

# Chapter-5

## Results and Discussion: The Empirical Output

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**Table 5.1: Descriptive Analysis of the Independent and Dependent variables**

Variables	Range		Mean	SD	CV (%)
	Max.	Min.			
1. Age(X <sub>1</sub> )	75.00	20.00	44.97	12.31	27.50
2. Education(X <sub>2</sub> )	7.00	1.00	3.46	1.26	36.41
3. Family size(X <sub>3</sub> )	9.00	1.00	5.013	1.69	33.86
4. Farm mechanization(X <sub>4</sub> )	95.00	70	84.76	6.30	7.43
5. Cropping Intensity(X <sub>5</sub> )	233	100	139.49	32.15	23.04
6. Homestead land (X <sub>6</sub> )	2.50	0.10	1.47	1.17	79.84
7. Own land(X <sub>7</sub> )	7.00	0.10	0.38	0.31	81.24
8. Area under Rubber (X <sub>8</sub> )	6.00	0.28	1.08	0.84	77.50
9. Annual Income (X <sub>9</sub> )	75000	1083.33	14935.84	10217.80	68.41
10. Income from Rubber (X <sub>10</sub> )	60000	1000	12707.30	7551.17	59.42
11. Off-farm income (X <sub>11</sub> )	15000	625	2972.66	3070.48	103.29
12. Economic status (X <sub>12</sub> )	0.60	0.02	0.14	0.13	96.52
13. Material possession (X <sub>13</sub> )	8125	200	1543.98	1532.90	99.52
14. Scientific Orientation (X <sub>14</sub> )	5.00	2.10	3.61	0.54	14.93
15. Value towards adoption (X <sub>15</sub> )	5.28	2.60	3.75	0.56	15.02

16. Value towards discontinuance ( $X_{16}$ )	5.00	2.00	2.86	0.53	18.44
17. Value towards rejection ( $X_{17}$ )	4.25	2.00	2.94	0.39	13.33
18. Mass media exposure ( $X_{18}$ )	2.22	1.11	1.65	0.30	17.96
19. Adoption Index ( $Y_1$ )	83.33	4.16	24.76	16.14	65.18
20. Re-invention ( $Y_2$ )	3.00	1.00	1.79	0.50	27.98
21. Perceived constraints ( $Y_3$ )	7.50	3.60	5.47	0.98	17.92
22. Socialization level ( $Y$ )	30.02	3.88	10.68	5.33	49.91

Table 5.1: It presents the descriptive analysis on the distribution pattern and distribution nature of different independent and dependent variables.

The distribution pattern of variable **Age ( $X_1$ )** depicts that the minimum age of the respondents is 20 and the maximum is 75. Since the respondents belong to farming background and it was pre-decided, this distribution of age is quite natural. The mean age is 44.97 with standard deviation 12.31. The coefficient of variance (CV) is 27.50 per cent which indicates that the distribution pattern of the variable is consistent.

The distribution pattern of variable **Education ( $X_2$ )** shows that the minimum standard of the respondents is 1 which means respondents can read only and the maximum is 7 which mean respondents' level of education is higher secondary. The mean education is 3.46 with S.D of 1.26. The coefficient of variance is 36.41 per cent which indicate distribution of the variables is fairly consistent.

The distribution pattern of variable **Family size ( $X_3$ )** depicts that the maximum family size of the respondents is 9 and the minimum is 1. This distribution shows that while some respondents have a small and nuclear

family even single person in the family others are having a joint family. The mean size of the family is 5.01 with standard deviation of 1.69. The coefficient of variance is 33.86 per cent which indicate the distribution of variable is fairly consistent.

The distribution pattern of the variable **Farm mechanization (X<sub>4</sub>)** shows that maximum farm mechanization is 95m per cent and the minimum is 75 per cent. The mean mechanization is 84.76 with standard deviation of 6.30. The coefficient of variance is 7.43 per cent which indicate the variable is highly consistent.

The distribution pattern of the **Cropping intensity (X<sub>5</sub>)** depicts that the maximum cropping intensity is 233 per cent and the minimum is 100 per cent. The mean cropping intensity is found to be around 139.49 per cent with standard deviation of 32.15. The coefficient of variance is 23.04 per cent which mean that the cropping intensity is consistent.

The distribution pattern of size of **Homestead land(X<sub>6</sub>)** shows that maximum homestead land is 2.50 Kani while the minimum is only 0.10 Kani. There is a quite narrow variation in the land holding of the respondents. This shows that while some respondents have enough land holding not only for a house to stay but also for some vegetable production others just having the only enough space for house only. The mean of the land holding size is 1.47 with a standard deviation of 1.17. The coefficient of variance is 79.84 per cent which indicates that the distribution of variable is quite consistent.

The distribution pattern of **Own land (X<sub>7</sub>)** shows that the maximum land own by the respondent is 7 kani while the minimum is 0.10 kani. The mean

of own land is 0.38 with a standard deviation of 0.31. The coefficient of variance is 81.43 per cent which indicates that the distribution of the variable is quite consistent.

It has been found that the average **Area under rubber (X<sub>8</sub>)** of the study group is 1.08 kani with record of maximum area under rubber is 6 kani and the minimum is 0.28. The standard deviation of the variables is 0.31 with coefficient of variance of 77.50 per cent which mean the distribution of variable is quite consistent.

It has been found that average the **Annual Income (X<sub>9</sub>)** of the study group is around Rs.14935.84 per annum, with a record of maximum annual income of Rs. 75000.00 per annum and minimum of only Rs. 1083.33 per annum. It has been recorded that the SD is 10217.80 with coefficient of variance (CV) of 68.41 per cent, which means the income is quite consistent in nature, in terms of its distribution.

The distribution pattern of the variable **Income from rubber(X<sub>10</sub>)** shows that the maximum income of the respondent family is Rs.6000 and minimum is Rs.1000. The mean income from rubber is Rs.12707.66 with standard deviation of 7551.17. The coefficient of variance is 59.42 per cent which means the distribution of variable is moderately consistent in nature.

The distribution pattern of the variable **Off-farm income (X<sub>11</sub>)** shows that the maximum income of the respondent family is Rs.15000 and minimum is Rs.625. The mean income from rubber is Rs.2972.66 with standard deviation of 3070.48. The coefficient of variance is 103.29 per cent which means the distribution of variable is inconsistent in nature.

The distribution of pattern of **Economic status (X<sub>12</sub>)** depicts that the maximum value is 0.60 and the minimum is 0.02. The mean economic status is 0.14 with standard deviation of 0.13. The coefficient of variance is 96.52 per cent which is quite consistent in nature of its distribution.

The distribution pattern of the **Material possession (X<sub>13</sub>)** of the study group shows that the maximum value is 8125 and the minimum is 200. The mean value of the variable is 1543.98 with standard deviation of 1532.90. The coefficient of variance is 99.52 per cent which is quite consistent.

The variable **Scientific orientation(X<sub>14</sub>)** have been recorded a maximum and minimum of around 5.00 and 2.10 respectively and an average of around 3.16 out of four point scales with standard deviation of 0.54. That means most of the respondents are fairly oriented towards scientific tools and technologies. The coefficient of variance is 14.93 per cent showing that the attitude towards Scientific Orientation is highly consistent in terms of its variance.

The distribution pattern of the variable **Value towards adoption(X<sub>15</sub>)** depicts that the maximum and minimum is 5.28 and 2.60 respectively and the average is around 3.75 with SD of 0.56. The coefficient of variance is 15.02 % which indicates variable is highly consistent in term of its distribution.

The distribution pattern of the variable **Value towards discontinuance (X<sub>16</sub>)** shows that the maximum and minimum values are 5.00 and 2.00 respectively where standard deviation value is 0.53. The coefficient of variance is 18.44 per cent which indicates the distribution pattern of the variables are highly consistent in nature.

The distribution pattern of variable **Value towards rejection (X<sub>17</sub>)** depicts that the mean value is 2.94 out of eight point scales where standard deviation value is 0.39. The coefficient of variance is 13.33 per cent which shows the variable is highly consistent in nature in term of its distribution.

The variable **Mass media exposure (X<sub>18</sub>)** shows a maximum and minimum of 2.22 and 1.11 with a mean of around 1.65 which means that the average half respondents are not much exposed to the sources available. Moreover, the variable recorded a standard deviation of 0.30 and Coefficient of variance of 17.96 per cent, showing that the distribution of the variable highly consistent in nature.

The dependent variables **Adoption index (Y<sub>1</sub>)**, **Re-invention (Y<sub>2</sub>)**, and **Constraints perceived (Y<sub>3</sub>)** have recorded a maximum of 83.33, 3.00, and 7.50 respectively; a minimum of 4.16, 1.00 and 3.60 respectively and an average of 24.76, 1.79 and 5.47 respectively. This means that the average respondents have shown a fairly positive tendency towards the mentioned Adoption index, Re-invention and constraints perceived. The variables Y<sub>1</sub>, Y<sub>2</sub> and Y<sub>3</sub> have shown high consistency in terms of their distribution, by recording a standard deviation of 16.14, 0.50 and 0.98 respectively and a coefficient of covariance of 65.18 per cent, 27.98 per cent and 17.92 per cent respectively.

The dependent variable **Socialization level (Y)** is derived from the above mentioned three dependent variables. This has shown a maximum-minimum range between 30.02–3.88, with the mean value of 10.68. This means that the variable Socialization level shows the multiplying effect of the above mentioned three dependent variables i.e. Y<sub>1</sub>, Y<sub>2</sub> and Y<sub>3</sub>. The

variable shows a standard deviation of 5.33 and a coefficient of covariance of 49.91 per cent, showing that the variable Re-socialization Index is consistent in nature in terms of its distribution.

**Table 5.2: Co-efficient of Correlation between Adoption index ( $Y_1$ ) Vs 18 Independent Variables**

Variables	r value
1. Age( $X_1$ )	<b>-0.261*</b>
2. Education( $X_2$ )	<b>0.237*</b>
3. Family size( $X_3$ )	-0.022
4. Farm mechanization( $X_4$ )	0.044
5. Cropping Intensity( $X_5$ )	0.128
6. Homestead land ( $X_6$ )	<b>-0.227*</b>
7. Own land( $X_7$ )	-0.146
8. Area under Rubber ( $X_8$ )	<b>-0.303*</b>
9. Annual Income ( $X_9$ )	-0.137
10. Income from Rubber ( $X_{10}$ )	-0.211
11. Off-farm income ( $X_{11}$ )	0.002
12. Economic status ( $X_{12}$ )	-0.081
13. Material possession ( $X_{13}$ )	-0.073
14. Scientific Orientation ( $X_{14}$ )	0.035
15. Value towards adoption ( $X_{15}$ )	-0.020
16. Value towards discontinuance ( $X_{16}$ )	0.127
17. Value towards rejection( $X_{17}$ )	-0.025
18. Mass media exposure( $X_{18}$ )	0.188

\*\* Significant at 1% level of significance

\* Significant at 5% level of significance

Table 5.2 presents the co-efficient of correlation between adoption index and 18 independent variables.

This table reveals that the variable such as Education( $X_2$ ) of the respondents has been found positive and significant correlation with adoption index ( $Y_1$ ).

This table also reveals that some variables such as Age ( $X_1$ ), Homestead land ( $X_6$ ) and Area under rubber ( $X_8$ ) have shown significant but, negatively correlated with Adoption index.

Education monitors behavioural disposition and adoption behaviour. Any kind of attitude is the resultant of directional behavioural pursuits, so it has been inclined towards attitude towards adoption of available technology for rubber plantation.

Again age is basically a disposition biological chronology and psychology maturity and the young respondents shown the propensity to adopt the new and recommended technology.

It is also unique to observed that the farmer having smaller homestead land are more tempted towards adoption of rubber plantation. So, plantation technology has bestowed a clear dent for the farmer having smaller homestead land.

The farmer having smaller size of holding to run rubber enterprise are more dent on better adoption of plantation technology. Smaller plantations mean high intensity management and are more dynamic display of modernizing enterprise through adoption of technology.

**Table 5.3: Co-efficient of Correlation between Re-invention ( $Y_2$ ) Vs 18 Independent Variables**

<b>Variables</b>	<b>r value</b>
1. Age( $X_1$ )	-0.193
2. Education( $X_2$ )	<b>0.248*</b>



3. Family size( $X_3$ )	0.088
4. Farm mechanization( $X_4$ )	0.052
5. Cropping Intensity( $X_5$ )	0.158
6. Homestead land( $X_6$ )	-0.265
7. Own land( $X_7$ )	-0.014
8. Area under Rubber ( $X_8$ )	-0.038
9. Annual Income ( $X_9$ )	-0.033
10. Income from Rubber ( $X_{10}$ )	-0.014
11. Off-farm income ( $X_{11}$ )	<b>0.255*</b>
12. Economic status ( $X_{12}$ )	-0.173
13. Material possession ( $X_{13}$ )	0.002
14. Scientific Orientation ( $X_{14}$ )	0.047
15. Value towards adoption ( $X_{15}$ )	<b>0.258*</b>
16. Value towards discontinuance ( $X_{16}$ )	0.034
17. Value towards rejection( $X_{17}$ )	-0.156
18. Mass media exposure( $X_{18}$ )	0.169

\* Significant at 5% level of significance

Table 5.3 presents the co-efficient of correlation between re-invention and 18 independent variables.

This table reveals that the variable such as Education( $X_2$ ), off farm income( $X_{11}$ ) and Value towards adoption( $X_{15}$ ) of the respondents has been found positive and significant correlation with Re-invention ( $Y_2$ ).

Education monitors behavioural disposition and adoption behaviour. Any kind of attitude is the resultant of directional behavioural pursuits, so it has been tuned towards re-invention process in the socialization.

Off farm income has influence on the process of re-invention, nurtured and accelerated by the respondents. It has been found that from other story, the off farm income can provide a fillip for redeeming and rediscovering the possible technology so that this can suit better in the changing social ecology. Nevertheless, off farm income has got in any farm situation a

higher pile of informational element that add additional boost to go for re-invention.

Reinvention is a social process, disposed and displayed through the individual adoption vis-à-vis contemplation process. Here, the variable Value towards adoption ( $X_{15}$ ) has rightly been tuned to re-invention process to accelerate the ultimate social process

**Table 5.4: Co-efficient of Correlation between Perceived constraints ( $Y_3$ ) Vs 18 Independent Variables**

<b>Variables</b>	<b>r value</b>
1. Age( $X_1$ )	0.012
2. Education( $X_2$ )	0.068
3. Family size( $X_3$ )	0.089
4. Farm mechanization( $X_4$ )	<b>-0.257*</b>
5. Cropping Intensity( $X_5$ )	0.151
6. Homestead land ( $X_6$ )	0.102
7. Own land( $X_7$ )	-0.011
8. Area under Rubber ( $X_8$ )	-0.129
9. Annual Income ( $X_9$ )	-0.131
10. Income from Rubber ( $X_{10}$ )	-0.014
11. Off-farm income ( $X_{11}$ )	-0.102
12. Economic status ( $X_{12}$ )	-0.128
13. Material possession ( $X_{13}$ )	-0.194
14. Scientific Orientation ( $X_{14}$ )	0.047
15. Value towards adoption ( $X_{15}$ )	0.116
16. Value towards discontinuance ( $X_{16}$ )	0.128
17. Value towards rejection( $X_{17}$ )	0.004
18. Mass media exposure( $X_{18}$ )	-0.167

\* Significant at 5% level of significance

Table 5.4 presents the co-efficient of correlation between perceived constraints and 18 independent variables.

This table reveals that the variable farm mechanization( $X_4$ ) of the respondents has been found negative and significant correlation with Perceived constraints ( $Y_3$ ).

Human labour involved drudgery and painful repetition of which at stress and pain to farm operation. It ultimately accounts to decline of productivity. So, the increase of Farm mechanization ( $X_4$ ) has been found to be downside in perceived constraints. So, the result suggests that a strategic mechanization can help reduce the drudgery and increase the proficiency of production.

**Table 5.5; Co-efficient of Correlation between Socialization level (Y) Vs 18 Independent Variables**

Variables	r value
1. Age( $X_1$ )	<b>-0.269*</b>
2. Education( $X_2$ )	<b>0.251*</b>
3. Family size( $X_3$ )	-0.014
4. Farm mechanization( $X_4$ )	0.031
5. Cropping Intensity( $X_5$ )	0.143
6. Homestead land ( $X_6$ )	<b>-0.231*</b>
7. Own land( $X_7$ )	-0.149
8. Area under Rubber ( $X_8$ )	<b>-0.315**</b>
9. Annual Income ( $X_9$ )	-0.147
10. Income from Rubber ( $X_{10}$ )	-0.216
11. Off-farm income ( $X_{11}$ )	0.004
12. Economic status ( $X_{12}$ )	-0.095
13. Material possession ( $X_{13}$ )	-0.086
14. Scientific Orientation ( $X_{14}$ )	0.040
15. Value towards adoption ( $X_{15}$ )	-0.005
16. Value towards discontinuance ( $X_{16}$ )	0.138
17. Value towards rejection( $X_{17}$ )	-0.030
18. Mass media exposure( $X_{18}$ )	0.185

\*\* Significant at 1% level of significance

\* Significant at 5% level of significance

Table 5.5 presents the co-efficient of correlation between Socialization level and 18 independent variables.

This table reveals that the variable such as Education( $X_2$ ) of the respondents has been found positive and significant correlation with Socialization level (Y).

This table also reveals that some variables such as Age ( $X_1$ ), Homestead land ( $X_6$ ) and Area under rubber ( $X_8$ ) have shown significant but, negatively correlated with Socialization level.

This indicates that respondent's socialization process as a whole has been impacted by education as this compound gone for characterizing the process of social chemistry in the form of socialization.

Again age is basically a disposition biological chronology and psychology maturity and the younger respondents have shown higher participation as comparison with much aged respondents in the socialization process of rubber enterprise.

It is also unique to observe that the respondents having smaller homestead land depicts the accelerated enculturation towards socialization of rubber plantation. Similarly, the farmer having smaller size of area under rubber cultivation to run rubber enterprise has gone swift socialization compared with large size of holding. That means smaller the size of holding faster would be socialization process of rubber enterprise.

**Table 5.6: Regression Analysis: Causal Effect of independent Variables on Adoption index ( $Y_1$ ), the consequent variable**

Variables	$\beta$ -Value	Regression Co-efficient	t-Value
1. Age( $x_1$ )	-0.214	-0.279	-1.200
2. Education( $X_2$ )	0.110	1.412	0.615

3. Family size ( $X_3$ )	-0.283	-2.737	-1.586
4. Farm mechanization ( $X_4$ )	0.022	0.057	0.166
5. Cropping Intensity ( $X_5$ )	-0.156	-0.078	-1.135
6. Homestead land ( $X_6$ )	-0.122	-6.333	-0.904
7. Own land ( $X_7$ )	0.242	3.318	1.083
8. Area under Rubber ( $X_8$ )	-0.629	-12.110	<b>-2.386*</b>
9. Annual Income ( $X_9$ )	0.155	0.000	0.928
10. Income from Rubber ( $X_{10}$ )	-0.189	0.000	-0.932
11. Off-farm income ( $X_{11}$ )	0.008	0.420	0.060
12. Economic status ( $X_{12}$ )	0.128	15.735	0.909
13. Material possession ( $X_{13}$ )	-0.025	0.000	-0.174
14. Scientific Orientation ( $X_{14}$ )	-0.021	-0.613	-0.158
15. Value towards adoption ( $X_{15}$ )	-0.092	-2.632	-0.716
16. Value towards discontinuance ( $X_{16}$ )	0.213	6.498	1.566
17. Value towards rejection ( $X_{17}$ )	0.020	0.838	0.153
18. Mass media exposure ( $X_{18}$ )	0.100	5.429	0.740

R square=0.308

F value for R=0.555 with 18 and 58 DFS

Adjusted R square=0.094

\* denotes significant at 5% level

Table 5.6 presents the causal effect of independent variables on Adoption index ( $Y_1$ ).

This table reveals that the variable Area under rubber ( $X_8$ ) has been found significantly negative which indicates consequent variable adoption index is characterised by the size of the area under rubber plantation. This means smaller size of rubber plantation holdings is more prone to adopt the technology available. This reason being smaller size plantations are easy to manage and intensify the farm operations.

$R^2$  value being 0.308, it is concluded that with the combination of all these 18 causal variables, 30.08 per cent variance in adoption index has been explained.

**Table 5.6(a): Step down Regression: Causal Effect of independent Variables on Adoption index ( $Y_1$ ), the consequent variable**

predictors	B	S.E	Beta	t	R	R square	Adjusted R	S.E of the estimate
Area under Rubber ( $x_8$ )	-9.436	2.562	-0.490	-3.682**	0.303	0.092	0.079	15.489
Family size( $x_3$ )	-3.046	1.290	-0.315	-2.362*	0.394	0.155	0.132	15.036

\*\* Significant at 1% level of significance

\* Significant at 5% level of significance

Table 5.6 (a) presents the step down multiple regression analysis of adoption Index with independent variables.

The step-down regression analysis has isolated two critical causal variables *viz.* Area under rubber ( $x_8$ ) and Family size ( $x_3$ ) as to have substantive impact on adoption process of rubber enterprise. The two variables together have explained 24.7 per cent (0.092+0.155) of variance embedded with consequent variable.

**Table 5.7 Regression Analysis: Causal Effect of independent Variables on Re-invention ( $Y_2$ ), the consequent variable**

Variables	$\beta$ -Value	Regression Co-efficient	t-Value
1. Age( $X_1$ )	-0.202	-0.008	-1.133
2. Education( $X_2$ )	0.000	0.000	0.003
3. Family size( $X_3$ )	0.396	0.120	2.229*
4. Farm mechanization( $X_4$ )	-0.173	-0.014	-1.298
5. Cropping Intensity ( $X_5$ )	0.142	0.002	1.037
6. Homestead land ( $X_6$ )	-0.209	-0.339	-1.555
7. Own land( $X_7$ )	0.146	0.062	0.654
8. Area under Rubber ( $X_8$ )	0.129	0.077	0.489

9. Annual Income ( $X_9$ )	0.031	0.015	0.183
10. Income from Rubber ( $X_{10}$ )	0.093	0.062	0.461
11. Off-farm income ( $X_{11}$ )	0.297	0.048	2.238
12. Economic status ( $X_{12}$ )	-0.167	-0.642	-1.192
13. Material possession ( $X_{13}$ )	-0.132	-0.043	-0.940
14. Scientific Orientation ( $X_{14}$ )	-0.077	-0.072	-0.593
15. Value towards adoption ( $X_{15}$ )	0.219	0.195	1.708
16. Value towards discontinuance ( $X_{16}$ )	-0.010	-0.009	-0.072
17. Value towards rejection ( $X_{17}$ )	-0.061	-0.079	-0.461
18. Mass media exposure ( $X_{18}$ )	0.065	0.110	0.480

R square=0.311

F value for R=0.557 with 18 and 58 DFS

Adjusted R square=0.097

\* denotes significant at 5% level

Table 5.7 presents the causal effect of independent variables on re-invention. The variable family size ( $X_3$ ) extracted here with as to have higher operating proficiency to characterize the greater behavior of causal variable re-invention, while family size presents both stress and motivation to go for re-invention in individual to elicit a better choice out of basket of commodity to support the family and earn better social status for the family also a family higher maturity level and direct experiential learning can be combined as asset as well as social capacity to move for re-invention while socialization of rubber enterprise has been taken care of.  $R^2$  value being 0.311, it is concluded that with the combination of all these 18 causal variables, 31.1 per cent variance in re-invention has been explained.

**Table 5.7(a): Step down Regression: Causal Effect of independent Variables on Re-invention ( $Y_2$ ), the consequent variable**

Predictors	B	S.E	Beta	t	R	R square	Adjusted R	S.E of the estimate
Homestead land ( $X_6$ )	-0.422	0.175	-0.261	-2.411*	0.265	0.070	0.058	0.489
Value towards adoption ( $X_{15}$ )	0.227	0.097	0.254	2.348*	0.367	0.135	0.111	0.474

\*\* Significant at 1% level of significance

\* Significant at 5% level of significance

Table 5.7 (a) presents the step down multiple regression analysis of re-invention with independent variables.

The step-down regression analysis has isolated two critical causal variables viz. Homestead land ( $x_6$ ) and Value towards adoption ( $x_{15}$ ) as to have substantive impact on re-invention process rubber enterprise. The two variables together have explained 20.5 per cent (0.07+0.135) of variance embedded with consequent variable.

**Table 5.8 Regression Analysis: Causal Effect of independent Variables on Perceived constraints ( $Y_3$ ), the consequent variable**

Variables	$\beta$ -Value	Regression Co-efficient	t-Value
1. Age( $X_1$ )	0-.136	-0.011	-0.740
2. Education( $X_2$ )	-0.061	-0.048	-0.332
3. Family size( $X_3$ )	0.123	0.073	0.670
4. Farm mechanization( $X_4$ )	-0.310	-0.048	-2.247*
5. Cropping Intensity ( $X_5$ )	0.104	0.003	0.735
6. Homestead land ( $X_6$ )	0.170	0.536	1.219



7. Own land( $X_7$ )	0.237	0.197	1.025
8. Area under Rubber ( $X_8$ )	-0.173	-0.202	-0.636
9. Annual Income ( $X_9$ )	-0.136	-0.013	-0.787
10. Income from Rubber ( $X_{10}$ )	0.306	0.039	1.467
11. Off-farm income ( $X_{11}$ )	0.054	0.017	0.395
12. Economic status ( $X_{12}$ )	-0.175	-1.307	-1.205
13. Material possession ( $X_{13}$ )	-0.217	0.000	-1.493
14. Scientific Orientation ( $X_{14}$ )	0.095	0.173	0.708
15. Value towards adoption ( $X_{15}$ )	0.173	0.301	1.306
16. Value towards discontinuance ( $X_{16}$ )	0.185	0.343	1.318
17. Value towards rejection( $X_{17}$ )	-0.078	-0.195	-0.568
18. Mass media exposure( $X_{18}$ )	-0.083	-0.275	-0.598

R square=0.263

F value for R=0.513 with 18 and 58 DFS

Adjusted R square=0.034

\* denotes significant at 5% level

Table 5.8 presents the causal effect of independent variable on perceived constraints.

Here in this table Beta value -0.310 indicates that with one unit increase in Farm mechanization, the constraint will be reduced to 0.310 units.

It has been found that the causal variables Farm mechanization has been selected at the last step in the stepwise regression. It indicates that the farm mechanization is the most important intervention in order to reduce the perceived constraints for small and marginal enterprise.  $R^2$  value being 0.263, it is concluded that with the combination of all these 18 causal variables, 26.3 per cent variance in perceived constraints has been explained.

**Table 5.8(a): Step down Regression: Causal Effect of independent Variables on Perceived constraints (Y<sub>3</sub>), the consequent variable**

Predictors	B	S.E	Beta	t	R	R Squared	Adjusted R	S.E of the estimate
Farm mechanization (X <sub>4</sub> )	-0.040	0.017	-0.257	-2.298*	0.257	0.066	0.053	0.954

\* Significant at 5% level of significance

Table 5.8(a) presents the step down multiple regression analysis of perceived constraints with independent variables.

The table shows that the step-down regression analysis has isolated one critical causal variable that is Farm mechanization as to have substantive impact on farm mechanization of rubber enterprise. The variable has explained 6.6 per cent of variance embedded with consequent variable.

**Table 5.9: Regression Analysis: Causal Effect of independent Variables on Socialization level (Y) the consequent variable**

Variables	$\beta$ -Value	Regression Co-efficient	t-Value
1. Age(X <sub>1</sub> )	-0.231	-0.099	-1.303
2. Education(X <sub>2</sub> )	0.108	0.455	0.604
3. Family size(X <sub>3</sub> )	-0.265	-0.848	-1.498
4. Farm mechanization(X <sub>4</sub> )	-0.002	-0.002	-0.015
5. Cropping Intensity (X <sub>5</sub> )	-0.147	-0.024	-1.074
6. Homestead land (X <sub>6</sub> )	-0.119	-2.045	-0.890
7. Own land(X <sub>7</sub> )	0.263	1.193	1.187
8. Area under Rubber (X <sub>8</sub> )	-0.642	-4.078	-2.451*
9. Annual Income (X <sub>9</sub> )	0.150	0.077	0.899
10. Income from Rubber (X <sub>10</sub> )	-0.169	0.000	-0.840
11. Off-farm income (X <sub>11</sub> )	0.021	0.036	0.157

12. Economic status ( $X_{12}$ )	0.113	4.595	0.810
13. Material possession ( $X_{13}$ )	-0.042	0.000	-0.302
14. Scientific Orientation ( $X_{14}$ )	-0.017	-0.171	-0.134
15. Value towards adoption ( $X_{15}$ )	-0.075	-0.712	-0.591
16. Value towards discontinuance ( $X_{16}$ )	0.226	2.277	1.673
17. Value towards rejection ( $X_{17}$ )	0.014	0.188	0.105
18. Mass media exposure ( $X_{18}$ )	0.098	1.754	0.729

R square=0.318

F value for R=0.564 with 18 and 58 DFS

Adjusted R square=0.106

\* denotes significant at 5% level

Regression analysis is the statistical tool which has been done to isolate and estimate the causal variables having dominating effect as well as impact on influencing the performance of consequent variables where coefficient of correlation helps an estimation of degree of influencing the regression analysis helps an estimation of efficacy of variables in characterizing the consequent variables.

The table 5.9 presents the causal effect of independent variables on Socialization level. It has been found that the variable area under rubber ( $X_8$ ) has exerted the highest regressional impact on socialization level and it indicates that for the small farm, socialization has gone faster. So the small and marginal enterprise deserves a focus with socialization process in order to generate a bouncy in their economy and social status.

The  $R^2$  value being 0.381, it is to conclude that with the combination of all these 18 causal variables, 38.1 per cent variance in the socialization process (Y) has been explained.

**Table 5.9(a): Step down Regression: Causal Effect of independent Variables on Socialization level (Y), the consequent variable**

Predictors	B	S.E	Beta	t	R	R square	Adjusted R	S.E of the estimate
Area under Rubber (X <sub>8</sub> )	-3.048	0.826	-0.480	-3.688**	0.315	0.099	0.087	5.093
Family size(X <sub>3</sub> )	-0.917	0.417	-0.287	-2.201*	0.403	0.162	0.140	4.944
Education (X <sub>2</sub> )	0.929	0.441	0.220	2.105*	0.458	0.210	0.178	4.834

\*\* Significant at 1% level of significance

\* Significant at 5% level of significance

The step-down regression refers to isolate the determining the causal factor of plethora of 18 variables to estimate their substantial impact on consequent variable.

The three variable Area under rubber(x<sub>8</sub>), Family size (x<sub>3</sub>) and Education (x<sub>2</sub>) have been screened out as to have discernable impact on socialization process. So, area under rubber (x<sub>8</sub>) family size and education of the respondents should be important consideration while we would be having an action for promoting faster and wider socialization of rubber enterprise in the study area.

The variables could explain 43.7 per cent variance embedded with consequent variable.

**Table 5.10: Path Analysis: Adoption index (Y<sub>1</sub>)  
Vs 18 Exogenous Variables**

Variables	Direct effect	Indirect effect	Total effect	Substantial indirect effect		
				I	II	III
1. Age(X <sub>1</sub> )	-0.214	-0.047	-0.261	-0.072 (x <sub>2</sub> )	0.043 (x <sub>7</sub> )	-0.042 (x <sub>8</sub> )
2. Education(X <sub>2</sub> )	0.110	0.126	0.237	0.139 (x <sub>1</sub> )	-0.035 (x <sub>9</sub> )	-0.034 (x <sub>5</sub> )
3. Family size(X <sub>3</sub> )	-0.283	0.261	-0.022	0.376 (x <sub>8</sub> )	-0.132 (x <sub>7</sub> )	0.117 (x <sub>10</sub> )
4. Farm mechanization(X <sub>4</sub> )	0.022	0.022	0.044	0.049 (x <sub>1</sub> )	-0.038 (x <sub>8</sub> )	0.028 (x <sub>16</sub> )
5. Cropping Intensity (X <sub>5</sub> )	-0.156	0.284	0.128	0.093 (x <sub>8</sub> )	0.048 (x <sub>3</sub> )	0.033 (x <sub>7</sub> )
6. Homestead land (X <sub>6</sub> )	-0.122	-0.105	-0.227	-0.059 (x <sub>16</sub> )	-0.048 (x <sub>3</sub> )	0.035 (x <sub>5</sub> )
7. Own land(X <sub>7</sub> )	0.242	<b>-0.388</b>	-0.146	-0.480 (x <sub>8</sub> )	0.155 (x <sub>3</sub> )	-0.099 (x <sub>10</sub> )
8. Area under Rubber (X <sub>8</sub> )	<b>-0.629</b>	0.327	<b>-0.303</b>	0.185 (x <sub>7</sub> )	0.169 (x <sub>3</sub> )	-0.141 (x <sub>10</sub> )
9. Annual Income (X <sub>9</sub> )	0.155	-0.292	-0.137	-0.347 (x <sub>8</sub> )	0.113 (x <sub>3</sub> )	-0.111 (x <sub>10</sub> )
10. Income from Rubber (X <sub>10</sub> )	-0.189	-0.022	-0.211	-0.472 (x <sub>8</sub> )	0.176 (x <sub>3</sub> )	0.128 (x <sub>7</sub> )
11. Off-farm income (X <sub>11</sub> )	0.008	-0.006	0.002	-0.136 (x <sub>8</sub> )	0.082 (x <sub>3</sub> )	-0.034 (x <sub>10</sub> )
12. Economic status (X <sub>12</sub> )	0.128	-0.209	-0.081	-0.312 (x <sub>8</sub> )	0.110 (x <sub>7</sub> )	0.095 (x <sub>3</sub> )
13. Material possession (X <sub>13</sub> )	-0.025	-0.049	-0.073	-0.243 (x <sub>8</sub> )	0.063 (x <sub>7</sub> )	-0.055 (x <sub>10</sub> )
14. Scientific Orientation (X <sub>14</sub> )	-0.021	0.055	0.035	-0.056 (x <sub>3</sub> )	0.043 (x <sub>1</sub> )	0.036 (x <sub>2</sub> )
15. Value towards adoption (X <sub>15</sub> )	-0.092	0.072	-0.020	0.045 (x <sub>8</sub> )	-0.040 (x <sub>9</sub> )	-0.039 (x <sub>3</sub> )

16. Value towards discontinuance (X <sub>16</sub> )	0.213	-0.085	0.127	0.083 (x <sub>8</sub> )	-0.046 (x <sub>3</sub> )	-0.040 (x <sub>7</sub> )
17. Value towards rejection(X <sub>17</sub> )	0.020	-0.045	-0.025	0.085 (x <sub>8</sub> )	-0.039 (x <sub>1</sub> )	-0.039 (x <sub>9</sub> )
18. Mass media exposure(X <sub>18</sub> )	0.100	0.088	0.188	0.048 (x <sub>8</sub> )	0.044 (x <sub>1</sub> )	0.025 (x <sub>10</sub> )

**RESIDUAL EFFECT=0.6919**

Table 5.10 presents the path analysis for decomposing the total effect(r) of the antecedent variables into direct, indirect and residual effect on the consequent variable, Adoption index (Y<sub>1</sub>). It has been found that the variable area under rubber has exerted the highest direct effect as well as highest total effect adoption process. Own land has recorded highest level of indirect in characterizing adoption index.

The residual effect being 0.6919, it is concluded that even with combination of all these 18 variables, 69.19 per cent of the variance on the consequent variable, adoption index could not be explained.

**Table 5.11: Path Analysis: Re-invention (Y<sub>2</sub>) Vs 18 Exogenous Variables**

Variables	Direct effect	Indirect effect	Total effect	Substantial indirect effect		
				I	II	III
1. Age(X <sub>1</sub> )	-0.202	0.009	-0.193	-0.042 (x <sub>11</sub> )	0.039 (x <sub>4</sub> )	0.035 (x <sub>3</sub> )
2. Education(X <sub>2</sub> )	0.000	0.248	0.248	0.131 (x <sub>1</sub> )	0.071 (x <sub>11</sub> )	0.054 (x <sub>15</sub> )
3. Family size(X <sub>3</sub> )	<b>0.396</b>	<b>-0.309</b>	0.088	-0.087 (x <sub>11</sub> )	-0.080 (x <sub>7</sub> )	-0.077 (x <sub>8</sub> )
4. Farm mechanization(X <sub>4</sub> )	-0.173	0.226	0.052	0.061 (x <sub>11</sub> )	0.059 (x <sub>15</sub> )	0.046 (x <sub>1</sub> )
5. Cropping Intensity (X <sub>5</sub> )	0.142	0.016	0.158	-0.067 (x <sub>3</sub> )	0.047 (x <sub>6</sub> )	0.025 (x <sub>11</sub> )

6.Homestead land (X <sub>6</sub> )	-0.209	-0.055	<b>-0.265</b>	0.067 (x <sub>3</sub> )	-0.043(x <sub>12</sub> )	0.036 (x <sub>4</sub> )
7. Own land(X <sub>7</sub> )	0.146	-0.160	-0.014	-0.217 (x <sub>3</sub> )	0.098 (x <sub>8</sub> )	-0.076 (x <sub>12</sub> )
8. Area under Rubber (X <sub>8</sub> )	0.129	-0.167	-0.038	-0.237 (x <sub>3</sub> )	0.111 (x <sub>7</sub> )	-0.083 (x <sub>12</sub> )
9. Annual Income (X <sub>9</sub> )	0.031	-0.063	-0.033	-0.159 (x <sub>3</sub> )	0.071 (x <sub>8</sub> )	0.065 (x <sub>7</sub> )
10. Income from Rubber (X <sub>10</sub> )	0.093	-0.107	-0.014	-0.246 (x <sub>3</sub> )	0.097 (x <sub>8</sub> )	0.077 (x <sub>7</sub> )
11. Off-farm income (X <sub>11</sub> )	0.297	-0.043	0.255	-0.115 (x <sub>3</sub> )	-0.042 (x <sub>13</sub> )	0.038 (x <sub>15</sub> )
12. Economic status (X <sub>12</sub> )	-0.167	-0.005	-0.173	-0.133 (x <sub>3</sub> )	0.066 (x <sub>7</sub> )	0.064 (x <sub>8</sub> )
13. Material possession (X <sub>13</sub> )	-0.132	0.135	0.002	0.094 (x <sub>11</sub> )	-0.051 (x <sub>12</sub> )	0.050 (x <sub>8</sub> )
14. Scientific Orientation (X <sub>14</sub> )	-0.077	0.124	0.047	0.079 (x <sub>3</sub> )	0.041 (x <sub>1</sub> )	0.023 (x <sub>15</sub> )
15. Value towards adoption (X <sub>15</sub> )	0.219	0.039	0.258	0.055 (x <sub>3</sub> )	0.051 (x <sub>11</sub> )	-0.046 (x <sub>4</sub> )
16. Value towards discontinuance (X <sub>16</sub> )	-0.010	0.043	0.034	0.065 (x <sub>3</sub> )	0.058 (x <sub>6</sub> )	-0.038 (x <sub>11</sub> )
17.Value towards rejection(X <sub>17</sub> )	-0.061	-0.095	-0.156	-0.037 (x <sub>1</sub> )	-0.030 (x <sub>15</sub> )	0.028 (x <sub>12</sub> )
18.Mass media exposure(X <sub>18</sub> )	0.065	0.104	0.169	0.052 (x <sub>11</sub> )	-0.050 (x <sub>4</sub> )	0.047 (x <sub>15</sub> )

**RESIDUAL EFFECT=0.6551**

Table 5.11 presents the path analysis for decomposing the total effect(r) of the antecedent variables into direct, indirect and residual effect on the consequent variable, re-invention (Y<sub>2</sub>). It has been found that the variable family size has exerted the highest direct effect on re-invention.

Similarly highest indirect effect has been exerted by the variable family size. So, this variable has got substantive and associational property in characterizing the consequent variable. Homestead land has highest total effect on re-invention process.

The residual effect being 0.6551, it is concluded that even with combination of all these 18 variables, 65.51 per cent of the variance on consequent variable, re-invention could not be explained.

**Table 5.12: Path Analysis: Perceived constraints (Y<sub>3</sub>) Vs 18 Exogenous Variables**

Variables	Direct effect	Indirect effect	Total effect	Substantial indirect effect		
				I	II	III
1. Age(X <sub>1</sub> )	-0.136	0.148	0.012	0.071 (x <sub>4</sub> )	0.042 (x <sub>7</sub> )	0.040 (x <sub>2</sub> )
2. Education(X <sub>2</sub> )	-0.061	0.129	0.068	0.088 (x <sub>1</sub> )	0.043 (x <sub>15</sub> )	-0.032 (x <sub>13</sub> )
3. Family size(X <sub>3</sub> )	0.123	-0.035	0.089	-0.190 (x <sub>10</sub> )	-0.129 (x <sub>7</sub> )	0.0103 (x <sub>8</sub> )
4. Farm mechanization(X <sub>4</sub> )	<b>-0.310</b>	0.054	<b>-0.257</b>	0.046 (x <sub>15</sub> )	-0.035 (x <sub>6</sub> )	0.031 (x <sub>1</sub> )
5. Cropping Intensity (X <sub>5</sub> )	0.104	0.047	0.151	-0.038 (x <sub>6</sub> )	0.032 (x <sub>7</sub> )	0.030 (x <sub>13</sub> )
6. Homestead land (X <sub>6</sub> )	0.170	-0.068	0.102	0.064 (x <sub>4</sub> )	-0.045 (x <sub>12</sub> )	-0.030 (x <sub>10</sub> )
7. Own land(X <sub>7</sub> )	0.237	-0.248	-0.011	0.161 (x <sub>10</sub> )	-0.132 (x <sub>8</sub> )	-0.080 (x <sub>12</sub> )
8. Area under Rubber (X <sub>8</sub> )	-0.173	0.044	-0.129	0.230 (x <sub>10</sub> )	0.180 (x <sub>7</sub> )	-0.087 (x <sub>12</sub> )
9. Annual Income (X <sub>9</sub> )	-0.136	0.005	-0.131	0.180 (x <sub>10</sub> )	0.106 (x <sub>7</sub> )	-0.095 (x <sub>8</sub> )
10. Income from Rubber (X <sub>10</sub> )	0.306	<b>-0.349</b>	-0.043	-0.130 (x <sub>8</sub> )	0.125 (x <sub>7</sub> )	-0.080 (x <sub>9</sub> )



11. Off-farm income (X <sub>11</sub> )	0.054	-0.156	-0.102	-0.069 (x <sub>13</sub> )	-0.064 (x <sub>4</sub> )	0.055 (x <sub>10</sub> )
12. Economic status (X <sub>12</sub> )	-0.175	0.047	-0.128	0.120 (x <sub>10</sub> )	0.108 (x <sub>7</sub> )	-0.086 (x <sub>8</sub> )
13. Material possession (X <sub>13</sub> )	-0.217	0.023	-0.194	0.089 (x <sub>10</sub> )	-0.067 (x <sub>8</sub> )	0.062 (x <sub>7</sub> )
14. Scientific Orientation (X <sub>14</sub> )	0.095	-0.048	0.047	-0.038 (x <sub>4</sub> )	-0.038 (x <sub>10</sub> )	-0.037 (x <sub>13</sub> )
15. Value towards adoption (X <sub>15</sub> )	0.173	-0.057	0.116	-0.083 (x <sub>4</sub> )	0.035 (x <sub>9</sub> )	-0.019 (x <sub>7</sub> )
16. Value towards discontinuance (X <sub>16</sub> )	0.185	-0.057	0.128	-0.047 (x <sub>6</sub> )	-0.041 (x <sub>4</sub> )	-0.040 (x <sub>7</sub> )
17. Value towards rejection (X <sub>17</sub> )	-0.078	0.082	0.004	0.034 (x <sub>9</sub> )	0.034 (x <sub>13</sub> )	0.030 (x <sub>12</sub> )
18. Mass media exposure (X <sub>18</sub> )	-0.083	-0.084	-0.167	-0.089 (x <sub>4</sub> )	-0.049 (x <sub>13</sub> )	-0.041 (x <sub>10</sub> )

**RESIDUAL EFFECT= 0.788**

Table 5.12 presents the path analysis for decomposing the total effect(r) of the antecedent variables into direct, indirect and residual effect on the consequent variable, perceived constraints (Y<sub>3</sub>). It has been found that the variable farm mechanization has exerted the highest direct effect on the independent variable perceived constraints and highest indirect effect has been exerted by the income from rubber.

Similarly farm mechanization has got highest total effect on perceived constraints of the respondents.

The residual effect being 0.788, it is concluded that even with combination of all these 18 variables, 78.8 per cent of the variance could not be explained.

**Table 5.13: Path Analysis: Socialization level (Y)  
Vs 18 Exogenous Variables**

Variables	Direct effect	Indirect effect	Total effect	Substantial indirect effect		
				I	II	III
1. Age(X <sub>1</sub> )	-0.231	-0.038	-0.269	-0.070 (x <sub>2</sub> )	0.047 (x <sub>7</sub> )	-0.043 (x <sub>8</sub> )
2. Education(X <sub>2</sub> )	0.108	0.143	0.251	0.150 (x <sub>1</sub> )	-0.034 (x <sub>9</sub> )	0.032 (x <sub>5</sub> )
3. Family size(X <sub>3</sub> )	-0.265	0.251	-0.014	0.383 (x <sub>8</sub> )	-0.144 (x <sub>7</sub> )	0.105 (x <sub>10</sub> )
4. Farm mechanization(X <sub>4</sub> )	-0.002	0.033	0.031	0.053 (x <sub>1</sub> )	-0.038 (x <sub>8</sub> )	0.030 (x <sub>16</sub> )
5. Cropping Intensity (X <sub>5</sub> )	-0.147	0.290	0.143	0.095 (x <sub>8</sub> )	0.045 (x <sub>3</sub> )	0.036 (x <sub>7</sub> )
6. Homestead land (X <sub>6</sub> )	-0.119	-0.112	-0.231	-0.063 (x <sub>16</sub> )	-0.045 (x <sub>3</sub> )	0.033 (x <sub>5</sub> )
7. Own land(X <sub>7</sub> )	0.263	<b>-0.412</b>	-0.149	-0.489 (x <sub>8</sub> )	0.145 (x <sub>3</sub> )	-0.089 (x <sub>10</sub> )
8. Area under Rubber (X <sub>8</sub> )	<b>-0.642</b>	0.327	<b>-0.315</b>	0.201 (x <sub>7</sub> )	0.158 (x <sub>3</sub> )	-0.127 (x <sub>10</sub> )
9. Annual Income (X <sub>9</sub> )	0.150	-0.297	-0.147	-0.354 (x <sub>8</sub> )	0.118 (x <sub>7</sub> )	0.106 (x <sub>3</sub> )
10. Income from Rubber (X <sub>10</sub> )	-0.169	-0.047	-0.216	-0.482 (x <sub>8</sub> )	0.165 (x <sub>3</sub> )	0.139 (x <sub>7</sub> )
11. Off-farm income (X <sub>11</sub> )	0.021	-0.017	0.004	-0.139 (x <sub>8</sub> )	0.077 (x <sub>3</sub> )	0.033 (x <sub>1</sub> )
12. Economic status (X <sub>12</sub> )	0.113	-0.208	-0.095	-0.318 (x <sub>8</sub> )	0.120 (x <sub>7</sub> )	0.089 (x <sub>3</sub> )
13. Material possession (X <sub>13</sub> )	-0.042	-0.044	-0.086	-0.248 (x <sub>8</sub> )	0.069 (x <sub>7</sub> )	-0.049 (x <sub>10</sub> )
14. Scientific Orientation (X <sub>14</sub> )	-0.017	0.057	0.040	-0.053 (x <sub>3</sub> )	0.046 (x <sub>1</sub> )	0.036 (x <sub>7</sub> )
15. Value towards adoption (X <sub>15</sub> )	-0.075	0.070	-0.005	0.046 (x <sub>8</sub> )	-0.038 (x <sub>9</sub> )	-0.037 (x <sub>3</sub> )

16. Value towards discontinuance ( $X_6$ )	0.226	-0.088	0.138	0.085 ( $x_8$ )	-0.044 ( $x_3$ )	-0.044 ( $x_7$ )
17. Value towards rejection ( $X_{17}$ )	0.014	-0.043	-0.030	0.087 ( $x_8$ )	-0.042 ( $x_1$ )	-0.037 ( $x_9$ )
18. Mass media exposure ( $X_{18}$ )	0.098	0.087	0.185	0.049 ( $x_8$ )	0.047 ( $x_1$ )	0.024 ( $x_6$ )

**RESIDUAL EFFECT=0.6775**

Table 5.13 presents the path analysis for decomposing the total effect( $r$ ) of the antecedent variables into direct, indirect and residual effect on the consequent variable, socialization level( $Y$ ).

Path analysis has been understood to decompose the value of coefficient of correlation into direct, indirect and residual effect so as to characterize the consequent variable i.e. Socialization of rubber technology.

It has been found that the variable area under rubber ( $X_8$ ) has got highest total effect exerted on socialization level ( $Y$ ). Similarly, the highest direct effect has been exerted by the variable area under rubber. The highest indirect has been exerted by the variable own land ( $X_7$ ). So, the variable area under has got tremendous impact on the socialization process. The other way round we can say that higher the size of own land in a unit area and unit time, the higher would be level of socialization.

The residual effect being 0.6775, it's concluded that even with combination of all these 18 variables, 67.75 per cent of the variance could be explained.

**Table 5.14: Factor analysis: Conglomeration of variables based on factor loading and renaming of factors**

<b>Factors</b>	<b>Variables</b>	<b>Factor loading</b>	<b>Variance (%)</b>	<b>C.V. (%)</b>	<b>Factor Renaming</b>
<b>Factor-1</b>	Family size (X <sub>3</sub> ) Own land (X <sub>7</sub> ) Area under rubber(X <sub>8</sub> ) Annual income (X <sub>9</sub> ) Income from rubber (X <sub>10</sub> ) Economic status (X <sub>12</sub> )	-0.766 0.809 0.906 0.652 0.841 0.586	21.501	21.501	Resource entrepreneurship
<b>Factor-2</b>	Age (X <sub>1</sub> ) Education (X <sub>2</sub> )	-0.807 0.778	10.397	31.898	Capacity
<b>Factor-3</b>	Farm mechanization (X <sub>4</sub> ) Off farm income (X <sub>11</sub> ) Material possession(X <sub>13</sub> ) Value towards adoption(X <sub>15</sub> )	0.643 0.438 0.459 0.654	9.902	41.801	Farm behaviour
<b>Factor-4</b>	Cropping intensity(X <sub>5</sub> ) Homestead land(X <sub>6</sub> ) Value towards discontinuance (X <sub>16</sub> )	0.683 -0.749 0.575	8.987	50.788	Socialization
<b>Factor-5</b>	Scientific orientation (X <sub>14</sub> )	0.745	7.678	58.465	Scientific orientation

<b>Factor-6</b>	Value towards rejection( $X_{17}$ )	-0.772	7.350	65.815	Decision
	Mass media exposure ( $X_{18}$ )	0.530			

Table 5.14 presents the factor analysis to elucidate the conglomeration of variation based on the factor loading, Eigen value i.e. intrinsic homogeneity of the variables interacting and operating therewith. Six factors have been elicited therefore and have been renamed accordingly in the next page-

Factor 1 has accommodated the following variables *viz.* Family size ( $X_3$ ), Own land ( $X_7$ ), Area under rubber( $X_8$ ), Annual income ( $X_9$ ), Income from rubber ( $X_{10}$ ) and Economic status ( $X_{12}$ ) and contributed 21.50 per cent of the variance in the entire interaction. The factor has been renamed as Resource entrepreneurship.

Factor 2 has accommodated two variables *viz.* Age ( $X_1$ ) and Education ( $X_2$ ). These two contributed 10.39 per cent variance in the entire interaction and it has been renamed as Capacity.

Factor 3 has accommodated the following variables *viz.* Farm mechanization ( $X_4$ ), Off farm income ( $X_{11}$ ), Material possession( $X_{13}$ ), Value towards adoption ( $X_{15}$ ) and contributed 9.90 per cent variance in the entire interaction. It has been renamed as Farm behaviour.

Factor 4 has accommodated following variables *viz.* Cropping intensity( $x_5$ ), Homestead land( $X_6$ ), Value towards discontinuance ( $X_{16}$ ) and all these variables together contributed 8.98 per cent variance in the entire interaction and operation. It has been renamed Socialization.

Factor 5 accommodated only one variable that is scientific orientation ( $X_{14}$ ). So the factor has been renamed scientific orientation. It contributes 7.67 per cent variance in the entire operation and interaction.

Factor 6 has accommodated the variables value towards adoption ( $X_{17}$ ) and mass media exposure ( $X_{18}$ ) and their contributed variance per centage is 7.35. It has been renamed as Decision.

So, while handling with these 18 antecedent variables, those six factors would be strategically significant for operating with and managing the social ecology of rubber plantation of the study area.