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MAGNITUDE AND CORRELATES OF AGRICULTURE INDEBTEDNESS IN PUNJAB

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Background

The paper in hand is the 2nd part of a study on “*Extent and Determinants of Indebtedness among Farmers in Rural Punjab: Inter-Regional Analysis*”. The first part of the study was devoted to highlight the regional variations in the degree of indebtedness among farmers in Punjab. The study area, i.e., Punjab state was divided into five regions i) Siwalik Foot-hill Region, ii) Central Plain Region (North), iii) Central Plain Region (South), iv) Western Plain Region (South), v) Western Plain Region. The regional differentiations in terms of extent of debt, sources of debt, purpose of debt, rate of interest and determinants of indebtedness were studied. Linear regression was used to analyse the relative indebtedness among different farm-size categories and various spatial regions of the state (Kaur and Singh, 2009). This part of the study is addressed to “*Magnitude and Correlates of Agriculture Indebtedness in Punjab.*”

Objectives

The major objective of this study is to identify the factors that are associated with high degree of indebtedness among farmers in Punjab. To highlight the magnitude of debt according to farm-size categories is another objective of this study so that the category of the farmers requiring urgent redress could be identified.

Database and Methodology

The study is based on the data collected from 451 households (Kaur and Singh 2009). Out of 451 farming households, surveyed in 2003-04, 101 households were from the marginal farm-size, 140 from the small farm-size, 150 from the medium farm-size and 60 from the large farm-size categories. The outstanding amount of loans is taken as debt. A few assumptions in the form of hypotheses have been taken to test their validity towards the magnitude of indebtedness among farmers in Punjab. Simple correlation coefficient method is applied to test the validity of the hypotheses.

Empirical Findings

Magnitude of Indebtedness

Although agriculture is the backbone of the Indian economy, yet agriculture in India has always been a way of life rather than a business (Kumar, 1993). Indian agriculture witnessed vast development during the 1960s through the modern technology evolved and adopted in agriculture and the success of which is popularly known as the Green Revolution. The impact of Green Revolution was particularly visible in the states like Punjab, Haryana, western Uttar Pradesh and a few selected districts of some other states. The rural economy of Punjab got strengthened considerably following the growth in

agricultural sector while the growth of secondary and tertiary sectors also gave a fillip to the economic growth (Jain and Subramanian, 1999). The Punjab state was on the forefront in the adoption of new agricultural technology, which resulted into large increase in the use of current as well as capital inputs to obtain the benefits of new production technology (Singh and Toor, 2005). However, due to small landholding, large size of the family and dependence on non-institutional sources for loan, the marginal and small farmers are under high degree of indebtedness.

The magnitude of debt among the different farm-size categories in the area under study is highlighted in Table 1. The Table evidently shows that the average amount of loans per household is Rs.1,24,105.70 and the amount of loan per household increases as farm-size goes up. It reveals that the needs of farmers are increasing as farm-size goes up because for investing in agricultural operations as fixed costs, the required amount of income cannot be generated. The average amount of loan per owned acre and per operated acre is Rs. 13,637.98 and Rs. 12,900.79 respectively (Table 1). The table further shows that

category-wise amount of loan per owned acre and per operated acre is the highest against the marginal farm-size category followed by the small, medium and large farm-size categories. Despite many policy measures taken by the central and state governments, the indebtedness of farmers, especially marginal and small cultivators keeps increasing (Singh, 2010). The analysis brings out that the burden of debt is greater on the lower farm-size categories as compared to the large farm-size category. Some of the reasons identified for indebtedness among marginal and small farmers are lower income level due to low productivity levels, increased cost of production, rising cost of living, inadequate institutional credit, unproductive expenditure on social ceremonies and intoxication etc. (Singh, 2010).

The role of various sources of debt in the area under study has been analysed and the results are presented in Table 2. The table shows that on an average, a farming household in Punjab has taken 34.29 per cent of total loan from the non-institutional sources, while 65.71 per cent from the institutional sources.

The marginal farmers are under a total debt of Rs.37,799.48 out of which 54.72 per

Table 1
Punjab : Magnitude of Indebtedness

Farm-Size Categories	Amount of Debt (In Rs.)		
	Per Household	Per Owned Acre	Per Operated Acre
Marginal Farmers	37799.48	22104.45	17746.23
Small Farmers	76981.60	19390.82	17495.81
Medium Farmers	168162.67	16951.88	15682.82
Large Farmers	269201.67	8529.83	8497.52
All Categories	124105.70	13637.98	12900.79

Source : Field Survey, 2003-04

Table 2
Punjab : Indebtedness According to Source of Loan (In Rs.)

Sl. No.	Source of Debt	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	All Categories
	Non-institutional					
1.	Large Farmers	3700.46	3992.85	666.67	-----	2289.91
2.	Professional Money-lenders	2007.42	843.57	-----	-----	711.42
3.	Commission Agents	14976.26	30317.85	62040.00	46250.00	39552.34
	Sub-total	20684.14 (54.72)	35154.27 (45.67)	62706.67 (37.29)	46250.00 (17.18)	42553.67 (34.29)
	Institutional					
1.	Co-operative Societies/ Banks	5605.93	15792.86	32081.33	79305.00	27378.49
2.	Land Devolvement Banks	3634.66	7928.57	8633.33	41000.00	11601.10
3.	Regional Rural Banks	1511.88	652.15	5193.33	6166.67	3088.69
4.	Commercial Banks	5640.10	15902.29	59548.00	96480.00	38840.28
5.	Housefed	722.77	15902.29	-----	-----	643.45
	Sub-total	17115.34 (45.28)	41827.29 (54.33)	105455.99 (62.71)	222951.67 (82.82)	81552.01 (65.71)
	Total	37799.48	76981.56	168162.66	269201.67	124105.68

Source: Field Survey, 2003-04

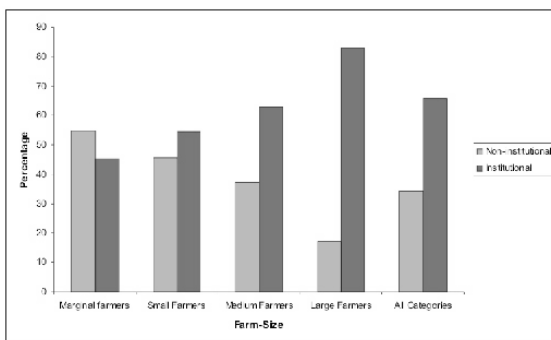
Note : The figures in the parentheses are percentages.

cent have been taken from non-institutional sources and the remaining 45.28 per cent from institutional sources. While out of the total loan small farmers have taken 45.67 per cent loan from non-institutional sources and 54.33 per cent from institutional sources, whereas the corresponding figures for medium farmers are 37.29 per cent and 62.71 per cent respectively. The large farm-size category obtained 34.29

per cent of total loan from non-institutional sources and 82.82 per cent from institutional source. The table further reveals that large farmers have availed the highest amount of loans from commercial banks, whereas the farmers belonging to marginal, small and medium farm-size categories have taken the maximum amount of loan from the commission agents. Farmers need finance for carrying out

the cultivation as well as for subsistence. The analysis leads to the conclusion that as the farm-size increases the share of the loan obtained from non-institutional sources decreases. On the other hand, with the increase in the size of farm the share of loan obtained from institutional sources also increases (Fig. 1). Institutional agencies hitherto benefited only the creditworthy and large cultivators, driving the small, unprogressive and less creditworthy peasants to the money-lenders (Vijaygopalan, 1976). The marginal and small farmers also find it easier to get loans from non-institutional sources, and avoid institutional sources due to their time consuming formalities and cumbersome procedures (Singh et al., 2010; Sekhon and Saini, 2008).

**Punjab : Farm-Size Wise Share of Loan
Obtained from Institutional and
Non-Institutional Sources**



Source : Table 2

Fig. 1

Correlates of Indebtedness

The farmers at present are in severe distress. Extreme manifestation of such distress occurs in the form of suicides by the farmers. Distress of the farmers in India is closely linked to the new liberal policy regime implemented in the country in the recent past. The new economic policy advocates withdrawal of the state from the economic sphere by leaving it to the logic of market forces. Leaving the agriculture sector to the vagaries of free market could prove disastrous (Jodhka, 2006). The

subordination of cultivators to market and capital forces without safety net to support them in times of crop loss, accounts for the devastation of rural communities (Vasavi, 1998). The small size of land holdings, poor resource base and varying monsoon behaviour are exposing majority of the farmers, particularly the small and marginal, leading some of them finally to commit suicide because of mounting debts of money-lenders (Kumari, 2005). It is unnecessary to recapitulate the causes of debt, but in examining them we observed that the debt was allied both to prosperity and poverty, while its existence was due to poverty and its volume was due to prosperity (Darling, 1925).

The amount of debt at a point of time is influenced by several economic and non-economic factors such as females in the family, family-size, educational level of the head of family, farm-size, total household income, subsidiary income, ratio of credit from non-institutional sources to that from institutional sources, expenditure on unproductive purposes, value of total assets, total expenditure and distance from district headquarter. Simple correlation analysis is used to find out the relationship between indebtedness and different factors mentioned above. The hypotheses related to these factors and their validity on the basis of the values of correlation (Table 3) have been tested and presented as under:

1. *More the number of females in the family greater would be the magnitude of indebtedness.*

The table 3 reveals that the correlation coefficient (0.15) against the factor called 'number of females' in the family is significant at one per cent level of probability for all the categories taken together which indicates that an increase in the number of female members in the family results in more indebtedness. It

Table 3
Punjab: Factors Determining Indebtedness Among Farmers
(Results of Simple Correlation Analysis)

Sl. No.	Factors	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	All Categories
1.	Number of Females	0.12	-0.03	-0.01	0.10	0.15* (3.24)
2.	Family-Size	0.15	0.01	0.09	0.20	0.21* (4.58)
3.	Education Level	0.10	-0.06	-0.09	-0.003	-0.3
4.	Farm-Size	0.36* (3.84)	0.20** (2.41)	0.25* (3.16)	0.48* (4.19)	0.43* (10.11)
5.	Total Household Income	-0.03	-0.7	-0.10	0.26** (2.06)	-0.08*** (1.88)
6.	Income from Subsidiary Occupations	-0.15	-0.14*** (1.67)	-0.13	-0.06	-0.31* (6.91)
7.	Ratio of Credit from Non-Institutional Sources to that from Institutional Sources	0.51* (5.89)	0.63* (9.68)	0.43* (5.81)	0.70* (7.50)	0.58* (15.16)
8.	Expenditure on Unproductive Purposes	0.33* (3.48)	0.87* (21.00)	0.57* (8.45)	0.80* (10.15)	0.71* (21.48)
9.	Value of Total Assets	0.08	0.34* (4.27)	0.19** (2.35)	0.04	0.35* (7.97)
10.	Total Expenditure	0.09	0.07	0.04	0.25** (1.98)	0.31* (6.91)
11.	Distance from District Headquarter	-0.07	-0.03	0.09	-0.16	-0.04

Source : Computed from the data collected from Field Survey, 2003-04.

Note : Figures in parentheses indicate t-values.

* Significant at one per cent level

** Significant at five per cent

*** Significant at ten per cent

implies that the female members in farming households generally do not contribute towards the family income. On the other hand, the farmers have to spend more money on the marriage of girls. Some times agricultural loans

are used only for such purposes. However, this coefficient is negative in the case of farmers belonging to small and medium farm-size category but this is not statistically significant. Thus the hypothesis, more the number of

females in the family greater would be the magnitude of indebtedness stands proved.

2. *Larger the family-size, greater would be the magnitude of indebtedness.*

The relationship between family-size and indebtedness is also found to be positive and significant at one per cent level. This is, because, larger the size of family more will be the expenditure on household activities, marriages and other social ceremonies, construction of house etc, while the income from the fixed land holding seldom improves. Hence, the hypothesis stands proved.

3. *Higher the level of education of the head of the family, lower is the indebtedness.*

The correlation coefficient between education level of the head of the family and magnitude of indebtedness is found to be negative and insignificant. It establishes an inverse relationship between education level and indebtedness, thereby leading to the fact that as the education level improves the indebtedness comes down. It proves the assumption that higher the educational level of the head of the family, lower is the indebtedness. Education or the learning process involves a change in human behavior and is therefore crucial to economic growth, both from the individual and the aggregate standpoint. This is especially true in the case of agriculture (Clifton, 1965). It is evident that additional education usually increases an individual's ability to contribute to production and his earning (Edward, 1964). In fact educated farmer can arrange institutional loan with lower rate of interest and can also encourage family members for subsidiary occupations to supplement the household income, resulting low magnitude of indebtedness.

4. *Bigger the farm-size, higher is the*

magnitude of debt.

The correlation coefficient between farm-size and magnitude of indebtedness is found to be 0.43 which is significant at one per cent level for all categories of the farmers taken together. This coefficient is also positive and significant at one per cent level for the marginal, medium and large farm-size categories individually. However, for the small farm-size category this coefficient is significant at 5 per cent level of probability. Positive relationship between farm-size and indebtedness shows that the capability of the farmers to take and pay back loans increases with an increase in their land holding. Larger the land holding, lesser will be number of defaulters (Dadhich, 1997). Thus, the hypothesis bigger the farm-size, higher is the magnitude of debt stands proved.

5. *Higher the level of total household income, lower is the magnitude of indebtedness.*

The analysis reveals that the correlation coefficient for total income is negative and significant at 10 per cent level of probability. This coefficient is negative for the farmers belonging to marginal, small and medium farm-size categories. So, as the income of the farmer increases it helps in curtailing his indebtedness. Hence, it proves the assumption that higher the level of household income, lower is the magnitude of indebtedness.

6. *Higher the income from subsidiary occupations, lower is the magnitude of indebtedness.*

The results point out that correlation coefficient for the factor 'income from subsidiary occupations' is negative and statistically significant at one per cent level for all the categories of farmers taken together. Similarly, the correlation coefficient for the

same factor is negative in all the different categories of farmers but statistically significant at ten per cent level only in the case of small farmers. It indicates that with subsidiary occupations the total income of a farmer increases, which helps in curtailing his indebtedness. Hence, the above observation proves the assumption that as income from subsidiary occupations increases, the magnitude of indebtedness decreases. Therefore, various institutional and non-institutional training programmes should be organised to provide knowledge and skill to the farmers regarding subsidiary occupations (Gill and Saini, 2010).

7. *As the ratio of credit from non-institutional to that from institutional sources increases, the magnitude of indebtedness also increases.*

The correlation coefficient results for the factors, viz. 'ratio of credit from non-institutional sources to that from institutional sources' are found to be positive and statistically significant at one per cent level of probability for all the categories of farmers taken together or considered category-wise. It strongly proves the hypothesis that as the ratio of credit from non-institutional sources increases, the magnitude of indebtedness also increases. Because, agricultural development and optimum utilization of all kinds of available resources depend on the most important factor viz. institutional financial support to the farmers (Thamilarasan, 2009). Commercial banks are now considered as the major component in increasing agricultural production and economic development of rural areas by supplying credit facilities to farmers (Sekhon and Saini, 2008, p. 153). Thus, the farmers not obtaining loan from institutional sources are under high debt as compared to those dependent on institutional sources for

their financial requirement.

8. *Expenditure on unproductive purposes and the magnitude of indebtedness are positively related.*

The correlation coefficient for the factor 'expenditure on unproductive purposes and magnitude to indebtedness' is found to be positive and significant at one per cent level of probability for all the categories of farmers taken together and category wise. It indicates that as the expenditure on unproductive purposes like family maintenance, marriages and other social ceremonies increases, it plunges the farmers into more indebtedness. Hence, the above assumption stands strongly proved.

9. *The value of total assets owned by the farming household is directly proportional to the magnitude of debt.*

The relationship between value of total assets owned by a farming household and indebtedness is also positive and significant at one per cent level for all the categories taken together indicating that farmers have to take more loan for agricultural machinery, tubewells, etc therefore, magnitude of indebtedness increases. Moreover, as the value of total assets increases, the capacity to take a loan also enhances. The financial assistance from the banking institutions for agricultural operations has created significant impact on the level of income of the farmers and formation of assets (Thamilarasan, 2009, p.12). Thus, the hypothesis that higher the value of total assets owned by the farming household, the more is the magnitude of debt stands proved.

10. *Household expenditure and magnitude of debt are positively related.*

The correlation coefficient between household expenditure and magnitude of debt

is found to be positive and significant at the one per cent level of probability. This coefficient is also positive for the different farm-size categories. Hence, the hypothesis that household expenditure and magnitude of indebtedness are positively related proved to be valid. On the basis of field survey Singh (2010) has found that in Punjab annual income of the marginal and small farmers fall short to their annual total expenditure by 41.4 per cent in case of marginal farmers and 35.5 per cent in case of small farmers. Therefore, marginal and small farmers are under heavy burden of debt.

11. *Distance from district headquarter and the magnitude of indebtedness are inversely related to each other.*

The table reflects a negative and statistically insignificant relationship between the factors called 'distance from district headquarter and magnitude of indebtedness'. It implies that as the distance from the district headquarter increases the magnitude of indebtedness of the farmers decreases. Thus, the hypothesis; 'distance from district headquarter and magnitude of indebtedness is inversely related' found to be valid. It indicates that the farmers located closer to the district headquarters (big cities) are more educated, they are likely to invest on subsidiary occupations to enhance their household income and they have more access to the institutional sources providing loan. Therefore, they have more burden of debt than the farmers living away from the district headquarter.

On the basis of above analysis, it can be concluded that by improving the educational level of the farmers, increasing household income through subsidiary occupations, encouraging them to get loan from institutional sources, educating them to control the size of the family and unproductive expenditure, the magnitude of rural indebtedness in Punjab can

be curtailed to some extent.

Conclusions and Policy Implications

- The burden of debt, per owned and operated acre, is greater on farmers belonging to the marginal and small farm-size categories as compared to those from the large farm-size category.
- It has been found that the farmers belonging to the marginal, small and medium farm-size categories prefer to meet their loan needs from commission agents little realising that the interest charged by them is quite higher than that of the institutional sources.
- The large farm-size category of farmers availed their loans mainly from institutional sources.
- It has been found that higher the total household income, more income from the subsidiary sources, the higher level of education and larger the distance from district headquarter, the lesser is the magnitude of indebtedness.
- It has been observed that the households having more number of females, large size of the family, large size of the farm, more expenditure on unproductive purposes, high value of total assets and total expenditure are under high burden of indebtedness.

Taking into account that the farmers belonging to the marginal and small farm-size categories are under high burden of indebtedness the government should introduce necessary land reforms by lowering the ceiling level of landholdings, acquiring the surplus land and distributing this land to such farmers. Apart from land reforms the government must ensure remunerative prices of agricultural produce taking into account the cost of production and consumer price indices. To raise the income level of the farmers, the government

should encourage the farmers in starting subsidiary occupations.

To overcome the problem of charging interest exorbitantly and arbitrary from the poor farmers by the commission agents, the government should take necessary steps to advance loan to these farmers on reasonable interest rates and easy repayment installments. A strong check on the unlawful and unethical activities of the commission agents is also required.

Given that education is pivotal to the development/welfare of the agricultural sector, and consequently, the farming families, it is logical that the education facility should be sincerely extended to the farming community, in order to save them from a situation leading to indebtedness. The farmers of lower farm-size categories and the females, should receive priority in educating them to control their family-size and expenditure on unproductive purposes.

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