An Analysis Of Intensity Of Livelihood Diversification Among Rural Households In Cuddalore District Of Tamil Nadu

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Abstract

Purpose: The study was undertaken to analyse the intensity of livelihood diversification among rural households in Cuddalore district of Tamil Nadu.
Methodology: The study is based on primary data collected from the respondents through a well-structured interview schedule. 374 respondents have been selected and a simple random sampling technique has been used to select the respondents.
Materials and methods: The Simpson index of diversity has been used to measure the intensity or pattern of livelihood diversification among the rural households in Cuddalore district of Tamil Nadu.
Results: The results of the study revealed that apart from crop production farm and livestock trading, Handicrafts and artisanship are the most important activities in the study area and the SID in the study area is 0.32 which is less than the midpoint.
Suggestions: The study suggested that government should continue its efforts to generate income earning opportunities in the rural areas and support the farmers to enhance agricultural productivity through supportive policies including input utilization and creating market for their product.

Keywords: Simpson index, utilization, Random sampling, opportunities.

Introduction

Smallholders benefit more from livelihood diversification in general because it takes use of opportunities and synergies between on- and off-farm activities. A household's utilization of a variety of strategies and social support networks to raise their level of life is known as livelihood diversification. By providing more sources of income for households and lowering poverty, livelihood diversification enhances rural society's ability to engage in a variety of on- and off-farm economic activities and enhances overall well-being (Megerssa et al., 2020). By expanding the source of income for impoverished households, a variety of income-generating activities enhance the well-being of the rural poor (Abera et al., 2021). Welfare is typically measured by consumption spending, and it is enhanced by the attitudes of businesses and consumers (Juhro & Iyke, 2020). Income diversification from sources other than agriculture can be extremely important for the growth of the rural economy as labor employment in agriculture gradually declines. Generally speaking, a farm household's income level is influenced by its participation in a variety of non-income activities as well as its agricultural output. Adoption of this kind of plan could stabilize household earnings by increasing the self-insurance mechanism (Seng, 2015).

Individual households in Cuddaalore, Kurinjipaddi, and Nallur typically participate in a variety of activities, depending on their abilities, skills, and evaluation of opportunities and limitations. These activities may be a fundamental component of extensive improvements to the community's infrastructure or they may take place in less developed, isolated areas. These choices about the kind of particular activity to be engaged in were made at the home level. This approach has aided in the development of the area as well as helping them increase the security of their means of subsistence. Making a list of the various diversification strategies that the farmers in the research region have adopted is helpful.

Review of Literature

Abiodun et. al., (2019) The study conducted an empirical investigation on the various livelihood strategies and types employed by rural households in Ondo State, Nigeria. This study used primary data, which were gathered from 120 rural household heads using a well-structured questionnaire focused on the particular goals of the investigation. Descriptive statistics, the Simpson index, and multinomial logit regression were used to analyze the data. According to the results, 82.5% of the respondents were married, and 80.8% of the respondents were men. The majority of responders (83%) have completed at least their primary schooling. Farming was the main occupation of 73.3% of the respondents, and it was seen that they combined non-farm and farm tactics. Carpentry, welding, trading, tailoring, hunting, logging, and civil service were some other non-farm revenue streams that were noted. A risk neutral value of 0.64 was found in the Simpson livelihood diversification index results, indicating that around 73.3% of respondents had multiple sources of income. Age, household size, education level, and farm size were the primary characteristics that significantly influenced respondents' choice of livelihood strategy, according to the multinomial logit analysis. The insufficiency of capital or assets, issues with infrastructure, restricted access to natural resources, insufficient awareness and training, and cultural issues were seen as impediments to household heads' attempts to diversify their sources of income. In conclusion, households in rural areas have a moderate degree of income diversification. Additionally, since a variety of income streams increase a rural household's overall income, they offer appropriate relief.

Anaman & Adjei (2021) Using data from 894 randomly selected households from the most recent round of the Ghana Living Standards Survey, which was conducted by the Ghana Statistical Service from October 2016 to October 2017, the researchers determined the factors influencing income diversification and the relationship between income diversification and the economic welfare of rural households in the Volta Region of Ghana. The age of the household head, the amount of remittances the household receives, and the size of the household all had a favorable impact on the total income diversification of the household as indicated by the Simpson Index. The researchers found that the age of the household head had a cubic, or S-shaped, relationship on the number of income-based activities (NIBA), another indicator of diversity. Income diversification first decreased from 17 to 31 years of age; it then climbed from 31 to 74 years of age; finally, it reduced after the retirement and advanced age of the household head. Moderate levels of formal education attained, remittances, home size, and power connection were the positive drivers of NIBA. The findings demonstrated that income diversification only had an impact on economic welfare at moderate to high usage levels.

Das & Mitra (2021) The purpose of this paper is to investigate how well such livelihood diversification works to raise or sustain intertemporal consumption levels in relation to household knowledge about climate change. The study builds multiple regression models with and without the assumption of endogeneity of occupational diversification index using cross-sectional survey data of 1200 families from central and western Odisha. The findings unequivocally show that households with substantial perceptions of climate change can profit from diversification and sustain or increase their consumption over time, but those with little or no awareness of climate change cannot. In order to boost farmers' income, diversification has been a top government priority in India. However, these policies won't have much of an impact unless farmers receive the necessary climate education to enable them to select profitable ventures that also stabilize consumption.

Objective of the study

The objective of the study is to find out the intensity and pattern of livelihood diversification in the study region.

Methods and Materials

The study is based on primary data collected through a well-defined interview schedule.

Sampling Size and Technique

The study population comprised of all the rural households in the selected villages of three blocks from Cuddalore district. The sample size has been calculated using the formula developed by Taro Yamane (1967).

The formula for determining the sampling size as

$n=N/1+N(e)^2$

n=Sample Size

N=population Size (5693 rural households)

e= sampling error (usually 0.05)

By substituting the values, the sample size is equal to 373.740

The sample size of the total population is 374 approximately when using the formula developed by Taro Yamane, (1967).

After the calculation the sample size, a simple random sampling technique has been used to select the respondents in the study area. The respondents have been selected on a non-proportionate basis.

Table 1.1 Sampling Design

CUDDALORE BLOCK		
Village Name	**Rural Households**	**Sample chosen**
Naduvirapatty	653	42
Palayam	567	40
Ramapuram	590	41
Total	1,810	123
KURINJIPADI BLOCK		
Village Name	**Rural Households**	**Sample chosen**
Poovanikuppam	668	42
Puliyar	727	44
Keezhur	716	43
Total	2,111	129
NALLUR BLOCK		
Village Name	**Rural Households**	**Sample chosen**
Kilimangalam	732	45
Venkarumbur	527	39
Naraiyur	513	38
Total	1,772	122

Source: computed from the data collected from the statistical office Cuddalore

Statistical tools and techniques

The primary data was collected by interview schedule since the chosen respondents actively engaged in the interview and provided practical cooperation in their responses. The data were then converted into the tabular form using SPSS, STATA and EXCEL software's.

Measurements of Livelihood Diversification- A Simpson Diversity Index

The Simpsons Index of Diversity (SID), Herfindahl, Gibbs, Martin's indexes, and other techniques are among the several ways to estimate household livelihood diversification; nevertheless, the Simpsons

Index of Diversity (SID) is the most effective. Hill (1973) measured diversity using the Simpson index as well. The Simpson index was also modified by Joshi et al. (2003) to compare agricultural diversity across a number of South Asian nations. Here, we employ it to gauge the diversity of livelihoods.

This study estimates the degree of livelihood diversification among farm households in the Cuddalore district of Tamil Nadu using the Simpsons Index of Diversity (SID). The SID takes into account the number of sources of livelihood as well as the degree of income distribution equity among them. This justifies the use of the SID in this study over other diversification measures, such as Herfindahl, Shannon, and others. The Simpsons Index of Diversity (SID) was used in this study to estimate livelihood diversification among Rural households in the Cuddalore district of Tamil Nadu.

$$SDI = 1 - \sum_{i=1}^{n} Pi^2 \quad \text{(1)}$$

In equation (1) where SID is Simpsons Index of Diversity, n is number of livelihood sources, p_i is Proportion of income coming from the i^{th} livelihood source. The value of Simpsons Index of Diversity (SID) ranges from Zero (0) to one (1). Thus, value zero (0) represents perfect specialization and value one (1) represents perfect livelihood diversification**.**

Results and Discussions

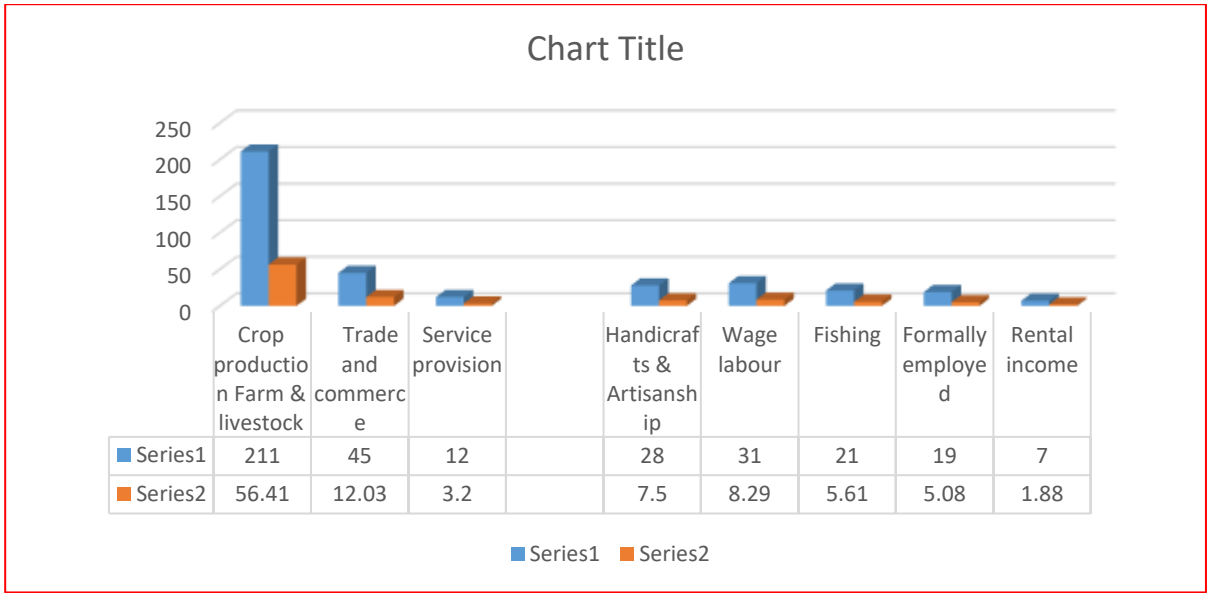
The Simpson index of diversity has been used to measure the magnitude and intensity of livelihood diversification in the study area. The results are discussed below.

Table 1.2 Intensity of Livelihood strategies in the study area.

Livelihood strategies	Frequency	Percent	Cumulative percent
Crop production Farm & livestock	211	56.41	56.41
Trade and commerce	45	12.03	68.44
Service provision	12	3.20	71.64
Handicrafts & Artisanship	28	7.50	79.14
Wage labour	31	8.29	87.43
Fishing	21	5.61	93.04
Formally employed	19	5.08	98.12
Rental income	7	1.88	100.00
Total	374	100.00	

Source: Computed from own survey 2023**.**

Figure 5.13 Intensity of Livelihood strategies in the study area.



Extent of Livelihood Diversification

A household or individual with a varied means of subsistence depends on multiple distinct economic activities. A 'diverse livelihood' is the opposite of a specialized livelihood based on a single, full-time activity. Diversification is the incorporation of new activities into the economic portfolio. Adding new ventures to the portfolio of investments is known as diversification. The income sources of different households were studied to measure the diversification in this regard and presented in Table 1.2 and Figure 1.1**.** It brings out very clearly that majority of the households i.e., 211 respondents (56.41 per cent) are engaged with the crop production farm and livestock. Similarly, 45 respondents (12.0.3 per cent) deals with the trade and commerce. After crop production and farm activities, trade and commerce were the most important activities in the study area as both poor and rich were engaged in this profession. Trading occurred at various scales. Handicrafts and Artisanship were found to be a major source of livelihood for many households which constitutes 7.50 per cent of respondents i.e., (28 respondents). In the study area Rural households were also engaged in Wage income related activities which constitutes around 8.29 per cent of respondents i.e., 31 respondents. In spite of these activities, the area under study earned its livelihood from the rental income also (7 respondents i.e., 1.88 per cent) which can be a supplement to the meagre income of the people. It was further observed that many of the Rural households were formally employed i.e., out of total 374 respondents, 19 (5.08 per cent) were engaged with the formal profession like Teacher, health worker defence service etc. The study's findings also show that a large number of rural households make a living by offering a variety of services, including shoe shining, barbering, laundry, butchering, mechanic work, transportation, tailoring, etc.

In summary, the study's findings showed that the majority of respondents—56.41 percent—were involved in crop production, farming, and livestock activities. Trade and commerce came in second with 12.03 respondents, followed by wage laborers such as Masons and MGNREGA, who made up around 8.29 percent of respondents, and handicrafts and artisans, which constitutes around 7.50 percent of respondents. The study's other livelihood methods include fishing, net and equipment repair, fish transportation, etc.; these techniques account for roughly 5.61 percent of respondents, with formally employed people making up the next largest percentage at 5.08 percent. Additional means of subsistence in the research area include rental income and service delivery, which account for roughly 1.88 percent and 3.20 percent of respondents, respectively. Therefore, it may be concluded that the vast majority of responders worked with the farm and livestock.

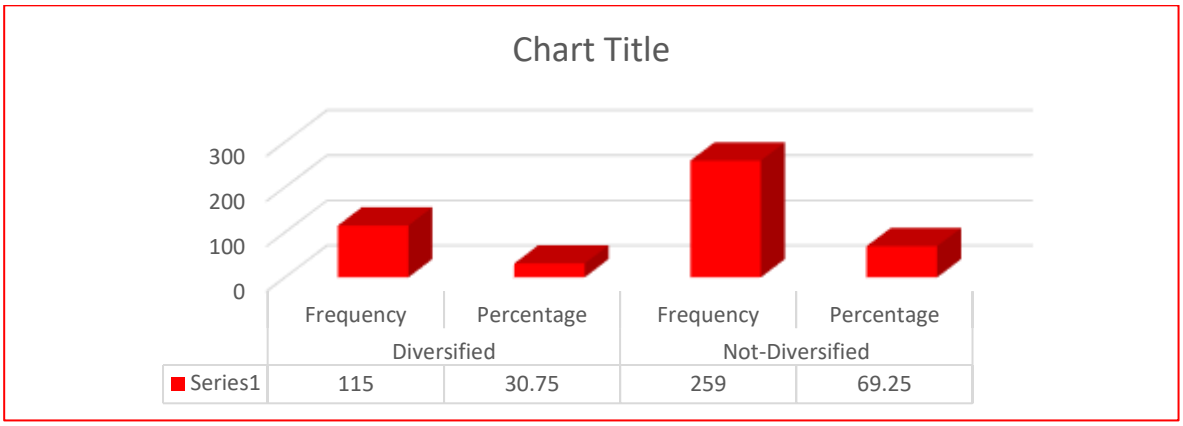
Table 1.3 Occupational Diversification of Households from one Livelihood Strategy into another Strategy

Diversified	**Not-Diversified**

Frequency	Percentage	Frequency	Percentage
115	30.75	259	69.25

Source: Field Survey 2023

Figure 1.2 Occupational Diversification of Households from one Livelihood Strategy into another Strategy



Source: Computed

Diversifying one's livelihood methods can be a choice or a requirement for households and individuals (Ellis, 2000). A combination of both (diversification of crop types and livelihood activities) or diversification outside of agriculture (towards skills that earn a living) can be the focus of diversification literature at times. Examples of this kind of diversification outside of agriculture include diversifying market-oriented agricultural commodities.

In the present study, the respondents are the rural households (Earning head of the family whether male or female). The results of the table 1.3 and figure 1.2 revealed that out of a total 374 respondents, only 115 (30.75 per cent) respondents have diversified their occupation from one portfolio to another from last one decade, while 259 respondents (69.25 per cent) didn't diversify their occupation from the traditional occupation.

Table 1.4 Distribution of diversification index among diversified households

Diversification Index		**Frequency**	**Percentage**	**Average value of SDI**
Low	(< 0.38)	25	21.74	**SDI Value= 0.32**
Medium	(0.38-0.63)	64	55.65	
High	(> 0.63)	26	22.61	
Total		115	100	
n =374	**Std. Dev= .166**	**Min.= 00.28**	**Max.= 0.797**	

Source: calculated from primary data

Table 1.4 shows the distribution of diversification extent among several diversifiers. The rate of livelihood diversification is measured by the Simpsons Index of Diversity (SDI), which has a range of 0 to 1. Perfect specialization and livelihood diversification are shown by values zero and one, respectively. The study's Simpsons Index of Diversity (SDI) average value was 0.32, which is less than the midway. This demonstrated how rural households' average degree of livelihood diversification is being taken advantage of. The study area's households are mostly involved in farming, raising livestock, and producing crops; their involvement in off-farm and non-farm activities is restricted. This is because

the majority of people who live in rural areas are vulnerable because they only work in agriculture and are therefore dependent on various risks (natural disasters), such as drought, a lack of irrigation water, the absence of alternative sources of income, etc. While formal wage employment, rent income, and self-employment are the new revenue streams that have formed for rural households in the study area, the majority of these businesses are operated by wealthy and educated farmers. The low level of livelihood diversification that has been observed indicates that farm households in the study area are less varied in their sources of income. This implies that an average respondent in the study area is involved in almost in small types of income-generating activities. It is clear from Table 1. 4, that the majority of the diversifiers (55.65%) had medium level of Diversification Index as against only 22.61 per cent of diversified households were under high level of Diversification Index. Diversification lessens both expected and unanticipated volatility, resulting in a smoother flow of revenue for the household. Combining businesses and activities that yield returns at different periods of the year helps improve predictable seasonal changes in income. Unpredictable swings might result in an unanticipated loss of revenue, but they can also be mitigated by a diverse portfolio of economic activity.

The study area's households are mostly involved in raising livestock and crops, with little to no involvement in non-farm pursuits. However, in addition to their involvement in other on-farm activities, they also don't actively pursue off-farm revenue-generating options, such as the study area's industries and services. Due to these uncontrollable circumstances, households in the research participate in a variety of economic activities insufficiently.

Conclusion

This study attempts to measure the level of occupational diversification using the survey data collected from 374 randomly selected households from three blocks of Cuddalore district. It has been found that the most significant activities in the study area, excluding the production of crops, farms, and livestock, are handicrafts and artisanship; the study area's SID is 0.32, which is less than the midpoint. This demonstrated how rural households' average degree of vocational variety is being taken advantage of. The government should keep up its efforts to create rural income-earning opportunities and assist farmers in increasing agricultural productivity through supportive policies like input utilization and product market creation in order to increase the degree of livelihood diversification.

References

- Regasa Megerssa, G., Negash, R., Bekele, A. E., & Nemera, D. B. (2020). Smallholder market participation and its associated factors: Evidence from Ethiopian vegetable producers. Cogent Food & Agriculture, 6(1), 1783173.
- Abera, A., Yirgu, T., & Uncha, A. (2021). Determinants of rural livelihood diversification strategies among Chewaka resettlers' communities of southwestern Ethiopia. Agriculture & Food Security, 10(1), 1-19.
- Juhro, S. M., & Iyke, B. N. (2020). Consumer confidence and consumption expenditure in Indonesia. Economic Modelling, 89, 367-377.
- Seng, K. 2015. The Effects of nonfarm activities on farm households' food consumption in rural Cambodia. Development Studies Research, 2(1): 77–89, DOI: 10.1080/ 21665095.2015.1098554
- Abiodun, T. C., Olutumise, A. I., & Ojo, S. O. (2019). Evaluation of choices of livelihood strategy and livelihood diversity of rural households in Ondo State, Nigeria. Journal of Social Sciences and Humanities, 5(1), 17-24.
- Anaman, K. A., & Adjei, K. D. (2021). Income diversification and economic welfare of rural households in the Volta Region of Ghana. Research in World Economy, 12(Spe 1), 120-137.
- Das, S., & Mitra, A. (2021). Does climate change perception make livelihood diversification more effective? evidence from the consumption mobility study of rural households. Delhi, Institute of Economic Growth.
- Hill, M. O. 1973. Diversity and evenness: a unifying notion and its consequences. Ecology 54: 427–432.
- Joshi, P. K., Gulati, A., Birthal, P. S., & Twari, A. (2003). Agricultural diversification in South Asia: Patterns, determinants, and policy implications. Discussion Paper No.
- Ellis, F. (2000). The determinants of rural livelihood diversification in developing countries. Journal of agricultural economics, 51(2), 289-302.