Determinants of Livelihood Diversification of Rural Households in Sylhet

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Authors’ contributions

This study was carried out in collaboration between both authors. Both authors read, reviewed and approved the final manuscript.

ABSTRACT

Livelihood diversification is considered as a constructive way to improve the livelihood of poor people in rural Bangladesh. This study examines the level of livelihood diversification and the determinants of livelihood diversification of rural households in Sylhet division by using both primary and secondary data. The primary data were collected from two districts of Sylhet division by adopting simple random sampling procedures. A face to face interview was employed to collect cross section data of total 210 respondents in which semi-structured and pre-tested questionnaire was used. Descriptive statistics, Simpson diversification indexing and Logit model analysis were employed for analyzing the data in accordance with the objectives of the study. The socioeconomic attributes of different respondents indicate that characteristics of sampled respondents differ from each other in respect of their age, gender, literacy rate, family composition, land holdings, credit access etc. However, in rural Bangladesh, a considerable number of households have diversified their livelihoods at different levels through several income generating activities. Though medium and highly diversified households are majority in rural areas; which accounts for 37% and 26% of total households, respectively. Logit model was estimated to analyze the determinants and find that several factors either positively or negatively affect the extent of livelihood diversification. Gender, education level, land holdings and credit access had positive and significant effects on livelihood diversity.

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diversification. On the other hand, dependency ratio and savings had a negative but significant effect on diversification of livelihood in rural areas. Considering the findings, the study suggested some policy implication like encouraging entrepreneurship, expanding credit facilities, development of rural infrastructure along with market facilities; introducing effective pro-poor policies that may assist all poor people to generate more income and higher-return activities. Hence policies that widen the extent of income earning sources and livelihood diversification should be given proper attention.

Keywords: Livelihood diversification; rural households; Simpson diversification index; determinants of livelihood diversification; Bangladesh.

1. INTRODUCTION

In many developing countries it has been found that rural households allow themselves to diversify their income sources in order to reduce income related risks and improve their living condition [1,2]. Income diversification refers to a continuous adaptive process whereby households add new activities, maintain existing ones or drop others, thereby maintaining diverse and changing livelihood portfolios. People may diversify their livelihood pattern by adopting a range of activities and income sources. Rural livelihood and diversification can be defined as the process by which rural households construct an increasingly diverse portfolio of activities and assets in order to survive and to improve their standard of living [3,4].

In agriculture based economies like Bangladesh, this is often necessary where various types of risks are common which leads to low productivity, low output and invariably low income which continually trap the poor group in the vicious cycle of poverty. To avoid those risks in farming activity, households may shift to another non-farm or off farm activity which will provide them more income and less vulnerability [5]. For this reasons, Agriculture’s share to rural household income dropped from about 60% in 1988 to 45% in 2008. So, increasing the sources of income, therefore, has become an important component of livelihood strategies among rural households [6,7].

Diversification of income is considered as an effective way to increase household wellbeing in the developing countries which is also referred as a risk management and coping strategy. It is meant to shield the effects of economic hardship cuts across all workforces in the formal sector (public/private sector), as well as, in the informal sector. From different studies it’s found that in less developed countries multiple occupations are very common and more than 60 percent of the total workforce is engaged in livelihood diversification. The reasons are basically to cushion the effects of shocks (economic and agro-climatic), to reduce poverty and income inequality [8,9], to improve consumption stability and also improve the overall standard of living of the rural households [10-12].

Different studied have been done on distinct aspects and issues related to income and livelihood diversification in different countries. Many studies identified the determinants of income diversification among rural farming households and some of them investigated effects of income diversification on overall wellbeing and poverty reduction [10-11,13-17]. They found an empirical relationship between diversification of income and its welfare impacts on rural household and most of these studies found positive feedback of income diversification on household well-being. Again some studies indicate that diversification reduces livelihood vulnerability which reflects that income diversification is not only positively correlated with wealth but also with an increased ability to cope with shocks [18]. So, diversification is the main way for the rural households to insure themselves against the occurrence of shocks and improve their well-being. Many studies found that poverty in Sylhet district is widespread, particularly in the rural areas. A strategy that succeeds in generating a reasonable rate of growth in real per capita income can shift large number of households above the poverty line. In this connection, diversification of income sources can play a vital role to reduce poverty and increase the level of household well-being in Sylhet area also. In Bangladesh, literatures on rural livelihoods are scarce and a very few studies have been done to find out the determinants of livelihood in Bangladesh [19-21].

This present study assesses the patterns, sources of income and quantifies the extent of diversification of rural livelihoods. Based on the
primary data, this study provides empirical evidence on how rural livelihoods are diversifying and it will help policymaker to frame policies, arrange different programs and finance projects for the development of rural economy of Bangladesh. Overall, this study will bear a significant importance on their income diversification portfolio by finding the present socio-economic condition of the selected area and also by evaluating the factors affecting the decision towards livelihood diversification of rural households. However, considering the significance of livelihood diversification in developing economy, and likely impacts on the welfare of local communities as a result of the diversification, this paper addresses two questions: (i) To what extent the livelihood is diversified in rural economy? ii) What are the main determinants of livelihood diversification of rural groups?

2. MATERIALS AND METHODS

2.1 Study Area and Sampling Procedure

The study was conducted in 2 districts (Sylhet and Moulavibazar) from Sylhet division as it fulfills the specific research objective. There is a large variation of population that depends on different income earning sources. Sources from the district level office namely department of agriculture cooperation and farmers showed that, about 80% of the households in the study area mainly depend on farming along with other income earning activities. After listing the households, a total of 210 respondents were selected from the districts using simple random sampling procedure. Data was collected through field survey by making personal visits in the study area based on a structured questionnaire where questions were focused on the subject related variables.

The information elicited from the respondents are based on the demography, primary and secondary occupations of household members, land and assets ownership, migrations and remittances, labor force, on-farm, off-farm and non-farm activities, credit and savings, agricultural prices, income from different sources, and living conditions etc. Household net income was calculated by deducting total cost from total returns and the share of income from different sources was the basis to assess their livelihood diversification. Focus group discussion (FGD) was conducted to collect more information and cross-check the data and information.

2.2 Analysis of Data and Analytical Technique

After collection of the data, each questionnaire was verified for the sake of consistency and completeness. To achieve the objectives and to get the meaningful results, data was analyzed with tabular technique and statistical technique along with the combination of descriptive and inferential techniques as demanded by the study. In this present study, various descriptive statistical measures (i.e., sum, average, percentages, ratios, standard deviation etc.) were employed. The data were analyzed using Microsoft Excel and statistical package for social science (SPSS). The following techniques were used for analyzing data in accordance with the objectives of the study.

2.2.1 Measurement of livelihood diversification

There are different methods that can be applied to measure diversification. The vector of income share is the most common measure of livelihood diversification which is associated with different income sources [22,23].

Many Studies used the Simpson Index of Diversity as a measure of income diversification. By following the studies, the Simpson Index of Diversity (SID) was used to analyze the sources of income diversification [11,24-25].

The formula for Simpson Index is [26]:

$$SID = 1 - \sum_{i=1}^{n} P_i^2$$

Where, \( n \) is the total no. of income sources and \( P_i \) is the income portion of i-th income source.

The value of SDI falls between 0 and 1. The index’s value is zero if there is just one sources of income. As the number of sources increase, the shares (\( P_i \)) decline, as does the sum of the squared shares, so that SID approaches to 1. Households with most diversified income sources have the largest SID value, and the least diversified income sources have the smallest SID value. The closer the SID value is to zero, the more the level of specialization, and the further it is different from zero, the more the level of diversification.

Basically based on the SDI values, the level of livelihood diversification was defined as [14]:

99
The average land holding of the selected households was small (0.41 ha) which can hardly generate sufficient farm income for large families. For this reason, the household must find alternate source of income to maintain their livelihood. Among all the respondents there were 18% landless people, the majority (46.5%) were small land holders, 27.5% were medium land holders while only 8% belongs to large land holder group. Services rendered by different government and non-government organization reached 75% of sampled households. Among the 210 respondents, 41% had access to credit from different sources such as bank, NGOs, and relatives etc while 68% of them had access to saving. Environmental, institutional, and political factors were shared by people in the study area but these are not considered in this study.

3.2 Households Income Generating Activities and Shares

Table 1 shows the contribution and percentage share of each income source for the respondent’s households. Based on field observation, the rural households’ income generating activities are classified into different categories based on sources of income from which they derived. Table 1 provides some interesting insights into income earning pattern of the rural households. In general, small business (21.79%) and crop income (18.28%) strategies are predominant in rural households followed by remittance (16.58%) and non-agricultural wage
labour (12.88%). In addition to these, other sources had significant contribution to the household income.

This finding confirms results of similar study conducted in rural Bangladesh where 500 households in rural area of Bangladesh were surveyed. They identified the main occupations of the households of the rural people are mainly - Rice and non-rice crop, Petty business, Service or, Agricultural and non-agricultural laborer, remittance etc. The study also found that, remittance contributed highest share which accounts for 29% of the household’s total income, followed by Petty business (20%) and rice crop (16%) [5].

### 3.3 Level of Household’s Livelihood Diversification

The field survey showed that majority of households had multiple sources of income while only 9% of households had zero Simpson index implying that these households earned income only from a single source. The result shows that majority of the households are diversifying their livelihoods at medium and high level. A more detailed breakdown of household livelihood diversification implies that, medium and highly diversified houses are common in rural areas; which accounts for 37% and 26% of total households, respectively (Table 2). The study also found that, the sampled household’s with high livelihood diversification represented 6% of total households only. From a similar study conducted on rural Bangladesh, it was found that, 85% of total household belong to low-medium diversified category [1].

This result reflected that, in rural areas of Bangladesh the majority of the households are diversifying their livelihoods for earning significant amount of income to maintain their living standard.

### 3.4 Determinants of Household Livelihood Diversification in Rural Bangladesh

Respondents’ data indicates that most of the rural households participated at different level of livelihood diversification. Table 3 shows that male headed household had a positive and significant effect on the extent of livelihood diversification. Traditionally in rural areas of Bangladesh a male participant has more access and social acceptance than a female member in any aspects which represents less diversified livelihood in case of female headed households. This concurs with findings from different studies that more diversified households are basically male headed households [5,26].

### Table 1. Sources of household income and percentage shares

<table>
<thead>
<tr>
<th>Source of income</th>
<th>Amount (Tk.)</th>
<th>Share of total income (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop income</td>
<td>52860</td>
<td>18.28</td>
</tr>
<tr>
<td>Non-crop agriculture</td>
<td>24500</td>
<td>8.47</td>
</tr>
<tr>
<td>Agricultural labour</td>
<td>14640</td>
<td>5.06</td>
</tr>
<tr>
<td>Non-agricultural wage labour</td>
<td>37250</td>
<td>12.88</td>
</tr>
<tr>
<td>Small business</td>
<td>63000</td>
<td>21.79</td>
</tr>
<tr>
<td>Services and Salaried job</td>
<td>28640</td>
<td>9.91</td>
</tr>
<tr>
<td>Remittance</td>
<td>47950</td>
<td>16.58</td>
</tr>
<tr>
<td>Handloom</td>
<td>11300</td>
<td>3.91</td>
</tr>
<tr>
<td>others</td>
<td>9000</td>
<td>3.11</td>
</tr>
<tr>
<td>Total</td>
<td>289140</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: authors’ computation, 2020*

### Table 2. Diversification based on SDI

<table>
<thead>
<tr>
<th>SID Value</th>
<th>Type of diversification</th>
<th>% of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 0.01</td>
<td>No</td>
<td>9</td>
</tr>
<tr>
<td>0.011 - 0.250</td>
<td>Low</td>
<td>22</td>
</tr>
<tr>
<td>0.251 - 0.50</td>
<td>Medium</td>
<td>37</td>
</tr>
<tr>
<td>0.51 - 0.75</td>
<td>High</td>
<td>26</td>
</tr>
<tr>
<td>≥ 0.751</td>
<td>Very high</td>
<td>6</td>
</tr>
</tbody>
</table>

*Source: Authors’ computation, 2020*
Table 3. Determinants of household’s livelihood diversification

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of the household head</td>
<td>0.006</td>
<td>0.017</td>
<td>0.164</td>
</tr>
<tr>
<td>Gender of household head</td>
<td>0.163*</td>
<td>0.009</td>
<td>0.048</td>
</tr>
<tr>
<td>Education of household head</td>
<td>0.096**</td>
<td>0.032</td>
<td>0.001</td>
</tr>
<tr>
<td>Household size</td>
<td>0.134*</td>
<td>0.026</td>
<td>0.036</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>-0.007*</td>
<td>0.013</td>
<td>0.042</td>
</tr>
<tr>
<td>Farm size</td>
<td>0.192**</td>
<td>0.065</td>
<td>0.001</td>
</tr>
<tr>
<td>Primary occupation</td>
<td>-0.166</td>
<td>0.018</td>
<td>0.233</td>
</tr>
<tr>
<td>Credit access</td>
<td>0.458*</td>
<td>0.112</td>
<td>0.025</td>
</tr>
<tr>
<td>Amount of savings</td>
<td>-0.037*</td>
<td>0.062</td>
<td>0.019</td>
</tr>
<tr>
<td>Members of any organization</td>
<td>0.028</td>
<td>0.005</td>
<td>0.123</td>
</tr>
</tbody>
</table>

Here, ** Significant at 1% level; * Significant at 5% level. Source: Authors’ computation, 2020

The education level of the household head is also significantly and positively related to the livelihood diversification. Similar studies explained that higher education means engaging in more diverse activities and opening the door for more income earning sources [31-33].

The results also reveal that, household size had a significant input and it had positive contribution to the extent of livelihood diversification. This can be due to the fact that, the more members in a family, it is more likely to allow them in income diversity at the household level. The result is consistency with the work of others where they also found similar results [5,34-35]. The result of dependency ratio is negative and significantly related to the number of income sources. It shows that if it increases then the level of livelihood diversification will decreases and vice versa. So, rural households with a small proportion of dependent people tend to diversify income sources, since a greater proportion of dependent people means that fewer family members can engage in income earning activities [31].

The size of the farmland was found to be significantly and positively related to the livelihood diversification. This means that larger land holding households are likely to be more diversified in their livelihoods compared to the small or landless households and this result is by supported by similar studies conducted previously [17,34].

Table 3 represented that, the credit access had positive while amount of savings had a negative impact and both had highly significant effect on livelihood diversification. The positive effect of credit implies that households with more amount of credit are likely to be more diversified and households with more savings are likely to be less diversified due to the fact that more savings means less investment. The reason for this can be that credit access may help the rural people to invest in different kinds of activities and speed up their income, the result is consistent with other studies [35,26].

4. CONCLUSION

This study examined the extent of livelihood diversification in selected rural areas in Bangladesh and found that greater part of the rural household has diversified livelihoods at different levels. This indicates that livelihood diversification can be an effective and valuable strategy for local rural households to maintain their living condition and cope with income related shocks. Though livelihood diversification is an important strategy to improve their means of support but there are several factors either positively or negatively affect the extent of livelihood diversification. Gender, education level, land holdings and credit access had positive and significant effects on livelihood diversification. On the other hand, dependency ratio and savings had a negative but significant effect on diversification of livelihood in rural areas.

The findings of this study are useful to generate or improve policies aimed at enhancing livelihood diversification. In particular, the government should pursue and implement policies and programs to provide incentives for entrepreneurial development among the poor people in rural Bangladesh. Different small-scale petty businesses must be encouraged in the rural area along with the expansion of existing credit market, reducing the rate of interest in credit services, development of infrastructure and improvement of information facilities. The development of agricultural market structure
enables agricultural farmers to buy farm inputs at lower prices and sell their produce at competitive prices. Furthermore, government should also establish specific institutions and encourage rural women group to involve in income earning activities and maximize the income level for their family.

CONSENT

As per international standard informed and written participant consent has been collected and preserved by the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES


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