

## Chapter 6

### Empirical Study and Revelation

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This chapter deals with the results of the study or investigation discussed about it. At the end of this chapter interpretation has been made, explanation has been tried to put down and an attempt has been done to reveal the cause behind it.

**Table 11: Descriptive statistics of independent variable with respect to Mean, Standard Deviation of values and Coefficient of variance:**

Sl. no.	Variables	Mean	SD	CV
1	Age(x1)	49.92	9.03	0.180
2	Education(x2)	7.58	4.01	0.529
3	Family size(x3)	6.02	2.80	0.465
4	Gender Ratio(x4)	1.13	0.81	0.716
5	Educational aspiration (x5)	3.90	1.56	0.4
6	Size of holding (x6)	6.44	5.79	0.899
7	Cropping Intensity (x7)	1.65	0.42	0.254
8	Total no. of Livestock (x8)	3.92	2.46	0.627
9	Total annual income (x9)	44328.33	53167.13	1.199
10	Per capita annual income (x10)	8228.24	9360.05	1.137
11	Income Ratio(x11)	11.45	22.22	1.940
12	Capital intensity (x12)	7234.17	1511.61	0.208
13	Scientific Orientation (x13)	3.03	1.44	0.475
14	Self efficacy(x14)	3.08	1.24	0.402
15	Risk Orientation (x15)	2.77	1.12	0.404
16	Economic motivation(X16)	2.67	1.31	0.490

17	Competition(X17)	2.77	0.95	0.342
18	Information Index(X18)	28.83	27.93	0.968
19	Distance matrix(X19)	33.86	17.60	0.519

## RESULTS

Table 11 presents the distribution of variables in terms of mean, SD and CV. It has been found from the study that the mean age(X1) is 41.92 years with standard deviation, 9.03 for the total distribution taken for the study. Coefficient of variation of age is 18 which show a high level of consistency in its distribution nature.

The independent variable, **education (X2)** of farmers has been found from the study that the mean 6.02 years of schooling with standard deviation (SD), 2.80 for the total distribution taken for the study. Coefficient of variation of **education(X2)** is 46.5 which shows a moderate level of consistency in its distribution.

The independent variable, **family size (X3)** of farmers has been found from the study that the mean 6.02 with standard deviation (SD), 2.80 for the total distribution taken for the study. Coefficient of variation of **family size (X2)** is 46.5 which show a moderate level of consistency in its distribution.

The independent variable, **gender ratio (X4)** of farmers has been found from the study that the mean 1.13 with standard deviation (SD), 0.81 for the total distribution taken for the study. Coefficient of variation of **gender ratio (X4)** is 71.6 which shows a moderate level of consistency in its distribution.

The independent variable, **educational aspiration (X5)** of farmers has been found from the study that the mean 3.90 with standard deviation (SD), 1.56 for the total distribution taken for the study. Coefficient of variation of **educational aspiration (X5)** is 40 which shows a moderate level of consistency in its distribution.

The independent variable, **size of holding(X6)** of farmers has been found from the study that the mean 6.44 with standard deviation (SD), 5.79 for the total distribution taken for the study. Coefficient of variation of **size of holding(X6)** is 89.9 which shows a moderate level of consistency in its distribution.

The independent variable, **cropping intensity(X7)** of farmers has been found from the study that the mean 1.65 with standard deviation (SD), 0.42 for the total distribution taken for the study. Coefficient of variation of **cropping intensity(X7)** is 25.4 which show a moderate level of consistency in its distribution.

The independent variable, **total number of livestock(X8)** of farmers has been found from the study that the mean 3.92 with standard deviation (SD), 2.46 for the total distribution taken for the study. Coefficient of variation **total number of livestock(X8)** of is 62.7 which shows a moderate level of consistency in its distribution.

The independent variable, **total annual income(X9)** of farmers has been found from the study that the mean 44328.33 with standard deviation (SD), 53167.13 for the total distribution taken for the study. Coefficient of variation of **total annual income(X9)** is 119.9 which shows a moderate level of consistency in its distribution.

The independent variable, **per capita annual income (X10)** of farmers has been found from the study that the mean 8228.24 with standard deviation (SD), 9360.05 for the total distribution taken for the study. Coefficient of variation of **per capita annual income (X10)** is 113.7 which shows a moderate level of consistency in its distribution.

The independent variable, **income ratio (X11)** of farmers has been found from the study that the mean 11.45 with standard deviation (SD), 22.22 for the total distribution taken for the study. Coefficient of variation of **income ratio (X11)** is 194 which shows a moderate level of consistency in its distribution.

The independent variable, **capital intensity(X12)** of farmers has been found from the study that the mean 7234.17 with standard deviation (SD), 1511.61 for the total distribution taken for the study. Coefficient of variation of **capital intensity(X12)** is 20.8 which show a moderate level of consistency in its distribution.

The independent variable, **scientific orientation(X13)** of farmers has been found from the study that the mean 3.03 with standard deviation (SD), 1.44 for the total distribution taken for the study. Coefficient of variation of **scientific orientation(X13)** is 47.5 which shows a moderate level of consistency in its distribution.

The independent variable, **self efficacy (X14)** of farmers has been found from the study that the mean 3.08 with standard deviation (SD), 1.24 for the total distribution taken for the study. Coefficient of variation of **self efficacy (X14)** is 40.2 which shows a moderate level of consistency in its distribution.

The independent variable, **risk orientation(X15)** of farmers has been found from the study that the mean 2.77 with standard deviation (SD), 1.12 for the total distribution taken for the study. Coefficient of variation of **risk orientation(X15)** is 40.4 which shows a moderate level of consistency in its distribution.

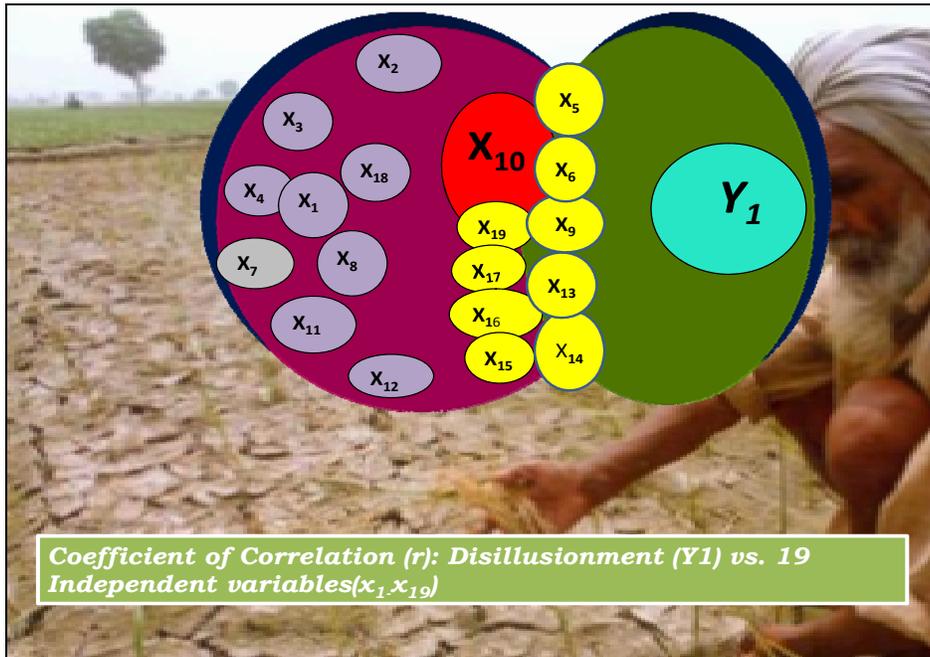
The independent variable, **economic motivation (X16)** of farmers has been found from the study that the mean 2.67 with standard deviation (SD), 1.31 for the total distribution taken for the study. Coefficient of variation of **economic motivation (X16)** is 49 which shows a moderate level of consistency in its distribution.

The independent variable, **competition (X17)** of farmers has been found from the study that the mean 2.77 with standard deviation(SD), 0.95 for the total distribution taken for the study. Coefficient of variation of **competition (X17)** is 34.2 which shows a moderate level of consistency in its distribution.

The independent variable, **information index (X18)** of farmers has been found from the study that the mean 28.83 with standard deviation(SD), 27.93 for the total distribution taken for the study. Coefficient of variation of **information index (X18)** is 96.8 which shows a moderate level of consistency in its distribution.

The independent variable, **distance matrix (X19)** of farmers has been found from the study that the mean 33.86 with standard deviation (SD), 17.60 for the total distribution taken for the study. Coefficient of variation of **distance matrix (X19)** is 51.9 which shows a moderate level of consistency in its distribution.

**COEFFICIENT OF CORRELATION (R): DISILLUSIONMENT (Y<sub>1</sub>)  
VS. 19 INDEPENDENT VARIABLES(X<sub>1</sub>-X<sub>19</sub>)**



**RESULTS**

It presents the coefficient of correlation between Y<sub>1</sub> (Disillusionment) and 19 independent variables. It has been found that following viz. Educational aspiration (x<sub>5</sub>), Size of holding (x<sub>6</sub>), Total annual income (x<sub>9</sub>), Per capita annual income (x<sub>10</sub>), Scientific Orientation (x<sub>13</sub>), Self efficacy(x<sub>14</sub>), Risk Orientation (x<sub>15</sub>), Economic motivation(X<sub>16</sub>), Competition(X<sub>17</sub>), Distance matrix(X<sub>19</sub>) have recorded significant correlation with the dependent variable.

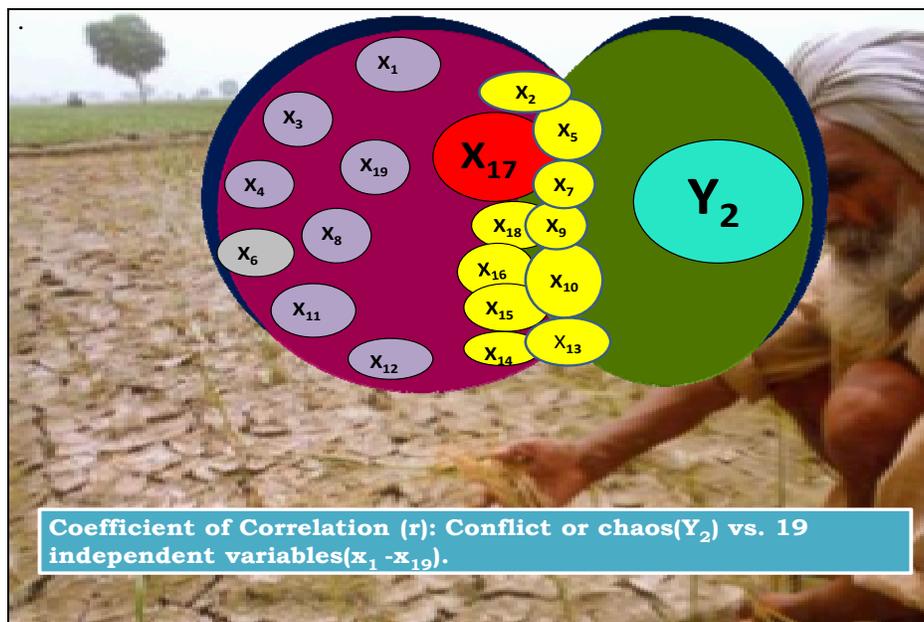
**REVELATION**

The variables recorded significant but negative correlation are Educational aspiration (x<sub>5</sub>), Size of holding (x<sub>6</sub>), Total annual income (x<sub>9</sub>), Per capita annual income (x<sub>10</sub>), Scientific Orientation (x<sub>13</sub>), Self efficacy(x<sub>14</sub>), Risk Orientation (x<sub>15</sub>), Economic motivation(X<sub>16</sub>), Competition(X<sub>17</sub>), Distance matrix(X<sub>19</sub>), so it is well discernible that the less the psychological,

managerial and educational proficiency of the respondent farmers, the higher has been the disillusionment( $Y_1$ ).

For example the poorer is the economic motivation or Risk orientation the higher has been the disillusionment. The Humongous problem of the present day Indian farmers are serious lack of self efficacy and off course economic motivation when agriculture is being perceived as the worst choice out of a tiny choice basket, the disillusionment is must to creep into the psychic construct of farmers. ICAR reports as depicts 42% farmers are ready to quit agriculture given an alternative non farm economy is made available to them.

**Coefficient of Correlation ( $r$ ): Conflict or chaos ( $Y_2$ ) vs. 19 independent variables( $x_1 - x_{19}$ ).**



## RESULTS

It presents the coefficient of correlation between  $Y_2$  (chaos) and 19 independent variables. It has been found that following viz. Education( $x_2$ ), Educational aspiration ( $x_5$ ), Cropping Intensity ( $x_7$ ), Total annual income ( $x_9$ ), Per capita annual income ( $x_{10}$ ), Scientific Orientation ( $x_{13}$ ), Self

efficacy( $x_{14}$ ), Risk Orientation ( $x_{15}$ ), Economic motivation( $X_{16}$ ), Competition( $X_{17}$ ), Information Index( $X_{18}$ ) have recorded significant correlation with the dependent variable.

### **REVEALATION**

The variables recorded significant but negative correlation are Education( $x_2$ ), Educational aspiration ( $x_5$ ), Cropping Intensity ( $x_7$ ), Total annual income ( $x_9$ ), Per capita annual income ( $x_{10}$ ), Scientific Orientation ( $x_{13}$ ), Self efficacy( $x_{14}$ ), Risk Orientation ( $x_{15}$ ), Economic motivation( $X_{16}$ ), Competition( $X_{17}$ ), Information Index( $X_{18}$ ) so it is well discernible that the less the psychological, managerial and educational proficiency of the respondent farmers, the higher has been the Chaos ( $Y_2$ ).

It is obvious that if a farmer cannot become self efficacious, cannot take risk, everything related to his confidence will go down and he will have some chaotic instances inside as well as outside due to some hardship in income and other required outcomes.

**Coefficient of Correlation (r): Disorder ( $Y_3$ ) vs. 19 independent variables( $x_1 - x_{19}$ )**

### **RESULTS**

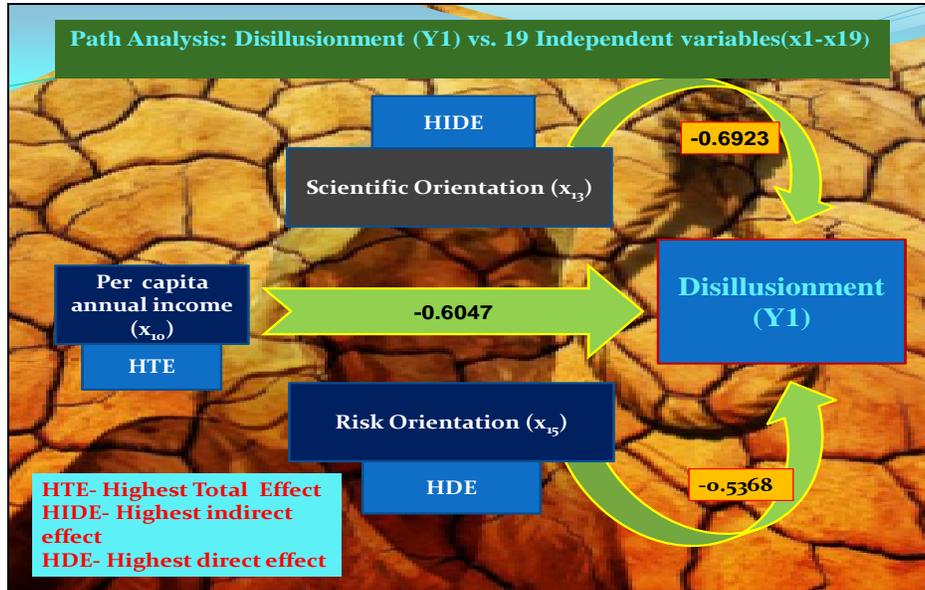
It presents the coefficient of correlation between  $Y_3$  (Disorder) and 19 independent variables. It has been found that following viz. Total annual income ( $x_9$ ), Per capita annual income ( $x_{10}$ ), Scientific Orientation ( $x_{13}$ ), Self efficacy( $x_{14}$ ), Risk Orientation ( $x_{15}$ ), Economic motivation( $X_{16}$ ), Competition( $X_{17}$ ) have recorded significant correlation with the dependent variable.

### **REVEALATION**

The variables recorded significant but negative correlation are Total annual income ( $x_9$ ), Per capita annual income ( $x_{10}$ ), Scientific Orientation ( $x_{13}$ ), Self efficacy( $x_{14}$ ), Risk Orientation ( $x_{15}$ ), Economic motivation( $X_{16}$ ), Competition( $X_{17}$ ) so it is well discernible that the less the psychological, managerial and educational proficiency of the respondent farmers, the higher has been the Disorder ( $Y_3$ ).

If income is not be sufficient for a person he may not behave like a progressive farmer and as a result he will feel unrest within his psyche which will cause disorder.

**Path Analysis: Disillusionment (Y1) vs. 19 Independent variables(x1-x19)**



**Residual effect**= 23.21 per cent

**RESULTS**

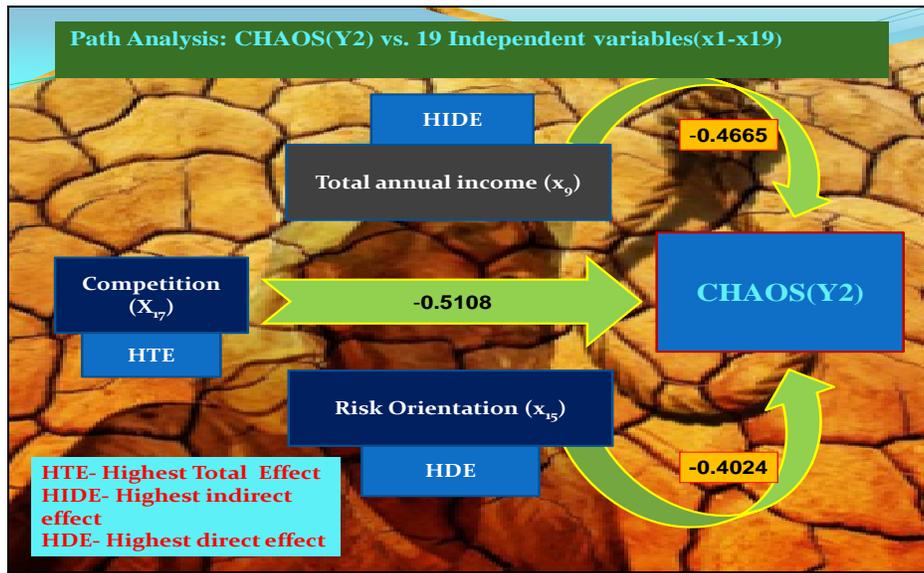
Table 5 presents the Path Analysis to Decompose the Total effect into Direct, Indirect and Residual effect. It has been found that the variable Risk Orientation (x<sub>15</sub>) has highest direct effect(-0.5368), while the variable Scientific Orientation (x<sub>13</sub>) has exerted the highest indirect effect (-0.6923) on the perception of Disillusionment (Y1). The variable Risk Orientation (x<sub>15</sub>) has enrouted the highest indirect effect of as many as 12 variables on the consequent variable.

The Residual effect being 23.21 per cent, it is to infer that even with the combination of these 19 exogenous variables, per cent of variance cannot be explained. This suggests the inclusion of more numbers of relevant and consistent variables for this framework of study

**REVEALATION**

The variable Risk Orientation ( $x_{15}$ ) has exerted the highest direct effect to employ that higher risk orientation inculcates higher capability to conjure and absorb entrepreneurial jerk and uncertainties. But Risk orientation here merits a clandestine combination scientific orientation to survive with the uncertainties. Risk orientation has again got higher level of companionships with other variables to contribute to ultimately the consequent variable Disillusionment.

**Path Analysis: Chaos or Conflict(Y2) vs. 19 Independent variables( $x_1$ - $x_{19}$ )**



Residual effect= 40.47 per cent

**RESULTS**

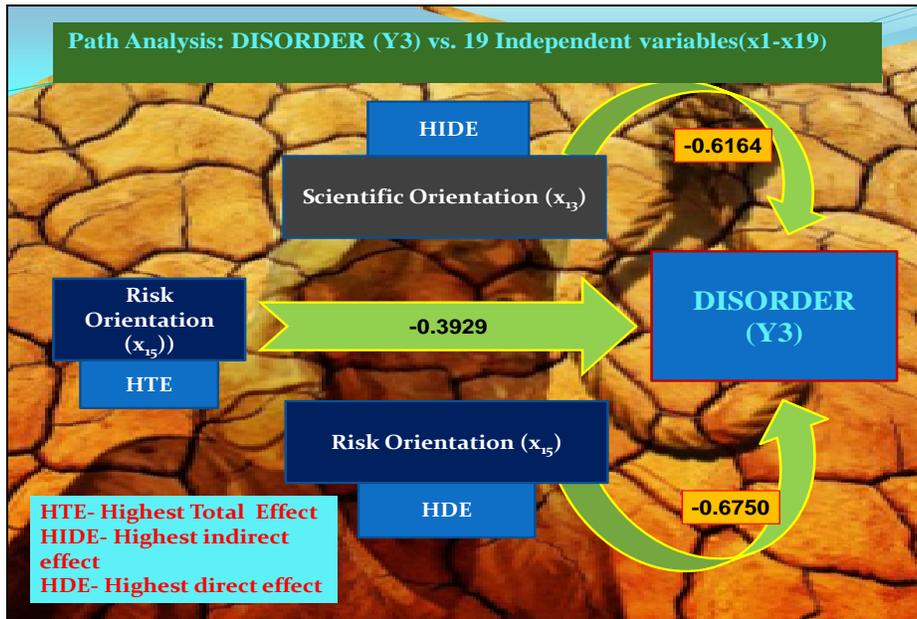
Table 16 presents the Path Analysis to Decompose the Total effect into Direct, Indirect and Residual effect. It has been found that the variable Risk Orientation ( $x_{15}$ ) has highest direct effect(-0.4024), while the variable Total annual income ( $x_9$ ) has exerted the highest indirect effect(-0.4665) on the perception of Disillusionment(Y1). The variable Risk Orientation

( $x_{15}$ ) has enrooted the highest indirect effect (10times) on the consequent variable.

The Residual effect being 40.47 per cent, it is to infer that even with the combination of these 19 exogenous variables, 40.47 per cent of variance cannot be explained. This suggests the inclusion of more numbers of relevant and consistent variables for this framework of study.

So The predominated factors, as formed by accommodating them based on factor loading, can offer a strategic implication by effectively downsizing the sphere of variables into well textured factors.

**Path Analysis: Disorder (Y3) vs. 19 Independent variables( $x_1$ - $x_{19}$ )**



Residual effect= 53.68 per cent

**RESULTS**

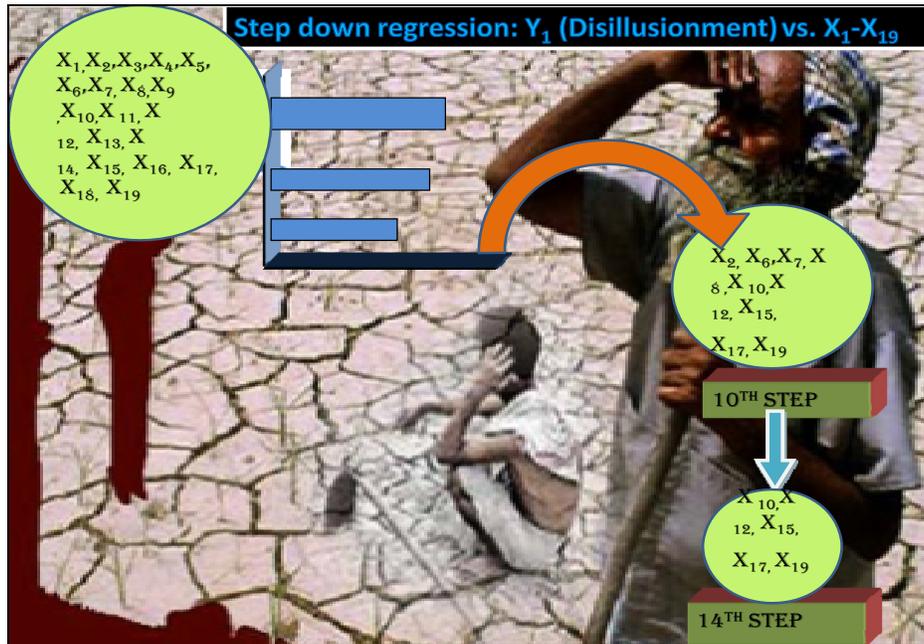
Table 17 presents the Path Analysis to Decompose the Total effect into Direct, Indirect and Residual effect. It has been found that the variable Risk Orientation ( $x_{15}$ ) has highest direct effect(-0.6750),while the variable

Scientific Orientation ( $x_{13}$ )Has exerted the highest indirect effect(-0.6164)On the perception of Chaos (Y2).

The Residual effect being 53.68 per cent, it is to infer that even with the combination of these 19 exogenous variables, 53.68 per cent of variance cannot be explained. This suggests the inclusion of more numbers of relevant and consistent variables for this framework of study.

So, The predominated factors, as formed by accommodating them based on factor loading, can offer a strategic implication by effectively downsizing the sphere of variables into well textured factors

**Regression Analysis : Disillusionment ( $Y_1$ ) VS 5 Causal variables( $x_{10},x_{12},x_{15},x_{17},x_{19}$ ):**



**MULTIPLE R-SQ= 65.93% S.E= 0.32**

**RESULTS**

Table 8 presents the multiple regression analysis between criterion variable Disillusionment vs 19 causal variables. It has been found that the variables Per capita annual income ( $x_{10}$ ), Capital intensity ( $x_{12}$ ),Risk Orientation ( $x_{15}$ ),

Competition( $X_{17}$ ), Distance matrix( $X_{19}$ ) have contributed substantially to the variable embedded with the consequent variable  $Y_1$ .

The  $R^2$  value being 0.7679, it is to infer that 76.79 per cent of variance in the consequent variable has been explained by the combination of these 19 variables.

Table 9 presents the stepwise regression and it has been depicted that the 5 causal variables that are Per capita annual income ( $x_{10}$ ), Capital intensity ( $x_{12}$ ), Risk Orientation ( $x_{15}$ ), Competition( $X_{17}$ ), Distance matrix( $X_{19}$ ) have been retained at the last step.

The  $R^2$  value being 0.6593, it is to infer that 65.93 per cent of variance in the consequent variable has been explained by the combination of these 5 causal variables.

### **REVEALATION**

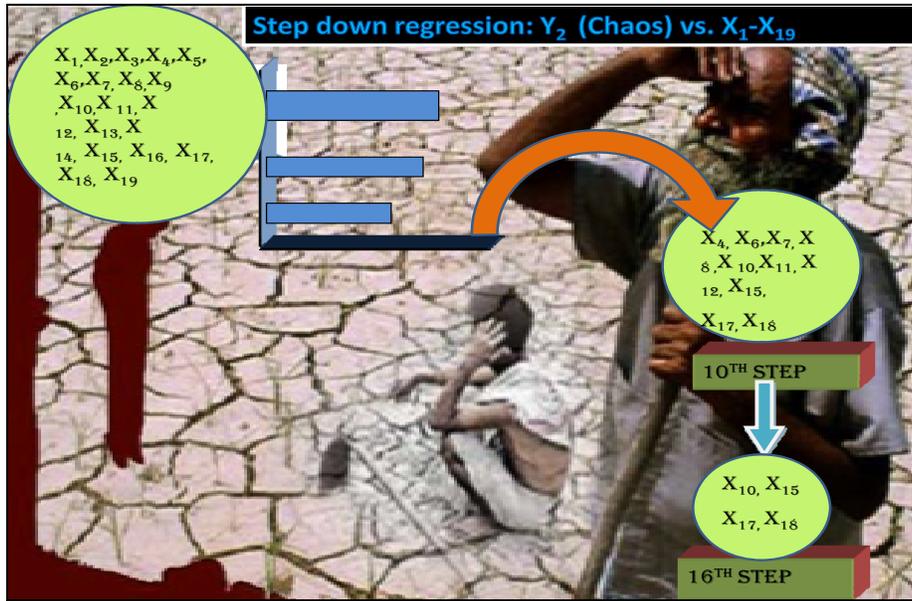
The variables retained in the last stage in stepwise regression analysis does present and operational constellation of 5 dominant variables working together and interacting reticulately, it can characterize both the level and direction of disillusionment.

So, those few variables can go immensely important in making the farmers relinquished of disillusionment and thus have incubated an important strategic implementation for research locale and similes.

**Table 21: Regression Analysis: Conflict or Chaos (Y<sub>2</sub>) VS 4 Causal variables(x<sub>10</sub>,x<sub>15</sub>,x<sub>17</sub>,x<sub>18</sub>):**

**MULTIPLE R-SQ= 0.5448**

**S.E= 0.21**



**RESULTS**

Table 10 presents the multiple regression analysis between criterion variable Disillusionment vs 19 causal variables. It has been found that the variables Per capita annual income (x<sub>10</sub>), Risk Orientation (x<sub>15</sub>), Competition(x<sub>17</sub>), Information Index(x<sub>18</sub>) have contributed substantially to the variable embedded with the consequent variable Y<sub>1</sub>.

The R<sup>2</sup> value being 0.5953, it is to infer that 59.53 per cent of variance in the consequent variable has been explained by the combination of these 19 variables.

Table 11 presents the stepwise regression and it has been depicted that the 5 causal variables that are Per capita annual income (x<sub>10</sub>), Risk

Orientation ( $x_{15}$ ), Competition( $X_{17}$ ), Information Index( $X_{18}$ ) have been retained at the last step.

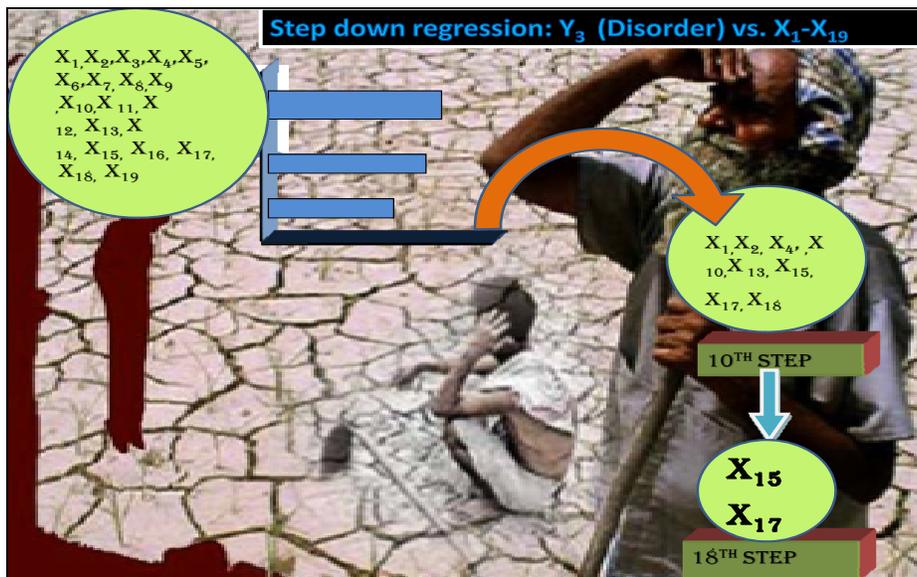
The  $R^2$  value being 0.5448, it is to infer that 54.48 per cent of variance in the consequent variable has been explained by the combination of these 5 causal variables.

### REVEALATION

The variables retained in the last stage in stepwise regression analysis does present and operational constellation of 4 dominant variables viz. Per capita annual income ( $x_{10}$ ), Risk Orientation ( $x_{15}$ ), Competition( $X_{17}$ ), Information Index( $X_{18}$ ) working together and interacting reticulously it can characterize both the level and direction of disorder.

So, those four variables can go immensely important in making the farmers relinquished of chaos and thus have incubated an important strategic implementation for research locale and similes.

### Regression Analysis: Disorder ( $Y_3$ ) VS 2 Causal variables( $x_{15}, x_{17}$ ):



**MULTIPLE R-SQ= 0.2284**

**S.E= 0.43**

**Results**

Table 12 presents the multiple regression analysis between criterion variable Disorder vs 19 causal variables. It has been found that the variables Risk Orientation ( $x_{15}$ ), Competition( $X_{17}$ ) have contributed substantially to the variable embedded with the consequent variable Y1.

The  $R^2$  value being 0.4623, it is to infer that 46.23 per cent of variance in the consequent variable has been explained by the combination of these 19 variables.

Table 13 presents the stepwise regression and it has been depicted that the 2 causal variables that are Risk Orientation ( $x_{15}$ ), Competition( $X_{17}$ ) have been retained at the last step.

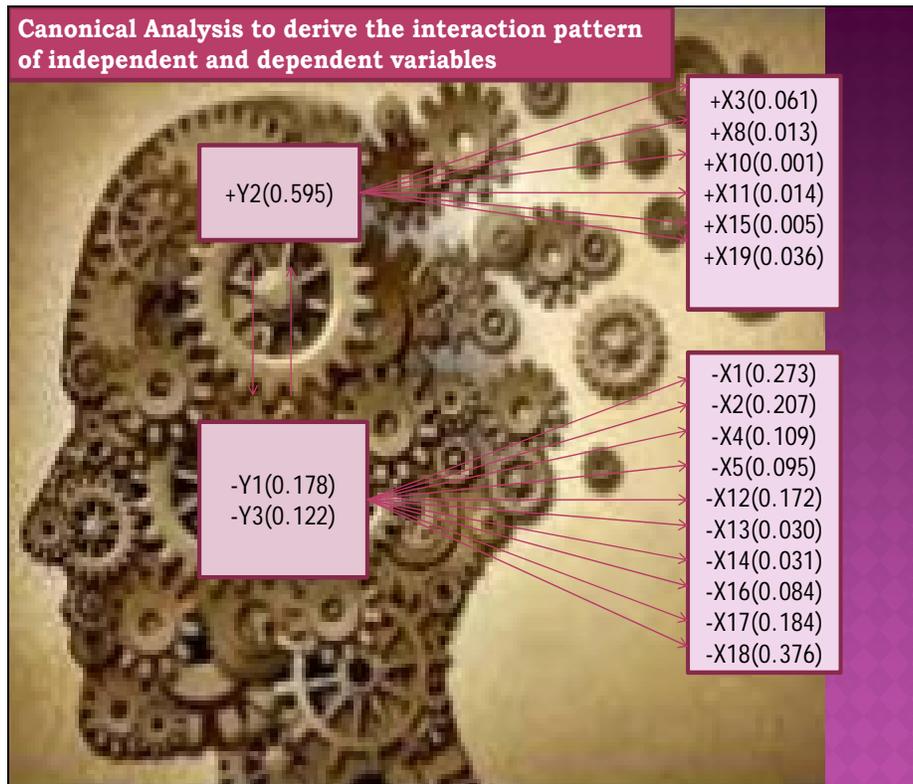
The  $R^2$  value being 0.2284, it is to infer that 22.84 per cent of variance in the consequent variable has been explained by the combination of these 2 causal variables.

**Revelation**

The variables retained in the last stage in stepwise regression analysis does present and operational constellation of 2 dominant variables viz. Risk Orientation ( $x_{15}$ ), Competition( $X_{17}$ ) working together and interacting reticulately it can characterize both the level and direction of disorder.

So, those two variables can go immensely important in making the farmers relinquished of disorder and thus have incubated an important strategic implementation for research locale and similes.

## Canonical Analysis to derive the interaction pattern of independent and dependent variables



### Results

CCA for this study has been applied to extract the canonical covariates between two sets of variables, the Left Side variables and Right Side variables. It has offered us a diode of interaction between LS variables and RS variables. It has gone further to form a congenital in-group between Y1 and Y3 to imply that Disillusionment and Disorder of a farmer here in case prefer to move together and at the same time have been in clandestine interaction with the X1,X2,X4,X5,X12,X13,X14,X16,X17,X18.

On the other hand Y2 move to the opposite side and has been in clandestine interaction with the following X3 X8,X10,X11,X15,X19.

**Factor Analysis: Conglomeration of 19 explanatory variables into 5 factors.**

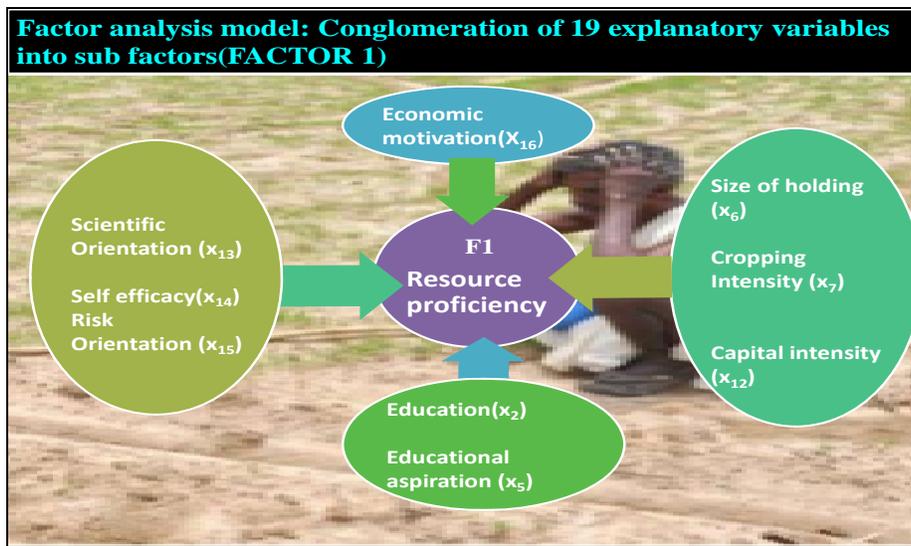
**Results & Revelation**

Table 20 presents factor analysis for conglomeration of apparently different variables into homogenous clusters called FACTOR and this conglomeration has been done based on FACTOR LOADING. So the higher the value of factor loading the more will be “Imbibing Propensity” to bring homogenous variables to the closest binding.

Here the 19 variables have been accommodated in 5 Factors.

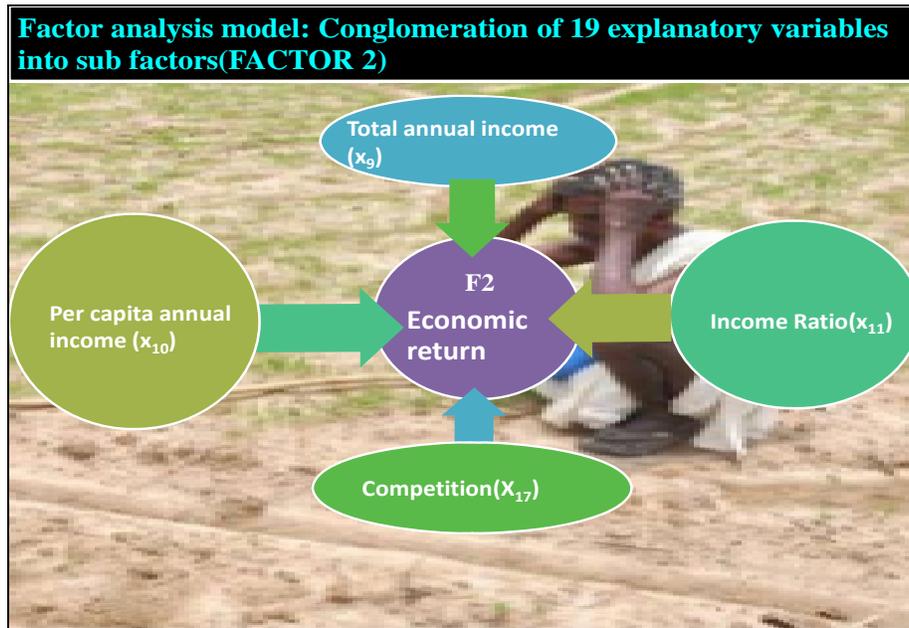
**Factor 1** has accommodated Education( $x_2$ ), Educational aspiration ( $x_5$ ), Size of holding ( $x_6$ ), Cropping Intensity ( $x_7$ ), Capital intensity ( $x_{12}$ ), Scientific Orientation ( $x_{13}$ ), Self efficacy ( $x_{14}$ ), Risk Orientation ( $x_{15}$ ), Economic motivation( $x_{16}$ ) which contributed to **29.185%** and has been renamed as **Resource proficiency**.

So, it can be inferred that under the single canopy of Factor, **Resource proficiency** these 9 variables can be well predicted.

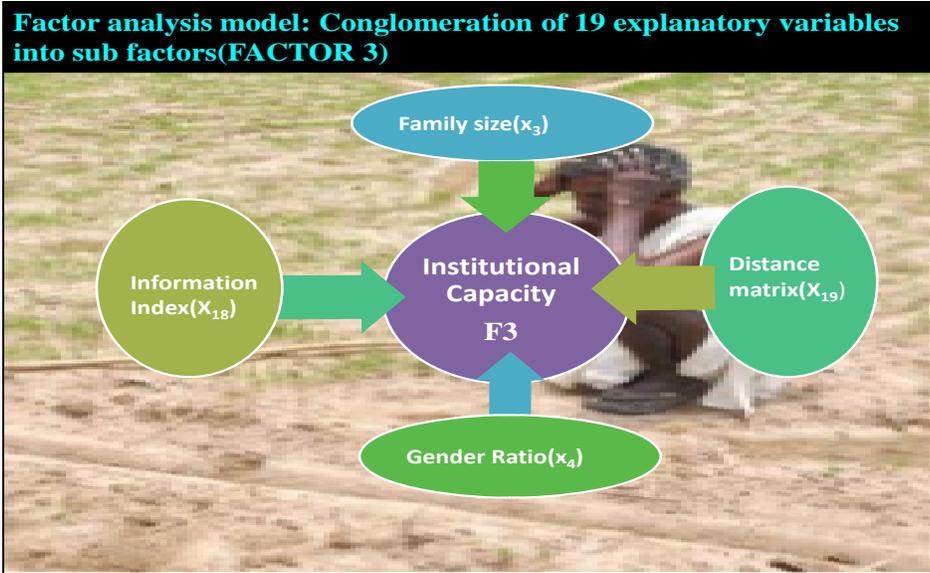


**Factor 2** has accommodated Total annual income ( $x_9$ ), Per capita annual income ( $x_{10}$ ), Income Ratio( $x_{11}$ ), Competition( $x_{17}$ ) which contributed to **12.148%** and has been renamed as **Economic return**.

So, it can be inferred that under the single canopy of Factor, *Economic return* these 4 variables can be well predicted.



**Factor 3** has accommodated Family size( $x_3$ ), Gender Ratio( $x_4$ ), Information Index( $X_{18}$ ), Distance matrix( $X_{19}$ ) which contributed to **9.141%** and has been renamed as *Institutional Capacity* So, it can be inferred that under the single canopy of Factor, *Institutional Capacity* these 4 variables can be well predicted.



**Factor 4 has accommodated *Age(x<sub>1</sub>)* which contributed to 6.323% and Factor 5 has accommodated *Total no. of Livestock (x<sub>8</sub>)* which contributed to 10.099%. variance**

