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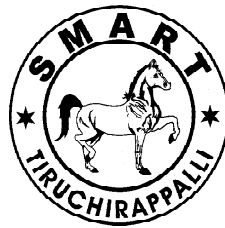**Professor MURUGESAN SELVAM, M.Com, MBA, Ph.D, D.Litt**
Founder - Publisher and Chief Editor

WILLINGNESS TO PAY FOR CUSTOMIZED HEALTH INSURANCE PACKAGE: AN EXPLORATORY STUDY IN A DEVELOPING COUNTRY

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Abstract

The study explores the determinants, that influence the willingness to pay for customized health insurance package, in the context of a developing country. The targeted respondents were drawn from both urban and rural areas of Amritsar, Jalandhar, Kapurthala, Ludhiana, Mohali, and Patiala Districts of Punjab State, India. A pre-tested questionnaire was administered to 1254 low-income households, selected by stratified random sampling technique. The contingent valuation method was applied to elicit willingness to pay (WTP), using the reverse bidding format. Descriptive statistics for demographic details of the respondents and multiple regression method (backward), was used to explore the influence of socio-economic determinants on willingness to pay. Overall, the average willingness to pay for a customized package was Rs 888.56 per year ($50.11).The regression results revealed that higher the education profile, higher the willingness to pay and more the number of dependents and sick members in the family, higher the willingness to pay.

Keywords: *Health Insurance, Universal Health Insurance Scheme, Willingness to Pay and Contingent Valuation Method*

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1. Introduction

With the higher out-of-pocket expenditure and the desire to provide quality treatment within an affordable health financing, the policymakers in India are keen on offering health insurance for the poor **(Dror et al., 2007)**. Viewing the limitations of the existing health insurance schemes, one of the ways to extend health insurance coverage is through a community-based health insurance scheme **(Ahmed et al., 2016)**. The core objective of introducing publicly funded health insurance schemes, also known as community-based health insurance schemes, is to achieve universal health coverage **(Marten et al., 2014)**. To date, the existing evidence on publicly funded health insurance (PFHI) schemes focused on understanding the determinant of enrollment, utilization, and role of community-based health insurance schemes (CBHI) in improving health care services **(Nandi and Schneider, 2020)**. Nonetheless, the orientation towards intake of health insurance should be developed voluntarily with the clients willing to pay the premium for the coverage **(Dror et al., 2007).**This could be the feasible option with the localized requirements of people and to avoid any adverse selection **(Purohit, 2014)**. Documented evidence from the studies in under-developed and developing nations, revealed that the dropouts from CBHIs were due to the burden of higher premium payment **(Chirwa et al., 2020)**. Given the growing need to extend access to CBHIs, the present study aimed at establishing the determinants, that could affect the willingness to pay for customized health insurance package, specific to the Indian context.

2. Review of Literature

2.1. Determinants of Willingness to Pay

Willingness to pay refers to "the amount of money that people are or a household is willing to spend to access or acquire a particular service" **(Miti et al., 2020)**. A systematic review study, conducted to explore the factors that affect the uptake of community-based health insurance schemes in low and middle-income countries, indicated the low levels of income and financial unavailability to be the major barriers **(Adebayo et al., 2014).**

2.1.1. Age

Age is a significant contributor towards determining the willingness to pay **(Adams et al., 2015).** The coefficients of age were negatively related and it implied that younger individuals were more willing to pay than the older ones **(Nosratnejad et al., 2016).** Contrarily, in the Ethiopian context, older age groups and poor households were found willing to pay for CBHI **(Garedew et al., 2020).**

2.1.2. Income

The income of the household is significantly associated with the willingness to pay **(Adams et al., 2015; Haile et al., 2014; Nosratnejad et al., 2014,Nosratnejad et al., 2016).**The fall in income levels could lead to financial hardships and further contribute to the misery of household**(Ganesh et al., 2007).**

2.1.3. Education level

The past studies also found the education level of households to exercise a significant influence on the willingness to pay for insurance **(Gustafsson-Wright et al., 2009)**. In Ethiopia, urban households, with higher education, were 3.38 times more likely to subscribe to CBHI schemes **(Deksisa et al., 2020).**

2.1.4. Family Size

The willingness to pay increases in direct proportion to the number of family members or family size **(Nosratnejad et al., 2014 and Nosratnejad et al., 2016).** The family size is

positively associated with the willingness to pay decisions and as the number of household members increases, the probability of willingness to join increased by 69 percent **(Haile et al., 2014)**.

2.1.5. Marital Status

Four studies from Asia reported positive association between marital status and willingness to pay **(Dror et al., 2016)**. Marital status plays a significant role in the willingness to pay towards health insurance **(Haile et al., 2014)**.

2.1.6. Gender

The study conducted in Burkino Faso reported that compared to male respondents, female respondents paid less WTP (928 CFA) as compared to males(3666 CFA ($4.89) (3666 CFA ($4.89) **(Nosratnejad et al., 2016)**. Similarly, the predicted willingness to pay differed among men (16369 Mongolian Tugrik) and women (16661 Mongolian Tugrik) in Mongolia, towards private health insurance **(Batbold & Pu, 2021)**.

2.1.7. Health Status

A substantial body of literature explored the relationship between health status and willingness to pay **(Nguyen et al., 2011)**. People, with poor health quality, prefer to enroll than those with good health condition, with private health insurance **(Adams et al., 2015)**.

2.1.8. Possession of Health Insurance Policy

Adequate knowledge and awareness about the details of the insurance scheme and its working are essential in the successful implementation and sustainability **(Dror et al., 2016)**.

2.1.9. Hospitalization

The unprecedented burden of hospitalization on the households, could be avoided or at least could be reduced, if the time and quality of health care are accessible without any hindrance. Consumers place little weight on mortality effects while choosing plans **(Abaluck et al., 2020)**.

3. Statement of the Problem

In India, where 80% of health care expenditure is mainly borne by out of pocket system, financial constraints in seeking quality health care treatment, have forced the poor people into catastrophic situation. Previous studies in the literature highlighted the coverage constraints of Government sponsored health schemes in addressing the health care requirements of poor people. Literature also suggested for customized health insurance packages to transform mere passive beneficiaries to active beneficiaries of health insurance schemes. This research study is an attempt to estimate the amount low-income households are willing to pay as a premium for a customized health insurance package. The insurance package was designed to match the requirements of low-income households. Besides, this research study tried to establish the factors that affect the willingness to pay for a customized health insurance package.

4. Need of the Study

There has been growing importance for health insurance schemes, for mitigating the health expenditures among low-income households. There was an intense need to conduct this study to achieve universal health insurance coverage, in line with the achievement of Good Health and Well Being, as an agenda of UNDP's Sustainable Development Goals.

5. Objectives of the Study

The main purpose of the study was to estimate the willingness to pay as a premium, for a customized health insurance package and to examine the factors that determine the willingness to pay for a health insurance package.

6. Hypotheses of the Study

The following null hypotheses were formulated for further analysis.

H_{01}: Higher the age of members of households, lesser the willingness to pay.

H_{02}: Lower quintile respondents are less willing to pay.

H_{03}: Households, with no formal education, are less willing to pay.

H_{04}: Households with dependents are more willing to pay.

H_{05}: Unmarried respondents are less willing to pay.

H_{06}: Male respondents will be more willing to pay.

H_{07}: Households, whose family's health status is very poor, will be willing to pay.

H_{08}: Households, who possess health insurance plans, will be willing to pay.

H_{09}: People, who have a hospitalization history, will be more willing to pay.

7. Research Methodology

7.1. Sample Selection

1254 low-income households, with a per capita income below Rs 5130/- per month and with occupations such as street hawkers, micro businessmen, and workers in factories, were contacted for the study. The study adopted a cross-sectional research design and applied a stratified random sampling technique, to collect the responses from respondents residing in Amritsar, Patiala, Mohali, Ludhiana, Jalandhar, and Kapurthala Districts of Punjab, India.

7.2. Sources of Data

Primary data were collected, by using a structured questionnaire, to elicit the responses, with a mix of open and close-ended questions. The respondents were also given the orientation towards health insurance policies and their features of selected policies such as Universal Health Insurance Scheme (floated through Public General Insurance Companies), Star Micro Health Insurance scheme, L& T General Insurance Company's Jeevika Medisure Micro Insurance, and customized health insurance package.

7.3. Period of the Study

This research study was conducted over eight months (December, 2017- July, 2018)

7.4. Tools Used in the Study

This research study used the contingent valuation method, as the replies of respondents were based on the contingent scenario offered. The study adopted the reverse bidding game method, also called the descending bidding game method, as adopted by **Binnendijk, et al. (2013).** Backward linear regression method was used to test the hypotheses.

8. Data Analysis

8.1. Descriptive Analysis of Willingness to Pay and Socio-Demographic and Economic Profile

The socio-demographic, economic and health profile of respondents vis a vis their willingness to pay and willing to enroll, have been presented in **Table-1**. Out of the total sample (1254) selected for the study, 988 respondents (78.80 percent) preferred customized package while 135 respondents (10.80 percent) preferred universal health insurance scheme and 131 respondents (10.40 percent) did not prefer either

of the packages. The average willingness to pay ranged between Rs 867.88 (Jalandhar) and Rs 536.38 (Patiala), provided the premium was paid in installments. Among the quintile groups, the Q1 group of respondents preferred to pay only Rs 534.11 while Q2 and Q4 respondents preferred to pay an approximate amount of Rs 822.60- Rs 826.10. While male-headed households were willing to pay an amount of Rs 768.97, female-headed households were willing to pay Rs665.18. Those respondents, who reported educational background with 11- 12 grade, were interested to pay an amount of Rs 880.56, which was nearly equal to the overall average willingness to pay by all the respondents. When the number of dependents was 7, households were ready to pay the premium amount of Rs 971.43 for insurance coverage while the respondents were willing to pay Rs 783.33 if the households have more than 6 family members sick.

8.2. Determinants of Willingness to pay for Health Insurance

The factors or variables, that affect the willingness to pay for health insurance, are socio-demographic factors, economic factors, and health-related factors. To determine the factors or variables, that affect the willingness to pay, the regression model was used. In the regression model, the natural logged willingness to pay is predicted by using the socio-demographic, health, and economic factors. All the items, in the correlation analysis, reported a correlation coefficient at less than 0.7. Hence the multicollinearity in the data did not exist. Also, the variance inflation factor (VIF) test, obtained a maximum value of 1.824, which indicated no multicollinearity in the regression model.

The model summary, presented in **Table-2**, explains that the model could explain 11.5 percent of the total variance and the model was fit at F=9.602, p<0.000 (**Table-3**). The regression results, with the parameter estimates, are presented in **Table-4**. The results revealed that respondents, in the higher age of households and quintiles reported higher willingness to pay, even at a higher price. Hence H_{01}- Higher the members of households, lesser the willingness to pay and H_{02}-Lower quintile respondents are less willing to pay, were rejected. Although female households recorded negative coefficients, some female households were paying a higher premium compared to male households, and hence H_{06}-Male respondents will be more willing to pay, was rejected. Respondents, with higher education, tended to purchase insurance with more premium, as evident from the regression results of this study. Therefore, the H_{03}-households with no formal education, are less willing to pay, was also rejected. The number of dependents, as well as several sick members in the family, exercised significant influence on the willingness to pay and hence the statement, H_{04}-Households with dependents are more willing to pay, was accepted. Previous studies established that unmarried people would be willing to pay lesser premium and the results of the present study concur with it. Hence H_{05} was accepted. Also, the respondents, whose health expenditures was catastrophic and with poor health status, were expected to pay higher premium, over the respondents, with non-catastrophic expenditures. Hence H_{07} –Households, whose family's health status is very poor, will be willing to pay, more and H_{09}–People, who have a hospitalization history, will be more willing to pay were accepted. The negative coefficient reveals the significant negative relationship between the possession of health insurance and willingness to pay for the customized package. This means that the hypothesis statement H_{08} -Households who possess health insurance plans will be willing to pay more, was rejected.

9. Findings of the Study

The study aimed to explore the determinants of willingness to pay, for customized health insurance package, in the context of a developing country. The study adopted a contingent valuation approach, to determine the degree of willingness to pay. The findings are presented below.

- The study found the unadjusted mean amount, allotted for the customized package to be Rs.888.56 ($50.011). The Universal Health Insurance Scheme charges of Rs 450 per year ($25.327), for an average family size of 5 members, was still less than the WTP for a customized package.

- The male-headed household tended to pay more for insurance coverage than female-headed household. Because of male dominance in decision making in financial decisions, female members reported lower commitment towards enrollment as well as the payment towards health plans.

- Highly educated respondents were more willing to enroll and pay higher premium. Higher capabilities in understanding the modus operandi of health insurance schemes also contributed to the higher willingness to purchase.

- The income level of respondents was expected to have positive coefficient, conversely but the negative results implied that higher-income people were not willing to pay but they were willing to enroll in a health insurance scheme. Higher the number of dependents, the higher the food and non-food expenditures as well as health expenditures. Higher the number of sick members in the family, higher the medical expenditure spending, that triggered the vicious circle of poverty.

10. Suggestions

Findings from this study could be useful, for strategic planning by Central and State Governments, to implement community-based health insurance schemes. The findings of this study revealed that majority of people were not aware of the community-based insurance schemes and they would be more willing to enroll if awareness about the advantages of health insurance schemes was provided. The major reason for lower penetration of community-based health insurance schemes is the lack of appropriate distribution channels. The demonetization event had forced people to depend on digital financial service providers as well as banking channels for payment. Once enrolled, the mechanism shall facilitate the deduction of premium from the bank accounts of the beneficiaries to reduce the dropouts. Also, towards sustainable development, NABARD-Bank-SHG programs could be widely encouraged.

11. Conclusion

This research was conducted to estimate the willingness to pay as a premium, for a customized health insurance package and examine the determinants of willingness to pay for a health insurance package. The low-income households of Punjab State, were willing to pay Rs 888.56 per year ($50.11), for a customized health insurance package. This research has provided empirical evidence that households with higher education profile, with dependents and sick members in the family, were more willing to pay for the health insurance package.

12. Limitations of the Study

The customized health insurance package was designed to support the health care financing needs of low-income households of the sample State of Punjab. The findings cannot be applied

to other contexts such as mid-size income households, women, and households, with non-communicable and communicable diseases.

13. Scope for Further Research

This research study followed a cross-sectional research design. Future studies can be longitudinal in estimating the influence of changing socio-economic and demographic profiles of respondents. Future studies could examine the WTP towards a health insurance package, among migrant labor, women, and households, with non-communicable and communicable diseases.

14. Acknowledgement

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Table-1: Results of Descriptive Statistics associated with Willingness to Pay and Socio-demographic and Economic Profile

Particulars	Variables	Not Willing to Enroll	Willing to enroll	Total
District	Amritsar	0	197	197
	Jalandhar	0	193	193
	Kapurthala	0	200	200
	Ludhiana	0	200	200
	Mohali	49	169	218
	Patiala	82	164	246
Gender	Female	43	204	247
	Male	88	919	1007
Age	Less than 25	12	65	77
	26-35	19	297	316
	36-45	45	342	387
	46-55	25	191	216
	More than 55	30	228	258
Marital Status	Unmarried	30	226	256
	Married	101	897	998
	Joint Family	52	162	214
Domicile	Rural	52	623	675
	Urban	79	500	579
Health Expenditure	Non-Catastrophic	88	432	520
	Catastrophic	43	691	734
In-patient hospitalization in the last 1 month	No	108	961	1069
	Yes	23	162	185
Possession of Health Insurance Policy	No	86	921	1007
	Yes	45	202	247
Overall Health Status	Very Poor	0	38	38
	Poor	60	349	409
	Average	18	288	306
	Good	46	386	432
	Excellent	7	62	69

Particulars	Variables	Not Willing to Enroll	Willing to enroll	Total
Package Opted	No package	131	0	131
	Customized Package	0	988	988
	UHIS	0	135	135
Quintile Groups	Destitute (Q1)	85	173	258
	Extremely Poor (Q2)	10	241	251
	Non-poor (Q3)	6	73	79
	Vulnerable Poor (Q4)	8	346	354
	Wealth Quintile (Q5)	22	290	312
Education	No Formal Education	97	447	544
	1- 5 Grade	12	184	196
	6- 8 Grade	10	191	201
	9- 10 Grade	7	193	200
	11- 12 Grade	3	87	90
	Graduation and above	2	21	23
Number of Dependents (Family Size)	0	0	3	3
	1	73	164	237
	2	19	193	212
	3	6	323	329
	4	14	257	271
	5	18	155	173
	6	1	17	18
	7	0	7	7
	8	0	4	4
Number of Sick Members in the family	0	33	111	144
	1	65	752	817
	2	19	207	226
	3	4	28	32
	4	4	15	19
	5	4	6	10
	More than 6	2	4	6

Source: Author's Calculation from the primary data collected

Table-2: Results of Model Summary for Analyzing the Determinants of willing to pay for Health Insurance Package

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.339	0.115	0.103	0.28657

Source: Author's Calculation from the primary data collected

Table - 3: Results of ANOVA Test for Analyzing the Determinants of willing to pay for Health Insurance Package

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.828	15	0.789	9.602	.000
Residual	90.912	1107	0.082		
Total	102.741	1122			

Source: Author's Calculation from the primary data collected

Table- 4: Results of Regression Coefficients Explaining the Determinants of Willingness to Pay for Health Insurance Package

Parameters	Unstandardized Coefficients B	Standard Error	Standardized Beta	t	Sig	Collinearity Statistics	
						Tolerance	VIF
(Constant)	6.645	0.045		147.81	0		
Quintile Q2	0.09	0.027	0.122	3.327	0.001	0.597	1.675
Quintile Q4	0.063	0.025	0.095	2.5	0.013	0.548	1.824
Quintile Q5	0.05	0.026	0.072	1.926	0.054	0.572	1.747
Female	-0.061	0.029	-0.077	-2.107	0.035	0.595	1.68
11- 12 Grade	0.101	0.033	0.089	3.093	0.002	0.967	1.034
Graduation and Above	0.197	0.064	0.088	3.07	0.002	0.97	1.031
Married	-0.057	0.028	-0.076	-2.057	0.04	0.592	1.688
Non-catastrophic Expenditure	-0.064	0.018	-0.102	-3.54	0	0.955	1.047
Possession of health insurance	-0.091	0.022	-0.115	-4.035	0	0.981	1.02
No of dependents (Family size)	0.025	0.006	0.113	3.895	0	0.953	1.049
No of sick members	0.024	0.011	0.064	2.204	0.028	0.953	1.05

Source: Author's Calculation from the primary data collected

Note: Significant Regression coefficients are presented in the table