

Chapter 6

Case Study and Result

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.

6.1 Descriptive Statistics:

Table 16: Descriptive statistics of independent variables (x1-x13) with respected to Mean, Range, Standard Deviation and Co-efficient of variance values.

Variables(Independent)	Mean	Range	S. D	C.V (%)
Age (x1)	46.4	29-61	8.849	19.07
Education(x2)	5.5	1-14	3.539	64.34
Family Size (x3)	5.01	2-9	1.935	38.62
Income from intercroops (per capita)(x4)	7303.39	2062-20600	4414.86	60.44
Income from mango (per capita)(x5)	236873.5	73220-361000	67850.46	28.64
Size of orchard(x6)	6.516	2-10	1.9505	29.93
Homestead area(katta) (x7)	4.083	0.5-9	2.325	56.94
Distance Matrix(x8)	4.354	1-9	2.068	48.09
Fuel consumption(per capita, per month)(x9)	265.53	105-456	89.5	33.7
Electricity consumption(per capita)(x10)	90.75	40-165	29.547	32.55

Frequency of visit to the market(x11)	5.9	2-7	1.145	19.4
Group interaction(x12)	6.185	3-10	1.714	27.71
Problems related to mango cultivation(x13)	3.126	1-11.4	1.486	47.53

6.1.1 Discussion

- The variable age (x1) has recorded a range from 29-61 with mean value 46.4. So the mean age of the respondents is 46.4-47.
- The C.V. value stands at 19.07 per cent. So the distribution of the character is highly consistent.
- The variable education (x2) has recorded a range from 1-14 with mean value 5.5. So the mean education or year of schooling stands at 5.5 or V-VI standard.
- The C.V. value stands at 64.34 per cent. So the distribution of the character is somehow consistent.
- The variable family size (x3) has recorded a range from 2-9 with mean value 5.01. So the mean family size of the respondents is 5.
- The C.V. value stands at 38.62 per cent. So the distribution of the character is highly consistent.
- The variable income from inter crops (per capita) (x4) has recorded a range spanning from 2062-20600 with mean value 7303.39. So the mean income from inter crops is 7300 rupees.
- The C.V. value stands at 60.44 per cent. So the distribution of the character is somehow consistent.
- The variable income from mango crop (per capita) (x5) has recorded a range spanning from 73220-361000 with mean value 236873.5. So the mean income from mango crop is 240000 rupees.

The C.V. value stands at 28.64 per cent. So the distribution of the character is highly consistent.

- The variable size of orchard (x6) has recorded a range spanning from 2-10 with mean value 6.516. So the mean size of orchard is 6.5 acres.
- The C.V. value stands at 29.93 per cent. So the distribution of the character is highly consistent.
- The variable homestead area (x7) has recorded a range from 0.5-9 with mean value 4.083. So the mean homestead area of respondents is 4 katta.
- The C.V. value stands at 56.94 per cent. So the distribution of the character is somehow consistent.
- The variable distance matrix (x8) has recorded a range from 1-9 with mean value 4.354.
- The C.V. value stands at 48.09 per cent. So the distribution of the character is highly consistent.
- The variable fuel consumption (per capita, per month) (x9) has recorded a range from 105-456 with mean value 265.53. So the mean fuel consumption (per capita, per month) is 265-270 rupees.
- The C.V. value stands at 33.70 per cent. So the distribution of the character is highly consistent.
- The variable electricity consumption (per capita) (x10) has recorded a range from 40-165 with mean value 90.75. So the mean electricity consumption (per capita) is 91 rupees.

The C.V. value stands at 32.55 per cent. So the distribution of the character is highly consistent.

- The variable frequency of visit to the market (x11) has recorded a range from 2-7 with mean value 5.9. So the mean frequency of visit to the market of every respondent is 6 times in a week.
- The C.V. value stands at 19.4 per cent. So the distribution of the character is highly consistent.

- The variable group interaction (x12) has recorded a range spanning from 3-10 with mean value 6.185.
- The C.V. value stands at 27.71 per cent. So the distribution of the character is highly consistent.
- The variable problems related to mango cultivation (x13) has recorded a range spanning from 1-11.4 with mean value 3.126.

The C.V. value stands at 47.53 per cent. So the distribution of the character is highly consistent.

Table 17: Descriptive statistics of dependent variables (Y1-Y6) with respected to Mean, Standard Deviation and Co-efficient of variance values.

Variables(Dependent)	Mean	Range	S.D	C.V (%)
Yield of mango(y1)	7011.67	4500-9500	1561.51	22.27
Yield marketed(y2)	6267.83	4000-8300	1302.7	20.78
Yield consumed(y3)	747.16	300-1500	311.808	41.73
Cost of cultivation(y4)	42596.4	35000-49650	4155.13	0.097
Net return(y5)	36777.6	27000-48400	4820.36	13.1
GI Perception Index(y6)	1.262	0.16-2.3	0.57312	45.41

6.1.2 Discussion:

- The dependant variable yield of mango (Y1) has recorded a range from 4500-9500 with mean value 7011.67. So the mean yield of mango in the study area is nearly about 7000 kg.
- The C.V. value stands at 22.27 per cent. So the distribution of the character is highly consistent.
- The dependant variable yield marketed (Y2) has recorded a range from 4000-8300 with mean value 6267.83. So the mean yield marketed in the study area is nearly about 6300 kg.

The C.V. value stands at 20.78 per cent. So the distribution of the character is highly consistent.

- The dependant variable yield consumed (Y3) has recorded a range from 300-1500 with mean value 747.16. So the mean yield consumed at home is nearly about 750 kg.
- The C.V. value stands at 41.73 per cent. So the distribution of the character is highly consistent.
- The dependant variable cost of cultivation (Y4) has recorded a range spanning from 35000-49650 with mean value 42596.4. So the mean cost of cultivation in 1 acre area is nearly about 42500-43000 rupees.

The C.V. value stands at 0.097 per cent. So the distribution of the character is highly consistent.

- The dependant variable net return (Y5) has recorded a range spanning from 27000-48400 with mean value 36777.68. So the mean net return from mango cultivation is 37000 rupees.
- The C.V. value stands at 13.1 per cent. So the distribution of the character is highly consistent.
- The dependant variable GI Perception Index (Y6) has recorded a range from 0.16-2.3 with mean value 1.262.
- The C.V. value stands at 45.41per cent. So the distribution of the character is highly consistent.

6.2 Coefficient of correlation (r); Y v/s exogenous variables:

Table 18: Coefficient of correlation (r) between Yield of mango (Y1) and 13 independent variables (x1-x13).

Co- efficient of correlation(r); Yield of mango (Y1) vs. Exogenous variables	
Exogenous variables	"r " value (Spearman's Correlation coefficient)
Age(x1)	-0.115
Education(x2)	0.123
Family size(x3)	-0.085
Income from intercrops(per capita)(x4)	-0.035
Income from mango crop(per capita)(Rs)(x5)	-0.087
Size of mango orchard(Acre)(x6)	-0.053
Homestead area(katta)(x7)	-0.008

Distance matrix(x8)	-0.026
Fuel consumption(per month per capita)(x9)	0.067
Electricity consumption (per capita)(x10)	0.073
Frequency of visit to the market(in a week)(x11)	-0.254*
Group interaction(x12)	0.1
Problems related to mango cultivation(x13)	-0.145

** Correlation is significant at the 0.01 level (2 tailed)

*Correlation is significant at the 0.05 level (2 tailed)

Results: It has been found that the variable x11 that is frequency of visit to the market is significant but negatively correlated with the dependant variable Y1 (yield of mango)

Revelation: The results reveal that the respondents with higher mango yields are less frequent to the market. This may suggest that respondents with higher yields are mostly enjoying the facility of gate sale.

MODEL -1

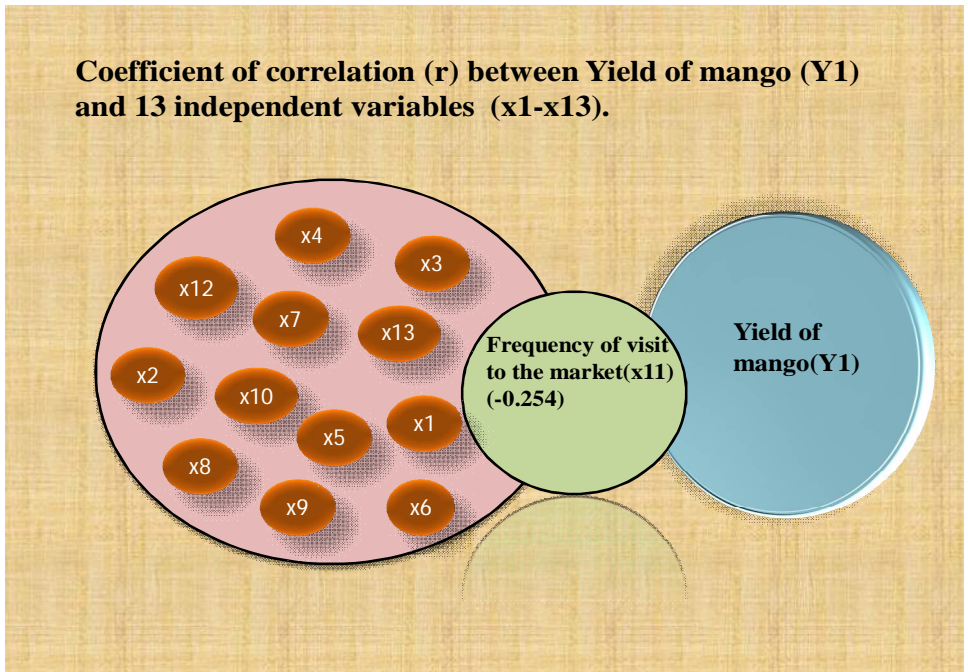


Table 19: Coefficient of correlation (r) between Yield marketed (Y2) and 13 independent variables (x1-x13)

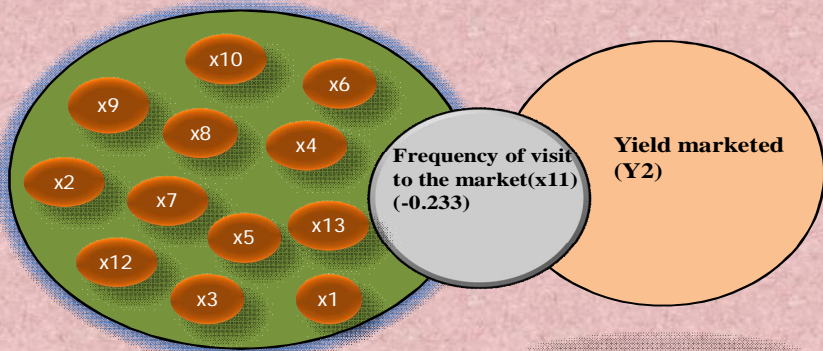
Exogenous variables	"r" value (Spearman's Correlation coefficient)
Age(x1)	-0.128
Education(x2)	0.12
Family size(x3)	-0.061
Income from intercrops(per capita)(x4)	-0.06
Income from mango crop(per capita)(Rs)(x5)	-0.093
Size of mango orchard(Acre)(x6)	-0.068
Homestead area(katta)(x7)	0.002
Distance matrix(x8)	-0.012
Fuel consumption(per month per capita)(x9)	0.072
Electricity consumption (per capita)(x10)	0.071
Frequency of visit to the market(in a week)(x11)	-0.233
Group interaction(x12)	0.104
Problems related to mango cultivation(x13)	-0.129

** Correlation is significant at the 0.01 level (2 tailed)

*Correlation is significant at the 0.05 level (2 tailed)

MODEL -2

Coefficient of correlation (r) between Yield marketed(Y2) and 13 independent variables (x1-x13).



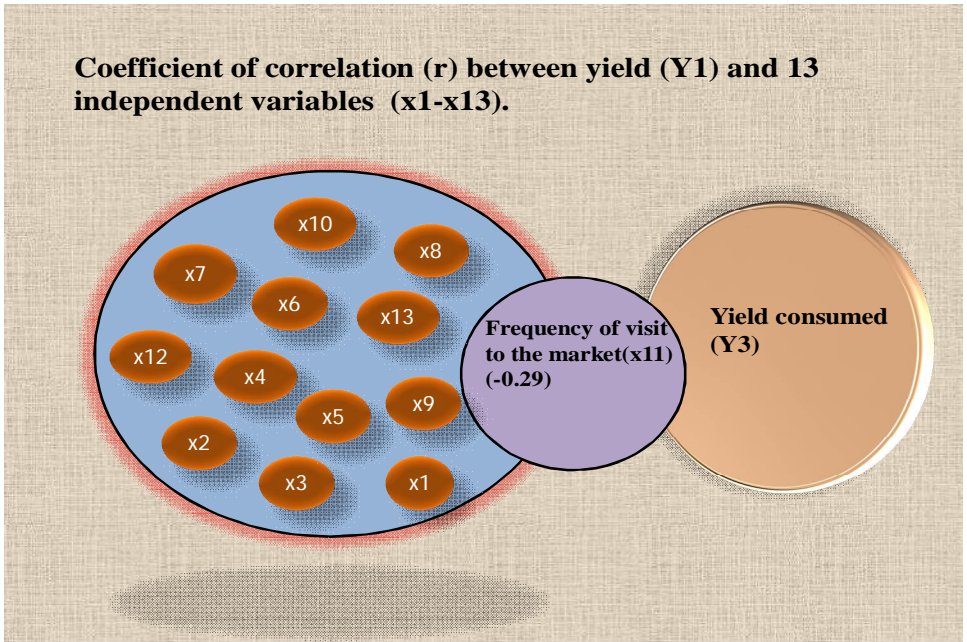
Results: The only variable which is significant with Y2 that is yield marketed (at 10 per cent) is x11 (frequency of visit to the market)

Revelation: So there is a possibility for the respondents having less volume of yield marketed, their frequency to market interaction is high, but this relation is not that conclusive.

Table 20 Coefficient of correlation (r) between Yield consumed (Y3) and 13 independent variables (x1-x13).

Co- efficient of correlation(r); Yield consumed (Y3) vs. Exogenous variables	
Exogenous variables	"r " value (Spearman's Correlation coefficient)
Age(x1)	-0.031
Education(x2)	0.04
Family size(x3)	-0.177
Income from intercrops(per capita)(x4)	0.05
Income from mango crop(per capita)(Rs)(x5)	-0.075
Size of mango orchard(Acre)(x6)	-0.014
Homestead area(katta)(x7)	0.041
Distance matrix(x8)	-0.035
Fuel consumption(per month per capita)(x9)	-0.033
Electricity consumption (per capita)(x10)	0.055
Frequency of visit to the market(x11)	-0.29*
Group interaction(x12)	0.116
Problems related to mango cultivation(x13)	-0.166

MODEL -3



Result: It has been found that the variable x11 (frequency of visit to the market) is significant but negatively correlated with the dependant variable Y3 that is yield consumed.

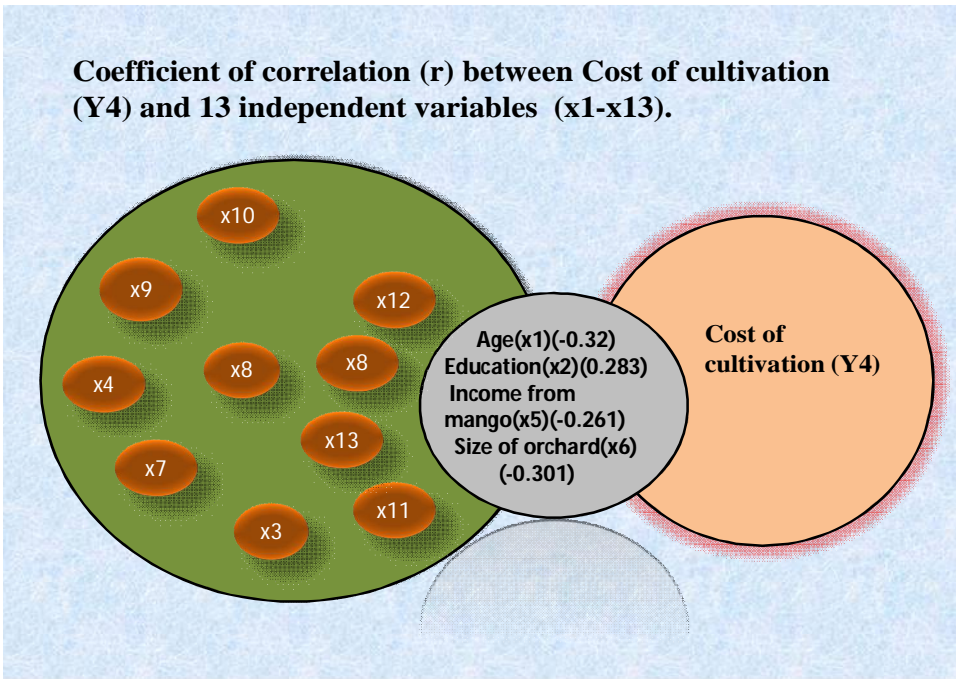
Revelation: So the result reveals that the respondents with high yield consumption at home are less frequent to the market. So as they consume more at home, they have less surplus mango to sell at the market.

Table 21: Coefficient of correlation (r) between Cost of cultivation (Y4) and 13 independent variables (x1-x13).

Co- efficient of correlation(r); Cost of cultivation (Y4) vs. Exogenous variables	
Exogenous variables	"r " value (Spearman's Correlation coefficient)
Age(x1)	-0.32*
Education(x2)	0.283*
Family size(x3)	-0.053
Income from intercrops(per capita)(x4)	0.084

Income from mango crop(per capita)(Rs)(x5)	-0.261*
Size of mango orchrd(Acre)(x6)	-0.301*
Homestead area(katta)(x7)	-0.047
Distance matrix(x8)	-0.073
Fuel consumption(per month per capita)(x9)	0.068
Electricity consumption (per capita)(x10)	0.163
Frequency of visit to the market(in a week)(x11)	-0.174
Group interaction(x12)	-0.029
Problems related to mango cultivation(x13)	0.212

MODEL-4



Result: From the Table we can see that the variables x1 (age), x5 (income from mango crop), x6 (size of mango orchard) is significant but negatively correlated with the dependant variable Y4 (cost of cultivation).

It has been found that the variable x2 (education) is positively correlated with the dependant variable Y4 (cost of cultivation).

Revelation: So the result reveals that lesser the cost, higher is the income. Those who are young, they are not efficient in managing cost. Higher the size of mango orchards better would be the cost distribution. Higher the education level, the more is the cost of cultivation may be due to effect of pro input intuitive dispositions of modernity.

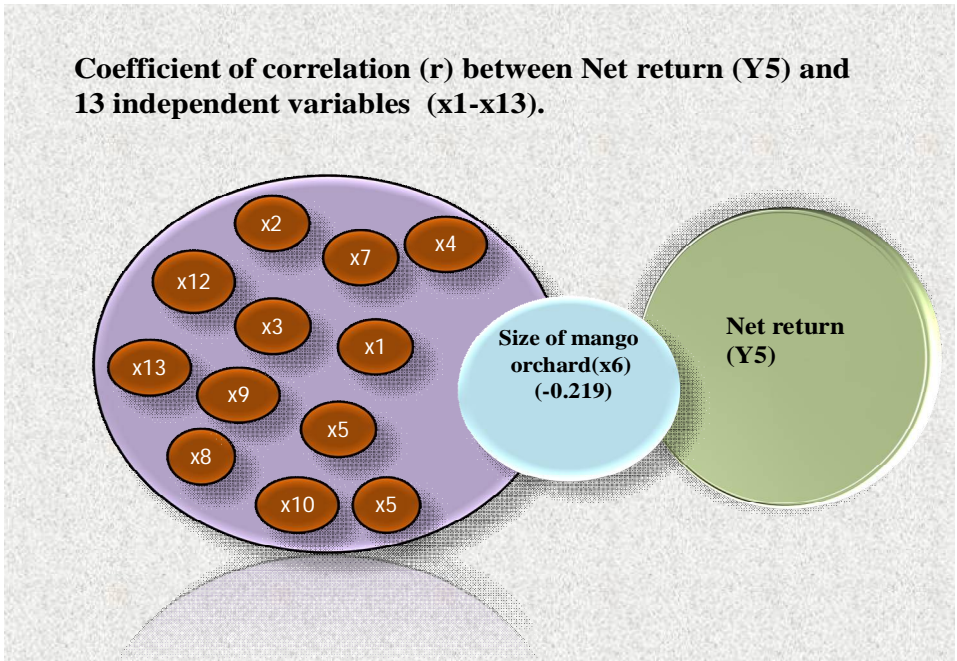
Table 22: Coefficient of correlation (r) between Net return (Y5) and 13 independent variables (x1-x13).

Co- efficient of correlation(r); Net return (Y5) vs. Exogenous variables	
Exogenous variables	"r " value (Spearman's Correlation coefficient)
Age(x1)	-0.093
Education(x2)	-0.026
Family size(x3)	-0.028
Income from intercrops(per capita)(x4)	-0.057
Income from mango crop(per capita)(Rs)(x5)	-0.151
Size of mango orchard(Acre)(x6)	-0.219
Homestead area(katta)(x7)	-0.047
Distance matrix(x8)	-0.004
Fuel consumption(per month per capita)(x9)	0.052
Electricity consumption (per capita)(x10)	-0.038
Frequency of visit to the market(in a week)(x11)	-0.047
Group interaction(x12)	0.165
Problems related to mango cultivation(x13)	0.063

** Correlation is significant at the 0.01 level (2 tailed)

*Correlation is significant at the 0.05 level (2 tailed)

MODEL- 5



Result: It has been found that the size of orchard (x6) is significant but negatively correlated with the dependent variable Y5 (net return) (at 10 per cent level of significance)

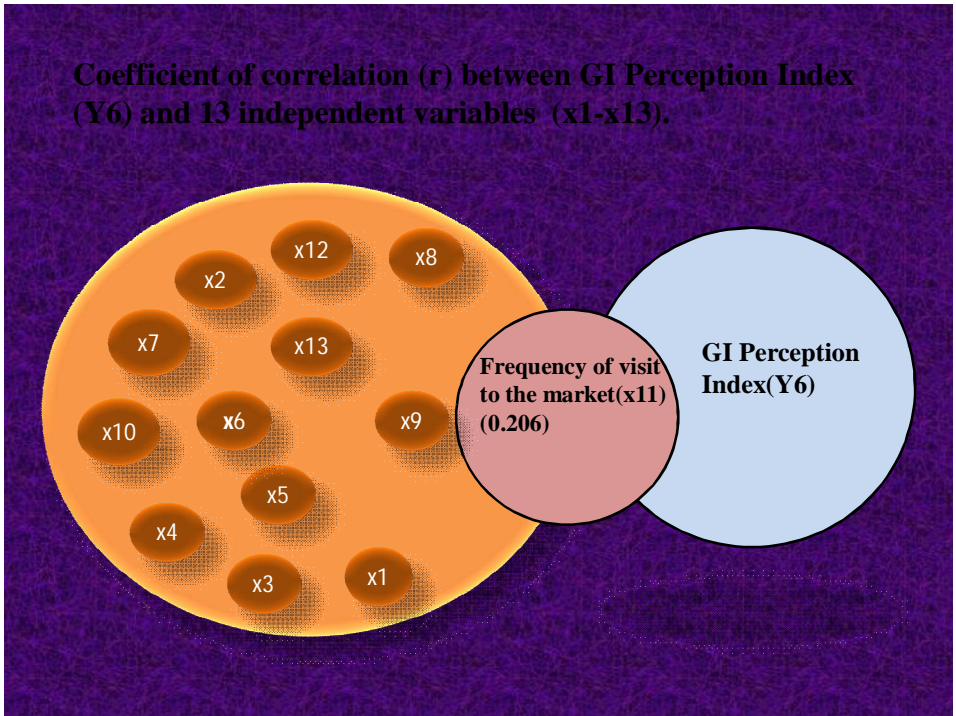
Revelation: So there is a possibility for the respondents having small size of mango orchards, their net return from mango cultivation is going to be higher. Things may so happen, up to certain size of orchard the return keeps increasing and after that it starts showing declining trend.

Table 23: Coefficient of correlation (r) between GI Perception Index (Y6) and 13 independent variables (x1-x13)

Co- efficient of correlation(r); GI Perception Index (Y6) vs. Exogenous variables	
Exogenous variables	"r " value (Spearman's Correlation coefficient)
Age(x1)	-0.044
Education(x2)	0.011

Family size(x3)	0.052
Income from intercrops(per capita)(x4)	0.025
Income from mango crop(per capita)(Rs)(x5)	0.079
Size of mango orchard(Acre)(x6)	0.02
Homestead area(katta)(x7)	0.031
Distance matrix(x8)	-0.177
Fuel consumption(per month per capita)(x9)	0.156
Electricity consumption (per capita)(x10)	0.049
Frequency of visit to the market(in a week)(x11)	0.206
Group interaction(x12)	-0.045
Problems related to mango cultivation(x13)	-0.163

MODEL -6



Result: It has been found that the frequency of visit to the market (x11) is significant and positively correlated with Y6 that is GI Perception Index (at10 per cent level)

Revelation: So there is an indication that with higher frequency of market interaction the propensity for GI driven mango enterprise has gone up.

Table 24: Presents the Colinearity amongst and between the "Dependent variables"

"r " value (Spearman's Correlation coefficient)						
Dependent variables	Yield of mango(Y1)	Yield marketed(Y2)	Yield consumed (Y3)	Cost of cultivation (Y4)	Net return (Y5)	GI Perception Index (Y6)
Yield of mango(Y1)	1					
Yield marketed(Y2)	0.990**	1				
Yield consumed (Y3)	0.890**	0.831**	1			
Cost of cultivation (Y4)	0.266*	0.298*	0.063	1		
Net return (Y5)	0.332**	0.342**	0.206	0.439**	1	
GI Perception Index (Y6)	-0.028	0.002	-0.127	0.049	-0.077	1

** Correlation is significant at the 0.01 level (2 tailed)

*Correlation is significant at the 0.05 level (2 tailed)

Result and Revelation:

- The dependent variable yield marketed (Y2) is significant and positively correlated with yield of mango (Y1). The higher the yield, the higher would be the marketed surplus and that is why the correlation holds good.
- It has also been evinced that the yield consumed (Y3) has recorded strong correlation with yield of mango (Y1) and yield marketed (Y2) when yield is big and better, it acts to both market disposal and home consumption level.
- Cost of cultivation is significant and positively correlated with both yield of mango (Y1) and yield marketed (Y2) but no apparent relation with yield consumed (Y3).

- Cost of cultivation has certainly elicited impact on net return (Y5). That's why this two are correlated strongly.
- The results stand interesting by revealing the fact that GI perception on mango has not yet been relegated to orchard management or yield behaviour of the orchards in terms of marketed surplus or cost of cultivation even with the net return.
- GI perception could have been better conceptual operational inputs in making the management of orchard more calibrated and orchestrated with Total Quality Management (TQM).

6.3 Regression analysis:

Table 25: Multiple Regression analysis yield of mango (Y1) vs. 13 causal variables(x1-x13).

Variable	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	9763.102	3088.529		3.161	0.003
Age(x1)	-19.933	29.064	-0.113	0.686	0.496
Education(x2)	28.820	72.436	0.065	0.98	0.693
Family size(x3)	-188.317	177.290	-0.233	1.062	0.294
Income from intercrop(x4)	-0.057	0.063	-0.160	0.901	0.372
Income from mango crop(x5)	-0.008	0.007	-0.351	1.126	0.266
Size of orchard(x6)	312.560	253.574	0.390	1.233	0.224
Homestead area(x7)	72.676	99.821	0.108	0.728	0.470
Distance matrix(x8)	67.155	120.105	0.089	0.559	0.579
Fuel consumption(x9)	3.875	3.156	0.222	1.228	0.226
Electricity consumption(x10)	2.105	9.114	0.040	0.231	0.818
Frequency of visit to the market(x11)	-427.780	192.966	-0.314	2.217	0.032
Group interaction(x12)	79.972	132.858	0.088	0.602	0.550
Problems related to mango cultivation(x13)	-169.677	145.508	-0.161	1.166	0.250
Dependent Variable: Yield of mango (Y1)					

R Square	Adjusted R Sq.	SE(est)
0.216	-0.006	1565.925

Table 26: Regression Analysis (Step wise): Screening of variables having significant efficacy for character yield of mango (Y1)

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	9247.416	1033.195		8.950	0.000
Frequency of visit to the market(x11)	-378.941	171.961	-0.278	-2.204	0.032
Dependent Variable: Yield of mango (Y1)					
R Square	Adjusted R Sq.	SE(est)			
0.077	0.061	1512.862			

Table 26 presents the Multiple Regression analysis where in 13 variables have been regressed against the consequent variable yield of mango (Y1). In order to isolate out of these 13 casual variables the most important and critically functional variables, step wise regression analysis was carried out.

Results: Through the stepwise regression analysis it has been found that one causal variable frequency of visit to the market (x11) has been retained at the last step to make the significant contribution to yield of mango (Y1) So, this variable has got substantive strategic and operational impact on mango cultivation and production function.

It has been found that the collectively 13 variables have explained 21.6 per cent of variance embedded with the consequent variable Y1. The variable frequency of visit to the market (x11) has been retained at the last step explains 7.7 per cent.

Revelation: Only Frequency of visit to the market (x11) has been retained at the last stage of Step-wise Regression Analysis which has got solitary contribution of $(7.7/21.6 * 100 = 35)$ per cent to the total R^2 value i.e., to infer that market visit deserve to earn a special attention while we intend to make a serious intervention in the mango cultivation. So, these variables can be considered the most important strategic and functional variables that would characterise as well as explain the production function in the most efficient way. Moreover it is discernable that mango cultivation is an important horticultural enterprise must be market linked and responsive.

MODEL – 7

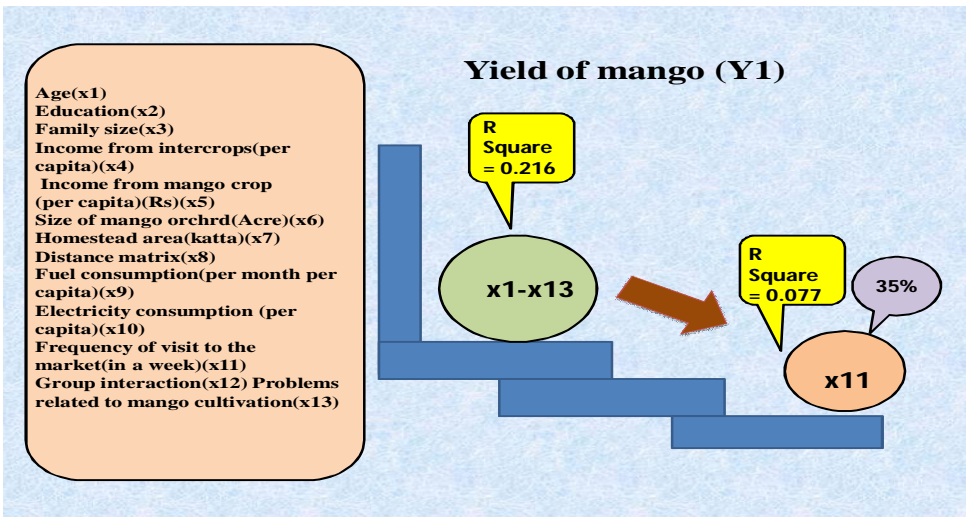


Table 27: Multiple Regression analysis yield marketed (Y2) vs. 13 causal variables (x1-x13).

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8344.943	2600.581		3.209	0.002
Age(x1)	-19.820	24.472	-0.135	-0.810	0.422
Education(x2)	29.724	60.992	0.081	0.487	0.628
Family size(x3)	-134.545	149.280	-0.200	-0.901	0.372

Income from intercrop(x4)	-0.044	0.053	-0.149	-0.828	0.412
Income from mango crop(x5)	-0.006	0.006	-0.306	-0.972	0.336
Size of orchard(x6)	222.653	213.512	0.333	1.043	0.302
Homestead area(x7)	65.435	84.051	0.117	0.779	0.440
Distance matrix(x8)	50.564	101.130	0.080	0.500	0.619
Fuel consumption(x9)	3.301	2.657	0.227	1.242	0.220
Electricity consumption(x10)	2.034	7.674	0.046	0.265	0.792
Frequency of visit to the market(x11)	-333.607	162.480	-0.293	-2.053	0.046
Group interaction(x12)	68.058	111.868	0.090	0.608	0.546
Problems related to mango cultivation(x13)	-123.848	122.520	-0.141	-1.011	0.317
Dependent Variable: Yield marketed (Y2)					
R Square	Adjusted R Sq.	SE(est)			
0.201	-0.024	1318.529			

Table 28: Regression Analysis (Step wise): Screening of variables having significant efficacy for character yield marketed (Y2)

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8041.111	865.412		9.292	0.000
Frequency of visit to the market(x11)	-300.556	144.035	-0.264	-2.087	0.041
Dependent Variable: Yield marketed (Y2)					
R Square	Adjusted R Sq.	SE(est)			
0.070	0.054	1267.184			

MODEL – 8

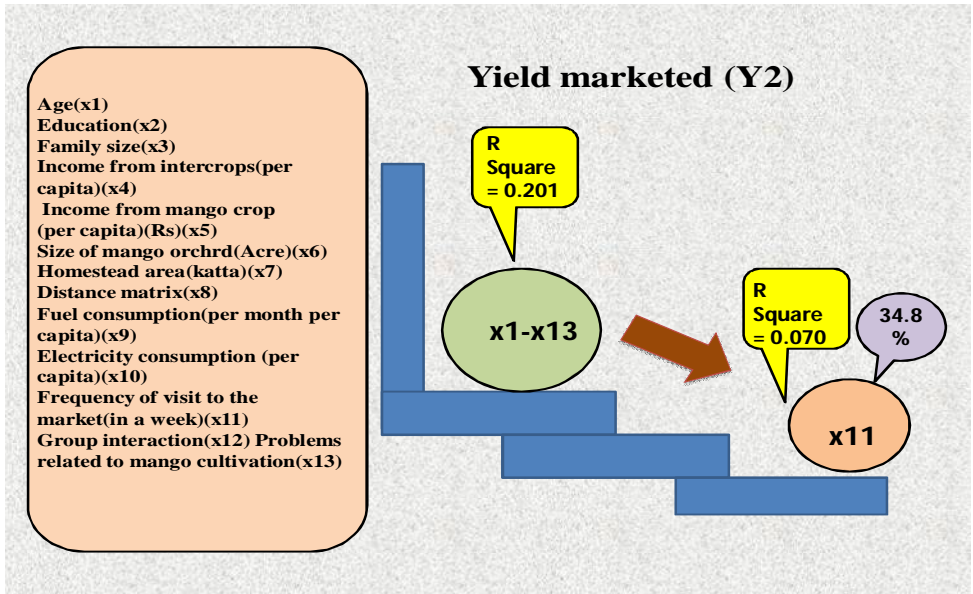


Table 28 presents the Multiple Regression analysis where in 13 variables have been regressed against the consequent variable yield marketed (Y2)

Results: Through the stepwise regression analysis it has been found that one causal variable frequency of visit to the market (x11) has been retained at the last step to make significant contribution to yield marketed (Y2) so; this variable has got substantive strategic and operational impact on mango cultivation and production function.

It has been found that the collectively 13 variables have explained 20.1 per cent of variance embedded with the consequent variable Y2. The variable Frequency of visit to the market (x11) has been retained at the last step explains 7 per cent.

Revelation: Only frequency of visit to the market (x11) has been retained at the last stage of Step-wise Regression Analysis which has got solitary contribution of $(7.0/20.1 * 100 = 34.8)$ per cent to the total R^2 value i.e., to infer that market visit deserve to earn a

special attention while we intend to make a serious intervention in the mango cultivation. So, these variables can be considered the most important strategic and functional variables that would characterise as well as explain the production function in the most efficient way. Moreover it is discernable that mango cultivation is an important horticultural enterprise must be market linked and responsive.

Table 29: Multiple Regression analysis yield consumed (Y3) vs. 13 causal variables (x1-x13).

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1471.699	605.135		2.432	0.019
Age(x1)	-0.372	5.694	-0.011	0.065	0.948
Education(x2)	0.701	14.192	0.008	0.049	0.961
Family size(x3)	-54.653	34.736	-0.339	1.573	0.122
Income from intercrop(x4)	-0.015	0.012	-0.206	1.182	0.243
Income from mango crop(x5)	-0.002	0.001	-0.477	1.561	0.125
Size of orchard(x6)	88.236	49.683	0.552	1.776	0.082
Homestead area(x7)	5.342	19.558	0.040	0.273	0.786
Distance matrix(x8)	15.806	23.532	0.105	0.672	0.505
Fuel consumption(x9)	0.512	0.618	0.147	0.829	0.411
Electricity consumption(x10)	0.004	1.786	0.000	0.003	0.998
Frequency of visit to the market(x11)	-88.733	37.808	-0.326	-2.347	0.023
Group interaction(x12)	9.052	26.031	0.050	0.348	0.730
Problems related to mango cultivation(x13)	-46.556	28.509	-0.222	-1.633	0.109
Dependent Variable:Yield consumed (Y3)					
R Square	Adjusted R Sq.	SE(est)			
0.245	0.032	306.81141			

Table 30: Regression Analysis (Step wise): Screening of variables having significant efficacy for character yield consumed (Y3)

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1192.868	206.340		5.781	0.000
Frequency of visit to the market(x11)	-75.543	34.342	-0.277	-2.200	0.032
Dependent Variable: Yield consumed (Y3)					
R Square	Adjusted R Sq.	SE(est)			
0.077	0.061	302.134			

MODEL - 9

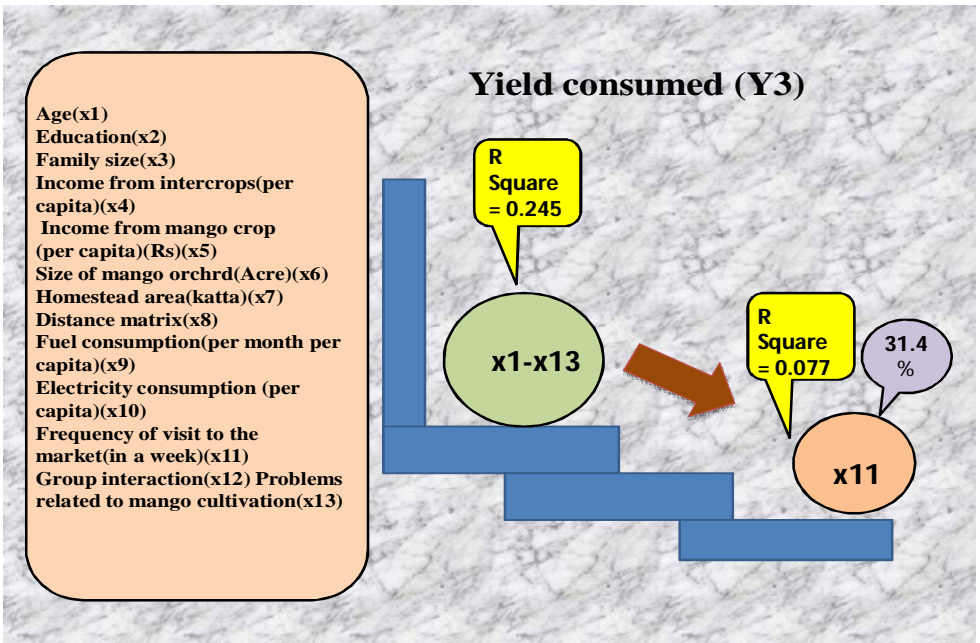


Table 30 presents the Multiple Regression analysis where in 13 variables have been regressed against the consequent variable yield consumed (Y3)

Results: Through the stepwise regression analysis it has been found that one causal variable Frequency of visit to the market (x11) has been retained at the last step to make the significant contribution to yield consumed (Y3).

It has been found that the collectively 13 variables have explained 24.5 per cent of variance embedded with the consequent variable Y3. The variable Frequency of visit to the market (x11) has been retained at the last step explains 7.7 per cent.

Revelation: Only Frequency of visit to the market (x11) has been retained at the last stage of Step-wise Regression Analysis which has got solitary contribution of **(7.7/24.5 *100 = 31.42)** per cent to the total R² value i.e., to infer that market visit deserves to earn a special attention while we intend to make a serious intervention in the mango cultivation. So, these variables can be considered the most important strategic and functional variables that would characterise as well as explain the production function in the most efficient way. So the result reveals that the respondents with high yield consumption at home are less frequent to the market. As they consume more at home, they have less surplus mango to sell at the market.

Table 31: Multiple Regression analysis Cost of cultivation (Y4) vs. 13 causal variables(x1-x13).

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	48547.847	7786.319		6.235	0.000
Age(x1)	-110.141	73.271	-0.235	-1.503	0.140
Education(x2)	182.648	182.615	0.156	1.000	0.322
Family size(x3)	193.590	446.956	0.090	0.433	0.667
Income from intercrop(x4)	0.278	0.159	0.296	1.756	0.086
Income from mango crop(x5)	-0.001	0.018	-0.023	-0.077	0.939
Size of orchard(x6)	-626.348	639.270	-0.294	-0.980	0.332
Homestead area(x7)	146.441	251.653	0.082	0.582	0.563

Distance matrix(x8)	-18.656	302.790	-0.009	-0.062	0.951
Fuel consumption(x9)	10.118	7.955	0.218	1.272	0.210
Electricity consumption(x10)	-19.615	22.978	-0.139	-0.854	0.398
Frequency of visit to the market(x11)	-579.942	486.476	-0.160	-1.192	0.239
Group interaction(x12)	127.714	334.941	0.053	0.381	0.705
Problems related to mango cultivation(x13)	245.907	366.832	0.088	0.670	0.506
Dependent Variable: Cost of cultivation (Y4)					
R Square	Adjusted R Sq.	SE(est)			
0.296	0.097	3947.767			

Table 32: Regression Analysis (Step wise): Screening of variables having significant efficacy for character Cost of cultivation (Y4)

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	52590.875	2988.877		17.596	0.000
Age(x1)	-131.961	56.888	-0.281	-2.320	0.024
Size of mango orchard (x6)	-594.089	258.087	0.279	-2.302	0.025
Dependent Variable: Cost of cultivation (Y4)					
R Square	Adjusted R Sq.	SE(est)			
0.176	0.147	3836.633			

MODEL – 10

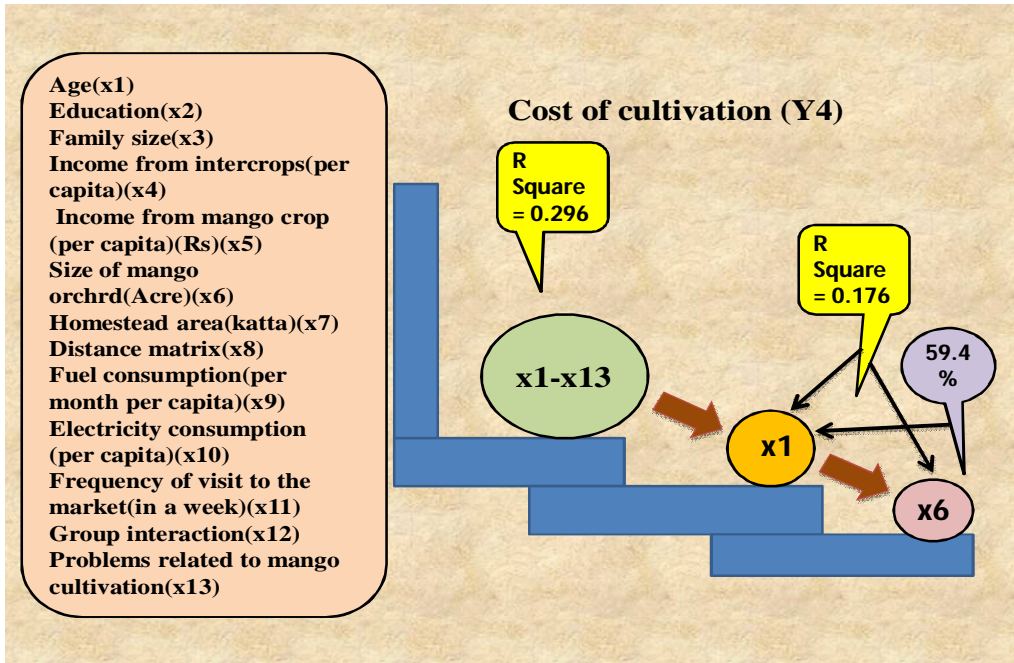


Table 32 presents the Multiple Regression analysis where in 13 variables have been regressed against the consequent variable cost of cultivation (Y4)

Results: Through the stepwise regression analysis it has been found that two causal variable i.e. Age (x1) and Size of mango orchard (x6) have been retained at the last step to make the significant contribution to So, these variables have got substantive strategic and operational impact on mango cultivation and production function.

It has been found that the collectively 13 variables have explained 29.6 per cent of variance embedded with the consequent variable Y4. The variables (Age and Size of orchard) have been retained at the last step explains 17.6 per cent.

Revelation: The step wise regression presents that at last step of step down analysis two variables Age (x1) and Size of mango orchard (x6) have contributed the most to cost of cultivation (Y4).

Only Age (x1) and Size of mango orchard (x6) have been retained at the last stage of Step-wise Regression Analysis which has got contribution of **(17.6/29.6 * 100 = 59.4)** per cent to the total R² value i.e., to infer that the experience and maturity of the respondents vis-a-vis have positively contributed to complex management of mango orchard leading to a higher level of proficiency and been reflected in the better cost management. Similarly the size of orchard has got a decisive contribution to the cost volume and its management efficiency. The bigger the size of orchard, the higher has been the cost to be incurred.

Table 33: Multiple Regression analysis Net return (Y5) vs. 13 causal variables (x1-x13).

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	45318.701	9585.573		4.728	0.000
Age(x1)	-112.438	90.202	-0.206	-1.247	0.219
Education(x2)	-243.819	224.813	-0.179	-1.085	0.284
Family size(x3)	61.435	550.238	0.025	0.112	0.912
Income from intercrop(x4)	0.124	0.195	0.113	0.633	0.530
Income from mango crop(x5)	0.028	0.022	0.392	1.253	0.217
Size of orchard(x6)	-1533.444	786.992	-0.621	-1.948	0.057
Homestead area(x7)	42.530	309.805	0.021	0.137	0.891
Distance matrix(x8)	-330.391	372.758	-0.142	-0.886	0.380
Fuel consumption(x9)	8.667	9.794	0.161	0.885	0.381
Electricity consumption(x10)	-34.047	28.287	-0.209	-1.204	0.235
Frequency of visit to the market(x11)	-654.203	598.891	-0.155	-1.092	0.280
Group interaction(x12)	872.960	412.339	0.311	2.117	0.040

Problems related to mango cultivation(x13)	227.290	451.600	0.070	0.503	0.617
Dependent Variable: Net return (Y5)					
R Square	Adjusted R Sq.	SE(est)			
0.207	-0.017	4860.013			

Table 34: Regression Analysis (Step wise): Screening of variables having significant efficacy for character Net return (Y5)

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	47958.686	6398.509		7.495	0.000
Age(x1)	-80.258	73.582	-0.147	-1.091	0.280
Size of orchard(x6)	-651.362	322.985	-0.264	-2.017	0.049
Electricity consumption(x10)	-38.489	23.114	0.236	-1.665	0.102
Frequency of visit to the market(x11)	-585.740	549.456	0.139	-1.066	0.291
Group interaction(x12)	604.073	356.696	0.215	1.694	0.096
Dependent Variable: Net return (Y5)					
R Square	Adjusted R Sq.	SE(est)			
0.147	0.068	4654.691			

MODEL- 11

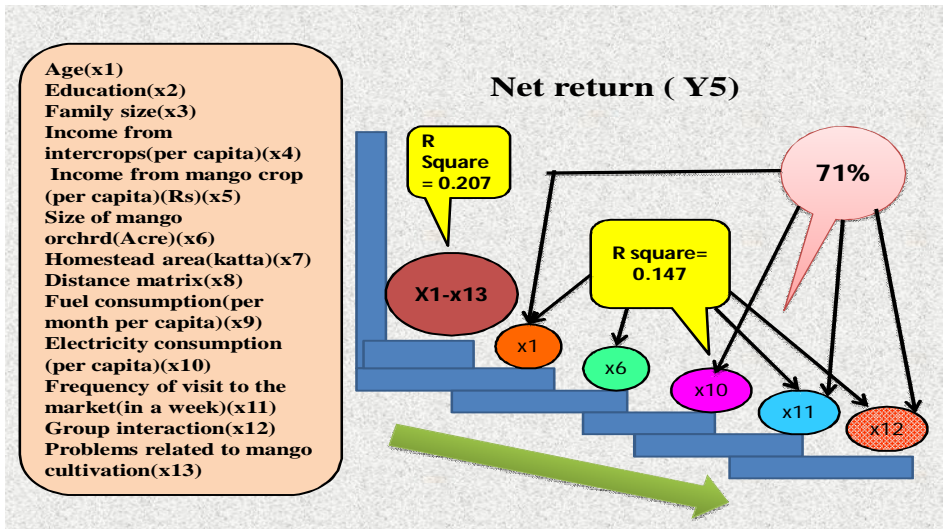


Table 34 presents the Multiple Regression analysis where in 13 variables have been regressed against the consequent variable net return (Y5)

Results: Through the stepwise regression analysis it has been found that five causal variable i.e. Age (x1), Size of mango orchard (x6) Electricity consumption(x10) Frequency of visit to the market(x11) and Group interaction(x12) have been retained at the last step to make significant contribution to So, these variables have got substantive strategic and operational impact on mango cultivation and production function.

It has been found that the collectively 13 variables have explained 20.7 per cent of variance embedded with the consequent variable Y5.The variables (Age, Size of orchard, Electricity consumption, Frequency of visit to the market and Group interaction) have been retained at the last step explains 14.7 per cent.

Revelation: These variables have been retained at the last stage of Step-wise Regression Analysis which have contributed **(14.7/20.7 *100 = 71)** per cent to the total Variance. So, this five variables can be considered the most important strategic and functional variables that would characterized as well as estimate the production function in the most efficient way.Net return is a presumptions of efficient cost management, group actions and sharing, adopt management of input, proper planning and it's on time executions. So, the following five variables have recorded substantive effect on net return.

Table 35: Multiple Regression analysis GI Perception Index (Y6) vs. 13 causal variables (x1-x13).

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.609	1.203		0.506	0.615
Age(x1)	-0.002	0.011	-0.026	-0.149	0.882
Education(x2)	-0.003	0.028	-0.018	-0.101	0.920

Family size(x3)	-0.008	0.069	-0.028	-0.121	0.904
Income from intercrop(x4)	0.000	0.000	0.028	0.150	0.881
Income from mango crop(x5)	0.000	0.000	0.396	1.199	0.237
Size of orchard(x6)	-0.108	0.099	-0.368	-1.095	0.279
Homestead area(x7)	0.023	0.039	0.093	0.591	0.558
Distance matrix(x8)	-0.080	0.047	-0.287	-1.700	0.096
Fuel consumption(x9)	0.001	0.001	0.185	0.966	0.339
Electricity consumption(x10)	0.001	0.004	0.076	0.416	0.679
Frequency of visit to the market(x11)	0.094	0.075	0.189	1.257	0.215
Group interaction(x12)	-0.004	0.052	-0.011	-0.073	0.942
Problems related to mango cultivation(x13)	-0.018	0.057	-0.046	-0.316	0.753
Dependent Variable: GI Perception Index (Y6)					
R Square	Adjusted R Sq.	SE(est)			
0.118	-0.132	0.610			

Table 36: Regression Analysis (Step wise): Screening of variables having significant efficacy for character GI Perception Index (Y6)

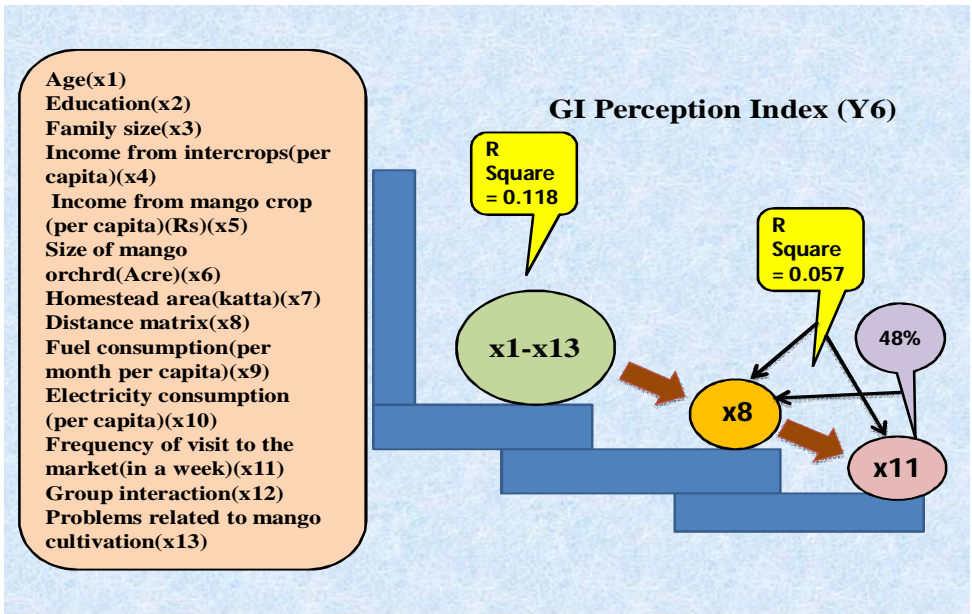
Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.980	0.395		2.482	0.016
Distance matrix(x8)	-0.055	0.036	-0.199	1.517	0.135
Frequency of visit to the market(x11)	0.089	0.066	0.177	1.348	0.183
Dependent Variable: GI Perception Index (Y6)					
R Square	Adjusted R Sq.	SE(est)			
0.057	0.023	0.566			

Table 36 presents the Multiple Regression analysis where in 13 variables have been regressed against the consequent variable GI Perception Index (Y6).

Results: Through the stepwise regression analysis it has been found that two causal variables Distance matrix(x8) and Frequency of visit to the market(x11) have been retained at the last step to make significant contribution to So, these variables have got substantive strategic and operational impact on mango cultivation and production function.

It has been found that the collectively 13 variables have explained 11.8 per cent of variance embedded with the consequent variable Y6. The variables (Distance matrix and Frequency of visit to the market) have been retained at the last step explains 5.7 per cent.

MODEL- 12



Revelation: Only Distance matrix and Frequency of visit to the market have been retained at the last stage of Step-wise Regression Analysis which has got contribution of $(5.7/11.8 * 100 = 48.30)$ per cent to the total R² value i.e., to say GI has helped earning quality branding, market positioning, export possibilities, customers fidelity.

6.4 Factor analysis:

Table 37 presents the Factor analysis (Component Matrix) for the conglomeration of apparently homogeneous 13 independent variables(x1-x13) into 7 distinct factors.

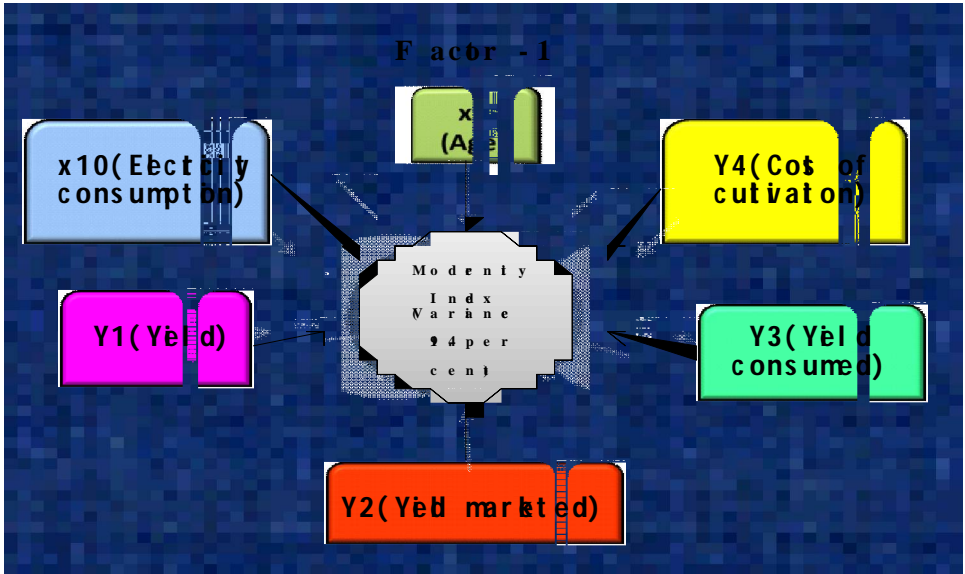
The factor analysis has got tremendous strategic and operational implications; this will help allocation of resources based on factors, not on variables in isolation. The resource allocation can be proportionate in terms of variance explained by the respective factors. The total 13 exogenous Variables have been put up with Factor Analysis to identify the important factor in state of variables, which has been responsible for contributing the Variance in the process of conglomeration.

Table – 37.1

Factor 1	Variables	Eigen Value	Variance	Cumulative variance	Factor renaming
-0.506	Age(x1)	3.693	19.437	19.437	Modernity index
0.564	Electricity Consumption(per capita) (x10)				
0.702	Yield of Mango(unit area)(kg) (Y1)				
0.698	Yield marketed(kg) (Y2)				
0.604	Yield Consumed(kg) (Y3)				
0.488	Cost Of Cultivation(1 Acre) (Y4)				

This table has accommodated 6 variables viz. namely Age(x1), Electricity Consumption (per capita) (x10), Yield of Mango (unit area)(kg) (Y1), Yield marketed (kg) (Y2), Cost Of Cultivation (1 Acre)

(Y4), Yield Consumed (kg) (Y3) with **Eigen value 3.693** and **variance 19.437** per cent the factor is renamed as **Modernity index**.



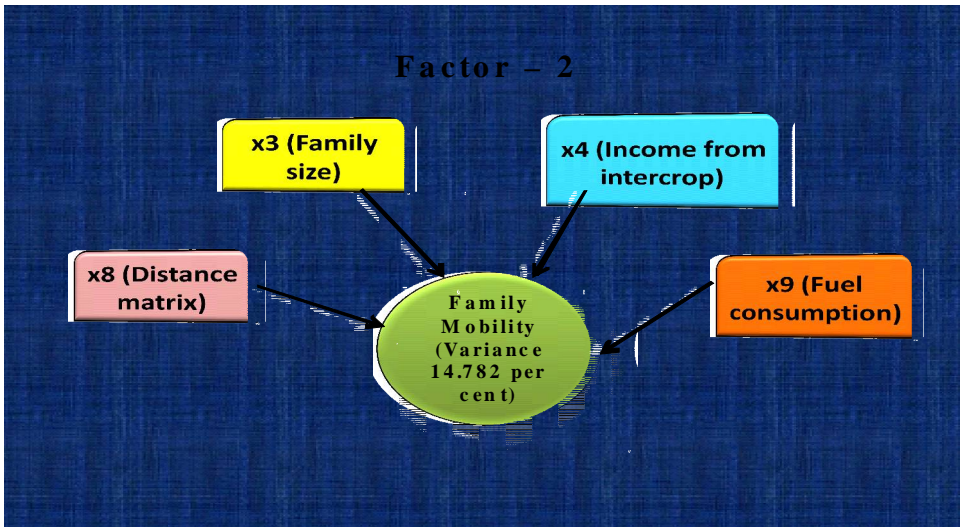
MODEL- 13

Table- 37.2

Factor 2	Variables	Eigen Value	Variance	Cumulative variance	Factor renaming
0.539	Family Size(x3)	2.809	14.782	34.219	Family mobility
-0.578	Income from intercrops(per capita) (x4)				
0.415	Distance Matrix(x8)				
0.577	Fuel consumption(per month, per month) (x9)				

This table has accommodated 4 variables viz. Namely Family Size(x3), Income from intercrops(per capita) (x4), Fuel consumption(per month, per month) (x9), Distance Matrix(x8)with

Eigen value 2.809 , variance 14.782 and cumulative variance 34.219 per cent the factor is renamed as **Family mobility**.

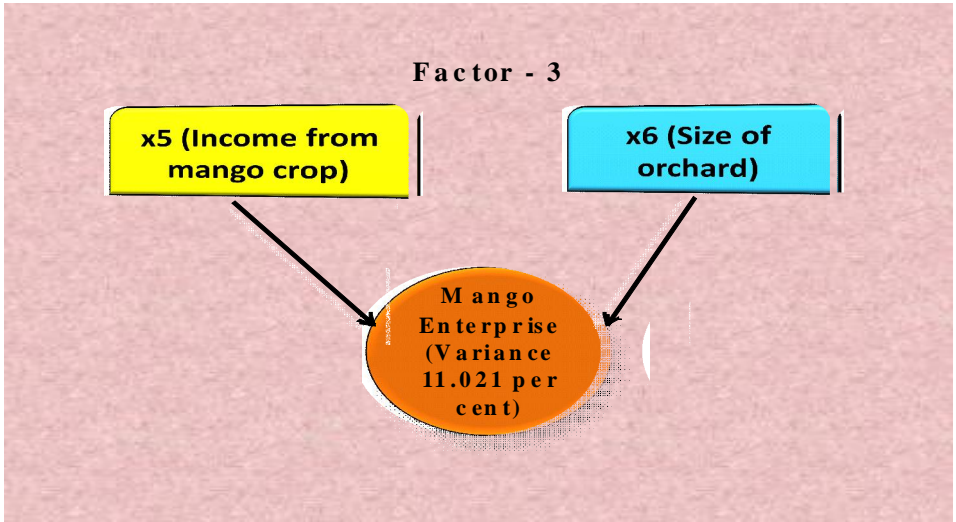


MODEL - 14

Table- 37.3

Factor 3	Variables	Eigen Value	Variance	Cumulative variance	Factor renaming
0.762	Income from mango crop(x5)	2.094	11.021	45.24	Mango Enterprise
0.844	Size of mango orchard(x6)				

This table has accommodated 2 variables viz. Namely Income from mango crop(x5), Size of mango orchard(x6) with **Eigen value 2.094, variance 11.021 and cumulative variance 45.24** per cent the factor is renamed as **Mango Enterprise**.



MODEL- 15

Table- 37.4

Factor 4	Variables	Eigen Value	Variance	Cumulative variance	Factor renaming
0.524	Education (x2)	1.575	8.29	53.53	

This table has accommodated only one variable that is education (x2) with **Eigen value 1.575, variance 8.29 and cumulative variance 53.33 per cent**. As this factor contains only one variable so renaming has not been done here.

Table- 37.5

Factor 5	Variables	Eigen Value	Variance	Cumulative variance	Factor renaming
0.668	Problems related to mango cultivation(x13)	1.36	7.156	60.686	

This table has accommodated only one variable that is Problems related to mango cultivation(x13)with **Eigen value 1.36, variance**

7.156 and cumulative variance 60.686 per cent. As this factor contains only one variable so renaming has not been done here.

Table- 37.6

Factor 6	Variables	Eigen Value	Variance	Cumulative variance	Factor renaming
0.458	Frequency of visit to the market(x11)	1.196	6.295	66.981	Enterprise Interaction
0.806	Group interaction(x12)				

This table has accommodated 2 variables viz. Namely Frequency of visit to the market(x11)Group interaction(x12)with **Eigen value 1.196, variance 6.295and cumulative variance 66.981** per cent the factor is renamed as **Enterprise interaction.**

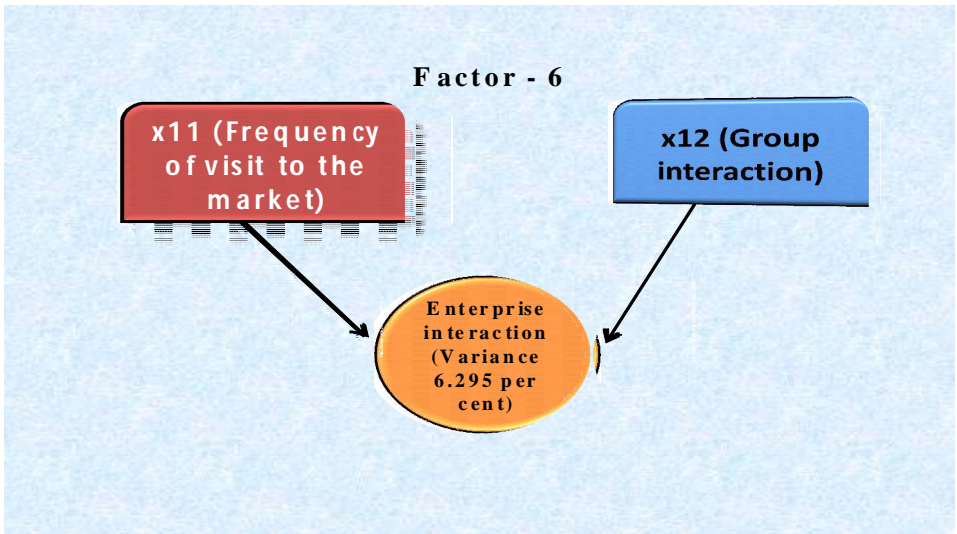
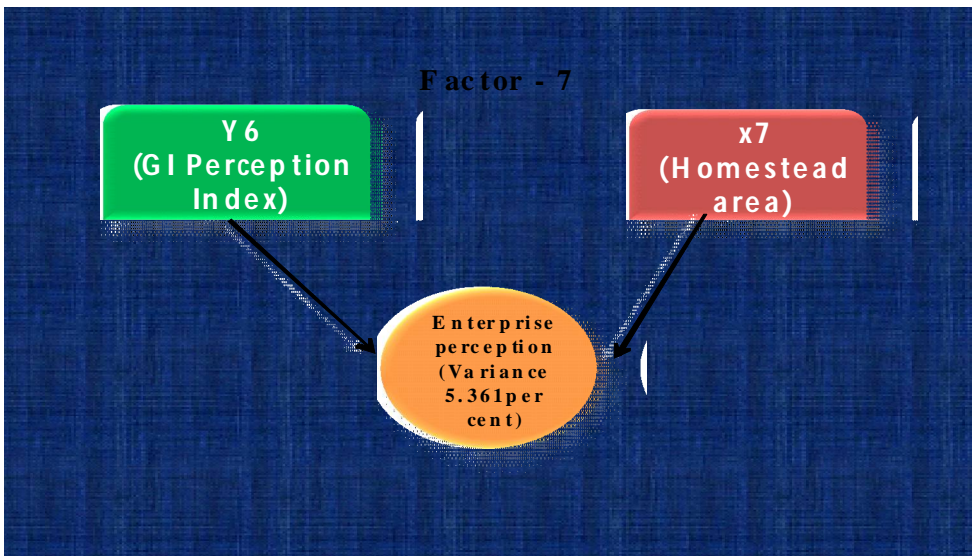


Table- 37.7

Factor 7	Variables	Eigen Value	Variance	Cumulative variance	Factor renaming
0.448	Homestead area (katta)(x7)	1.019	5.361	72.342	Enterprise Perception
0.588	GI perception Index(Y6)				

This table has accommodated 2 variables viz. Namely GI perception Index(Y6), Homestead area (katta)(x7)with **Eigen value 1.019, variance 5.361 and cumulative variance 72.342** per cent the factor is renamed as **Enterprise perception**.

MODEL- 17



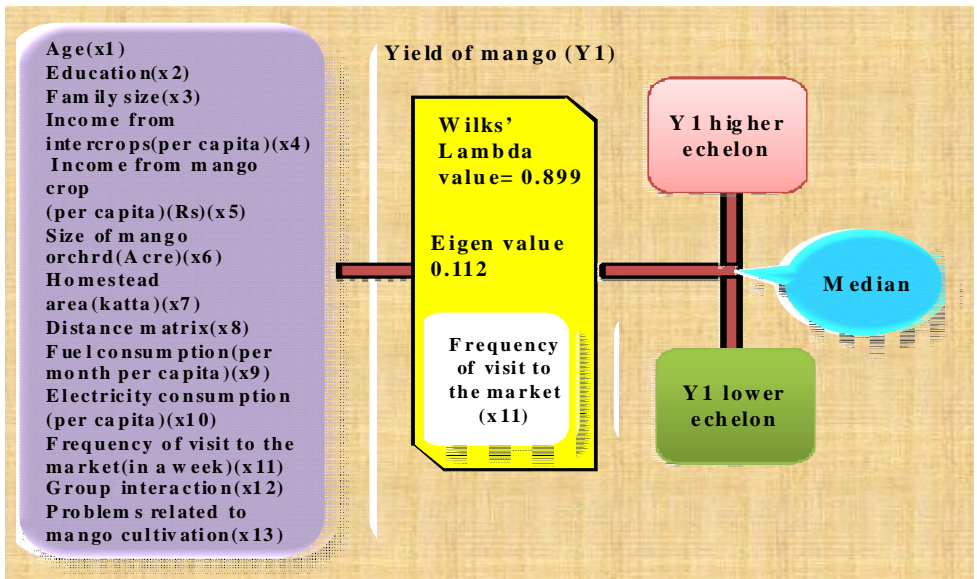
6.5 Canonical Discriminant Function analysis (Step wise):

Based on medians all the dependent variables have been splitted into high and low level of performed behaviour and having this in place Wilk’s Lambda for this analysis has been found significant to infer that the efficacy of creating chasms into high and low level of performances.

Table 38: Presents the Canonical Discriminant Function Coefficients for yield of mango (Y1)

Canonical Discriminant Function Coefficients for yield of mango (Y1) (Unstandardized coefficients)				
Variable	Function			
	1			
Frequency of visit to the market(x11)	0.913			
(Constant)	-5.386			
Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	0.899	6.117	1	0.013
Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	0.112	100	100	0.318
Correctly classified 65%				

MODEL- 18

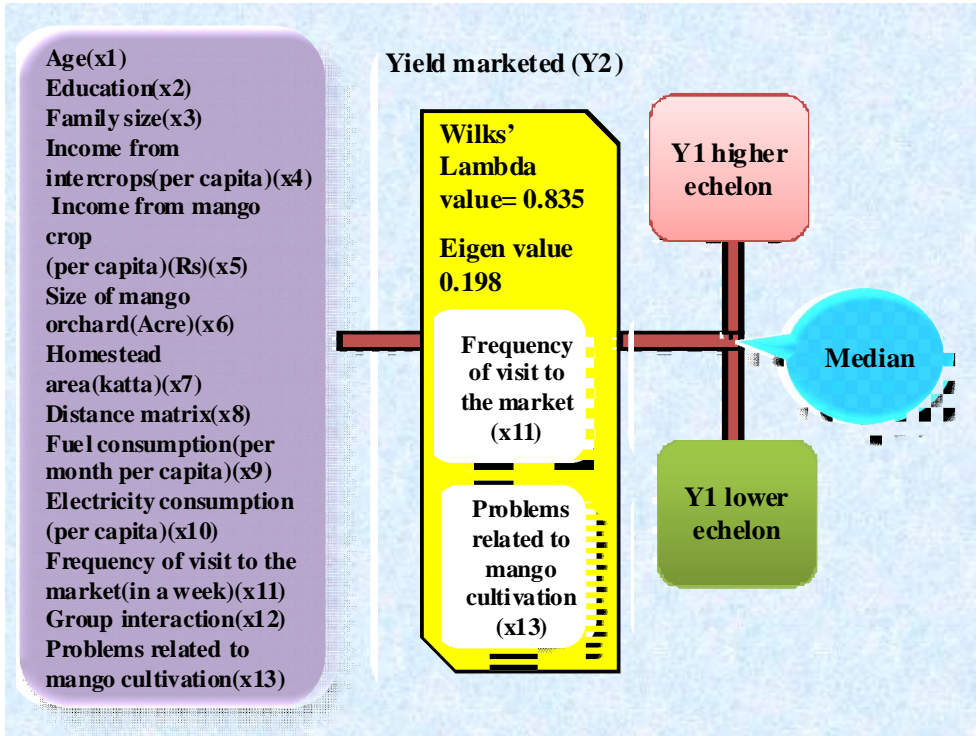


Result and Revelation: Canonical discriminant function (step wise) has been carried out to elicit the variables having critical and clandestine impact on yield of mango (Y1) by dint of discriminatory properties of respective variables. It stands discernible that the variable Frequency of visit to the market(x11) has gone isochronously in characterising yield of mango (Y1).

The yield of mango (Y1) has been scaled up when the frequency of market visit has activated. This is solitary marker response. This discrimination holds good in 65 per cent cases.

Table 39: Presents the Canonical Discriminant Function Coefficients for yield marketed (Y2)

Canonical Discriminant Function Coefficients for yield marketed (Y2)(Unstandardized coefficients)				
Variable	Function			
	1			
Frequency of visit to the market(x11)	0.795			
Problems related to mango cultivation(x13)	0.451			
(Constant)	-6.104			
Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	0.835	10.277	2	0.006
Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	0.198	100	100	0.406
Correctly classified 65%				



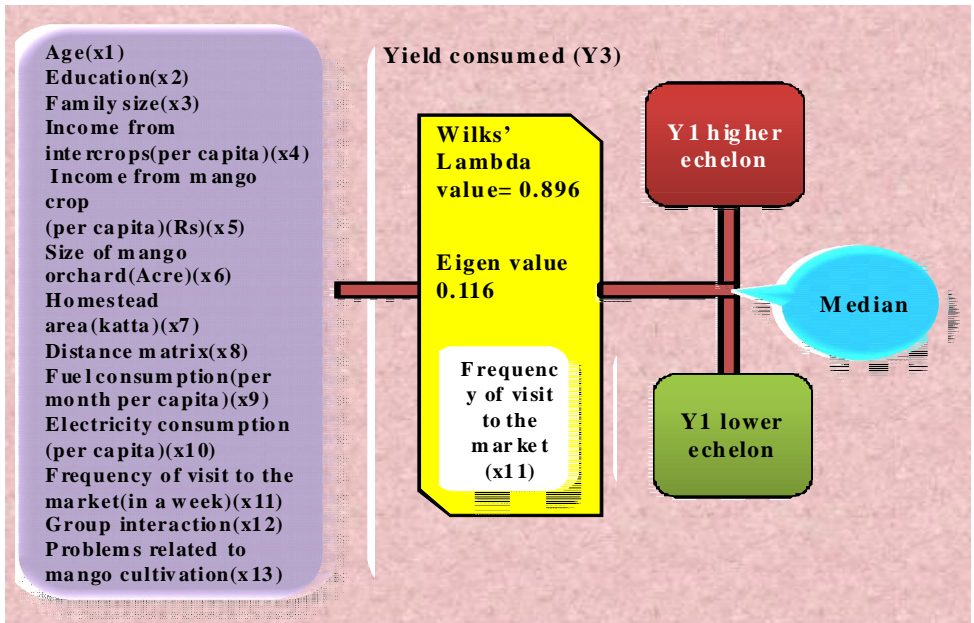
MODEL - 19

Result and Revelation: Canonical discriminant function (step wise) has been carried out to elicit the variables having critical and clandestine impact on yield marketed (Y2) by dint of discriminatory properties of respective variables. It stands discernible that the variables Frequency of visit to the market(x11) and Problems related to mango cultivation(x13) have gone isochronously in characterising yield marketed (Y2).

The yield marketed (Y2).has been scaled up when the frequency of market visit has activated and problem perception have been simultaneously activated as well as orchestrated. This discrimination holds well in 65 per cent cases.

Table 40: Presents the Canonical Discriminant Function Coefficients for yield consumed (Y3)

Canonical Discriminant Function Coefficients for yield consumed Y3 (Unstandardized coefficients)				
Variable	Function			
	1			
Frequency of visit to the market(x11)	0.915			
(Constant)	-5.396			
Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	0.896	6.329	1	0.012
Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.116a	100	100	0.323
Correctly classified 65%				



MODEL - 20

Result and Revelation: Canonical discriminant function (step wise) has been carried out to elicit the variables having critical and clandestine impact on yield consumed (Y3) by dint of discriminatory properties of respective variables. It stands discernible that the variable frequency of visit to the market(x11) has gone substantive in characterising yield consumed (Y3).

The yield consumed (Y3) has been scaled up when there is a good amount of fruit yield and there is a good market for the produce. For market information, knowing the rates of mango, demands, market visit is very much crucial for a farmer. This discrimination holds well in 65 per cent cases.

Note: No stepwise discriminant analysis has been possible for cost of cultivation (Y4), net return (Y5) and GI Perception Index (Y6).

6.6 Important information about Mango Producer's Characteristics:

1) Farming experience of the Mango growers(%):

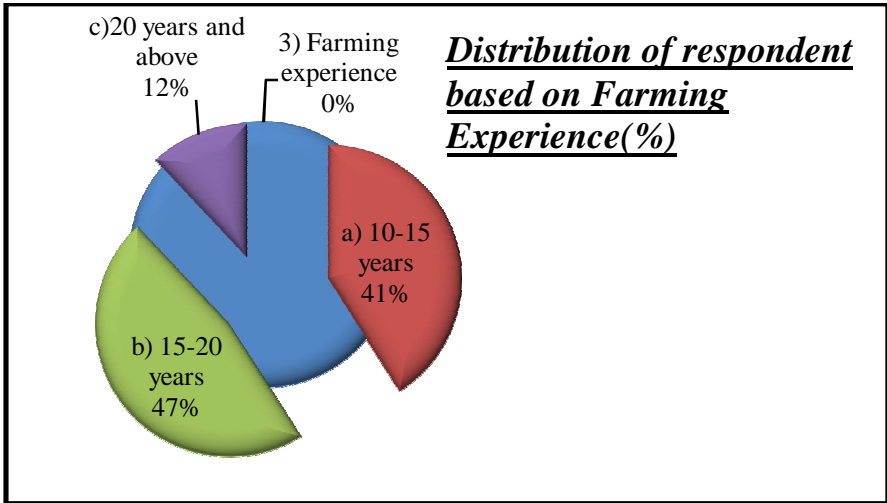


Figure No 16: Farmer's experience in Mango farming

Experience of farmer in farming is an important variable in determining the quality and quantity of the products as well as

adoption of new technologies. In this study, it was found that majority of the farmers (47 per cent) have been growing mango for last 15-20 years and (12 per cent) of them are in the business for last 20 years and above and rest 41 per cent farmers are practicing this for last 10-15 years. It shows that Mango farming is not a new business in the study area Malda.

2) Land holding of the Mango Growers (%):

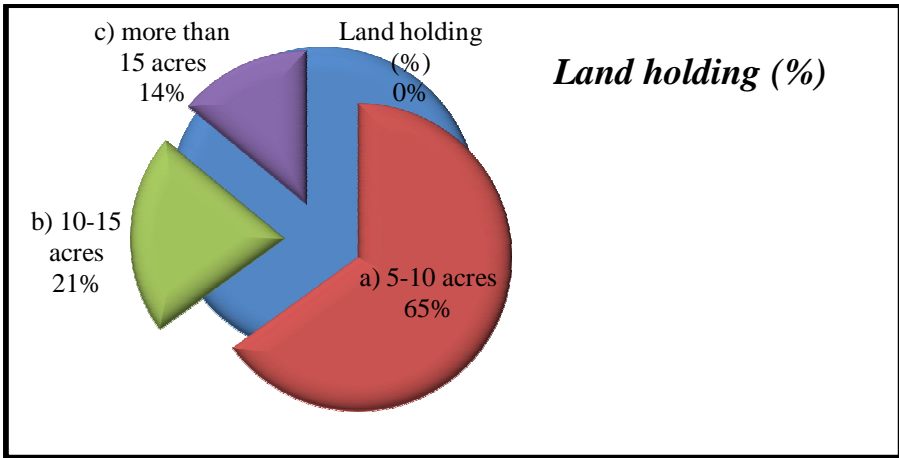


Figure No 17: Land holding pattern of the respondents

In the study, it is found that all the farmers of the selected site practicing Mango cultivation are big farmers. They have large area under mango. In the study, 65 per cent of the respondents possess 5-10 acres of area under mango cultivation, 21 per cent of respondents possess 10-15 acres of mango orchard and 14 per cent have land more than 15 acres for mango cultivation. The result shows good economic strength of the mango cultivars of the studied area.

3) Distribution of lands under different cultivars (%):

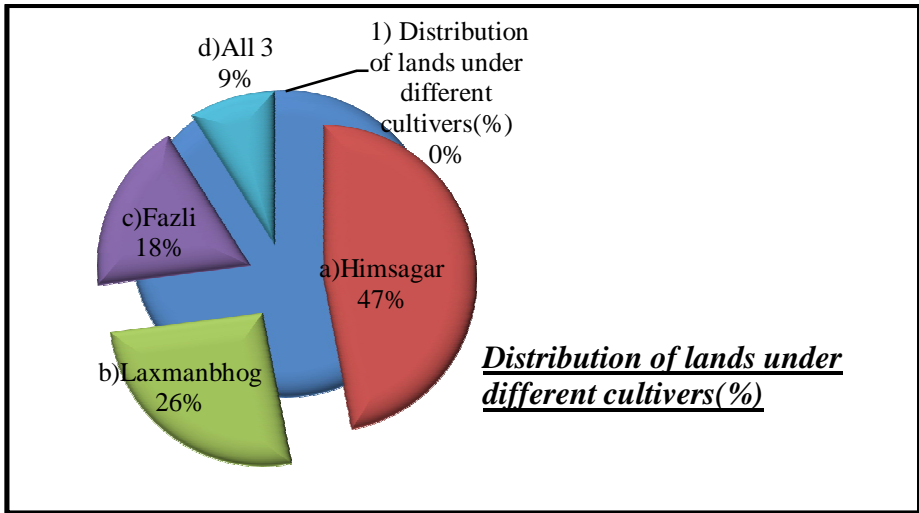


Figure No 18: Distribution of lands under different cultivars

In the study area, a variety of mango is grown for business purpose. Among those varieties Fazli, Laxmanbhog, Himsagar is widely cultivated and assigned Geographical Indication. The study results show that among the respondents, 47 per cent are going for Himsagar. 26 per cent farmers are cultivating Laxmanbhog, 18% is going for Fazli and 9 per cent is practicing all the three varieties.

Table No 41: Presents the production rate of Mango:

Area	No. of plants	No. of Mangoes per plant	Total number of mangoes	Production rate
1 acre	45-50	800	36000-40000	7-9 t/ha

4) Source of Income of the Mango Cultivars(%):

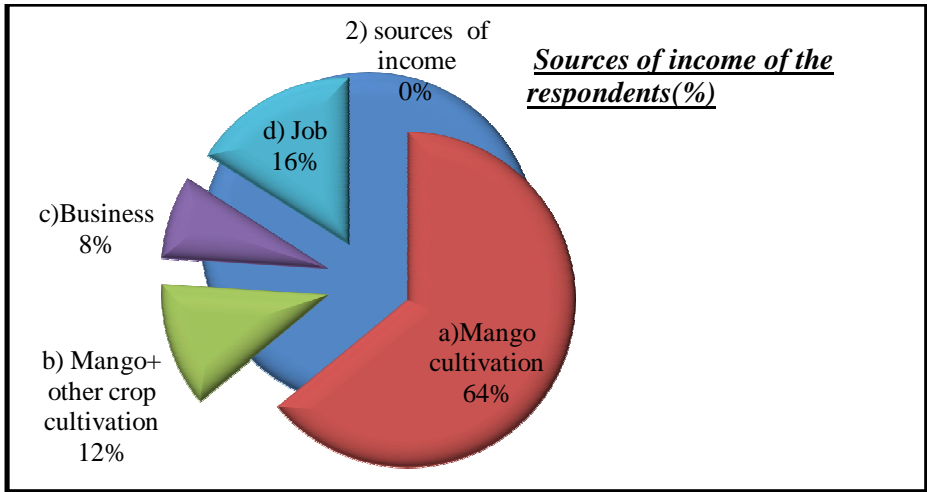


Figure no 19: Source of Income of the mango grower

The source of income of the mango cultivars of the selected site was studied. The study shows that most of the farmers (64 per cent) are practicing mango growing as their main source of income , 12 percent are other crop cultivar. While 16 per cent of them are engaged in various jobs and 8% of them practicing other business as their main source of income.

5) Age of the mango orchard in the study area (%):

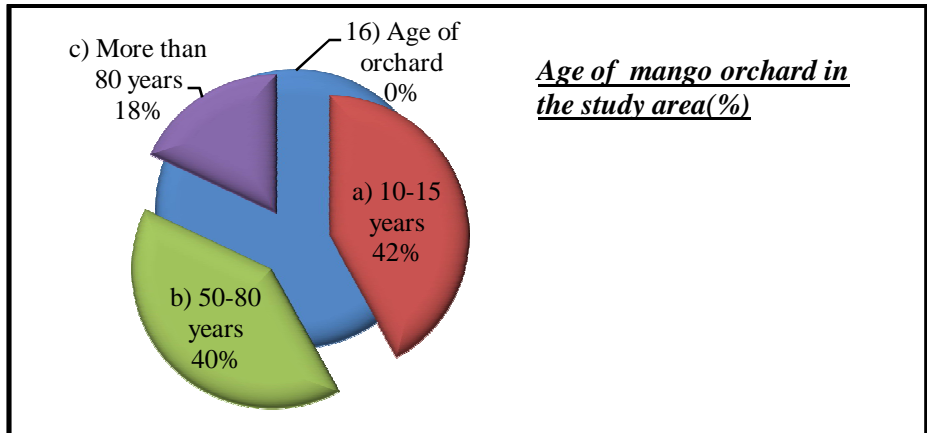


Figure no 20: Age of mango orchard in the study area

In my study area the orchards are mainly old orchards. From this pie chart we can see that 42 per cent orchards are 10-15 years old, 40 per cent orchards are 50-80 years old and 18 percent orchards are older than 80 years.

Cost of cultivation:

Table No 42: Presents the cost of cultivation (1 acre area)

Sl. No.	Component	Proposed Expenditure (Rs.)
1.	Cultivation Expenses	
	(i) Cost of planting material	600
	(ii) Manures & fertilizers	6500
	(iii) Insecticides & pesticides	2500
	(iv) Cost of Labour	9,000
	(v) Others, (Power)	3600
	Subtotal	22,200
2.	Irrigation	
	(i) Tube-well/submersible pump	45,000
	Subtotal	45,000
4.	Infrastructure	
	(i) Store & pump house	15,000
	(ii) Labour room	5,000
	(iii) Agriculture Equipments	40,000
	Subtotal	60,000
5.	Land Development	
	(i) Soil Levelling	30,000
	(ii) Fencing	4,000
	Subtotal	34,000
	Grand Total	1,61,200

This is the total cost required for a new mango orchard. But in the study area all the respondents are practicing mango cultivation for at least 10 years. So, the cost of cultivation would be as follows-

Table No 43: Presents the cost of Production (10-20yrs. old mango orchard, 1acre)

Sl. No.	Component	Proposed Expenditure (Rs.)
1.	Cultivation Expenses	
	(i) Manures & fertilizers	8,000
	(ii) Insecticides & pesticides	5,500
	(iii) Cost of Labour	9,000
	(iv) Others, (Power)	4600
	Subtotal	27,100
2.	Irrigation	5,000
3.	Infrastructure	
	(iii) Agriculture Equipments	6,000
	(iv) Earthing up and compost	3000
	(v) Labour cost during harvesting and transport cost	7000
	Grand Total	48,100

As we can see that 1 acre of old mango orchard produces 8000kg- 9000kg of mangoes then cost of production of 1 kg mango is nearly about 6 rupees.

6.7) Important information about Mango market:

6) Quality response of fruit (%):

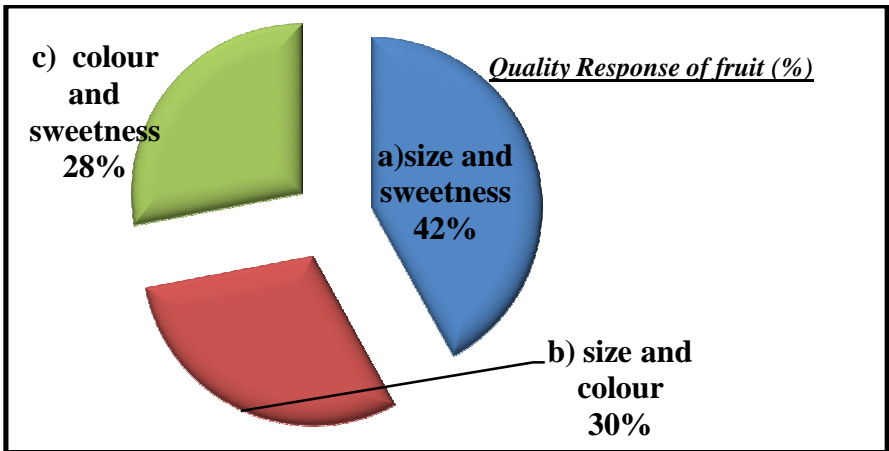


Figure No 21: Quality response of the Respondents

The result shows that all the farmers are aware of the quality their mango has. 42 per cent of the farmers went for the good size and sweetness of their fruit while 30 per cent farmer mentioned the colour and size of their fruit and 28 per cent favoured the colour and sweetness of the fruit they produced.

7) Main Buyers of Mango (%):

In the study area, 60 mango farmers were surveyed and the result shows that the main buyers of their mango are Aratdars and pre-harvest contractors. Mango farmers generally contract with them and sell their mango to these pre-harvest contractors and aratdars.

In the study area all the farmers contract with the local aratdars and 20 of them also contracted with the pre-harvest contractors.

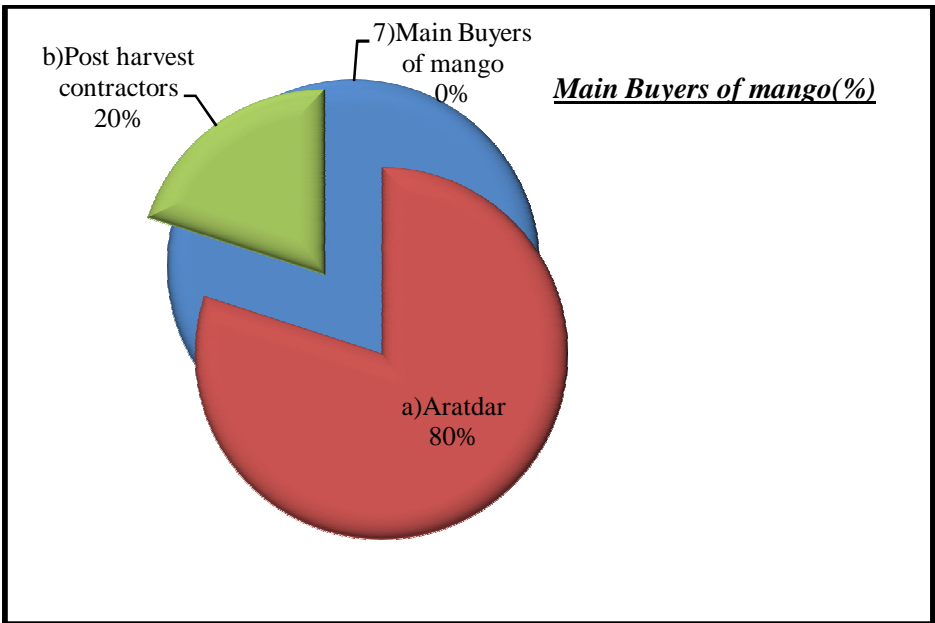


Figure No 22: Main Buyers of Mango

8) Mode of Selling of the produce in the study area (%):

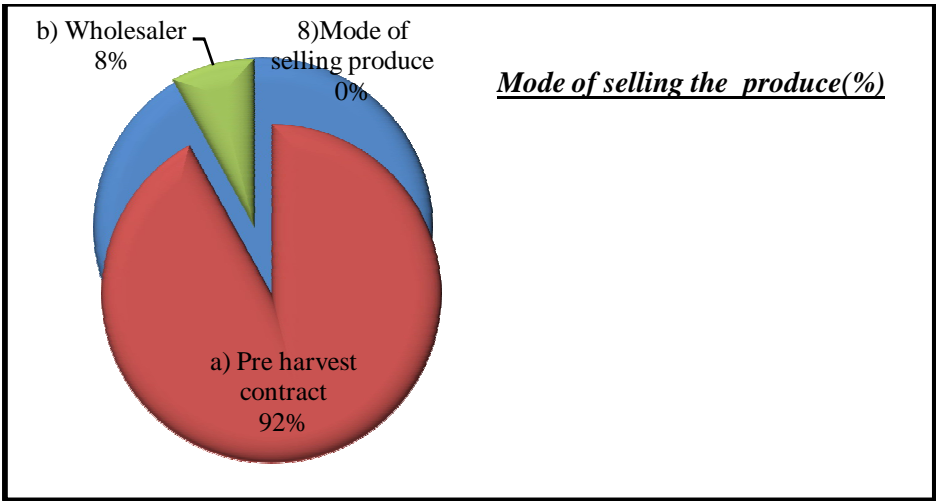


Figure No 23: Mode of Selling of the produce in the study area

Generally two types of selling practice i.e. selling to the wholesalers and retailers without contract and pre-harvest contract were practiced by the farmers of the selected villages. The pre-harvest contract was the most commonly preferred system of selling. Farmers prefer pre-harvest contract because of the low risk associated as well as easy way of getting money without harvesting and transportation burden. In the selected area of study, most of the farmers, 92 per cent prefers pre-harvest contract and rest 8 per cent sales their fruits to the wholesalers and retailers without contract.

9) Criteria of Harvesting Fruit according to the respondents (%):

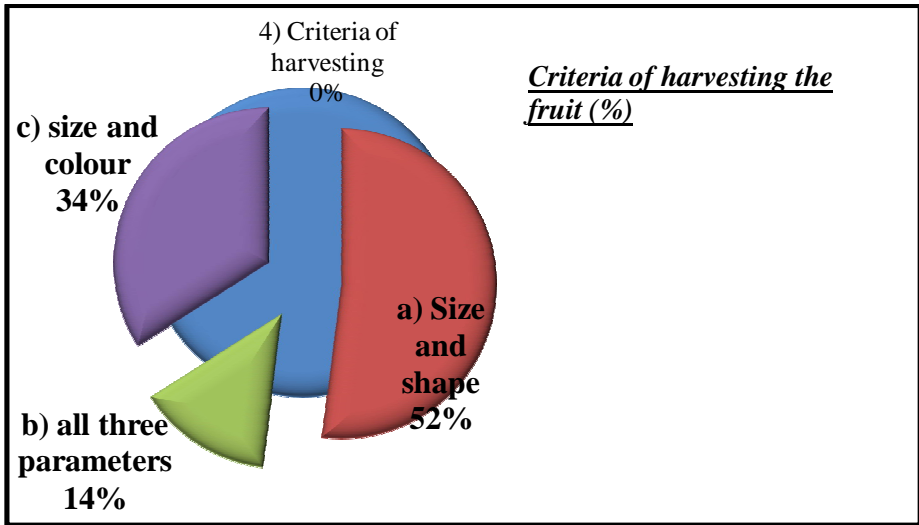


Figure No 24 Criteria of Harvesting Fruit

There is a mixed opinion of the farmers about the criteria of harvesting. Some of the farmers harvest mango noticing the size and colour while some of them notice the size only and some of them go for all the three parameters. According to the results, 52 per cent of the farmers notice the size and shape of their fruit and 34 per cent farmers notice the size of fruit along with its colour while 14 per cent farmers go for all the three parameters.

10) Method of Harvesting (%):

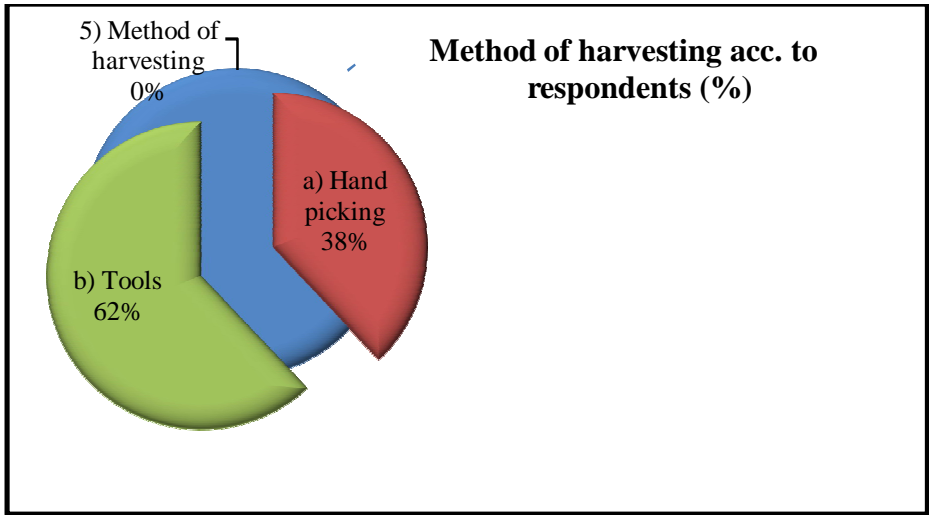


Figure no 25: Method of Harvesting

The study results show that 38 per cent of the farmers use handpicking of mangoes while 62 per cent of farmers use picking tools.

11) Process of making payment; two phases of payment (%):

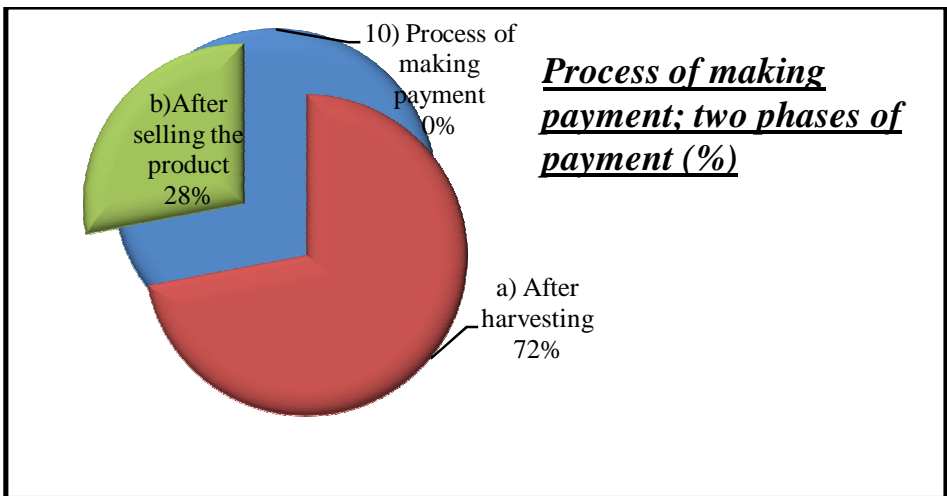


Figure No 26: Process of making payment; two phases of payment

In pre-harvest contract method payment to the farmers for their produce is given in two different methods. First one is immediately after harvesting of the crop and the other one is after selling of the product.

In the study area, in 72 per cent cases payment is immediately made after harvesting of mango and in rest 28 per cent cases payment is made after selling the produce.

12) Decisioning the price of whole mango orchard (%):

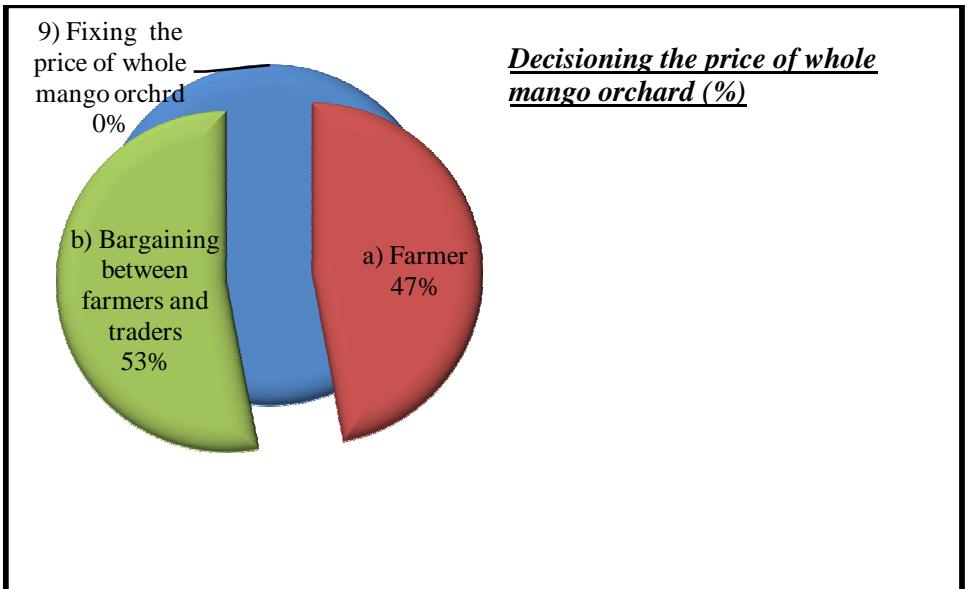


Figure No 27: Decisioning the price of whole mango orchard

According to the survey results, 47 per cent farmers decide the price of their whole mango orchard themselves and the rest 53 per cent farmers depend on bargaining between the farmers and traders.

13) Farmers' Satisfaction regarding the Price offered to them (%):

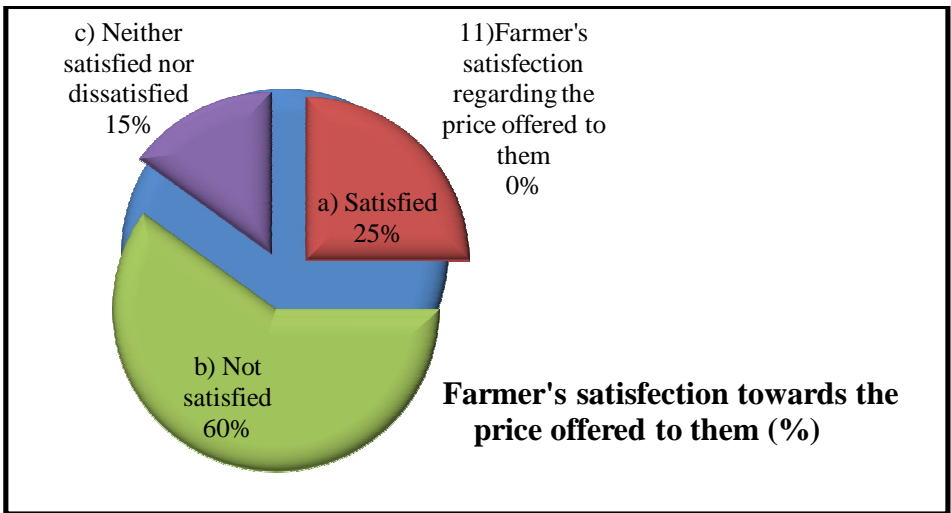


Figure No 28: Satisfaction among respondents regarding the Price offered to them

The study reveals that only 25 per cent of the farmers are satisfied with the price of mango offered to them while 60 per cent of farmers are not satisfied with the price and 15 per cent of the farmers are neither satisfied nor dissatisfied with the price offered to them.

14) Providing support to the farmers (%):

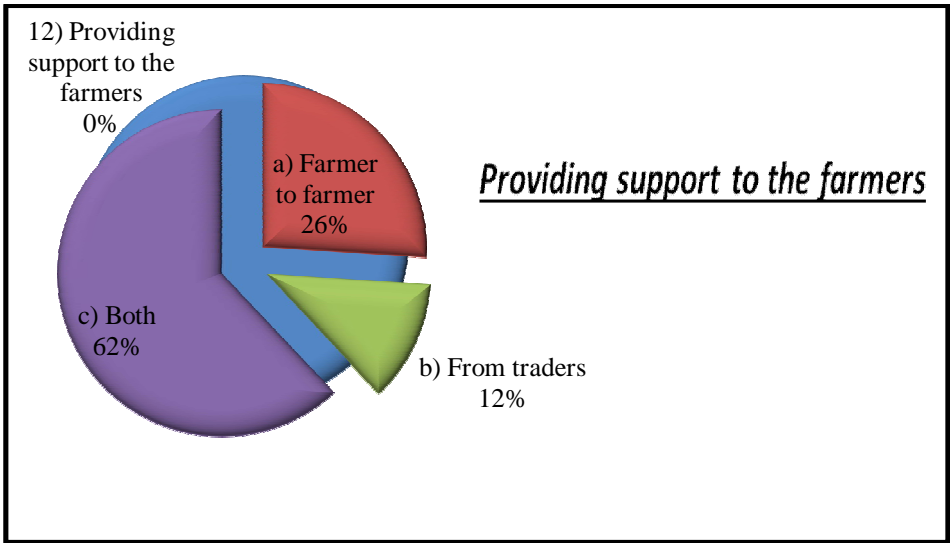


Figure No 29: Providing support to the farmers

The main supports of mango farmers are the traders and the other farmers. The study reveals that 26 per cent of farmers are dependent on the views of other farmers while 12 per cent farmers get information support from the traders and 62 per cent of farmers depend on both the trader and other farmers. This study also shows the lack of Government support for the well being of the farmers.

15) Provided Support is enough for the farmers or not(%):

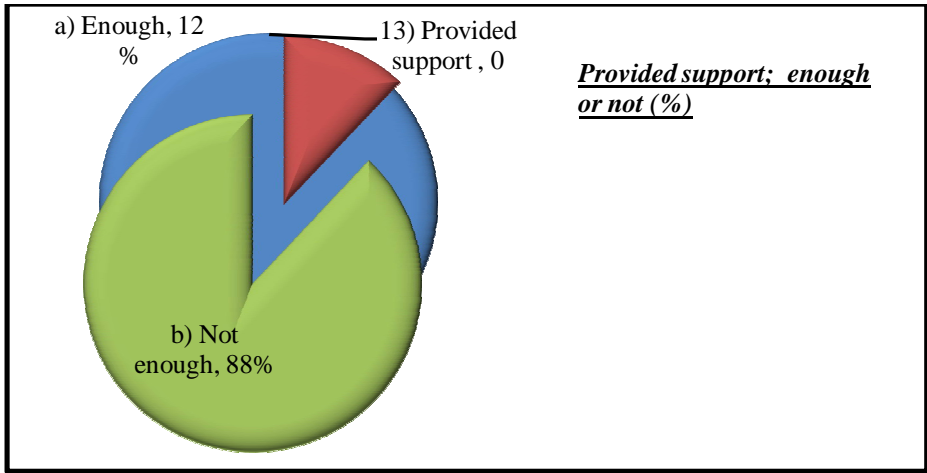


Figure No 30: Provided Support is enough for the farmers or not

The study reveals that there are lacks of support provided to the farmers. Among all the respondents, 88 per cent stated that the support provides is not enough while only 12 per cent think that the support provided to them about mango cultivation and marketing is enough for them.

16) Access to market information (%):

The farmers of the studied area get minimum access to the market information. Use of internet and modern communication services is less and this prevents the farmers to know price opportunities, marketing risks and management of these marketing risks. Among the respondents, 72 per cent states that they get a minimum level of market information while 28 per cent stated that they do not get market information.

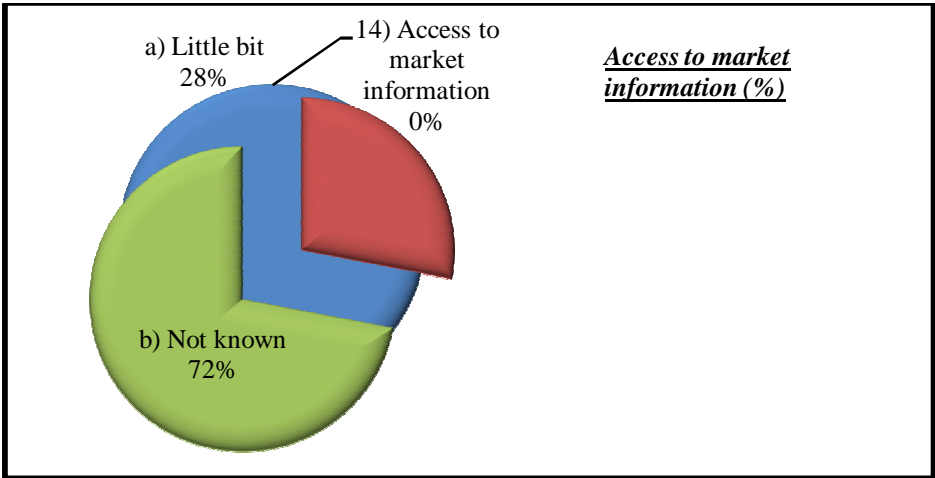


Figure No 31: Access to market information

17) Information seeking behaviour; the means and source (%):

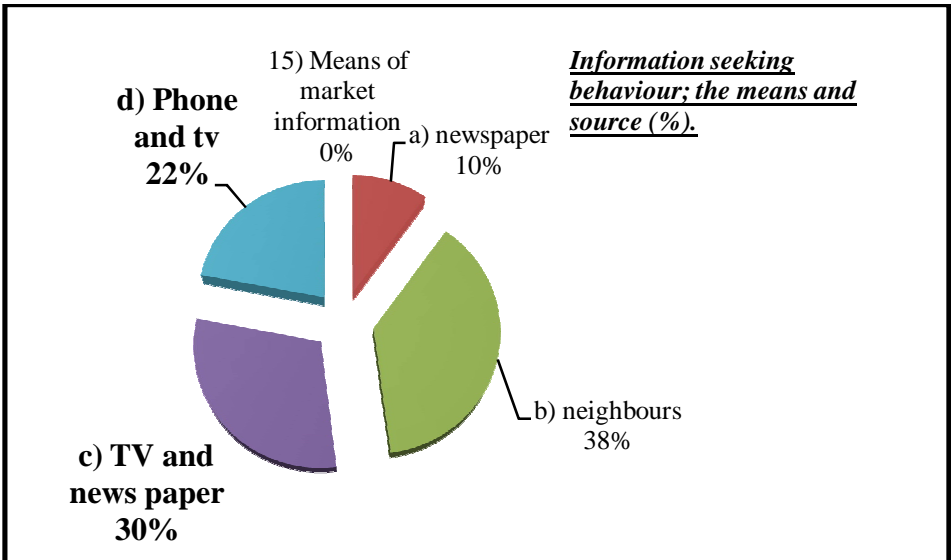


Figure No 32: Information seeking behaviour; the means and source

In the study area newspapers, neighbours, television and mobile phones are the main source of information. In the study, the result describes that 10 per cent of the farmers get information through newspapers while 38 per cent farmers get it from neighbours and 30 per cent get information from TV and news paper and 22 per cent of farmers depends on television and mobile phones to get the market information.

6.8 Value added product ratio:

Value added product ratio is defined by the following formula and the unit is recorded in kg.

Value add product ratio =

$(\text{Price of 1 unit raw produce} / \text{price of 1 unit value added product}) * 100$

Difference = $(\text{Price of 1 unit raw produce} - \text{price of 1 unit value added product})$

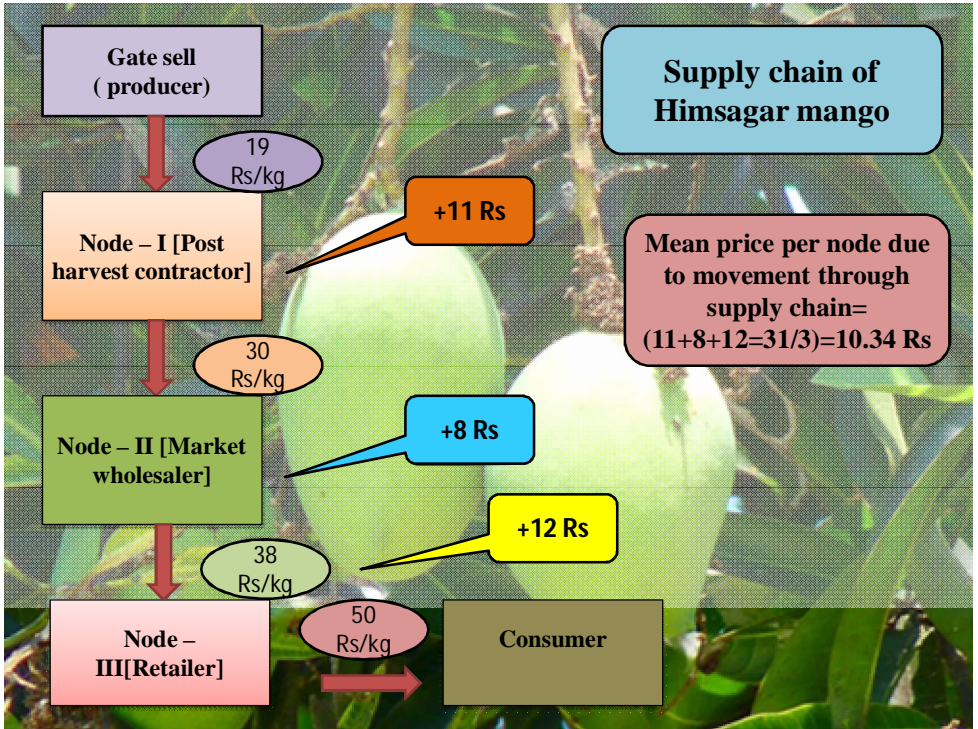
Table 44

Product	Product ratio	Difference
1) Mango pickle	11.34 per cent	$(150-17) = 133$
2)Aam papri (Aamsotto)	2.12 per cent	$(800-17) = 783$
3) Mango kasundi	6.8 per cent	$(250-17) = 233$
4)Dried mango powder	42.5 per cent	$(40-17) = 23$

6.9 Supply chain cost:

Supply chain management is defined as the design and operation of physical, management information and financial systems needed to transfer goods and services from point of production to point of consumption in an efficient and effective manner. The supply is the part of retail operations that ensures that the right product is in the right place, at the right time and at the right cost. In my study area the following marking channel is followed.

MODEL- 21

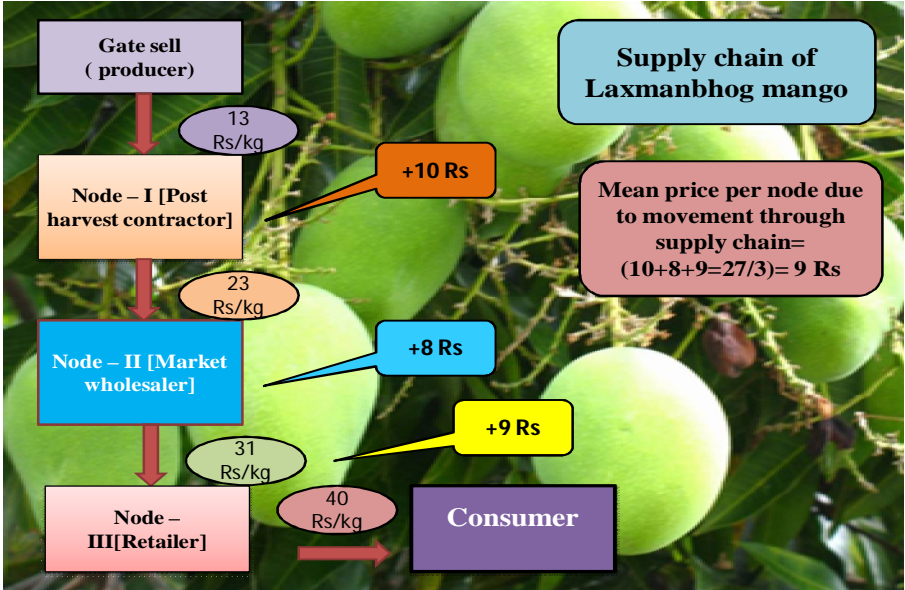


From this model we can see that there are 3 nodes i.e. post harvest contractor, market wholesaler and retailer for marketing of Himsagar mangoes in my study area Malda district. Farmer sells the produce at 19 Rs/kg to post harvest contractor and consumer purchases the product at 50 Rs/ kg. There is difference of prices in each step. In 1st step the price difference is 11 Rs, in 2nd step this is 8 Rs, and in last step difference is 12 Rs. So, mean price per node due to movement through supply chain is $(11 + 8 + 12 = 31 / 3) = 10.34$ Rs.

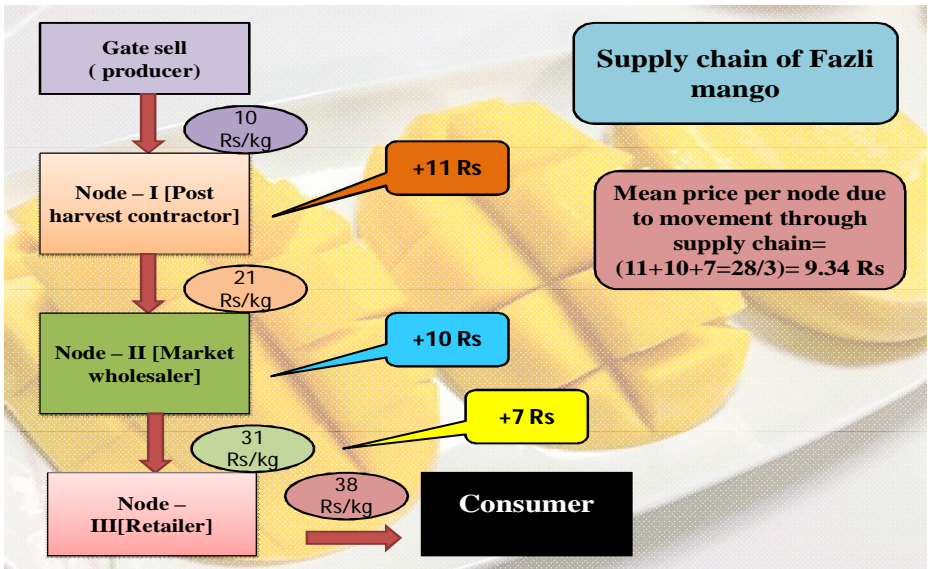
The same supply chain can be seen in case of Laxmanbhog mango. Farmer sells the Laxmanbhog mango at 13 Rs/kg to post harvest contractor and consumer purchases the product at 40 Rs/ kg. There is difference of prices in each step. In 1st step the price difference is 10 Rs, in 2nd step this is 8 Rs, and in last step difference is 9 Rs. So, mean price per node due to movement through supply

chain is $(10+8+9=27/3) = 9$ Rs. The model for supply chain is as follows -

MODEL- 22



MODEL- 23



Farmer sells the Fazli mango at 10 Rs/kg to post harvest contractor and consumer purchases the product at 38 Rs/ kg. There is difference of prices in each step. In 1st step the price difference is 11 Rs, in 2nd step this is 10 Rs, and in last step difference is 7 Rs. for marketing of Fazli mangoes. So mean price per node due to movement through supply chain is $(11+10+7=28/3) = 9.34$ Rs.