

## IMPACT OF DEMOGRAPHIC VARIABLES AND TAX SCHEMES ON SELECTION OF INSURANCE PLAN

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### ABSTRACT

This study was based on a microeconomic approach of estimating the determinants for selection of different insurance plans in Karimnagar town, Andhra Pradesh. This study attempts to capture the impact of earning members demographic variables and tax schemes in selection of insurance schemes. 500 questionnaires are collected by using simple random technique. To draw valid conclusions and test them empirically data was tested by using statistical methods like mean, median, mode, skewness, Anova and multiple linear regression. The impact of tax schemes has significantly caused in selection of insurance schemes. Demographic variables have geared towards diversified investments in insurance plans.

**Keywords:** Demographic variables, Insurance plans, Pension plan, Regression analysis, Tax schemes.

## INTRODUCTION:

The change in societies affect the changes occurred in individual perceptions. Our ancestor saving the money is to fulfill the uncertain needs especially in bad times and even the current generation also have the same ideology. But now the people want to increase their amount according to future value due to awareness of the inflation and to increase the number of income sources to sustain in increased cost of living. Investing is not a game but a serious subject that can have a major impact on investors' future wellbeing. The future is uncertain, and you must determine how much risk you are willing to bear since higher return is associated with accepting more risk. (Lopes, 1987). The key to a successful financial plan is to keep apart a larger amount of savings and invest it intelligently, by using a longer period of time. The turnover rate in investments in insurance schemes should exceed the inflation rate and cover taxes as well as allow you to earn an amount that compensates the risks taken.. Customers are fully aware of the insurance policies and are well equipped with modern gadgets such as mobile phones, laptops and various financial websites giving the insured the choice and information about the policies. The insurance companies only hear from the customers for certain events.

## NEED FOR THE STUDY:

In the lightening fast changing competitive market the insurance executives require all sorts of information that were not predicted earlier. Such information is to be supplied in a timely manner. In critical situations it assumes to be greater importance. Often such information demand is either impossible or difficult to get instantly. Managers need to formulate information sources to determine whether the information is sufficient and then to support the decision-making process. This comes from not only analysis of operational information but also external sources. Profitability as compared to its competitors products, analysis customer feedback are critical for decision making. The key drivers for modern managements in competitive environment will be business intelligence and statistically analyzed consolidated data. Insurers in India have to evaluate this as strategically similar to the thrust that the customer service deserves. Currently the usage of statistical technologies is gradually increasing in analytical processing answers business questions and therefore helps in decision support. The perceptions of the people are changing towards the life styles and comforts. The companies have majorly contributed to create the awareness about how insurance schemes help in tax planning and reduce risk. Due to customized necessities of investors, attitudes and view points are becoming the potentials for increased diversified investment in insurance.

## OBJECTIVE OF THE STUDY:

- This study attempts to discover the impact of investors' demographic variables and tax schemes in selection of insurance portfolio.

## HYPETHESES:

- 1) **H<sub>0</sub>:** Demographic variables of the investors will moderately influence in opting the insurance plans.
- 2) **H<sub>0</sub>:** Tax saving schemes will moderately influence in opting the insurance plans by the investors.

## LITERATURE REVIEW:

- ❖ Repetto and Shah, (1975) studied the demographic and other influences on long term saving behaviour in India. The data for the study was collected from surveys conducted in the Kaira district of Maharashtra in 1930 and 1965. They found that large family size had a depressing effect on long term household saving rate. They also found that sons in rural India served as substitute assets in households and fulfil some of the demand for wealth and that the long term saving rate responds positively to a higher rate of return on saving and positively to higher-level of permanent income.
- ❖ Krishnamurthy. S, Mony S.V, Jhaveri. N, Bakhshi.S, Bhat.S and Dixit M.R (2005), in the paper titled "Insurance Industry in India: Structure, Performance and Future Challenges", has clearly explained the status and growth of Indian Insurance Industry after liberalization and also presents future challenges and opportunities linked with the Insurance. Insurance is the backbone of country's risk management system and influence growth of an economy in several ways. Penetration of Insurance largely depends on availability of Insurance products, insurance awareness and quality of services. The future growth of

this sector will depend on how effectively the insurers are meeting the expectations of their customers and able to change the perceptions of the Indian consumers and make them aware of the insurable risks. On the demand side, the rises in income will trigger the growth of Insurance. The process of reforms has enhanced competition, provided a choice to the customers, improved the efficiency level of the Industry and obligated the insurers to provide social and rural sectors. LIC continues to remain strong in rural areas while in major urban and metros the private insurers have made their presence felt.

- ❖ Subhasis Ray and Shahid Ali (2008) conducted a gap analysis between customers' expectations and current provisions of Indian life insurance industry. The study made an attempt to identify the gap between available and desired features in terms of existing products and services in life insurance. They investigated reasons for buying life insurance and found preferred tenure and age cut-off for entering into a life insurance.
- ❖ Devasenathipathi, Saleendran and Shanmugashunaram (2008) conducted a research on consumer preference and comparative analysis of all life insurance companies. The study found that with the fast changing liberalization, globalization and Privatization policies, the changing and growing needs and demands of people have made the insurance industry more competitive. Both Public and private players now offer greater choice in terms of products and services.
- ❖ Gireesh Kumar and Eldhosekv (2008) A Study on customer perceptions on life insurance services: A comparative study of Public and Private sectors observes that the insurance industry landscape in India has dramatically changed. The Study revealed that Consequent to the implementation of government Policies on globalization and liberalization. The consumers have become more critical of the quality services. In such an environment it is time that the industry should pay more attention to quality services so that the market opportunities can be tapped.
- ❖ Gaurav, Prashanth and manoj (2010) A study was to determine whether the variables such as demographic characteristics (age, gender) and investment patterns could be used individually or in combination to both differentiate among levels of men and women investment decisions and concluded that the modern investor is a mature and adequately groomed person and the individual investors prefer investments according to their risk preference. For e.g. Risk averse peoples chooses life insurance policies, fixed deposits with banks and post office, PPF and NSC. Occasions of blind investments are scarce, as a majority of investors are found to be using some source and reference groups for taking decisions. Though they are in the trap of some kind of cognitive illusions such as overconfidence and narrow framing, they consider multiple factors and seek diversified information before executing some kind of investment transaction.

### **SURVEY METHOD AND TECHNIQUE:**

More than 500 questionnaires were supplied and 500 questionnaires were collected from the public and private employees as well as self employed individuals from the Karimnagar town, Andhra Pradesh. However simple random sampling technique and structured questionnaire methods were used. The questionnaire consists of demographic variables, tax schemes and types of insurance questions.

### **STATISTICAL TOOLS:**

To draw valid conclusions and test them empirically, before starting the regression test the data was tested using mean, median, mode and skewness. The test represents the data is partially non normal. Thus an extensive statistical technique of multiple linear regression was used to examine the existence of relationship, nature and extent of relationship between demographic variables, tax schemes and insurance schemes which includes the ANOVA to identify the existence of relationship. These statistical tests on data were made by using SPSS. Literature offers some guidelines i.e., when mean, median and mode do not have the same value in a distribution, and then it is known as skewed distribution. The direction of skewness is determined by ascertaining whether the mean is greater than the mode or less than the mode. If mean is greater than the mode, then skewness is positive. When the mean is less than the mode, then skewness is negative. The difference between the mean and mode indicates the extent of departure from symmetry. The p-value of ANOVA test typically below 0.05 indicates the existence of relationship between independent and dependent variable. Multiple regression analysis indicate the nature, strength and extent of the relationship. All the independent variables are included to test dependent variable with each dependent variable individually but, few independent variables shown lowest results. Those variables are eliminated and re tested.

# INDEPENDENT VARIABLES:

**Table 1: Mean, Median, Mode rating and Skewness values of Demographic variables and tax schemes.**

Variable	Independent	Mean	Median	Mode	Skewness
Gender	X <sub>1</sub>	1.16	1	1	1.840
Sector	X <sub>2</sub>	1.94	2	2	0.047
Education	X <sub>3</sub>	2.62	3	3	-0.006
Respondents Income	X <sub>4</sub>	1.45	1	1	1.278
Family Income	X <sub>5</sub>	1.42	1	1	2.022
Savings	X <sub>6</sub>	1.92	2	1	0.708
Tax Schemes	X <sub>7</sub>	1.57	2	2	-0.300
Pension Plan	X <sub>8</sub>	1.86	2	2	-2.057

Source: Primary data.

# DEPENDENT VARIABLES:

**Table 2: Mean, Median, Mode rating and Skewness values of Insurance variables**

Variable	Independent	Mean	Median	Mode	Skewness
Life Insurance Plan	Y <sub>1</sub>	1.20	1	1	1.505
Pension Plan	Y <sub>2</sub>	1.84	2	2	-1.881
Child Insurance Plan	Y <sub>3</sub>	1.80	2	2	-1.520
Money back Plan	Y <sub>4</sub>	1.77	2	2	-1.301
Medical Plan	Y <sub>5</sub>	1.80	2	2	-1.474

Source: Primary data.

# ANALYSIS:

**Model:** Life Insurance =  $\alpha + \beta_1$  Gender +  $\beta_2$  Family Income +  $\beta_3$  Savings +  $\beta_4$  Tax Schemes +  $\beta_5$  Pension plan for tax savings +  $\mu$ .

# HYPOTHESIS:

**H<sub>0</sub>:** Investment in life insurance does not depends on the Gender, family income, Savings and Tax. Schemes and Pension plan for tax savings.

**H<sub>1</sub>:** Investment in life insurance will depend on the at least one variable.

**Table No 3: Regression analysis of Life insurance plan**

Summary	Multiple R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of Estimate
	0.506	0.256	0.248	0.317
<b>ANOVA Table</b>	<b>Sum of Squares</b>	<b>df</b>	<b>F- Ratio</b>	<b>p-Value</b>
Regression	17.015	5	33.959	0.000
Residual	49.503	494		
<b>Regression Table</b>	<b>Coefficient</b>	<b>Standard Error</b>	<b>t-Value</b>	<b>p-value</b>
Constant	0.965	0.103	9.403	0.000
Gender	0.047	0.039	1.220	0.223
Family Income	-0.023	0.020	-1.197	0.232
Savings	-0.043	0.017	-2.579	0.010
Tax Schemes	0.040	0.030	1.326	0.186
Pension plan for tax savings	0.471	0.042	11.123	0.000

Source: Primary data.

### INTERPRETATION:

R-square value is 0.256 was obtained which implies that 25.6 percent of variation is observed in investing in life insurance. The calculated F-ratio value is 33.959 and the critical value at 5% level of significance is 2.37. The calculated value is greater than the critical value and falls into rejection region which indicates that null hypothesis is rejected. The variation attributed by gender coefficient value is 0.047, tax schemes 0.040 and pension plan 0.471 have accounted the amount of positive variation in the test. Thus it implies that one unit increase in gender, tax schemes and pension plan causes to increase in respondents investment in life insurance by 0.047, 0.040 and 0.471 units respectively. Where as, the family income coefficient value is -0.023 and savings -0.043 has accounted the amount of negative variation in the test. Thus it implies that one unit increase in respondents income and savings causes to decrease in respondents investment in insurance by -0.023 and -0.043 units respectively. The significance value of F-ratio is 0.000 which is less than say 0.05. Thus it indicates the independent variable(s) (Gender, family income, Savings, Tax schemes and pension plan for tax savings) explain the variation in the dependent variable (Life insurance).

**Model: Pension Plan=  $\alpha + \beta_1$ Gender +  $\beta_2$  Family Income+  $\beta_3$  Savings +  $\beta_4$  Tax Schemes +  $\beta_5$  Pension plan for tax savings +  $\mu$ .**

### HYPOTHESIS:

**H<sub>0</sub>:** Selection of pension plan does not depends on the Gender, Family income, Savings, Tax schemes and Pension plan for tax savings.

**H<sub>1</sub>:** Selection of Pension plan will depend on the at least one variable.

Table No 4: Regression analysis of Pension Plan				
Summary	Multiple R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error Of Estimate
	0.506	0.256	0.247	0.317
ANOVA Table	Sum of Squares	df	F- Ratio	p-Value
Regression	17.040	6	28.299	0.000
Residual	49.478	493		
Regression Table	Coefficient	Standard Error	t-Value	p-value
Constant	0.945	0.111	8.530	0.000
Gender	0.047	0.039	1.226	0.221
Family Income	-0.023	0.020	-1.175	0.240
Savings	-0.043	0.017	-2.575	0.010
Tax Schemes	0.042	0.030	1.368	0.172
Pension plan for tax savings	0.467	0.043	10.862	0.000

**Source: Primary data.**

### INTERPRETATION:

R-square value is 0.256 was obtained which implies that 25.6 percent of variation is observed in selection of pension plan in insurance scheme. The calculated F-ratio value is 28.299 and the critical value at 5% level of significance is 2.37. The calculated value is greater than the critical value and falls into rejection region which indicates that null hypothesis is rejected. The variation attributed by gender coefficient value is 0.047,

tax schemes 0.042 and pension plan for tax savings 0.467 have accounted the amount of positive variation in the test. Thus it implies that one unit increase in gender, tax schemes and pension plan for tax savings causes to increase in selection of pension plan in insurance scheme by 0.047, 0.042 and 0.467 units respectively. Where as, the family income coefficient value is -0.023 and savings -0.043 has accounted the amount of negative variation in the test. Thus it implies that one unit increase in family income and savings causes to decrease in respondents selection of pension plan in insurance by -0.023 and -0.043 units respectively. The significance value of F-ratio is 0.000 is less than say 0.05. Thus it indicates the independent variable(s) (gender, family income, savings, tax schemes and pension plan for tax savings) explain the variation in the dependent variable (Pension plan).

**Model: Money back Plan =  $\alpha + \beta_1 \text{Gender} + \beta_2 \text{Sector} + \beta_3 \text{Education} + \beta_4 \text{Family Income} + \beta_5 \text{Savings} + \beta_6 \text{Tax Schemes} + \mu$ .**

### HYPOTHESIS:

**H<sub>0</sub>:** Selection of Money back plan in insurance does not depends on the Gender, Sector, Education, Family Income, Savings and tax schemes.

**H<sub>1</sub>:** Selection of Money back Plan insurance plan will depend on the at least one variable.

**Table No 6: Regression analysis of Money back Plan**

Summary	Multiple R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of Estimate
	0.174	0.030	0.018	0.416
ANOVA Table	Sum of Squares	df	F- Ratio	p-Value
Regression	2.665	6	2.566	0.019
Residual	85.343	493		
Regression Table	Coefficient	Standard Error	t-Value	p-value
Constant	1.585	0.132	12.035	0.000
Gender	0.116	0.051	2.285	0.023
Sector	0.033	0.030	1.087	0.278
Education	-0.037	0.024	-1.553	0.121
Family Income	-0.051	0.026	-1.966	0.050
Savings	0.028	0.022	1.293	0.197
Tax Schemes	0.066	0.039	1.680	0.094

**Source:** Primary data.

### INTERPRETATION:

R-square value is 0.030 was obtained which implies that 3 percent of variation is observed in selection of money back insurance plan in insurance scheme. The calculated F-ratio value is 2.566 and the critical value at 5% level of significance is 2.37. The calculated value is greater than the critical value and falls into rejection region which indicates that null hypothesis is rejected. The variation attributed by gender coefficient value is 0.116, sector 0.033, savings 0.028 and tax schemes 0.066 have accounted the amount of positive variation in the test. Thus it implies that one unit increase in gender, sector, savings and tax schemes causes to increase in selection of money back plan in insurance scheme by 0.116, 0.033, 0.028 and 0.066 units respectively. Where as, the education coefficient value is -0.037 and family income -0.051 has accounted the amount of negative variation in the test. Thus it implies that one unit increase in education and family income causes to decrease in selection of money back plan in insurance by -0.037 and -0.051 units respectively. The significance value of F-ratio is 0.019 is less than say 0.05. Thus it indicates the independent variable(s) (gender, sector, education, family income, savings and tax schemes) explain the variation in the dependent variable (Money back Plan).

**Model: Medical Plan =  $\alpha + \beta_1 \text{Gender} + \beta_2 \text{Respondents Income} + \beta_3 \text{Savings} + \beta_4 \text{Tax Schemes} + \beta_5$**

### Pension plan for tax savings + $\mu$ .

#### HYPOTHESIS:

**H<sub>0</sub>:** Selection of Medical plan in insurance does not depends on the Gender, Respondents Income, Savings, tax schemes and Pension plan for tax savings.

**H<sub>1</sub>:** Selection of Medical plan will depend on the at least one variable.

**Table No 7: Regression analysis of Medical Plan**

Summary	Multiple R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of Estimate
	0.305	0.093	0.084	0.386
<b>ANOVA Table</b>	<b>Sum of Squares</b>	<b>df</b>	<b>F- Ratio</b>	<b>p-Value</b>
Regression	7.535	5	10.107	0.000
Residual	73.657	494		
<b>Regression Table</b>	<b>Coefficient</b>	<b>Standard Error</b>	<b>t-Value</b>	<b>p-value</b>
Constant	1.509	0.132	11.407	0.000
Gender	0.104	0.047	2.196	0.029
Respondents Income	-0.012	0.031	-0.391	0.696
Savings	-0.088	0.021	-4.229	0.000
Tax Schemes	0.086	0.038	2.277	0.023
Pension plan for tax savings	0.117	0.052	2.260	0.024

**Source:** Primary data.

#### INTERPRETATION:

R-square value is 0.093 was obtained which implies that 9.3 percent of variation is observed in selection of medical plan in insurance scheme. The calculated F-ratio value is 10.107 and the critical value at 5% level of significance is 2.37. The calculated value is greater than the critical value and falls into rejection region which indicates that null hypothesis is rejected. The variation attributed by gender coefficient value is 0.104, tax schemes 0.086 and pension plan for tax savings 0.117 have accounted the amount of positive variation in the test. Thus it implies that one unit increase in gender, tax schemes and pension plan for tax savings causes to increase in selection of medical plan in insurance scheme by 0.104, 0.086 and 0.117 units respectively. Where as, the respondents income coefficient value is -0.012 and savings -0.088 has accounted the amount of negative variation in the test. Thus it implies that one unit increase in respondents income and savings causes to decrease in selection of medical plan in insurance by -0.012 and -0.088 units respectively. The significance value of F-ratio is 0.000 is less than say 0.05. Thus it indicates the independent variable(s) (gender, respondents income, savings, tax schemes and pension plan for tax savings) explain the variation in the dependent variable (Medical plan).

#### FINDINGS (INDEPENDENT VARIABLE WISE):

##### GENDER:

In this study 83.8% of respondents are male. The diverse impact of gender is observed in selection of the insurance portfolio. Investing in life insurance policies is low. Though the most of the investors are not working in pension jobs (public/private) and are self employed the investments in pension plan has observed low. The similar results have observed in selection of child insurance plan. Where as, for money back plan and medical plan the gender impact is moderate. The increased inflation rate, consumer awareness and by increased health problems in societies has diverted the mind set of Karimnagar town investors.

##### FAMILY INCOME AND SAVINGS:

Impact of family income and savings in selection of insurance plans is negative. As the income and savings increases the investors are investing in other insurance plans or the current income invested in several plans



to reduce risk and/or to protect their families from uncertainty. Whereas, in selection of money back plan the savings has observed positive relationship. As the savings increases investment in the money back plans are also increase. It means the investors want their savings back in future with increased returns to safeguard their future needs and to defend inflation and uncertainty.

### **TAX SCHEMES:**

The impact of tax schemes has become necessary for investors as the income of the Karimnagar citizens has increased due to recent developments. The increased pay packages in public and private sectors transform the people as tax payers (47.8%). In selection of insurance plans to safeguard their money the investors are investing in several insurance plans.

### **SECTOR & EDUCATION:**

The low impact of sector has observed in selection of money back plan. The sample consists of 23% public sector employees, 60.4% private sector employees and 16.6 % respondents are self employed. This low impact may be due to terms and conditions of plan. (All the respondents belong to the different sector are giving same importance to the money back plan). Education has observed low negative impact on money back plan. This may be due to diversified investment in other plans and/or terms and conditions of the plan.

### **RESPONDENTS INCOME:**

A low negative impact of respondents income is observed in selection of medical plan. This may be due to diversified investment in other plans and/or the specified coverage medical plan's terms and conditions like there should be an injury/accident and nominee should hospitalized at least for three days, many medical plans do not compensate for type of fewer, out patient clinic expenses and medicine expenses etc. The value (-0.012) is nearer to zero.

### **CONCLUSION:**

Varied impact of demographic variables and tax schemes is observed in this study. The selection of insurance plans is mostly affected by tax schemes to save the income and to shield uncertain requirements of future (Thus, we accept null hypothesis). Few demographic variables have affected normally and few were less affected (Thus, Null hypothesis is rejected). The investors are currently less interested in money back plan. Most of the respondents are male so, the variation in selection of insurance portfolio is caused by gender. Interest in investing in pension plan for tax savings has shown major variation for selecting of the life insurance and pension plans. Where as, the impact of family income and savings has found negative relation in selection of insurance plans and it indicates the selection of diversified investments as income and savings increases.

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