

Use Innovativeness among the Youth

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Abstract

Purpose: Current study is aimed to comprehend and communicate young consumers' variety looking for in product usability. It entails repurposing previously used items in new ways. The graduating students of a public University located in Bhopal; India were the respondents of the study. The effect of control variables gender and income on the consumer use innovativeness was also measured.

The primary data was collected using Google form. A pilot study was conducted on 30 respondents to check the construct validity and reliability of the research tool. For the final study a total of 406 responses were obtained. Random sampling technique was used to select the class groups. The questionnaire was then posted to those class groups. SmartPLS software was used to analyze Partial Least Square Structural Equation Modelling. Confirmatory Composite Analysis was applied in this research in order to observe the interrelationship in terms of linear compounds, followed by testing of structural model framework and testing of research hypotheses.

Findings: It has been found that Curiosity and Creativity, Multiple use Potential, Voluntary Simplicity and Risk Preferences have direct positive impact on Consumer Use Innovativeness. It is observed that Creative reuse has no significant impact on Consumer Use Innovativeness. Also, there is no significant impact of the control variables gender and income on Consumer Use Innovativeness

Practical Implications: Communication of the results of this study would definitely help the higher education policy makers to include innovation and research-oriented curriculum in each level of graduation. Similar studies can be conducted to determine the level of innovation among our country's future leaders. This would also assist policymakers in identifying appropriate methods for instilling entrepreneurial awareness and aptitude among the youth, allowing for the production of more and more guided inventions at the state level, hence improving the country's innovation index.

Originality Value: The study will help the policy makers of both the school and higher education of the state to include more practice-oriented activities to develop and improve entrepreneurial aptitude among the student's community. This may further motivate the youth towards innovation and entrepreneurship.

Keywords: Curiosity/creativity, Multiple use Potential, Voluntary Simplicity, Risk Preferences, Consumer use innovativeness, Young Consumer Community

I. INTRODUCTION

We define innovativeness as a consumers' willingness to adopt a product ahead of the bulk of others. Across product categories, several studies have discovered that innovators are more likely to be risk takers, opinion leaders, more likely to acquire info from the media than from words of mouths, receptive to novel philosophies and changes, relatively young, and so on. When a new product is first introduced,

marketers try to figure out which segment of the population is most likely to accept it. The key aim of the study is to validate a measure of use innovativeness contributed by Price and Ridgway 1983. This study comprehends consumers' variety looking for in product usability. It entails repurposing previously used items in new ways. (Price and Ridgway 1983, p679) In order to know about the use innovativeness of the selected youth we used an

innovativeness scale includes 5 factors: Curiosity/creativity, Multiple use Potential, Voluntary Simplicity and Risk Preferences. The scale contains of 42 items, instead of 44 items mentioned in the original, intended to reproduce the above five factors. Each item was operationalized utilizing 7 place, Likert scale, and we seek to demonstrate a link between the selected factors and innovativeness. The Use innovativeness measure that we have obtained clearly depicts the innovativeness of the present youth in using various items/ adapting changes.

II. RESEARCH BACKGROUND

Innovation is one of the few behavioural science topics that has a direct application to consumer behaviour. Communication theories, choice, decision-making, and BRAND loyalty can all be influenced by consumers' propensity to absorb novel items, whether they be ideas, goods, or services. Consumer behavior would consist of a succession of routine purchase responses to a static set of items if there were no such traits as innovation capability.

Hurt, Loucks, Rutherford, and Newlove 1977; Midgley and Dowling 1978; Hirschman 1980; Carlson & Grossbart, 1985; Foxall 1989; Kirton 1989; Mudd 1990) made a significant contribution to the field of innovativeness research (Hurt, Loucks, Rutherford, and Newlove 1977; Midgley and Dowling 1978; Carlson & Grossbart). To put it another way, updating the innovative traits is the same as adopting a new product (a visual buying behaviour). Situational elements such as product category interest, experience communication, perceived innovative qualities, and other situational factors permit or prevent this feature from being updated (Midgley and Dowling 1978). Another potential update that has emerged from these interactions is the usage of innovation, which involves remaking or employing an existing product to solve a new consumer problem (Hirschman 1980).

While purchase/adoption innovative behaviour refers to when a person first became interested in an invention, use innovative behaviour refers to the person's sustained commitment to the innovation. As a result, utilize innovative

behaviour is regarded as a post-adoption consuming behaviour, and it is predictable to be linked to both post-adoption and pre-adoption variables in the use process, such as use consumer attitude and experience. It's also likely to be connected to word-of-mouth, which has a personal impact on the spread of information.

III. REVIEW OF LITERATURE

A study on the validation of a use innovativeness scale by Price and Ridgway says that the research-based use innovativeness metric predicts acceptance of new technology (in this case, computer technology) and might be applied to other areas of innovation research. There found a positive correlation between the opinion leadership and innovativeness and the acceptance of new information technology. It is proved that the construct of use innovativeness is a hands-on measurement for use in innovation research. (Girardi et al., 2005)

However, Lecocq and Demil (2006) discovered that an industry's open systems strategy causes an entry induction phenomenon, with new entrants adopting open systems faster than incumbents. According to Vrgovic et al. (2012), a government agency using innovation centres in underdeveloped nations could assist SMEs in connecting, communicating, and collaborating with independent inventors and other parties to restart innovative activities.

However, according to Wynarczyk (2013), SMEs are highly reliant on two key internal components – R&D capacity and managerial structure and competencies – as well as two external factors – open innovation practises and the firm's ability to attract government grants for R&D and technological development – for international competitiveness. SMEs must pay close attention to the methods and partners they choose (Theyel 2013). SMEs design search methods for a variety of activities, including new information, innovative ideas, potential partners, and new markets.

It is been observed that new product rates are very high in many industries (Fu and Elliott, 2013). Three fourth of the market segment is constituted by very innovative customers. So in

this highly competitive global market, so more attention must be given to identify innovators and the predictors of innovation. As a matter of fact, research examining consumer innovativeness has become widespread (Kim et al., 2017). Prior studies focussed on conceptualization and measurement of consumer innovativeness (Kaushik et al., 2014; Lee and Mano, 2014; Roehrich, 2004). Also, some of those studies aimed at determining factors which affect consumer innovativeness (Bartels and Reinders, 2011) and influence of innovativeness on purchase intention (Hwang et al., 2019). It is learnt that innovativeness is the degree to which a person is comparatively prompt in accepting and practicing new ideas than people of similar systems. This definition considers only the behavioural aspect of being innovative. Innovativeness is actually a personal trait how a person is open towards changes by embracing new ideas.

A study (Handarkho and Harjoseputro, 2019) on mobile payments showed a significant effect of Consumer Innovativeness on the intention to adopt. Therefore, it is vital to identify the level of innovativeness and its backgrounds. There is a branch of research whose main focus is on conceptualization and measurement of innovativeness, along with identifying various factors affecting innovativeness (Bartels and Reinders, 2010; Goldsmith and Foxall, 2003; Kaushik et al., 2014; Konuk, 2019; Lee and Mano, 2014; Roehrich, 2004).

There found a very systematic review of literature with same approaches by Kaushik et al. (2014) reviewed 101 articles on consumer innovativeness, published from 1971 to 2013 who offered updated model of Bartels & Reinders's (2011) study. Also, Kim et al., (2017) reviewed the articles that have cited Kim et al.'s (2012) paper covering the period of 2013- 2017. Van Oorschot et al. (2018) made a bibliographic review of innovation adoption covering 2013–2016.

Canan Eryigit reviewed 188 publications published in journals listed in the Web of Science database in the last decade for his study Consumer Innovativeness a Systematic Review.

Quantitative and narrative methodologies were used to conduct content analysis. These papers were classified to five study themes based on the content analysis: 1) consumer innovativeness's effects; 2) consumer innovativeness's antecedents; 3) consumer innovativeness's moderating role; 4) consumer innovativeness's mediating role; 5) consumer innovativeness's measurement. According to the findings, the majority of the articles analysed in this study contain research into the effects of consumer innovation. The most common outcome of consumer innovation is the acceptance of new products. The function of the moderator and the antecedents of consumer innovativeness were the next most popular research topics.

Prior Literature on measuring the consumer's innovativeness are very rarely available.

The fact that there are less articles in this study area implies that consumer innovativeness measurement has been well established in prior studies. In the previous decade, the function of consumer innovativeness as a mediator was uncommon. The research themes were thoroughly addressed by supplying the variables used in prior studies as well as the study findings. The study backs up the importance of customer innovation in adoption. In past studies, a variety of elements have been identified as antecedents of consumer innovation. In the research paper, these factors are categorised in to four and is presented in table with the mention of authors who have studied its significance in their research studies. Such factors are divided into 4 groups, namely, marketing mix elements, social factors, psychological factors, and personal factors. Furthermore, the results revealed that customer innovativeness plays a larger role in consumer behavior research. The findings of the study may be beneficial in directing future research.(Id, 2020)

Theoretical Framework

According to Rogers' theory of the diffusion of innovations, adopters have innate personality

traits that affect their likelihood to adopt innovation. Impacts of these traits have been explored and affirmed that potential adopters are more receptive towards change, ready to make adjustments to adopt an innovation. Also, it stated that adopters who have more exposure, knowledge and more choices will exert more power towards adopting an innovation. Individuals are thought to have varying degrees of propensity to accept innovations, and it is commonly observed that the proportion of the population adopting a new technology follows a roughly normal distribution over time (Rogers, 1995). Individuals are classified into the following five categories of individual innovativeness (from earliest to latter adopters) when this normal distribution is broken down into segments: laggards, innovators, early adopters, early majority, and late majority (Rogers, 1995). Individual innovativeness is defined as implementing, adopting or developing an innovation (Yuan and Woodman, 2010).

Nowadays, the multiple innovative uses of various products are publicised through various mediums like YouTube channels etc by the consumers and most of these uses are unknown to the manufacturers of those products. Like worn out Tyres are used for making puffies (modern seating stools) and also very attractive small decorative ponds for outdoor garden. Empty Oil canes are used for making hanging flower plant pots. There are varieties of very useful items prepared out of old clothes. All these are customer's innovativeness only. These creativities are the outcome of factors like curiosity, risk preferences and creative reuse. The manufacturers must keep a close association with their consumers to comprehend how innovative are they while using the product. As rightly mentioned by Canan Eryigit in his paper Consumer Innovativeness a Systematic Review "*Articles in the measurement of consumer use innovativeness were relatively rare*". The researchers here are making an effort to measure the use innovativeness among the consumers of Bhopal City.

Individual innovativeness is defined as **developing, adopting or applying the innovations** (Yuan and Woodman, 2010). According to Rogers (2003), under the individual innovativeness idea, there is constantly fresh knowledge inside the social system, which is digested by adopters (Rogers, 2003). The Antecedents of Consumer Innovativeness: Age, Gender and Family Income are taken as the antecedents of Use innovativeness among consumers. (Frank et al. (2015), Kaushik and Rahman (2016a), Thakur and Jasrai (2018))

As conceptualized by Price and Ridgeway, use innovativeness encompasses five factors: multiple use potential, creative reuse, Voluntary simplicity, risk preferences, and Curiosity/creativity. With the above scales, use innovativeness is measured and a conceptual model of post adoption process is developed. This study has investigated the discriminating effects personal factors like, gender and income, on the level of use innovativeness of the selected young consumer community. A pilot study was conducted on 30 respondents in order to check the construct reliability and validity of the selected tool.

Conceptual Framework

The subjects were the students of graduate courses enrolled in a Public University located in Bhopal, India. The data was collected through questionnaire prepared through Google form and was circulated among the under graduate class groups.

Data was collected online through the circulation of google form. Responses were received from 406 respondents. (Krejcie & Morgan). Smart-PLS software was used to analyse Partial Least Square and Structural Equation Modelling. As it is learnt that the software provides more accurate results with extreme agility for complex research models, the researcher has used this software to reach accurate conclusions of the study.

The scale consists of 27 items designed to reflect five factors unlike 44 in case of the innovativeness construct by Price and Ridgeway

1983. Each item was operationalized using 7 place, Likert scale. The 5 factors identified are further detailed to know the exact responses of the selected. Creativity and curiosity and Risk Preferences had 5 statements each, Voluntary Simplicity 4 statements, creative reuse 5 statements and multiple use potential 4 statements another 4 statements were there to measure how innovatively they use their mobile phones. Item scores are summed within factors and identified the overall use innovativeness measure. With the above scales, use innovativeness is measured and a conceptual model of post adoption process is developed.

The study's major goal was to scientifically theorize how children employ innovative behavior. This research explores whether utilization of innovative behavior was a feasible idea in consumer behavior by separating usage and acquiring innovative behavior, likening these two innovative behaviours, and identifying the best predictor variables of use

innovative behavior during the adoption and post-adoption procedures. Family Income and Gender are taken as the major predictors of use innovativeness among the respondents selected for the study. The 5 statements under Creativity and Curiosity measures the creative thinking skills and their ability to disjoin and rejoin things at home. The one who lack confidence to reassemble will never try to disjoin and see the parts apart though they are curious to know about the working of a certain thing. 5 statements are asked under Risk Preference which measured the respondents' attitude towards trying a new product with which they are less familiar or to work with a new project which they never did before. There are people who can try the instructions labelled on the product more innovatively than others. People who fear to take risk will always go for products in assembled form than unassembled form. The 4 statements under voluntary

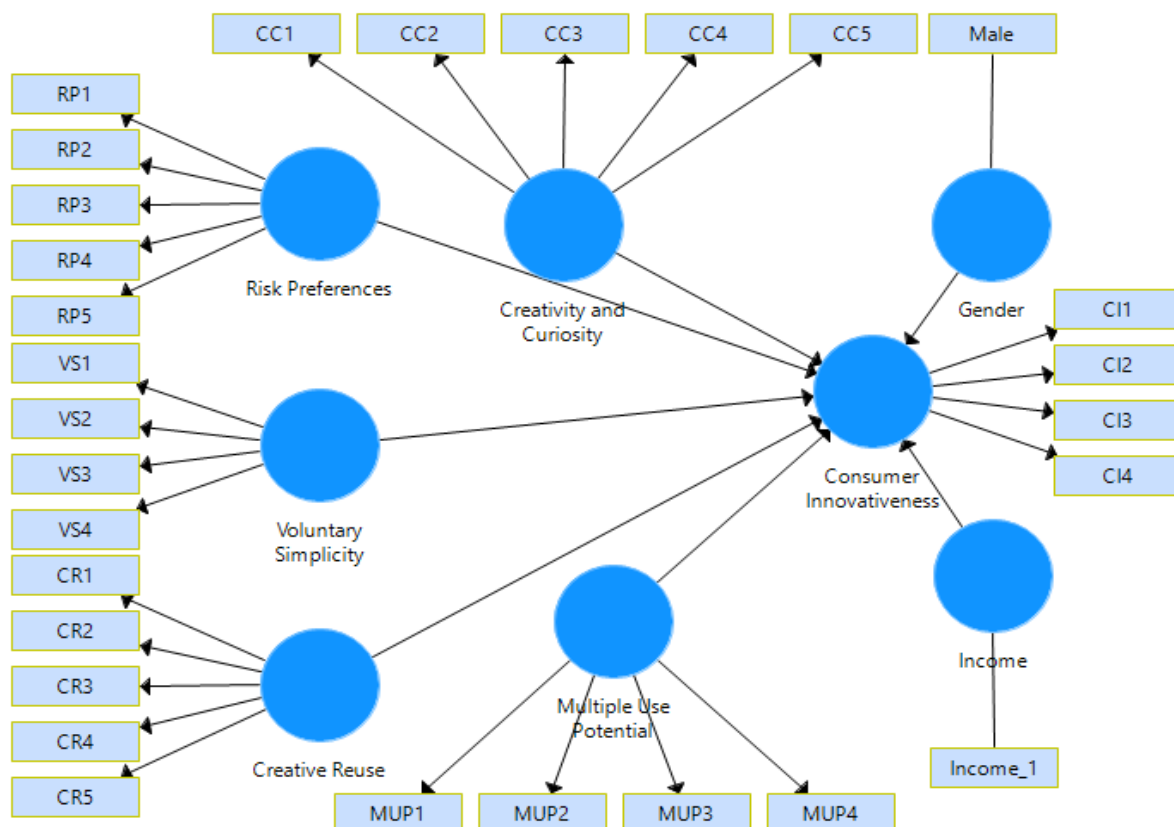


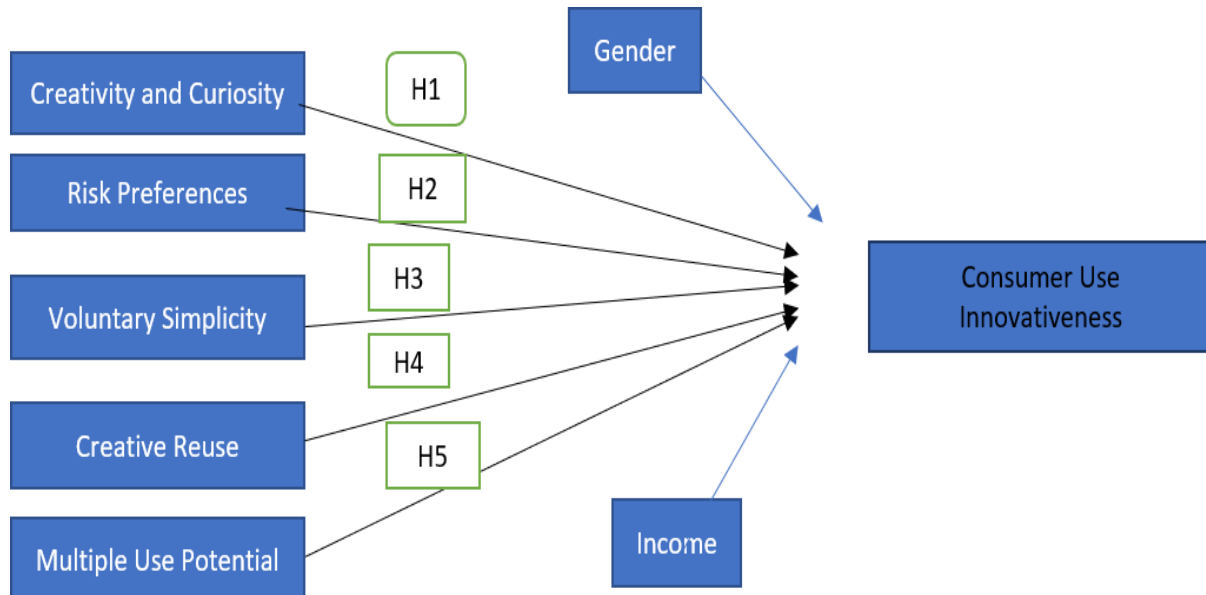
Figure 1: Conceptual Framework

Simplicity measures the attitude of the respondents towards making something of their

own and gifting, their opinion towards second hand stores and its products etc. There were 5

statements asked to measure the reuse ability of the respondents and 4 statements about Multiple use Potential. The consumer innovativeness was measured by another 4 statements which measured how greater variety (Price and Rigway, 1983) they use their mobile phones.

Research Hypotheses Development : This study will attempt to explore the following research hypotheses based on the research model



H₁: Creativity and Curiosity has a positive impact on Consumer Use Innovativeness

H₂: Risk Preferences has a positive impact on Consumer Use Innovativeness

H₃: Voluntary Simplicity has a positive impact on Consumer Use Innovativeness

H₄: Creative Reuse has a positive impact on Consumer Use Innovativeness

H₅: Multiple use Potential has a positive impact on Consumer Use Innovativeness

H₆: There is a significant positive impact of gender on Consumer Use Innovativeness

H₇: There is a significant positive impact of Income on Consumer Use Innovativeness

Reliability and Validity of the Self-Constructed questionnaires were tested with the help of SEM (Structural Equation Model) software. Questionnaires were then administered to 30 learners in pilot study to check the fitness of Model. The analysis was done with SEM Software. The study used descriptive as well as inferential statistics.

The degree to which the indicators of a given construct converge or share a large part of the variation for that construct is referred to as

convergent validity. In other words, it refers to the degree to which a measure has a positive relationship with other measures within the same construct, or the degree to which a latent construct explains the variation of its indicators. The factor loadings, composite reliability, and the Average Variance Extracted, according to Hair et al. (2014), can be used to assess convergent validity (AVE). Each construct should have an AVE of more than 0.50 and factor loadings more than 0.70 to achieve convergent validity.

In order to observe the interrelationship in terms of linear compounds, confirmatory composite analysis was applied and the results of the same is presented below in Table 2. Composite reliability and average variance extracted were considered for assessing the measurement model as a part of convergent validation.

Table 2: Results of Confirmatory Composite Analysis

Constructs	Factor Loadings	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Creativity and Curiosity					
CC1	0.705	0.798	0.810	0.860	0.552
CC2	0.734				
CC3	0.706				
CC4	0.751				
CC5	0.813				
Risk Preferences					
RP1	0.745	0.835	0.844	0.890	0.670
RP2	0.863				
RP3	0.842				
RP4	0.731				
RP5	0.607				
Voluntary Simplicity					
VS1	0.840	0.790	0.793	0.878	0.705
VS2	0.654				
VS3	0.798				
VS4	0.796				
Creative Reuse					
CR1	0.775	0.804	0.813	0.871	0.629
CR2	0.789				
CR3	0.691				
CR4	0.794				
CR5	0.749				
Multiple Use Potential					
MUP1	0.896	0.865	0.880	0.908	0.713
MUP2	0.883				
MUP3	0.821				
MUP4	0.771				
Consumer Innovativeness					
CI1	0.829	0.821	0.825	0.882	0.651
CI2	0.840				
CI3	0.811				
CI4	0.745				

All of the measured constructs had AVE scores more than 0.50 and factor loadings larger than 0.70 except for RP5(I enjoy improvising, while cooking), VS2 (liking towards second hand clothes), CR3 (As a child, I really enjoyed taking things apart and putting them together) , indicating that convergent validity had been proven. Thus the three IDVs are eliminated from the further analysis.

The researcher is making an attempt to identify the effect of control variables gender and income on the consumer use innovativeness of graduating students of a leading Public

University in Bhopal, India which encompasses five factors; multiple use potential, creative reuse, voluntary simplicity, risk preferences, and Curiosity/creativity (Price and Rigway,1983).

Discriminant Validity

Discriminant validity was investigated utilizing the Fornell-Larcker Criterion (1981). The Fornell-Larcker Criterion can be used to determine the degree of shared variance that is present in between the latent variables.

Table 3: Discriminant Validity

	01. Creativity and Curiosity	02. Risk Preferences	03. Voluntary Simplicity	04. Creative Reuse	05. Multiple Use Potential	06. Consumer Use Innovativeness	07. Gender	08. Income
01. Creativity and Curiosity	0.743							
02. Risk Preferences	0.448	0.819						
03. Voluntary Simplicity	0.348	0.493	0.840					
04. Creative Reuse	0.735	0.536	0.577	0.793				
05. Multiple Use Potential	0.465	0.537	0.604	0.606	0.844			
06. Consumer Use Innovativeness	0.535	0.592	0.606	0.621	0.764	0.807		
07. Gender	-0.074	-0.073	0.001	-0.060	-0.008	-0.024	1.000	
08. Income	0.069	0.014	-0.033	0.028	-0.017	-0.002	-0.076	1.000

Note: Figures in bold indicate discriminant validity and represents the Square Root of Average Variance Extracted (AVE). Correlation coefficients are depicted in the other figures.

Table 3 depicts that the square root of the AVE was greater than the square root of all crossing

construct correlation values, representing that the study is suitable for final analysis.

STRUCTURAL MODEL ASSESSMENT

The subjects consist of 188 males and 218 females with age ranging between 17-25(90.4%) and 25-30(9.6%). 78.3% of the

subjects were students only and not engaged with any employment. 3.4% of them were self-employed and 18.2% were salaried. 103 respondents fall in 1-3 lacs annual income

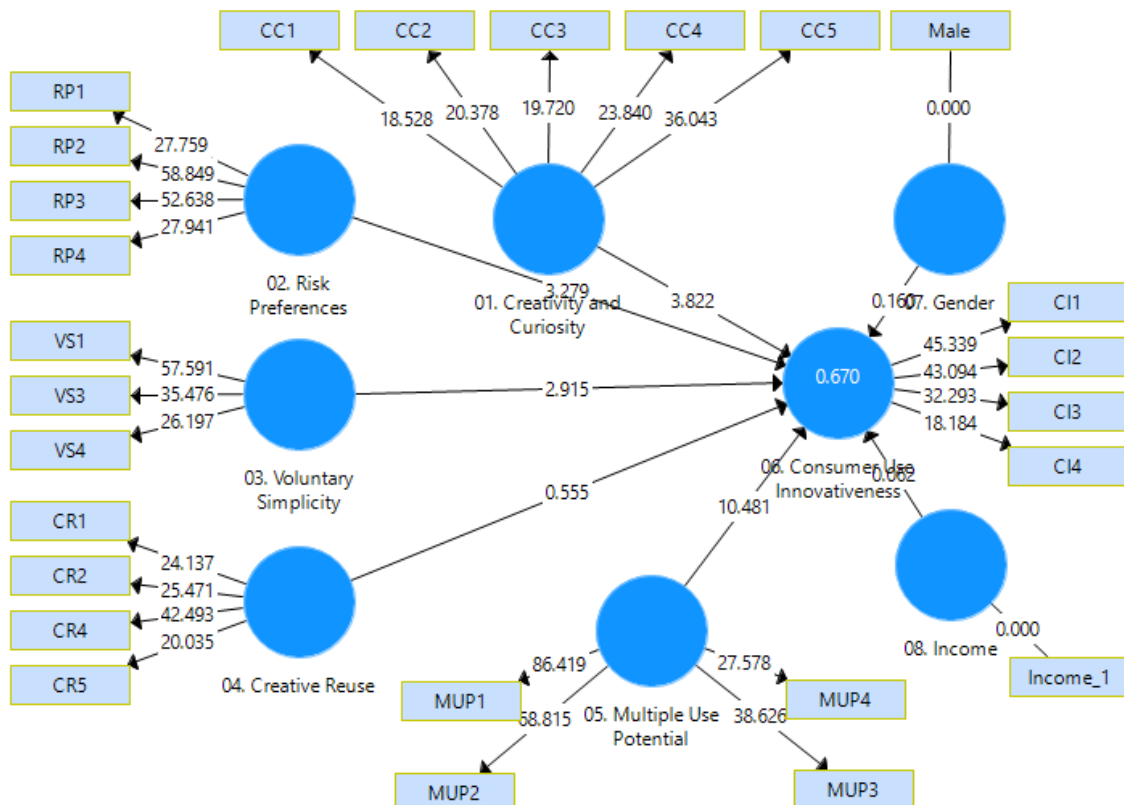
category, 20% were in 3-6 lacs and majority (54.7%) were in 6 Lacs & above income category.

Table 1: Demographic Profile

Levels	Counts	% of Total	Cumulative %
GENDER			
Males	188	46.3 %	46.3 %
Females	218	53.7 %	100.0 %
AGE			
17-25	367	90.4 %	90.4 %
25-30	39	9.6 %	100 %
OCCUPATION			
Student	318	78.3 %	78.3 %
Self employed	14	3.4 %	81.8 %
Salaried	74	18.2 %	100.0 %
INCOME (INR)			
One Lakh – Three Lakh	103	25.4 %	25.4 %
Three Lakh- Six Lakh	81	20.0 %	45.3 %
Six Lakh and Above	222	54.7 %	100.0 %

To create a link between the constructs and their prognostic significance, authors used the Structural Equation Model. Without modifying the sign, the bootstrapping technique was used

with 500 bootstraps. This procedure aided in the determination of p-values for the study's defined hypotheses.



Testing of Research Hypothesis

Means, STDEV, T-Value, P-Value					
Constructs Relationship	Original Samples (O)	Sample Means (M)	Standard Deviations (STDEV)	T Statistics (O/STDEV)	P Value
01. Creativity and Curiosity -> 06. Consumer Use Innovativeness	0.159	0.162	0.042	3.822	0.000
02. Risk Preferences -> 06. Consumer Use Innovativeness	0.165	0.166	0.050	3.279	0.001
03. Voluntary Simplicity -> 06. Consumer Use Innovativeness	0.158	0.159	0.054	2.915	0.002
04. Creative Reuse -> 06. Consumer Use Innovativeness	0.028	0.028	0.050	0.555	0.289
05. Multiple Use Potential -> 06. Consumer Use Innovativeness	0.489	0.485	0.047	10.481	0.000
07. Gender -> 06. Consumer Use Innovativeness	0.005	0.006	0.029	0.160	0.437
08. Income -> 06. Consumer Use Innovativeness	-0.002	-0.002	0.028	0.062	0.475

Note: Both Gender and Income are considered as control variables

IV. FINDINGS

It has been found that the selected IDV explains 67.4% variance in measuring use innovativeness of the graduating students of the university. The youth like innovativeness and thus they prefer to use various product innovatively. There could not found any significant impact of family income and gender on the use innovativeness among the graduating student of the university. Except the hypothesis that Creative Reuse leads to Use innovativeness amongst the youth, all the other four independent variables like Creativity and Curiosity, Multiple Use Potential, Voluntary Simplicity, and Risk Preferences, play a noteworthy role in the use innovativeness of the youth.

The findings are in line with the findings of the findings of Price and Rigway, 1983 that Higher

the scores greater is the innovativeness. But the independent variable creative reuse could not account significant impact in the innovative behaviour of the graduating students of the University.

V. CONCLUSION AND SUGGESTIONS

The curiosity among youngsters to know more about the product may lead to their choice for various products. The manufactures of various product must conduct these types of researches on their prospective consumers to add more innovations to their product which will help them to grab the market undoubtedly. The creative reuse among the young has a great influence on their culture and family as many respondents expressed their concern that though they wish to disjoin and rejoin the products, due to their fear of not getting another one from

their parents, stop them from doing so. The initial interaction has motivated the researcher to add annual income as one of the control variables in deciding the youth innovative behaviour but did not prove any significant role here. Also, the common perception of the region that the boys are more innovative than the girls (as they tend to disjoin and rejoin the products and love risk taking is proved wrong(H_6).

From the authors point of view, the communication of this research results would definitely illuminate the scope of the following points;

As the future of any nation is their youth, university wise and region wise research on use innovativeness nation wise may help the manufacturers of various product to identify the right target group and the market for their products. Such customer-oriented product may prove more successful. The influence of culture and religion are not studied in the present. The future researchers can conduct more detailed research by including these variables. The researcher very strongly recommends more such studies as India has more than 50% of its population below age of 25 which constitute that mush percentage of consumers of the country. These consumers can be rightly found in different universities of the Nation. As innovation and entrepreneurship can be motivated through innovation centres run by government agencies like MSMEs, Institutional Innovation Council etc, (Vrgovic et al. 2012), the university curriculum can be reframed accordingly to improve the innovation index of our country.

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