Socio-Economic Status of Farming Community: A Case of District Rajanpur

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ARTICLE DETAILS

ABSTRACT

Rural development and Agri-sector development are interlinked. The present study investigates the socio-economic factors that gauge the status of the farmers community in south Punjab especially District Rajanpur. The research is based on the primary source of data. The interviews of 250 farmers are recorded. Farmers’ status is measured by Household per capital income. The used estimation technique is ordinary least squares. It is observed that almost 65 percent farmers are living below poverty line. The variables like education, health, land holdings, hybrid seeds and use of mechanization have a significant impact on farmers’ status by raising Per Capita income. Better health facilities, availability of better seeds and provision of low-cost fertilizers are responsible for attractive farmers’ status.

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1. Introduction

Pakistan constitutes an affluent and enormous resource base which covers various ecological and climatic zones. Agriculture plays a pivotal role in generating economic growth. Agriculture has been the sector facing problems since the inception of Pakistan. There have been problems of low productivity, old and traditional methods in crop farming, inequality in land ownership, tenant-owner relations, low income per capita, and poor socio-economic status of farmers. It reflects the poor socioeconomic status of farming community. Socio-economic status is synonymous with social class, social hierarchy, social stratification and economic position of an individual in society. Socioeconomic status represents one’s social and economic position in a society. It reflects living standard of an individual or a group. It can be measured by one’s income level, education, and occupation. The living standard refers to access to all those opportunities, necessities, and resources which makes life easy to live. If an individual enjoys access to the resources his socioeconomic status
will be high.

Farmers in rural areas are financially miserable and abject to poverty. Farmers are working hard but earn less or not enough to meet their needs. Low income is a major reason for their low socioeconomic status. Low percapita reduces the command on available resource which leads to deterioration of their living conditions. Socioeconomic status indicates the economic and social conditions of a country. Poor socio-economic status of farmers leads toward the slow pace of development in agriculture sector. The study is aimed to explore the socioeconomic factors responsible for poor status of farmers. It examines the socioeconomic status of farmers in the context of per capital income. It estimates the relationship between percapital income and socioeconomic factors. It also determines the inducing factors of farmer per capita income.

The rest of the study is presented as follows.

Section one presents the Introduction of agriculture sector and the term Socio-economic status. The review of previous literature is described in section 2. Section 3 provides the explanation socioeconomic variables, data collection techniques, methodology and study design. Section 4 discusses the findings of the study. The last section reflects conclusion and policy suggestions based on findings.

2. Literature Review

Review of the literature is aimed to familiarize research with body and credibility of the established knowledge about the concerned issue or topic. Many studies in the different formulations are carried out to examine the status of the farming sector. The brief review of national as well as international literature is given.

Tanwir et al. (2006) highlighted the socioeconomic milieu of small farmers. They observed that farmers in small rural areas were poverty stricken having poor socioeconomic status in community. They estimated the negative relationship between socioeconomic status and poverty. Poverty was found the major reason of low level of socioeconomic status. Because it reduces their command on available economic resources and deteriorates their standard of living. They identified the poverty inducing factors. Low farm productivity, age of the household head, lower prices of inputs, high dependency ratio, lack of infrastructure and large family size were considered as poverty determinants. These factors directly influenced the socioeconomic position of farmers. Poverty was taken as dependent variable and assigned the binary values to estimate the significance of relationship with independent variables. The study revealed that there was a positive relationship between variables and poor socioeconomic status. Primary data were taken through structured questionnaire and interview from 150 respondents of selected area. Income approach and probability model was used.

Sathayanarayn et al. (2010) explored the socioeconomic status of farmers. The socioeconomic characteristics of farmers were investigated to estimate their status that are Family type, size of family, the gender of the decision-maker, social participation, income level, and landholding, productivity level. Oduro-Ofori Eric et al. (2014) examined the impact of education on the agricultural productivity of farmers in municipalities. They collected data from eight farming communities based on their area, education, access to extension services, and non-formal education.
Chouhan (2017) analyzed the socioeconomic status of farmers’ by adopted agroforestry. The data were collected through interviews from respondent’s members of agroforestry farming. The study was confined to one cropping season. The analysis represented that majority of farmers had low socioeconomic status. Half of the population was less educated, but they were willing to accept new changes in farming pattern. They had medium sized family tends toward joint system consisted on 5 members. They recommended achieving social equity through raising standard of living.

H.Tsuruta (2018) investigated the socioeconomic status of betel leaf farmers. They highlighted the issue of deforestation. They collected data from selected samples dividing into seven categories based on their income level. The results showed that their socioeconomic status was low because of poverty and lack of educational facilities. That led them to constitute illegal forest dwellers. They advised the government to provide credit and educational facilities to poor farmers to improve their socioeconomic status.

Komatsu et al. (2019) unveiled the impact of gender in agricultural cropping work and their nutritional status in rural areas. Women’s engagement in agricultural cropping production process could increase their work load and reduce their BMI. They used cost-benefit analysis. The duration of time and energy spent in agricultural crop production was the cost compared with the benefit of increase in agricultural productivity. They stated that improvement in nutrition offset with the increase in working hours. They observed the gender inequality in nutritional status and claimed that the use of modern agricultural inputs were helpful to increase in productivity with saving time and energy.

Sanusi, S. M., et al. (2019) identified the causative factors affecting the livelihood status of farmers. They reported that income status of farmers were poor. Poverty index developed by Foster et al. (2012) was used to measure poverty status. Their per capita income was less than average level. They took data from primary sources i.e. survey and questionnaire. They used both descriptive and inferential statistics tools to find the significance of relationship between income status and socioeconomic factors. The results indicate that income status was depended negatively on old age, number of dependents and long distance from home to farm.

3. Data source and Methodology
3.1 Data Sources
The present study uses the Household’s per capita income as a proxy of farmer’s’ status in Southern Punjab. Primary data is used in this study. All the farmers of district Rajanpur are the population of data. Data is collected through using technique of simple random sampling for both male and females. Data of 250 farmers are taken from age cohorts of 18 to 65 years. A questionnaire is used which is based on the information about personal socio-economic characteristics of farmers.

Data can be analyzed by two ways, first is elementary analysis and second is estimation analysis. The detailed explanation of sample area and targeted sample is described by descriptive analysis. Generally it expresses the findings of the mean, median, maximum and minimum values, standard deviation of the selected variables. The behavior of respondents is expressed by ratios and percentages. The overall significance of estimated model is represented by Econometric analysis.
3.2 Methodological Issues

The multivariate regression model is used in the present study in order to explore the socioeconomic status of the farming community.

The general form of the multiple regression model is given in the following functional form

\[
Y_i = f(X_1, X_2, \ldots, X_n) \quad \text{(1)}
\]

\[
Y_i = \alpha_o + \alpha_1X_1 + \alpha_2X_2 + \ldots + \alpha_nX_n + \mu_i \quad \text{(2)}
\]

Where \(Y_i\) is the regressand variable and the \(X_i\)'s are the regressors. \(\alpha_o\) is the intercept term and \(\alpha_1, \alpha_2, \ldots, \alpha_n\) are the partial regression coefficients.

The dependent variable in our research is quantitative. The suggested method is ordinary least squares technique. Our explained variable is Per-Capita income and its numerical values are large, while the explanatory variables are mixed in nature, both qualitative and quantitative. Therefore, the most appropriate model for estimating the parameters is Log-linear model. The partial regression Coefficients are defined by

\[
\frac{\text{% change in regressand}}{\text{absolute change in regressor}} \quad \text{or} \quad \alpha_i = \frac{\% \Delta Y}{\Delta X} \quad \text{(3)}
\]

3.3 Model Specification and Variables’ Description

The specified form of the model for the present study is given in equation (4)

\[
\log (PCI) = \alpha_o + \alpha_1AGE + \alpha_2AGES + \alpha_3EDUC + \alpha_4HOUS + \alpha_5SOPT + \alpha_6SEED + \alpha_7SEX + \alpha_8MRST + \alpha_9FMSP + \alpha_{10}INFR + \alpha_{11}FRTI + \alpha_{12}DFPN + \alpha_{13}HELT + \alpha_{14}TECH + \alpha_{15}CRED + \mu_i \quad \text{(4)}
\]

3.3.1 Income per capita (PCI)

Income per capita income is the measurement of farmers’ status. Average income of a person can earn within the boundaries of his country in a year is called per capita income. If total income of a country is divided by its total population then the remaining value is per capita income. As per capita income increases poverty decreases. An increase in average income, increases the access to basic resources and necessities. It is used to measure status. If income per capita of household is below the international standard of minimum income per day the household is considered poor in standard. Household per capita income is calculated by

\[
HPCI = \frac{\text{Total Family Income}}{\text{Total Family Size}}
\]

3.3.2 Independent variables

Age (AGE)

Age is an important factor. Socioeconomic status of farmers also depends on his age. As his
age increases his status also increase because of experience. He knows about many opportunities and ways to increase income and status. But it is observed that farmers’ status may decrease with the age because as the age passed his productive abilities diminish and he couldn’t work efficiently it is a non-linearity case. (Javed et al. 2008).

**Education (EDUC)**

Education is a source of knowledge and information. It also enables a person to distinguish between right and wrong actions. Education is a vital component of socioeconomic status. It effects the position of a person in society. As the level of education increases, skills of a person increases and leads to higher income opportunities which decreases the poor status. (Sharma et al. 2011).

**Gender (Sex)**

Sex is a factor which also responsible for poor socioeconomic status. In rural areas, women are also working with men side by side in fields. They manage house chores and training of children but their activities are not recognized. They didn’t get paid for their work. Poverty and low standard is observed more among females as compared to males. (Komatsu et al. 2019).

**Marital status (MRST)**

If the farmer is married, he is responsible for increasing family size. As the size of family increases, he has to earn more income to fulfil their needs, consumption expenditures increases and saving decreases. This is also a contributory factor to poor status. (Nouman et al. 2013).

**Dependency ratio (DEPN)**

It is used to measure the age to population ratio of people whether they are included or not in labor force. It expresses the dependency burden on population by decreasing their productivity. It can be calculated by following method. First of all divide the percentage of children and old aged by the working age population then multiply it by 100. (Chidiet al.2015)

Dependency ratio = percent children+old age/percent working age*100

**Family setup (MFSP)**

Family setup represents the structure of family. Joint family consists on large number of family members which lead toward the increase in free eaters. While the nuclear family consists only mother and father along with their children. (K.Sathyanaryan et al. 2010). It is hypothesized that joint family system is responsible for low or poor status.

**Use of fertilizers (FRTI)**

Fertilizers are used to increase the fertility of soil or plant. It is natural or synthetic originated material. It provides essential nutrients to plant tissues and soil. It increases production of land.

**Household housing condition (HOUS)**

Housing condition of household is a vital factor for determining the farmers’ status. The expected sign may be positive.

**Health (HELT)**

Health is an important factor to determine farmers’ status. If a person has no major disease, he will spent less money on medicine and works more productively. If he remains ill, he wouldn’t work efficiently which reduces income and increases poverty. (Javed et al. 2008)
Infrastructure (INFR)

Infrastructure includes physical and organizational structure and facilities i.e. building, roads, power supplies, water, sewage, transport and communication facilities needed for a society. Having these facilities increases the standard of living. (Tanwiret al.2006)

Use high variety seeds. (SEED)

High variety seeds are used to make soil more fertile and increase production. These seeds are grown and cultivated in short time. They are time saving and productive which enhance the level of production. (Ananthang et al. 2011).

Social participation (SOPT)

Social participation refers to participate in social activities like panchayat, cooperative societies or farm training. It enhances the knowledge and skills of farmers. (Muhammad et al. 2017)

Use of technology (TECH)

Today is the age of modernity. Every work is done by modern technology. It is also used in rural areas as harvester, thresher, electric tube well and cutting machines. These machines do work of hundred people in less time. It enhances the production per acre. (Maudkar DD et al. 2017)

Credit facility (CRED)

Farmers earn income on the end of their crops. They didn’t have monthly salary. But they have wants and needs which could by fulfil by money so, they borrow credit from commercial banks or friends, relatives etc. (Bolarinva 2011)

4. Results and Discussion

The findings are discussed at two-stages. First we explain descriptive characteristics of data. secondly we discuss the econometric Analysis of Study

4.1 Descriptive Analysis

There are 250 observations in the data. PCI is a dependent variable taken as a continuous variable. In the case of dummy variable description of mean, median, maximum, minimum values are not important. Dependency ratio shows the burden of eaters on earner. Its average value is 6. It shows the average dependents of a family are 6 members. Standard deviation is 1.753. In rural areas, farmers, education is 0.52 on the average and its standard deviation is 0.5004.

![Table 1: Descriptive Statistics of Some Selected Variables](image)

| Variable | Mean | Standard Deviation |
|----------|------|-------------------|
| EDUC     | 0.5240 | 0.5004           |
| DPEN     | 5.7900 | 1.7530           |
| FERT     | 0.5100 | 0.5004           |
| SEX      | 0.5240 | 0.5100           |
| MRST     | 0.7360 | 0.4416           |
| TRCT     | 0.4640 | 0.4997           |
| HLTH     | 0.5800 | 0.4979           |
| HOUS     | 0.3280 | 0.4704           |
| INFR     | 0.240  | 0.4037           |
| SEED     | 0.4604 | 0.4986           |
| Total Observations | 250 |
4.2 Econometric Analysis

Table 2 describes the OLS estimates of the per capita income of farmers’ community in order to explain the socio-economic status of the farmers. The explanatory power of the model is examined by the coefficient of determination. The values of $R^2$ and Adjusted $R^2$ are 0.45 and 0.41 respectively. The model is highly significant overall. The value of $F$-statistics is 12.63 and statistically significant at one percent level.

Table 2: OLS Estimates of Log-Linear Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|-------|
| C        | 8.306136    | 0.363861   | 22.82775    | 0.0000|
| AGE      | 0.102760    | 0.020912   | 4.913868    | 0.0000|
| AGES     | -0.001490   | 0.000303   | -4.920228   | 0.0000|
| EDUC     | 0.120962    | 0.056458   | 2.142527    | 0.0332|
| HOUS     | -0.026925   | 0.057380   | -0.469246   | 0.6393|
| SOPT     | -0.049898   | 0.056204   | -0.887788   | 0.3756|
| SEEDS    | 0.202133    | 0.063237   | 3.196441    | 0.0016|
| SEXX     | 0.121704    | 0.055332   | 2.199504    | 0.0288|
| MRST     | 0.082080    | 0.064812   | 1.266431    | 0.2066|
| FMSP     | -0.017066   | 0.016303   | -1.046786   | 0.2963|
| INFRA    | 0.187775    | 0.071238   | 2.635864    | 0.0090|
| FRTI     | 0.071702    | 0.071040   | 1.009321    | 0.3139|
| DEPN     | -0.144117   | 0.062131   | -2.319567   | 0.0212|
| HELT     | 0.197577    | 0.056563   | 3.493055    | 0.0006|
| TECH     | 0.153486    | 0.059877   | 2.563368    | 0.0110|
| CRED     | 0.017695    | 0.060645   | 0.291786    | 0.7707|

R-Squared: 0.4481  F - Statistics: 12.63
Adjusted R- Square: 0.4128  P-Value of F - Statistics: 0.000
Size of Sample 250

Source: calculated by authors by using E-views statistical package.

The age of the farmer is not only positive but highly significant. Age factor is directly related to the per capita income. The per capita income of the farmer’s increases about 0.10 percent due to an increase of one year of age. Findings are resembled with the results of Reddy et. al. (2017). But the coefficient of age square reduces the farmers’ status. Another significant variable that enhances the farmers’ status is education. An addition of one year of education raises the farmer’s income about 0.12 percent. These findings are highly significant and matched with the findings of Readdy and Almaheyo (2015). We have found that the Coefficients of Housing condition (HOUS) and social
participation (SOPT) have negative impact on the farmers’ per capita income. These variables are statistically insignificant. These variables have no discernible impact on farmers’ status.

It is noted that the use of hybrid seeds have direct impact on the farmers’ status. The value of the coefficient is 0.2020 and is statistically significant. The farmers’ per capita rises about 0.202 percent because of an increase of one unit of improved seeds. The reason may be that output of the agriculture sector increases due to high varieties’ yields seeds and ultimately income of the farmers increases. Out findings support the results of Ananthanget al. (2011). We have used the binary variable for gender (sex). The coefficient of sex is positive and statistically highly significant. It shows that Agri-income increases about 0.121 percent due to an increase of one unit of females. The reason may be that the females’ contribution in family income is larger as compared to male workers. Our results are stay line with Komatsu et al. (2013) findings. The socio-demographic variables like marital status and Family set up turn out to be insignificant. These factors are not considered as the influential factors for the farmer’s status. As it is observed that joint family setup has negative effect on the farmers’ per capita income (Nouman et al. 2019)

Per capita income is directly influenced by the improved infrastructure. Due to increase in unit in improved infrastructure facility, per capita income is increased about 0.19 percent. The coefficient of infrastructure is highly significant. The study has explored that the dependency ratio is inversely related to per capita income (Chidi et al. 2015). The per capita income falls about 0.144 percentage points because of an increase in one dependent in the household. There is found positive link between better health status and per capita income of the farmers. The coefficient of Health status is not only positive but highly significant at one percent level of significance. Our results support to the findings of Javed et al. (2008). The present research has focused on two more variables related to farms activities and their expected impact is to be positive like use of modern technology and agriculture credit. We have found that both variables have positive or direct impact on the farmers’ income. The use of modern technology significantly influences the farmers’ status, albeit credit is not significant influential factor. Our findings of use of modern technology support Masudark DD et al.’s study (2017).

5. Conclusions
The present study has investigated the factors that evaluates the status of farmer community in rural south Punjab. The study is based on the primary source of data, collected by the authors. Socio-economic variables are considered for determining the farmers’ status, especially agriculturally based factors. Log-linear form of regression model is used to estimate the parameters. The study concludes that age of head of household, education, health, fertilizer, high variety of seeds use of modern technology and significant impact on farmers’ status.

Following recommendations and suggestions based on present study’s conclusion.

1- Government should provide better facilities in rural community with equipped laboratories.
2- Provision of intracultural facilities like paved road infrastructure, school and colleges, banks and markets should be the top priority of government.
3- Government should provide hybrid seed varieties. Low-cost fertilizers and crops’ productivity raising inputs.
4- The farmers should be given awareness and knowledges of use of modern technology.
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