ISSN 2549-3922 EISSN 2549-3930

Journal of Regional and Rural Development Planning
(Jurnal Perencanaan Pembangunan Wilayah dan Perdesaan)
Februari 2025, 9 (1): 44-58
DOI: http://dx.doi.org/10.29244/jp2wd.2025.9.1.44-58

Does Migration Lead to Income Diversification in Rural Areas? A case Study in Cilacap Regency, Indonesia

Cahyo Wisnu Rubiyanto[1*], Fanny Widadie[2], Rosalia Natalia Seleky[3], & Ikhsan Fajar Alamsyah[1]

[1]Department of Agribusiness, Universitas Muhammadiyah Yogyakarta, Gedung Siti Walidah (F3 Lt.1), Kampus Terpadu UMY, Jalan Brawijaya, Tamantirto, Kasihan, Bantul, Daerah Istimewa Yogyakarta, Indonesia; [2]Department of Agribusiness, Sebelas Maret University, Jalan Ir. Sutami 36 A, Surakarta, Indonesia; [3]Department of Agricultural and Forest Science, Faculty of Life and Environmental Sciences, Shimane University, 060 Nishikawatsucho, Matsue, Shimane 690- 8504, Shimane, Japan;
[*]Corresponding author. e-mail: cahyo.wisnu@umy.ac.id
(Received: May 25th, 2024; Accepted: September 7th, 2024)

ABSTRACT

Migration plays a crucial role in the income augmentation efforts of numerous Asian nations, although its effect on income diversification is still uncertain. This study observed 168 households with 78 migrant households in four villages in Binangun and Nusawungu districts of Cilacap Regency, Indonesia to support their livelihoods and how remittance and income is distributed among them. The data was analyzed by Binary Logistic Regression analysis a statistical technique utilized for modeling the association between a dependent variable and independent variables, family size, land area, livestock count, remittances, total income, total investment, and migrant status. The results demonstrate substantial differences in income between households with migrants and those without migrants, highlighting the vital impact of remittances and the importance of small and medium-sized enterprises (SMEs) on developing rural economies. The results of statistics showed that remittances and total income had p-values of 0.000, highlighting their crucial role in the process of diversifying livelihoods. The limited impact of livestock suggests that it serves as a supplementary asset, whereas the lack of relevance of family size, land area, and investment implies that these factors may not be the main factors driving diversity in the research area. These findings enhance the overall comprehension of rural livelihoods by illustrating the diverse functions that various forms of capital have in determining household strategy. Additional study is required to enhance our comprehension of the interaction among remittances, migration, and livelihood strategies, establishing a basis for data-driven policies that promote economic resilience and expansion in rural regions.

Keywords: distribution, income diversification, migration, remittance, rural livelihood

INTRODUCTION

Remittances to rural areas have been sent as household's income by more migrants in Asian countries in recent years (Kakhkharov & Ahunov, 2022; Rigg et al., 2014; Yona & Mathewos, 2017). Many studies conducted in Southeast Asia and other Asian nations have examined migration and its effects on the rural livelihoods (Martin et al., 2013; Martin & Lorenzen, 2016; C.W Rubiyanto & Hirota, 2021). It has been discovered that prior movement networks and remittances in both regions contribute to increased migration opportunities, professional changes, and agricultural abandonment.

Studies conducted in Bangladesh revealed that people have varied their sources of income based on their age, level of education, and assets, highlighting the importance of these variables in the decision-making process of livelihood diversification (Akter et al., 2020). Also, migration raises income levels and strengthens the security of rural livelihoods (Lindenberg, 2002). Additionally, the changes in income sources brought about by globalization result in a gradual diversification of rural households' income (Rubiyanto & Hirota, 2022). This supports the notion that migration and remittances, two aspects of globalization that are essential to the economic sustainability of rural areas, help to diversify sources of income.

The livelihood method, as applied in these research, highlights the beneficial relationships between migration and development with respect to poverty alleviation and diversification of livelihoods. De Haan (2012) presents a perspective that differs from the conventional negative perception of migration. Instead, it emphasizes the significant role of remittances in supporting diverse livelihood alternatives. Furthermore, research on agriculture have brought attention to the ways in which migration and the flood of remittances, which frequently drive the deagrarianization of rural livelihoods (Bryceson, 1996), affect rural households and their susceptibility. For instance, as demonstrated in many regions of Asia, the survival of the "rural smallholder" is increasingly ascribed to the diversification of sources of income and the part played by remittances obtained through migration to other nations as workers, urban centers, or the locations of commodity crop booms (Hurni & Fox, 2018; Vicol et al., 2018).

Understanding how migration affects rural livelihood strategies has gained attention in recent years, especially in developing nations like Indonesia (Nopitasari & Imelda, 2019). Numerous research and discussions have focused on the effects of migration as a diversification strategy in conjunction with agriculture and other industries (Bang et al., 2022; Khumya & Kusakabe, 2015; Mishra et al., 2022). For rural households seeking to diversify their sources of income, both internal and external migration have become essential strategies (Ellis, 2008; Hansson et al., 2013; Schneider et al., 2017). These migrations present chances to increase earning potential, lower income risk, and protect against socioeconomic and environmental shocks. For rural households, particularly those with restricted access to resources, the decision to migrate is both a personal and a strategic one (Rerkasem, 2005; Widiatmaka et al., 2016). Therefore, the effects of migration and the remittances that follow on rural economies are intricate and multifaceted (Ahmad, 2003; Stoian & Centre, 2014).

Examining the many livelihood strategies used by rural households for their survival, how remittances influence these strategies, and the wider effects on livelihood diversification are vital in this setting. In order to provide readers a thorough grasp of this dynamic relationship, this study will examine the portfolio of income sources and compare them between migrant and non-migrant households on rural lives. The dynamics and role of migration and its relationship to livelihood diversification in rural areas are clarified by this survey conducted in Cilacap Regency, Indonesia.

METHODOLOGY

Study Area

The study was conducted in the rural West Javan districts of Binangun and Nusawungu in the Cilacap Regency of West Java [Figure 1]. The Cilacap Regency covers an area of 2,249 square kilometers and is located in the southern part of Central Java. The characteristics of Cilacap are influenced by various variables, including migration patterns and the size of rice fields. Rural areas of the county are seeing a significant impact of individuals traveling in search of broader sources of household income and access to resources not available locally. As a result, rural households are increasingly choosing non-agricultural work and other diverse ways of making a living, such as small and medium-sized enterprises (SMEs) and migration, instead of relying solely on conventional agricultural techniques (Depeasantization & Araghi, 1995; Hansson et al., 2013).

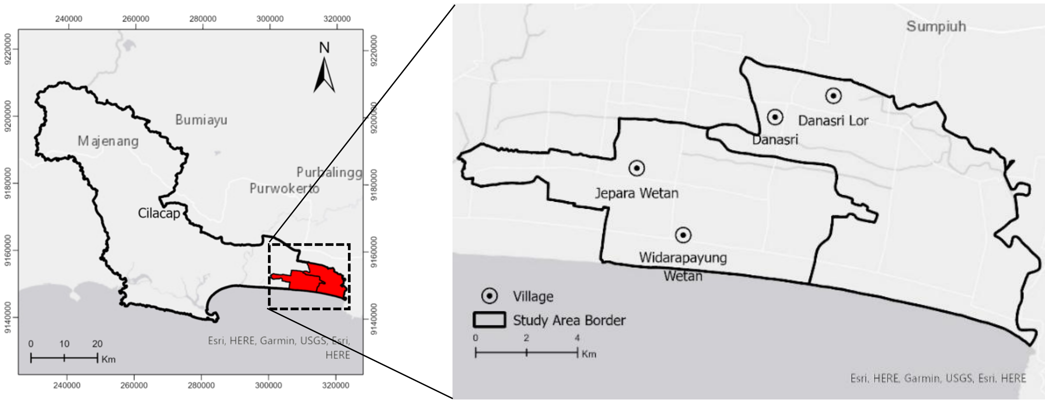

Figure 1. Map of Study Area in Cilacap Regency

The remittances received by migrants employed in various sectors such as factories, hospitals, and domestic services, who are working in countries like Japan, Korea, Malaysia, Singapore, and Hong Kong, have a substantial influence on the economic activities and livelihoods in Cilacap Regency. Conducting research on household livelihood strategies and the specific impacts of remittances on rural development and environmental conservation is essential due to the ongoing socioeconomic and cultural changes caused by migration and diversification of livelihoods in Cilacap Regency. Comprehending these characteristics is crucial for formulating adaptable strategies and plans for sustainable development that can accommodate the evolving requirements of the rural populations in Cilacap Regency (Cinner et al., 2010; Toiba et al., 2015).

In order to examine the influence of remittances on rural livelihoods, we chose four villages as our research locations: Widarapayung and Jepara Kulon in Binangun District; Danasri Lor and Danasri Kidul in Nusawungu District [Table 1]. These communities are situated along the coastline of the Cilacap Regency, at an elevation of 7–10 meters above sea level. The distance to the district center is approximately thirty to forty kilometers, which can be covered in around fifty to sixty minutes by automobile. Local people in these villages rely primarily on agriculture, particularly rice cultivation, as their main source of income. Wage labor, small and medium-sized enterprises (SMEs), and migrants are among the various activities. The majority of houses in the villages of Widara Payung and Jepara Kulon in the Binangun District are owned by migrants workers. Nevertheless, the majority of individuals residing in the villages of Danasri Lor and Danasri Kidul in the Nusawungu region are engaged in agricultural activities.

The sample sizes in each village differ due to the distinct socioeconomic characteristics of the areas [Table 1]. In Widara Payung and Jepara Kulon, a significant portion of the population consists of migrant workers, leading to a larger sample size in these villages. Conversely, in the villages of Danasri Lor and Danasri Kidul within the Nusawungu region, the majority of residents are engaged in agricultural labor, resulting in a smaller but focused sample. Additionally, the openness and cooperation of village heads also influenced the sample selection process, as their willingness to participate facilitated the gathering of data in certain areas more than in others.

The total sample size across the district was selected to 90 households, purposively with 50% migrant and 50% non-migrant household. However, after conducting an initial analysis, 12 households were excluded from the sample because they exhibited characteristics that could potentially skew the results and compromise the integrity of the findings. The differences in sample sizes across the villages reflect the varied economic activities and population dynamics, while the adjustments made after the basic analysis were necessary to ensure the accuracy and reliability of the study's conclusions.

Table 1. General information of the selected villages

	Binangun District		Nusawungu District	
	Widarapayung Village	Jepara kulon Village	Danasri lor Village	Danasri Kidul Village
Population	6,212	6,709	6,479	5,422
No. of Household	44	36	76	12
Elevation (m)	7	8	10	10
Distance to district center (Km)	32	29	38	42
Time to district center (minutes)	50	48	59	65
Main livelihood	Farmers, wage labor, migrant, SMEs	Farmers, wage labor, migrant, SMEs	Farmers, wage labor, migrant, SMEs	Farmers, wage labor, migrant, SMEs
Number of Migrant	26	17	37	8

Data Collection

We carried out a survey from 21 to 31 August 2023 to gather data on the movement of local people, the transfer of money, and the activities that generate revenue for households in specific areas. Total number of households analyzed was 168, with 78 of them being migrant households. The survey facilitated the identification of crucial factors that influence migration decisions and provided insights into the effects of remittances on rural livelihoods and strategies for diversification. We performed face-to-face interviews with research participants by personally visiting households in each location.

During the interviews, we gathered data regarding the level of household participation in migration, the destinations of their migration, the quantity of remittances they received, and the manner in which these remittances were utilized by the household. In addition, we gather data pertaining to food security, assets, and investments. The data collected from the initial survey will serve as the foundation for doing additional analysis and exploring the relationship between remittances and migration, the livelihood diversification.

Table 2 presents data that classifies and provides explanations for factors that are relevant to the study of household livelihoods in rural areas. Every variable is associated with a distinct form of capital, such as human, natural, financial, physical, or social capital. These many types of capital are essential in determining household income and investment plans. These factors offer valuable information regarding the resources accessible to households and their ability to maintain and enhance their livelihoods.

Family size is considered a measure of human capital. The labor capacity, income production potential, and overall economic resilience of a household can be considerably impacted by the total number of family members. Families with a bigger number of members may have a larger workforce for agricultural tasks, but they may also experience increased financial pressure as a result of having more dependents to support. Comprehending the number of individuals in a family is important for evaluating the amount of human resources that a household possesses. This is a crucial aspect in defining the techniques a household employs to sustain its livelihood and diversify its revenue.

The classification of both land area and livestock falls under the category of natural capital. The aggregate size of arable land significantly impacts the availability of natural resources for households, which in turn has a direct influence on agricultural output and subsequent income levels. Likewise, the number of livestock possessed by a household also serves as natural capital, offering supplementary revenue streams through the trade of animal products or labor. These factors are crucial for comprehending the significance of natural resources in supporting rural livelihoods and their contribution to the household's overall income.

Remittance and Total income are regarded as indications of financial capital, whilst Total investment indicates physical capital. Remittances play a crucial role in the financial capital of a region, frequently providing additional or even higher income compared to local sources, especially in households with migrants. The aggregate revenue derived from various sources provides a thorough assessment of a household's economic condition, whereas the total investment indicates the ability to enhance or sustain tangible assets, such as infrastructure or technology. These variables emphasize the significance of both financial and physical capital in guaranteeing economic stability for households and facilitating additional investment in improving livelihoods.

Finally, the classification of migrant status falls under the category of Social Capital, which differentiates between households with migrants and those without migrants. The migration status of individuals can have significant consequences for their social capital, which in turn affects their ability to access networks, information, and opportunities. This ultimately impacts their ability to diversify their income and maintain economic resilience. It is crucial to comprehend the significance of social capital in rural areas, specifically in relation to migration, in order to evaluate how households adjust to evolving economic circumstances and utilize their social networks to improve their lives.

Data Analysis

The data obtained from the survey will be examined using quantitative methodologies. The quantitative study will involve the use of descriptive statistics to provide a summary of the migration patterns, remittance amounts, and the distribution of household income. This task entails computing indicators of central tendency, such as the number of households involved in each activity and the average amount of remittances. It also involves identifying other sources of income and determining their percentage contribution. In addition, frequency distribution tables will be created to demonstrate the occurrence of various livelihood activities among the families.

We employed Binary Logistic Regression analysis, by using SPSS, a statistical technique utilized for modeling the association between a dependent variable and independent variables [Table 2]. The dependent variable in this instance is the number of income sources, which serves as an indicator of livelihood diversity. The Binary Logistic Regression analysis model is used to analyze the impact of many parameters; family size, land area, number of livestock, remittances, total income, total investment, and migrant status, on the probability of a household having numerous sources of income. The model assesses the importance and intensity of these connections to determine the factors that play a crucial role in encouraging livelihood diversification. This aids researchers in comprehending the primary factors that influence households to engage in different income-generating activities.

Table 2. Descriptions and explanatory of variables

Variables	Description	Explanatory
Family size	Total family member	Represent the Human capital
Area of land	Total area of agriculture land	Represent the Natural capital
Number of livestock	Total livestock of each household	Represent the Natural Capital
Remittance	Total income received from remittance in IDR	Represent the Financial Capital
Total income	Total income received per household from all income sources in IDR	Represent the Financial Capital
Total Investment	Total value of investment in IDR	Represent the Physical Capital
Status of Migrant	Migrant of Non-Migrant	Represent the Social Capital

The quantitative approach will utilize inferential statistics to analyze the connections between variables. The quantitative findings will present a thorough summary of the numerical data gathered in the study, illuminating the quantitative aspects and patterns of migration, remittance, and the corresponding strategies for diversifying livelihoods in the rural areas of Cilacap Regency.

The statistical analysis in Table 3 evaluates the fit and accuracy of the model used in the study. The Omnibus Test of Model Coefficients shows a chi-square value of 74.376 with a significance level of 0.00, indicating a significant influence of the model. This test confirms that the model with all included predictors significantly improves the prediction of the outcome variable compared to a model without them. The Model Summary provides R-squared statistics, with the Cox & Snell R^2 at 35.8% and the Nagelkerke R^2 at 50.6%, suggesting that the independent variables explain a substantial portion of the variability in the dependent variable. The Nagelkerke R^2, which adjusts the Cox & Snell R^2 to allow for a maximum value of 1, indicates that the model explains about half of the variation, which is considered a strong result in social sciences research. The Hosmer and Lemeshow test, with a chi-square value of 3.962 and a significance level of 0.864, further indicates a good fit, suggesting that the predicted probabilities align well with the observed data. Additionally, the Classification table reveals an overall percentage correct of 81.5%, demonstrating the model's accuracy in predicting the outcome variable. This high accuracy underscores the model's strong predictive power and reliability, making it a robust tool for understanding the relationships between the variables in the study.

Table 3. Statistical model of test (n=168)

Test Statistic	Value		Notes
Omnibus Test of Model Coefficients	Chi-square 74.376	Significant 0.00	Significant influence
Model Summary	Cox & Snell R^2 35.8%	Nagelkerke R^2 50.6%	Significant influence
Hosmer and Lemeshow test	Chi-square 3.962	Significant 0.864	Model is fit
Classification table	Overall percentage correct 81.5%		Model is accurate

RESULTS AND DISCUSSION

Socio economy in the study site

A summary of livelihood activities in the study site is shown in Table 4. The provided table presents information about different income sources in four specific areas: Widara Payung, Jepara Kulon, Danasri Lor, and Danasri Kidul village. The table outlines various income sources prevalent in the mentioned areas. These sources include Food Selling SMEs, Grocery Shops, Trading, Small-scale Industry, Service, Livestock Business, Fisheries Business, Crafts, Other Business, Wage, Pension, Gifts, Government Support, Other Income Sources, International Remittance, Local Remittance, and Other Remittance. This diverse range of income sources reflects the economic activities and livelihoods pursued by the households in the respective regions. There are noticeable variations in the income levels across the different income sources and regions. For example, International Remittance appears to be a significant income source. On the other hand, the Small-scale Industry seems to be less prominent, with income recorded in only Widara Payung and Danasri Lor. Wage labor is a widespread means of earning income in all regions, but it is most concentrated in Danasri Kidul, where 38 households (50%) depend on wages for their livelihood. This indicates a significant prevalence of wage-based agriculture in this specific region compared to other areas (Mishra et al., 2022; Van Hoang et al., 2019).

Table 4. Characteristics of livelihood activities and average of income source of the households in a year in each village

No	Income Sources	Binangun District (n=80)				Nusawungu District (n=88)			
		Widara Payung (n=44)		Jepara Kulon (n=36)		Danasri Lor (n=76)		Danasri Kidul (n=12)	
		HH (%)	Income (thousand IDR)	HH (%)	Income (thousand IDR)	HH (%)	Income (thousand IDR)	HH (%)	Income (thousand IDR)
1	Food Selling SMEs	13.64	5434.1	19.44	5761.1	2.63	2336.0	33.33	5852.3
2	Grocery Shop	15.91	6272.7	2.78	3000.0	2.63	928.0	8.33	13846.2
3	Trading	9.09	6818.2	22.22	5447.2	6.58	2024.0	8.33	138.5
4	Small-scale Industry	2.27	545.5	0.00	0.0	1.32	1280.0	0.00	0.0
5	Service	15.91	3334.1	13.89	4183.3	5.26	880.0	8.33	461.5
6	Livestock Business	11.36	2006.4	2.78	69.4	5.26	696.0	0.00	0.0
7	Fisheries Business	6.82	724.5	0.00	0.0	1.32	104.0	0.00	0.0
8	Crafts	4.55	927.3	2.78	6666.7	5.26	148.0	0.00	0.0
9	Other Business	29.55	9751.4	22.22	2942.8	2.63	832.0	8.33	553.8
10	Wage	22.73	4718.2	41.67	5866.7	50.00	17764.5	41.67	8400.0
11	Pension	6.82	2045.5	0.00	0.0	2.63	928.0	0.00	0.0
12	Gifts	0.00	0.0	2.78	266.7	1.32	48.0	0.00	0.0
13	Government Support	0.00	0.0	11.11	268.1	11.84	480.0	66.67	769.2
14	Other Income Sources	20.45	4259.1	19.44	2445.8	40.79	6960.2	33.33	9530.8
15	International Remittance	47.73	29886.4	41.67	17513.9	43.42	21293.3	66.67	44769.2
16	Local Remittance	9.09	1409.1	5.56	2055.6	9.21	1429.3	0.00	0.0
17	Other Remittance	2.27	50.0	0.00	0.0	3.95	560.0	0.00	0.0

The data emphasizes the importance of remittances, whether international or local, as substantial contributors to household income. International remittances are a significant source of income in all four categories, highlighting the economic reliance on family members employed abroad (Adekunle et al., 2022; Oliva, 2017). This phenomenon is common in many developing regions. Income sources within the same region also exhibit variations. For instance, in Danasri Kidul, the primary sources of income are wages and international remittances, while in Widara Payung, small and medium enterprises (SMEs) involved in food selling and grocery shops make substantial contributions. This implies that there are variations in economic activities and opportunities even in geographically limited areas.

The data provided allows for a thorough analysis of the income sources in the given regions, highlighting the wide range of economic activities and the importance of remittances and wage labor in household earnings. Gaining a comprehensive understanding of these patterns is essential for policymakers and researchers to develop targeted interventions and support systems that promote sustainable economic development in these regions.

Income Composition of Migrant and Non-Migrant Household

Figure 2 presents a comparison of migrant and non-migrant households in relation to their sources of income. The percentages indicate the proportion of households relying on each specific income source within each category. A notable observation is the significant influence of overseas remittances on the income composition of migrant households. International remittances constitute 55% of the income for migrant households, underscoring the crucial role of family members employed abroad in sustaining the financial well-being of their households in their home countries. Wage labor also plays a significant role, accounting for 14% of the income. Additionally, food-selling small and medium enterprises (SMEs) and grocery shops are important contributors, each sector accounting for 4% of the total income.

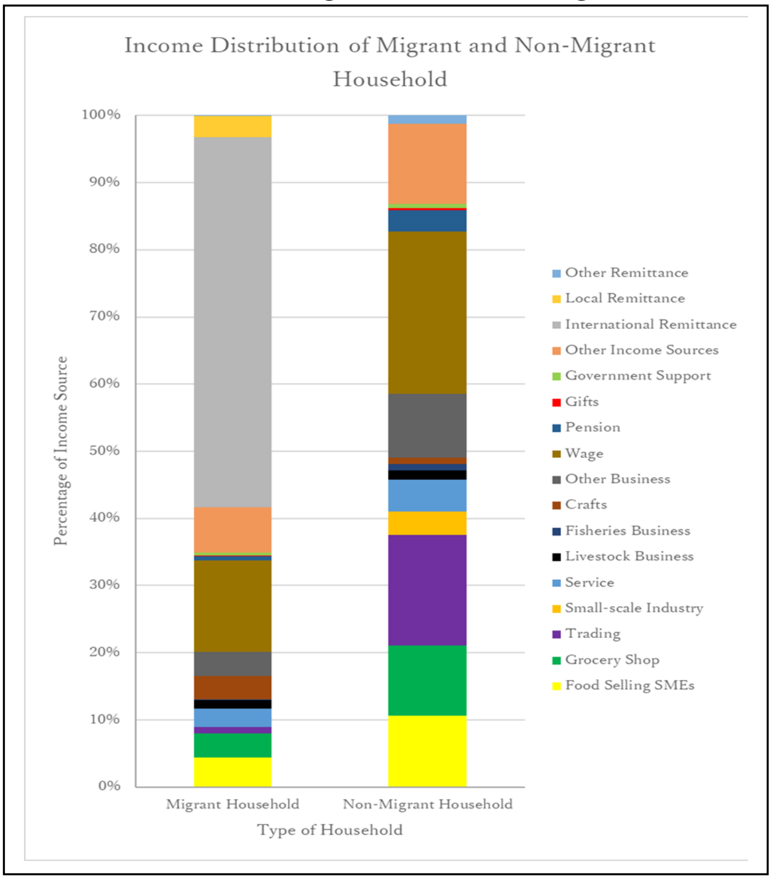

Figure 2**.** Income Distribution of Migrant and Non-Migrant Household

On the other hand, non-migrant households have a wider range of income sources. Wage labor is the primary source of revenue, accounting for 24% of their total income. Trade is the second most important source, contributing 16% of the income. Other significant sources include other income sources (12%), food-selling small and medium enterprises (11%), and grocery shops (11%). Notably, overseas remittances do not contribute to the income of non-migrant households, emphasizing their reliance on local economic activities (Grunbuhel & Schandl, 2005; Ngoc & Yokoyama, 2019).

Wage labor is an important source of income for both migrant and non-migrant households. However, the data indicates that non-migrant households have a greater dependence on wage income, which constitutes 24% of their total income, compared to migrant households where it only accounts for 14%. This suggests that there may be more job opportunities available for non-migrant households, as indicated by previous studies (Barret et al., 2001; Shirai et al., 2017; Yuko & Rambo, 2017).

Government assistance provides a small yet significant portion of the total income for both migrant and non-migrant households. Migrant households receive no government support, indicating that they mostly depend on alternative sources such as foreign remittances and wages for their financial sustenance. For non-migrant households, government assistance accounts for a mere 1% of their total income. The limited government assistance to migrant households may be attributed to a range of factors, such as potential difficulties in receiving aid for households with overseas workers or a reduced dependence on such aid due to remittances serving as the primary income source. Although government assistance only accounts for a small portion (1%) of the income for non-migrant households, it still contributes to their overall financial well-being. Nevertheless, the small proportion indicates that non-migrant households primarily obtain their income from diverse sources, including employment, trade, and other revenue-generating activities.

Role of Remittance for the household

The significant disparity in financial support provided through overseas remittances between households with migrants and those without underscores the economic impact of migration on household finances. Migrant households rely heavily on remittances from family members employed either overseas or domestically. The importance of remittances in the economic dynamics of migrant households cannot be overstated. The data clearly illustrates the substantial dependence on international remittances as the main source of income for migrant households. This interdependence underscores the crucial role of family members employed overseas in maintaining the financial well-being of their households within the local context (Carr, 2020).

International remittances make a significant contribution to the total income of migrant households, enabling them to meet their basic needs and invest in various economic endeavors. Additionally, the prevalence of food-selling small and medium enterprises (SMEs) and grocery shops as substantial contributors to household income highlights the entrepreneurial activities within these communities. SMEs are essential for diversifying household income and demonstrate the entrepreneurial spirit and economic resilience in the regions studied (Adger, 2000; Ayuttacorn, 2019; Heinimann et al., 2017).

The data clearly shows that the income distribution of non-migrant households is markedly different from that of migrant households. Although non-migrant households do not benefit from foreign remittances, their reliance on wage labor and local economic activities indicates a distinct economic environment. This comparison highlights the different economic dynamics and livelihood strategies of migrant and non-migrant households, necessitating specific interventions to adequately support both groups (Rigg, 2005; Rigg et al., 2012). Remittances are crucial for improving rural livelihoods as they provide a steady income, meet household needs, and contribute to economic development and resilience in rural areas.

Role of SMEs for the Household

The research reveals that the significance of small and medium enterprises (SMEs) in diversifying household income is a crucial factor. Within the research site, SMEs such as food-selling businesses and grocery shops make a significant contribution to the income of both migrant and non-migrant households. The importance of these SMEs as vital sources of revenue highlights the impact of entrepreneurial activity in transforming the economic environment of the regions under study.

The diagram illustrates the contrasting income structures between households with migrants and those without. International remittances are a major source of income for migrant households, underscoring their economic dependence on family members working overseas (Liao et al., 2015; Yuko & Rambo, 2017). This reliance emphasizes the need for policies and initiatives that support and harness the potential of remittances for sustainable development in rural regions. In contrast, non-migrant households have a broader range of income sources, such as wage labor and local economic activities, rather than relying solely on migration (Abdulai & CroleRees, 2001; Htway et al., 2014; Wan et al., 2016).

Diversification Strategies of the Household

The diversification strategies employed by households, particularly in rural parts of Cilacap Regency, have a significant impact on their economic well-being and resilience. Based on the statistics, migration emerges as a crucial element of these strategies, especially for rural households that rely on foreign remittances as a substantial income source. This underscores the importance of households strategically diversifying their income sources to reduce risks and enhance their economic stability (Martin & Lorenzen, 2016; Nopitasari & Imelda, 2019).

A significant finding from the data is the prevalence of remittances, which constitute around 55% of the income for households with migrants. This underscores the strategic decision of households to engage in migration as a means to diversify their income sources and mitigate risks. Migration serves as a strategic approach to reduce economic uncertainties and vulnerabilities in their local settings (Adger, 2006; Barrios, 2008; Sène-Harper et al., 2019). Moreover, the relationship between migration, remittances, and household economic conditions demonstrates the intricate dynamics of livelihood diversification. Migrant households strategically manage their income sources to ensure financial stability, as evidenced by studies conducted by Nagarajan & Dor (2009) and Yadeta & Hunegnaw (2022).

Furthermore, the significance of small and medium-sized enterprises (SMEs), such as food-selling businesses, grocery shops, and other ventures, in enhancing household income highlights the complex nature of diversification methods. The entrepreneurial spirit is evident in many communities, where households actively engage in diverse economic activities to expand and safeguard their income sources. This involvement in entrepreneurial activities demonstrates the adaptability of rural households as they navigate economic challenges and capitalize on opportunities for sustainable livelihoods (Hussein & Nelson, 1998; Pedersen, 2010).

The intentional decisions by households to participate in migration, utilize remittances, and engage in entrepreneurial endeavors highlight the complexity of their diversification strategies. These decisions are influenced by various factors, including economic incentives, risk reduction, and the pursuit of opportunities beyond the immediate context. Therefore, it is crucial for policymakers and development practitioners to understand the underlying reasons and dynamics behind these diversification initiatives. This understanding will enable the design of tailored interventions that promote sustainable economic development in rural areas. By recognizing the strategic importance of household diversification and the complex network of decisions involved, specific programs can be developed to strengthen and enhance these strategies, ultimately fostering economic resilience and prosperity in rural areas.

The correlation between diverse household components and livelihood diversification is a crucial field of research in rural development, offering valuable insights into how various variables impact the strategies that households employ to sustain and enhance their livelihoods. The findings given in Table 5 demonstrate noteworthy outcomes in this context. Family size has a significance level of 0.128, which suggests that it does not have a statistically significant effect on livelihood diversification in this study. However, the current literature typically implies that having a larger family can help in diversifying livelihoods by offering more labor resources that can be assigned to other economic activities (Ellis, 2000; Reardon, 1997). The insignificance in this context suggests that family members in the area is going to work as Migrant that lead less diversification (Rubiyanto & Hirota, 2021).

Table 5. Results of analysis of the factors affecting the livelihood diversification

Variables	S.E.	Sig.
Family size	0.194	0.128
Area of land	0.000	0.993
Number of livestock	0.044	0.059*
Remittance	0.000	0.000***
Total income	0.000	0.000***
Total Investment	0.000	0.229
Status of Migrant	0.655	0.000***

Note: *, ***, indicate significant difference at $p<0.10$ and $p<0.01$, respectively

The area of land demonstrates a significance level of 0.993, indicating that there is no discernible impact on the diversification of livelihoods. This outcome questions the conventional belief that land is a vital resource in rural lifestyles (Barrett et al., 2001). Within the research area, it appears that the size of land does not have a direct impact on diversification because of restricted land productivity on one crop of rice field and also a shift towards alternative sources of income that are not related to agriculture.

The significant level of 0.059 for the number of livestock suggests a moderate impact on livelihood diversification. Livestock is commonly seen as a type of natural asset that may be readily converted into cash, enabling households to have the freedom to participate in various income-generating endeavors (Alary et al., 2011). The marginally significant outcome indicates that owning livestock may contribute to diversification, while it is not the exclusive determining factor.

Remarkably, both remittance and total income had p-values of 0.000, highlighting their crucial roles in fostering diversification of livelihoods. Remittances offer households supplementary financial resources that can be allocated to diverse activities, thereby diminishing reliance on a sole income source and facilitating the management of risks (de Haan, 2000; Stark & Bloom, 1985). Moreover, an increased total income allows households to effectively pursue and maintain various sources of income, highlighting the significance of financial resources in expanding their range of economic activities and investment (Ellis, 2000). Despite the total investment does not have a significant impact on livelihood diversification, local people in the area could maintain the conversion of agricultural land, which is currently happening in many Southeast Asian countries, by buying the rice field as their asset to their survival. The findings indicate that investing in natural capital such as agricultural land is more strongly linked to long-term income stability rather than immediate diversification attempts (Barrett et al., 2001).

The status of migrant has a high level of significance (0.000), suggesting a substantial correlation with livelihood diversification. Total income from remittance in this area is higher than other income sources, this suggested that status of migrant lead to less diversification. However, this study suggested that remittances can potentially contribute to more progressive livelihood diversification, enabling families to invest in new income-generating activities. By investing in agricultural innovations, small businesses, or other productive assets, households can build more sustainable and resilient livelihoods rather than physical asset such as building bigger house and buying the cars or motorbikes. This approach reduces the risk associated with over-dependence on remittances and enhances long-term economic security. This aligns with existing literature, which underscores migration as a key mechanism linking rural households to broader economic networks and improving opportunities for diversification (Tacoli, 2002; McDowell & de Haan, 1997). Nonetheless, the long-term success of this strategy hinges on how households manage and invest their remittance income.

CONCLUSIONS AND RECOMMENDATIONS

To summarize, the thorough examination of the income composition of migrant and non-migrant households highlights the crucial significance in influencing rural livelihoods diversification. Financial capital, specifically through remittances and total income, plays a crucial role in the process of diversifying livelihoods, lead to more less diversification. The significance of migration as a means of earning a living is underscored by the emergence of migrant status as a crucial determinant. The limited impact of livestock suggests that it serves as a supplementary asset, whereas the lack of relevance of family size, land area, and investment implies that these factors may not be the main factors driving diversification in the research area.

An essential aspect of creating focused interventions is understanding the diverse economic activities undertaken by households in the local economy, as well as their connections to migration, remittances, and other activities. By recognizing the intricate choices made by households to ensure their financial stability and overcome obstacles. The effective use of remittances, support for entrepreneurship, and implementation of tailored development programs have the potential to stimulate economic growth, reduce poverty, and progressive diversification in these communities (Start & Johnson, 2004; Sunderlin et al., 2005; Rubiyanto & Hirota, 2022). Therefore, it is essential to acknowledge and utilize the strategic diversification plans of rural households to promote sustainable economic development and prosperity.

A comprehensive understanding of government support necessitates additional context, including the precise forms of support offered (e.g., social assistance, subsidies, grants) and the criteria for qualification (Alther et al., 2002; Barrios, 2008; Yuko & Rambo, 2017). Moreover, the efficacy of government assistance programs may differ depending on regional policy. Further examination and investigation of the relationship between remittances, migration, and livelihood strategies are necessary to develop a comprehensive understanding the dynamics and to guide evidence-based policies aimed at promoting economic resilience and growth in these regions.

ACKNOWLEDGEMENT

The completion of this study would not have been possible without the valuable contributions of the respondents who shared their experiences and insights. Their willingness to provide information and engage in the research process is greatly appreciated.

REFERENCES

Abdulai, A., & CroleRees, A. (2001). Determinants of income diversification amongst rural households in Southern Mali. Food Policy, 26(4), 437–452. https://doi.org/10.1016/S03069192(01)00013-6

Adekunle, I. A., Tella, S. A., & Ogunjobi, F. O. (2022). Remittances and the future of African economies. International Migration, 60(5), 252–270. https://doi.org/10.1111/imig.12951

Adger, W. N. (2000). Social and ecological resilience: are they related? Progress in Human Geography, 24(3), 347–364. https://doi.org/10.1191/030913200701540465

Adger, W. N. (2006). Vulnerability. Global Environmental Change, 16(3), 268–281. https://doi.org/10.1016/j.gloenvcha.2006.02.006

Ahmad, A. (2003). Rural Poverty and Agricultural Diversification in Thailand * Department of Agricultural and Resource Economics October 2003 Rural Poverty and Agricultural Diversification in Thailand. 46(0), 1–24.

Akter, M., Ahmed, J. U., Fatema, K., Datta, T., & Akter, K. (2020). Factors Affecting Extent of Haor Livelihood Diversification in Sunamganj District, Bangladesh. Asian Journal of Agricultural Extension, Economics & Sociology, November, 43–51. https://doi.org/10.9734/ajaees/2020/v38i1030429

Alary, V., Corniaux, C., & Gautier, D. (2011). Livestock's contribution to poverty alleviation: How to measure it?. World Development, 39(9), 1638-1648. 10.1016/j.worlddev.2011.02.008

Alther, C., Castella, J. C., Novosad, P., Rousseau, E., & Hieu, T. T. (2002). Impact of accessibility on the range of livelihood options available to farm households in mountainous areas of northern Viet Nam. Doi Moi in the Mountains: Land Use Changes and Farmers' Livelihood Strategies in Bac Kan Province, Vietnam, May 2014, 121–146.

Ayuttacorn, A. (2019). Social networks and the resilient livelihood strategies of Dara-ang women in Chiang Mai, Thailand. Geoforum, 101(February), 28–37. https://doi.org/10.1016/j.geoforum.2019.02.022

Bang, J. T., Mitra, A., & Wunnava, P. V. (2022). Hollowing out the middle? Remittances, poverty, and income inequality in Nigeria. Migration and Development, 11(3), 543–559. https://doi.org/10.1080/21632324.2020.1806599

Barret, C. B., Reardon, T., & Webb, P. (2001). Nonfarm income diversification and household livelihood strategies in rural Africa: concepts, dynamics, and policy implication. Food Policy, 26(12), 315–331. https://doi.org/10.1074/JBC.274.42.30033.(51)

Barrios, E. (2008). Infrastructure and rural development: Household perceptions on rural development. Progress in Planning, 70(1), 1–44. https://doi.org/10.1016/J.PROGRESS.2008.04.001

Bryceson, D. F. (1996). Deagrarianization and Rural Employment in sub-Saharan Africa: A Sectoral Perspective. World Development, 24(1), 97–111.

Carr, E. R. (2020). Resilient livelihoods in an era of global transformation. Global Environmental Change, 64(June), 102155. https://doi.org/10.1016/j.gloenvcha.2020.102155

Cinner, J. E., McClanahan, T. R., & Wamukota, A. (2010). Differences in livelihoods, socioeconomic characteristics, and knowledge about the sea between fishers and non-fishers living near and far from marine parks on the Kenyan coast. Marine Policy, 34(1), 22–28. https://doi.org/10.1016/j.marpol.2009.04.003

de Haan, A. (2000). Migrants, livelihoods, and rights: The relevance of migration in development policies. Social Development Working Paper, No. 4, London: Department for International Development.

De Haan, L. J. (2012). The livelihood approach: A critical exploration. Erdkunde, 66(4), 345–357. https://doi.org/10.3112/erdkunde.2012.04.05

Depeasantization, G., & Araghi, F. A. (1995). Global Depeasantization, 1945-1 990. 36(2), 337–368.

Ellis, F. (2000). The determinants of rural livelihood diversification in developing countries. Journal of Agricultural Economics, 51(2), 289-302. https://doi.org/10.1111/j.1477-9552.2000.tb01229.x

Ellis, F. (2008). The Determinants of Rural Livelihood Diversification in Developing Countries. Journal of Agricultural Economics, 51(2), 289–302. https://doi.org/10.1111/j.1477-9552.2000.tb01229.x

Grunbuhel, C. M., & Schandl, H. (2005). Using land-time-budgets to analyse farming systems and poverty alleviation policies in the Lao PDR. International Journal of Global Environmental Issues, 5(3/4), 142. https://doi.org/10.1504/ijgenvi.2005.007990

Hansson, H., Ferguson, R., Olofsson, C., & Rantamäki-Lahtinen, L. (2013). Farmers' motives for diversifying their farm business - The influence of family. Journal of Rural Studies, 32, 240–250. https://doi.org/10.1016/j.jrurstud.2013.07.002

Heinimann, A., Mertz, O., Frolking, S., Egelund Christensen, A., Hurni, K., Sedano, F., Parsons Chini, L., Sahajpal, R., Hansen, M., & Hurtt, G. (2017). A global view of shifting cultivation: Recent, current, and future extent. PLOS ONE, 12(9), e0184479. https://doi.org/10.1371/journal.pone.0184479

Htway, S. S., Phyo, A. S., Grunbuhel, C. M., & Williams, L. J. (2014). Changing Livelihoods of Farming and Landless Households in Ayeyarwaddy Delta. Asia Pacific Sociological Association (Apsa) Conference Transforming Societies: Contestations and Convergences in Asia and the Pacific, July, 1–18.

Hurni, K., & Fox, J. (2018). The expansion of tree-based boom crops in mainland Southeast Asia: 2001 to 2014. Journal of Land Use Science, 13(1–2), 198–219. https://doi.org/10.1080/1747423X.2018.1499830

Hussein, K., & Nelson, J. (1998). Sustainable Livelihood and Livelihood Diversification.

Kakhkharov, J., & Ahunov, M. (2022). Do migrant remittances affect household spending? Focus on wedding expenditures. Empirical Economics, 63(2), 979–1028. https://doi.org/10.1007/s00181-021-02163-8

Khumya, T., & Kusakabe, K. (2015). Road development, and changes in livelihood and mobility in Savannakhet, Lao PDR. Development in Practice, 25(7), 1011–1024. https://doi.org/10.1080/09614524.2015.1071782

Liao, C., Barrett, C., & Kassam, K. A. (2015). Does Diversification Improve Livelihoods? Pastoral Households in Xinjiang, China. Development and Change, 46(6), 1302–1330. https://doi.org/10.1111/dech.12201

Lindenberg, M. (2002). Measuring Household Livelihood Security at the Family and Community Level in the Developing World. 30(2), 301–318.

Martin, S. M., & Lorenzen, K. (2016). Livelihood Diversification in Rural Laos. World Development, 83, 231–243. https://doi.org/10.1016/j.worlddev.2016.01.018

Martin, S. M., Lorenzen, K., & Bunnefeld, N. (2013). Fishing Farmers: Fishing, Livelihood Diversification and Poverty in Rural Laos. Human Ecology, 41, 737–747. https://doi.org/10.1007/s10745-013-9567-y

McDowell, C., & de Haan, A. (1997). Migration and sustainable livelihoods: A critical review of the literature. IDS Working Paper 65. Institute of Development Studies.

Mishra, K., Kondratjeva, O., & Shively, G. E. (2022). Do remittances reshape household expenditures? Evidence from Nepal. World Development, 157, 105926. https://doi.org/10.1016/j.worlddev.2022.105926

Nagarajan, S., & Dor, A. (2009). Migration, remittances, and household health: Evidence from South Africa. 3349555, 182. https://search.proquest.com/docview/304889079?accountid=10499%0Ahttp://AP6JM8WD2T.search.serialssolutions.com?ctx_ver=Z39.88-2004&ctx_enc=info:ofi/enc:UTF-8&rfr_id=info:sid/ProQuest+Dissertations+%26+Theses+A%26I&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertat

Ngoc, N. T. H., & Yokoyama, S. (2019). Driving forces for livelihood structure changes in Vietnam's northwestern mountainous region: A case study on Yen Chau district, Son La province. Tropics, 27(4), 81–97. https://doi.org/10.3759/tropics.ms18-09

Nopitasari, R., & Imelda, J. (2019). The Contribution of Remittances: a Tacit Knowledge of Parenting Capacity in Families of Migrant Workers in East Lombok, Indonesia. https://doi.org/10.4108/eai.8122018.2283908

Oliva, J. C. M. (2017). On the Road: Connectivity infrastructures in Southeast Asia. Journal of Infrastructure, Policy and Development, 1(1), 98. https://doi.org/10.24294/jipd.v1i1.6

Pedersen, M. L. (2010). The Sustainable Livelihoods Approach. June.

Reardon, T. (1997). Using evidence of household income diversification to inform study of the rural nonfarm labor market in Africa. World Development, 25(5), 735-747. https://doi.org/10.1016/S0305750X(96)00137-4

Rerkasem, B. (2005). Transforming subsistence cropping in Asia. Plant Production Science, 8(3), 275–287. https://doi.org/10.1626/pps.8.275

Rigg, J. (2005). Poverty and livelihoods after full-time farming: A South-east Asian view. Asia Pacific Viewpoint, 46(2), 173–184. https://doi.org/10.1111/j.14678373.2005.00266.x

Rigg, J., Promphaking, B., & Le Mare, A. (2014). Personalizing the middle-income trap: An inter-generational migrant view from rural Thailand. World Development, 59, 184–198. https://doi.org/10.1016/j.worlddev.2014.01.031

Rigg, J., Salamanca, A., & Parnwell, M. (2012). Joining the Dots of Agrarian Change in Asia: A 25 Year View from Thailand. World Development, 40(7), 1469–1481. https://doi.org/10.1016/j.worlddev.2012.03.001

Rubiyanto, C.W, & Hirota, I. (2021). A Review on Livelihood diversification' Dynamics, Measurement and Case Studies in Montane Mainland Southeast Asia.pdf (pp. 128–142).

Rubiyanto, Cahyo Wisnu, & Hirota, I. (2022). The Livelihood Transition and Diversification Strategies of Mountain Villages after Road Development: Tropical Agriculture and Development, 66(4), 113–129.

Schneider, S., Niederle, P. A., Schneider, S., & Andre, P. (2017). Resistance strategies and diversification of rural livelihoods: the construction of autonomy among Brazilian family farmers. 6150(August). https://doi.org/10.1080/03066151003595168

Sène-Harper, A. L., Camara, S. M. E., & Matarrita-Cascante, D. (2019). Does Diversification Lead to Livelihood Security in Fishing-Farming Communities? Insight from the Senegal River Delta. Human Ecology, 47(6), 797–809. https://doi.org/10.1007/s10745-019-00121-8

Shirai, Y., Fox, J., Leisz, S. J., Fukui, H., & Rambo, A. T. (2017). The influence of local non-farm employment on rural household structure in Northeast Thailand. Journal of Rural Studies, 54, 52–59. https://doi.org/10.1016/j.jrurstud.2017.06.003

Stark, O., & Bloom, D. E. (1985). The new economics of labor migration. American Economic Review, 75(2), 173-178.

Start, D., & Johnson, C. (2004). Livelihood Options? The Political Economy of Access, Opportunity and Diversification. Working Paper 233, April, 56. https://doi.org/10.1136/bjo.2008.145912

Stoian, D., & Centre, W. A. (2014). Variations and Dynamics of Extractive Economies: The Rural-urban Nexus of Non-timber Forest Use in the Bolivian Amazon Variations and dynamics of extractive economies: the rural-urban nexus of non-timber forest use in the Bolivian Amazon Freiburg im Bre. October.

Sunderlin, W. D., Belcher, B., Santoso, L., Angelsen, A., Burgers, P., Nasi, R., & Wunder, S. (2005). Livelihoods, forests, and conservation in developing countries: An Overview. World Development, 33(9), 1383–1402. https://doi.org/10.1016/J.WORLDDEV.2004.10.004

Tacoli, C. (2002). Changing rural-urban interactions in sub-Saharan Africa and their impact on livelihoods: A summary. Working Paper Series on Rural-Urban Interactions and Livelihood Strategies, 7.

Toiba, H., Umberger, W. J., & Minot, N. (2015). Diet Transition and Supermarket Shopping Behaviour: Is There a Link? Bulletin of Indonesian Economic Studies, 51(3), 389–403. https://doi.org/10.1080/00074918.2015.1111997

Van Hoang, C., Tran, T. Q., Nguyen, Y. H. T., & Nguyen, K. D. (2019). Is Land Ownership a Key Factor in the Choice of Livelihood in the Mekong Delta, Vietnam? Human Ecology, 47(5), 681–691. https://doi.org/10.1007/s10745-019-00101-y

Vicol, M., Pritchard, B., & Htay, Y. Y. (2018). Rethinking the role of agriculture as a driver of social and economic transformation in Southeast Asia’s upland regions: The view from Chin State, Myanmar. Land Use Policy, 72(September 2017), 451–460. https://doi.org/10.1016/j.landusepol.2018.01.009

Wan, J., Li, R., Wang, W., Liu, Z., & Chen, B. (2016). Income diversification: A strategy for rural region risk management. Sustainability (Switzerland), 8(10). https://doi.org/10.3390/su8101064

Widiatmaka, Ambarwulan, W., Setiawan, Y., & Walter, C. (2016). Assessing the suitability and availability of land for agriculture in tuban regency, East Java, Indonesia. Applied and Environmental Soil Science, 2016. https://doi.org/10.1155/2016/7302148

Yadeta, D. B., & Hunegnaw, F. B. (2022). Effect of International Remittance on Economic Growth: Empirical Evidence from Ethiopia. Journal of International Migration and Integration, 23(2), 383–402. https://doi.org/10.1007/s12134-021-00833-1

Yona, Y., & Mathewos, T. (2017). Assessing challenges of non-farm livelihood diversification in Boricha Woreda, Sidama zone. 9(April), 87–96. https://doi.org/10.5897/JDAE2016.0788

Yuko, S., & Rambo, A. T. (2017). Household structure and sources of income in a rice-growing village in Northeast Thailand. Southeast Asian Studies, 6(2), 275–292. https://doi.org/10.20495/seas.6.2_275