

A Study on Life Insurance Penetration

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Abstract: Life Insurance is an important economic security programme. Even though life insurance started in India in 1881, the life insurance penetration in India is very low. The possible explanation to the life insurance penetration may be demographic, social, economic and behavioural factors. The present study is to examine the impact of these factors on life insurance penetration. Study revealed that demographic, socio-economic and behavioural variables have an impact on life insurance penetration

Key Words: Household, Penetration

Date of Submission: 13-02-2019

Date of acceptance: 28-02-2019

I. INTRODUCTION

Before the liberalisation period, the life insurance sector was the monopoly of the LIC. After liberalising the sector in 2000, a number of players entered the market. The basic objective of life insurance is to protect the family at the time of the death of the household head. Life insurance is also aimed at accumulating savings of the household. Though no of players entered the market, life insurance penetration is low in India. The demographic, social economic and behavioural variables may have an influence on life insurance penetration. The present study is to examine the influence of these factors on life insurance penetration.

II. REVIEW OF LITERATURE

Hiltz (1971) analysed the inequality of Life insurance ownership between Black and White families and examines the possible causes of differences. Study found that within income groups black families own much smaller amounts of life insurance on the average than whites. Part of the difference in level of life insurance coverage is probably due to the tendency for blacks to own more expensive types of coverage, which give them less life insurance protection per dollar. The differences are also due to the disproportionate concentration of blacks in manual occupations because working class households own less life insurance than white collar households at the same income level. The third factor is difference in values and family structure related to the need for life insurance to protect the wife and children.

Anderson and Nevin (1975) analysed the life insurance purchasing behaviour of young newly married couples. The relationship between two dependant variables amount of life insurance purchased, type of life insurance purchased was tested against no of explanatory variables. The variables significantly explaining the amount of life insurance were education of husband current household income, expected household income, net worth of household, husbands insurance before marriage, and wife's insurance before marriage. Study revealed that education has a negative influence on the amount of life insurance. Another unexpected finding is that middle income couples purchased considerably less life insurance than either the lower or upper income couples. Three of the independent variables were found to be statistically significant in explaining the type of life insurance purchased. The variables are net worth, wife's insurance before marriage, and influence of insurance agent. Both the Husbands and wife's life insurance portfolio before marriage were significant in explaining amount of insurance purchased but the degree of their influence was in opposite direction

Hershbarger (1980) found that sex, marital status, income level, were significant factors determining purchase of life insurance. The main reason for the purchase of life insurance is security. Majority of the respondents expressed satisfaction with their present company and present agent.

Fitzgerald (1987) revealed that husband's future earnings are found to increase the demand for insurance on the husband' life and wife's future earnings are also found to increase the demand for life insurance on the husband. Social security survivor benefit of surviving wife decreases the husband's life insurance demand. But social security survivor benefit condition on both surviving increases the demand for life insurance on husband.

Truett and Truett (1990) revealed that age, education, and level of income affect the demand for life insurance. Study also found that income elasticity of demand is higher at lower levels of income than at higher levels of income

Brown and Kim (1993) tried to identify factors that lead to variation in the demand for life insurance across countries. Study found that income, dependency ratio, education, have positive significant relationship with life insurance consumption. Islamic faith, inflation was statistically significant and negatively related with life insurance consumption

Showers and Shotick (1994) analysed the household characteristics on demand for Insurance. Study uses household demand for total insurance as the dependent variable and it is represented by the sum of its premium for health, life, auto and home owners insurance. Study found that income, age, family size and number of earners have positive and significant relationship with demand for insurance. Study uses how the number of earners interacts with income to influence demand. To examine this relationship $inc * Num$ is included as a variable. The interaction term have negative significant relationship with demand for insurance, the additional dollar spent on insurance is lower for multi-earner households.

Gandolfi and Miners (1996) revealed that household income is significantly positive for both males and females but change in income is much greater for husband than for the wife's. Study also revealed that full time labour force participation by the wife reduces life insurance ownership by the husband significantly but part time labour force participation of the wife has no significant influence on the husband's life insurance ownership. Study also reveals that educational level of the spouse has a negative impact on the husband's total (Individual & Group) life insurance coverage.

Ward and Zurbrueegg (2002) tried to investigate determinants of life Insurance consumption in Asia. Study also compared Asian market with developed OECD market. Study found that income, inflation, financial development are significant factors influencing Life Insurance Consumption. Study also considered the role of political and legal system in the development of life insurance and found that civil right is significant and positive impact on life insurance but political system is statistically insignificant and social welfare expenditure is insignificant impact on Life Insurance.

Vidal-Melida (2004) analysed whether bequest motive is a relevant issue affecting a theoretical decision to purchase life annuities. Study found that bequest motive reduces the attractiveness of annuities. Individuals interest in leaving a bequest (Altruistic) have utility in the purchase of un-indexed policy. Individual have strategic bequest motive can attain greater welfare with the purchase of indexed annuity.

Vidal-Melia and Lejarraga-Garcia (2006) tried to analyse whether the bequest motive in itself is really a relevant factor influencing the theoretical decision as to whether to purchase annuities for couples. The study considered two models ie Model without market imperfection and model with market imperfection. Study found that the bequest motive is found not to be a significant factor influencing the demand for annuities from consumption.

Schunk (2006) estimated the relationship between saving motives and saving rate. The paper also investigates whether saving motives helps to explain what type of savers households are. Study found that households with unemployed households head have a saving rate which is 8 percent lower than households whose head is working. And civil servants have saving rate 3 percent higher on average.

Dragos and Dragos (2009) uses multinomial logit model to explain the behaviour of the life insured. Study revealed that as age increases it decreases the probability of choosing the endowment insurance and unit linked insurance products with respect to term insurance. Study also revealed that men likely to choose ULIP than women. Finally when income increases, it increases the probability of choosing endowment insurance and ULIP plans.

Majumdar (2010) describes the present status of insurance penetration in India, Buying behaviour of Insurance in India, why slow insurance penetration in India and what step can be taken to raise insurance penetration. Insurance penetration in India is only 4.1 percent only compared to 9 percent in South Korea, 10 percent in Hong Kong, 7.6 percent. Study says that in India 73 percent of the population uninsured without any cover. Regarding buying behaviour, study says that instead of risk management tool life insurance is considered as a saving instrument. Another factor is average sum assured per Indian Household is Rs 27951/ and among the households with insurance coverage this average comes to Rs 114450/. Study says that majority of the Indian are under insured. Regarding the reason for low insurance penetration, study describes lack of financial literacy is the main reason. Other reasons are lack of products to suit the customers and channels, efficient use of alternative channels, attrition of agents, neglecting rural and social sector obligations. Regarding the steps to raise insurance penetration the paper proposes firstly education, both present and prospective customers. and training of agents, catering the needs of rural and social sector and efficient use of alternative channels especially bancassurance and product development.

Bending and Arun (2011) found that household size is positively associated with usage of micro life insurance. Study also found that poor is less likely to participate in micro life insurance schemes. Education of the household head is a strong determinant of household's participation in micro life Insurance participation. Further the Implementation and promotion of financial education measures by micro finance institution may improve the knowledge and understanding of Insurance

Kjosevski (2012) used two measures as a demand for life insurance: life insurance penetration and life insurance density. Result found that higher GDP per capita, inflation, health expenditure, level of education, and the rule of law are the most robust predictors of life insurance. Real interest rate, ratio of quasi-money, young dependency ratio, old dependency ratio, control of correction and Govt effectiveness do not appear to be robustly associated with life insurance demand.

Mahdzan and Victorian (2013) tried to examine the relationship between the demographic factors, financial literacy and life insurance demand. The study uses ANOVA and Multiple regression to analyse the data. Study found that education and income are significant demographic variables influencing life insurance demand. All the saving motives are significantly influences life insurance demand. Wealth accumulation motive was found to have the strongest impact on life insurance demand, followed by bequest, life cycle and precautionary motives. Study also found that financial literacy had no impact on life insurance demand

III. METHODOLOGY

Present study is analytical in nature based on primary data .Primary data collected from household survey. Sample survey conducted among four hundred households. Sampling unit of the study was household. Multistage sampling method was used for data collection.. In the first stage four districts were randomly selected from Kerala state of India In the second stage one municipality and one panchayath were randomly selected. In the third stage one ward from each municipality and each Panchayath were selected .From each ward fifty households were taken to collect data. Tool for data analysis was binary logistic regression.

Objective

To examine the influence of demographic, socio-economic and behavioural variables on Life Insurance Penetration.

Hypothesis

Demographic socio-economic and behavioural variables have an influence on life insurance penetration.

IV. ANALYSIS AND DISCUSSION.

In order to examine the combined effect of demographic socio-economic and behavioural variables on life insurance penetration, a Binary logistic regression was carried out with binary variable whether holding life insurance or not as the dependant variable and socio-economic and behavioural variables as independent variables. Since independent variables are categorical, they are converted into dummy variable for using them in the regression model. Backward selection method of regression analysis was carried out in order to find out the most significant predictor of life insurance penetration. Twenty six independent dummy variables were deleted by the process of backward selection method from a total of forty four variables.

Table 1.1 Model fit diagnostics of binary logistic regression.

Step	Chi-square	df	Sig.
1	13.541	8	0.095
26	9.396	8	0.310

Table 1.1 shows the model fit diagnostics of the initial and final regression models. The significance value of chi-square test is greater than .05 So the null hypothesis is accepted and initial and final regression models are adequately fit for the data and is valid for predicting life insurance penetration.

Table 1.2 Model summary of initial and final regression model

Step	-2 Log likelihood	Cox &Snell R Square	Nagelkerke R Square
1	406.803	0.296	0.398
26	418.825	0.275	0.369

From table 1.2 it can be seen that the R square of the initial regression model is 0.398, indicating that 39.8 per cent variation in the life insurance penetration is determined by the demographic, socio-economic and behavioural variables. The R square of the final regression model after eliminating twenty nine variables is found to be .369 indicating that 36.9 per cent variation in the level of penetration is determined by the retained independent variables. The -2 log likelihood is also sufficiently large indicating that the logistic regression is significantly fitted to the data.

Table 1.3: Coefficients of final regression model for the effect of socio-economic, demographic variables on life insurance coverage.

Age of the Household Head	AG2:If 40-50, 0 otherwise	0.778	0.334	5.427	0.02	2.178
	AG3:If 51-60, 0 otherwise	0.894	0.348	6.616	0.01	2.446
Age of the Spouse	AGS1:If <35, 0 otherwise	1.555	0.34	20.949	0	4.734
No of Dependants	DP2:If two dependants, 0 otherwise	0.568	0.296	3.675	0.055	1.764
Religion	CH:1 if Christian, 0 otherwise	0.99	0.462	4.586	0.032	2.692
	HI:1If Hindu, 0 otherwise	1.266	0.38	11.073	0.001	3.546
Caste	FO: If forward, 0 otherwise	0.604	0.311	3.769	0.052	1.83
Education of household head	BS: If <SSLC, 0 otherwise	-0.636	0.358	3.165	0.075	0.529
	DE: if Degree, 0 otherwise	-0.623	0.362	2.962	0.085	0.537
Education of spouse	SDE:If Degree, 0 otherwise	0.706	0.312	5.118	0.024	2.027
Occupation of Household head	GO: If Govt, 0 otherwise	1.262	0.446	8.002	0.005	3.532
	PV : If Private, 0 otherwise	0.893	0.393	5.153	0.023	2.443
	BU: If Business, 0 if otherwise	0.639	0.383	2.777	0.096	1.895
Income	IN1:If<10000, 0 otherwise	-0.688	0.318	4.689	0.03	0.502
Bequest Motive		.0313	0.156	4.029	0.045	1.368
Tax Saving Motive		1.286	0.36	12.75	0	3.618

The unstandardised regression coefficient of dummy variable representing education of household head, below SSLC and degree are negative, indicating lower contribution on penetration by households with head of the household is, below SSLC education and degree education, compared to head of households with P G degree holders. The regression coefficient representing dummy variable occupation of household head such as government employment and private employment is positive and significant, indicating that households with government employee or private employee as head, have higher contribution to have life insurance coverage than households with head of the household is a day labourer.

The regression coefficient representing dummy variable head of the household have in the age group 41-50 and 51-60 are significant and positive means if the head of the household is within this age group, household have more probability to be covered by life insurance than age group above 60. The regression coefficient representing dummy variable monthly income less than Rs 10000 has less probability (B= -0.688) to be covered by life insurance than income level more than Rs 50000. Regression coefficient of dummy variable representing religion such as Christian (B=.990) and Hindu (B=1.266) are positive and significant means these households have more probability to be covered by life insurance than Muslim households. However Hindu households are more probability (B=1.266) than Christian households (B=.990). Regression coefficient representing dummy variable caste, forward means forward caste households have more probability to be covered by life insurance than SC/ST households but it is not significant. Regression coefficient representing dummy variable age of spouse less than 35, education of spouse is degree are positive and significant. Household with spouse age less than 35 has more probability to be covered by life insurance than those above 55 and households with spouse education degree has more probability to be covered by life insurance than P G education. Unstandardised regression coefficient of bequest motive and tax saving motive are positive and significant means higher the bequest and tax saving motive, higher the probability to be covered by life insurance. However tax saving (B=1.286) motive have more effect on coverage than bequest motive (B=.313)

The exponential beta coefficient of demographic variables such as age of the household head, age of spouse, religion, caste are greater than one means these variables have higher impact to be covered by life insurance. The exponential beta coefficient of dummy variable age of the household head is between 40-50 is 2.178 means compared base category age of the household head is above 60, this category has twice likely to

be covered by life insurance. The exponential beta coefficient of age of the household head is 51-60 is 2.446 means this category has twice likely to be covered by life insurance than those with base category head of the household head is above 60. The exponential beta coefficient of age of the spouse is less than 30 is 4.734 means, this category have four times more likely to be covered by life insurance than the age of the spouse of the head is above 55.

The exponential beta coefficient of religion Christian is 2.692 means compared to Muslim households, Christian households have twice likely to be covered by life insurance than Muslim households. The exponential beta coefficient of religious category, Hindu household is 3.546, means compared to Muslim households Hindu households have thrice likely to be covered by life insurance than Muslim households. The regression coefficient of caste-forward is 1.830, means compared to SC/ST households forward caste households have higher odds to be covered by life insurance than SC/ST households.

The exponential beta coefficient of dummy variable spouse education degree is 2.027 means, compared to households with spouse education P G, households with spouse education degree have twice likely to be covered by life insurance. The dummy variable occupation of the household head is 3.532 means compared to occupation of the household head is day labourer, households with head of the household is government employee have thrice likely to be covered by life insurance.

Household with family income less than Rs10000 have an exponential beta coefficient of less than one means compared to households with family income more than 50000, households with family income less than 10000 have less likely to be covered by life insurance.

The odd ratio of bequest motive is 1.368 means one unit increase in bequest motive likely to have 1.368 times a household to be covered by life insurance. The exponential beta coefficient of tax saving motive is 3.618 means one unit increase in tax saving motive, likely to have 3 times a household to be covered by life insurance.

The demographic variables taken for analysis are age of household head, Age of Spouse, No of Dependents, Religion and caste.. Logistic Regression analysis of effect of the demographic variables on Life Insurance Penetration shows that age of the household head between 40-50, age of the household head, 51-60, age of the spouse less than 35, religion Christian and Hindu have significant impact on life insurance coverage of the household.

The social variables taken for analysis are education of household head, education of spouse, occupation of household head, occupation of spouse, and place of residence.. Logistic Regression analysis of effect of the social variables on Life Insurance Penetration shows that education of the spouse of the head of the household head degree, occupation of the household head government employee, private employee, have significant effect on life insurance coverage of the household

The economic variables taken for analysis are economic status of household and income occupational status of spouse.. Logistic Regression analysis of effect of the economic variables on life Insurance penetration shows that households with monthly household income less than Rs10000 and less contribution to have household covered by life insurance.

The behavioral variables taken for analysis are old age motive, bequest motive, tax saving motive and risk aversion.. Logistic regression analysis of effect of the behavioral variables on Life Insurance Penetration shows that the variables such as namely, tax saving motive and bequest motive.

In short, it is evident from the analysis that demographic, socio-economic and behavioral variables have significant relationship with status life insurance penetration. Hence the result rejects the null hypothesis that, there is no significant relationship between demographic, socio-economic and behavioral variables with status of life insurance penetration, and accepts the alternative hypothesis that there is significant relationship between some of the demographic, socio-economic and behavioral variables with status of life insurance penetration.

V. CONCLUSION

Life insurance is an important financial security programme. However the life insurance penetration is low in India. The study revealed that age, religion, caste, education, occupation, income, bequest motive and tax saving motive are the significant variables influencing life insurance penetration. The result will help the policy makers and regulatory bodies to take effective steps to increase life insurance penetration.

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Jino Joseph. "A Study on Life Insurance Penetration". " IOSR Journal of Humanities and Social Science (IOSR-JHSS). vol. 24 no. 02, 2019, pp. 05-10.