Chapter

# 4

# On Field Empirical Study

**The revelation of the on field empirical study has been given with supportive statistical data.**

**Table 1: Correlation of coefficient (r) with socialization Index weed(y1) and 17 independent variables ( x1-x17).**

| Sl. No. | Variables | r value | Remarks |
|---|---|---|---|
| 1 | Education (x1) | 0.004 | |
| 2 | Family size (x2) | 0.164 | |
| 3 | Total Land holding (x3) | 0.294 | ** |
| 4 | Area under GB (x4) | 0.420 | ** |
| 5 | Ag-Income (x5) | 0.282 | ** |
| 6 | Income-off Farm (x6) | 0.154 | |
| 7 | Annual Income (x7) | 0.250 | * |
| 8 | Annual expenses (x8) | 0.137 | |
| 9 | Loan amount (x9) | 0.137 | |
| 10 | Save amount (x10) | -0.032 | |
| 11 | Economic Status (x11) | -0.046 | |
| 12 | Plant hill% (x12) | -0.260 | * |
| 13 | Seedling age (x13) | -0.012 | |
| 14 | Nitrogen Dose (x14) | -0.221 | * |
| 15 | Phosphate Dose (x15) | 0.067 | |
| 16 | MOP total (x16) | -0.156 | |
| 17 | Expense wage (x17) | -0.017 | |

** Significant at 1% level of significance

* Significant at 5% level of significance

ISBN: 978-93-85822-50-6

Table 1 presents the co-efficient of correlation between Socialization Index weed (y1) and 17 independent variables (x1-x17).

This table reveals that the variable Total Land holding (x3) of the respondents has been found positive and significant correlation with Socialization index (Y1).

This table also reveals that some variables such as Area under Gobinda Bhog (x4), Ag-Income (x5), and Ann_Income (x7), have shown significant, posetively correlated and Plant hill% (x12) & Nitozen Dose (x14) have shown significant, negetively correlated with Socialization index (y1).

**Table 2: Correlation of coefficient (r) with socialization Index Yield(y2) and 17 independent variables ( x1-x17).**

| Sl. No. | Variables | r value | Remarks |
|---|---|---|---|
| 1 | Education (x1) | 0.163 | |
| 2 | Family size (x2) | 0.086 | |
| 3 | Total Land holding (x3) | -0.040 | |
| 4 | Area under GB (x4) | -0.179 | |
| 5 | Ag-Income (x5) | 0.239 | * |
| 6 | Incom-off Farm (x6) | 0.110 | |
| 7 | Ann_Income (x7) | 0.199 | |
| 8 | Ann_exp (x8) | 0.069 | |
| 9 | loan_amt (x9) | 0.149 | |
| 10 | save_amt (x10) | 0.078 | |
| 11 | Economic Status (x11) | -0.035 | |
| 12 | Plant hill% (x12) | 0.167 | |
| 13 | sdling_age_day (x13) | -0.152 | |
| 14 | Nitozen Dose (x14) | 0.241 | * |
| 15 | Phosphate Dose (x15) | -0.095 | |
| 16 | MOP total (x16) | 0.080 | |
| 17 | expense_wage (x17) | -0.077 | |

** Significant at 1% level of significance

* Significant at 5% level of significance

Table 2 presents the co-efficient of correlation between Socialization Index Yield (y2) and 17 independent variables (x1-x17).

ISBN: 978-93-85822-50-6

This table reveals that the variable Nitrogen Dose (x14) of the respondents has been found positive and significant correlation with Socialization index Yield (Y2).

This table also reveals that some variables such as Ag-Income (x5), have shown significant and positively correlated with Socialization index Yield (y2).

**Table 3 Correlation of coefficient (r) with socialization Index Irrigation(y3) and 17 independent variables( x1-x17)**

| Sl. No. | Variables | r value | Remarks |
|---|---|---|---|
| 1 | Education (x1) | -0.187 | |
| 2 | Family size (x2) | 0.202 | * |
| 3 | Total Land holding (x3) | -0.140 | |
| 4 | Area under GB (x4) | -0.003 | |
| 5 | Ag-Income (x5) | -0.134 | |
| 6 | Incom-off Farm (x6) | 0.109 | |
| 7 | Ann_Income (x7) | -0.003 | |
| 8 | Ann_exp (x8) | 0.288 | ** |
| 9 | loan_amt (x9) | 0.142 | |
| 10 | save_amt (x10) | -0.303 | ** |
| 11 | Economic Status (x11) | 0.128 | |
| 12 | Plant hill% (x12) | 0.090 | |
| 13 | sdling_age_day (x13) | 0.011 | |
| 14 | Nitozen Dose (x14) | 0.274 | ** |
| 15 | Phosphate Dose (x15) | 0.018 | |
| 16 | MOP total (x16) | 0.085 | |
| 17 | expense_wage (x17) | -0.112 | |

** Significant at 1% level of significance

* Significant at 5% level of significance

Table 3 presents the co-efficient of correlation between Socialization Index Irrigation (y3) and 17 independent variables (x1-x17).

This table reveals that the variable Nitozen Dose (x14) of the respondents has been found positive and significant correlation with Socialization index Irrigation (Y3).

ISBN: 978-93-85822-50-6

This table also reveals that some variables such as Ann_exp (x8), Family size (x2) have shown significant and positively correlated and the variables saved_amount (x10) have shown significant but negatively correlated with Socialization index Irrigation (y3).

**Table 4 Correlation of coefficient (r) with Rate of Paddy(y4) and 17 independent variables( x1-x17)**

| Sl. No. | Variables | r value | Remarks |
|---|---|---|---|
| 1 | Education (x1) | -0.208 | * |
| 2 | Family size (x2) | 0.017 | |
| 3 | Total Land holding (x3) | -0.343 | ** |
| 4 | Area under GB (x4) | -0.284 | ** |
| 5 | Ag-Income (x5) | -0.262 | * |
| 6 | Incom-off Farm (x6) | 0.041 | |
| 7 | Ann_Income (x7) | -0.116 | |
| 8 | Ann_exp (x8) | 0.141 | |
| 9 | loan_amt (x9) | 0.014 | |
| 10 | save_amt (x10) | -0.232 | * |
| 11 | Economic Status (x11) | 0.066 | |
| 12 | Plant hill% (x12) | -0.019 | |
| 13 | sdling_age_day (x13) | 0.090 | |
| 14 | Nitozen Dose (x14) | -0.128 | |
| 15 | Phosphate Dose (x15) | -0.209 | * |
| 16 | MOP total (x16) | -0.108 | |
| 17 | expense_wage (x17) | 0.024 | |

** Significant at 1% level of significance

* Significant at 5% level of significance

Table 4 presents the co-efficient of correlation between Rate of Paddy (y4) and 17 independent variables (x1-x17).

This table reveals that some variables such as Total Land holding (x3), Area under Gobinda Bhog (x4), save_amt (x10), Phosphate Dose (x15), Education (x1), have shown significant but negetively corelated with Rate of Paddy (y4).

ISBN: 978-93-85822-50-6

**Table 5 Correlation of coefficient (r) with Marketing Surplus(y5) and 17 independent variables ( x1-x17).**

| Sl. No. | Variables | r value | Remarks |
|---|---|---|---|
| 1 | Education (x1) | 0.231 | * |
| 2 | Family size (x2) | -0.677 | ** |
| 3 | Total Land holding (x3) | -0.029 | |
| 4 | Area under GB (x4) | 0.008 | |
| 5 | Ag-Income (x5) | 0.015 | |
| 6 | Incom-off Farm (x6) | -0.186 | |
| 7 | Ann_Income (x7) | -0.110 | |
| 8 | Ann_exp (x8) | -0.014 | |
| 9 | loan_amt (x9) | 0.012 | |
| 10 | save_amt (x10) | -0.047 | |
| 11 | Economic Status (x11) | -0.036 | |
| 12 | Plant hill% (x12) | -0.072 | |
| 13 | Age of seedling /day (x13) | -0.117 | |
| 14 | Nitozen Dose (x14) | -0.084 | |
| 15 | Phosphate Dose (x15) | -0.144 | |
| 16 | MOP total (x16) | -0.004 | |
| 17 | wage (x17) | 0.002 | |

** Significant at 1% level of significance

* Significant at 5% level of significance

Table 5 presents the co-efficient of correlation between Marketing Surplus(y5) and 17 independent variables (x1-x17).

This table reveals that the variable Education (x1) of the respondents has been found positive and significant correlation with Marketing Surplus(y5).

This table also reveals that some variables such as Family size (x2), have shown significant but negatively correlated with Marketing Surplus(y5).

**Table 6: Correlation of coefficient (r) with Socialization Index (Y) and 17 independent variables ( x1-x17).**

| Sl. No. | Variables | r value | Remarks |
|---|---|---|---|
| 1 | Education (x1) | -0.189 | |
| 2 | Family size (x2) | 0.199 | |
| 3 | Total Land holding (x3) | -0.143 | |
| 4 | Area under GB (x4) | -0.006 | |
| 5 | Ag-Income (x5) | -0.136 | |

ISBN: 978-93-85822-50-6

| | | | |
|---|---|---|---|
| 6 | Income-off Farm (x6) | 0.109 | |
| 7 | Annual Income (x7) | -0.004 | |
| 8 | Annual_exp (x8) | 0.290 | ** |
| 9 | loan_amt (x9) | 0.142 | |
| 10 | save_amt (x10) | -0.306 | ** |
| 11 | Economic Status (x11) | 0.129 | |
| 12 | Plant hill% (x12) | 0.090 | |
| 13 | seedling_age_day (x13) | 0.011 | |
| 14 | Nitozen Dose (x14) | 0.272 | ** |
| 15 | Phosphate Dose (x15) | 0.015 | |
| 16 | MOP total (x16) | 0.084 | |
| 17 | expense_wage (x17) | -0.112 | |

** Significant at 1% level of significance

* Significant at 5% level of significance

Table 6 presents the co-efficient of correlation between Socialization Index (Y) and 17 independent variables (x1-x17).

This table reveals that the variable Ann_exp (x8) of the respondents has been found positive and significant correlation with Socialization (Y).

This table also reveals that some variables such as Nitozen Dose (x14), have shown significant and positively correlated & saved _amt (x10) have shown significant but negatively correlated with Socialization (Y).

**Table 7: Regression analysis socialization Index weed(y1) vs 17 causal variables( x1-x17)**

| S.L. No. | Variables | Unstandarized coeficient β | Std. Error | Standarized Coeficient β | t value |
|---|---|---|---|---|---|
| | Constant (y1) | 22.912 | 5.987 | | 3.827 |
| 1 | Education (x1) | -0.358 | 0.380 | -0.099 | -0.940 |
| 2 | Family size (x2) | 0.212 | 0.253 | 0.100 | 0.841 |
| 3 | Total Land-ha (x3) | -0.380 | 1.294 | -0.055 | -0.293 |
| 4 | Area under GB (x4) | 6.866 | 2.996 | 0.430 | 2.292 |
| 5 | Ag-Income (x5) | 0.000 | 0.000 | 0.165 | 1.340 |
| 6 | Incom-off Farm (x6) | 0.000 | 0.000 | -0.145 | -1.126 |
| 9 | loan_amt (x9) | 0.000 | 0.000 | -0.149 | -1.396 |
| 10 | save_amt (x10) | 0.000 | 0.000 | -0.066 | -0.607 |

ISBN: 978-93-85822-50-6

| | | | | | |
|---|---|---|---|---|---|
| 11 | Economic Status (x11) | -0.012 | 0.094 | -0.012 | -0.123 |
| 12 | Plant hill% (x12) | -0.014 | 0.009 | -0.163 | -1.512 |
| 13 | sdling_age_day (x13) | 0.030 | 0.152 | 0.020 | 0.200 |
| 14 | Nitozen Dose (x14) | -0.023 | 0.025 | -0.102 | -0.922 |
| 15 | Phosphate Dose (x15) | 0.022 | 0.041 | 0.060 | 0.542 |
| 16 | MOP total (x16) | -0.034 | 0.025 | -0.141 | -1.365 |
| 17 | expense_wage (x17) | 0.000 | 0.000 | 0.016 | 0.163 |

The table 7 presents the regression analysis to estimate that the respective causal contribution of 17 extrigenous variables on the dependent variable, socialization Index weed (y1).

It has been found that the variables Area under GB (x4) and Ag-Income (x5) have contributed to the extent of 0.430 percent and 0.165 percent of variance to the total R2 value.

So the socialization level of the selected technology has been well estimated to the variables Area under GB (x4) and Ag-Income (x5).

So this two variables can be indicator variables to measure the technology Socialization Index Weed (y1).

R2 Value being 0.3113 it is to conclude that 31.13 Percent of the variability embedded with the consequent variable socialization Index weed (y1) has been explain with the combination of the 17 causal variables.

**Table 8: Regression analysis socialization Index yield (y2) vs 17 causal variables( x1-x17)**

| **S.L. No.** | **Variables** | **Un standardized coefficient β** | **Std. Error** | **Standardized Coefficient β** | **t value** |
|---|---|---|---|---|---|
| | Constant (y1) | 33.838 | 7.935 | | 4.264 |
| 1 | Education (x1) | 0.487 | 0.504 | 0.100 | 0.966 |
| 2 | Family size (x2) | -0.180 | 0.335 | -0.063 | -0.539 |
| 3 | Total Land-ha (x3) | 1.488 | 1.715 | 0.160 | 0.867 |
| 4 | Area under GB (x4) | -11.924 | 3.971 | -0.552 | -3.003 |
| 5 | Ag-Income (x5) | 0.000 | 0.000 | 0.326 | 2.707 |

ISBN: 978-93-85822-50-6

| | | | | | |
|---|---|---|---|---|---|
| 6 | Incom-off Farm (x6) | 0.000 | 0.000 | 0.229 | 1.807 |
| 9 | loan_amt (x9) | 0.000 | 0.000 | 0.175 | 1.679 |
| 10 | save_amt (x10) | 0.000 | 0.000 | -0.003 | -0.024 |
| 11 | Economic Status (x11) | -0.089 | 0.125 | -0.071 | -0.718 |
| 12 | Plant hill% (x12) | 0.009 | 0.012 | 0.081 | 0.761 |
| 13 | sdling_age_day (x13) | -0.277 | 0.201 | -0.136 | -1.373 |
| 14 | Nitozen Dose (x14) | 0.059 | 0.033 | 0.195 | 1.790 |
| 15 | Phosphate Dose (x15) | -0.073 | 0.054 | -0.147 | -1.350 |
| 16 | MOP total (x16) | 0.017 | 0.033 | 0.053 | 0.524 |
| 17 | expense_wage (x17) | 0.000 | 0.000 | -0.063 | -0.656 |

The table 8 presents the regression analysis to estimate that the respective causal contribution of 17 extregenous variables on the dependent variable, socialization Index Yield (y2).

It has been found that the variables Ag-Income (x5) and Income-off Farm (x6) have contributed to the extent of 0.326 per cent and 0.229 percent of variance to the total R2 value.

So the socialization level of the selected technology has been well estimated to the variables Ag-Income (x5) and Incom-off Farm (x6).

So this two variables can be indicator variables to measure the technology Socialization Index Yield (y2).

R2 Value being 0.3390 it is to conclude that 33.90 Percent of the variability embedded with the consequent variable socialization Index weed (y1) has been explain with the combination of the 17 causal variables.

**Table 9: Regression analysis socialization Index Irrigation(y3) vs 17 causal variables ( x1-x17).**

| S.L. No. | Variables | Un standardized coefficient β | Std. Error | Standardized Coefficient β | t value |
|---|---|---|---|---|---|
| | Constant (y1) | 15987.224 | 9309.137 | | 1.717 |
| 1 | Education (x1) | -1061.566 | 591.323 | -0.182 | -1.795 |
| 2 | Family size (x2) | 950.031 | 392.845 | 0.276 | 2.418 |

ISBN: 978-93-85822-50-6

| | | | | | |
|---|---|---|---|---|---|
| 3 | Total Land-ha (x3) | -3492.098 | 2012.374 | -0.314 | -1.735 |
| 4 | Area under GB (x4) | 7049.607 | 4658.644 | 0.272 | 1.513 |
| 5 | Ag-Income (x5) | -0.034 | 0.029 | -0.142 | -1.203 |
| 6 | Incom-off Farm (x6) | 0.002 | 0.026 | 0.007 | 0.059 |
| 9 | loan_amt (x9) | 0.067 | 0.031 | 0.219 | 2.147 |
| 10 | save_amt (x10) | -0.019 | 0.008 | -0.246 | -2.358 |
| 11 | Economic Status (x11) | 312.519 | 146.116 | 0.208 | 2.139 |
| 12 | Plant hill% (x12) | -9.596 | 14.144 | -0.07 | -0.678 |
| 13 | sdling_age_day (x13) | -169.428 | 236.318 | -0.069 | -0.717 |
| 14 | Nitozen Dose (x14) | 100.934 | 38.895 | 0.276 | 2.595 |
| 15 | Phosphate Dose (x15) | -35.145 | 63.299 | -0.059 | -0.555 |
| 16 | MOP total (x16) | 31.301 | 38.446 | 0.08 | 0.814 |
| 17 | expense_wage (x17) | -0.24 | 0.31 | -0.073 | -0.773 |

The table 9 presents the regression analysis to estimate that the respective causal contribution of 17 extregenous variables on the dependent variable, socialization Index Irrigation(y3).

It has been found that the variables Family size (x2) and Area under GB (x4) have contributed to the extent of 0.276 percent and 0.272 percent of variance to the total R2 value.

So the socialization level of the selected technology has been well estimated to the variables Family size (x2) and Area under GB (x4).

So this two variables can be indicator variables to measure the technology Socialization Index Irrigation(y3).

R2 Value being 0.3674 it is to conclude that 36.74 Percent of the variability embedded with the consequent variable socialization Index Irrigation(y3) has been explain with the combination of the 17 causal variables.

ISBN: 978-93-85822-50-6

**Table 10: Regression analysis Rate of Paddy (y4) vs 17 causal variables( x1-x17)**

| S.L. No. | Variables | Un standardized coefficient β | Std. Error | Standardized Coefficient β | t value |
|---|---|---|---|---|---|
| | Constant (y1) | 1090.84 | 106.664 | | 10.227 |
| 1 | Education (x1) | -6.068 | 6.775 | -0.097 | -0.896 |
| 2 | Family size (x2) | 6.12 | 4.501 | 0.165 | 1.36 |
| 3 | Total Land-ha (x3) | -13.553 | 23.058 | -0.113 | -0.588 |
| 4 | Area under GB (x4) | -65.881 | 53.379 | -0.237 | -1.234 |
| 5 | Ag-Income (x5) | 0 | 0 | -0.221 | -1.756 |
| 6 | Incom-off Farm (x6) | 0.001 | 0 | 0.23 | 1.744 |
| 9 | loan_amt (x9) | 0 | 0 | 0.047 | 0.435 |
| 10 | save_amt (x10) | 0 | 0 | 0.047 | -1.637 |
| 11 | Economic Status (x11) | 0.173 | 1.674 | -0.182 | 0.103 |
| 12 | Plant hill% (x12) | -0.045 | 0.162 | 0.011 | -0.276 |
| 13 | sdling_age_day (x13) | -0.529 | 2.708 | -0.03 | -0.195 |
| 14 | Nitozen Dose (x14) | -0.536 | 0.446 | -0.02 | -1.202 |
| 15 | Phosphate Dose (x15) | -0.715 | 0.725 | -0.136 | -0.986 |
| 16 | MOP total (x16) | -0.107 | 0.441 | -0.112 | -0.243 |
| 17 | expense_wage (x17) | -0.001 | 0.004 | -0.026 | -0.36 |

The table 10 presents the regression analysis to estimate that the respective causal contribution of 17 extregenous variables on the dependent variable, Rate of Paddy (y4)

It has been found that the variables Incom-off Farm (x6) and Family size (x2) have contributed to the extent of 0.23 percent and 0.165 percent of variance to the total R2 value.

So the socialization level of the selected technology has been well estimated to the variables Incom-off Farm (x6) and Family size (x2).

So this two variables can be indicator variables to measure the technology Rate of Paddy (y4).

R2 Value being 0.2805 it is to conclude that 28.05 Percent of the variability embedded with the consequent variable Rate of Paddy (y4) has been explain with the combination of the 17 causal variables.

ISBN: 978-93-85822-50-6

**Table 11: Regression analysis socialization Marketing Surplus (y5) vs 17 causal variables( x1-x17)**

| S.L. No. | Variables | Un standardized coefficient β | Std. Error | Standardized Coefficient β | t value |
|---|---|---|---|---|---|
| | Constant (y1) | 129.403 | 29.83 | | 4.338 |
| 1 | Education (x1) | 2.948 | 1.895 | 0.124 | 1.556 |
| 2 | Family size (x2) | -11.752 | 1.259 | -0.838 | -9.335 |
| 3 | Total Land-ha (x3) | -8.172 | 6.448 | -0.18 | -1.267 |
| 4 | Area under GB (x4) | 23.686 | 14.928 | 0.225 | 1.587 |
| 5 | Ag-Income (x5) | 0 | 0 | 0.282 | 3.041 |
| 6 | Incom-off Farm (x6) | 2.01E-05 | 0 | 0.024 | 0.245 |
| 9 | loan_amt (x9) | 7.97E-05 | 0 | 0.064 | 0.796 |
| 10 | save_amt (x10) | 2.73E-05 | 0 | 0.085 | 1.031 |
| 11 | Economic Status (x11) | -0.672 | 0.468 | -0.11 | -1.436 |
| 12 | Plant hill% (x12) | 0.018 | 0.045 | 0.033 | 0.404 |
| 13 | sdling_age_day (x13) | -0.345 | 0.757 | -0.035 | -0.456 |
| 14 | Nitozen Dose (x14) | 0.115 | 0.125 | 0.077 | 0.92 |
| 15 | Phosphate Dose (x15) | -0.162 | 0.203 | -0.067 | -0.799 |
| 16 | MOP total (x16) | -0.017 | 0.123 | -0.011 | -0.14 |
| 17 | expense_wage (x17) | 0 | 0.001 | 0.033 | 0.449 |

The table 11 presents the regression analysis to estimate that the respective causal contribution of 17 extregenous variables on the dependent variable, Marketing Surplus (y5).

It has been found that the variables Area under GB (x4) and Education (x1) have contributed to the extent of 0.225 percent and 0.124 percent of variance to the total R2 value.

So the socialization level of the selected technology has been well estimated to the variables Area under GB (x4) and Education (x1).

So this two variables can be indicator variables to measure the technology Marketing Surplus (y5).

ISBN: 978-93-85822-50-6

R2 Value being 0.6089 it is to conclude that 60.89 Percent of the variability embedded with the consequent variable Marketing Surplus (y5) has been explain with the combination of the 17 causal variables.

**Table 12: Regression analysis Socialization Index (Y) vs 17 causal variables( x1-x17)**

| S.L. No. | Variables | Un standardized coefficient β | Std. Error | Standardized Coefficient β | T value |
|---|---|---|---|---|---|
| | Constant (y1) | 3452.843 | 1859.803 | | 1.857 |
| 1 | Education (x1) | -212.911 | 118.136 | -0.182 | -1.802 |
| 2 | Family size (x2) | 188.886 | 78.484 | 0.274 | 2.407 |
| 3 | Total Land-ha (x3) | -702.543 | 402.037 | -0.316 | -1.747 |
| 4 | Area under GB (x4) | 1400.471 | 930.716 | 0.27 | 1.505 |
| 5 | Ag-Income (x5) | -0.007 | 0.006 | -0.143 | -1.211 |
| 6 | Incom-off Farm (x6) | 0 | 0.005 | 0.01 | 0.081 |
| 9 | loan_amt (x9) | 0.013 | 0.006 | 0.22 | 2.157 |
| 10 | save_amt (x10) | -0.004 | 0.002 | -0.247 | -2.376 |
| 11 | Economic Status (x11) | 62.384 | 29.191 | 0.208 | 2.137 |
| 12 | Plant hill% (x12) | -1.925 | 2.826 | -0.07 | -0.681 |
| 13 | sdling_age_day (x13) | -34.11 | 47.212 | -0.07 | -0.722 |
| 14 | Nitozen Dose (x14) | 20.11 | 7.771 | 0.275 | 2.588 |
| 15 | Phosphate Dose (x15) | -7.215 | 12.646 | -0.061 | -0.571 |
| 16 | MOP total (x16) | 6.232 | 7.681 | 0.08 | 0.811 |
| 17 | expense_wage (x17) | -0.048 | 0.062 | -0.073 | -0.777 |

The table 12 presents the regression analysis to estimate that the respective causal contribution of 17 extregenous variables on the dependent variable, Socialization Index (Y).

It has been found that the variables Nitozen Dose (x14) and Area under Gobinda Bhog(x4) have contributed to the extent of 0.275 percent and 0.27 percent of variance to the total R2 value.

ISBN: 978-93-85822-50-6

So the socialization level of the selected technology has been well estimated to the variables Nitozen Dose (x14) and Area under Gobinda Bhog(x4).

So this two variables can be indicator variables to measure the technology Socialization Index (Y).

R2 Value being 0.3683 it is to conclude that 36.83 Percent of the variability embedded with the consequent variable Socialization Index (Y) has been explain with the combination of the 17 causal variables.

**Table 13: Path Analysis: Direct, Indirect and Residual effect; Socialization Index Weed (y1) Vs 17 Exogenous Variables(x1 to x17)**

| Sl no | Variables | Total Effect (r) | Direct Effect (DE) | Indirect Effect (IE)=r-DE | Highest Indirect Effect |
|---|---|---|---|---|---|
| 1 | Education (x1) | 0.004 | -0.0989 | 0.1029 | 0.4018 (x7) |
| 2 | Family size (x2) | 0.164 | 0.1006 | 0.0634 | |
| 3 | Total Land-ha (x3) | 0.294 | -0.0564 | 0.3504 | |
| 4 | Area under GB (x4) | 0.42 | 0.4317 | -0.0117 | |
| 5 | Ag-Income (x5) | 0.282 | 0.311 | -0.029 | |
| 6 | Incom-off Farm (x6) | 0.154 | 0.0266 | 0.1274 | |
| 7 | Ann_Income (x7) | 0.25 | -0.1518 | 0.4018 | |
| 8 | Ann_exp (x8) | 0.137 | -0.2318 | 0.3688 | |
| 9 | loan_amt (x9) | 0.137 | -0.098 | 0.235 | |
| 10 | save_amt (x10) | -0.032 | -0.2636 | 0.2316 | |
| 11 | Economic Status (x11) | -0.046 | -0.0125 | -0.0335 | |
| 12 | Plant hill% (x12) | -0.26 | -0.1645 | -0.0955 | |
| 13 | sdling_age_day (x13) | -0.012 | 0.0201 | -0.0321 | |
| 14 | Nitozen Dose (x14) | -0.221 | -0.1014 | -0.1196 | |
| 15 | Phosphate Dose (x15) | 0.067 | 0.0593 | 0.0077 | |
| 16 | MOP total (x16) | -0.156 | -0.1409 | -0.0151 | |
| 17 | expense_wage (x17) | -0.017 | 0.0159 | -0.0329 | |

RESIDUAL EFFECT=0.3113

Table 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 index Weed (y1). It has been found that

ISBN: 978-93-85822-50-6

the variable Annual Income (x7) has exerted the highest direct effect as well as highest total effect of socialization process.

The residual effect being 0.3683, it is concluded that even with combination of all these 17 variables, 36.83 per cent of the variance on the consequent variable, adoption index could not be explained.

**Table 14: Path Analysis: Direct, Indirect and Residual effect; Socialization Index Yield (y2) Vs 17 Exogenous Variables(x1 to x17)**

| Sl no | Variables | Total Effect (r) | Direct Effect (DE) | Indirect Effect (IE)=r-DE | Highest Indirect Effect |
|---|---|---|---|---|---|
| 1 | Education (x1) | 0.163 | 0.0991 | 0.0639 | 0.3747 (x4) |
| 2 | Family size (x2) | 0.086 | -0.0633 | 0.1493 | |
| 3 | Total Land-ha (x3) | -0.040 | 0.1625 | -0.2025 | |
| 4 | Area under GB (x4) | -0.179 | -0.5537 | 0.3747 | |
| 5 | Ag-Income (x5) | 0.239 | 0.0174 | 0.2216 | |
| 6 | Incom-off Farm (x6) | 0.110 | -0.1337 | 0.2437 | |
| 7 | Ann_Income (x7) | 0.199 | 0.1493 | 0.0497 | |
| 8 | Ann_exp (x8) | 0.069 | 0.8186 | -0.7496 | |
| 9 | loan_amt (x9) | 0.149 | -0.0053 | 0.1543 | |
| 10 | save_amt (x10) | 0.078 | 0.6946 | -0.6166 | |
| 11 | Economic Status (x11) | -0.035 | -0.0707 | 0.0357 | |
| 12 | Plant hill% (x12) | 0.167 | 0.0820 | 0.085 | |
| 13 | sdling_age_day (x13) | -0.152 | -0.1344 | -0.0176 | |
| 14 | Nitozen Dose (x14) | 0.241 | 0.1951 | 0.0459 | |
| 15 | Phosphate Dose (x15) | -0.095 | -0.1466 | 0.0516 | |
| 16 | MOP total (x16) | 0.080 | 0.0529 | 0.0271 | |
| 17 | expense_wage (x17) | -0.077 | -0.0628 | -0.0142 | |

RESIDUAL EFFECT=0.3390

Table 14 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 index Yield (y1). It has been found that the variable Area under Gobinda Bhog (x4) has exerted the highest direct effect as well as highest total effect of socialization process.

ISBN: 978-93-85822-50-6

The residual effect being 0.3390, it is concluded that even with combination of all these 17 variables, 33.90 per cent of the variance on the consequent variable, Socialization index Yield could not be explained.

**Table 15: Path Analysis: Direct, Indirect and Residual effect; Socialization Index Irrigation (y3) Vs 17 Exogenous Variables(x1 to x17).**

| Sl no | Variables | Total Effect (r) | Direct Effect (DE) | Indirect Effect (IE)=r-DE | Highest Indirect Effect |
|---|---|---|---|---|---|
| 1 | Education (x1) | -0.187 | -0.1806 | -0.0064 | 0.5723 (x8) |
| 2 | Family size (x2) | 0.202 | 0.2770 | -0.075 | |
| 3 | Total Land-ha (x3) | -0.140 | -0.3171 | 0.1771 | |
| 4 | Area under GB (x4) | -0.003 | 0.2750 | -0.278 | |
| 5 | Ag-Income (x5) | -0.134 | 0.1242 | -0.2582 | |
| 6 | Incom-off Farm (x6) | 0.109 | 0.3187 | -0.2097 | |
| 7 | Ann_Income (x7) | -0.003 | -0.3458 | 0.3428 | |
| 8 | Ann_exp (x8) | 0.288 | -0.2843 | 0.5723 | |
| 9 | loan_amt (x9) | 0.142 | 0.2816 | -0.1396 | |
| 10 | save_amt (x10) | -0.303 | -0.4873 | 0.1843 | |
| 11 | Economic Status (x11) | 0.128 | 0.2071 | -0.0791 | |
| 12 | Plant hill% (x12) | 0.090 | -0.0719 | 0.1619 | |
| 13 | sdling_age_day (x13) | 0.011 | -0.0690 | 0.08 | |
| 14 | Nitozen Dose (x14) | 0.274 | 0.2772 | -0.0032 | |
| 15 | Phosphate Dose (x15) | 0.018 | -0.0600 | 0.078 | |
| 16 | MOP total (x16) | 0.085 | 0.0807 | 0.0043 | |
| 17 | expense_wage (x17) | -0.112 | -0.0737 | -0.0383 | |

RESIDUAL EFFECT=0.3674

Table 15 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 index Irrogation (y2). It has been found that the variable Annual expenditure (x8) has exerted the highest direct effect as well as highest total effect of socialization process.

The residual effect being 0.3674, it is concluded that even with combination of all these 17 variables, 36.74 per cent of the variance on the consequent variable, adoption index could not be explained.

ISBN: 978-93-85822-50-6

**Table 16: Path Analysis: Direct, Indirect and Residual effect; Rate of Paddy(y4) Vs 17 Exogenous Variables(x1 to x17)**

| Sl no | Variables | Total Effect (r) | Direct Effect (DE) | Indirect Effect (IE)=r-DE | Highest Indirect Effect |
|---|---|---|---|---|---|
| 1 | Education (x1) | -0.208 | -0.09628 | -0.11172 | 0.77785 (x5) |
| 2 | Family size (x2) | 0.017 | 0.165676 | -0.14868 | |
| 3 | Total Land-ha (x3) | -0.343 | -0.11574 | -0.22726 | |
| 4 | Area under GB (x4) | -0.284 | -0.23556 | -0.04844 | |
| 5 | Ag-Income (x5) | -0.262 | -1.03985 | 0.77785 | |
| 6 | Incom-off Farm (x6) | 0.041 | -0.73155 | 0.77255 | |
| 7 | Ann_Income (x7) | -0.116 | 1.184249 | -1.30025 | |
| 8 | Ann_exp (x8) | 0.141 | 0.641564 | -0.50056 | |
| 9 | loan_amt (x9) | 0.014 | -0.09267 | 0.10667 | |
| 10 | save_amt (x10) | -0.232 | 0.366449 | -0.59845 | |
| 11 | Economic Status (x11) | 0.066 | 0.011216 | 0.054784 | |
| 12 | Plant hill% (x12) | -0.019 | -0.03129 | 0.01229 | |
| 13 | sdling_age_day (x13) | 0.090 | -0.02008 | 0.11008 | |
| 14 | Nitozen Dose (x14) | -0.128 | -0.13626 | 0.00826 | |
| 15 | Phosphate Dose (x15) | -0.209 | -0.10973 | -0.09927 | |
| 16 | MOP total (x16) | -0.108 | -0.02572 | -0.08228 | |
| 17 | expense_wage (x17) | 0.024 | -0.03567 | 0.05967 | |

RESIDUAL EFFECT=0.2805

Table 16 presents the path analysis for decomposing the total effect(r) of the antecedent variables into direct, indirect and residual effect on the consequent variable, Rate of paddy (y3). It has been found that the variable Ag-Income (x5) has exerted the highest direct effect as well as highest total effect of socialization process.

The residual effect being 0.2805, it is concluded that even with combination of all these 17 variables, 28.05 percent of the variance on the consequent variable, Rate of paddy could not be explained.

ISBN: 978-93-85822-50-6

**Table 17: Path Analysis: Direct, Indirect and Residual effect; Marketing Surplus(y5) Vs 17 Exogenous Variables (x1 to x17).**

| Sl no | Variables | Total Effect (r) | Direct Effect (DE) | Indirect Effect (IE)=r-DE | Highest Indirect Effect |
|---|---|---|---|---|---|
| 1 | Education (x1) | 0.231 | 0.1237 | 0.1073 | 0.1623 (x2) |
| 2 | Family size (x2) | -0.677 | -0.8393 | 0.1623 | |
| 3 | Total Land-ha (x3) | -0.029 | -0.1785 | 0.1495 | |
| 4 | Area under GB (x4) | 0.008 | 0.2224 | -0.2144 | |
| 5 | Ag-Income (x5) | 0.015 | 0.2367 | -0.2217 | |
| 6 | Incom-off Farm (x6) | -0.186 | -0.0279 | -0.1581 | |
| 7 | Ann_Income (x7) | -0.110 | -0.0714 | -0.0386 | |
| 8 | Ann_exp (x8) | -0.014 | 0.3022 | -0.3162 | |
| 9 | loan_amt (x9) | 0.012 | -0.0034 | 0.0154 | |
| 10 | save_amt (x10) | -0.047 | 0.3424 | -0.3894 | |
| 11 | Economic Status (x11) | -0.036 | -0.1099 | 0.0739 | |
| 12 | Plant hill% (x12) | -0.072 | 0.0331 | -0.1051 | |
| 13 | sdling_age_day (x13) | -0.117 | -0.0347 | -0.0823 | |
| 14 | Nitozen Dose (x14) | -0.084 | 0.0774 | -0.1614 | |
| 15 | Phosphate Dose (x15) | -0.144 | -0.0672 | -0.0768 | |
| 16 | MOP total (x16) | -0.004 | -0.0112 | 0.0072 | |
| 17 | expense_wage (x17) | 0.002 | 0.0335 | -0.0315 | |

RESIDUAL EFFECT=0.6089

Table 17 presents the path analysis for decomposing the total effect(r) of the antecedent variables into direct, indirect and residual effect on the consequent variable, Rate of paddy (y3). It has been found that the variable Marketing Surplus(y5) has exerted the highest direct effect as well as highest total effect of socialization process.

The residual effect being 0.6089, it is concluded that even with combination of all these 17 variables, 60.89 percent of the variance on the consequent variable, Rate of paddy could not be explained.

ISBN: 978-93-85822-50-6

**Table 18: Path Analysis: Direct, Indirect and Residual effect; Socialization Index (Y) Vs 17 Exogenous Variables (x1 to x17).**

| Sl no | Variables | Total Effect (r) | Direct Effect (DE) | Indirect Effect (IE)=r-DE | Highest Indirect Effect |
|---|---|---|---|---|---|
| 1 | Education (x1) | -0.189 | -0.1828 | -0.0062 | 0.6755 (x8) |
| 2 | Family size (x2) | 0.199 | 0.2742 | -0.0752 | |
| 3 | Total Land-ha (x3) | -0.143 | -0.3145 | 0.1715 | |
| 4 | Area under GB (x4) | -0.006 | 0.2698 | -0.2758 | |
| 5 | Ag-Income (x5) | -0.136 | 0.1781 | -0.3141 | |
| 6 | Incom-off Farm (x6) | 0.109 | 0.3856 | -0.2766 | |
| 7 | Ann_Income (x7) | -0.004 | -0.3935 | 0.3895 | |
| 8 | Ann_exp (x8) | 0.290 | -0.3855 | 0.6755 | |
| 9 | Loan amount (x9) | 0.142 | 0.3038 | -0.1618 | |
| 10 | save_amt (x10) | -0.306 | -0.5767 | 0.2707 | |
| 11 | Economic Status (x11) | 0.129 | 0.2070 | -0.0780 | |
| 12 | Plant hill% (x12) | 0.090 | -0.0708 | 0.1608 | |
| 13 | sdling_age_day (x13) | 0.011 | -0.0701 | 0.0811 | |
| 14 | Nitozen Dose (x14) | 0.272 | 0.2754 | -0.0034 | |
| 15 | Phosphate Dose (x15) | 0.015 | -0.0618 | 0.0768 | |
| 16 | MOP total (x16) | 0.084 | 0.0801 | 0.0039 | |
| 17 | expense_wage (x17) | -0.112 | -0.0745 | -0.0375 | |

RESIDUAL EFFECT=0.6775

Table 17 presents the path analysis for decomposing the total effect(r) of the antecedent variables into direct, indirect and residual effect on the consequent variable, Rate of paddy (y3). It has been found that the variable Socialization Index (Y) has exerted the highest direct effect as well as highest total effect of socialization process.

The residual effect being 0.6775, it is concluded that even with combination of all these 17 variables, 67.75 percent of the variance on the consequent variable, Rate of paddy could not be explained.

ISBN: 978-93-85822-50-6