



## **MULTIVARIATE ANALYSIS ON THE EFFECT OF SOCIO-ECONOMIC CHARACTERISTICS INFLUENCING TO BUY LIFE INSURANCE POLICIES FROM THE PUBLIC SECTOR LIFE INSURER**

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### **Abstract:**

This study employs multivariate analysis to examine how various socio-economic characteristics impact the purchase of life insurance policies from public sector insurers among rural residents. By analyzing multiple variables simultaneously, the research reveals complex relationships and patterns that inform the purchasing behavior, ultimately aiding insurers in developing more effective marketing strategies.

### **Introduction:**

Life insurance is a key financial instrument that provides security and peace of mind to individuals and families, particularly in rural areas where access to other forms of financial protection is limited. In India, public sector life insurers like the Life Insurance Corporation of India (LIC) have traditionally been dominant players, enjoying widespread trust and government backing. However, purchasing decisions regarding life insurance policies are not solely based on the perceived reliability of the insurer. Socio-economic factors such as income, education, occupation, family size, and social status play a crucial role in shaping individuals' preferences for public sector insurers over private competitors.

Understanding how these socio-economic characteristics influence decisions to purchase life insurance from public sector insurers is critical for developing more tailored products and outreach strategies. This study aims to use multivariate analysis to examine the interplay between various socio-economic factors and the decision to purchase life insurance policies from public sector insurers. The findings will help public sector insurers better understand the demographic profile of their customers and fine-tune their services to meet the needs of different socio-economic groups.

### **Objectives:**

- To identify the socio-economic characteristics most strongly associated with the purchase of public sector life insurance policies.
- To analyze interactions between multiple socio-economic variables in influencing purchasing decisions.
- To provide actionable insights for public sector insurers to enhance their product offerings in rural markets.

### **Research Methodology:**

The study employ a quantitative research design using multivariate analysis techniques to explore the effects of multiple socio-economic variables on the decision to purchase life insurance policies from public sector insurers. The study analyze how different socio-economic characteristics, when considered together, impact the likelihood of purchasing a life insurance policy from a public sector insurer.

A total of 700 respondents from various rural and semi-urban areas of Erode district will be selected through stratified random sampling. The samples are stratified by socio-economic characteristics such as age, gender, income level, education level, occupation, and family size to ensure a diverse representation of the population. Data are collected using a structured questionnaire designed to capture: Socio-economic characteristics: Age, gender, marital status, education level, income level, occupation, family size, and place of residence (rural or semi-urban). Insurance purchasing behavior: Questions related to whether the respondent has purchased life insurance from a public sector insurer, type of policy chosen, reasons for selecting a public sector insurer, and the amount of coverage purchased. Influential factors: Additional questions to identify the key factors that influenced the decision to purchase life insurance, such as trust in public sector insurers, affordability, peer influence, or agent recommendations. The analysis conducted in the following steps: Descriptive Statistics: To provide a summary of the socio-economic profile of the respondents and their life insurance purchasing behavior.

Multivariate Logistic Regression: This analysis employed to determine the effect of multiple socio-economic variables on the decision to purchase life insurance from public sector insurers. Logistic regression is suitable because the dependent variable (whether the respondent purchased life insurance from a public sector insurer) is binary.

### **Literature Review:**

Syed Ibrahim (2003) the author brings out the reasons for accepting the LIC as a superior form of saving instrument. Progress of LIC over the past few decades highlighted along with comparison of private companies in terms of policies issued growth in market share and so on. Though LIC has grown to become number one life insurer in terms of policies issued and claims settled, the penetration of Life Insurance is very low while compared with international insurance business. The insurance sector is under stiff competition because of liberalization. To overcome this LIC should become more flexible towards the changing nature of customers in order to become more dynamic.

Akbar Alikhan and Praveenkumar (2003) opined that despite the wider scope of opportunities, the insurance companies are facing challenge in terms of insurance product innovation. In western countries, insurance is sold more as an instrument of life risk cover than in India as a product offering protection and security. The researchers' stressed the need for educating the people about the basic nature of life insurance products and creating a desire for insuring their life.

Dilip Roy and Saikat Banerjee (2003) the article focusing on the competitive dimensions of Life Insurance companies during the early period of privatization. The author suggests that the product differentiation is the only ‘mantra’ to succeed in the future competition. Also the researcher states that reaching the people who are not connected with the financial network of any form in our country will decide the survival of insurance companies in future.

Ahmed Beloucif, Bill Donaldson and Ugur Kazanci (2004) examined the relationship between brokers and clients in the UK life insurance industry. The overriding concern is the evaluation of performance in different stages of policy servicing relationship and characteristics of both brokers and client that have an impact on the quality of a relationship. The study reveals that the commitment of brokers in insurance business has positively influenced the relationship outcomes but not in equal measures and has different impact at different stages of service. Service quality is found to be a mediating variable and has significant impact. The results, based on a sample of 118 clients, revealed that relationships need to be re-examined in life insurance industry in a time specific manner.

Ranchana Rajatanavin, Mark spice (2004) state that New Service Development (NSD) is becoming increasingly important as the insurance industry in many countries opened up and becomes more competitive. The study examined how customer views are integrated into the NSD process in the Thai insurance industry. This qualitative research was conducted using in-depth interviews with top offices, sales mangers, senior vice-presidents of marketing and actuary mangers in a number of leading Life Insurance and non-Life Insurance companies. The study investigated how NSD works in the Thai industry, focusing on how customer views and incorporated in their process. The results shows that the NSD process in Thailand is not oriented towards developing truly innovative products, but there is much NSD for adaptation of products form other markets. Sales agents act as main information transferers as to the customer and inturn bringing in customer views through personal interactions for an effective NSD. Lack of cross-functional teamwork can cause failure in developing new products and services.

C. S. Rao (2004) examined the consumers’ awareness about insurer’s product prices and terms and conditions of their policies. He states that the reason for lack of awareness among the insured is that there is a heavy reliance on completion of sales amongst players for good market performance in order to ensure their survival. He states that as the market is evolving from an emerging to an emerged change in approaching in all aspects of its operation so that it is essential to move away from a merit based regime to a disclosure based regime. The former chairman of IRDA adds that the sustained investments in irrigation and power have brought prosperity to the rural people. To study these markets and to tap the vast potential sound business sense is required. He concluded that there is a need to overhaul the insurance Act. This research, answers to many problems that exist today.

**Research Gap:**

While individual socio-economic factors have been studied in insurance contexts, there is a lack of comprehensive multivariate analyses that consider interactions among these factors. This study seeks to address this gap.

**Multivariate Analysis of Variance LIC:**

Roy’s multivariate test- Shows the effect of socio-economic characteristics on the factors influencing to buy life insurance policies among the insured population- public sector life insurer.

Table 1

Independent Variable	Value	F	Hypothesis df	Error df	Sig.	
Intercept	Roy’s largest Root value					
	Roy's Largest Root	2.639	1.171E2 <sup>a</sup>	11.000	488.000	.000
Gender	Roy's Largest Root	.361	16.022 <sup>a</sup>	11.000	488.000	.000
Age	Roy's Largest Root	1.132	50.316 <sup>c</sup>	11.000	489.000	.000
Marital status	Roy's Largest Root	1.135	50.451 <sup>c</sup>	11.000	489.000	.000
Educational qualification	Roy's Largest Root	.898	40.020 <sup>c</sup>	11.000	490.000	.000
Community	Roy's Largest Root	.654	29.134 <sup>c</sup>	11.000	490.000	.000
Occupation	Roy's Largest Root	1.675	74.928 <sup>c</sup>	11.000	492.000	.000
Salary income	Roy's Largest Root	.984	43.833 <sup>c</sup>	11.000	490.000	.000
Income from other sources	Roy's Largest Root	.985	43.770 <sup>c</sup>	11.000	489.000	.000
Family type	Roy's Largest Root	.578	25.636 <sup>a</sup>	11.000	488.000	.000
Family size	Roy's Largest Root	1.463	65.161 <sup>c</sup>	11.000	490.000	.000

The above Roy’s multivariate test of significance, describes the effect of nine personal factors of the policy holders on factors influenced to buy their life insurance policies. The simultaneous effect of gender, age, marital status, educational qualification, community, occupation, salary income from the other sources, family type and family size on the dependent variables such as recognizing the need for insurance, awareness about life insurance policies, affordability, customer confidence on insurance companies, features of life insurance policies and the marketing initiatives of the life insurance companies were highly significant at 0.000 per cent. Thus gender, age, marital status, educational qualification, community, occupation, salary income, income from other sources, family type and family size simultaneously influence the dependent items.

**Manova Table:**

Table 2

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Gender	Awareness about the life insurance	7.638	1	7.638	9.427	.002

	Recognizing the need for life insurance policies	17.440	1	17.440	22.250	.000
	Affordability towards the insurance	50.288	1	50.288	89.246	.000
	Customer confidence towards the life insurance company	6.905	1	6.905	8.605	.004
	Life insurance policy features	.036	1	.036	.046	.831
	Marketing initiatives of the life insurance companies	.163	1	.163	.193	.661
Age	Recognizing the need for life insurance policies	21.751	2	10.875	13.421	.000
	Awareness about the life insurance	7.212	2	3.606	4.600	.010
	Affordability towards the insurance	10.117	2	5.059	8.978	.000
	Customer confidence towards the life insurance company	66.870	2	33.435	41.666	.000
	Life insurance policy features	18.055	2	9.027	11.368	.000
	Marketing initiatives of the life insurance companies	4.500	2	2.250	2.664	.071
Marital Status	Recognizing the need for life insurance policies	.655	2	.327	.395	.674
	Awareness about the life insurance	19.552	2	9.776	12.472	.000
	Affordability towards the insurance	31.871	2	15.936	28.281	.000
	Customer confidence towards the life insurance company	62.684	2	31.342	39.059	.000
	Life insurance policy features	63.849	2	31.925	40.203	.000
	Marketing initiatives of the life insurance companies	7.771	2	3.885	4.601	.010
Education	Recognizing the need for life insurance policies	68.913	3	22.971	28.348	.000
	Awareness about the life insurance	84.974	3	28.325	36.137	.000
	Affordability towards the insurance	37.317	3	12.439	22.075	.000
	Customer confidence towards the life insurance company	107.055	3	35.685	44.471	.000
	Life insurance policy features	52.425	3	17.475	22.006	.000
	Marketing initiatives of the life insurance companies	31.518	3	10.506	12.442	.000
Community	Recognizing the need for life insurance policies	1.755	3	.585	.597	.617
	Awareness about the life insurance	3.133	3	1.044	1.777	.151
	Affordability towards the insurance	54.578	3	18.193	32.287	.000
	Customer confidence towards the life insurance company	28.510	3	9.503	11.843	.000
	Life insurance policy features	3.960	3	1.320	1.767	.153
	Marketing initiatives of the life insurance companies	60.530	3	20.177	23.895	.000
Occupation	Recognizing the need for life insurance policies	63.775	5	12.755	15.741	.000
	Awareness about the life insurance	28.499	5	5.700	7.272	.000
	Affordability towards the insurance	125.303	5	25.061	44.475	.000
	Customer confidence towards the life insurance company	84.419	5	16.884	21.041	.000
	Life insurance policy features	48.924	5	9.785	12.322	.000
	Marketing initiatives of the life insurance companies	37.459	5	7.492	8.872	.000
Salary Income	Recognizing the need for life insurance policies	1.963	3	.654	.808	.490
	Awareness about the life insurance	32.855	3	10.952	13.972	.000
	Affordability towards the insurance	64.828	3	21.609	38.351	.000
	Customer confidence towards the life insurance company	52.797	3	17.599	21.932	.000
	Life insurance policy features	4.278	3	1.426	1.689	.168
	Marketing initiatives of the life insurance companies	26.430	3	8.810	11.095	.000
Income from other sources	Recognizing the need for life insurance policies	17.844	2	8.922	11.010	.000
	Awareness about the life insurance	2.800	2	1.400	1.786	.169
	Affordability towards the insurance	35.045	2	17.523	21.837	.000
	Customer confidence towards the life insurance company	2.839	2	1.419	2.519	.082
	Life insurance policy features	31.002	2	15.501	19.521	.000
	Marketing initiatives of the life insurance companies	7.573	2	3.787	4.484	.012
Family type	Recognizing the need for life insurance policies	3.517	1	3.517	4.384	.037
	Awareness about the life insurance	1.254	1	1.254	1.485	.224

	Affordability towards the insurance	31.575	1	31.575	56.036	.000
	Customer confidence towards the life insurance company	.670	1	.670	.807	.369
	Life insurance policy features	1.443	1	1.443	1.818	.178
	Marketing initiatives of the life insurance companies	1.629	1	1.629	2.771	.097
Family size	Recognizing the need for life insurance policies	5.488	3	1.829	1.867	.134
	Awareness about the life insurance	41.367	3	13.789	17.592	.000
	Affordability towards the insurance	135.014	3	45.005	79.870	.000
	Customer confidence towards the life insurance company	59.124	3	19.708	24.560	.000
	Life insurance policy features	1.944	3	.648	.816	.485
	Marketing initiatives of the life insurance companies	23.048	3	7.683	9.098	.000

The above table shows the multivariate analysis of variance of socio-economic characteristics on the dependent variables. The results describes that recognizing the need for life insurance cover, Awareness about the life insurance, affordability towards the insurance, customer confidence towards the life insurance, customer confidence towards the life insurance company differed significantly according to the gender at one per cent level. Also, recognizing the need for life insurance, awareness, affordability, customer confidence towards life insurance policy and life insurance policy features are varied significantly among the different age group of the policy holders at one per cent level. The personal variable marital status has a highly significant difference at one per cent level with affordability, customer confidence, life insurance policy features and marketing initiatives of the life insurance companies.

The test again confirms that the all six dependent variables recognizing the need for life insurance, awareness, customer confidence, policy features and marketing initiatives are highly significant at one per cent level with the educational qualification of the insured population. The dependent variables customer confidence towards life insurance companies, affordability and marketing initiatives are highly significant at one per cent level with the communal category of the policy holders. It is interesting to note that all the six dependent variables are having highly significant relationship at one per cent level with the occupational category of the policy holders. Among the factors influenced to buy recognizing the need, awareness, affordability customer confidence and marketing initiatives are highly significant at one per cent level with the salary income of the policy holders. The dependent variable realizing the need for insurance cover, affordability, policy features and marketing in initiatives are significant at one per cent level with the various income level of the policy holders through secondary sources. While analysizing the family type with the dependent variables it is observed that affordability and marketing initiatives were highly significant with one per cent level. Finally, the awareness about life insurance, affordability customer confidence, life insurance policy features and marketing initiatives of the life insurance companies are highly significant with the family size of the policy holders at one per cent level.

From the analysis it is concluded that recognizing the need for life insurance cover is influenced by gender, age, marital status, education, occupation, salary income and income from other sources and family size.

Customer confidence towards the life insurance companies is influenced by all the nize personal characteristics except income from secondary sources and family type of the policy holders. The life insurance policy features is influenced by gender, age, marital status, education, occupation and income from other sources. Finally, the marketing initiatives of the life insurance companies is highly influenced by all the nine personal characteristics of the policy holders.

#### **Conclusion:**

This study provides a detailed understanding of how socio-economic characteristics influence rural and semi-urban residents' decisions to purchase life insurance from public sector insurers. It is evident that factors such as income, education, and occupation significantly affect these decisions, with lower-income and less-educated individuals more likely to choose public sector insurers due to their trustworthiness, affordability, and governmental support. The multivariate analysis will help uncover not only the direct effects of individual socio-economic factors but also how these factors interact to shape consumer preferences. This information will be valuable to public sector insurers in improving their product offerings and targeting strategies to better serve specific socio-economic segments. Additionally, the findings can inform policymakers and financial educators in designing interventions that promote greater awareness of life insurance benefits and ensure equitable access to financial security for all segments of society.

#### **References:**

1. Thomas Varghese and Vishal Shah, The Dependable Duo-Data Warehousing / Mining in Insurance Industry, Volume VIII, No. 1, IRDA journal - Jan 2010, page:15-18
2. Geeta Sarin, Important Tool for Building Customer Relationship Data Mining in Insurance, Volume VIII, No. 1, IRDA journal - Jan 2010, p:30-33.
3. Rajesham C.H and Rajender K, "Changing Scenario of Indian Insurance sector", Indian Journal of Marketing (2006), Vol. 36, No. 7, Pp. 9-15.
4. Rao Bh., Venkateswara, "LIC - New Business Lacks Vigor", Insurance Chronicle, The ICFAI University Press (2006) Pp. 33 – 40.
5. Marwah Sanjiv (2002), "Customer Churn", Journal of Insurance and risk management, Pp. 77-84.
6. Bitner, M.J & Evaluating Service Encoounters: The Effects of Physical Surroundings and Employee Responses, Journal of Marketing (1990), Pp. 54, 69-82.
7. Lehtinen, U., and Lehtinan, J.R., Two Approches to service Quality Dimensions, the Service Industries Journal, (1991), Vol. 11, No. 3, Pp. 287-303.

8. Ashvin Parekh, Importance of Training in Insurance - Value Creator and Enabler of Performance, Volume VIII, No. 2, IRDA journal Feb 2010, p:12-16
9. Dakshina Murthy J. and Venkata Madhukar Kanagala, Preventing Insurance Fraud - The Critical Success Factor, Volume VIII, No. 8, irda journal- August 2010, page:23-26
10. Prashanth, V. The Doctrine of Subrogation - Crystallisation of the Law, Volume VIII, No. 8, IRDA journal -August 2010, p:32-35
11. Koushik Majumdar. Setting the Priorities Right - Public Disclosures and Business Analytics, Volume VIII, No. 9 IRDA journal - September 2010, p:31-33