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## CHAPTER III

### RESEARCH METHODOLOGY

#### **Introduction**

This chapter outlines the research methodology employed in the present study, detailing the rationale behind the chosen methods and approach. Research methodology refers to the systematic plan for conducting research, encompassing the strategies, tools, and procedures used to gather and analyse data. Mishra & Alok (2022) elucidated —methodology as the scientific approach used to perform research. The purpose of this chapter is to present a coherent explanation of how the research was designed and implemented, including the theoretical orientation, selection of sources, analytical frameworks, and data interpretation techniques. This ensures the transparency and reliability of the study while stating it within the broader academic area. The following aspects were covered by the approach.

#### **3.1 Research Method**

Every research technique seeks to address the post-positivist strategy of challenging the accepted understanding of ultimate truth while investigating particular research issues (Williams, 2007). The design of the current study included both descriptive and analytical research methods. The basic research approach that examines the problem as it stands at the moment is the descriptive research methodology. Descriptive research uses observation to determine the features of a particular event (Williams, 2007). One variety of investigation that needs the application of critical thinking prowess and the analysis of data pertinent to the subject at hand is called analytical research. Psychologists, physicians, and students are among the professions who employ analytical research to find the most relevant information during investigations (Williams, 2007).

#### **3.2 Research Design**

A Research plan is the scheme of work that has to be strictly followed to complete the research process within a time-bound and cost-bound manner. It narrates the process of sample selection, variable determination, data gathering, data analysis, and interpretation of the outcome. Research design can be further divided into five designs:

3.2.1 Location of the Investigation

3.2.2 Sampling Design

3.2.3 Observational Design

3.2.4 Statistical Design

3.2.5 Operational Design

**3.2.1 Location of the Investigation**

The tribes belongs to Kerala are the native people who live mostly in the jungles and alp of Western Ghats which abut Tamil Nadu and Karnataka. Accordance with the 2011 Indian census, there are 4,84,839 Scheduled Tribes living in Kerala, which consists of 2,38,203 males and 2,46,636 females. The most of the tribes are found in Wayanad (1,36,062), next two districts are Idukki (50973) and Palakkad (39665) due to the majority indigenous tribal population of the state. The Socio-Economic and Caste Census, 2011 (SECC) was a new survey that the Indian government carried out to determine which Indian homes were below the poverty line. As per SECC (2011) data, 63.19 lakh (82.08%) of Kerala's 76.99 lakh households—or 63.19 million people—live in rural regions. 10.32% of them are homes belonging to scheduled castes, while 1.63% are houses belonging to Scheduled Tribes. 19.16 lakh rural families (30.33%) out of all rural households are underprivileged. Most importantly, the area with the greatest percentage of deprivation is Palakkad (42.33%) and the most unprivileged category is Scheduled Tribes of Palakkad district. Figure 3.2 displays the study's geographical location.

Attappady is a Tribal Taluk in Kerala state covering a surface area of 735 km<sup>2</sup>. Six revenue villages are included in the Attappady Taluk: Agali, Kallamala, Kottathara, Padavayal, Pudur, and Sholayur. The taluk's administrative center is at Agali. In February 2021, it is separated from the Mannarkkad Taluk in the Palakkad district. The western portions of Attappady contain 249 km<sup>2</sup> of Attappady Reserve Forest. It belongs to India's protected and restricted forests. Natural goldfields may be found across the Nilgiri Biosphere Reserve, including the Attappady Gorge in the Palakkad district and the nearby Chaliyar Gorge in the Nilambur area in the Malappuram district. The significant gold-bearing capableness of the crag in the 834 Sq. km. region of the Attappady has been validated by the Geological Survey of India. Attappady's Kottathara, Puttumala, Pothupadi,

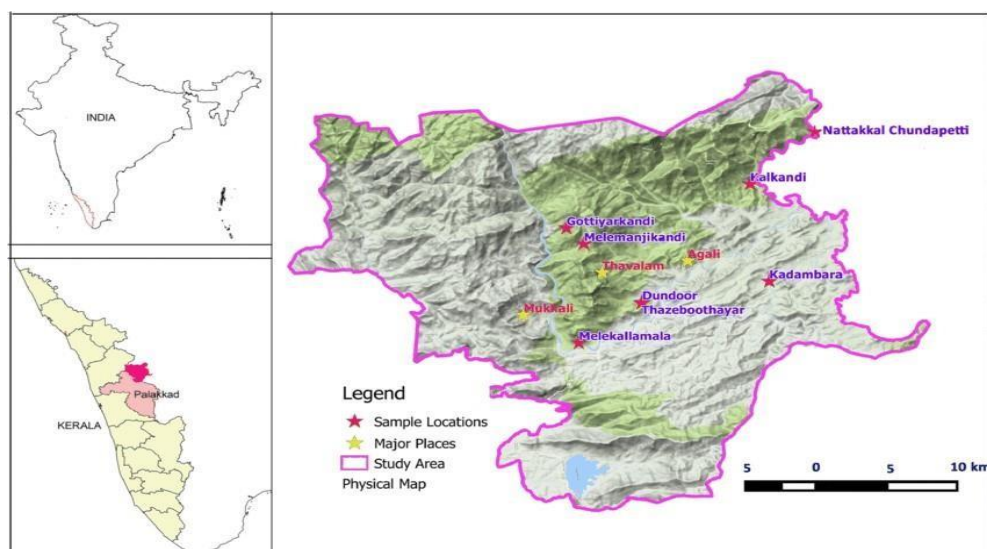
Mundaiyur, and Kariyur-Vannathorai Prospects are recognised for having gold mineralisation.

**Figure 3.1 Percentage of India's Deprived Rural Households to the Total Number of Rural Households in Various Categories**



Source: Socio-Economic and Caste Census (2011)

**Figure 3.2 Geographical Location of the Study Area**



The area is renowned for having a wide range of flora and wildlife and for having great biodiversity. The Attappady Hills are significant environmentally and are a component of the Western Ghats, a UNESCO World Heritage Site. Attappady's tribal populations have long engaged in shifting cultivation, sometimes referred to as slash-and-burn farming. Millet Village is the neighbourhood's well-known name. They farm vegetables, maize, and Raggi (finger millet). However, due to environmental issues, this approach is rapidly being replaced with more environmentally friendly agricultural practices. The tribal groups of Attappady have a plethora of traditional knowledge about farming, forestry, and medicinal plants. Attappady has the potential to be a popular ecotourism destination due to its natural beauty and cultural variety. Governmental and non-governmental groups collaborate to safeguard the Attappady region's distinctive biodiversity. This covers initiatives to protect the habitat and animals. Over the years, Attappady has experienced a number of socioeconomic and health crises, such as starvation, poverty, problems with land rights, economic hardship, and insufficient access to healthcare and education. To solve these concerns, both governmental and non-governmental groups have been working. Numerous welfare initiatives and projects have been established by the governments of Kerala and the Central Government with the goal of enhancing the living circumstances of the indigenous groups in Attappady. These efforts cover healthcare, education, housing, and skill-building activities. There are continuous efforts to safeguard the natural resources and cultural legacy of the indigenous tribes while also enhancing their quality of life.

### **3.2.2 Sampling Design**

The Scheduled Tribes from the three categories of Irula, Muduga, and Kurumba who inhabit the administrative boundaries of Attappady Tribal Taluk were the study's target group. The goal of the inquiry was to estimate and quantify the effects of the awareness programme on financial literacy and PMJDY delivered to the chosen tribes on a category-by-category basis. As a result, information was acquired from the Irula, Mudugas, and Kurumba adults. The tribes who were prepared to participate and offer information throughout the interview schedule were chosen as the study's samples. Figure 3.3 displays the sampling design.

When a subset of the population is selected to be representative of the full population, this is known as —samplell. Researchers can select a sample since it is not practical to investigate full population. Therefore, the study of the sample aids in understanding the identity of the population and generalizing the findings. The sample size should be sufficient to authorize for the generalization of the study's findings while still being acceptable and practicable in terms of cost, time, and resources (Nongkynrih, 2012). The size of the sample was determined by considering the population type, the nature of the inquiry, the kind of information needed, and the available resources (Acharya et al., 2013). Since the sample count was finite Slovin's formula was applied for an adult population of 24,462 (as per 2011 Census Data) at a 95 % confidence level. The total adult tribal population was 24462, which included 20465 Irulas, 2378 Mudugas, and 1619 Kurumbas. The sample size calculated based on Slovin's formulae was 394, which was proportionally distributed as 330 Irulas, 38 Mudugas, and 26 Kurumbas. Therefore, the sample size from Kurumba fell under the —small sample categoryll. Statistical tests like multiple regression analysis could not provide accurate results when it was performed for small samples. According to Green (1991), the required sample size for arriving at a generalizable result for a Multiple Regression Analysis is  $50 + 8 * m$ , where —mll represents the count of predictors. In this study, the number of predictors is two; therefore, the sample size of Muduga and Kurumba was increased to 66. Hence, the total number of sample was finalized to 462, which includes 330 Irulas, 66 Mudugas, and 66 Kurumbas. Table 3.1 shows the community wise adult population, respective samples that have to be selected from each category, and the actual number of samples that were used in the study.

The sample size is calculated applying the formula below:

$$n = \frac{N}{1 + Ne^2}$$

Where,            n = Number of Samples  
                      N = Size of the Population  
                      e = error

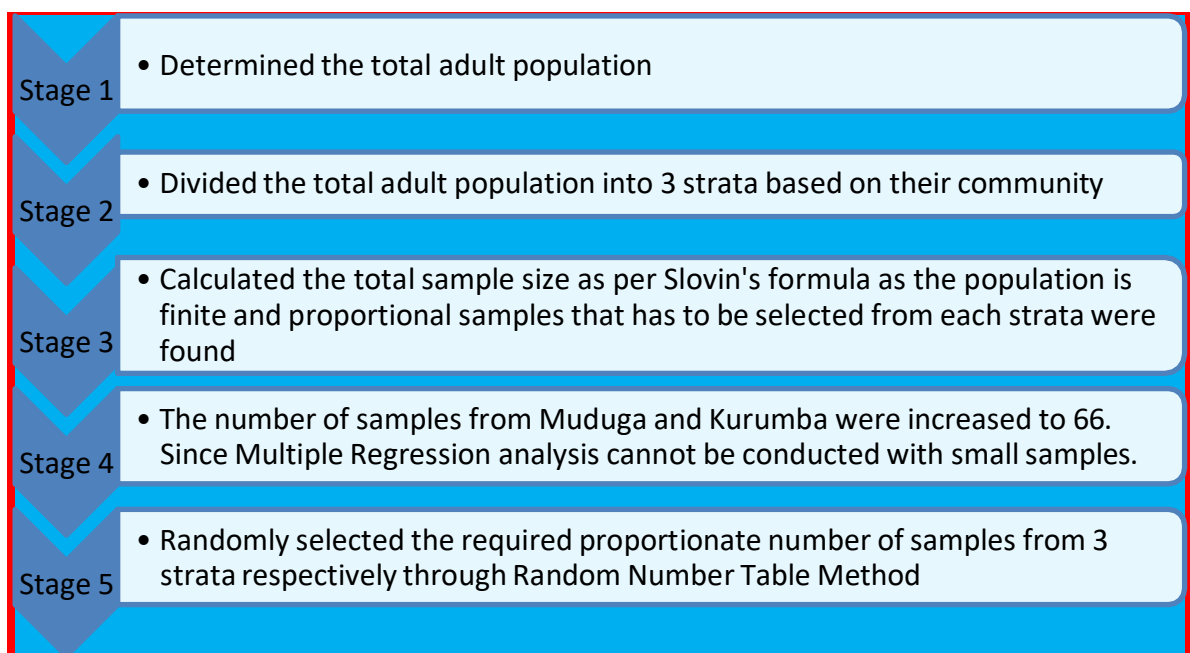
**Table No 3.1 Community-wise Tribal Adult Population and Sample Size**

Sl. No.	Sub-sets	Adult Population (Figures in numbers)	Sample size As per Slovin's formula	Actual number of Samples Selected from each category
1	Irula	20465	330	330
2	Muduga	2378	38	66
3	Kurumba	1619	26	66
	<b>Total</b>	<b>24,462</b>	<b>394</b>	<b>462</b>

**Source: Compiled data**

Using the Stratified Proportionate Sampling technique, the total population was divided into three strata (three sub-sets of tribes) namely Irulas, Mudugas, and Kurumbas. Then from each stratum adequate number of respondents was taken as the representative sample through the Random Number Table Method. Each household was given a number and the samples were selected randomly.

**Figure 3.3 Procedures of Sample Selections**



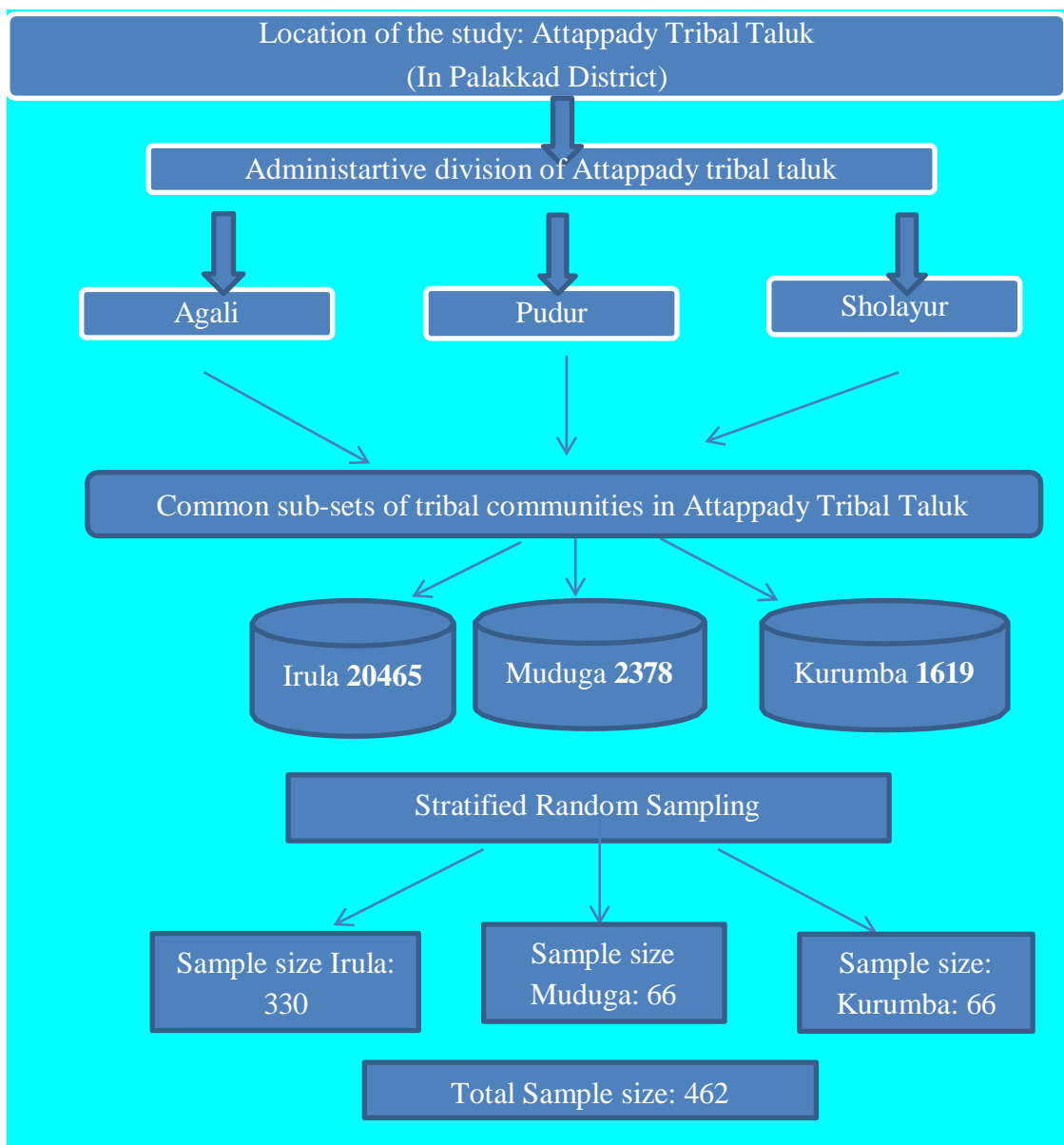
**Source: Author's compilation**

3.2.3 Observational Design

- Sources of Data Gathering

Both first-hand and second-hand data were used in this investigation. The data-gathering method used was the interview schedule approach. Furthermore, supporting information for the study was gathered from a diverse of publications, books, reports, and periodicals.

Figure No 3.4 Sampling Design



Source: Author’s compilation

- **Data Gathering Tool**

The input was fetched by using an organised interview schedule in which the investigator herself marked the responses. To achieve the objectives, the interview schedule was divided into four major parts. Each part deals with a specific objective. Part I deals with the Socio-Demographic Information. Part II contains data on the level of FL and financial inclusion. Part III includes data regarding level of awareness about PMJDY aspects before and after imparting awareness sessions. Part IV deals with data on the influence of the awareness programme on financial literacy and the Pradhan Manthri Jan-Dhan Yojana on Financial Inclusion.

- **Collection of Data**

The first set of data gathering was accomplished during the period from April 2022 to June 2022. These data pertain to the pre-awareness period. Then after considering their extent of financial literacy and extent of awareness of PMJDY benefits, an awareness programme was conducted with the help of tribal promoters in Attappady. The programme period was from July 2022 to December 2022. The awareness programme module includes four major modules covering the basic points relating to FA, FB, FK, and Benefits of PMJDY. The proposed time duration of awareness sessions was three hours per session. In the first session, the trainer made them aware of various basic concepts associated to FL and FI. In the second session, practical aspects of banking, and various forms used in banking transactions were shown. ATM cards, Debit cards, Credit cards, etc., were shown to them and explained their benefits. In the third session benefits of PMJDY were explained to them, recollecting the points of earlier sessions was done, and the participants were allowed to ask their doubts and concerns.

Further, the post-awareness programme data collection was started in the month of June 2023 and ended in August 2023. The provision of a six-month time period has been considered essential for them to practically use the knowledge gathered from the awareness sessions. Again, with the help of tribal promoters, the post-data were gathered. The researcher established a good rapport with the respondents and explained the purpose and methodology of the research study. Personal interviews conducted in the regional vernacular were used to gather the primary data. The time required to successfully complete an interview schedule was around 15 minutes.

- **Financial Literacy and PMJDY- Awareness Programme Module**

Even though there are financial literacy programmes in Attappady, this awareness campaign is specially developed to close the gaps in the current initiatives, especially for the most marginalized groups, such as the Kurumba tribes. This programme, in contrast to generic ones, concentrated on training that was culturally appropriate, practical banking usage, and PMJDY awareness. The study might show its concrete effects by comparing the programme's levels of inclusion and financial literacy before and after.

The awareness programme module used for this study was taken from the elaborate training module prepared for the financial training purpose by the National Centre for Financial Education (NCFE), which is a Section 8 (Not for Profit) Company promoted by the Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI), Insurance Regulatory and Development Authority of India (IRDAI), and Pension Fund Regulatory and Development Authority (PFRDA). The training module of NCFE covers broad areas of financial literacy. Since the target audience of the study was select tribes from Attappady, only basic areas of financial literacy modules were selected considering their extent of literacy and awareness. The programme covered aspects of financial literacy and the benefits of PMJDY in Four modules. Sessions were organised with the help of tribal promoters of those settlements in an unstructured manner with the available group of household representatives. Demonstrations of using ATM cards and filling up Cheques were done by the trainer. An adequate chance to clear the respondent's doubts was given at the end of the session. The researcher acted as the trainer and tribal promoters acted as the facilitators. Before starting the awareness sessions, the researcher enrolled into the website of NCFE and got awareness about financial literacy classes, modules, and preparation methods then started to impart it to the select respondents of Scheduled Tribes.

- **Awareness Programme Objectives:**

- To escalate the extent of financial literacy by creating awareness of various concepts associated to FA, FB, and FK.
- To make them aware of PMJDY benefits.

### **Module I – Financial Knowledge**

Income – Expense - Savings – Investment - Money – Bank accounts – Interest - Primary Functions of Banks – Depositing and Lending – Use of ATM – Online banking – Insurance - Major financial schemes to aid backward sections.

### **Module II – Financial Behaviour**

Family budget – Spending on day-to-day needs - Purchase decision of durable goods – Household Financing – Credit management.

### **Module III – Financial Attitude**

Emergency fund – Importance of set aside fund – Importance of future savings.

### **Module IV – PMJDY – Benefits**

Basic Savings Bank Deposit – No minimum balance is required - Rupay Card – Insurance/Pension – Interest crediting – Over Draft – Direct Benefit Transfer.

- **Ethical Consideration**

In order to safeguard the rights, dignity, and welfare of the participants, this study complies with ethical research guidelines. Informed consent from the participants was obtained and was fully informed about the objectives of the study. Participants were guaranteed to participate voluntarily and were fully given the right to discontinue involvement at any time. Strict confidentiality protocols were followed, and personal information was anonymised and utilized only for the research. Since the intended population of the study was Scheduled Tribes, strict attention was paid to safeguarding cultural sensitivity, and honouring the customs, beliefs, and social structures throughout the research process. The ethical clearance was fetched from the Institutional Human Ethical Committee of Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, with the approval number AUW/IHEC/COM-22-23/XMT-07. Integrity was maintained throughout the data collecting and processing process, avoiding any kind of coercion or deception. Transparency in the presentation of the results guarantees that they fairly and impartially represent the opinions of the participants.

- **Pilot Study**

A Pilot study was carried out by the researcher by taking a subset of the population that contains 60 items. It was carried out to understand the reliability and validity aspects of the schedule developed by the researcher. Then researcher codified the data gathering and data analysis tools were applied to understand about reliability and validity of the schedule. Cronbach's Alpha Reliability Coefficient value was found out and it was satisfactory from the analysis.

- **Schedule Design**

It includes questions about various elements associated to FL and FI dimensions. After apprehending the concept in detail and reviewing the existing related literature, various dimensions have been explored and then various elements related to each element were set. Then, the researcher formulated a structured interview schedule containing questions about the elements.

**Elements Included in the Interview Schedule:**

1. Background Profile of the Respondents
2. Financial Literacy (FA, FB, and FK)
3. PMJDY Scheme Aspects
4. Financial Inclusion
5. Impact of Financial Literacy and PMJDY Scheme.

**Validity Testing Values**

**1. Criterion Validity**

- A. Predictive Validity- Regression Analysis was applied and found from the analysis that Predictive Validity holds good.
- B. Concurrent Validity- Based on previous results and comparison with previous results, it was necessary to conclude about Concurrent Validity.
- C. Postdictive Validity- On the basis of correlation analysis, the validity aspect was tested and proven it as satisfactory.

**2. Face Validity**

From the expert opinions, face validity was ensured concerning the schedule. The schedule was assessed by five experts from the field who have expertise and knowledge. A panel of five was considered acceptable (Lynn, 1986).

### 3. Content Validity

The schedule was sent to 15 Experts and 13 of them marked it as —Essentiall.

$$\begin{aligned} \text{Then, CVR} &= [N_e - (N/2)] / (N/2) \\ &= [13 - 7.5] / 7.5 = 0.73. \end{aligned}$$

Any value that is greater than 0.7 and a number of panellists above 10 is considered satisfactory (Lawshe, 1975). Thus, the Content Validity assumptions were concluded as good.

### 4. Construct Validity

It consists of two kinds of Validity measures.

1. Convergent Validity.
2. Discriminant Validity

#### Convergent Validity:

If the value of the relevant Average Variance Extract is more than 0.5, it shows good (Fornell & Larcker, 1981). Likewise, if the value of Construct Reliability or Composite Reliability is greater than 0.7, it shows good Convergent Validity concerning the collected data. Here the values were in the cut-off region. All the Square roots of the AVEs were larger than the inter-construct correlations. Therefore, the researcher interpreted it as good Discriminant Validity.

#### Reliability Measures

**Table No 3.2 Cronbach's Alpha Reliability Coefficient Values**

Dimensions	No. of Elements	Irula (Before AP)	Irula (After AP)	Muduga (Before AP)	Muduga (After AP)	Kurumba (Before AP)	Kurumba (After AP)
<b>I. FL</b>							
<b>A. FA</b>	3	0.898	0.785	0.925	0.758	0.896	0.854
<b>B. FB</b>	6	0.745	0.845	0.745	0.745	0.942	0.741
<b>C. FK</b>	11	0.895	0.912	0.845	0.845	0.745	0.785
<b>II. PMJDY</b>	10	0.945	0.845	0.746	0.842	0.845	0.792
<b>III. Impact of FL on FI</b>	5	0.854	0.845	0.745	0.745	0.896	0.896
<b>IV. Impact of PMJDY Scheme on FI</b>	6	0.721	0.721	0.796	0.796	0.921	0.921

Source: Data collected through the pilot study

\*AP: Awareness Programme

If the value of Cronbach's Alpha is 0.7 and above, it is considered satisfactory (Nunnally, 1978). Here all the values were above 0.7, and the schedule holds good. Thus, it was applied to collect the original data.

### **Test of Multicollinearity**

Under this test the researcher tests whether the independent variables are correlated or not through Variance Inflation Factor Method. It is challenging to dictate the actual impact of each predictor variable on the predicted variable when there is a high correlation between them. Reduced statistical power, inflated standard errors, and inaccurate coefficient estimates can result from this. Finding multicollinearity helps researchers get more accurate conclusions by ensuring the validity and interpretability of the regression model. Table 3.3 explains the result of multicollinearity test.

**Table No 3.3 Variance Inflation Factor Values for Independent Variables**

<b>Variables</b>	<b>VIF Values</b>
Financial Attitude	1.45
Financial Behaviour	1.23
Financial Knowledge	1.32
Awareness of PMJDY Scheme	1.30
No Minimum Balance Required	1.35
Interest on Deposits	1.25
Rupay Debit card Availability	1.38
Accidental Insurance Cover	1.45
Life Cover	1.45
Easy Money Transfer	1.30
Direct Benefit Transfer Facility	1.28
Overdraft Facility	1.40
Access to Pension and Insurance Products	1.45

**Source: Computed Data**

From the VIF values calculated it can be interpreted that multicollinearity is not an issue among the independent variables since all the VIF values were less than five. This indicates that every variable gives the model distinct and trustworthy information. As a result, the regression results are more accurate and easier to understand.

### **3.2.4 Statistical Design**

#### **❖ Mean Score Analysis**

In research, the term "mean score analysis" usually refers to a statistical technique applied to examine and evaluate the means (average scores) of a collection of data or replies. When researchers seek to compile and contrast the main trends of several groups or circumstances within a study, they frequently employ this method. In the present study the level of financial literacy and awareness on PMJDY were need to be compared. Hence, mean score analysis was applied to estimate the extent of financial literacy and level of awareness on PMJDY benefits, and to compare between the prior and subsequent-performance of the respondents.

#### **❖ Normalized Inverse Euclidean Distance Method**

An indicator of how inclusive a region's financial sector is the —Index of Financial Inclusion (IFI)l. The IFI is erected as a Multidimensional Index that apprehends facts on diverse angles of FI, such as Banking Penetration, Availability of Banking Services, and Usage of the Banking System. The IFI subsumes information on these facets in one single number lying between 0 and 1, where 0 denotes full financial exclusion and 1 designates full financial inclusion. The particular study used a particular measure of Financial Inclusion similar to (Sarma, 2008, 2016; Sarma & Pais, 2011). The —Normalized Inverse Euclidean Distance Method was the statistical tool used for Index calculation.

A Multidimensional Technique for establishing an IFI was used. The process was cognate to that applied by UNDP for the calculation of some popular development indices like the HDI, the HPI, and the GDI. There were various dimensions for the Index. Various authors used different sizes for constructing the Index based on the target respondents, whose extent of financial inclusion is proposed to measure.

Different authors used different dimensions to construct the Index based on the background and related characteristics of the population being studied. The various dimensions used by a few authors are summarized below. Table 3.4 displays the studies that followed the FII (Sarma, 2016) to assess FI. Table 3.5 explains the different dimensions selected by different authors for the establishment of FII.

**Table No 3.4 Studies Adopted in Sarma’s FII to Measure the Extent of FI**

Sl. No.	Year	Author (s)	Study Title
1	2018	Yorulmaz	—Construction of a Regional Financial Inclusion Index in Turkey
3	2015	Sriram & Sundaram	—A Study on Status of Financial Inclusion in India
3	2021	Nguyen	—Measuring Financial Inclusion: A Composite FI Index for the Developing Countries
4	2022	Chuc et al.,	—The Necessity of Financial Inclusion for Enhancing the Economic Impacts of Remittances
5	2017	Cámara	—Measuring Financial Inclusion: A Multidimensional Index
6	2012	Gupte et al.,	—Computation of Financial Inclusion Index for India
7	2017	Goel & Sharma	—Developing a Financial Inclusion Index for India
8	2021	Borhan et al.,	—Measuring Financial Inclusion in Developing Economies: A Multi-Dimensional Index
9	2013	Faruk & Noman	—The Financial Inclusion: A District Wise Study on Bangladesh”

**Source: Author’s compilation**

**Table No 3.5 Dimensions Taken by Various Authors for Constructing the Financial Inclusion Index**

Sl. No.	Year	Author(s)	Dimensions
1	2008, 2016	Sarma,	<ul style="list-style-type: none"> <li>• Banking Penetration</li> <li>• Usage of Banking System</li> <li>• Availability of Banking Services</li> </ul>
2	2012	Gupte et al.,	<ul style="list-style-type: none"> <li>• The Outreach Dimension</li> <li>• The Usage Dimension</li> </ul>
3	2012	Arora,	<ul style="list-style-type: none"> <li>• The Ease of Transactions Dimension</li> <li>• The Cost of Transactions Dimension</li> <li>• Outreach Dimension</li> <li>• Ease of Transaction Dimension</li> <li>• Cost of transaction Dimension</li> </ul>
4	2019	Abdulmumin et al.,	<ul style="list-style-type: none"> <li>• Financial Institution Penetration</li> <li>• Availability of Financial Institution Service</li> <li>• Usage</li> </ul>
5	2020	Rahman,	<ul style="list-style-type: none"> <li>• Convenient Accessibility</li> <li>• Take-up rate of Financial Products</li> <li>• Responsible usage</li> <li>• Satisfaction level</li> </ul>
6	2014	Crisil Inclusix	<ul style="list-style-type: none"> <li>• Branch penetration</li> <li>• Credit Penetration</li> <li>• Deposit Penetration</li> </ul>
7	2012	Demirgüç-Kunt & Klapper,	<ul style="list-style-type: none"> <li>• The mechanics of the use of Formal Accounts</li> <li>• Focuses on Savings Behaviour</li> <li>• Focuses on Sources of Borrowings</li> <li>• Focuses on the Use of Insurance Products</li> </ul>
8	2014	Amidžic et al.,	<ul style="list-style-type: none"> <li>• The Outreach Dimension</li> <li>• The Usage Dimension</li> <li>• The Quality Dimension</li> <li>• The Cost of Usage Dimension</li> </ul>

**Source: Author's compilation**

Based on Sarma's Financial Inclusion Index many authors had developed their own Index to calculate the size of financial insertion. Here, an index for calculating Financial Inclusion was constructed which is similar to Sarma's FII. Three aspects were used, BP, BA, and BU.

First, the Dimension Index has to be calculated by applying the below mentioned formula:

$$Di = \frac{Ai - mi}{Mi - mi}$$

- Ai = First Dimension's Attested value
- mi = First Dimension's Minimal value
- Mi = First Dimension's Most value

Dimension Value will always ranges between 0 and 1. As the value of  $d_i$  increases, better will be the attainment of that region in that particular aspect. If  $n$  dimensions were there, then,

$$FII_i = 1 - \frac{\sqrt{(1 - d_1)^2 + (1 - d_2)^2 + \dots + (1 - d_n)^2}}{\sqrt{n}}$$

❖ **Paired Sample t-test:**

A Paired sample t-test was put in to discover whether the average difference between the two groups of observation was Zero. If the researcher wants to compare and analyse repetitive results, a paired sample t-test can be applied. To gauge the effectiveness of the awareness programme on FL and PMJDY imparted to select tribes of Attappady, measuring financial literacy at two points in time on the same samples was necessary. Since the samples were same and the data were collected at two different times, to compare the values Paired Sample t-test was used. The First measuring was before imparting the sessions and the Second was after imparting the sessions.

$$\text{Test Statistic: } t = \frac{\sum d}{\sqrt{1\{(\sum d)^2 - (\sum d)^2 / (n-a)\}}}$$

Sample Data 1: Financial literacy scores before the awareness programme

Sample Data 2: Financial literacy scores after the awareness programme

n= Sample size

❖ **Correlation**

Correlation analysis is used in research to quantify and evaluate the level of connection between two or more variables. In this study the researcher demonstrated the relation between FL and FI with the help of Correlation analysis, since it is the apt tool for analyzing the relationship between variables.

❖ **Multiple Regression Analysis**

Multiple Regression analysis can be applied to examine the connection between one response variable and multiple regressor variables. The intention of multiple regression analysis is to prognosticate the value of the single outcome variable by using the predictor variables whose values are known. Here, the researcher used Multiple Regression analysis to appraise the impact of FL and PMJDY utilities on the FI of the tribes of Attappady, since it is considered as an apt tool for forecasting or elucidating outcomes based on data. Its main goal is to model and comprehend the impact of one or more predictor factors on the predicted variable.

### **3.2.5 Operational Design**

#### **Development of Conceptual Framework**

There were two theories adopted in this study: one theory for FL and another for FI. For FL the adopted theory was the —Three-Dimensional Theory of Financial Literacy: which defines financial literacy as a combination of three key dimensions: financial attitude, financial behaviour, and financial knowledge. This theory posits that FL is not just on possessing financial apprehension but also involves positive attitudes toward managing finances and effective financial behaviours. FK provides the foundational comprehension of financial conceptions and tools. FA reflects the mind-set and values regarding money management, such as prioritizing savings or avoiding unnecessary debt. Financial behaviour focuses on the actual practices, such as budgeting, timely loan repayments, and investing. Together, these dimensions create a comprehensive framework for assessing and enhancing financial literacy (Hung et al., 2009).

For FI, the theory was the —Supply-led theory of Financial Inclusion. This theory emphasizes that increasing the availability and accessibility of monetary services drives insertion. This theory suggests that improving factors such as banking penetration (number

of bank accounts per population), banking availability (geographic and functional access to banking services), and banking usage (frequency and depth of service utilization) can significantly enhance financial inclusion. By focusing on these supply-side indicators, the research contributes to understanding how expanding institutional and infrastructural support can integrate marginalized communities into the formal financial system (Patrick, 1966).

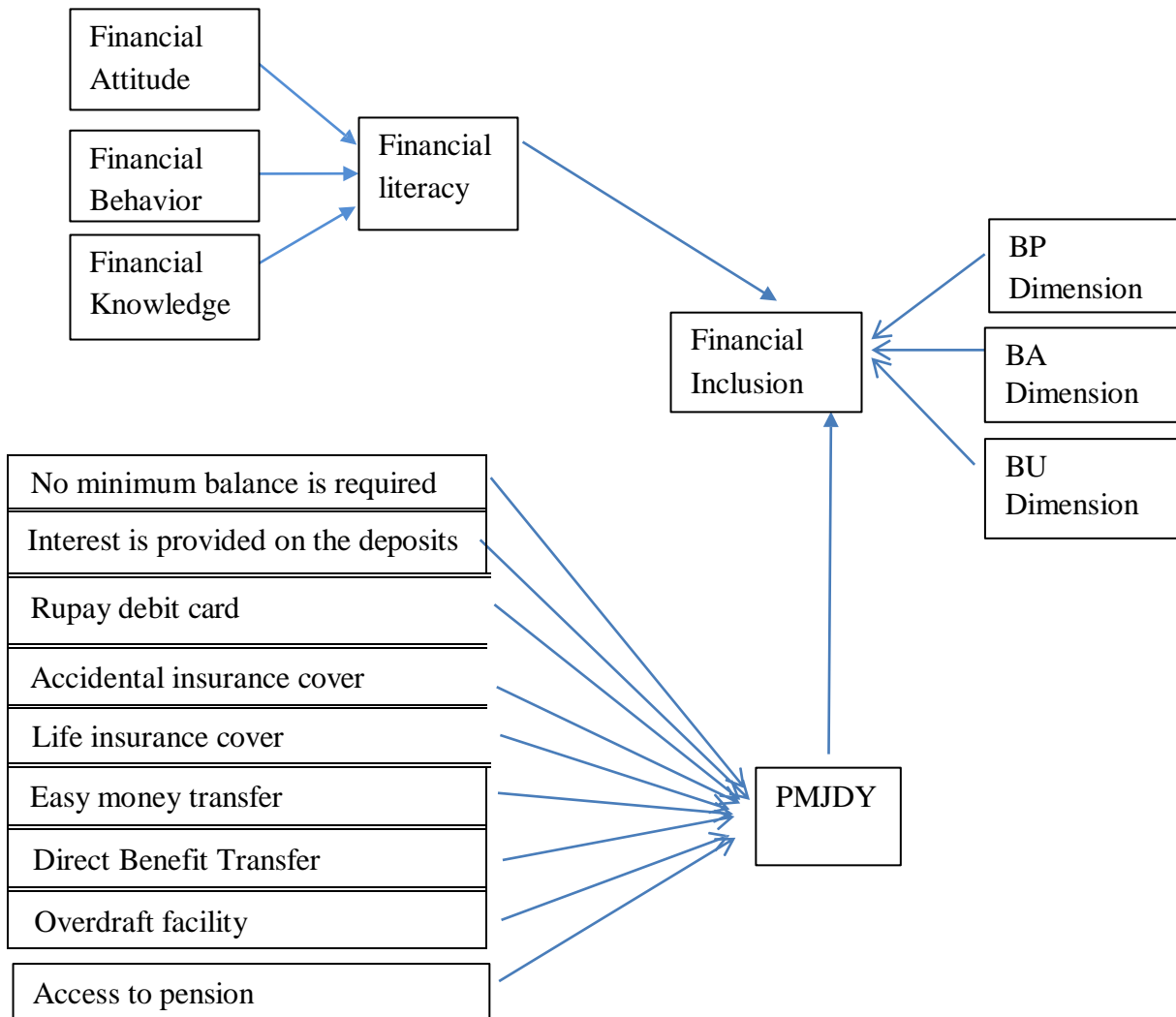
A distinct focus and logical directions were given to the investigation by the conceptual framework. Building a conceptual framework could help to fully comprehend the variables included and their expected relationships. From the literature review, a theoretical framework has been proposed to measure FL, FI, and PMJDY.

The FL model used in this study is a modified version of the —Financial Literacy Education Commission’s (FLEC) framework. The framework has one response variable and three predictor variables. FL being the explained variable, FA, FB, and FK constituted the predictor variables.

The financial inclusion model was similar to the model developed by Sarma (2008, 2012, 2015), which includes one responding variable and three predictor variables. Financial inclusion is the dependent variable which is dependent upon three independent variables, namely BP, BA, and BU. Figure 3.6 depicts the financial inclusion model.

The conceptual framework for measuring PMJDY awareness was adopted from past literature (Poorna et al., 2015; Shibu, 2022; Singhal, 2016; Unnamalai, 2016). Here the ten benefits of PMJDY constituted the dependent variable and the awareness programme on PMJDY is the independent variable. Figure 3.5 portrays the conceptual model for measuring the influence of PMJDY.

Figure 3.5 Conceptual Framework



Source: (Financial Literacy and Education Commission, 2021; Sarma 2008, 2012, 2015; Government of India, 2014)

✓ **Analysing the FL and FI Among the Select Scheduled Tribes.**

Analysing financial literacy before implementing the awareness programme was essential to make comparisons and interpret the results between the pre and post-periods. The pre and post result have to be compared and interpreted on the basis of the tribal sub-sets to which they belong. The tool used for analysis was Mean Score Analysis. The variables taken into consideration for measuring financial literacy are displayed in Table 3.6.

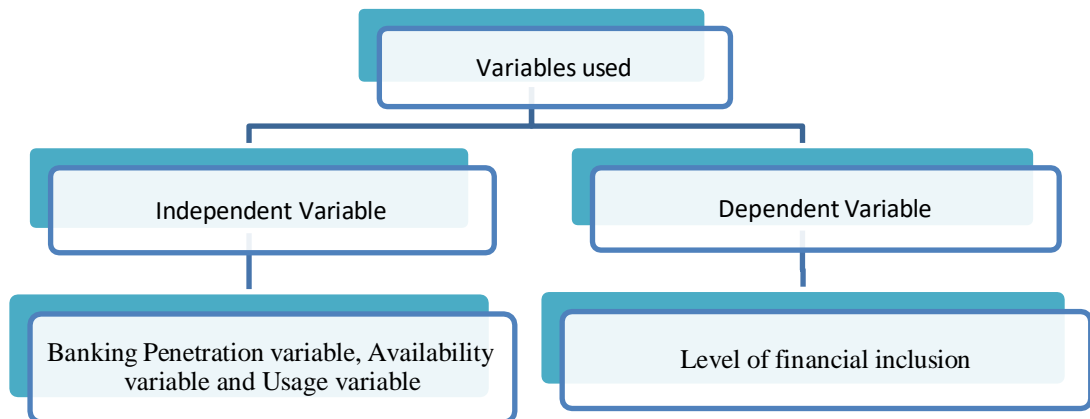
**Table 3.6 Variables Taken into Consideration for Measuring Financial Literacy**

Independent Variable	Dependent Variable
Financial Attitude	
Financial Behaviour	Financial Literacy
Financial Knowledge	

**Source: FLEC, 2021**

The degree of FI was assessed and compared by using the Normalized Inverse Euclidean Distance Method. Economic insertion was measured with regard to three aspects, BP, BA, and BU.

**Figure 3.6 Lists of Variables Taken into Account for Analysing the Extent of Financial Inclusion**



**Source: Sarma (2008, 2012, 2015)**

✓ **Analysing the PMJDY Awareness among the Select Scheduled Tribes**

The extent of awareness of PMJDY has to be measured before imparting the intervention programme. Using Mean Score Analysis, the pre and post-awareness was measured for the benefits of PMJDY.

**Table 3.7 Variables Taken into Consideration for Measuring Awareness of Benefits of PMJDY**

Independent Variable	Dependent Variable
Aware that no minimum balance is necessary	Awareness of the benefits of PMJDY
Know that interest is provided on the deposits	
Understand that PMJDY account holders will get a Rupay debit card	
Aware about accidental insurance coverage facility	
Know about life cover benefit	
Aware that an easy money transfer facility is available	
Know about the Direct Benefit Transfer facility of the scheme	
Know about the Overdraft facility of the scheme	
Aware that Access to pension facility is available	

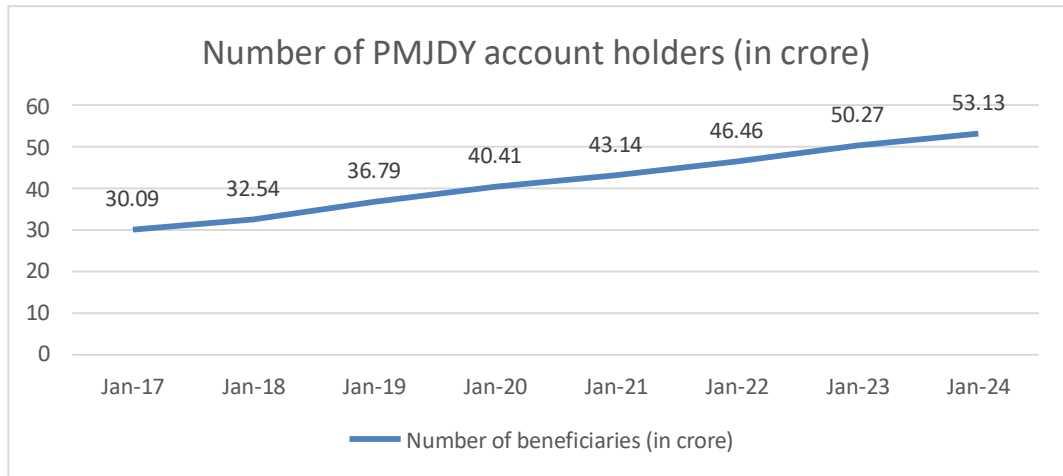
**Source: Secondary Data**

✓ **To evaluate the Effectiveness of the Awareness Programme on FL and PMJDY Imparted to Select Scheduled Tribes**

State governments, Central governments, and NGOs are developing various schemes for financial inclusion. PMJDY was one among them, which is a central government scheme introduced by Honourable Prime Minister Modi Ji. The main objective of this scheme was to bank the unbanked, bringing the nation to a highly financially included country. The significance of this scheme was that RBI claims it as a successful and most prominent scheme increasing the number of account holders in India. Figure 3.7 shows the role of the scheme in increasing the number of bank holders in India.

In this part of the inquiry, the effectiveness of the awareness of FL and PMJDY was measured with the help of pre and post-comparative analysis and Paired Sample t-tests.

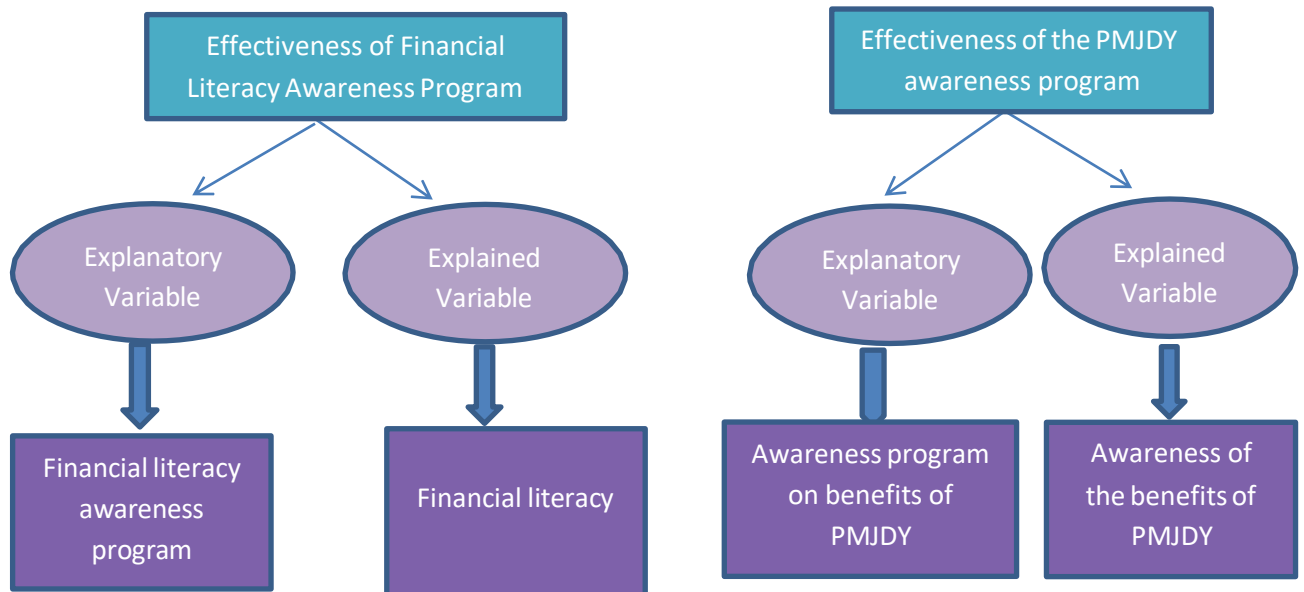
**Exhibit 3.7 PMJDY Accounts opened from 2017-2024 (in crore)**



**Source: Government Data**

As per the reports of the Government of India, PMJDY is a Successful scheme with regard to financial inclusion. Thus, here the fifth goal is to apprehend the effectiveness of FL and PMJDY awareness programmes among the three sub-sets of select tribes.

**Figure 3.8 List of Variables Used in Analysing the Effectiveness of Financial Literacy and PMJDY Awareness Programme**

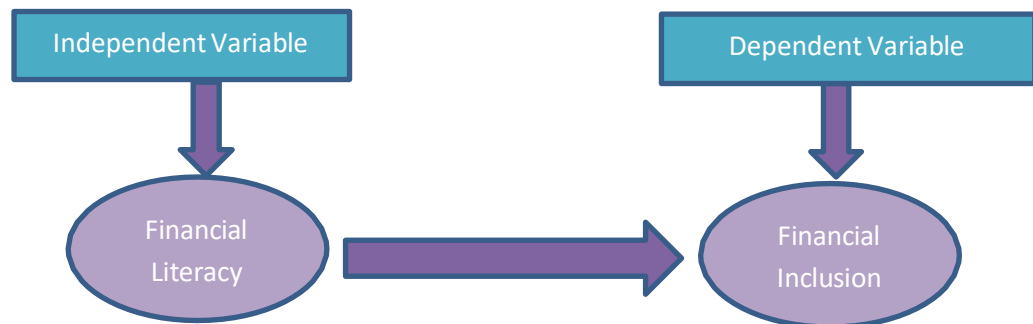


**Source: Author's compilation**

✓ **Analysing the Association Between FL and FI**

The association between FL and FI was established separately for Irulas, Mudugas, and Kurumbas. Figure 3.9 shows the explained and explanatory variables.

**Figure 3.9 List of Variables Used in Analysing Relationship between Financial Literacy and Financial Inclusion**

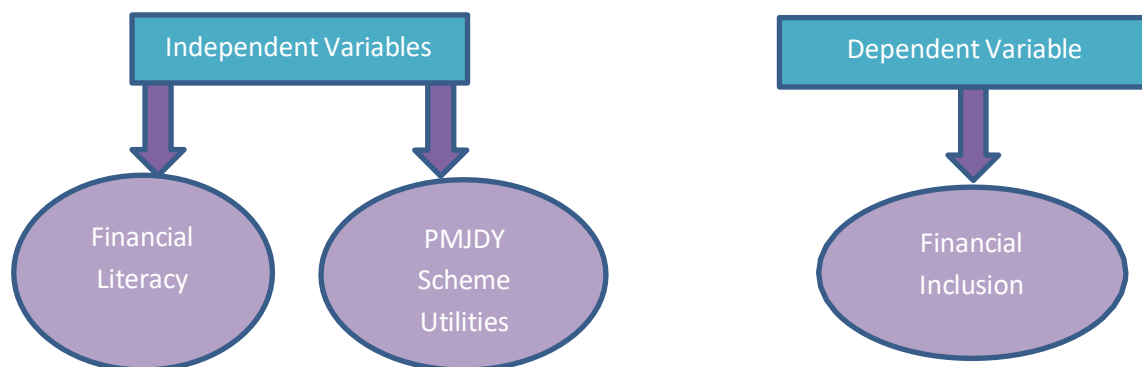


**Source: Authors Compilation**

✓ **Studying the Influence of FL and PMJDY Awareness Programme on FI of Tribes of Attappady**

The PMJDY has unquestionably had a major influence on Indian people's financial inclusion, as the research community may conclude. Through the provision of fundamental banking services including insurance, credit facilities, and savings accounts, PMJDY has equipped rural residents with financial resources, promoting economic engagement and decreasing reliance on unofficial financial avenues. Millions of individuals who were unbanked before have now entered the official financial system thanks in large part to the programme. However the impact of the scheme among rural is questionable part. In certain locations, the rural poor do not receive PMJDY benefits. Their limited access to banks and low literacy rates were the main obstacles. Researchers proposed expanding the network of bank branches and implementing financial literacy initiatives to improve the scheme's efficacy (Nagarathnamma & Srinivas, 2018; Singhal, 2016). Hence this study provided a financial literacy and PMJDY awareness programme among select tribes from the three sub-sets of tribes and measured the impact through Multiple Regression analysis. Figure 3.10 depicts the list of variables used in the Multiple Regression analysis.

**Figure 3.10 List of Variables Used in Analysing the Impact of Financial Literacy and PMJDY Awareness Programme**



Source: Author’s Compilation

### 3.3 Variable Definitions

**Table 3.8 Variables and Respective Definitions**

Sl. No.	Variable	Definition
1	Financial Inclusion	—Financial inclusion is a process that ensures the ease of access, availability, and usage of the formal financial system for all members of an economy (Sarma, 2008).
2	Financial Literacy	—Financial literacy is a blend of skill, behaviour, awareness, attitude, and knowledge of an individual that is required to make sound financial decisions leading toward the achievement of financial well-being (OECD, 2013).
3	PMJDY	In India, the government of India developed and introduced the Pradhan Mantri Jan Dhan Yojana, often known as PMJDY. In August 2014, Honourable Prime Minister Narendra Modi announced its introduction. In particular, among the economically underprivileged and unbanked segments of society,

Sl. No.	Variable	Definition
		the primary goals of PMJDY are to encourage financial inclusion and give universal ingress to banking services. This initiative seeks to ensure that every family in India has access to at least one bank account and offers account users a diverse of financial services and advantages, including insurance, pension access, overdraft options, and RuPay debit cards (Press Information Bureau, 2014).
4	Representative of the Family	—An individual attained the age of 18 or more from a family. Family means a group of persons who commonly live together and would take their meals from a common kitchen unless the exigencies of work prevented any of them from doing so (Census, 2011).
5	Nuclear Family	—A group of people who are united by ties of partnership and parenthood and consisting of a pair of adults and their socially recognized children (Encyclopaedia Britannica, 2015).
6	Joint Family	—Members of a unilineal descent group live together with their spouses and offspring in one homestead and under the authority of one of the members (Encyclopaedia Britannica, 2015).
7	Disposable Earnings of the Family	—Income remaining after deduction of taxes and social security charges, available to be spent or saved as one wishes (Oxford Dictionary)
8	Family Budget	—A family budget is a statement that shows how family income is spent on various items of expenditure on necessities, comforts, luxuries, and other cultural wants (Clare, G.1957)

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Sl. No.	Variable	Definition
9	Emergency Fund	—An emergency fund is money set aside to pay for large, unexpected expenses, such as unforeseen medical expenses, home appliance repair or replacement, major car fixes, unemployment, etc. (Bundrick, H. M. (n.d.))
10	Personal Savings	—The money one has saved, especially through a bank or official scheme (Oxford Dictionary)

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**Source: Secondary Data****Summary**

This chapter contained the details of the methodology used in the study. It explained research methods, research design, sampling design, statistical design, observation design, and operational design. The framework for analysis was set forth, and a Conceptual framework was developed here. It narrated the meaning of concepts selected for the study and the study period.