

## FACTORS AFFECTING SUSTAINABLE POVERTY REDUCTION LIVELIHOODS IN RURAL AREAS IN THE MEKONG DELTA, VIETNAM

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**Abstract:** Sustainable poverty reduction livelihoods in rural areas is a comprehensive process to solve current problems and build sustainability for the future. Sustainable Poverty Reduction Livelihoods in Rural Areas aims at solutions to reduce poverty and ensure complete and sustainable development of rural communities. The research seeks to discover factors affecting sustainable poverty reduction livelihoods in rural areas. Research data was collected in the Mekong Delta, Vietnam. In the survey with the questionnaire, 750 people responded directly to the questionnaire. SPSS 20 and AMOS 24 software are used to analyze data. The data collection process takes place from August to October 2023. Implementation methods include data descriptive statistics, testing scales, analyzing factors' suitability, and testing research structure. The research results show that six factors affect sustainable livelihoods and poverty reduction in rural areas in the Mekong Delta, Vietnam, including local government policies, infrastructure, education and training, labour market, community involvement, and finance and banking services. From the study's findings, several contents are discussed and suggested to help understand the relationship between factors affecting sustainable poverty reduction livelihoods in rural areas.

**Key words:** Factors, sustainable poverty reduction, livelihoods, rural areas, Vietnam

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### INTRODUCTION

Poverty and its consequences affect socio-economic development in countries. Many global efforts with many solutions in the fight against poverty are ongoing. Poverty reduction must first understand the poor to help people experiencing poverty have the capacity to escape poverty sustainably (Ansoms and McKay, 2010). The livelihoods of people with low incomes still face many difficulties. Research and search for solutions to help people experiencing poverty have enough livelihood capital to choose a livelihood to increase revenue and reduce poverty is necessary (Singh and Chudasama, 2020).

In Vietnam, the government has paid attention to poverty reduction with policies to support the poor in integrating into life to reduce poverty sustainably (Tuan et al., 2023). Therefore, Vietnam is considered one of the countries with impressive achievements in poverty reduction. Vietnam is among the countries that soon achieved the goal of halving the poverty rate by 2010. By 2016, Vietnam's poverty rate was 5.8%, according to the government's poverty standard. In 2019, the poverty rate continued near multidimensional poverty of 5.7% (General Statistics Office, 2019). Although Vietnam has made progress in poverty reduction, it still needs to be completed, as Vietnam's poverty standard is still low compared to the world. The rate of falling back into poverty is still high; people experiencing poverty in Vietnam are primarily farmers whose livelihoods are tied to agriculture (Andriessse, 2018). Therefore, research on the livelihoods of poor households in rural areas is typical of Vietnam's common poverty problem. The Mekong Delta is the central agricultural production region in Vietnam; the livelihoods of the poor and local people still depend mainly on agricultural production. However, uncertainties and shocks related to weather, climate, epidemics, prices, and agricultural product output markets often cause low-income people to face risks (Hai and Ngan, 2022). The output market depends on the role of traders and the value chain of purchasing agricultural products. It creates many chances for poor and farming households in the law of supply and demand to meet the market. The farm product processing industry in the entire region needs to develop faster; farmers bear many risks in terms of product output. These risks increase the risk of poverty and re-poverty for farming households (Wang et al., 2016).

Thus, the impacts of shocks by the natural environment, economic environment, urbanization, climate change, and human intervention in water resources are forces. People in the Mekong Delta choose livelihood activities that help households

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sustain poverty reduction in economic growth, preventing the risk of falling back into poverty (Atkinson, 2021). In the process of finding sustainable poverty reduction solutions, the livelihood approach has been chosen and applied by many countries instead of the poverty reduction approach focusing on food concerns. The livelihood approach puts people at the centre of poverty reduction, focusing on finding and choosing livelihood activities based on the household's livelihood capital resources (Soltani et al., 2012). While studies agree on the role of livelihood resources in household livelihood choices, there are disagreements in the research branch on which livelihood activities to choose to achieve sustainable livelihood goals.

If agriculture has remained the main livelihood of poor households for many decades, recent changes in economic structure. Shrinking agricultural land and increasing population have increasingly emphasized the role of non-agricultural work in creating jobs for the landless and landless poor (You and Zhang, 2017). External hazards and shocks force many poor households to choose various livelihood activities to minimize risks. Available research theories do not agree on the position and role of livelihood activities for needy families (Wang et al., 2023). Directions for selecting livelihoods for sustainable poverty reduction should be clarified to propose long-term orientations for transforming industry structure and solutions to support livelihood transformation (Agyeman et al., 2019). Research in the context of economic change in the Mekong Delta sheds light on the characteristics of poverty reduction livelihoods in rural areas. Discover factors affecting livelihoods and poverty reduction in rural areas to make policy recommendations towards sustainable poverty reduction.

## LITERATURE REVIEW

The Mekong Delta region has the third lowest poverty rate in the country compared to other economic areas. The Mekong Delta is a region with great potential for agricultural production. Rural areas in the Mekong Delta face difficulties such as crop failure, loss of property, increasing poverty, and relapse into poverty. Besides, the scale of near-poor households in the area is still high; the size of near-poor households is approximately the same as that of poor households (Zulu and Richardson, 2013). These near-poor households easily fall back into poverty if they encounter difficulties from the external environment, such as climate change and economic shocks (Barbier and Hochard, 2018). In addition, poor households in rural areas are a typical problem in the region. Localities in the region have uneven poverty rates, and some provinces have high poverty rates, including Soc Trang and Tra Vinh. Some areas, including Can Tho and Long An, have low poverty rates (Hai et al., 2023). The Mekong Delta region is facing a situation where poor households are ethnic minorities. Tra Vinh and Soc Trang provinces have a proportion of poor households that are ethnic minorities, accounting for more than 50% of poor households in the area. People with low incomes in the Mekong Delta still face many difficulties because of the vicious cycle of lack of capital for livelihood, choosing low-productivity, low-income, and poor livelihoods. The vicious cycle becomes more severe when external risk factors cause the loss of their livelihood resources (Cao et al., 2016). So that the development process does not hurt poor households because they lack livelihood capital. The requirement is to research and improve the livelihood capital capacity of vulnerable subjects. They have the opportunity to participate in highly productive livelihood activities, ensuring a sustainable escape from poverty.

*Sustainable poverty reduction livelihood* is a livelihood concept that refers to the parts of a livelihood, including livelihood capital, livelihood activities, and the relationship between capital and livelihood activities to maintain and develop. A livelihood is sustainable when coping with and overcoming shocks and difficulties. At the same time, it preserves and enhances capacity and assets in both the present and the future while not weakening natural-based resources (Canwat and Onakuse, 2023). Sustainable livelihoods meet three standards: economic compatibility, institutional compatibility, and socio-cultural compatibility. In terms of economic livelihood, it must meet market needs, meet financial investment, and apply techniques and technology. Institutionally, livelihood is suitable in terms of regulations, monetary policies and support programs. From a socio-cultural perspective, that livelihood must be consistent with local knowledge, ideal for low-income people, women, minority groups, and disabled people and suitable for the locality (Do and Park, 2019). In addition, climate change adaptation livelihoods are based on two criteria: climate compatibility and environmental compatibility.

Based on the perspectives of sustainable livelihoods, Sustainable poverty reduction livelihoods will help the poor recover quickly and escape poverty sustainably under short-term and long-term external impacts based on foundations, including not being dependent on external assistance that comes from internal resources from within the household. Improve households' current and future capacity and assets to choose livelihood activities that are economically, culturally, and institutionally compatible to meet short- and long-term development needs (Gentle and Maraseni, 2012).

Sustainable livelihoods and poverty reduction focus on solving the relationship between livelihood capital and livelihood activities in implementing sustainable livelihood goals. To build sustainable poverty reduction livelihoods, it is necessary to improve livelihood capital capacity so households can proactively choose livelihood activities according to social development trends instead of waiting for outside help (Hansen et al., 2019). Accordingly, building sustainable poverty reduction livelihoods must gradually help families improve their capital to choose practical livelihood activities to escape poverty proactively, avoid falling back into poverty and get rich.

The Mekong Delta region still focuses on agricultural development, developing high-quality commodity agriculture, and economic restructuring. Due to the impact of climate change, the Mekong Delta region is severely affected by rising sea levels and saltwater intrusion (Hai, 2022). Coastal areas will be seriously affected by saltwater intrusion and landslides. In addition to the impact on the natural environment, human intervention in the Mekong River flow from upstream during hydroelectric power generation increases water scarcity in the dry season, reducing alluvial flow and economic benefits during the flood season. It has threatened the livelihood security of Mekong Delta households (Hai et al., 2023). Climate change and the impact of countries upstream of the Mekong River are factors that seriously threaten agricultural production, which is the main livelihood of people in the Mekong Delta, and as a result, increasing poverty and re-poor.

In recent years, the loss of agricultural land has increased with urbanization and the formation of a series of industrial zones in the Mekong Delta. Urbanization has dramatically affected the livelihoods of people whose land was recovered but could not change industries due to the slow pace of job creation from the non-agricultural sector, further increasing poverty in the area. According to He and Ahmed (2022) in the study "Farmers' livelihood capital and its impact on sustainable livelihood strategies: evidence from the poverty-stricken areas of Southwest China". Livelihood capital affects livelihood strategies and sustainable poverty reduction. Combine achievements in sustainable poverty reduction with sustainable livelihoods, optimize livelihood strategies and enhance sustainable livelihood capacity. Farmers should comprehensively observe the environment and resources when choosing a livelihood strategy. Farmers should choose the most suitable livelihood strategy according to the actual situation of their livelihood capital to take full advantage of the benefits of their livelihood capital. Take advantage of educational level, credit capital and social network relationships to actively seek ways to increase income and job opportunities. The types of livelihood strategies adopted by farmers are not constant and will change as there are changes in livelihood capital. Therefore, farmers should choose the most suitable livelihood strategy according to their actual livelihood capital to improve their livelihood capacity (He and Ahmed, 2022).

According to Yu et al. (2022) in the study "Eliminating Deprivation and Breaking Through Dependence: A Mechanism to Help Poor Households Achieve Sustainable Livelihoods by Targeted Poverty Alleviation Strategy". Lack of capital is the hallmark of poverty, and capital support significantly reduces poverty. Implement a comprehensive livelihood system for poor households, eliminating multidimensional shortages by supplementing livelihood capital. Policies to support low-income families with capital, build sustainable poverty reduction roadmaps, and ultimately help poor households escape poverty and achieve sustainable livelihoods (Yu et al., 2022). The close links between different components of the livelihood system provide ideas for promoting poverty reduction programs to achieve sustainable goals. This study has not shown specific solutions for sustainable poverty reduction livelihoods.

In the study "How does ecological poverty alleviation contribute to improving residents' sustainable livelihoods?—Evidence from Zhejiang Province, China" by Shi et al. (2023). Poverty alleviation should pay attention to improving the welfare of local people. Tourism-based projects have been effective in promoting economic and natural capital. Agriculture-based initiatives effectively promote people's human, social and physical capital. The level of people's participation is a decisive factor in the effectiveness of village-led projects. Many factors influence sustainable poverty reduction, such as cultural and social norms, local government support, specific policies and laws, and available resources (Shi et al., 2023). The study "Measuring farmers' sustainable livelihood resilience in the context of poverty alleviation: a case study from Fugong County, China" by Sun et al. (2023). The study uses resilience theory combined with the traditional sustainable livelihood analysis framework to build a framework to describe farmers' sustainable resilience livelihood. The study developed an index of farmers' sustainable livelihood resilience and a measurement model using three internal resilience dimensions: buffering, self-organizing, and learning capacity (Sun et al., 2023). Research shows that the ability of farmers to restore sustainable livelihoods is unevenly distributed in both space and time. Therefore, further research should focus on factors affecting the ability of farmers to restore sustainable livelihoods, thereby strengthening both theory and practical application to restore farmers' sustainable livelihoods.

## **THEORETICAL FRAMEWORK AND RESEARCH STRUCTURE**

### **Theoretical framework**

The sustainable poverty reduction livelihood approach is appropriate when using economic measures of income and poverty rate to evaluate the effectiveness of the poverty reduction process. Besides, the advantage of the livelihood approach is that it focuses on the livelihood capacity of households to help choose sustainable livelihood strategies, putting people at the centre of the poverty reduction process. Available studies have divided household livelihoods into four components: people with livelihood capacity, livelihood activities, livelihood assets and livelihood goals. It is a primitive livelihood framework that lays the foundation for developing livelihood frameworks. In addition to internal factors, some studies have added external factors that affect the implementation of livelihood goals, such as context, conditions, trends and structural, institutional and process. Livelihood resources include human capital, natural capital, financial capital, social capital and other capital sources (Kaygusuz, 2011). Accordingly, context, conditions and trends, along with institutions and organizations, have a relationship with livelihood resources to determine the livelihood strategies of households. Currently, sustainable livelihood frameworks are applied by empirical researchers in different approaches.

In the study "Livestock Production, Rural Poverty, and Perceived Shocks: Evidence from Panel Data for Vietnam" by Do et al. (2019). The study assessed the contribution of livestock to rural poverty reduction and examined the determinants of wealth. Livestock contributes to poverty reduction, and assets are affected by the hardships households face, including access to credit, agricultural land size, Education level of the head of household, irrigation system and access to national power sources (Do et al., 2019). Allowing rural families to better cope with shocks will contribute to development and reduce poverty in rural areas. According to the study "Rural Household' Livelihood Responses to Industry-based Poverty Alleviation as a sustainable route out of Poverty" by author Ding et al. (2020). Industrialization is one way to achieve a sustainable path out of poverty. Implementing poverty reduction projects and responding to changes in the livelihoods of rural households is very important. A more robust livelihood response would reduce poverty (Ding et al., 2020). Effective poverty alleviation can also stimulate more robust household responses. External environmental factors include locality, type of industry, and local organizational capacity. Factors within the family, including resources, income, medical, education, number of employees, policy beliefs, credit availability, and social networks, have significantly impacted households' livelihood responses. However, this impact changes in different directions and has different intensities.

According to authors Deng and Zhang (2020), the study "Livelihood Sustainability and Dynamic Mechanisms of Rural Households Out of Poverty: An Empirical Analysis of Hua County, Henan Province, China". Three factors determine sustainable livelihoods: livelihood base, accelerated livelihoods, and livelihood environment. The study analyzed the livelihood characteristics of rural households escaping poverty and the dynamic mechanisms of sustainable livelihoods in hunger eradication and poverty reduction based on quantitative measurements of livelihood sustainability (Deng and Zhang, 2020). Livelihood resources, especially labour resources and proactive livelihood development of rural households influence sustainability. Rural households escape poverty sooner, are located in industrial parks or typical modern industrial zones, apply diverse, non-agricultural production methods, and have a higher level of livelihood sustainability. Developing sustainable livelihoods for rural households to escape poverty requires promoting the endogenous strength of rural households to create positive livelihood acceleration based on ensuring a livelihood base.

In the study "An Assessment of Poverty Alleviation Measures and Sustainable Livelihood Capability of Farm Households in Rural China: A Sustainable Livelihood Approach" by Su et al. (2021). Effective mechanisms for government poverty reduction measures rely on the sustainable livelihoods of farming households. The development of local industries and government financial support will improve the sustainable livelihoods of farmers and reduce poverty (Su et al., 2021). A positive correlation exists between poverty reduction measures and natural and social capital for sustainable livelihoods. This finding will help improve the sustainability of the livelihoods of farming households.

Poverty eradication measures and diverse capital sources have an impact on sustainable livelihoods. This approach has the effect of stabilizing poverty reduction mechanisms in rural areas in the long term. According to Zhang et al. (2022) in the study "The Impact of Livelihood Sources on Relative Poverty among Households in the Karst Mountains, a case study from Huajiang demonstration area". The author uses interdisciplinary analytical methods to measure household livelihood sources and relative poverty in the karst region and explores the impacts of livelihood sources on relative poverty (Zhang et al., 2022). Natural conditions influence relative poverty in the area due to a lack of material conditions. The household's labour status, production conditions, social network and natural conditions affect the household's source of livelihood. Strengthening households' sources of livelihood can significantly reduce their relative poverty.

With increased household sources of livelihood, agricultural modernization can dramatically minimize household poverty levels, helping to consolidate and expand poverty reduction activities. In the study "Analyzing the status of multidimensional poverty of rural households by using sustainable livelihood framework: Policy implications for economic growth" by Fahad et al. (2023). *Poverty* is a multifaceted and place-based problem that cannot be quantified by monetary measures alone. The multidimensional poverty line is considered a new approach to assessing poverty, determining the causes of poverty, and encouraging poor households to escape poverty sustainably (Fahad et al., 2023). Research suggests that three capital sources, natural capital, social capital and financial capital, influence sustainable poverty reduction. Some sustainable poverty reduction solutions, including enhancing the spirit of self-reliance to escape poverty, are of interest.

### Hypotheses

Sustainable poverty reduction livelihoods involve effective and long-term economic and social development. Sustainable poverty reduction livelihoods aim to reduce poverty and improve the quality of life for the community. Many factors affect sustainable poverty reduction livelihoods. We can pose hypothesis: What factors affect sustainable poverty reduction livelihoods in rural areas in the Mekong Delta? Politics and the quality of governance at local and national levels significantly influence the ability to implement poverty reduction strategies. Political stability helps create a positive business environment and allows development policies to be implemented effectively.

Hypothesis 1. Does local government policy affect livelihoods and sustainable poverty reduction in rural areas in the Mekong Delta? Adequate and efficient infrastructure systems, including transportation, clean water, and electricity, are critical to creating a positive business environment and helping rural communities connect to markets and services.

Hypothesis 2. Does infrastructure affect livelihoods and sustainable poverty reduction in rural areas in the Mekong Delta? Education level and occupational skills affect the ability to generate income. Investing in education and training improves employment opportunities and access to higher-paying jobs.

Hypothesis 3. Does education and training affect sustainable poverty reduction livelihoods in rural areas in the Mekong Delta? Labour market development and access to employment opportunities can enhance community income.

Hypothesis 4. Does the labour market affect livelihoods and sustainable poverty reduction in rural areas in the Mekong Delta? Agriculture often makes up a large part of the livelihoods of many poor communities. Sustainable rural development can provide career opportunities and improve agricultural production. Active community participation and interaction in the decision-making and implementation of development policy are also essential to ensure that solutions are designed based on the actual and local needs of the community.

Hypothesis 5. Does community participation affect sustainable poverty reduction livelihoods in rural areas in the Mekong Delta? Access to finance and banking services can affect the ability to invest and grow a business. An effective financial system can provide necessary capital and support to local companies. Hypothesis 6 Do finance and banking services affect sustainable poverty reduction livelihoods in rural areas in the Mekong Delta?

### Research structure

We build the research structure based on available research and theoretical frameworks. We propose a research structure for factors that affect sustainable poverty reduction livelihoods in rural areas in the Mekong Delta. The research structure has six factors affecting sustainable livelihoods and poverty reduction in rural areas: local government policies, infrastructure, education and training, labour market, community involvement, and finance and banking services. The



research structure is shown in Figure 1. The variables observed in the research structure of factors affecting sustainable poverty reduction livelihoods in rural areas in the Mekong Delta are shown in Table 1.

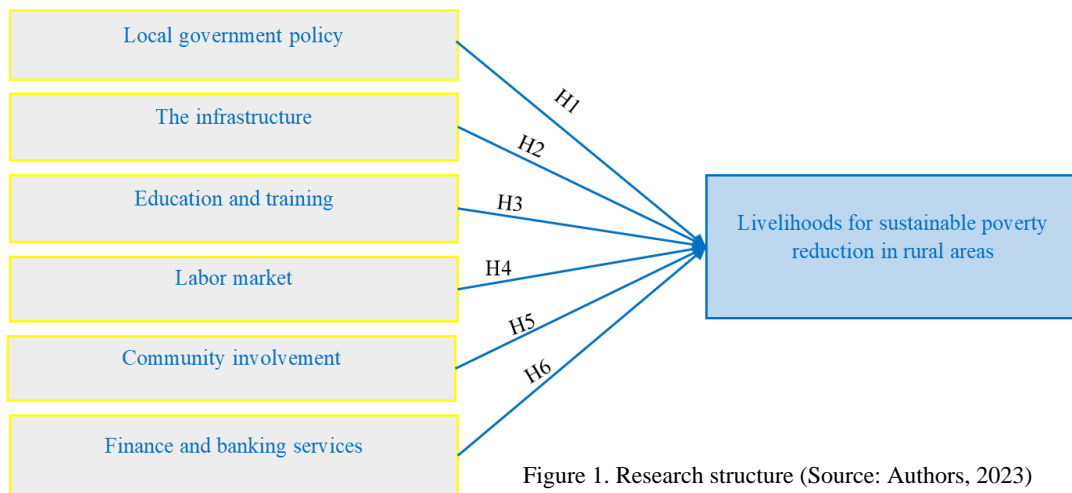


Figure 1. Research structure (Source: Authors, 2023)

Table 1. Observed variables in research structure (Source: Authors compiled from evaluation studies, 2023)

Factors in the research structure	Encode	Observed variables
Local government policy	LOGP	(1) Economic development policy; (2) Rural and agricultural policy; (3) Education and training policy; (4) Construction and maintenance of infrastructure; (5) Resource management and environmental protection; (6) Social policy.
The infrastructure	TINF	(1) Connected transportation system; (2) Irrigation works; (3) Electricity and energy; (4) Educational and medical infrastructure; (5) Internet access; (6) Agricultural product processing facilities.
Education and training	EDAT	(1) Improve educational level; (2) Develop professional skills; (3) Vocational training centre; (4) Building a community education foundation; (5) Research and application of agricultural technology; (6) Access to internet and technology.
Labor market	LAMA	(1) Job opportunities; (2) Income and consumption; (3) Population movement; (4) Market access; (5) Labor quality and skills; (6) Working conditions.
Community involvement	COIN	(1) Support community businesses; (2) Share knowledge and skills; (3) Protect and manage resources; (4) Support farmers and agricultural workers; (5) Promote community tourism; (6) Social care and support.
Finance and banking services	FABS	(1) Financial support for farmers; (2) Developing financial services in rural areas; (3) Financial training and consulting; (4) Supporting sustainable agriculture; (5) Financial incentive policies; (6) Developing agricultural product markets.
Livelihoods for sustainable poverty reduction in rural areas	LSPR	(1) The living environment in rural areas is improved; (2) Poverty reduction livelihoods are adequate; (3) Satisfaction with local government policies; (4) Income in rural areas is increased.

**METHODOLOGY**

Research methods used include descriptive statistics, testing of scales, analysis of the suitability of factors and testing of research structures. The steps of the research method are shown in Figure 2.

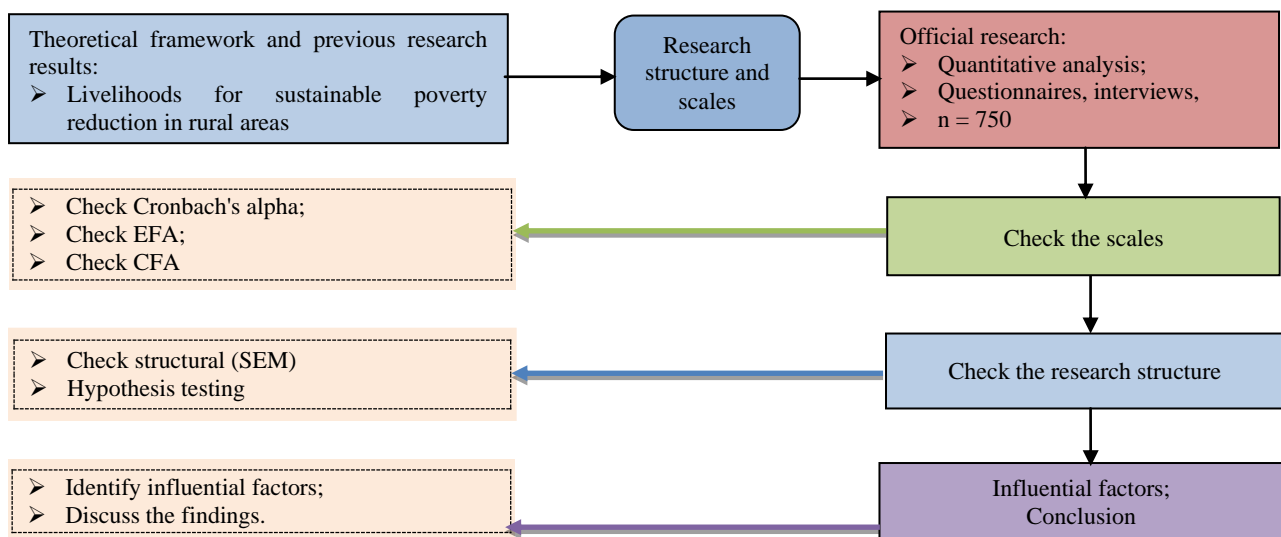


Figure 2. Flowchart of research methodology steps (Source: Authors, 2023)

**Research area**

In Vietnam, The Mekong Delta is a critical agricultural region with essential contributions to the country's fields of production and export of rice, fruits, and aquatic products. It is a region with a strategic position in ensuring national food security. Economic restructuring during the integration process has increased income and reduced poverty rates. The region's poverty rate was 12.6% in 2010, and by 2016, the region's poverty rate was 5.2%, according to the government poverty line. In 2019, the poverty rate, according to the multidimensional poverty standard, was 5.8% (General Statistics Office, 2019). However, the Mekong Delta region is facing many challenges in the process of poverty reduction. The pace of poverty reduction in the current period is slowing down due to the impact of the COVID-19 pandemic and the worldwide economic crisis. The study area is shown in Figure 3.

**Research data analysis**

To discover factors affecting sustainable poverty reduction livelihoods in rural areas in the Mekong Delta. A questionnaire was developed based on theoretical research. The survey questionnaire has 46 Likert items, including six demographic scales and seven scales measuring factors affecting sustainable poverty reduction livelihoods in rural areas in the Mekong Delta. Data collection took place from August to October 2023. The Likert scale is used in the range of values from 1 to 5 to measure survey subjects' perceptions of (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) completely agree. Respondents answer directly on the questionnaire.

The questionnaire was distributed to 750 people in the Mekong Delta, Vietnam. A total of 735 valid responses were collected. Responses from the survey were coded and analyzed using SPSS version 20 and AMOS version 24 software. Research factors affecting sustainable poverty reduction livelihoods in rural areas of the Mekong Delta, with statistical steps to describe demographics. Test the reliability of the scale.

Structural factor analysis. Hypothesis testing by linear structural model (SEM) on factors affecting sustainable poverty reduction livelihoods in rural areas of the Mekong Delta; Identify factors affecting sustainable poverty reduction livelihoods in rural areas of the Mekong Delta, Vietnam.

**RESULTS**

The results of analyzing six demographic scales in the survey area of the Mekong Delta are shown in Figure 2. Testing the scales in the research structure of factors affecting sustainable poverty reduction livelihoods in the rural Mekong Delta is shown in Table 3. Results of testing the scales in the structure study. Cronbach's Alpha coefficient was used to test the strong correlation between rankings in the construct. The results of survey data analysis show that all seven scales have high reliability. Cronbach's Alpha coefficient of the scales > .8 and total correlation coefficient > .3. It shows the appropriateness of the rankings in the research structure (Cronbach, 1951).

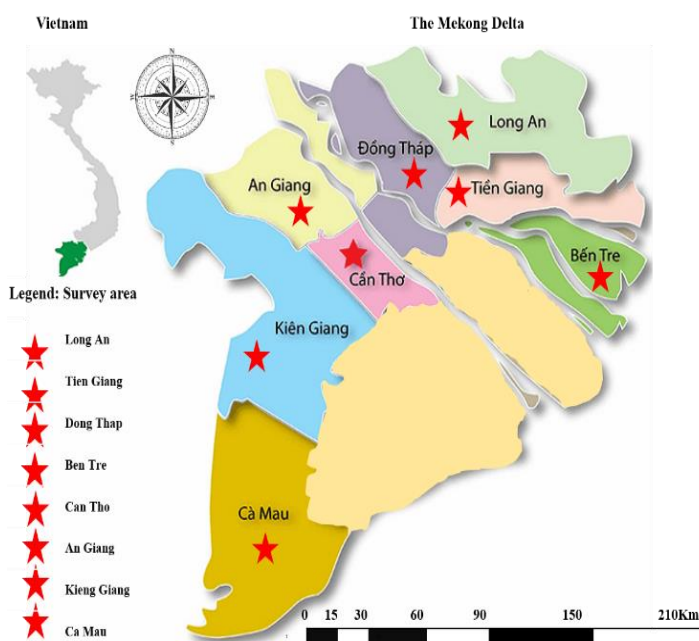


Figure 3. Survey area in the Mekong Delta, Vietnam (Source: Authors gathered, 2023)

Table 2. Demographic characteristics of the survey sample (Source: Analysis of survey data by authors, 2023, n =735)

Characteristics and survey area	Number of respondents	Percentage
1. Survey area	735	100%
Long An	52	7.1
Tien Giang	89	12.1
Dong Thap	80	10.9
Ben Tre	139	18.9
Can Tho	61	8.3
An Giang	131	17.8
Kieng Giang	78	10.6
Ca Mau	105	14.3
2. The gender	735	100%
Male	375	51.0
Female	360	49.0
3. Occupation	735	100%
State employees	58	7.9
Company leadership	79	10.7
Researchers	61	8.3
Business staff	158	21.5
Technical staff	61	8.3
Teacher	131	17.8
Freelance labor	78	10.6
Other	109	14.8
4. Age (years)	735	100%
< 30	178	24.2
30 - 40	173	23.5
40 - 50	148	20.1
> 50	236	32.1
5. Education	735	100%
Master or PhD	42	5.7
College or Bachelor	214	29.1
Professional diploma holders	182	24.8
Other	297	40.4
6. Monthly Income (million VND)	735	100%
< 5	153	20.8
5 - 10	198	26.9
10 - 15	148	20.1
> 15	236	32.1

Table 3. Results of testing the scales in the research structure (Source: Analysis of survey data by the authors, 2023, n = 735)

Scales of measurement of factors	Encode	No. of items	Cronbach's Alpha	Corrected Item-Total Correlation range	Mean
Local government policy	LOGP	6	.914	.653 - .866	2.954
The infrastructure	TINF	6	.888	.632 - .827	3.362
Education and training	EDAT	6	.904	.594 - .900	3.672
Labor market	LAMA	6	.965	.764 - .861	3.093
Community involvement	COIN	6	.935	.687 - .899	4.005
Finance and banking services	FABS	6	.960	.715 - .941	3.595
Livelihoods for sustainable poverty reduction in rural areas	LSPR	4	.934	.841 - .900	3.765

Exploratory factor analysis (EFA) for scales in the research structure. The test results show KMO = .856. Bartlett's test, Sig. value = .000 (< .05). The test results show that Eigenvalue = 1.285 ( $\geq 1$ ). The sum of squares of cumulative factor loadings = 76.482% ( $\geq 50\%$ ); EFA analysis shows that the structure of the model is appropriate (Hair et al., 2010). Therefore, all seven factors in the structure are retained in the research model, shown in Table 4. The rotated matrix results in Table 4 show that 40 observed variables are classified into seven factors. All observed variables have a Factor Loading coefficient > .5. Therefore, all seven elements were retained in the research structure (Doll et al., 1994). Confirmatory factor analysis (CFA) in the structure is shown in Table 5. Results of testing the reliability and convergence of the factors. The test result (CR) is > .7, guaranteeing the scale's reliability (Nunnally and Bernstein, 1994). Besides (AVE)  $\geq .5$ , and (MSV) < (AVE), the Square Root of AVE (SQRTAVE) > Inter-Construct Correlations. Therefore, Table 5. Results of testing reliability and convergence in the research structure are guaranteed at all scales (Baumgartner and Homburg, 1996).

The results of testing the research structure are shown in Figure 4 on factors affecting sustainable poverty reduction livelihoods in rural areas of the Mekong Delta. It shows Chi-square/df = 3.948; GFI = .843; CFI = .949; TLI = .943; RMSEA = .063; PCLOSE = .000. The results of linear structural model analysis in Figure 4 show consistency in the research structure. The results of testing the linear system of the model of factors affecting sustainable poverty reduction livelihoods in rural areas of the Mekong Delta are shown in Figure 4 and Table 6. The analyzed data shows that the Sig value of LOGP scale = .000 (< .05), TINF = .000 (< .05), EDAT = .000 (< .05), LAMA = .000 (< .05), COIN = .000 (< .05), FABS = .000 (< .05). The Sig value of the six factors has proven that there is an impact relationship between the independent variables and the dependent variable (Hu and Bentler, 1999).

Table 4. Rotated component matrix (Source: Analysis of survey data by the authors, 2023, n = 735)

	Component						
	1	2	3	4	5	6	7
LAMA5	.929						
LAMA6	.927						
LAMA3	.903						
LAMA4	.896						
LAMA1	.893						
LAMA2	.866						
FABS4		.968					
FABS3		.963					
FABS5		.958					
FABS6		.942					
FABS2		.830					
FABS1		.740					
COIN5			.937				
COIN6			.935				
COIN1			.872				
COIN4			.856				
COIN2			.768				
COIN3			.740				
LOGP5				.871			
LOGP6				.852			
LOGP3				.807			
LOGP4				.802			
LOGP1				.736			
LOGP2				.709			
EDAT5					.913		
EDAT6					.907		
EDAT3					.838		
EDAT2					.729		
EDAT1					.682		
EDAT4					.645		
TINF6						.894	
TINF5						.838	
TINF4						.811	
TINF3						.739	
TINF2						.716	
TINF1						.692	
LSPR2							.792
LSPR4							.772
LSPR1							.720
LSPR3							.651

Table 5. Reliability and convergence test results (Source: Survey data analyzed by the authors, 2023, n = 735)

Factor construct	CR	AVE	MSV	MaxR(H)	LAMA	FABS	COIN	LOGP	EDAT	TINF	LSPR
LAMA	.945	.743	.091	.998	.862						
FABS	.953	.776	.040	.997	-.130***	.881					
COIN	.924	.677	.086	.998	.122**	.083*	.823				
LOGP	.914	.645	.278	.947	.274***	-.076*	.118**	.803			
EDAT	.900	.614	.207	1.003	.210***	.038	.142***	.381***	.783		
TINF	.888	.576	.153	.935	.064†	-.040	.124**	.264***	.216***	.759	
LSPR	.937	.787	.278	.946	.302***	.201***	.293***	.528***	.455***	.391***	.887

The results of the standardized regression coefficient are shown in Table 6. Results of testing the relationship between research concepts and Figure 5 Level of factors affecting sustainable poverty reduction livelihoods in rural areas in Mekong

Delta. It shows factors affecting sustainable poverty reduction livelihoods in rural Mekong Delta, including LOGP = .340, TINF = .234, EDAT = .209, LAMA = .166, COIN = .157, FABS = .233..

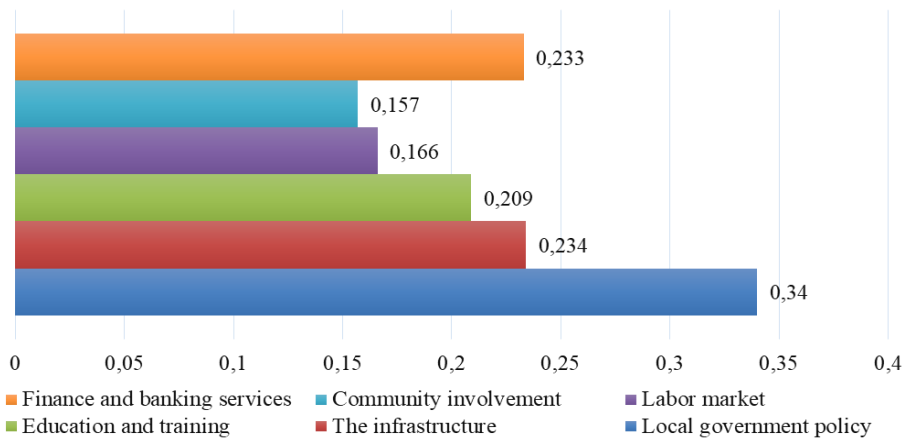
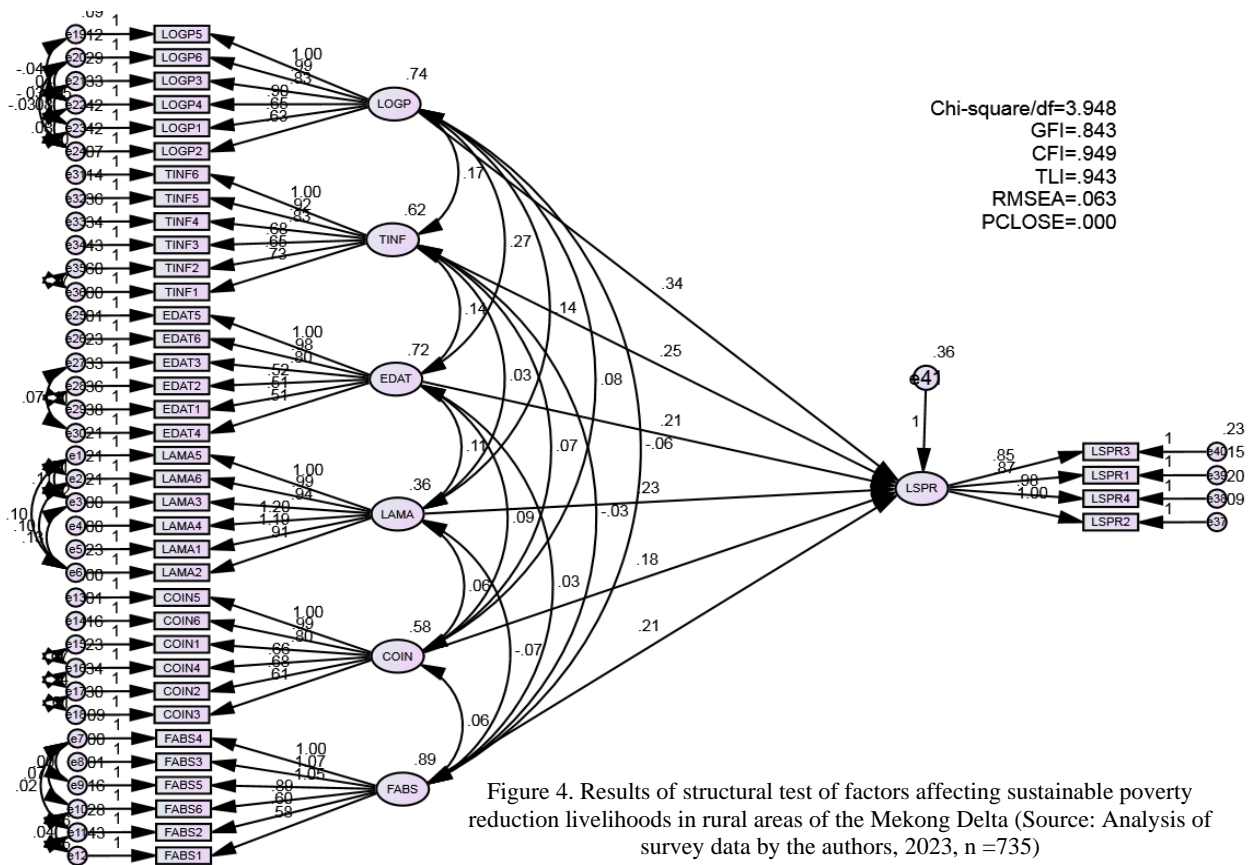


Figure 5. Level of factors affecting sustainable poverty reduction livelihoods in rural areas in the Mekong Delta (Source: Analysis of survey data by the authors, 2023, n = 735)

Table 6. Results of testing the relationship between research concepts (Source: Analysis of survey data by the authors, 2023, n = 735)

Factors affecting sustainable poverty reduction livelihoods	Estimates	Sig	Standardized estimates
LOGP----> LSPR	.336	.000	.340
TINF----> LSPR	.252	.000	.234
EDAT----> LSPR	.210	.000	.209
LAMA----> LSPR	.234	.000	.166
COIN----> LSPR	.175	.000	.157
FABS----> LSPR	.209	.000	.233

### DISCUSSION OF THE FINDINGS

The findings in the study show that six factors can affect sustainable poverty reduction livelihoods in rural areas in the Mekong Delta, Vietnam, including local government policies, infrastructure, education and training, the labour market, community involvement, and financial and banking services. Local government policies impacting sustainable livelihoods and poverty reduction in rural areas in the Mekong Delta are .340. Local government policies play an



essential role in supporting and shaping the process of sustainable poverty reduction (Kabir et al., 2019). Local governments can establish policies to support the development of regional economic sectors, create favourable conditions for businesses and create job opportunities. This could include supporting small and medium-sized enterprises, encouraging investment and creating a positive business environment. Local governments can develop policies for rural areas to help farmers, improve agricultural quality, and create career opportunities (Kitole et al., 2023).

Local governments can develop social policies to support vulnerable populations, including those in poverty and ethnic minorities, ensuring that everyone has equal opportunities in progress development. These policies need to be designed and implemented considering each local community's specific needs and characteristics to ensure the measures' effectiveness and sustainability (Lwasa et al., 2014). Infrastructure's impact on sustainable poverty reduction livelihoods in rural areas in the Mekong Delta is .234. Road transport systems help connect the countryside with major towns and cities. Convenient roads allow farmers to transport agricultural products to markets quickly and access various services (Liu and Xu, 2016). The Mekong Delta is famous for its vast canals and rice fields. Irrigation works and irrigation infrastructure should be maintained and improved to ensure adequate water sources for farming and safety from salty sea water (Suich et al., 2015). A stable and affordable electricity supply is essential to support agricultural production activities and small and medium-sized enterprises. Clean and renewable energy can also help reduce costs and positively impact the environment (Lo et al., 2016). The Internet is essential for accessing information, markets and online services. Internet access can also create new business opportunities and increase educational attainment. Tourism infrastructure can create additional sources of income and employment opportunities for rural communities. Developing tourist attractions and related services can promote sustainable livelihoods (Liu and Wang, 2019). Improving infrastructure enhances livelihoods and helps rural communities increase their resilience to economic and environmental challenges.

Education and training policies impact sustainable poverty reduction livelihoods in the Mekong Delta rural area of .209. Education and training policies can focus on improving the educational attainment of rural communities. People with higher levels of education can often access higher-paying jobs and participate in modern economic sectors (Huang et al., 2022). Vocational training can provide specific skills for rural workers, from crop care to industrial skills such as crafts, food processing, and more. These skills can help them find new job opportunities and grow their businesses.

Building and maintaining quality schools and vocational training centres can increase access to education for rural communities. This helps provide educational and training opportunities for children and adults. Improving education continues beyond the school level and includes building a community education foundation (Mbaiwa and Stronza, 2010). Education and training programs based on the specific needs of communities can create positive changes in their livelihoods. These measures help improve the quality of human resources and access to opportunities in rural areas, creating favourable conditions for economic diversification and sustainable poverty reduction (Sharma et al., 2018).

The labour market's influence on sustainable poverty reduction livelihoods in the Mekong Delta rural area is .166. The labour market provides job opportunities for rural people. Diversification in career opportunities can help them find jobs with stable and higher incomes (Mbuyisa and Leonard, 2017). Employment opportunities can increase the revenue of rural workers, thereby improving their living standards and consumption capacity. Having a steady income helps families more easily access necessary products and services. The labour market requires quality and skills from workers. Investing in education and training can improve labour quality and increase access to high-paying jobs. Policies that support and facilitate the labour market can enhance sustainable poverty reduction livelihoods in rural areas of the Mekong Delta, providing opportunities and, at the same time, helping to build a resilient community (Ma et al., 2021).

Community participation's impact on sustainable poverty reduction livelihoods in the Mekong Delta rural area is .157. Sustainable poverty reduction livelihoods in rural areas are essential in building and maintaining community-based development strategies (Nguyen, 2022). Community participation from the decision and planning stages helps ensure that development strategies and policies are built around community needs. Participation in training and skills development programs helps build community capacity. This may include training in vocational skills that facilitate the implementation of sustainable economic activities. Finance and banking services' impact on livelihoods and sustainable poverty reduction in the Mekong Delta rural area is .233. We provide financial products and services such as loans, agricultural insurance, and farmer credit to invest in production, purchase modern equipment, and improve work processes (Snyman, 2012).

We should facilitate the increased presence of bank branches and financial transaction points in rural areas to make banking services more accessible to farming communities (Paudel Khatiwada et al., 2017). Provide training and financial consulting programs to improve the farming community's knowledge and financial management skills. This helps them understand how to use and manage personal finances and agricultural businesses. We should develop preferential policies and encourage investment in agricultural and cooperative projects that can help increase productivity and create a stable source of income (Sinyolo and Mudhara, 2018). Support agricultural cooperation and new business models to enhance negotiating power and market access. By combining the above measures, finance and banking services can contribute positively to sustainable development and poverty reduction in rural areas (Sife et al., 2010).

## CONCLUSION

The hypothesized research model has been tested on scales showing the appropriateness of the factors in the research structure. The research results have verified that the model of factors affecting sustainable poverty reduction livelihoods in rural areas of the Mekong Delta is appropriate. Among them, six factors show the level of influence on sustainable poverty reduction livelihoods in rural areas, including local government policies, infrastructure, education and training, labour market, community involvement, and finance and banking services. Thus, the results achieved in the study have satisfied

the set objectives. Some of the contents discussed have suggested suggestions to help policymakers understand the relationship between factors affecting sustainable poverty reduction livelihoods in rural areas. Policymakers should make adjustments in investment in infrastructure development education, creating more job opportunities, improving people's lives, and linking economic development with society and environmental protection, market development and tourism products. Sustainable poverty reduction livelihoods are a topic of concern to the world. The findings in the study also help researchers conduct further investigations. They should collect more samples in a larger area to evaluate comprehensively.

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