

# Impact of Demographic Variables on Buying Behaviour of Life Insurance Policy: An Empirical Study

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**Abstract:** Human life is the most important asset and life insurance is the most important type of insurance which provides financial protection to a person and his family at the time of uncertain risks or damage. Life insurance provides both safety and protection to individuals and also encourages savings among people. The present study based on the objective to identify those factors which influence customer's policy buying decision and also analyse the preferences of customers while life policy investment decision-making. Various types of policies and demographic factors (Age, Occupation and Gender) have been discussed in the paper. The data for the study has been collected from Insurance Regulatory and Development Authority, India and the sample size is 5638 policyholders of various private life insurers have been selected through secondary sources. We have taken few hypotheses based on demographic and type of insurance policy and tested them with the help of various statistical tools like chi-square, correlation. The analysed data has been presented in the form of table, bar graphs. Insurance companies should spread more awareness about life insurance, reduction in premium amount and giving more attention on need based innovative products are some of the suggestions provided by the researcher. The paper concludes with that demographic factors of the people play a major and pivotal role in deciding the purchase of life insurance policies.

**Keywords:** Customers, Life Insurance Policies, Type of policy

## 1. Introduction

There are different types of insurance policies customized to diversified needs of people. Easy purchase of policy, ease in payment of premium and simplified procedure for settlement of claims and most importantly touching human spirit in marketing are the hallmarks of health insurance business.

There are certain basic forms of life insurance. The different types of life insurance policies include:

Sr No.	Type of Insurance Policy	Features
1	Term Life Insurance	Term insurance is a life insurance product offered by an insurance company which offers financial coverage to the policy holder for a specific time period.
2	Whole Life Policy	The policyholder pays regular premiums until his death, upon which the corpus is paid out to the family.
3	Endowment Plans	Endowment plans pay out the sum assured under both scenarios - death and survival
4	Unit Linked Insurance Plans	ULIP is a life insurance product, which provides risk cover for the policy holder along with investment options to invest in any number of qualified investments.
5	Money Back Policy	Money back plan is a life insurance product as well as an investment plan which provides life insurance cover against death of the policy holder along with periodic returns as a percentage of sum assured.

## 2. Review of Literature

Athma. P and Kumar. R (2007) in the research paper titled "an explorative study of life insurance purchase decision making: influence of product and non-product factors". The empirical based study conducted on 200 sample size comprising of both rural and urban market. The various product and non-product related factors have been identified and their impact on life insurance purchase decision-making has been analysed. Based on the survey analysis; urban market is more influenced with product based factors like risk coverage, tax benefits, return etc. Whereas rural population is influenced with non-product related factors such as: credibility of agent, company's reputation, trust, customer services. Company goodwill and money back guarantee attracts many people for life insurance Praveen Kumar Tripathi (2008), in his summer training project report titled "customer buying behaviour with a focus on market segmentation" conduct a research based study on buying pattern in the insurance industry with a special focus on HDFC standard life insurance. The various segments of the markets divided in terms of insurance needs, age groups, satisfaction levels etc were taken into account to know the customer perception and expectation from private insurers.

Abate G. A. (2012) studied the factors affecting the profitability of insurance companies in Ethiopia. The study used financial data of nine insurance companies in Ethiopia and covered a period of nine years. Return on Assets (ROA) was used as a proxy for insurance companies' profitability. Both descriptive and regression analysis were employed in data analysis. The model used was:

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$$ROA_{i,t} = \alpha + \sum \beta_j X_{i,t}^j + v_{i,t}$$

Where  $ROA_{i,t}$  is the Return on Assets of insurance company  $i$  for period  $t$ ;  $\alpha$  is the regression constant;  $X_{i,t}^j$  denotes insurance specific determinants;  $v_{i,t} = \epsilon_{i,t}$  is the disturbance term.

The study established that the most important determinants of profitability are: growth, leverage, volume of capital, size, and liquidity where growth, size, and volume of capital are positively related with profitability while liquidity ratio and leverage ratio are negatively related.

Hifza M. (2011) conducted a study on determinants of insurance companies' profitability in Pakistan using financial data for 35 insurance companies using financial data covering the period 2005 -2009. ROA was used as a proxy for profitability. The regression model used was specified as:

$$\Pi = \alpha + \ln\beta_0 \text{ Age} + \ln\beta_1 \text{ Size} + \beta_2 \text{ Lev} + \beta_3 \text{ Loss Ratio} + \beta_4 \text{ Volume of Capital} + \epsilon$$

Where,  $\Pi$  is the profitability of insurance companies.

The study found out that the profitability of Pakistan insurance companies is significantly positively influenced by volume of capital; significantly negatively influenced by loss ratio and leverage; and not related to age of the insurer.

**2.1 Hypothesis of the Study**

Following are the hypothesis for the primary data analysis:

- H01: There is no association between Gender and Type of Policy.
- H02: There is no association between Occupation and Type of Policy.
- H03: There is no association between Age group and Type of Policy.
- H04: There is no Correlation between Age and Premium paid.
- H05: Occupation and gender are independent of the insurance investment decision.
- H06: There is no influence of demographic variables on buying behaviour on the type of policy.

**2.2 Importance of the study**

The research will:

Provide an understanding of the Indian Insurance sector.

Demonstrate the effects of various demographical factors, like age, gender, occupation. And type of policy on the insurance sector which will ultimately help to investors to choose the best insurance company among the available.

Support the insurance players to improve and adopt the marketing strategies to increase market share for selected schemes.

**2.3 Data Analysis**

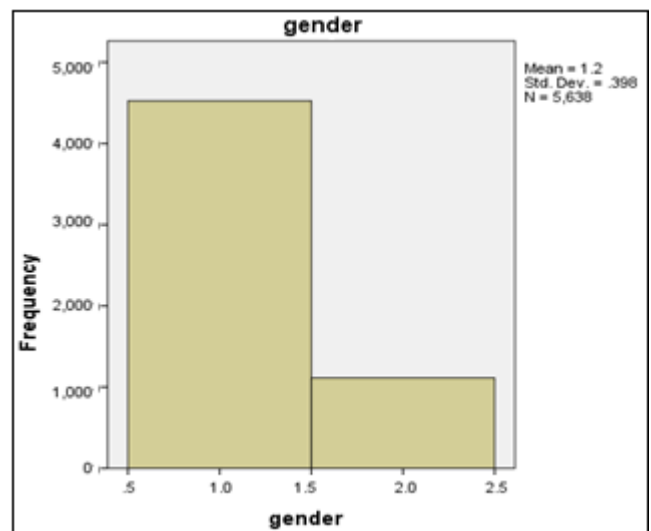
Various methods have been used in this study to find out the relationship between different variables. **CROSS-TAB, CHI SQUARE TESTS, MULTIPLE REGRESSION, CORRELATION ANALYSIS** have been used to find out these relationships between different variables according to the various responses given by the respondents. For analysis, Confidence Interval was taken as 95%. And Significance level 5%.

The analysis was conducted using IBM-SPSS 20.

**Demographic Details of the Respondents (in Percentage)**

**Table 1: Gender**

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	4525	80.3	80.3	80.3
Female	1113	19.7	19.7	100.0
Total	5638	100.0	100.0	



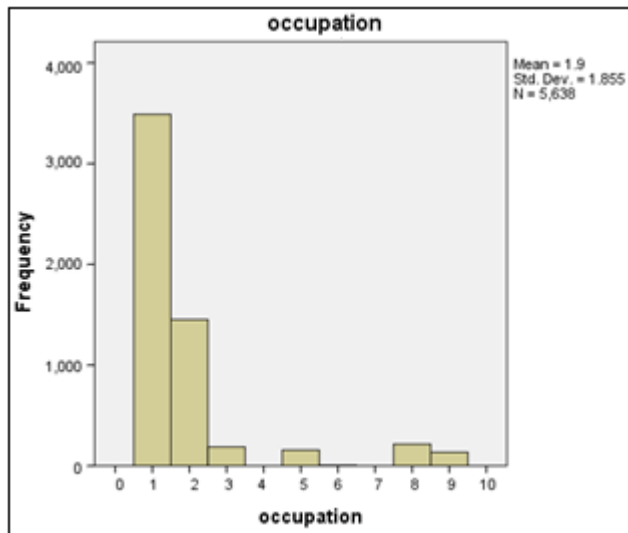
**Graph 1**

From table 1 and Graph 1, Out of 5638 samples drawn, the majority (80%) of policy holders are male and the remaining (20%) are Female policy holders.

**Occupation**

Le 2Tab

Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
Salaried	3489	61.9	61.9	61.9
Professional	1452	25.8	25.8	87.6
Business owner	187	3.3	3.3	91
Student	156	2.8	2.8	93.7
Retired/Pensioner	5	0.1	0.1	93.8
Housewife	215	3.8	3.8	97.6
Others	134	2.4	2.4	100
Total	5638	100	100	

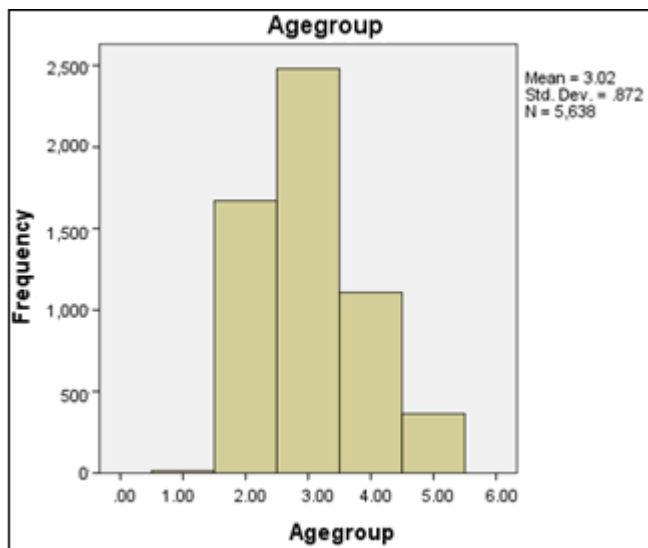


Graph 2

From table 2 and graph 2, Out of 5638 samples drawn, the majority (61.9%) of policy holders having occupation Salaried, followed 25.8% of the policy holders are having Professional as the occupation, 3.3% are Business Owners, 3.8% are House wife, 2.8% are Students and only 0.1% of the respondents are retired/pensioners.

Table 3: Age group

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
Below 15	14	.2	.2	.2
15 to 29	1671	29.6	29.6	29.9
30 to 44	2481	44.0	44.0	73.9
45 to 59	1108	19.7	19.7	93.5
60 and above	364	6.5	6.5	100.0
Total	5638	100.0	100.0	



Graph 3

Table 5: Descriptive Statistics for Premiums paid

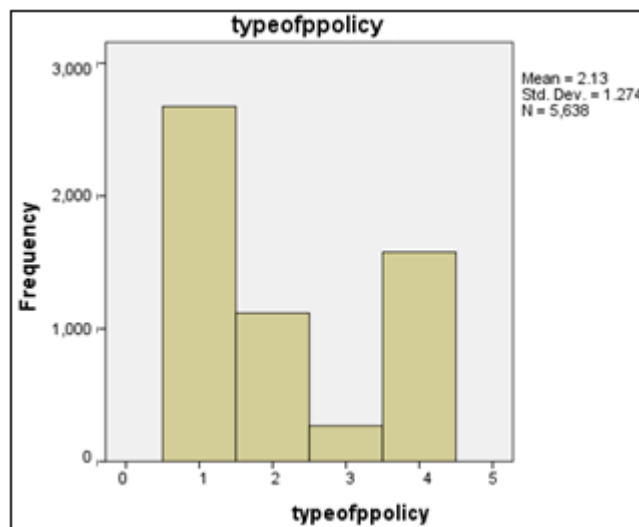
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Premium	5638	40	187108	4366.02	6026.184	10.047	221.894

From table 5, the minimum premium paid and maximum premium paid are 40 and 1,87, 108. Average premium paid is

From table No. 3 and graph 3, Out of 5638 samples drawn, the majority (44%) of policy holders having age group between 30 to 44 years, followed 29.6% of the policy holders are having age group between 15 to 29 years, 19.7% of the policy holders are having age group between 45 to 59 years, 6.5% of the policy holders are having age more than 60 years and the remaining policy holders are having age below 15.

Table 4: Type of policy

Type of Policy	Frequency	Percent	Valid Percent	Cumulative Percent
Money back policy	2674	47.4	47.4	47.4
Endowment policy	1118	19.8	19.8	67.3
Term policy	269	4.8	4.8	72.0
Unit linked	1577	28.0	28.0	100.0
Total	5638	100.0	100.0	



Graph 4

From the table 4 and graph 4 there are various types of life insurance policies with customized features and value additions catering to the needs of specific target segments. That a majority (46%) of the respondents preferred money back policy, followed by 28% of the respondents preferred unit linked plans and 19.8% preferred endowment plans. Out of 5638 samples drawn, only 4.8% of the respondents preferred term plans. Thus it can depict that among many plans available, the most preferred one among the mass is money back plan. This plan helps you to withdraw your money at regular intervals and still staying insured. This plan is famous for its high liquidity advantage. The other product gaining popularity is ULIP (unit linked insurance plan), as it serves multiple purposes, it gives high returns, tax benefits, life insurance, critical illness covers and is admired for its flexibility for paying premium amounts.

4366.02 skewness is 8.944 which is positive therefore data is positively skewed.

**Z-Test for two population means:**

Z-test was applied to find out significant difference between male and female premiums paid in life insurance policies.

**Null Hypothesis Ho:** It states that there is no significant difference between the male and female premiums paid.

**Alternative Hypothesis H1:** It states that there is a significant difference between the male and female premiums paid

**Table 6**

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Premium	Equal variances assumed	1.054	.305	-.691	5636	.490
	Equal variances not assumed			-.693	1706.338	.489

From Table 6, the significant value is 0.365. Since the significant value is greater than the test value 0.05, at 5% level of significance, so the null hypothesis is accepted. Therefore, there is no significant difference between the male and female investors towards investment in life insurance policies.

**Calculation of association between Age, Occupation, Gender of Respondents and Type of Policy**

**Cross-Tab:**

Cross tabulation tables (contingency tables) display the relationship between two or more categorical (nominal or ordinal) variables. The size of the table is determined by the number of distinct values for each variable, with each cell in the table representing a unique combination of values. Numerous statistical tests are available to determine whether there is a relationship between the variables in a table.

The following Analysis were conducted using Cross-Tab

- 1) Age and Type of policy
- 2) Gender and Type of policy
- 3) Occupation and Type of policy.

**Chi-Square Test:** chi-square test is applied to test the goodness of fit, to verify the distribution of observed data with assumed theoretical distribution. Therefore, it is a measure to study the divergence of actual and expected frequencies; Karl Pearson's has developed a method to test the difference between the theoretical (hypothesis) & the observed value. We used chi-square test to test the impact of Age, occupation and gender on Type of policy to a customer.

**Table 7: Gender \* Type of Policy Cross Tabulation**

gender	Type of policy				Total
	Money back policy	Endowment policy	Term policy	Unit linked	
Male	2176	959	189	1201	4525
Female	498	159	80	376	1113
Total	2674	1118	269	1577	5638

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	57.321a	3	.000
Likelihood Ratio	56.648	3	.000
Linear-by-Linear Association	23.892	1	.000
N of Valid Cases	5638		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 53.10

**Table 8: Age group \* type of policy Cross tabulation**

Age group	Type of policy				Total
	Money back policy	Endowment policy	Term policy	Unit linked	
Below 15	7	1	3	3	14
15 to 29	738	234	119	580	1671
30 to 44	1041	651	106	683	2481
45 to 59	650	215	39	204	1108
60 and above	238	17	2	107	364
Total	2674	1118	269	1577	5638

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	307.080a	12	.000
Likelihood Ratio	326.614	12	.000
Linear-by-Linear Association	94.302	1	.000
N of Valid Cases	5638		

a. 3 cells (15.0%) have expected count less than 5. The minimum expected count is .67

**Table 9: Occupation \* type of policy Cross tabulation**

Occupation	Type of policy				Total
	Money back policy	Endowment policy	Term policy	Unit linked	
Salaried	1302	565	121	1501	3489
Professional	1015	397	0	40	1452
Business owner	60	98	0	29	187
Student	1	1	147	7	156
Retired/Pensioner	2	3	0	0	5
Housewife	166	49	0	0	215
Others	128	5	1	0	134
Total	2674	1118	269	1577	5638

From Table 7, table 8, and table 9 the significant values are less than 0.05, it is concluded that there is a significant association between age, occupation and gender on Type of policy of a customer. Hence age, gender and occupation influence the type of policy to a customer.

**Calculation of coefficient correlation between age of respondents & premium paid**

Here we looked at the relationship between Age and Premiums paid. Table is a summary of the correlation between dependant and the independent variable.

		Age	premium
Age	Pearson Correlation	1	.223**
	Sig. (2-tailed)		.000
	N	5638	5638
premium	Pearson Correlation	.223**	1
	Sig. (2-tailed)	.000	
	N	5638	5638

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From table 10 the calculated value of r is positive, it is concluded that there is a significant relationship between age and premium paid. Hence age affects the customer premiums paid.

**Regression Analysis**

In this section we estimated the model parameters using the Least Squares method. We also looked at the usefulness of the model in explaining the premiums paid of life insurance companies by assessing whether the combination of these internal factors were useful in explaining the profitability of life insurance companies, and if they did, how much. We further assessed the usefulness of each of the independent variables in explaining the profitability of the life insurance companies

The output in table provides both unstandardized and standardized coefficients. In statistics, standardized coefficients or beta coefficients are the estimates resulting from an analysis carried out on independent variables that have been standardized so that their variances are 1. Therefore, standardized coefficients refer to how many standard deviations a dependent variable will change, per standard deviation increase in the predictor variable. Standardization of the coefficient is usually done to answer the question, which of the independent variables has a greater effect on the dependent variable in a multiple regression analysis, when the variables are measured in different units of measurement. In this study, some variables are whole numbers while others are ratios; we thus used the standardized values in this particular analysis.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-308.349	298.086		-1.034	.301
	Age	111.086	6.236	.226	17.813	.000
	dummy gender	-568.400	190.587	-.038	-2.982	.003
	money back	286.126	181.902	.024	1.573	.116
	endowment	4062.556	222.457	.269	18.262	.000
	Termplan	-197.721	374.052	-.007	-.529	.597

a. Dependent Variable: premium

The estimated model is

$$\text{Premium} = -1159.022 + 111.086 * \text{Age} - 568.4 * \text{Gender} + 286.126 * \text{D1} + 4062.556 * \text{D2} - 197.721 * \text{D3}$$

Here,

D1=1 opting Money back policy by the customer  
 =0, not opting Money back policy by the customer  
 D2=1 opting Endowment policy by the customer

=0, not opting Endowment policy by the customer  
 D3=1 opting Term Plan policy by the customer  
 =0, not opting Term Plan policy by the customer

After estimating the parameters of the model, our next step was to assess the usefulness of the overall model. We did this by using both the coefficient of determination, R<sup>2</sup> and ANOVA. We started with the R<sup>2</sup>. Table provides the model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.342 <sup>a</sup>	.117	.116	5664.782

a. Predictors: (Constant), Termplan, dummy gender, Age, endowment, money back

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	23977600718.531	5	4795520143.706	149.441	.000 <sup>b</sup>
	Residual	180729478563.803	5632	32089751.165		
	Total	204707079282.334	5637			

a. Dependent Variable: premium  
 b. Predictors: (Constant), Termplan, dummy gender, Age, Endowment, money back

From table 11, the beta coefficient of Age of policy holder is 111.086, and the respective p-value is 0.000. The p-value is less than the test value,  $\alpha = 0.05$ ; we therefore failed to accept H0 and concluded that Age of policy holder is significant in explaining premiums paid. In this study, from table 11, the beta coefficient for Gender is -568.4 and the p-value is 0.003. The p-value is less than the test value,  $\alpha = 0.05$ , we therefore failed to accept H0 and concluded that Gender of policy holder significant in explaining premiums paid. From table 11, the beta coefficient for money back policy is 286.126 and the p-value is greater than the test value,  $\alpha = 0.05$ , we therefore failed to reject H0 and concluded money back type of policy is not significant in explaining premiums paid. Beta coefficient for Endowment Plan Type of policy is 4062.556, and the p-value (0.000) is less than the test value,  $\alpha = 0.05$ , we therefore failed to accept H0 and concluded that Endowment policy is significant in explaining premiums paid. Beta coefficient for Term Plan Type of policy is -197.721 and the p-value (0.597) is greater than the test value,  $\alpha = 0.05$ , we therefore failed to reject H0 and concluded this type of policy is not significant in explaining premiums paid.

**3. Findings**

- 1) The consumer decision to purchase insurance product from different insurance companies can be affected by several factors like age, gender and occupation level. From the analysis, it is inferred that respondents belonging to the age group between 30 to 44 years (which contribute 44% to the total respondents) found to be more interested in buying a life insurance policy as compare to other age group.
- 2) It is found from the analysis that out of 5638 respondents, majority (46%) respondents preferred

money-back policy. This is followed by the unit linked plan of private insurers (28%) and endowment plans (19.8%). Only 4.8% of the respondents have shown interest towards term plan. Hence in present days' people are more interested in such policy which gives higher return along with the risk coverage benefit.

- 3) It is found that there is appositive relationship between age and premium paid of the policy holder.
- 4) From the analysis it is found that age, gender and Endowment policy is significant in explaining premiums paid and the remaining policies are not influenced premium.

#### 4. Conclusion

In the present Indian market, the investment habits of Indian consumers are changing very frequently. The individuals have their own perception towards various types of investment plans. The study of this research work was focused over consumer's perception on investment towards Life Insurance Sector. The objectives of this study were to evaluate the consumer's perception towards Life Insurance Policies is positive. It developed a positive mind sets for their investment pattern, in insurance policies. Still some actions are needed for developing insurance market.

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