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APPENDIX I

QUESTIONNAIRE

FINANCIAL SERVICES AWARENESS AND INVESTMENT PATTERN OF THE RURAL MASES, WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT

I humbly request you to kindly give your honest opinion for the following questions. Your views and opinions will be kept confidential. Your kind co-operation for this academic pursuit is solicited.

GUIDE
Dr. G. Ganesan, M.Com., MBA., MIT., M.Phil., Ph.D.,
Director
School of Commerce,
Bharathiar University, Coimbatore.

RESEARCH SCHOLAR
Mr. M. Sethupathi,
M.Com., M.Ed., MBA., M.Phil.,

I Personal Details/ Information

1.1 Name of the respondent (optional) :

1.2 Sex : Male Female

1.3 Age
25-30 years 31-35 years 36-40 years
41-45 years 46-50 years 51-55 years
Above 56 years

1.4 Marital Status : Married Unmarried

1.5 Educational Qualification
SSLC/Metric HSLLC
Diploma/Technical Education Under - Graduate
Professional qualification Post - Graduate
Others (Specify)

1.6 Nature of occupation
Agriculturist Daily wager Salaried
Business Households Students
Retired Professionals Others
1.7 State your Monthly income

Below Rs. 5000
Rs. 5001 –Rs.10000
Rs. 10001-Rs.15000
Rs. 15001 –Rs.20000
Above Rs. 20000

1.8 Size of the family

2-4 members
5-7 members
More than 7 members

1.9 Number of earning members in the family

1 2 3 4

1.10 Number of dependents in the family

1 2 3 4

1.11 Working area categorized as

Semi-urban area Town Village

II. Components of Household Income and Expenditure

2.1 Are you residing in?

Own house Rented house

Housing quarters Others (specify) ___________

2.2 Sources of Earning

From Agricultural Land Salary
Wages Leasing of Agri. land
Rent from building/lands Cattle breeding
Interest earned Share/stock for returns
Other (specify)

2.3 Do you have any additional income other than regular earning?

Yes No

2.4 Do you have formal budget for family expenditure

Yes No
2.4 a. If yes, State the consumption expenditure of your monthly income (in%)

<table>
<thead>
<tr>
<th>Nature of Expenditure</th>
<th>0-5 %</th>
<th>6-10%</th>
<th>11-15%</th>
<th>16-20%</th>
<th>21-25%</th>
<th>above 26 %</th>
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<td>Food</td>
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<td>Servant Maids</td>
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<td>Rent</td>
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<td>Entertainment</td>
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<td>Transportation</td>
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<td>Medical Expenses</td>
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<td>Children’s Education</td>
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<td>Others (Specify)</td>
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</table>

2.5 State the percentage of your monthly savings /investment

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<thead>
<tr>
<th></th>
<th>0-5 %</th>
<th>6-10%</th>
<th>11-15%</th>
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</table>

III Level of Awareness and Factors Influencing Investment behaviour

3.1 State the level of awareness on

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<th>Nature</th>
<th>Very High</th>
<th>High</th>
<th>Neutral</th>
<th>Low</th>
<th>Very Low</th>
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<tbody>
<tr>
<td>Safe /Low Risk Investment Avenues</td>
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<tr>
<td>Savings Accounts</td>
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<td>Bank Fixed Deposits</td>
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<td>Public Provident Fund</td>
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<td>National Savings Certificates</td>
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<td>Kisan Vikas Patras</td>
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<td>Post Office Savings</td>
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<td>Government Securities</td>
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<td>Mutual Funds</td>
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<td>Life Insurance</td>
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<td>Debentures</td>
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<td>Bonds</td>
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<td><strong>Moderate Risk Investment Avenues</strong></td>
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<td>Equity Share Market</td>
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<td>Commodity Market</td>
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<td>Forex Market</td>
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<td><strong>High Risk Investment Avenues</strong></td>
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<td>Real Estates/ (Property(s)</td>
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<td>Gold/Silver</td>
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<td>Chit Funds</td>
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<td><strong>Traditional Investment Avenues</strong></td>
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<td>Virtual Real Estate</td>
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<td>Hedge Funds</td>
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<td>Private Equity Investments</td>
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<td>Art &amp; Passion</td>
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<td><strong>Emerging Investment Avenues</strong></td>
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<td>Internet banking</td>
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<td>Phone Banking</td>
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<td>Debit/Credit Cards</td>
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<td>Smart Cards</td>
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<td>Direct Selling Agents</td>
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<td>Call Centers</td>
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3.2 State your level of awareness towards

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<td>Non-Branch Banking Services</td>
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<td><strong>Technologically Improved Investment Services</strong></td>
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<td>Exchange Traded Funds (Open / Closed Mutual Funds)</td>
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<td>Index Funds</td>
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<td>Systematic Investment Plans</td>
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<td>Sector Funds</td>
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<td>Unit Linked Insurance (Life &amp; non-Life Insurance Schemes)</td>
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<td>Pension Plans</td>
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<td>Children Education Plans</td>
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</tbody>
</table>

3.3 State which of the avenues mentioned below helped you in gathering knowledge of best investment avenues

- Business Channels (TV)
- Radio Commercials
- Newspapers
- Promotional pamphlets
- TV Commercials
- Stock Brokers/Investment Agents
- Friends/Relatives

3.4 State the level of influence of the following factors mentioned below on your preference for savings/investment medium

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Factors</th>
<th>Very High</th>
<th>High</th>
<th>Neutral</th>
<th>Low</th>
<th>Very Low</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>High liquidity</td>
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<td>2.</td>
<td>Safety of money</td>
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<td>3.</td>
<td>Regular returns</td>
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<td>4.</td>
<td>Higher returns</td>
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<td>5.</td>
<td>Long term benefits</td>
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<td>6.</td>
<td>Capital appreciation</td>
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<td>7.</td>
<td>Tax benefits</td>
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<td>8.</td>
<td>Prestige value</td>
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<td>9.</td>
<td>Others (Specify)</td>
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</tbody>
</table>
3.5 State the factors taken into consideration before investment
   Safety of the Principal  Low Risk
   High Returns  Maturity Period

3.6 State the time period you prefer to invest
   Short time (0-1 year)  Medium Term (1-5 years)
   Long Term (>5 years)

3.7 State at what rate you would prefer your investment to grow
   Steadily  At an Average Rate  Fast

3.8 State the purpose behind investment
   Wealth Creation  Tax Saving  Earn Returns
   Meet Future Expenses

IV. Investment Behaviour

4.1 State your monthly contribution for saving/ investment in Rs._________

4.2 Kindly describe your best investment experience
   Just the Beginner
   Comfortable with fixed deposits, chit funds, post office
   Has bought and sold individual shares of stocks /bonds
   Frequently trade in stocks, Commodities, Options and Futures

4.3 Your current investment is in
   a. Safe /Low Risk Investment Avenues
      Saving Accounts  Bank Fixed Deposits
      Public Provident Fund  National Saving Certificates
      Kisan Vikas Patras  Post Office Savings
      Government Securities
b. Moderate Risk Investment Avenues
   - Mutual Funds
   - Debentures
   - Life Insurance
   - Bonds

c. High Risk Investment Avenues
   - Equity Share Market
   - Commodity Market
   - Forex Market

d. Traditional Investment Avenues
   - Real Estates/ (Property(s)
   - Gold/Silver
   - Chit Funds

e. Emerging Investment Avenues
   - Virtual Real Estate
   - Hedge Funds
   - Private Equity Investments
   - Art & Passion

4.4 Rank the priorities of investment purpose (as 1, 2, 3...)

<table>
<thead>
<tr>
<th>Priorities</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s education</td>
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<tr>
<td>Family well being (security)</td>
<td></td>
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<tr>
<td>Ward’s marriage</td>
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</tr>
<tr>
<td>Construction of house</td>
<td></td>
</tr>
<tr>
<td>Status and prestige in the society</td>
<td></td>
</tr>
<tr>
<td>Aspiration to lead a comfortable life</td>
<td></td>
</tr>
<tr>
<td>Health care</td>
<td></td>
</tr>
<tr>
<td>Repayment of debts</td>
<td></td>
</tr>
<tr>
<td>To meet contingencies</td>
<td></td>
</tr>
<tr>
<td>Others (Specify)</td>
<td></td>
</tr>
</tbody>
</table>
V. Perception towards the Financial Service Availability

5.1 State your perception towards feasibility of financial services in rural areas

<table>
<thead>
<tr>
<th>Nature of services</th>
<th>Very Good</th>
<th>Good</th>
<th>Moderate</th>
<th>Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of financial services (Banking services, financial market services, traditional market practices)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Availability of information (banking and financial services)</td>
<td></td>
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<tr>
<td>Financial product knowledge (Various Innovative products introduced to rural mass)</td>
<td></td>
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<tr>
<td>Infrastructure facilities (Modern facilities like internet, electronic transfer facilities etc)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Operational conveniences (easy and user friendly services)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Access to the non-banking services (Internet/electronic banking, mobile banking, ATM, Smart cards, direct selling agents, call centers etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to modern financial transactions (Electronic transaction of shares ,bonds, MFs etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.2 What are the financial benefits available in rural areas?

- Minimal deposit facilities
- Credit card with revolving credit limits of Rs.25, 000 for rural households
- Savings oriented life insurances policy
- Investors’ education campaigns
APPENDIX II

STATISTICAL TOOLS APPLIED

Statistics is the science of collecting and classifying a group of facts according to their relative number and determining certain values that represent characteristics of the group. The most familiar statistical measure is the arithmetic mean, which is an average value for a group of numerical observations. A second important statistic or statistical measure is the standard deviation, which is a measure of how much the individual observations are scattered about the mean. The Chi-square test is a method of determining the odds for or against a given deviation from the expected statistical distribution. Other statistics indicate other characteristics of the group of observations. In addition to the problem of computing certain statistics for a particular group of observations, there is the problem of sampling. This is an attempt to determine for what larger group (called the population) of individuals or characteristics the statistics for this particular group (called the sample) would be a representative figure and how representative a figure it would be for a given larger group. This second problem of sampling can be solved only by resorting to the theory of probability and higher mathematics. In most applications of statistics to scientific and social research, insurance, and finance, the statistician is interested not only in the characteristics of the sample but also in those of some much larger population. Consequently, the theory of sampling is the most important part of statistical theory.

According to the nature of data and interpretations required, appropriate statistical tools have been applied. The following tools have been applied in the study: Summery Statistics Mean and Standard Deviation, Co-efficient of observed Variance (CV), Compound Growth Rate (CGR), Regression Analysis, Frequency Distribution, Weighted Arithmetic Mean, Likert’s Scale, Chi-Square Analysis, Pearson’s Correlation, Kendall’s Coefficient of Concordance, Reliability and ANOVA and Rotation Factor Analysis.
a. Summary Statistics

Summary statistics includes measure of Mean and Standard deviation.

i. Arithmetic Mean

Arithmetic Mean is the total of the values of the items divided by their number. A.M is the abbreviation and \( \bar{x} \) (read as x-bar) is the symbol for arithmetic mean. The terms ‘mean’ and ‘average’ (singular) also refer to Arithmetic Mean.

\[
X = \frac{\Sigma x}{N}
\]

\( x \) denote a given value. \( \Sigma x \) denotes the sum of all \( x \). \( \Sigma \) (read, sigma) is a symbol which is used to denote the sum or the total of the values given after the symbol.

ii. Standard Deviation

Standard Deviations are taken from the actual mean and the following formula is applied:

\[
\sigma = \sqrt{\frac{\Sigma x^2}{N}}
\]

Calculate the Actual Mean of the series, i.e., \( \bar{X} \)

Take the deviations of the items from the mean, i.e., find \( (X - \bar{X}) \).

Denote these deviations by \( x \).

Square these deviations and obtain the total \( \Sigma x^2 \)

Divide \( \Sigma x^2 \) by the total number of observations, and extract the square-root.

This gives us the value of Standard Deviation.

b. Co-efficient of Variation

Coefficient of Variation is the widely used and most popular relative measure of two or more group of variables. The group which has less C.V.is said to be more uniform or more stable or more homogeneous. More Coefficient of
Variation indicates greater variability or less consistency or less uniformity or less stability or less homogeneity.

\[ \sqrt[\text{c}.]{V} = \frac{\sigma}{\mu} \]

c. Compound Growth Rate

Very frequently summary judgments as to the growths are to be made to interpret time series on the variables. Estimates of trend are not only of academic interest, they are of considerable significance to the policy makers. Computation of growth rates is the most prevalent method for this purpose. The method of computation should be such that uses the entire series of observations. The basic approach is to specify the variable under study as a fraction of time. But a choice has to be made about the functional from itself. Two common functional forms are used for computation of growth rated with the help of Least Squares Method.

To understand the concept of compound growth rate, let us assume that the value of \( Y \) in base period \((t=0)\) is 100 and it grows over time at the rate of 10% for every value of \( Y \) at different points of time shall be as follows.

\[ B'' = yt - ((2y)^2) (2t))/((n/(2t)) - ((2t)^2))/n) \]

d. Frequency Distribution

The Frequency Distribution of the variables were calculated with the help of simple percentage, by writing the formula \( FD = F/N \times 100 \). Where \( F \) denotes the number of respondents, and \( N \) denotes the total number of sample population.

e. Weighted Arithmetic Mean

One of the most important objectives of statistical analysis is to get one single value that describes the characteristic of the entire mass of unwieldy data. Such a value is called the central value or an “average” means or the expected value of the variable, what the statisticians call the Arithmetic Mean. The process
of computing mean in the case of individual observation (i.e. where frequencies are not given) is very simple. Add together the various values of the variable and divide the total by the number of items.

f. Summated Scales (Likert’s Scales)

Summated Scales (or Likert- Type Scales) are developed by utilizing the item analysis approach wherein a particular item is evaluated on the basis of how well it discriminates between those persons whose total score is high and those whose score is low. Those items or statements that best meet this sort of discrimination test are included in the final instrument. In a Likert Scale, the respondent is asked to respond to each statement in terms of several degrees, usually five degree of agreement (or) disagreement. Each point on the scale carries a score of 5, 4, 3, 2, and 1. Scaling describes the procedure of assigning numbers to various degrees of opinion, attitude and other concepts.

g. Kendall’s Coefficient of Concordance

Kendall’s coefficient of concordance, represented by the symbol $W$, is an important non-parametric measure of relationship. It is used for determining the degree of association among several ($k$) sets of ranking of $N$ objects or individuals.

$$W = \frac{S}{\left(\frac{1}{12}\right)k^2 (N^3-N)}$$

Where, $S = \sum(R_j - \overline{R_j})^2$

$K = \text{no. of sets of ranking i.e., the number of judges;}$

$N = \text{number of objects ranked;}$

$(1/12) k^2 (N^3-N) = \text{maximum possible sum of the squared deviations i.e. the sum which would occur with perfect agreement among } k \text{ rankings.}$
h. Reliability

Reliability Analysis may be used to construct reliable measurement scales, to improve existing scales, and to evaluate the reliability of scales already in use. Specifically, Reliability and Item Analysis will aid in the design and evaluation of sum scales, that is, scales that are made up of multiple individual measurements (e.g., different items, repeated measurements, different measurement devices, etc.). It can be computed that numerous statistics allows one to build and evaluate scales following the so-called classical testing theory model.

Measures of Reliability

From the above discussion, one can easily infer a measure or statistic to describe the reliability of an item or scale. Specifically, we may define an index of reliability in terms of the proportion of true score variability that is captured across subjects or respondents, relative to the total observed variability. In equation form, we can say:

\[
\text{Reliability} = \frac{\sigma^2_{(\text{true score})}}{\sigma^2_{(\text{total observed})}}
\]

Cronbach's Alpha: The proportion of true score variance that is captured by the items by comparing the sum of item variances with the variance of the sum scale. Specifically, it can be computed: \(\alpha = \frac{k}{(k-1)} \times [1 - \frac{\sum(s_i^2)}{s_{\text{sum}}^2}]\)

If the sum scale is perfectly reliable, it would mean that the two halves are perfectly correlated (i.e., \(r = 1.0\)). Less than perfect reliability will lead to less than perfect correlations.

i. ANOVA (F-Test)

Two way ANOVA technique is used when the data are classified on the bases of two factors of ANOVA. The F-test is named in honour of the great statistician R.A. Fisher. The objective of the F-test is to find out whether the two independent estimates of population variance differ significantly, or whether the
two samples may be regarded as drawn from the normal populations having the same variance. The formulae used in the analysis of variance (Anova Table) classification model is:

\[ F = \frac{\text{Between-column variance}}{\text{Within-column variance}} \]

i.e., \[ F = \frac{V_1^2}{V_2^2} \]

**j. Rotation Factor Analysis**

The Factor Analysis is another multivariate technique. It is an extremely powerful and useful analytic approach to psychological, behavioral, financial and other types of data. It is a statistical technique for determining the underlying factors or forces among a large number of interdependent variables of measures. It is a method for extracting common factor variances from a set of observations. It groups the number of variables of smaller set of uncorrelated factors potentially conveying a great deal of information.

- **Factor**: A factor is an underlying dimension that accounts for several observed variables. There can be one or more factors, depending upon the nature of the study and the number of variables involved in it.

- **Factor – loadings**: Factor-loadings are those values which explain how closely the variables are related to each one of the factors discovered. They are also known as factors-variable correlations. In fact, factor-loadings work as the key to understanding what the factors mean. It is the absolute size (rather than the signs, plus or minus) of the loadings that is important in the interpretation of a factor.

- **Communality\( (h^2)\)**: Communality, symbolized as \( h^2 \), shows how much of each variable is accounted for by the underlying factors taken together. A high value of communality means that not much of the variable is
left over after whatever the factors represent is taken into consideration. It is worked out in respect of each variable as under:

\[ H^2 \text{ of the } i^{th} \text{ variable} = (i^{th} \text{ factor loading of factor A})^2 - (i^{th} \text{ factor loading of factor B})^2 \]

- Eigen Value: Eigen value (or Latent Root) is the sum of squared values of factor loadings relating to a factor. It indicates the relative importance of each in accounting for the particular set of variables under study.

- Total sum of squares: When Eigen values of all factors are totaled, the resulting value is called the total of squares. Rotations reveal different structures in the data. If the factors are independent, orthogonal rotation is done, and if they are corrected, an oblique rotation is made. Factor score represents the degree to which each respondent gets high scores on the group of items that load high on each factor. Factor scores are used in several other multivariate analyses.

k. Multiple Regressions

Multiple Linear Regression Analysis is a technique for modeling the linear relationship between two or more variables. It is one of the most widely used of all statistical methods. The regression model was performed to evaluate the influences of household savings and gross domestic savings of the nation. The dependent variable is gross domestic savings and the independent variable is household sector.

The general linear regression model, with normal error terms, simply of X variables is shown in equation 1.

\[ Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_{p-1} X_{ip-1} + \epsilon_i \]

Where \( \beta_0, \beta_1, \ldots, \beta_{p-1} \) are parameters, \( X_{i1}, X_{i2}, \ldots, X_{ip-1} \) are known constants, \( \epsilon_i \) are independent \( N(0, \sigma^2) \), \( i=1, 2, 3, \ldots, N \).