Discussion

The questionnaire is adopted from the various sources therefore the pilot testing was done to check the reliability of all the constructs under consideration. The questionnaires were distributed to almost 22 participants data was then coded for reliability analysis through Cronbach alpha that has to be in a range of 0-1 with minimum acceptable value to be 0.6. (Zikmund, 2000). All the constructs were in the acceptable range of Cronbach alpha and overall reliability of the questionnaire is .893. Few variables such as TAM model attributes and motivation were removed after pilot testing as their reliabilities were found to be 0.2 and -0.106.

#### H1: Cognitive Intelligence, Social interconnectedness, Cosmopolitanism, Self efficacy, subjective norms, and rationality impacts the consumer innovativeness

The regression analysis was initially performed by constructing variables through averages of their all respective questions that revealed the model of innovativeness to be 51% fit and model of innovation adoption 32% fit. Therefore, the factor analysis technique was applied to identify the weak questions with varimax rotation, questions were removed if its correlation is very low with the other questions of the variable construct further the question had communality extractions less than 0.6 value. The adjusted R-square for the model after factor analysis was 0.745, showing the innovativeness is 74.5% explained by intelligence ( $\beta = 0.236$ , p-value = .000), cosmopolitanism ( $\beta = 0.152$ , p-value = .000), rationality ( $\beta = 0.549$ , p-value = .000), interconnectedness ( $\beta = 0.096$ , p-value = .001), self-efficacy ( $\beta = 0.112$ , p-value = .000) and subjective norm ( $\beta = 0.124$ , p-value = .000). since all p-values are < .05 hence we have no enough evidences to accept Null hypothesis leading to acceptance of alternate hypothesis that innovativeness is highly influenced by personality traits and socialization habits of individuals. The model 2 that analyses the impact of innovativeness over the innovation adoption shows R-square to be 54.7% at p-value zero. The innovativeness explains 54.7% of innovation adoption creating an impact of 0.74 times on innovation adoption. Therefore we accept the alternate hypothesis

#### H2: Higher the innovativeness, more consumers are inclined to adopt the innovation

The null hypothesis was rejected showing adjusted R-square .57 with p-value < .05 for the impact of the model, the variable of innovativeness ( $\beta = 0.74$ , p-value = .001). The impact of moderating variable were further analyzed through 2SLS method showing the adjusted R-square to increase by .036, the F-value is 4.852 and p-value is .001 < .05 therefore we can conclude that predictors do moderate the relationship between personality traits and innovativeness. The moderating variable impact were age ( $\beta = -2.378$ , p-value = .018), gender ( $\beta = -0.641$ , p-value = .727), income ( $\beta = 1.591$ , p-value = .007) and education ( $\beta = 1.332$ , p-value = .430). This moderating impact is created due to age which shows that younger the person more he is attracted towards the innovation and income (Rogers, 2010), education and gender does not create any significant impact on the relationship of model 1.

The independent t-test and ANOVA was performed for the identification of differences in innovativeness within demographic, revealed that innovativeness and innovation adoption has significant variation with the income level difference. Further the descriptive for innovativeness were analyzed for profiling as suggested by Rogers (2010) the individuals who score high on innovativeness lie in the category of innovation adoption. The descriptive of innovativeness with each demographic and continuous variable reveals the profiling of innovator the age bracket of 15-23, male, with income>150K holding or enrolled in bachelor's degree can be potential prospects of innovative offering.

The coherence truth is revealed through this positivist research that the consumers in this market are intellectual, cosmopolites, self-efficacious, socially interconnected and do take peer and external influences while decision making. Moreover, when it comes to innovativeness they think rationally about the utility and need of the innovation in their lifestyles. The regression for model 1 shows almost 75% impact of these personality variables on the innovativeness, hence our consumer market is at the readiness stage for the innovation to enter into the market consistent with results of past studies (Im, Bayus, & Mason, 2003). This readiness will affect their adoption decision for innovation by almost 56% as depicted by the model 2 R-square value consistent with the study of Innate innovativeness (Im et al., 2003) supported by (Roehrich, 2004). The study also indicates that consumer think intellectually and rationally therefore if the innovation offered by the marketers is challenging consumer's intelligence, and rationally acceptable then it will have higher and rapider rate of diffusion, consumers self-efficacious, and have ability to cope with uncertainty, they are confident that they have abilities to correspond to changing environment and innovative ideas. Subjective Norm is not much strong but shows significant value in the model, that social influences do impact the inherent trait of innovativeness (Arts et al., 2011). Interconnectedness shows that consumers are interconnected socially and quite active on socializing through different mediums and this socialization does impact their decision to reach at the readiness stage for accepting the innovation. Cosmopolitanism also plays its role consumers travelling abroad are influenced by the technology and innovation that prevails in other societies and this influence makes them open minded towards the innovative idea. These relationships are further moderated by the socio economic characteristics which show that young people have more potential and they are more inclined towards the innovativeness supported by their financial background, however gender and education do not show significant moderating impact on the relationship. Consistent with the results of innovators' profiling section in the previous chapter the youth are more tech savvy, exposed to interconnected social world, with advancement everyday so they can be highly profitable target market for the innovation companies. There is a strong potential of innovators in the market if they are offered value innovation. The significant variables can be controlled by marketers with the product designs that can offer some utility and uniqueness to the consumer market. The reasons of switching smartphone also indicate that consumers are interested in new model, technology or features and almost 51.4% consumer change their smartphone within a year.

## **Conclusions**

Innovative economy is the need of the day for countries to flourish and develop and Pakistan has potential for growth, the consumers possess the necessary traits and characteristics and new generation is looking out for the horizons of innovations. As discussed by the Modernism philosopher of human autonomy, Immanuel Kant that humans are the center of laws and their actions are based on sensibility, understanding and reason, therefore keeping in view the consumers' personality study is extremely important and to be knowledgeable about their expectation. This study is giving insights to the innovation companies and marketers to categorize the consumers into innovators, adopters and laggards. As this study highlights the consumers who really are early contributors to the innovative offerings they can be targeted for the initial success of the innovation. The marketers must strive for their innovation quality, offerings, branding and communication tactics because today consumer is more connected and the awareness is coming from social circles and nations abroad, the information travelling time has reduced to seconds therefore the innovation diffusion is also dependent upon the company's policy of right product right time for right consumers.

## **Recommendations**

These finding suggests that

- There are potential innovators in the market who can be targeted and the marketers need to assess consumer market carefully. Segmentation cannot just rely on the habits and demographics of consumers; it is actually based on their inherent trait that further helps them to analyze the innovative offering before its adoption. The marketers can control these traits and design the product flattering the expectations of pacesetters
- The changes to be done in their innovation communication strategies; social media must be considered as consumers are highly interconnected and must address the utility of the innovation to kindle the rational behavior of human mind (Kim, 2008).

### Areas of Further Research

Innovation is not restricted to technology there are many dimensions of innovation, therefore further studies can be conducted to evaluate the consumers' domain specific innovativeness and their adoption decision. Since this model is tested and verified on a small sample from Karachi the research can be further conducted in metropolitan cities of Pakistan or even other under developing countries as it will be insightful to associate the results achieved and large data will provide greater generalizability and opportunities of testing complex hypothesis.

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