

Impact of Micro Level Factors on Rural Livelihood Diversification in Jorhat district of Assam: An Empirical Study

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Abstract- The present study deals with the role played by various micro level factors that affect the rural livelihood diversification in Assam, specifically in Jorhat. Rural people do not depend on one source of income. The main income source in the rural area is agriculture however, depending upon the demographic and psychographic profile, the households carry out more than one activity to earn livelihood and in many instances their major earning comes from other activities rather than agriculture. The present study is descriptive in nature. The data have been collected through a structured schedule specifically designed to capture the demographic and psychographic variables of rural population that lead to their livelihood diversification. Logit regression was used to analyze the data. It was found from the study that the micro level variables such as age, gender, monthly income family size and entrepreneurial tendency significantly influences rural livelihood diversification, however, education and risk has no impact on the same.

Keywords: Jorhat, livelihood diversification, micro level variables, Logit Regression

I. INTRODUCTION

Multiple sources of income has been considered as a good approach, however, it is generally not planned by the households, specifically in the rural areas. Technically, choosing alternative sources of income with the main source is known as livelihood diversification, which is defined as “the process by which rural families construct a diverse portfolio of activities and social support capabilities in order to survive and to improve their standards of living” (Ellis, 1998 p.4). The farmers in the rural areas depend more on the income from agriculture, which is again dependent on rain and climatic condition. While thinking of diversification the rural people do not go for another stream of agriculture rather they go for altogether different stream (Hoang et al.). Some of the selected diversification options are animal husbandry, labour work etc. Most of them are off-farm activities, which are independent of the typical risks that agriculture faces.

The issues of livelihood diversification are more relevant for the small farmers because their farming effort remain hand to mouth. Their farming output is just sufficient for their livelihood, in most of the cases they consumer their own production. The small farmers are the key to our economy, as they constitute 85% of the entire farming community but own only 44% of the entire land. The Indian agricultural sector is labour intensive and needs adequate manpower and energy; however farmers fail to lead a normal livelihood despite of relentless hard work. To execute the fundamental requirements of the farmers and their families, they are necessitated with integrated farming system (IFS) (**Sarma, and Talukdar, 2012**). The introduction of IFS has facilitated to create a foundation for a substitute development replica to enhance the practicability of small farmers in comparison to the bigger ones. IFS is seen to be a ray of hope for the augmenting demand for food and nutrition, secure income and enhancement in livelihood for farmers at grass root level who have limited means.

From the microeconomic angle, savings is the only protection against disruptions in livelihood to the poor people. Parallely, from a macroeconomic viewpoint, investments is mandatory for the creation of investment and fiscal development (**Hussein and Nelson, 1998**). In the last 30 years, an upsurge of the previous research investigations in association between and the savings and its aspects in the concerned nation. With the referred background, the study tries to investigate the various macroeconomic factors of savings in Indian household and the function of savings promote financial expansion in the tenure of last five years (**Maitra, 2017**).

There are several livelihood approaches in the rural as well as urban sector in the Assam region. The concoction between urban and rural, is affecting the livelihood of people in both constructive and negative manner as the market forces are growingly influencing all livelihood tactics. Based on all empirical studies, it is discovered that labor collectively believe that source of revenue is not easy as it was earlier. Various determinants like inappropriate weather for cultivation, price fluctuation, stiff competition from substitute yet better products and unenthusiastic approach of the upcoming generation towards the rural livelihood chores affect the decision of the livelihood diversification (Bhattacharjee, 2010). Sustainability of the activities depends upon learning diversification as it bounds households to be watchful and approve the transformations happening with time (Goyal, 2014).

The third world nation like India where both public as well as private service is accessible yet not utilized to its full potential. There is minimal identification of the requirements of the society and there are very less administrative and private schemes that are framed to assist the society in different districts of India, specifically Assam (Sengupta, 1996). The several home care and home help duties are not denoted as "right" and are not involved in the nation's budget. There is also a crisis of a proper of legislation elaborating requirements, prerogatives, and necessary services for the conception of industrialist, particularly in rustic areas. Our present Prime Minister is creating a new horizon of progression of youth and entrepreneurship by making fresh skill enhancement ministry that will be a mark for the expansion of entrepreneurship. In addition, rural regions will have more proportion of self-employment units in comparison to urban areas. The ultimate reason is that people are responsive towards their duties of humanizing their individual lifestyles in the rural sectors. Individually, resistant necessities are administrative identification of the mandatory for entrepreneurship endorsement schemes that are prevalent in rural areas (Haloi, 2016).

II. LITERATURE REVIEW

2.1 Status of Rural livelihood and diversification:

Saikia and Goswami (2015) analyzed the characteristics and limit of revenue diversification in various rural households in Assam. The paper explored that farm and nonfarm actions have a general source of revenue. However, the nonfarm region becomes a primary source of income, adding 69.42% of the entire household income in comparison to 21.72% contributed by the farming sector. The mean revenue of the households who are contributing in farm sector is less than that of the households who belong to the non-farm sector. The study showed unyielding aspects of farming as a source of revenue and a substitute employment opportunity. The rustic regions non-farm income surpassed the income earned from different land groups. Allowance is also seen to be a driving factor for all significant land class. Kumar, Bhatt, Dey, Kumar, Idris, Mishra, and Kumar (2018) states more part of allowance for small and large landholders showed that migration was a misery for all the petty landholders whereas it is seen as an optimistic opportunity for big landholders. Scrutinizing the income opportunities it was exposed that the poor people were having less productive land for farming whereas the rich were occupying more of it. Calculating the expanse of diversification in relation to the amount of income sources, it was located that prevalence of a relevant disparity in assortment in various household groups based on land and income.

2.2 Factors determining the livelihood diversification choices:

The choice of the livelihood diversification depends upon a variety of factors such as risk of loss of current source of livelihood, family size, age of the family members and head of the family, income index, saving, education, role of women and entrepreneurial tendencies affect the choice of livelihood diversification decision of the rural families. The extant literature has many studies, which suggest about the requirement of the diversification in case of the livelihood crisis or need.

2.2.1 Entrepreneurial Tendency

The livelihood decisions are mainly dominated by males (Wondim, 2019), in many studies the gender has not been found affecting the livelihood diversification (Ellis, 2000). Hazarika, and Goswami (2018) found that the women entrepreneurship is gaining popularity all around the world. Since the introduction of the five-year plans, the administrative authority of the country is paying more focus on the enhancement of women like the labour force contribution, women empowerment, pedagogy and elimination of gender

biasness. There are several micro, small and medium enterprises (MSMEs) that are led by women and are adding majorly to the fiscal progression of the country through employment and revenue generation, poverty alleviation and also by introducing entrepreneurial miscellany in the financial activities. Handloom industry is also one of the prime means of livelihood that caters to a suitable situation to evaluate the implication of rural-based women-owned micro industries for rustic financial improvement. **Choudhary (1996)** illustrates that with antiquated hand-woven looms, the manufacturing process happens in the rural regions. The recent study scrutinizes the determinants that make an impact on the ancestral women to own a handloom micro-enterprise, in Assam. Within the structure of unsystematic utility representation of financial choice, the outcome of the probit model represents age, recognition of other handloom micro-entrepreneurs, family business history past history of family business and optimistic influence on the verdict of women in making a handloom micro-entrepreneur. The research predicts a comprehensive strategy for the general improvement of handloom industry in the regional areas. **Hazarika (2016)** states that entrepreneurship plays an important role that helps in the enhancement of the financial system of our country. The progression in this area is necessary for the country's fiscal and societal growth. Each year, the State Institute of Rural Development (SIRD), Assam conducts many training sessions that are oriented with self-development and skills management for the youths, entrepreneurs, farmers and women. **Mali (1999)** state that these training programmes, the entrepreneurship enhancement is seen to be picking up pace and has an amazing contribution in the socio-economic development of Assam. However, the development in terms of enterprises in Assam is very less in the rural areas as compared to other states of India. The paper makes an effort to search for diverse skill development facilities that are offered by the State Institute of Rural Development for the enhancement of rural entrepreneurship and to inspect the influential role of training that is catered by the institute.

2.2.2. Demographic Characteristics of Family and Head

The reasons of livelihood diversification can diverge from region to region, beyond time and people. In this research, different aspects have been explored to be statistically relevant which can affect a household's perspective concerning contribution in livelihood diversification. Features like age of the head leading the household, the significance of credit has established a pessimistic but noteworthy impact on household's participation in diversification of livelihood tasks; whereas aspects like kind of family, its size, monthly income and remittance have portrayed a major constructive influence on household's involvement in diversification of livelihood chores (Neog and Buragohain (2020). Role and importance of women has always been secondary in the rural India. **Bhattacharjee (2013)** found the position of women in Assam in terms of livelihood. The women of Northeast are mostly situated in a different dimension, especially because of the assortment in the cultural background, customs and tribes. In a comprehensive expansion tactics, the sustainable sustenance of women has a special relevance. With the particular aim in mind, an all-inclusive study was done on both urban as well as rural women in Assam analyze the present condition of women along with the transformations happening with time. There are endless attempts made to comprehend the issues affecting the livelihood of the Assamese women. A clear approach in both macro and micro ways with the use of initial and secondary information is done to understand the significance. The presence of gender biasness analyzed from parameters like educational degree, employment, diseases, incidence of domestic violence and female workforce participation.

According to **(Dutta 2003)** the urban and rural gap is less in the disease and education level. Migration is a general strategy to cope up with livelihood issues. The errands and way of life of artisans and migrants are considered to be in a much-endangered state, as they hold no security. The huge hiatus in the income level of men and women in both the urban and rural areas of Assam protrudes relevant gender inequality in livelihood. The range of diversification in livelihood is minimal that also restricts the sustainability of livelihood in the porch and rustic parts of Assam.

Saha (2014) stated that the empowerment of the minority gender will not only fortify the individual woman but will help in boosting the position of the entire community as a whole. The role of microfinance has been identified as fresh progressing paradigms for upgrading poverty levels and benefitting the social and economical condition of the society of poor rural women. This particular step has helped many researchers throughout the world to reevaluate the definition of fiscal enclosure of the grass root people, more specifically women who were retrained to utilize their thought process. In the recent times, economists are showing concern about the market-related characteristics of micro finance organizations in the country. The schemes related to it have a vital role in the addition of women's financial, social and

political development. Right to savings and credit related facilities can reinforce and commence many interconnected tasks that are related to reinforcement of women power in these areas (**Rahman, and Day, 2010**).

2.2.3 Risk in existing income stream:

The risk in the existing income stream is explained by the uncertainty and power of the factors that affect the potential income of the main source of livelihood negatively; such as lack of rain and adverse climatic conditions are negative for farming and competition and downfall in urban demand is negative for the village and cottage industries. Further, the scale of operation is also very important. If the size of farm is small, it is more risky as compared with the farm of a bigger size. **Akhtar (2019)** states that recent fiscal climate of liberalization and globalization, cut-throat competition and transforming ecological situation have made the handloom conventional workers in Sualkuchi tremendously susceptible. The workers have accepted the growing devices overtime to escape livelihood uncertainties that are related to it. Nevertheless, administrative interference is essential to maintain the lives of the grass root people. Exceedingly, all frameworks and schemes should be executed synergistically to create an affirmative adaptive ability of the weaver societies of Sualkuchi. **Bhattacharjee (2014)** portrays that effectual use of land by marginal and small farmers in Assam who does the same by incorporating the crops and livestock. Making a framework is fundamentally vicious where organic elements like livestock, land and crops combine for cheap livelihood. The resolutions are regarding single constituents that can influence others, address poverty through accurate management technique, and analyze the reasonableness of the assimilation. The primary needs for the rural areas in Assam are to make Veterinary Care Services much more reachable principally in terms of anticipation. An assortment of components in farming system that is crop, livestock and ultimately fish want a proficient amalgamation in recent condition for sustainable livelihood result. **Mech, Borah and Mech (2017)** states that the rural non-farm area has huge significance as a substitute approach for creating employment, lowering poverty, attaining an elevated rate of progression in the rural areas. Most of the rural population in today's time is indulged in the assortment of non-farm tasks apart from involving in farming activities, which is one of their primary means of livelihood. The research makes an attempt to avail the rural employment opportunities and tries to recognize the determinants that makes a deep impact on the rural workforce to contribute in non-farm employment as a major livelihood. The research is done based on initial data that on the district of Dibrugarh in Assam. The five major factors like size of the land, pedagogy level, household size, ratio non-farm income to farm income are seen to be the major highlighters of the rural non-farm occupation in the state (**Chakraborty, 2006**).

2.2.4 Size of Current source of Income:

Sarkar et al. (2015) found that Aquaculture is one such reason of livelihood for the people residing in pastoral areas of Cachar district Assam and other parts of the northeast India. The outcome showed by the attitude of participatory rural evaluation and a procedure utilized by non-administrative organizations. Majority of the farmers does not hold good education qualification and most of them sustain their life below poverty line. The study was done on the kinds of ponds that exist. The results show that in spite of the accessibility of small and medium ponds can fetch better results through improved management process. 83% of the fishing farms in Cachar district in Assam are very small and medium in size, whereas only 17% of them are larger. The outcome denotes that small and medium ponds yield better production as compared to big farms and are financially cheap in the particular area.

The microfinance programs have great potential in improving the livelihood of women in all aspects. The study stresses on the framework that has been laid related to microfinance and Self Help Groups (SHGs) and scrutinize the functions of SHGs in empowering women in the remote areas of Assam. The northeast region continues to be a major one for financial prohibiting. However, the facility of micro credit has become very enriching for women workers especially in the unorganized region in the Northeast India. Few of the governmental as well as non-governmental agencies are providing micro finance facility to help develop and strengthen these areas and its people. It has become a quintessential element for the poor and the minorities in order to sustain an economically and socially viable livelihood (**Bhuiyan, et al., 2012**).

III. PURPOSE OF THE STUDY:

Rural population in India faces a variety of livelihood problems such as small size of farms, climatic issues, lack of education and gender issues and lack of resources. The rural families have to decide upon the livelihood diversification to meet such challenges. In this light of this thought, this study focuses on finding the factors determining the livelihood diversification in the Jorhat district of Assam.

IV. RESEARCH DESIGN

The present study is empirical in nature in which descriptive research design has been adopted. The research is based on the primary data collected from the farmers of the Jorhat district of Assam, India. A descriptive study establishes the relationship between the variables identified through the extant literature.

4.1 Research Instrument:

The research instruments were prepared with the help of the variables identified from the extant literature that affect the livelihood diversification in the rural India. The research instrument used was a structured schedule. Table 1 explains the nature of variables, their codes and measurement scale. The sampling method used in the study was snowball sampling. The researchers got the schedule filled by personal visits and telephonic survey.

4.2 Data Analysis Procedure

The data analysis has been done with the help of logit regression. In the logit regression, the independent variables may be categorical or on scale, however the dependent variable must always be categorical in nature. In the present study, the dependent variable has been categorized as 'not diversified' and 'diversified'. The details of scaling, coding and description and categories have been discussed in detail in the Table 1.

Table 1 Details of the variables

Nature	Name	Description	Value	Type of variable
Dependent Variable	DIVERSE	Livelihood Diversification	1 = Not Diversified 2 = Diversified	Categorical
Independent Variables	AGE	Age of the Head of the Family	1= below 25 2= 25 to 35 3= 35 to 45 4= 45 to 55 5= above 55	Categorical
	GENDER	Gender Head of the Family	0 = Female 1 = Male	Categorical
	EDUCATION	Education of the Head of the Family	1= Below 5 th 2= 5 th to 10 th 3= 10 th to 12 th 4= Graduation or above	Categorical
	ENT_TEND	Entrepreneurial Tendency - Approach towards starting own business	1= Not interested in starting any business 2= Interested in starting business	Categorical
	RISK	Risk on Existing Income Stream	1= Low Risk 2 = High Risk	Categorical
	M_INCOME	Monthly Income per family member	1= below 2000 2= 2001 to 4000 3= 4001 to 6000 4= 6001 to 10,000 5= above 10,000	Categorical

	FAMILY_SIZE	Number of members in the family	Actual Number of Members (1 to 6)	Scale
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4.3 Proposed Equation =

$LN(\hat{Y}/1-\hat{Y}) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \mu$, Where,

\hat{Y} = Probability of the livelihood diversification of the family (number code provided =1)

$1-\hat{Y}$ = Non-Probability of the livelihood diversification of the family (number code provided =0)

α = the constant or intercept

β_1 to β_7 = Regression coefficients of the respective independent variables

X_1 to X_7 = Independent Variables

μ = The error term

5. Data Analysis and Interpretation:

In this study, the data has been analyzed with the help of the logit regression. Table 2 shows the diversification of families for livelihood. The table shows that around 56% of the families have diversified for their livelihood and rest around 44% have not diversified.

Table 2 Diversification of the Families

Diversification Tendency	Respondents	Percentage
Families that have diversified	131	55.7
Families that have not diversified	104	44.3
Total	235	100.0

Table 3 Factors determining the Rural Livelihood Diversification

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	AGE	-4.268**	.595	51.451	1	.000	.014
	GENDER	1.904**	.524	13.212	1	.000	6.714
	EDUCATION	.069	.293	.056	1	.813	1.072
	ENT_TEND	1.281*	.612	4.376	1	.036	3.600
	RISK	-.208	.587	.125	1	.723	.813
	M_INCOME	.464*	.202	5.260	1	.022	1.591
	FAMILY_SIZE	.570*	.253	5.066	1	.024	1.768
	Constant	7.652	2.233	11.739	1	.001	2105.579
a. Variable(s) entered on step 1: AGE, GENDER, EDUCATION, ENT_TEND, RISK, M_INCOME, FAMILY_SIZE.							
-2 log likelihood							
Cox & Snell R Square = 0.681							
Nagelkerke R Square = 0.778							

** significant at 5%

* significant at 1%

Table 3 shows the factors that determine the rural livelihood diversification. It may be seen in the table that Age, Gender, Entrepreneurial Tendency, Monthly Income and Family size affect the diversification of the rural families. This variable significantly influences the rural livelihood diversification as the value under the significance column is below 0.05. However, at the same time Education and Risk (Risk of income due to small size of current source of income) have no significant influence on the diversification process as the value under the significance column is above 0.05.

Further, the age has negative beta value, which shows that age is negatively associated (higher the age, lower the possibility of diversification) with the dependent variable viz. diversification. However, rest other variables have a positive impact.

V. RESULTS AND DISCUSSION:

The factors that affect the rural livelihood diversification that were identified from the extant literature have been classified under the three major categories. First category contains the demographic characteristics such as gender, age, education, family size, monthly income. The second category contains the risk on current income, which is because of the uncertainties of climate etc. on the current income source and size of the source. Third category contains the entrepreneurial tendency of the head of the family. The discussion on the results in the context of the variables that have been found affecting the diversification process significantly is presented as under:

Demographic Variables:

Age: Most of the demographic variables significantly affect the livelihood diversification. In this study, it has been found that higher the age, lower the possibility of diversification and lower the age, lower the possibility of diversification. If the head of the family belongs to a younger age group, there are more chances for diversification as compared with the heads of the family who being to a higher age group. Young age group people know about more opportunities, believe to take risk and finds solutions for the existing and potential problems.

Gender: Gender decimation has been an important foundation for decision making, specifically in the rural context. In this study, it has been found that gender has a significantly positive impact on diversification process, which means (as per the codes) that where the head of the family is male the possibility of diversification is significantly high.

Monthly Income: Monthly income has positively significant impact on diversification. Higher income reflects positive impact on the diversification. This may also be understood vice-versa and interpreted that those who are diversified have higher income and not diversified have lower income.

Family Size: A large family gives more scope, opportunities and convenience for diversification. It has been found in the study that family size has significant impact on the diversification process. When there are more members in the family, few of them, who are less educated or less venturesome can handle the traditional occupation of the family and those who are young, more educated and more venturesome can start a new stream of livelihood.

Entrepreneurial Tendency: Entrepreneurial tendency is the tendency of households (head of the family in this case) to start own business. The impact of 'Entrepreneurial Tendency' has been found significant on livelihood diversification. Such a tendency is generally a result of education, nature of taking risk and past background etc.

VI. CONCLUSION

Assam records more diversity in rural occupations as compared to other states in India. The rural households are mainly involved in farming business and have been engaging themselves in other fields such as cutting and knitting, embroidery, tailoring, weaving etc that escalate their entrepreneurship capability that denotes various qualities of management, inventiveness and modernism. Entrepreneurs are not only a source of individual income, but it creates jobs for many people who can earn a sustainable livelihood through these sources. These entrepreneurs also play a crucial role in eliminating the problem of unemployment and makes way for economic progression in underdeveloped areas (Sahu, 2012). The study implies several facts regarding the rural livelihood diversification in Assam. Apart from the entrepreneurial tendencies discussed above, the factors that affect the diversification as per the present study are age, gender, monthly income and family size.

However, the livelihood diversification is such a broad area, which cannot be constrained with few factors. There are many other factors, which can be investigated by the budding researchers in future, specifically in the case of Assam such as the occupation of people; weather of the place, augmenting expenditure and the lessening size of the potential cultivable land, in terms of farming. Another major problem of rural livelihood in Assam is the fluctuations of mindset and lifestyle of youngsters. The growing rate of alcoholism among youngsters leads to joblessness and poverty. Many youths often want to try something else other than cultivation, which leads to redundancy in the farming sector. Another noteworthy point is the position of women in social and economic status of the nation and their contribution to make livelihood better. Special attention to their well being along with the extra push needed to uplift their position in the society can help in improving the rural livelihood of Jorhat and other areas of Assam. Various artisans and artisan are in a very poor state of hygiene, indebtedness whereas practice of child labour is very prevalent in these areas. Additionally, managerial vulnerability along with weak market structure has led to the penetration of intermediaries and has caused a very depressing factor in the livelihood operations of the rural regions in Assam.

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