The Rise of Rural Non-farm Sector in Bangladesh: A Distinct Socio-Economic Transformation

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Abstract
Structural transformation of South Asian economies shows the growing importance of Rural Non-farm (RNF) sector in the last two decades. As one of the emerging nations in South Asia, Bangladesh’s economy has been going through drastic transition since its independence, in 1971. Nevertheless, in 1990s, with the introduction of neoliberal policies and newly explored (indeed imposed) export sector, the transformation towards a progressive modern economy accelerated rapidly. The secondary data explored in this study show that policies undertaken earlier have failed in fulfilling their objectives. Instead, small and medium enterprises backed by distressed agricultural households have been playing the leading role in development activities. This study deals with the determinants of RNF sector participation for different categories of households. Strong heterogeneity was found within the RNF sector where mostly households with the highest and lowest incomes are mainly disposed to join the RNF sector. The microcredit access, land access, education and social perceptions are the dominant factors. RNF households as a whole, and particularly large landowning RNF households, are found to be better off in terms of education and healthcare expenditure and savings performances.

Keywords: Structural Transformation; RNFA; Bangladesh

1. Introduction
Bangladesh, whose survival appeared dubious after a bloody and sanguinary independence in 1971(Kissinger, 1974), has been experiencing a steady and moderate economic growth of around 6% for the last two decades. The driving forces of growth are the manufacturing, exports and external remittance which create a multiplier effect on domestic production (Jim Love, Ramesh Chandra; 2005). The structure of the rural economy has also
been observing a shift from farm to Rural Non-Farm (RNF) activities in the recent decades (Nargis and Hossain, 2006). In 2012, the contribution of agriculture was 17.3% compared with the contribution of industry at 28.6% and services at 54.1% (CIA Factbook, 2012). According to 2005-2006 Labour Force Survey, 87.71% of the total employed population were indulged in the informal sector, while the rest 12.29% were in the formal sector. In the survey of 2012, the informal sector consisted of 87.5% of the employed population, indicating almost negligible change albeit the economic growth. More importantly, almost 80% of total population in Bangladesh live in rural areas where the share of informal employment is 91.3% and formal employment is 8.8% (Bangladesh Bureau of Statistics [BBS], 2012).

With the assumption that any poor, traditional, stagnant economy would want to transform itself into a growing, dynamic one, the modernization theory in economics defines the informal sector as a ‘traditional’ pre-capitalist sluggish sector consisting people of low education level, less productivity and low income, along with, having no or low linkage with the formal sector, which will be irreversibly withered out with the process of modernization that is analogous to industrialization and capitalist development (Rostow, 1960; Sethuraman, 1976). However, some studies demonstrate a close articulation and compatibility between the formal and informal sectors that link the activities of petty producers and casual workers (Davies, 1979). Conversely, the revival of informal sector in Western Europe and United States, regardless of achieving high economic growth, creates new elements of argument concerning the sectoral linkages (Portes, 1983).

Bangladesh’s economy has been experiencing an expansion of informal sector with its higher economic growth. In 2002-03 the total number of informal workers in the economy was 35.1 million, while in 2005-06, it increased to 37.2 million and in 2010, to 47.3 million (BBS, 2010). On the contrary, the total number of formal workers decreased from 10.2 million in 2005-06 to 6.8 million in 2010 (BBS, 2010). 80% of Bangladesh’s population live in the rural areas, with 54% of them employed in the farming sector and 46% in the Rural Non-farm sector which constitutes 33% of total national GDP (World Bank [WB], 2013). These numbers portray a completely different scenario in the context of Bangladesh, where the informal sector, instead of fading out, is proliferating, while the formal sector employment is shrinking in absolute number.

The macro evidences presented above show a reduction of formal employment and expansion of informal sector and rural non-farm economy in Bangladesh; a phenomenon that is
not consistent with the earlier theories. These differences have created an impact on the living standard of the rural society. Therefore, it is important to look at the various distinct features of the rural economy in general and the differential impact on the quality of life in particular.

The present study is an effort to illustrate the dynamics of rural economy in Bangladesh. This study has two broad objectives: (i) to find out the determinants of rural non-farm employment; (ii) to grasp the dynamics of rural society in response to structural transformations in Bangladesh.

This paper is divided into four major parts. Initially, it deals with the relevance of the study and gives an overview of the topic. Then it reviews the prior literatures, identifies the research gaps and explains the methods of the study. Next, it summarizes the quantitative outcome of the study, which is subsequently followed by a regression model for the determinants of RNF sector. Thereafter, a comparison is offered between RNF and farm sector in terms of quality of life indicators. In addition to that, this paper includes 3 regression models for the three quality of life indicators. Afterwards, it draws a comprehensive scenario of the rural economy which is mainly based on the qualitative responses from respondents of this study. Finally, it concludes by showing three major features of RNF sector, the strengths and weaknesses of this study and puts forward an agenda for further broad based study.

2. Literature Review

It is well established that, poor in developing countries are indigent not because of lack of employment opportunities, rather due to jobs in low productive sectors that is termed as ‘working poor’ or underemployed (Osmani, 2003). The sector is important than the aggregate status of employment. In this respect, several dualities can exist in any developing economy.

Sir Arthur Lewis (1954), who first explored the duality between the rural subsistence sector and the urban modern sector, claims that over time through the industrialization process, the surplus labour of rural subsistence sector will be ruled out and the urban-rural wage will be equalized. Transition process has been presented in the internal migration model by Harris and Todaro (1970).

The modernization theory defines the informal sector as a ‘traditional’ pre-capitalist sector in a dual economy framework with no linkages with the modern capitalist sector. The main reasons for the formation of the informal sector are lack of education and lack of capitalist
development. This is expected to improve with a higher level of development where the modern sectors will dominate the entire economy by making the traditional sectors consumers of their cheap manufactured commodities (Moser, 1994). However, it was observed that the growth experienced by developing countries across the world does not incessantly lead to the eradication of informal or traditional sectors, thereby diverting from the aforementioned notion. For example, the Latin American economies have experienced an expansion in informal sectors since the 1950s (Oliviera and Roberts, 1994). More importantly, increased competition in modern capitalist sectors prompts the capitalists to reduce their production cost by subcontracting their work to the informal sector, hence, contributing to the expansion of the informal sector and sustaining it to satisfy the needs of the modern sectors (Sassen, 1990).

The ILO report (1972) explained two factors for the existence of informal sectors. The survival motive of labour compels workers to work in low productive sectors in the form of underemployment and the international division of labour facilitates the cost-cutting methods of producers through sub-contracting it to the informal sector.

Considering Formal-Informal linkages, three broad-based approaches were familiarized in the development literature: The Dualist, the Structuralist and the Legal School. According to Sethuraman (1976) and Tokman (1978), there are few relationships between the informal and formal sectors; the informal labour market is always in a disadvantaged position compared to the latter. Tokman (1989) further argues that the informal sector is by nature heterogeneous and has its own problems of sustainability. He recommends three types of measures to make the informal sectors more dynamic and bring them closer to the formal sectors. These include- providing productive assistance, supporting its workers and making changes in the regulations of governing them. Tokman (2001) in another paper argues that the explanation behind the existence of informal sector has shifted its focus from the reasoning of survivalist to the globalization one. According to him, rapid economic openings influenced the decentralization of labour and there is now a budding importance for analysing the informal sectors.

In Central America, formal employment, indeed, tends to decline with the emergence of new tradable sectors, which started to continue efficiently after the redefinition of informal sectors considering the internal heterogeneity. Sainz (1998) shows three scenarios of labour market in the Central American context: the economy of poverty, subcontracting and the agglomeration of small dynamic enterprises.
It is clear that the world has seen a growing importance for focusing and understanding the informal sector. The changing phenomenon was reasserted and importance of policy focused to achieve development goals was recognized in the work prior to the global recession. For Chen (2007), economic policies affect informal employment and this cannot be explained only by the survival logic. She presents two facts in this regard; first, the stable growth of informal economy in the developing and some developed and middle-income countries; and second, the increasing recognition of informal economy as a key pathway in promoting growth and reducing poverty. According to her, the formal and informal ends of an economic continuum are often dynamically linked. For informal sectors, it works out in terms of production and distribution relations, supplying inputs, finished goods or services either through direct transactions or subcontracting arrangements. Formal enterprises hire wageworkers, part-time workers, temporary workers and home-workers through contracting or sub-contracting arrangements (Chen, 2007).

However, in a book, titled The Informal Economy: Studies in advanced and less developed countries, by Portes, Castells and Benton (1989), it was stated that- “the transformation from a rural based traditional economy to an urban based modern economy also does not maintain the predicted path of transition. A new sector necessarily emerges to take care of the people thrown out from the defined dynamics. This is rural non-farm activities/sector”.

The additional labour from increasing labour force participation in rural areas has to be either absorbed by the agricultural sector or urban industrial sector through migration. Failure to do either of these leads to an expansion of the RNF economy. The rural agricultural sector tends to release its surplus labour and the next option left for the new entrants in the labour force is either urban or RNF sector (Lanjouw and Lanjouw, 2001). There was a focus of RNF employment and rural industrialization to alleviate rural poverty but it was observed that in many cases, the people who were involved with RNF economy partook of a positive correlation with poverty (Saith, 1992). As a result of the low productive Non-farm sector, the rural poor are driven to the cities with the expectations of getting employed in any wage earning job. The potential opportunities in urban sector and declining employment in rural areas jointly create a situation for a rapid migration towards the few cities which are the centres of economic growth and employment (Portes and Walton, 1976).

Taking the preceding argument of migration to urban sector into account, in the last 2 decades, the urban population has increased rapidly. Therefore, in 2010 the growth of urban
population has reached 2.8 %, in contrast to 0.46% growth in rural population and the capital city consisting of 35.06% of total urban population (WB, 2012). The growth of urban population and informal sectors thus contradicts the idea (following Lewis, Moser, Tokman etc.) of the formal sector in the urban areas absorbing the migrant population.

Jean O. Lanjouw and Peter Lanjouw (2001) defined the RNF sector as encompassing all activities except agriculture in rural areas which is by nature highly heterogeneous. Recent examinations show that in many countries the rural sector expansion, consequently contributes to economic growth, rural employment and poverty reduction with a pro-poor distributional effect. Studies from different countries’ records show that through better connections, subcontracting relations with the formal sectors help RNF sector sustain as a driving force of economic growth. Empirical evidences from Bangladesh Food for Work Program (FFWP) and Maharashtra Employment Guarantee Schemes (EGS) of India show that government-run public work schemes have a beneficiary outcome on RNF employment. They help in reducing the risks from different sources especially seasonal variation in agricultural employment (Ravallion, 1991). Moreover, Taiwan set an example of postcolonial favourable RNF case, which could avoid the problem of urban bias in development, and achieved to expand its Z good sector through a better infrastructural linkage (Hymer and Resnick, 1969). This contributed to an annual growth rate of 11.5% in RNF income over 1962-1980 (Ranis and Stewart, 1993).

According to World Development Report 2008, 75% of total poor people in developing countries live in rural areas; with 2.1 billion living on less than US$2 a day, 880 million on less than US$1 a day and 86% of them being directly or indirectly dependent on agriculture as their primary earning source (WB, 2008). South Asia, as a developing region which includes half of world’s poor, has been experiencing an increase in informal workforce over time. Empirical data show that during the 1960s and 1970s, only 2-3% of total workforce entered into large scale manufacturing sectors in India, Pakistan and Bangladesh (Amjad, 1988). In this context, the focus on informal economy and RNF economy in particular, has become the new strategy in development. In contrast to the structural transformation and its decline, it was found that the informal sector, specifically the RNF sector, can be a driving force of development (Saith, 1991; Bangasser, 2000). It has been argued that expansion of this sector can create demands for agricultural commodities and at the same time, supply cheap manufactured commodities for lower end agricultural sectors (Ranis and Stewart, 1993).
In the Asian Development Bank (2010) report on informal economy in Bangladesh, it was found that 99% of the jobs in agricultural sector and 82% jobs in the non-agricultural sectors have informal arrangements (Asian Development Bank [ADB], 2010). It was also discovered that those who had no education or low levels of education mainly enter into the informal sector in Bangladesh, where about 62% of total available jobs are low productive and low skilled. Trends show that the informal sector is not declining over time and to some extent, even expanding (BBS, 2010).

Verma (1996) demonstrates that the rural non-farm sector in Bangladesh started getting importance in the late 1980s. It was contributing to a large share of employment and value added services. Even though the RNF sector is low productive than its urban counterpart, it generates full-time, sustainable employment in small-scale industries though the household sector largely consists of low productive activities and absorbs the large expanding labour force in this sector. The author further argues that growth in RNF employment in Bangladesh stimulates more equitable growth as it employs unskilled labours and vulnerable groups, thereby stopping migration to some extent and disproportionately benefiting women. Mahmud (1996) opined that, microcredit and expansion of institutional credit helped improve self-employment entrepreneurship. Sen (1996) shows that the RNF economy in Bangladesh is not stagnant; instead it is dynamic and expanding over time. Demonstrating through data from 1983-91, he shows that RNF expanded by 2.8% growth rate annually. He also evinces within that 8-year period, the share of RNF income in total household income had increased from 26.3% to 34.6%. He further argues that movement in RNF employment sector has reduced poverty and helped achieve more equitable distribution of income. Participation in this movement mainly came from the land-poor. The dynamism of non-farm economy in Bangladesh mainly consists of fishery, poultry and livestock rearing in rural areas and food processing, engineering workshops, job printing, cosmetics and toiletries, construction materials and dyeing, finishing and other textile related activities in semi urban areas (Bhattacarya, 1996).

The share of RNF employment increased from 34% in 1987 to 52% in 2000. Land poverty, microcredit, technology, investments in children’s education and in human capital induced the expansion of RNF economy in Bangladesh (Hossain, 2004).This expansion has an effect on both international and internal migration. A recent study found that nearly 66% of emigration happens from rural to urban areas and 10% of emigration from rural to rural areas
(Afser, 2003). The author further states that the main cause of migration is better job opportunities where migrants are young males and more recently, females.

A recent case study which deals with the determinants of the rural non-farm economy in Bangladesh gives some grounded insights on RNF economy in Bangladesh. Empirical analyses were done for overall RNF activities and sector-wise analysis within the RNF sector. The study confirms the importance of gender and education as individual characteristics and remittance earners as a household characteristic for remittance employment. The results of the study also suggest that access to credit and organizations, presence of remittance earners and growth centres and institutions as community characteristics are important for local employment (Malek and Osmani, 2009).

The above literatures start with the definition of informal sector which emerged because of lack of education and lack of capitalist development (Moser, 1994). Sir Arthur Lewis (1954) argues that with the industrial development, the surplus labour of agriculture will cease to exist and urban and rural wage rates will be equalized. Harris and Todaro (1970) modelled the rural to urban migration process by considering the expected wage in urban sectors. But historical facts deny its applicability and thus, in 1971 International Labour Organization (ILO) first coined the term ‘Informal sector’ in the African context as a response to the increased informality in workforce. In analysing the linkage, Tokman (1978, 1989, and 2001) gave three distinct features in reasoning the existence of informal sector and explored a dependency relation instead of survival in the latter. Chen (2007) affirms the dependency logic given by Tokman (2001) in a more elaborated way by explaining the swelling decentralization and subcontracting arrangements in formal sectors.

This failure of rural labour absorption and indeed its expansion creates a new sector in rural area called the RNF sector. Focusing on RNF sectors became a policy to reduce poverty where Saith (1992) explores a positive correlation between rural poor and RNF sector. Lanjouw and Lanjouw (2001) defined RNF sector as all activities except agriculture in rural area which is highly heterogeneous. Showing the Taiwanese case, Ranis and Stewart (1993) established that better infrastructural connection can help the RNF sector to grow at a high rate. Bangladesh, an economy in transition, has been observing a rapid growth in informal sector as a whole and RNF sector in particular. In this regard, Amjad (1988) and Verma (1996) demonstrated that the RNF sector has been providing an increasing share of employment and value added services in
Bangladesh since late 1980s. Mahmud (1996) argues that the low productive self-employment is the major contributing factor in RNF sector which was boosted by micro-credit and institutional credit expansion. According to Bhattacharya (1996), the case of RNF activities in Bangladesh is not a typical case, but pro-poor in nature. Hossain (2004) argues that land poverty, micro-credit, technology, educational investment induced the RNF sector in Bangladesh which has been showing a steady improvement. The study by Malek and Usmani (2009) shows indicative scenario to intensively look at the RNF sector in Bangladesh.

The literatures stated above provide us a distinct feature of RNF sector, particularly in Bangladesh. The contemporary theoretical underpinnings of the field contradict the earlier findings at large although in Bangladesh the opposite scenario has been noticed. The case study found in the existing literatures from Comilla district deals with households owning less than 2.5 acres of lands. There is, however, a dearth of research about the determinants for both small and large landowning households.

The primary objective of this study is to address the earlier theoretical contradiction by identifying the determinants of RNF sector for both small and large landowning households. The secondary objective is to find out the performance of RNF households in terms of quality of life; whether they are well or worse off compared to farm households. Additionally, this paper studies the impact of economic transformation on the perception of rural life.

3. Research Methodology

Data was collected from one of the advanced villages in Bangladesh (Malek and Osmani, 2009). Till date this village has established five government primary schools, four kindergartens, two secondary schools, two madrasas and one Degree college. There is one branch of Krishi Bank (Agricultural Bank in Public Sector), one branch of Grameen Bank (Autonomous Bank focused on providing Microcredit), one branch of Asha NGO and some other local NGOs. The upazilla (Sub-district) is 3 kilometres and district city is 30 km away from the village (National Web Portal of Bangladesh, 2014). The district is located 100 km southwest of the capital city Dhaka, adjacent to Tripura of Eastern India and connected by the national highway with Dhaka-Chittagong highway. The presence of a large number of institutions has made the neighbouring small villages depended on it for various purposes. Thus,
the upshot of structural transformation is clearly visible in that village (Malek and Usmani, 2009).

The period of the survey was from December 12 to December 27, 2013 and about 30 variables were targeted relating to research objectives. The key terms are defined accordingly:

Farm: Directly related to agriculture and involved in cultivating crops and fisheries.
Non-farm: Working outside agriculture.

Rural Farm Household: Households which earn more than 51% of their income from farm sector.
Rural Non-farm Household (RNF): Households which earn more than 51% of their income from Non-farm sector.

A total of 98 households were surveyed, equally divided into farm and RNF categories, and despite the population representation in the village not being equally distributed, equal number of households were chosen for simplicity of comparison. This survey was focused on both quantitative and qualitative variables. For quantitative variables i.e. land and the market value of RNF enterprises were recorded after a logical assessment of assets. The households, whose earnings predominantly come from remittance, were deliberately excluded in the study. The quality of life was precisely defined in terms of their expenditure on education, healthcare and savings. In the preliminary questionnaire, consumption data were targeted but it was not feasible to calculate the consumption expenditure, particularly for households given the time and budget constraints. Education, healthcare and savings data were used as proxy for the quality of life.

The data for household head’s education was taken in terms of years of schooling which was later categorized into four subsequent groups. Agricultural landholding data were taken in terms of decimal measurement since this is the most common measurement in rural Bangladesh.

In the measurement of education expenditure, a proxy was used for direct cost of education since it is difficult to calculate the exact cost of education. This expenditure was calculated by examining the background of primary schooling for any pupil. An estimation of the expenditure was made based on three options available to the villagers, namely free primary schooling, kindergartens or private schools in nearby towns. Again, in measuring healthcare expenditure, proxy was used in terms of registered doctors, local pharmacy and other traditional
forms of consultancy existing in the rural areas. The savings data were taken based on whether the households have savings or not. In rural areas, the common and indirect forms of savings are life insurance, funding in other’s businesses and cash-holdings. Although these various forms of savings are not usually referred to as savings by them, the survey plausibly considered these as forms of savings.

Four Regression models were constructed to identify any dependency relation among the variables. As the dependent variables are binary outcomes for each of the model, the Logit Regression model is used. The objective of the first model was to find out the determinants of RNF sector. The other three models were constructed to examine how the quality of life indicators respond with the participation of farm and RNF sector. Before putting the data in the regression model, some manipulation and redefinition of the variables were done. The education data were redefined for private schooling in nearby town and the health data are defined with the reconsideration of a third category for the sake of getting binary outcome.

4. Research Findings

The findings of the study are represented in two parts. In the first part, regression models are run to precisely assess the causal relationship between the groups of variables. The models give an indicative scenario of the RNF sector. In the second part, comparisons and tabular representations are presented based on the predominantly qualitative outcome. By considering the explanatory variables for participation in a sector, the following regression model is constructed:

\[
\text{Participation}_{1=\text{Nonfarm}} = \alpha + \beta_0 \text{HHH}_{\text{AGE}} + \beta_1 \text{HHH}_{\text{SIZE}} + \beta_2 \text{HHH}_{\text{EDU}} + \beta_3 \text{MICROCREDEIT}_{\text{ACCESS} (1=\text{yes})} + \beta_4 \text{INTL}_{\text{MIG (1=\text{yes})}} + \beta_5 \text{INT}_{\text{MIG (1=\text{yes})}} + \beta_6 \text{AG}_{\text{LANDHOLDINGS}}
\]

Here,

\[\text{Participation} = \text{If there is participation in Rural Non-farm sector, the value is 1, otherwise 0}\]

\[\text{HHH}_{\text{age}} = \text{Household head’s age, HHH}_{\text{edu}} = \text{Household head’s education, Microcredit access} = \text{Microcredit access of any household, INTL}_{\text{mig}} = \text{International Migration, INT}_{\text{mig}} = \text{Internal Migration, AG}_{\text{landholdings}} = \text{Agricultural Landholdings}\]

Running the model for the sample dataset, we find the following outcome:
After running the regression model for the sample dataset, we find three explanatory variables: microcredit access, international migration and agricultural landholding, all of which are significant at 5% significance level. The coefficient 1.738 for microcredit implies that, other factors remaining constant, if probability of microcredit access increases by 1 unit then the probability of being in Non-farm sector will increase by 1.73 units. The coefficient 2.578 for international migration denotes that if the probability of international migration increases by 1 unit then the probability of being in Non-farm sector will be increased by 2.57 units. The coefficient -0.0085 indicates that a 1 unit increase in the landholding has a probable negative impact of 0.0085 units on the household that they will be in farm sector. And disregarding all other explanatory variables, the households have a 48% probability of joining the RNF sector.

The variables which are not significant at 5% level also show logical dependency relation in explaining the participation. Household size, household head’s age and internal migration show a negative relation whereas household head’s education shows a positive relation with the participation in RNF sector. From the data, it is seen that the household heads, who have secondary level of education prefer RNFA to farm and most of the farm households have at least one of their members migrated to urban sector.

Although, the values of the coefficients look infrequent, they give an indicative relation in explaining the determinants of RNF sector. The model can be run for larger numbers of observations to get a more robust outcome. The determinants of choosing Private sector education, which is a proxy for better awareness towards education, are presented by the regression model below:

\[ Edu_{1=pvt} = \alpha + \beta_0 HH_1 = RNF + \beta_1 HH_Hedu + \beta_2 HH_Size + \beta_3 INTL_Mig + \beta_4 INT_Mig \]

After running the regression for the sample data we get:

\[ Participation_{1=Nonfarm} = 0.4777 - 0.0004 HHH_{AGE} - 0.1969 HH_SIZE + 0.5694 HHH_{EDU} + 1.738 MICROCREDITACCESS(1=yes) + 2.578 INTL_{Mig}(1=yes) - 0.5418 INT_{Mig}(1=yes) - 0.0085 \text{AG}_{\text{LANDHOLDINGS}} \]

\[
\begin{array}{|c|c|c|c|c|c|c|c|c|}
\hline
\text{Parameters} & \text{Constant} & \text{HHH}_\text{Age} & \text{HHH}_\text{Size} & \text{HHH}_\text{Edu} & \text{Microcredit}^* & \text{Int}_\text{Mig}^* & \text{Int}_\text{Mig} & \text{Ag}_\text{Landholdings}* \\
\hline
\text{Coefficient} & 0.4777 & -0.0004 & -0.1969 & 0.5694 & 1.738 & 2.578 & -0.5418 & -0.0085 \\
\text{SD} & (1.2358) & (0.0238) & (0.1364) & (0.3471) & (0.7171) & (0.9849) & (0.7509) & (0.0041) \\
\hline
\end{array}
\]
\[ Edu_{1=pvt} = -3.8386 + 0.4297 HHINC_{1=RNF} + 0.1575 HHH_{Edu} + 0.6769 HHS_{ize} \]
+ 0.5582 INTL_{Mig} + 0.0069 INT_{Mig}

Pseudo\(R^2\) = 0.11 \(\text{N} = 98\)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Constant*</th>
<th>HH_Inc</th>
<th>HHH_Edu*</th>
<th>HH_Size</th>
<th>Intl_Mig</th>
<th>Int_Mig</th>
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<tr>
<td>Coefficients</td>
<td>- 3.8386</td>
<td>0.6374</td>
<td>0.9127</td>
<td>0.1724</td>
<td>0.8842</td>
<td>0.2474</td>
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<tr>
<td>SD</td>
<td>(1.1331)</td>
<td>(0.5673)</td>
<td>(0.3832)</td>
<td>(0.1322)</td>
<td>(0.7579)</td>
<td>(0.6837)</td>
</tr>
</tbody>
</table>

In this model, only autonomous expenditure and household head’s education level is significant at the 5% level. The economic interpretation of the autonomous variable – 3.8386 is, disregarding all other explanatory variables; the household will choose government primary education with 3.84 unit probability level. The interpretation of the coefficient 0.9127 is that if the education level of household head changes by one unit, it is likely that they will send their children to a private school with 0.92 unit probability level. It is well understood that the household head’s education level determines the education expenditure of next generation. The other explanatory variables also show positive associations with the dependent variable.

For the health expenditure, household’s primary income sector, household head’s age and household head’s education level is taken as the explanatory variables. Income level is offset by primary income sector and international-internal migration has little to do in determining the healthcare expenditure. Household head’s age and education level have been taken since both of them are crucial in determining health related expenditure.

The model is:
\[ Health_{1=Registered} = \alpha + \beta_0 HHINC_{1=RNF} + \beta_1 HHH_{Age} + \beta_2 HHH_{Edu} \]

Running the model for sample data, we get:
\[ Health_{1=Registered} = -6.8959 + 0.9599 HHINC_{1=RNF} + 0.8116 HHH_{Age} + 0.8032 HHH_{Edu} \]

Pseudo \(R^2\) = 0.20 \(\text{N} = 98\)

<table>
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<th>HHH_Age*</th>
<th>HHH_Edu*</th>
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<tbody>
<tr>
<td>Coefficient</td>
<td>- 6.8959</td>
<td>0.9599</td>
<td>0.8116</td>
<td>0.8032</td>
</tr>
<tr>
<td>SD</td>
<td>(1.5521)</td>
<td>(0.5670)</td>
<td>(0.0237)</td>
<td>(0.3857)</td>
</tr>
</tbody>
</table>
services. Participation in RNF sector, household head’s age, household head’s education level show high positive association with the probability of going to registered doctors.

For savings, household’s primary income sector, household size, international migration, internal migration and agricultural land are taken as explanatory variables. It is well established that saving is depended on income. But then again, what other factors in rural economy affect the savings is also important to look at in this specific aspect. The independent variables are taken considering other probable influential variables.

The model for savings is:

\[ \text{Savings}_{1=Yes} = \alpha + \beta_0 HHI_{NC1=RNF} + \beta_1 HH_{SIZE} + \beta_2 INT_{Mig} + \beta_3 INT^*_{Mig} + \beta_4 AG_{Land} \]

After running the regression for sample data we get:

\[ \text{Savings}_{1=Yes} = -1.5460 + 1.0686 HHI_{NC1=Nonfarm} + 0.0682 HH_{SIZE} + 1.3363 INT_{Mig} + 1.4199 INT^*_{Mig} + 0.0007 AG_{Land} \]

Pseudo \( R^2 = 0.12 \)\n\[ N = 98 \]

<table>
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<th>Parameters</th>
<th>Constant</th>
<th>HH_Inc*</th>
<th>HH_Size</th>
<th>Int_Mig</th>
<th>Int_Mig*</th>
<th>Ag_Land</th>
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</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-1.5460</td>
<td>1.0686</td>
<td>0.0682</td>
<td>1.3363</td>
<td>1.4199</td>
<td>0.0007</td>
</tr>
<tr>
<td>SD</td>
<td>(0.8265)</td>
<td>(0.4924)</td>
<td>(0.1172)</td>
<td>(0.7621)</td>
<td>(0.6175)</td>
<td>(0.0029)</td>
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</tbody>
</table>

Two independent variables, the household’s primary source of income and participation in internal migration are found significant at 5% level in this model. Both of the variables are positively associated with the dependent variable. This implies a high probability of being in the RNF sector has more than a unit chance that the household will have savings. Same interpretation applies for internal migration. Household size, international migration and agricultural land are also positively associated with savings although they are not significant at 5% level. And disregarding all other explanatory variables the household will go without savings with 1.55 unit probability level.

The models presented above give us some new insights about the RNFA in Bangladesh. From the first model we see that the participation in RNF sector comes from many aspects. It is obvious that RNFA is boosted by microcredit, international migration, large and negligible landholdings etc. It shows that the RNFA in Bangladesh is driven by two polar rationalities. Some go to lead and some go to survive since they have no other destinations to go to. In terms of quality of life, it is seen that RNF households are comparatively doing better in education,
health and savings expenditures. This scenario will be clearer in the next part through tabular analyses.

The regression models constructed above have used many dummy variables as explanatory variables which have weakened the model. This limitation can be overcome if more elaborated data is gathered. Despite having weaknesses, the regression models give important insights about the RNFA and indicative relations among the determining factors. The models can be used for a larger sample size in similar context to find more robust results.

4.1 Dynamics of Rural Economy

The comparative picture of rural economy is summarized in the table below:

Table-1: Comparison between Farm and Non-farm Households

<table>
<thead>
<tr>
<th></th>
<th>Farm Households</th>
<th>Non-farm Households</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td>Govt. Primary 75%</td>
<td>Govt. Primary 66%</td>
</tr>
<tr>
<td></td>
<td>Kindergarten 16%</td>
<td>Kindergarten 22%</td>
</tr>
<tr>
<td></td>
<td>Town 7%</td>
<td>Town 5%</td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td>Reg. Doctor 18%</td>
<td>Reg. Doctor 29%</td>
</tr>
<tr>
<td></td>
<td>Local Pharmacy 82%</td>
<td>Local Pharmacy 71%</td>
</tr>
<tr>
<td><strong>Savings</strong></td>
<td>Percentage of HH Have Savings 30%</td>
<td>Percentage of HH Have Savings 57%</td>
</tr>
</tbody>
</table>

Comparison Within Non-Farm Households

<table>
<thead>
<tr>
<th></th>
<th>HH Less than 30 Decimal Land (75%)</th>
<th>HH More than 100 Decimal Land (14%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td>Govt. Primary 80%</td>
<td>Govt. Primary 40%</td>
</tr>
<tr>
<td></td>
<td>Kindergarten 17%</td>
<td>Kindergarten 60%</td>
</tr>
<tr>
<td></td>
<td>Town 3%</td>
<td>Town 0%</td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td>Reg. Doctor 14%</td>
<td>Reg. Doctor 86%</td>
</tr>
<tr>
<td></td>
<td>Local Pharmacy 86%</td>
<td>Local Pharmacy 14%</td>
</tr>
<tr>
<td><strong>Savings</strong></td>
<td>Percentage of HH Have Savings 59%</td>
<td>Percentage of HH Have Savings 57%</td>
</tr>
</tbody>
</table>

Comparison Within Farm Households

<table>
<thead>
<tr>
<th></th>
<th>HH Less than 30 Decimal Land (36%)</th>
<th>HH More than 100 Decimal Land (36%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td>Govt. Primary</td>
<td>Govt. Primary</td>
</tr>
<tr>
<td></td>
<td>Kindergarten</td>
<td>Kindergarten</td>
</tr>
<tr>
<td></td>
<td>Town</td>
<td>Town</td>
</tr>
</tbody>
</table>
Source: Field Survey

From the table above, it is clear that there is less disparity between the farm and Non-farm sector and huge disparity within the sectors, especially in terms of education and healthcare expenditures where the disparity within the Non-farm sectors is more than the farm sector. This fact again shows the strong heterogeneity among the Non-farm households. Furthermore, Non-farm households are better off than farm households and they can and tend to spend more in education and healthcare which are two fundamentals of quality of life.

The qualitative outcome of the survey depicted a broad scenario of the rural economy and the dynamics of such is presented below:

**Table 2: Dynamics of Rural Economy**

<table>
<thead>
<tr>
<th>State of Agriculture</th>
<th>Outcome</th>
<th>Consequences</th>
<th>Impacts on Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Irrigation Costs</td>
<td></td>
<td></td>
<td>Variable effects on Employment</td>
</tr>
<tr>
<td>High Seeds, Fertilizer Costs</td>
<td>Agricultural Distress</td>
<td>Join in RNF Sector</td>
<td>Vulnerable Law and Order Situation</td>
</tr>
<tr>
<td>High Ag. Labour Price</td>
<td></td>
<td>Rural-Rural Migration</td>
<td>Positive impact on the Affordability of better Lifestyle</td>
</tr>
<tr>
<td>Low Output Price</td>
<td></td>
<td>Migration in Urban Informal Sector</td>
<td>Inequitable Changes in Consumption Pattern</td>
</tr>
<tr>
<td>Stagnancy</td>
<td></td>
<td></td>
<td>Complicacy of Life</td>
</tr>
</tbody>
</table>

Source: Field Survey

In the flow diagram, four consecutive steps are presented based on observations. In the first stage- the state of agriculture is pointed out which clearly led to agricultural distress as
outcome of neoliberal policies in agriculture since 1990s. As a response to this distress, discouraged agricultural labour either joined the RNF sector or to migrated to domestic cities or abroad.

5. Conclusion

The emergence of the RNF economy is usually depicted from a positive perspective of development; policy makers and international organizations suggest for more focus on RNF sector for better and smooth economic growth. The picture of rural non-farm economy as a transitory reservoir of unsustainable rural labour force is no more the reality.

The observed case study gives a different story of the whole phenomenon. The context of the study can be seen as a representation of the transitory rural economies in South Asia. This study sought to find out the determinants of RNF employment and the differences between farm and non-farm households in terms of their quality of life. In this context, agricultural landholding, microcredit access and international migration are jointly found to be significant in explaining the participation in RNFA. Microcredit access and international migration were positively associated with the RNF participation with extremely high coefficient. Agricultural landholding was negatively associated with RNF participation with low coefficient. However, household head age, household size and internal migration are negatively associated with RNF employment with insignificant outcome while household head education level shows a positive association.

The major findings of this study can be categorized into three sections:

First, RNF is not a homogenous sector and distinct experiences of different households lead them to that sector. Sheer heterogeneity prevails both in terms of asset-holdings and standard of livings. There was highly skewed distribution of agricultural land among the RNF households which is comparatively higher than that of farm households. Precisely 75% of RNFA households have less than 30 decimals of land which is not sufficient to survive in agriculture. This implies RNFA is induced by the increasing level of distress in agriculture.

Second, the distribution of land within the agricultural households was less asymmetric while the income distribution among the agricultural households was highly asymmetric because of the absence of land being the prime determinant of income. The profitability of agricultural land has drastically declined in the last several decades, since the commencement of neoliberal
policies in agriculture in 1990s, which tempted the agricultural households to switch to RNFA. Nevertheless, large landholding households can afford to send their young members abroad for work, which consequentially leads them to start new businesses in RNFA that also contributes to boosting the sector, although, this segment is very small. RNFA was predominantly driven by the landless households, where microcredit played an important patronizing role. The significance of microcredit access implies that the RNF sector is driven by self-employed small and medium enterprises which need initial capital to start with. The education level of household heads also determines the participation in RNFA since tertiary education has a negative relation with agriculture.

Finally, the performance in terms of quality of life varies modestly between the farm and RNF sectors and widely within the RNFA sector. The awareness regarding education and healthcare increased in both farm and RNF sector households, with slightly higher in the RNFA sector despite wide disparity within the sector.

This study has contributed in the existing literature in two ways. The findings of this study have provided a different insight of the RNF sector by contrasting with many conventional pessimistic understanding of this sector. The observed determinants will help in choosing appropriate policies for expansion of the rural economy and rural development. The findings in terms of quality of life have major implications in the policy framework for reducing poverty and ensuring human development. The research suggests that a new development strategy can be advanced if policies are redefined in expanding microcredit access, establishing skill development institutes, providing technological assistance in new enterprises, and developing agricultural incentive mechanism.

This study however, has certain limitations. Besides the sampling and survey area, it did not consider heterogeneity within the sectors which was found to be expressively perceptible in descriptive analyses and observations. In many cases, qualitative data was relied upon to avoid unexpected situations which became an obstacle in understanding the exact scenario.

In spite of these shortcomings, this study gives a crucial indicative scenario and shows a relationship between the explanatory variables such as agricultural landholding, education, microcredit and international migration with the dependent variable, which was the participation in RNF economy that can serve as a useful point of analysis in further research in this area.
References


