



Socioeconomic Analysis of Different Categories of Farm in Selected Areas of Mymensingh, Bangladesh

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Abstract

The purpose of this research was socioeconomic analysis of farms using primary data in two villages of Mymensingh Sadar. A total of 60 farms including 20 small, 20 medium and 20 large were randomly selected for the study. Socioeconomic analysis showed that indebtedness was higher in large farms than those of small and medium ones. Large farms also engaged more in farm activities than others. All of the asset position, income expenditure and saving were positively related with farm size but non-farm income was negatively related. Analysis of balance sheet depicted that all the farms became able to generate a positive net worth which was the highest in large farms followed by small and medium ones in terms of percentage term. Income statement analysis showed that each of the farms was profitable and earned positive net profit at the end of the accounting year. Net profit had a positive relation with farm size. Results of ratio analysis expressed that none of the farms was fully financially strong. But maximum of seven ratios were favorable to large farms followed by small and medium farms. So, considering overall situation, large farms were relatively strong followed by small and medium farms in the study area. This study recommends for similar studies in other parts of country to develop a benchmark for comparison which is almost absent in present situation of Bangladesh.

Keywords:

Farmers' livelihood, financial analysis, household development.

1. Introduction

Farms are the point of origin of agricultural production irrespective of the nature of agriculture. It is the unique composite unit of operation where different types of resources are combined to achieve specific goals. On the other hand, finance is the acquisition and use of resources in business (Murray and Nelson, 1991). Among different activities of farm, financial operation is the most important because it is the means of other operations. Financial operations generally include inflow and outflow of fund and its allocation. Every farm owner wants to make his farm profitable, strong and efficient. Financial analysis is one of the ways to assess the strength of the farm through the study of balance sheet, income statement and different types of ratios (Pandey, 2005). Though it is said that financial

statement of rural farm households in Bangladesh is not possible as farmers do not maintain any proper written record for their operations, but it should be remembered that structure of Bangladesh agriculture has been changed and farms are getting commercial form from its traditional subsistence nature in some extent. Moreover, record keeping is positively related with the frequency of business operations, specially cash inflows and outflows. Commercial farms generally have frequent cash flows and have to maintain record properly. Subsistence farms do fewer transactions which can be easily memorized and for this reason record keeping does not seem an urgent work for them. In Bangladesh, through traditional crop farms have fewer transactions but farms like dairy, poultry, seed, flower, vegetables, etc. which are run almost commercially have frequent

transactions and keep written records, some properly and some partially. Again, Bangladesh agriculture experienced a notable growth of farm based non-farm occupations over the past decade which also helped in bringing commercial nature in Bangladesh agriculture. Moreover, many of the rural households are the stakeholders of the NGOs where they have to keep records of their operations. So, it can be said that record keeping, though not completely, is being done in rural Bangladesh partially. With this partial records and strong memory recall of the farmers, the dearth of records for making financial statements can be fulfilled and financial analysis can be done for the farms in rural Bangladesh. The objectives of the present research was to prepare balance sheet and income statement of different categories of farms. It also examine the strengths and weakness of the farms by calculating different financial ratios. This type of analysis bears importance to realize the real situation of our farming community and is expected to contribute in making policy for their development in national and local levels.

2. Materials and Methods

Considering the objectives, time and availability of fund and man power, two villages i.e. Bhabkali, and Sutiakhali under Mymensingh Sadar upazila in Mymensingh district of Bangladesh were selected purposively. The villages were selected considering easy communication facilities and accessibility to the village. Poor rural households mainly farming households were selected from the selected villages through random sampling method. In all 60 farm households were selected where farmers were participating in different farm and non-farm activities and deprived from different facilities which they require. The study period was January to June 2014. The final survey was conducted during the period from February to March 2014 by direct interviews using a questionnaire. Tabular and statistical techniques were used for the analysis of the data. Report from balance sheet and income statements were followed in the study. In the case of balance sheet,

$$NW = TA - TL$$

Where, NW = net worth, TA = total assets and TL = total liabilities

In the case of income statement,

$$NCI = TCR - TCE \text{ and } NP = NCI + NCV = TCR - TCE + NCV$$

Where,

NCI = net cash income, TCR = total cash receipts, TCE = total cash expenses, NP = net profit and NCV = net change in inventory

Again, $NCV = EV - BV$

Where,

EV = ending value of existing stock and BV = beginning value of existing stock

There are several ratios performed by the experts to judge the financial strength of the firm business. In this study major nine ratios (Singh, 1988) were accomplished to achieve the objectives of the study. These are:

$$(i) \text{ Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

It measures the ability of the farm to meet its current liabilities. Higher the current ratio, the greater the short term solvency (Khan *et al.* 2012). A good current ratio would be indicated by 2:1. Lesser are always in favour of higher current ratio while the borrowers always try to keep it minimum because liquid asset does not earn anything for the farm.

$$(ii) \text{ Working capital ratio} = \frac{\text{Current and intermediate assets}}{\text{Current and intermediate liabilities}}$$

This is a measure of degree of financial safety over a period of time by comparing the present position of the business with that on some previous date. Higher the ratio safer will be the position of the farmer (Khan *et al.* 2012). A ratio of 2:1 is usually considered sufficient for the financial safety of the farm business.

$$(iii) \text{ Fixed ratio} = \frac{\text{Fixed or long term assets}}{\text{Fixed or long term liabilities}}$$

This is calculated by dividing the total fixed assets by the total fixed liabilities. This ratio measures the financial safety of the business over a longer period of time. A fixed ratio of 2:1 usually indicates a fair financial position from the stand point of fixed assets (Khan *et al.* 2012). The lower the ratio, generally more debt has to be represented by long term obligations.

$$(iv) \text{ Net capital ratio} = \frac{\text{Total assets}}{\text{Total liabilities}}$$

This ratio measures the degree of financial safety over a specific period of time. It indicates the long liquidity position of the farm business. A net capital ratio of 2:1 means that all the assets of the farmer would produce sufficient cash to cover all his liabilities during the year.

$$(v) \text{ Equity ratio} = \frac{\text{Net worth}}{\text{Total liabilities}}$$

The equity ratio is a concept similar to the net capital ratio. An equity ratio of 1:1 means that, the lender owns as much of the business as does

borrower (Khan *et al.* 2012). Thus the ratio represents the creditor's contribution of capital to that of the farm.

$$(vi) \text{ Equity-to-assets value ratio} = \frac{\text{Net worth}}{\text{Total assets}}$$

This ratio measures the overall financial position of the farm business. Higher the ratio better will be the financial position of the farm business.

$$(vii) \text{ Gross ratio} = \frac{\text{Total expenses}}{\text{Gross income}}$$

This ratio expresses the percentage of gross income absorbed by the total costs.

$$(viii) \text{ Operating ratio} = \frac{\text{Total operating expenses}}{\text{Gross income}}$$

It represents the proportion absorbed by operating expenses out of the gross income.

$$(ix) \text{ Rate of capital turn over} = \frac{\text{Gross income}}{\text{Total assets}}$$

This measure shows how efficiently the farm has used its capital resource to generate output. A large turnover ratio means one should try to use the capital assets more fully or sell some of them (Higgins 2001).

3. Results and Discussion

Socio-economic profile of the selected households

The findings of the study show that socio-economic characteristics of women of the selected households were not different from those of other parts of the country. Majority of the respondent women (84 per cent) were between 18-40 years of age. Average family size was found to be 5.58 persons where male and female was 2.86 and 2.72 respectively. About 19.35 per cent of family members were illiterate, 10.39 per cent could write their name, 59.86 per cent had academic qualification of secondary level; 1.39 per cent had education above secondary level. Heads of respondents household were engaged in agriculture 52 per cent, 16 per cent in business and 32 per cent in service.

Balance sheet

Balance sheet can be divided into two parts; assets and liabilities.

Asset

The balance sheet in Table 1 shows that the average total assets amounted to Tk 42700, 127500 and 211800 for small, medium and large farms respectively. So, total assets maintained a positive

relationship with farm size, which is also a common phenomenon in any economy.

1. Current assets

It is evident from Table 1 that small farm had no cash at bank and farm supplies. Their current asset position also very low compared to other two categories of farm. Total current asset stood at Tk 2200, 23400 and 62320 for small, medium and large farm respectively keeping positive relationship with farm size.

2. Intermediate assets

Table 1 depicts that different types of farm equipment were the major intermediate asset irrespective of farm categories. The total value of intermediate asset was found to be TK 6000, 29500 and 44000 for small, medium, and large farms respectively with a positive relation to farm size.

3. Fixed assets

Assets like land, building, house and land improvements are difficult to convert into cash. They are long-term permanent assets having time more than 10 years. Land was the highest valued fixed asset followed by household furniture and buildings/houses irrespective of farm categories in the study area. Total value of fixed asset was positively related with farm size and it was Tk 32500 for small farm households, Tk 127500 for medium farm households and Tk 211800 for large farm households respectively (Table 1).

Liabilities

A liability is defined as a claim by others against the farm business, like mortgages and accounts payable. Like assets liabilities are classified into. Three categories, i.e., current, intermediate and fixed liabilities. Taking all liabilities together, total liabilities stood at Tk 27100, 95100 and 126500 for small, medium and large farm respectively depicting a positive relationship with farm size (Table 1).

1. Current liabilities

It is shown in Table 1 that credit purchase (account payables) was the largest current liability followed by interest due and unpaid rent for all the farm under study. Moreover small farms were out of tax burden although others are in such obligation. Total current liabilities amounted of Tk 13500, 19500 and 32100 for small, medium and large farm respectively having positive relation with farm size.

2. Intermediate liabilities

Only unpaid balance of intermediate loan, i.e., due of loan beyond 1 to 10 years was the intermediate liabilities of the farm under study. Table 1 indicates that intermediate liabilities were amounted to be Tk 3600, 32000 and 33400 for small, medium and large farm respectively with positive relation with farm size.

3. Long-term liabilities

Loan on mortgaged of land and purchase of shallow-tube-well (STW) were the long-term liabilities of the farmers under study although the latter one was not found in the case of small farms. Like others, total liabilities were also positively related with farm size and it was Tk 10000, 43600 and 61000 for small, medium and large farms respectively (Table 1).

Net Worth

Net worth is also useful for calculating financial ratios of the farm business. It is evident

from Table 1 that net worth amount to Tk 15600 for small farm, Tk 32400 for medium farm and Tk 85300 for large farm with corresponding percentage of total assets of 36.53, 25.41 and 40.27 respectively. So, it can be said that although almost all asset and liability items increased with the increase in farm size, small farm exceeded medium farm in terms of assets accumulation at end of the investigation period.

Table 1. Balance Sheet for Farm Households

Assets	Amount (Tk)		
	Small (Average)	Medium (Average)	Large (Average)
Current assets			
Cash in hand	1175.25	10525.76	20598.23
Cash at bank	-	8645.34	27312.36
Farm supplies	-	1797.11	5945.12
Crops and livestock held for sale	1024.75	2431.79	8444.29
<i>Total Current Assets</i>	2200.00	23400.00	62300.00
Intermediate assets			
Farm equipment	6050.75	12178.45	18132.67
Livestock and poultry	449.27	10412.34	15564.34
Modern amenities	987.88	5010.39	7956.64
Others	512.10	1898.82	2346.35
<i>Total Intermediate Assets</i>	8000.00	29500.00	44000.00
Fixed assets			
Land	24906.74	49304.78	75123.47
Buildings/houses	5156.21	8567.72	9523.87
Household furniture	2437.05	16727.50	20852.66
<i>Total Fixed assets</i>	32500.00	74600.00	105500.00
Total assets (I + II + III)	42700.00	127500.00	211800.00
Liabilities			
Current Liabilities			
Credit purchase of seeds, feeds, fertilizers, repairs, etc.	8230.65	13123.56	22325.57
Interest on intermediate and long term liabilities.	2678.25	2978.23	5056.21
Taxes	-	512.67	1397.24
Rent	2591.10	2885.54	3320.98
<i>Total Current Liabilities</i>	13500.00	19500.00	32100.00
Intermediate Liabilities			
Intermediate or medium term loan (1 year to 10 year)	3600.00	32000.00	33400.00
<i>Total Intermediate Liabilities</i>	3600.00	32000.00	33400.00
Fixed Liabilities			
Mortgage on land	10000.00	25475.24	32624.66
Loan for STW		18124.76	28375.34
<i>Total Fixed Liabilities</i>	10000.00	43600.00	61000.00
Total Liabilities (I + II + III)	27100.00	95100.00	126500.00
Net worth	15600.00	32400.00	85300.00
	(36.53)	(25.41)	(40.27)
Total liabilities and net worth	42700.00	127500.00	211800.00

Figure in the parentheses indicate percentage of total assets

Income Statement

Income statement indicates how well the farm business has performed during the accounting period. From this, an idea of the returns to various resources after deducting the expenses and also about overall earnings of the farm can get. This is an important financial record because it measures the financial progress and profitability over a period of time. It is a summary of both cash and non-cash transactions of the farm business (Metcalf *et al.* 1976). Income statement is divided into two major categories, viz., income and expenses. Income includes cash receipts, sales of business and changes in inventory value of items of the farm. Expenses include operating and fixed expenses.

Cash Receipts

The record when a cash payment has been allocated for the sale of a product. Cash Receipt simply means receiving cash from some sources. The source could be anything, a customer paying for the credit purchases, a person paying rent for using equipment, interest received on investments, additional funds brought in by the owner to expand the business etc. The income statement in Table 6.1 shows that the total cash receipts amounted to Tk 54878, 96279 and 147260 for small, medium and large farm respectively. So, cash receipts maintained a positive relationship with farm size, which is also a common phenomenon in any economy.

Cash Expenses

Cash expenses are the costs that are matched with revenues on the income statement. For example, cost of goods sold is an expense caused by sales. Insurance expenses, wages expense, advertising expense, interest expense are different types of expenses. Those are occurred during the period of income statement.

1. Operating expenses

A category of expenditure that a business incurs as a result of performing its normal business operations is called operating expenses. One of the typical responsibilities that management must contend with is determining how low operating expenses can be reduced without significantly affecting the firm's ability to compete with its competitors. It is evident from Table 2 that, operating expenses stood at TK 8940, 25700 and 43300 for small, medium and large farm respectively keeping positive relationship with farm size.

2. Fixed expenses

Fixed expenses is a cost that does not change with an increase or decrease in the amount of

goods or services produced. Fixed costs are expenses that have to be paid by a farm, independent of any business activity. It is one of the two broad components of total cost of a business entity. Total value of fixed expenses was positively related with farm size and it was Tk 39550 for small farm households, Tk 55550 for medium farm households and Tk 68900 for large farm households (Table 2).

3. Total cash expenses

Total cash expenses are the sum of operating expenses and fixed expenses. Operating expenses generally vary with the size of the business operation, but fixed expenses do not do so during the period of operation. Taking all expenses together, total cash expenses stood at Tk 48490, 81250 and 112200 for small, medium and large farm respectively (Table 2).

Net cash income

The gross cash income less all cash expenses, is called net cash income. Net cash income amounted of Tk 6388, 15029 and 35060 for small, medium and large farm respectively with positive relation with farm size (Table 2).

Net change in inventory

Inventory generally means existing stock. In making adjustment for changes in inventory value, both changes in price and quantity should be taken into consideration. If the ending inventory value is greater than the beginning inventory value, it should be treated as a form of positive income. If opposite holds true it should be considered as negative income. Table 2 indicates net change in inventory was amounted to be Tk 2800, 7500 and 17600 for small, medium and large farm respectively.

Net Income

Net income is calculated by taking revenues and adjusting for the cost of doing business, depreciation, interest, taxes and other expenses. The measure is also used to calculate earnings per share. It is evident from Table 2 that net income amounted to Tk 9188 for small farm, Tk 22529 for medium farm and Tk 52660 for large farm with respective percentage of total cash expenses of 18.95, 27.73 and 46.93 respectively. So, large farm was the most profitable followed by medium and small farms in the study area.

Ratio analysis

The net worth is only the absolute amount by which total assets differs from total liabilities at a point of time. This may not give the correct picture of the financial position of the borrower farms. Hence, it would be useful to further analysis to find out

financial ratios. The lending agencies use these ratios in determining the solvency of the business and the ability of the borrowers to repay the loan. With the help of the balance sheet, a number of ratios can be worked out to evaluate the capital position of farmers. Financial ratio analyses are useful to assess the performance of the farms under study. These ratios are:

1. Current ratio

Table 3 shows that the current ratio of small, medium and large farm households is 0.163, 1.20 and 1.94 respectively. It indicates that the short term solvency of the small households is very lower compared to medium and large households. The large households have relatively greater short term solvency than others. But no farm has sufficient short term solvency to meet the current debt obligation.

2. Working capital ratio

The respective working capital ratios for small, medium and large farm households were found to be 0.596, 1.027 and 1.623. The ratio is lower for small households and higher for large households. It indicates that, the cash derive for small households will not be adequate to cover the liabilities of the same period. The large households were more capable to cover their liabilities with the cash derived in the same period.

3. Fixed ratio

It is evident from Table 3 that the fixed ratio for small, medium and large farm households was 3.25, 1.711 and 1.729 respectively. Fixed ratio for small households is 3.25 which indicate a fair financial position. On the other hand medium and large households have more debt than other households.

4. Net capital ratio

The respective net capital ratios of small, medium and large farm households stood at 1.576, 1.341 and 1.674. Table 3 shows the long liquidity position for medium households is lower than small and large households. Moreover, all the assets of the large households produced more cash to cover all his liabilities during the year than other households.

5. Equity ratio

It is recorded in Table 3 that equity ratio was 0.176 for small farm while it has 0.341 for medium and 0.674 for large farm. It means that the creditor's contribution of capital to that of the households is higher in the case of large households and lower in case of the medium households.

6. Equity-to-assets value ratio

Table 3 shows that equity-to-asset value ratio appeared to be the highest for large farms followed by small and medium farms. It implies that the capability of producing net worth from 1 unit of assets is higher (0.403 unit) for large farm households and lower (0.254 unit) for medium farm households.

7. Gross ratio

The gross ratio for large farm household was 0.760 while it was 0.884 for small and 0.844 for medium farm households (Table 3). It indicates that about 88 percent of the gross income of small farms was absorbed by total expenses. The percentage of expenses was lower for large households and others have same percentage.

8. Operating ratio

The operating ratio stood at 0.163, 0.267 and 0.386 for small, medium and large farm households respectively. It says that in the case of small households about 16 percent of the gross income was absorbed by operating expenses. The percentage of operating expenses was lower for small household and was higher for large households.

9. Rate of capital turn over

Table 3 depict that capital turnover rate was the highest for small farm (1.285) and was followed by medium (0.755) and large farm (0.530). It implies that small farm households used its capital resource more efficiently than others to generate output. A large turnover ratio means one is trying to use the capital assets more fully or is selling some parts of them.

Financial strength and weakness of the farm under study

Above discussion of ratios clearly mentions that none of the farms achieved all rounding performance in their operation, because none of them proved to be good in terms of each of the given ratios. But large farm households were comparatively in better position because maximum of seven ratios (current ratio, working capital ratio, net capital ratio, equity ratio, equity to asset-value ratio, gross ratio and operating ratio) were favorable to it. It was followed by small farm households and medium farm households (Table 3). So, financial strength of large farm households was comparatively better than other farm households in the study area. Moreover, small farm households showed better performance than medium ones though their resource base was smaller.

4. Conclusion and recommendation

Socioeconomic development of an agriculture based economy mainly depends on the

development of socioeconomic status of the farmers. So, plans, programs and strategies for betterment of farmers should be made considering their real situation like asset and liabilities position, solvency, efficiency, profitability, etc.

Financial analysis is an analysis that provides such information that is useful for the management of managers, creditors, investors and others to judge the operating performance and financial position of the farms accurately. This analysis gives better insight about the financial strength and weakness of the farm properly. Financial analysis is the starting point for making plans, before

using any sophisticated forecasting and budgeting procedures.

Thus financial analysis of different categories of farm bears importance for the socioeconomic development of the farmers as well as of the country as a whole. The present study reviews and find out the exact financial condition of our root level farm households. It will also help to identify the problems, potentials and financial strength of farm households contributing to our agricultural economy. The result of this study may be helpful to the policy makers and development workers in formulating plans for national agricultural development.

Table 2. Income Statement of the Farm Households

Items	Amount (Tk)		
	Small (Average)	Medium (Average)	Large (Average)
Cash Receipts			
Crop sales	8429.43	29707.57	58809.66
Livestock sales	1056.07	3857.43	10850.34
Vegetables and fruits sales	2702.50	6120.69	12350.46
Business	6637.93	26939.31	30496.54
Services	30250.07	21717.80	28253.92
Daily labor	3520.51	-	-
Miscellaneous receipts	2280.49	4188.20	6499.08
<i>Total cash receipts</i>	54878.00	96279.00	147260.00
Cash Expenses			
Operating expenses			
Hired labor	1398.33	8394.89	16468.78
Seeds, fertilizers, pesticides, insecticides, etc.	3601.41	6642.32	12567.87
Veterinary expenses.	1099.32	3921.67	7135.67
Fuel and repairs for machineries	899.01	1855.13	3912.32
Interest on operating loan	891.39	1850.09	1891.53
Miscellaneous	1050.54	3035.90	1323.83
<i>Total operating expenses</i>	8940.00	25700.00	43300.00
Fixed expenses			
Depreciation, interest on capital, working family labor, etc.	8399.56	14397.32	27390.12
Family expenses	31150.44	41152.68	41509.88
<i>Total fixed expenses</i>	39550.00	55550.00	68900.00
<i>Total cash expenses (I+II)</i>	48490.00	81250.00	112200.00
Net cash income (A-B)	6388.00	15029.00	35060.00
<i>Net change in inventory</i>	2800.00	7500.00	17600.00
Net income	9188.00	22529.00	52660.00
	(18.95)	(27.73)	(46.93)

Figure in the parentheses indicate percentages of total cash expenses

Table 3. Ratios for different categories of farm households

Name of the ratios	Small (Average)		Medium (Average)		Large (Average)	
	Calculation	Ratio	Calculation	Ratio	Calculation	Ratio
Current ratio	$\frac{2200}{13500}$	0.163	$\frac{23400}{19500}$	1.20	$\frac{62300}{32100}$	1.94
Working capital ratio	$\frac{10200}{17100}$	0.596	$\frac{52900}{51500}$	1.027	$\frac{106300}{65500}$	1.623
Fixed capital ratio	$\frac{32500}{10000}$	3.25	$\frac{74600}{43600}$	1.711	$\frac{105500}{61000}$	1.729
Net capital ratio	$\frac{42700}{27100}$	1.576	$\frac{127500}{95100}$	1.341	$\frac{211800}{126500}$	1.674
Equity ratio	$\frac{15600}{27100}$	0.576	$\frac{32400}{95100}$	0.341	$\frac{85300}{126500}$	0.674
Equity to asset-value ratio	$\frac{15600}{42700}$	0.365	$\frac{32400}{127500}$	0.254	$\frac{85300}{211800}$	0.403
Gross ratio	$\frac{48490}{54878}$	0.884	$\frac{81250}{96279}$	0.844	$\frac{85300}{112200}$	0.760
Operating ratio	$\frac{8940}{54878}$	0.163	$\frac{25700}{96279}$	0.267	$\frac{43300}{112200}$	0.386
Rate of capital turnover	$\frac{54878}{42700}$	1.285	$\frac{96279}{127500}$	0.755	$\frac{112200}{211800}$	0.530

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