

Theo yêu cầu của khách hàng, trong một năm qua, chúng tôi đã dịch qua 16 môn học, 34 cuốn sách, 43 bài báo, 5 sổ tay (chưa tính các tài liệu từ năm 2010 trở về trước) Xem ở đây

**DỊCH VỤ  
DỊCH  
TIẾNG  
ANH  
CHUYÊN  
NGÀNH  
NHANH  
NHẤT VÀ  
CHÍNH  
XÁC  
NHẤT**

Chỉ sau một lần liên lạc, việc dịch được tiến hành

Giá cả: có thể giảm đến 10 nghìn/1 trang

Chất lượng: Tạo dựng niềm tin cho khách hàng bằng công nghệ 1. Bạn thấy được toàn bộ bản dịch; 2. Bạn đánh giá chất lượng. 3. Bạn quyết định thanh toán.

Tài liệu này được dịch sang tiếng việt bởi:

[www.mientayvn.com](http://www.mientayvn.com)

Từ bản gốc:

<https://drive.google.com/folderview?id=0B4rAPqlxIMRDfIBVOnk2SHNlBkR6NHJiN1Z3N2VBaFJpbnlmbjhhqQ3RSc011bnRwbUxsczA&usp=sharing>

Liên hệ dịch tài liệu :

[thanhlam1910\\_2006@yahoo.com](mailto:thanhlam1910_2006@yahoo.com) hoặc [frbwrthes@gmail.com](mailto:frbwrthes@gmail.com) hoặc số 0168 8557 403 (gặp Lâm)

Tìm hiểu về dịch vụ: [http://www.mientayvn.com/dich\\_tiang\\_anh\\_chuyen\\_nghanh.html](http://www.mientayvn.com/dich_tiang_anh_chuyen_nghanh.html)

ACKNOWLEDGEMENTS 4 h 19 3/8

With these words, I would like to express my sincere thank to all who have supported me during my journey to complete the Master program in general

LỜI CẢM ƠN

Qua đây, tôi muốn gửi lời cảm ơn chân thành đến tất cả mọi cá nhân tổ chức đã hỗ trợ tôi hoàn thành chương trình thạc sĩ nói chung và luận văn nói riêng.

and this thesis in particular.

First of all, I would like to thank the Board of Faculties of the University of Economics of Ho Chi Minh City and International Institute of Social Studies (ISS) for providing me with all fruitful and precious academic knowledge during the master program.

The Thesis could not have been designed and completed without the support from my Professors in the University of Economics and ISS. I would like to show my deepest gratitude to Dr. Ha Thuc Vien and Dr. Tran Tien Khai for all their invaluable comments and fruitful guidance from the very beginning of the formatting of the topic. My special thanks go to Dr. Ha Thuc Vien for his academic supervision, inspiration through the progress of my thesis writing. In addition, I would like to express my sincere thank to Dr. Pham Khanh Nam, Mr Nguyen Van Dung for their guidance on technical issues used for the analysis of the thesis.

Last but not least, I am deeply indebted to my family members: my parents, my parents - in law, my sisters for all their understanding and supports during my study. I would like to express my special thanks to my mother and my mother-in-law, who have helped me to take care of my little baby so that I can concentrate on my thesis. Finally, I would like to thank my husband who is always besides me, encouraging and helping me with daily life, so that I can spend most of my time on completing the thesis.

#### ABSTRACT

Income diversification has been a special attention of researchers, especially in developing country. It is a means to increase household's income and reduce its volatility of each income source.

Trước hết, tôi muốn gửi lời cảm ơn đến các thầy cô ở Đại học Kinh Tế Thành Phố Hồ Chí Minh và Viện Nghiên Cứu Xã Hội Quốc Tế (ISS) đã cung cấp cho tôi những kiến thức chuyên môn bổ ích và quý báu trong quá trình học thạc sĩ.

Luận văn của tôi được thiết kế và hoàn thành với hỗ trợ nhiệt tình của các thầy cô ở Đại Học Kinh Tế và ISS. Tôi muốn tỏ lòng biết ơn sâu sắc đến tiến sĩ Ha Thuc Vien và tiến sĩ Tran Tien Khai về những ý kiến đóng góp và hướng dẫn hữu ích của các thầy trong quá trình định hình hướng nghiên cứu. Đặc biệt, tôi xin cảm ơn tiến sĩ Ha Thuc Vien, thầy hướng dẫn của tôi, luôn động viên tôi trong quá trình viết luận văn. Ngoài ra, tôi cũng muốn gửi lời cảm ơn đến tiến sĩ Phạm Khánh Nam, anh Nguyen Van Dung, những người đã chỉ dẫn tôi các vấn đề kỹ thuật trong quá trình phân tích số liệu trong luận văn.

Kể đến, tôi muốn bày tỏ lòng biết ơn sâu sắc đến mọi người trong gia đình tôi: cha mẹ tôi, cha mẹ chồng tôi, các chị em tôi đã thông cảm và giúp đỡ tôi trong quá trình học tập. Đặc biệt, tôi muốn gửi lời cảm ơn đến mẹ và mẹ chồng tôi, những người đã chăm sóc con tôi, giúp tôi có thể tập trung vào luận văn.

Cuối cùng, tôi muốn cảm ơn chồng tôi, anh đã luôn ở bên cạnh tôi, động viên và giúp đỡ tôi trong cuộc sống hàng ngày để tôi có thể dành nhiều thời gian hoàn thành luận văn.

#### TÓM TẮT

Đa dạng hóa thu nhập đang là một chủ đề khoa học được các nhà nghiên cứu quan tâm, đặc biệt ở các quốc gia đang phát triển. Đây chính là một phương tiện để tăng thu nhập của các hộ gia đình và

However, the patterns and income diversification vary from country to country and from region to region. This research aims at examining the determinants of income diversification among rural households in Vietnam and the impact of diversification on household's total income in order to decide appropriate policy responses. Based on Vietnam Household Living Standard Surveys in 2002, 2004, 2006, 2008 and 2010, the descriptive analysis on a variety of concepts of diversification shows that the diversification in rural areas is very common and tends to increase over time. For instance, a number of income sources among rural households goes up to from 4.08 in 2002 to 4.28 in 2010. The analysis also indicates the growing importance of non-farm activities. Nevertheless, the extent of diversification is not the same between the rich and the poor. The poorer tend to have more income sources than the richer while the richer is much more diversified in terms of share of income from non-farm activities than the poorer. The econometric analysis uses methods of Poisson regression in the model of number of income sources and 1-bit regression in the model of SID and NFS. The regression results show that socio-economic status and access to formal financial market both have positive impact on the number of income sources pursued by households and the Simpson index of diversification.

Interestingly, it is found that the access to financial markets has negative effect on the share of non-farm income. The accessibility of infrastructure is also an important determinant of income diversification. The evaluation of reverse

giảm nguy cơ biến động của từng nguồn thu nhập. Tuy nhiên, đa dạng hóa thu nhập thay đổi theo các kiểu khác nhau tùy thuộc vào từng quốc gia và từng vùng. Nghiên cứu này nhằm khảo sát các yếu tố xác định đa dạng hóa thu nhập trong các hộ gia đình nông thôn Việt Nam và tác động của đa dạng hóa đến tổng thu nhập của hộ gia đình để đưa ra những chính sách ứng phó phù hợp. Dựa trên các Khảo Sát Mức Sống Hộ Gia Đình Việt Nam vào các năm 2002, 2004, 2006, 2008 và 2010, sử dụng phân tích mô tả trên một loạt các khái niệm đa dạng hóa khác nhau, chúng ta sẽ thấy đa dạng hóa rất phổ biến ở khu vực nông thôn và có xu hướng tăng theo thời gian. Chẳng hạn, số nguồn thu nhập của các hộ gia đình nông thôn tăng từ 4.08 vào năm 2002 đến 4.28 vào năm 2010. Phân tích cũng cho thấy các hoạt động phi nông nghiệp ngày càng đóng vai trò quan trọng. Tuy nhiên, mức độ đa dạng hóa khác nhau giữa các hộ giàu và nghèo. Các hộ nghèo thường có nhiều nguồn thu nhập hơn các hộ giàu, trong khi các hộ giàu có tỷ trọng hoạt động phi nông nghiệp lớn hơn các hộ nghèo. Phân tích kinh tế lượng sử dụng các phương pháp hồi quy Poisson trong mô hình số nguồn thu nhập và hồi quy Tobit trong mô hình SID và NFS. Các kết quả hồi quy cho thấy tình trạng kinh tế xã hội và khả năng tiếp cận thị trường tài chính chính thức có ảnh hưởng tích cực đến số nguồn thu nhập mong muốn của các hộ gia đình và chỉ số đa dạng hóa Simpson.

Điều thú vị là, các nhà nghiên cứu phát hiện ra rằng khả năng tiếp cận thị trường tài chính có ảnh hưởng tiêu cực đến tỷ trọng thu nhập phi nông nghiệp. Khả năng tiếp cận cơ sở hạ tầng cũng là một yếu tố xác định quan trọng đa dạng hóa

impact of diversification on household's total income confirms that all of the three indicators of income diversification: a number of income source, share of non-fan, income and Simpson index of diversity have positive impact on household's total income. It implies that households try to increase their income by pursuing multiple income strategy, expanding their income generating out of agricultural activities and maintaining the balance among different income activities.

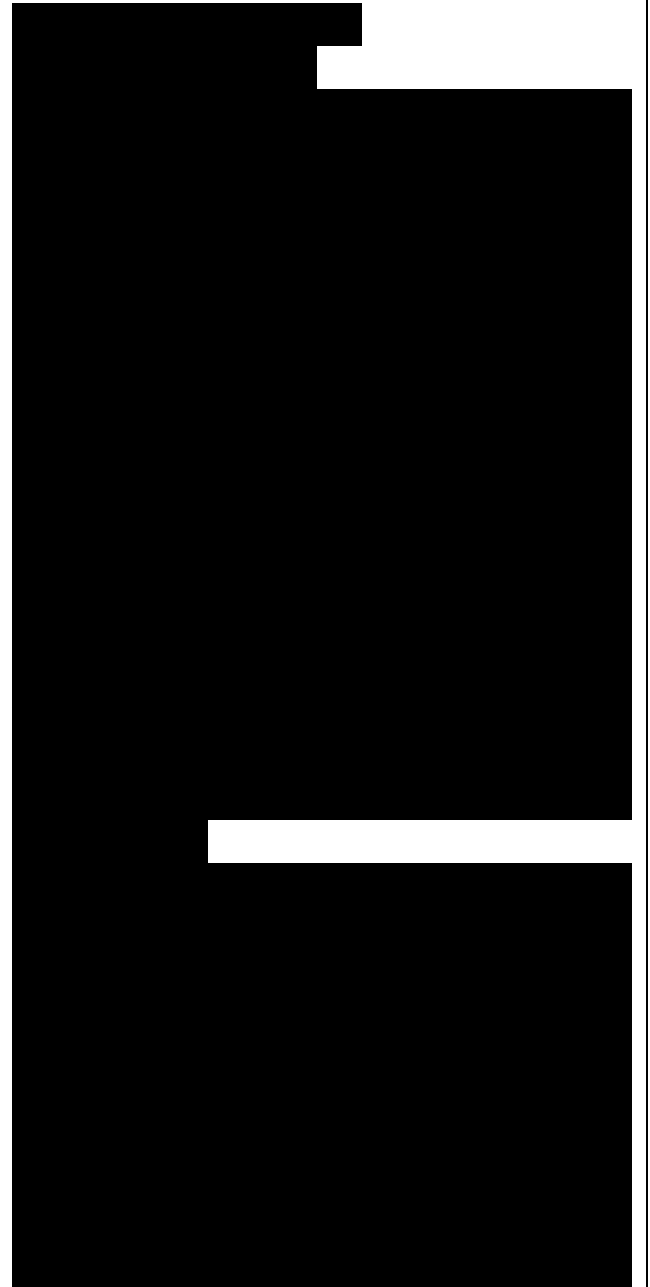
## CHAPTER 1 INTRODUCTION

### 1.1 Problem Statement

Income diversification among rural household in developing countries has called for substantial attention of scholars in development economics. It is referred to the allocation of resources among different income generating activities, both on-farm and off-farm, according to Abdulai and Crolerees (2001). I here are several motives for households to diversify their income sources. Households tend to carry out the income diversification because of the need to manage risks, to secure a smooth flow of income, to allocate the surplus labor or to respond to different kinds of market failures such as insurance and credit market imperfection (Ellis, 1998).

Given the potential role of income diversification in stabilizing income and alleviating rural poverty, governments in several developing countries are increasingly interested in promoting diversification. And Vietnam with more than 70% of the population lives in rural areas is not an exception. Since 1986. the Government has implemented various policies with an aim to developing multi-

thu nhập. Việc đánh giá tác động ngược của đa dạng hóa thu nhập đến tổng thu nhập của hộ gia đình cho thấy, cả ba yếu tố chỉ báo đa dạng hóa thu nhập (số nguồn thu nhập, tỷ trọng thu nhập phi nông nghiệp, và chỉ số đa dạng hóa Simpson) đều có ảnh hưởng tích cực đến tổng thu nhập của hộ gia đình. Điều này nói lên rằng các hộ gia đình cố gắng tăng thu nhập bằng nhiều chiến lược thu nhập, mở rộng ra khỏi các hoạt động nông nghiệp và duy trì cân bằng giữa các hoạt động thu nhập khác nhau.



sector economy, renovating the economic structure and stabilizing the social economic environment including improving people's living standards and opening the country's economy to the rest of the world. For rural development, some specific objectives raised are to create more jobs, to raise agricultural and rural industry-related income, and to develop services and off- farm activities. In other words, these policies are designed to directly or indirectly stimulate the process of income diversification in Vietnam in general and in rural areas in particular. With the nation-wide renovation, Vietnam has gained some remarkable achievements in economic development and poverty reduction, with the annual economic growth rate of 6-8 percent since the early 1990 and the poverty rate falling from 58% in 1993, 29% in 2002, 15.5% in 2006 to 14.5% in 2008 and 14.23% in 2010 (GSO). Part of income growth and poverty reduction is undoubtedly due to diversification among households both into higher value crops and into non-crop activities such as livestock raising, and non-farm activities.

Though income diversification plays such an important role in the early stage of rural transformation, the patterns of rural income diversification may vary across countries and regions (Ellis, 1998). Hence, it is necessary to identify the determinants of income diversification of specific countries and regions as it helps government have appropriate policy response to support the rural areas. While there are very few empirical studies about the income diversification issue in Vietnam, the research on the impact of

diversification on household income is even rarer. Based on the empirical studies and data from Vietnam Household Living Standards Survey 2008 (VHLSS 2008), this paper is aimed at determining the factors that affect the ability to carry out income diversification among households in rural Vietnam and to measure the impacts of diversification on household incomes.

### 1.2 Research objectives

The paper is to investigate determinants of income diversification among households in rural areas of Vietnam, and measure the difference in the level of impact of these factors among economic and geographical regions. This paper also aims at examining the reverse effects of income diversification on the household income.

### 1.3 Research questions

Specifically, the paper tries to address the following questions:

- What are the determinants of income diversification in rural Vietnam at household level?

How does the level of income diversification differ among rural regions within Vietnam?

What are the impacts of diversification on household income?

The thesis is organized into 5 chapters. After the introductory Chapter, Chapter 2 is literature review, including the review of theoretical framework and the previous studies of income diversification in developing countries. Chapter 3 describes the data source and methodologies used to analyze the data. Determinants and impacts of income diversification are analyzed economically in Chapter 4.

Chapter 5 summarizes the results found, draws some conclusion related and discusses some policy recommendations.

## CHAPTER 2 LITERATURE REVIEW

Concepts and measures of income diversification

Income diversification has been employed by households as one of the strategies to minimize the income variability and ensure a minimum level of income. Lmpirical studies commonly based on five different indicators of income diversification for their analysis, each of which is discusscd in details as bellows:

The first definition is possibly the simplest one that diversification is referred to the increase in the number of income sources of households (Minot et al. 2006). Accordingly, households with more income sources are considered to be more diversified and the more number of sources a household has over time, the greater the increase in diversification that household pursue over that time period. This indicator is simple to measure and understand. However, it only focuses on the number of sources with equal treatment among every income source but not taking into the consideration its importance to the total income of household.

The second approach is introduced to overcome the weakness of the previous measure. This indicator takes into account not only the number of income sources but also the contribution of each source to total household income. With this concept, income diversification is referred to the process that households try to increase the number of sources and also gain a greater balance among the

income sources in their portfolio (Ellis 2000, Minot et al. 2006). Following this concept, Schwarz and Zelle, (2005) used the Shannon equitability index, which increases with the number of income sources and the evenness. To analyze the income diversification among household in Indonesia

Khmerse Herfindahl index is employed by Babatunde and Qaim (2009) in examining the patterns of income diversification in Nigeria.

The third measure is related to nonfarm employment. It is defined as a process rural households increase their income from the non-farm sector (Barrett and Reardon 2001, Barrett et al. 2001). This concept is most commonly used in the form of the percentage of income from non-farm activities in total households' income by a number of authors including Ellis (2000). Abdulai and CroleRees (2001) and Minot et al. (2006).

The fourth definition is referred to the switch of subsistence production to commercialization production. The three basic measures often used to define this type of diversification are crop diversification, agricultural commercialization and income commercialization. Crop diversification refers to the proportion of crop production that is sold or bartered. The agricultural commercialization is defined as the share of agricultural output that is sold or bartered. The income commercialization is measured by the proportion of gross income from the cash income.

Finally, income diversification is defined by Minot et al. (2006) as "the process of



switching from low-value crop production to high-value crops, livestock, and non-farm activities". Some measures of this type of diversification are: the share of high value crops, the proportion of income from non-crop activities and the share of income from non-farm activities.

Within the scope of this study, we employ the first four concepts in the analysis of income diversification, which are discussed in details in the descriptive analysis. In the econometric analysis part, we only take into consideration three indicators of diversification: number of income sources, Simpson index of diversity, and the share of non-farm income in total household's income.

## 2.2 Theoretical framework

This study bases on the concept of Sustainable Livelihood Framework. According to Ian Scoones (1998), the concept 'Sustainable Rural Livelihood' has become increasingly important in the debates about rural development and poverty reduction. This term relates to a wide range of issues and its definition has been proposed and modified several times since 1992 when it was first introduced by Brundtland Commission on Environment and Development. Among these definitions, IDS's definition is somewhat a modified one of Sustainable Livelihood as follows:

A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural

resource base.”

Under the Sustainable Livelihood Framework, people are put at the centre of a variety of factors with inter-relationship that influence them to create livelihoods. Among these factors, the livelihood assets that they can access to and use play a very important role. These assets include natural capital, physical capital, human capital, social capital and financial capital. However, the extent to which they can access these assets is strongly impacted by their contexts in the form of trends (for instance, economic, political) or shocks (for example, natural disasters). Moreover, other social, institutional and political environments all have certain effects on the ways people use their assets to achieve their goals, which are known as livelihood strategies. Livelihood diversification is one of the strategies that enable households to increase their income, minimize the income fluctuations, hence improve their livelihood.

Figure 1: The Sustainable Livelihood Framework (Scoones 1998:4)

### 2.3 Determinants of income diversification

Researchers have identified several reasons why households try to diversify their income sources. These reasons are categorized as “demand-pull” factors versus push-distress factors (Barrett et al. 2001, Davis 2003, Davis and Bezemer 2003, Ellis 2000). “Pull” factors are ones that facilitate households to get wealth accumulation thanks to competitive advantages of superior technologies, skills and endowments. “Push” factors refer to difficult circumstances that face a specific household, a group of households or households within a region such as



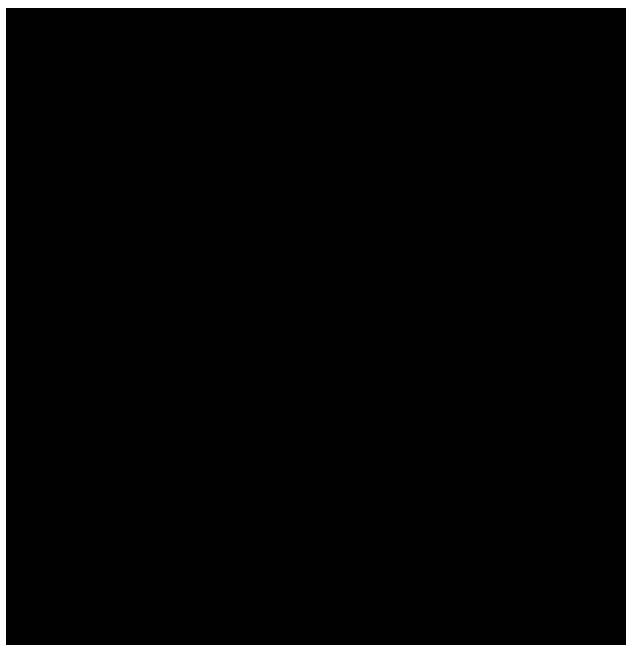
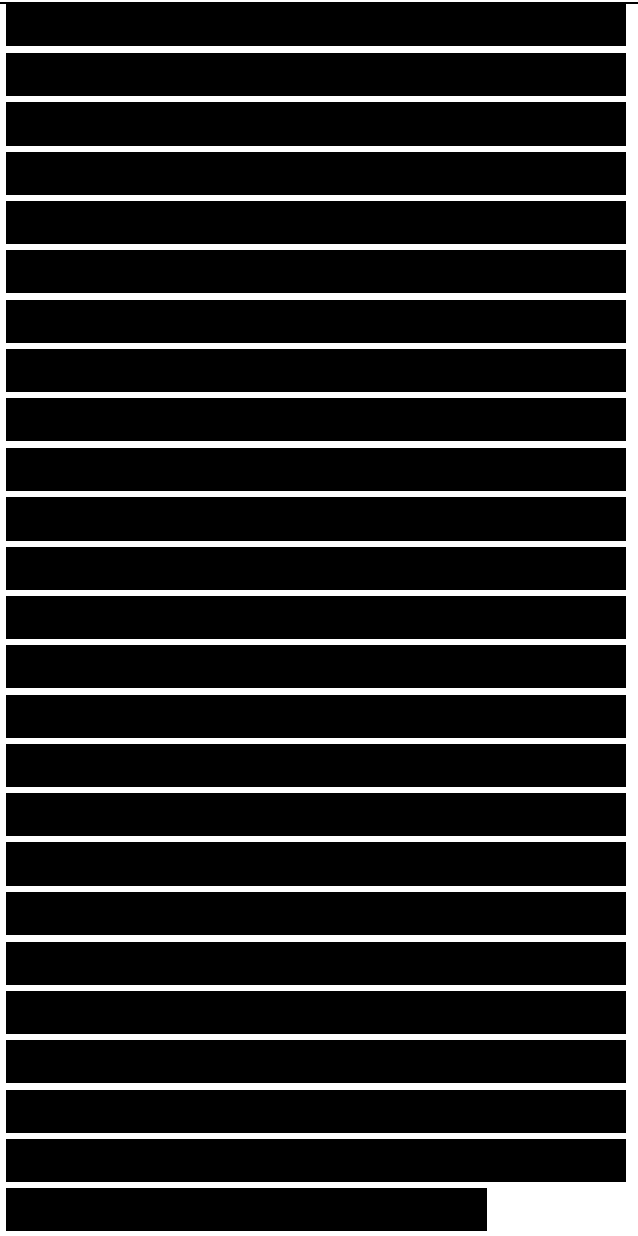
weather conditions, policy changes and failure of credit or insurance markets. These factors lead the households to diversify their income sources into non-farm activities for income smoothing by pursuing “risk management strategies” or "risk coping strategies” (Reardon et al. 2007). Reardon et al (2007) also argue that the literature on income diversification which defines its determinants in terms of pull and push factors tend not to place sufficient importance to the incentives underlying diversification as well as not enough attention to household capacity variables. They introduce another approach, focusing on the household capacity variables, defined as capital assets. According to this approach, the extent of participation in diversification strategy is affected by a number of variables capturing household available capacity and incentives to undertake that activity.

In line with the sustainable livelihoods literature, the ability of households to diversify income highly depends on their access to the different types of capital. It explains why households do not have the same opportunities to participate in non-farm activities, and hence get less diversified income (Abdulai, et al., 2001). The capitals as mentioned refer to a variety of assets that allow households to take part in farm as well as non-farm activities, which are commonly categorized as human, physical, financial, and social capital.

Capital within Reardon et al (2007) framework in particular and the sustainable livelihoods theory in general, mention no, only household', private assets but

... household/individual or village level. At household and individual demographic characteristics may affect the decision and ability to diversify income. At the regional or village level, the physical and institutional infrastructure plays an important role in driving the income diversification among households. Better access to infrastructure such as education, roads may help to reduce the cost of acquiring information, transport and transaction costs, as well as to enhance the households' opportunities of participation in non-farm activities (Barrett and Reardon, 2001; Davis, 2003; Ellis, 2000; Reardon, et al. 2007).

The impacts of the above types of assets on household income diversification have been reflected in empirical studies in different countries. Barrett, Reardon and Webb (2001) point out in most of the research papers on income diversification that better education has important effects on non-farm earnings. In studies of Tanzania, Lanjouw et al. (2001) finds that a better physical access to markets increases non-farm earnings. Abdulai and Crolerees (2001) finds in their study about the determinants of income diversification among rural households in Southern Mali that poorer households



have fewer opportunities in cash - crop production as well as non crop activities, leading to their less diversified incomes in w'hich lack of capital is the major reason. Studies in other developing economies also prove for the significance of these factors. For instance, access to public assets such as roads, electricity, water and private assets such as education and access to credit are also pointed out as factors that affect the households' ability and their extent to participate into income diversification (Escobal 2001; Babatunde and Qaim 2009).

Regarding to the inflnence of diversification on household livelihoods, the positive relationship between Income diversification and household welfare has been found b, a variety of researches. Babatunde and Qaim (2009) point out in a study in Nigeria that income diversification has positive and significant impact on total income of household regardless of the diversification measures used. In Zimbabwe, Ersado (2003) employs the number of income sources, the share of nonfarm income, and the Simpson index as measures of income diversification to study the relationship between diversification and household welfare. The author finds that in rural areas, richer households are more diversitied in income sources, while the result is in the opposite way in urban areas. Ersado (2003) also finds in rural areas with high variability in rainfall, households tend to have more number of income sources,

which is in line with the literature that considers multiple income strategy as a risk management strategy.

#### 2.4 Previous studies on income diversification in Vietnam

Since 1986, the Vietnam Government launched a policy called “Doi Moi (renovation) and has gained some remarkable achievements in economic development and poverty reduction. While there have been several researches and empirical studies conducted on the poverty issues in Vietnam (Glewwe et al. 2004, Minot et al. 2003, UNDP 2004), only a very few studies focus on the income diversification issues. The available studies only concentrate on specific regions of Vietnam. For instance, Minot et al. 2006 places most of their research content on the Northern Uplands of Vietnam while Nghiem (2010) focuses on the Mekong Delta River.

This study follows some part of the procedures in Minot et al. (2006) to identify the factors that affect the participation in income diversification of households in rural Vietnam. This study is different from previous studies in three aspects. First the scope of study covers households in rural areas of the whole country

[Redacted]

Phần mới dịch

[Redacted]

Những phần trùng tương ứng với những phần thiếu so với bản gốc

identify the reverse effect of income diversification on total income of households.

## CHAPTER 3 DATA AND RESEARCH METHODOLOGY

### 3.1 Data

The data used in this paper is derived from a set of national household surveys, including five Vietnam Household Living Standards Surveys (VHLSS) carried out in 2002, 2004, 2008, 2008 and 2010 with an aim to examine the changes in income sources and the contribution of each income source to households' total income. The sample size of the dataset of VHLSS 2002, 2004, 2006 and 2010 that is employed in this study is 22,621; 6,938; 6,882 and 6,753 rural households respectively. In order to identify the factors influencing the income diversification of households and study the relationship between income diversification and the total income of households, the paper uses the cross-sectional data set of the VHLSS 2008. It was conducted nation-wide with a sample size of 45,945 households (36,756 households in the income survey and 9,189 households surveyed on both income and expenditure) (GSO, VHLSS). As the paper is to examine the income diversification in rural Vietnam, only households in rural areas are included in the research comprising 6,837 households.

### 3.2 Research methodology

#### 3.2.1 Classification and calculation of income sources

According to VHLSS, the income of household can be obtained from two types of employment, through transfer and other income. The two types of employment are wage employment and

self-employment. Wage employment is divided into farm wage employment and non-farm wage employment. Self-employment includes activities such as crop, livestock, fishery, forestry which are grouped as farm self employment and two kinds of private business, that is agricultural private business and non-farm one. Based on the classification of VHLSS and within the scope of this study, household income is categorized into eight sources: wage (both farm and non-farm one), crop income, livestock income, fishers income, forestry income, enterprise income (including the income from both forms of private business), transfer, and other income.

'Cash' and 'earn' to compute the income from wage employment, which is the sum of annual earnings of household members in wage as well as bonuses from all the jobs these members take. The income from activities such as crop, livestock, fishery, forestry, enterprise is the net revenue from each activity, which is balance of the total value of production and the costs of production.

Transfer includes not only private transfers such as gifts and remittances received by household members during the past twelve months but also public transfers, which are the payments from different kinds of governmental programs like social subsidy, poverty reduction... Other income includes pensions, lottery winnings, interest of savings and loans, rental income. One-off amount of money such as sale of buildings, vehicles, gold, etc... is not considered as household income according to VHLSS.



### 3.2.2 Indicators of income diversity

As discussed above, there are different ways to measure income diversification. In this study, the income-based approach is deployed, focusing on three aspects of income diversification: diversification as multiple income sources, diversification as the increased importance of non-farm income to household total income and diversification as the production commercialization.

Regarding to the diversification as multiple sources of income, two indicators are employed for the analysis, including the number of income sources (NIS) and the Simpson index of diversity. NIS, which has been used by Minot et al. (2006) and Ibrahim et al. (2009) is easy to measure. However, it is criticized for its arbitrariness with the assumption that more active households with more active adults are likely to have more income sources (Babatunde and Qaim, 2009). In this regard, the NIS indicator is not used separately but in combination with the Simpson index of diversity (SID), which is the Simpson index of diversity (SID). By taking into account not only the number of income sources but also the proportion of each source to the total income, the SID allows to measure the overall diversification of household income. The SID is employed by Minot et al. (2006) and Joshi et al. (2003) to study diversification degree and is calculated as follows:

$$SID = 1 - \sum (P_i)^2$$
 where  $P_i$  refers to the income share of the income generating from activity  $i$  in total income of household. If household has only one source of income, SID is equal to zero,

indicating the perfect specialization. If the income of household is coming from many sources, the share of each source in total income decreases and so does the sum squared shares, hence SID will approach the value of 1, indicating that the household is highly diversified in income.

To identify the contribution of income generating from non-farm activities (including the non-farm wage income and the non-farm enterprise), the indicator of non-farm income share (NFS) is employed. The larger the NFS, the more diversified the household is. This indicator reflects the degree households switch from farm to non-farm activities.

This paper also uses another concept to examine the income diversification among households in which diversification is defined as the process of switching from subsistence production to commercial production. Under this concept, two measures of diversification will be considered, which are the crop share of the value of crop production that is sold or commercialization - the share of the value of crop production that is sold or commercialized and the agricultural commercialization - the proportion of the value of agricultural products (including crop, bartered, fishery, forestry) that is sold or

### 3.2.3 The method of analysis

In this research a variety of descriptive statistics and the analysis of the data including the in Chapter 4. The descriptive statistics which are discussed in details patterns over time. Section I and section II. The sample consists of different types of households and geographical regions by comDarino th, ... P 8 K measures

of diversification from the surveys of different years.

The econometric part will follow, to identify the determinants of income diversification among households and examine its effects on household's total income based on the data of the 2008 VHLSS. For the analysis of determinants, we apply the regression of three measures of diversification, including NIS, SID, NFS on a set of independent variables representing for household's capital asset. As the dependent variable is in form of count data in the NIS model, the Poisson regression is used. For SID and NFS measures, the data is censored between zero and one. hence we employ the Tobit regression, which are similarly employed by Escobal (2001) to examine the determinants of income diversification in rural Peru. Schwar/e and Zeller (2005) is another example to use the Tobit model in similar settings.

In order to analyze the impacts of income diversification on household's total income, the three models are used, in which the household's total income is the dependent variable, and the diversification measures are added to the set of explanatory variables. In order to avoid the problem of endogeneity, we use the Instrumental Variables (IV) method ■ two stage least squares (2SLS) in the analysis of the impact of income diversification on household's total income. Babatunde and Qaim (2009) use this technique in the similar context in the analysis in Nigeria.

### 3.3 Chapter remarks

In short, this study employs the descriptive and econometric methods to portrait the tendency of diversification and identify factors that influence income

diversification among households in rural Vietnam based on data from VHLSS of 2002, 2004, 2006, 2008 and 2010. The analysis is carried out on three indicators of diversification: number of income sources, Simpson index of diversity and share of income from non-farm activities with Poisson regression for NIS model and 1 obit model for SID and NFS models. In examining the impacts of diversification on household income, the instrument variable (IV) - two stage Least square regression is used in order to avoid the endogeneity problem.

Contextual analysis of Analysis of conditions and trends, and assessment of policy setting

## CHAPTER 4 FINDINGS AND DISCUSSIONS

### 4.1 Patterns and trends in income

#### 4.1.1 Diversity of income sources

In income source diversity analysis, following the division of income sources in VHLSS, household income is divided in 8 groups: wage, crop, livestock, fishery, forestry, enterprise, transfer and other income. The Table 4.1 below shows the trends in income diversity among rural household of the whole country as well as those of the specific regions by two measures: number of income sources and the Simpson index of diversity. Households in rural area tend to obtain their income from a variety of sources. On average, each household has 4.08; 4.35; 4.12; 3.50; 4.28 income sources according to VHLSS 2002, 2004, 2006, 2008 and 2010 respectively. These figures reflect a modest increase in the number of income sources in 2004 compared to 2002 before a gradual

decline in the next two periods in 2006 and 2008. The level of diversity increases again, with the average number of income sources goes up from 3.50 in 2008 to 4.28 in 2010. This trend happens to all geographical and economic regions.

Considering not only the number of income sources, but also the balance among them, the Simpson index of diversity shows the similar result in portraying the tendency of income diversification among rural households in Vietnam as well as most of its different regions. According to VHLSS 2002, 2004, 2006, 2008 and 2010, the value of this index is 0.488; 0.501; 0.484; 0.414; 0.442 respectively.

diverse while South TalTs IIIlv^^ ^ \*"  
f°Und ° m°S' . , crsc In Inc°mc  
sources, as shown by most of indicators  
in almost of all year\* ., years of surveys.  
As North East and North West are t e p  
rest regions in Vietnam and Southeast is  
most urbanized and least poor, the  
phenomenon may be explained that the  
poorest households tend to have higher  
level of diversity in income. Similarly,  
both indicators NIS and SID ng along  
with the level of poverty of households in  
every single year showing that poorer  
households have a tendency to diversify  
their income sources more than the richer  
ones. While this contradicts the results by  
Abdulai and Crolercs (2001) for Mali, it  
is in consistent with the findings by  
Schwarze and Zeller (2005) for rural  
Indonesia.

The fact that the income diversification is higher among poorer than richer households supports the idea that diversification is a mean to reduce risks

related to the variation in income from each source.

#### 4.1.2 Diversification as a shift.

a shift to non-farm activities Despite the dominant importance of agriculture, as shown in Figure 4.1, the share of income derived from agriculture has declined in total household income over time, from 27.4% in 2002 to 30.9% in 2004, 33.0% in 2006, 35.6% in 2008 and 37.1% in 2010 respectively. This indicates the growing importance of the non-agricultural sector, in line with the gradual structural transition of the economy. Contributing to the rise in the share of non-farm income, while there is a slight decrease in the share of non-farm enterprise, the proportion of non-farm wage increases continually and remarkably from 13.3% in 2002 to reach 24.7% in 2010. The growing importance of income generating from non-agricultural or non-farm activities to total household income occurs to all groups of households from different income quintiles, though it varies in level and speed. As shown in table

Figure 4. 1. Trends in income composition of rural households

Source: Analysis of VHLSS 2002, 2004, 2006, 2008 and 2010

4.3, the share of non-farm income in total income is lower for the poorer than the richer. According to the VHLSS 2002, the non-farm income share of the fifth quintile (the richest) is 40.8% while this number is only 15.4% among the first quintile (the poorest). During the period from 2002 to 2008, all income groups experience the increase in the share of income from outside agriculture to reach

23.1%, 35%, 38.9%, 42.6% and 44.8% respectively for the five groups of income from the poorest to the richest. However, in 2010, the poorest group experiences 5.7% decrease in non-farm income share, 17.4%. Similarly, there is 0% in the amount for the second quintile. Whereas, this is a slight decline of 1.9% in the mean ones UD sharply at 4.8%, 8.7% and 10.1% to share among the other three groups goes up sharply reach 43.7%, 51.3%, and 54.9% respectively. The third quintile, the richest quintile, non-farm income — non-farmer enterprise

Figure 4. 2 Share of nonfarm income in total income of rural households

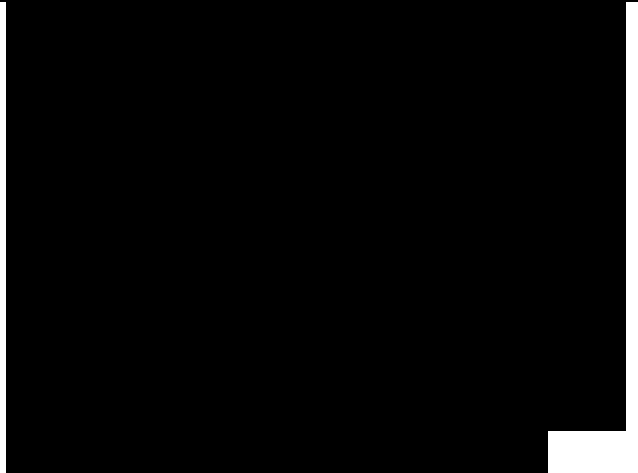
Source: Analysis of VHLSS 2002, 2004, 2006, 2008 and 2010

Table 4. 3 Share of non-farm income in household's total income by income quintile across years

Overall, rural households tend to be, farm income share in household total income in terms of non-varied among different groups of CVL is poor compared to the rich. This may be due to the fact that the poor face more constraints in participating in non-farm activities than the rich

#### 4.1.3 Diversification as commercialization production

As discussed above, diversification is also referred to the transition from production for household's consumption to production to sale or bartered. Within this analysis, we use two indicators: crop



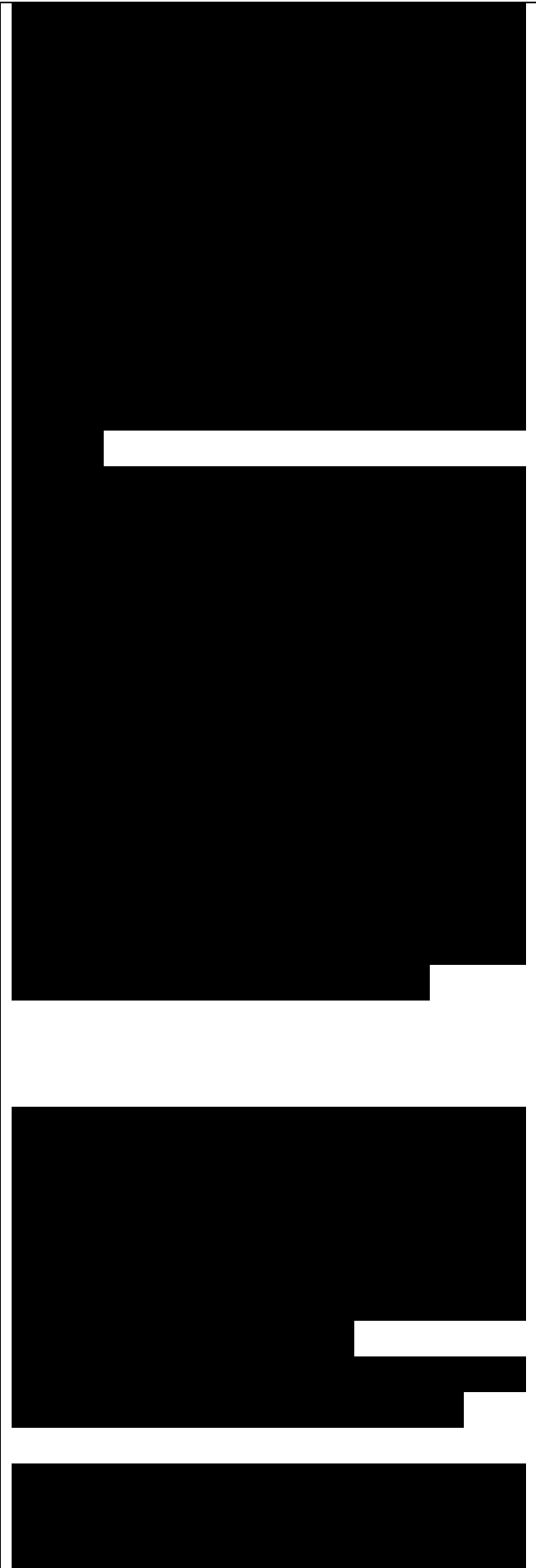
commercialization and agricultural commercialization.

Crop commercialization is represented by the share of crop output that is sold or bartered. Agricultural commercialization refers to the increase in the proportion of agricultural products (including crops, livestock products, fish and forest products) that is sold or bartered. These two measures indicate the proportion of cash income in total gross income deriving from producing crop and agricultural products.

Table 4.4 shows the two measures of commercialization of different geographical regions across years of survey. Among these regions, North East has a very small share of crop output that is sold or bartered, accounting for only 30.6% in 2002 and 24.9% in 2010. The other areas having relatively low commercial share of crop production include North Central Coast, North West and Red River Delta, with 38.7%, 40.2% and 41.4%, respectively, according to VHLSS 2010. On the contrary, the marketed proportion of crop for Central Highlands, Mekong River Delta and production is more than 80% for central and southern regions. In crop production, there is evident difference. Similar to the commercial agricultural output, North East in the degree of commercialization of agricultural products sold or bartered, and North West have near 30% despite a little fluctuation in this share across years.

Figure 4. 3 Share of output sold or bartered by region and year

Source: Analysis of VHLSS 2002, 2004, 2006, 2008 and 2010 The southern regions are even much more market-





oriented, with 81.1%, 73.4% and 89.8% of the agricultural output being marketed for Central Highlands, South East and Mekong River Delta, respectively, according to VHLSS 2010.

Generally, the degree of commercialization..... gradually over time. The share of 'dm°ng fUra' hous(;ho'ds increases households in the country as a whole tiLT^ ^ 0t ^ 2010 while the proportion of agricultural "" ^ ^ 2°2 1° 67.6% “

Considering the commercialization acm« ,i;rr dilferent income categories, it is clear that the richer are more commercialiM/t .u trcialized than the poorer. According to VHLSS 2010, the share of crop output and agricultural output that is marketed Of the highest income level is 87.8% and 80.5% while this figure for the lowest income level is just 41.7% and 47.9% as shown in Table 4.5.

During the 2002-2010 period, the commercialization in crop output increases for all income levels, except for the lowest income group with a slight decline of 1.3%. The fifth quintile - household has the greatest increase of 7.6%, followed by the second quintile with a rise of 5.1%. However, the commercialization in terms of agricultural output decreases a little bit for all income levels in 2010 compared to 2002. This may be due to the decrease in the price of animal or fishing products.

#### 4.2 Econometric results and discussion check xong

The analysis in this section uses the data of 6,837 households in rural areas out of

9,189 households under the Vietnam Household Living Standard Survey (VHLSS) 2008.

In the first part of this section, the determinants of income diversification are examined, in which we use three measures discussed in Chapter 3 as dependent variables and different household characteristics as explanatory variables. Descriptive statistics for the dependent and independent variables are shown in table 4.6 below.

Table 4. 6 Descriptive statistics for the dependent and independent variables

As discussed in the methodology pan, the Poisson regression is used in the model of NIS while I obit is employed in the models of NFS and SID. In all of these regressions, the vce(robust) function is selected to correct for the heteroscedasticity.

#### 4.2.1 Expected sign of determinants of income diversification

This section describes the expected influence of each household characteristic (explanatory variables) on the three measures of income diversification (the dependent variables). The hypotheses are summarized in I able 4.7

Table 4.7 Hypotheses regarding impact of independent variables on measures of income diversification

Compared to ethnic minority households, Kinh households have more convenient conditions in joining the economy because the fact that they are less likely to encounter barriers of linguistics and cultures as the other ethnic minorities do. I hen, they are expected to take more income-generating activities as well as activities outside the agricultural sector.

It is not clear about the way the age of household head influences diversification indicators. On the one hand, the older heads with accumulated experience facilitates their households to pursue more different income generating activities. However, under some circumstances, sound experience in a specific activity may urge households to focus on that activity rather than to spread their resources into various activities, resulting in fewer income sources. Accumulation of assets over time enables them to. On the other hand, higher accumulated wealth increases the share of non-participant into more profitable non-farm activities from more years of education facilitate. More knowledge and skills enable households to take part into more economic activities as well as education is related to the expected professional wage jobs. Hence, sources and larger share of income more diversification in number of income from non-farm activity. However, it is ambiguous whether higher education would lead to more household variety of skills, which may pursue more economic activities. Moreover, with more skills, households have more opportunities to take up professional non-farm wage jobs. For these reasons, we expect that the household size is positively correlated with the number of income sources and the share of non-farm income, while the negative relationship is expected to exist between the dependency ratio and these two diversification indicators.

Accessibility to electricity and tap water

allows households to establish self-employment non-farm enterprises. Therefore, the two variables are expected to be positively associated with the non-farm income share as well as the number of income sources. However, it is unclear about the impact of these variables on the Simpson index of diversity.

Market access variables indicate the transaction and transportation cost, one of the important components of operating costs of enterprises, both in agriculture sector and outside. This suggests the negative impact of the household's distance to a daily market and distance to a road on both the number of income sources and the share of income from non-farm activities. For the same argument, the variable period that a road is passable is positively correlated with the two indicators of diversification.

Capital which is partly financed by the formal credit is very vital to the establishment and expansion of enterprises, especially the ones non-agriculture sectors.

#### 4.2.2 Determinants of income diversification (number of income sources)

When holding other variables constant, on average, contrary to our expectation, approximately 0.5 source of income less than Kinh headed household has. This confirms ethnicity is not

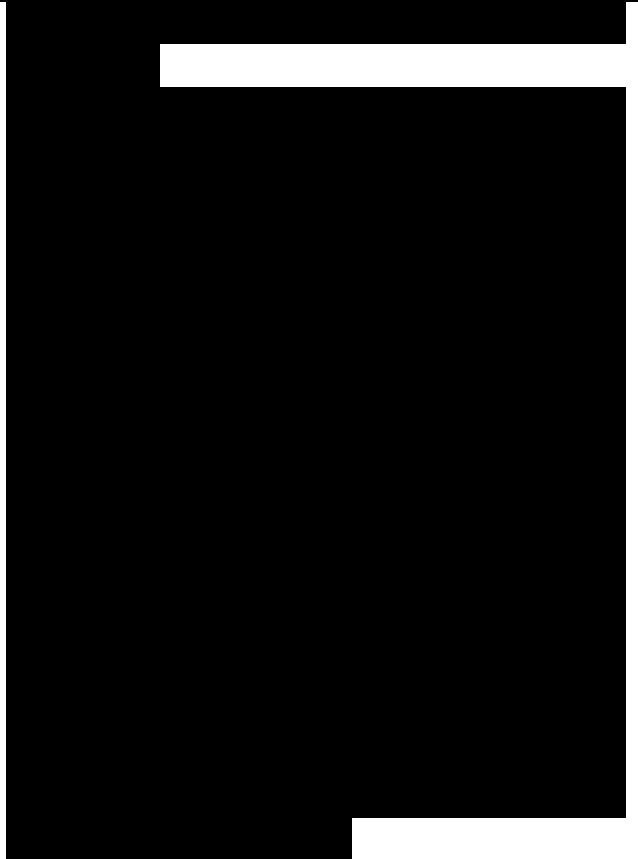
factor determining household income diversification. From the Table 4.8 household

headed by females. In income sources compared to As also shown in table 4.8 agriculture. Enables members in households with the NIS, which is consistent with our expectation, that education and the possibility to take part in more income-generating activities than household or smaller size

While the distance to main roads is significantly negatively related to the NIS as per our expectation, it is on the opposite side for the distance to a daily market. It means that the further from a daily market the household live, the more income sources they pursue, holding other variables constant. As a matter of fact, household living far away from daily markets tend to take part in more income generating activities, especially the farming activities such as livestock raising, crop growing, fishing, etc with a purpose to meeting their daily consumption needs.

It is also shown that the access to formal credit is significantly and positively associated with the NIS, which means that the accessibility to formal credit market allows household to take part in more different income generating activities.

Comparing to the reference region (the



Red River j Southeast region has roughly 0.39 River Delta. f\*« than tauscht|d

The regression results show no slatis,. of income sources across difrWce ^ ^

#### 4.2-3 Determinants of income <livers,f|cat|on ,g.

Similar to the number of income so,. mPS°n "'dcx of diversity)sources (NIS) K' h than the minority people in terms of the balanc ' PC°Ple \* ^ diversified consistent in the 2 models, indicating C T"® ^is number of income sources and m ■ m PC°Ple lCnd t0 haVe fewer sources, due to ,,c,rZ • employment. \* " ^ «

Age of household is positively ,nd signiricam coml>ted ^ ^ ^ indicating that the experience and skills accumulated over time not only allow households to pursue multiple income sources strategy as shown in the NIS model, but also to gain the balance among these sources of income.

The household headed by male is more balanced in income than those headed by female.

Neither household size nor the dependency ratio has significant relation with the SID. It means that there is no difference among large and small size

households in terms of maintaining the income balance among various sources, after controlling other variables.

The significant and negative association between the availability of tap water and the SID indicates that household with tap water is more conc non-farm activities than that without it.

Ip - statistics

\*\*' 973 22"

Source: Vietnam Househo.d

\*\* Survey (VHLSS) 200B

The regression result in Table 4 9 u Shows that nn relation between market access variahi°f Very weak significant «naoies and the Sin i formal credit is strongly and positively i CONtraSt' aCCCSS 10

results produced by the other two models:

Nis^ ^ ^ ^ ^ the

that households in rural Vietnam use the credit to ' ^ ^ h10^' rCC°nflrmS

e credlt to invest in farm activities such “ r\*S,ng "VeS,“k' nshin® « rather i,, non.r,, onc,

Tabic 4. 9 Determinants of income diversification (SID) and (NFS)

#### 4.2.4 Determinants of income diversi it-total income) • nts of the share of income generating

This model is to examine the deterini ^

[abor and the self- from non-farm activities. including the -onj^ ^ ^ ^ ^ ethnic employment in non-farm entcrprij points less !rom IV" 15 78 percent \ minority household head earn ac,ivi,«,,ha,,heKi,,hhousehold implies that the minority have f ' "ldl»8 «hcr variable jobs, which may be explained ^ “PPOru»l>ies to accKS ^ mountainous areas where the co,,dit h. in activities than non-farm ones A nvenient for tho, • .

ness. Age of head of household is significantly and positively associated with the share of income from non-farm activities.

Income from non-farm activities  
As expected, average education of household head is positively related to the share of non-farm income. Significantly, a one standard deviation increase in non-farm income, as well as for establishing and managing household's own non-farm enterprises.

Large size households with fewer older and fewer children members have more likelihood to diversify their income out of agricultural activities. In other words, the more working-age adults the household has, the larger proportion of income earning from non-farm activities. This could be explained that with more working-age people, a household can have more labor involve in non-farm activities due to the decrease in the marginal return of farm output to the labor input.

The availability of electricity and tap water is strongly and positively related to the share of income from non-farm activities. Controlling other variables, household with electricity has higher share of 0.02 percent, of non-tan water is 10.10 percent points.

Distance to market and access to roads are negatively and significantly associated with the share of income from non-farm activities. This is due to the fact that

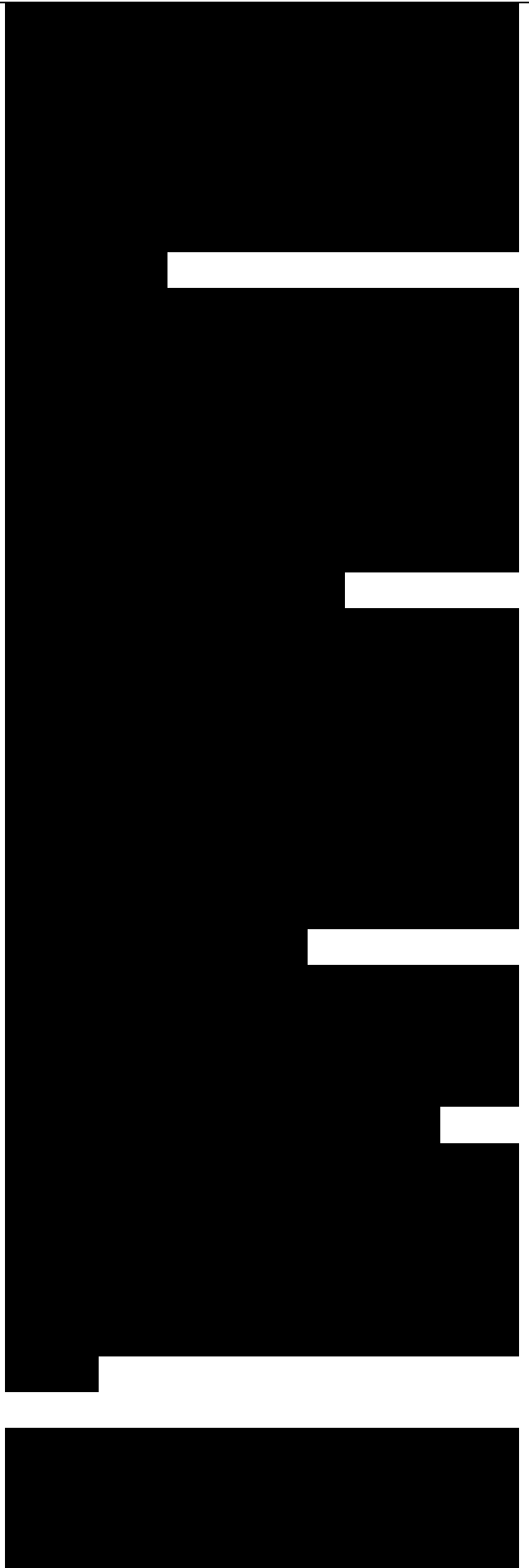


living far from roads eosls bom by self-employment enterp and market centers. SitnUarly, lho higher share of „o„.farm  
 ° Period ^ a importance of „„llrket  
 . aa\*°UiinI,, «\* activities.In  
 llhc share Of ;n \*S hlghliShts income frnm  
 •• Ir°m non-farm

It is surprising to note that access to fomiai co.ela.ed with the share of non.fami "\* \* households living in rural arcas ^ ^ TMybe because 4e ^ organizations to invest in agricul,ura] aclivijies “ fTO n f°TM»l financial It is also shown that comparing to the refer ” TM””:r 'ha"nori'lami ones. after controlling other variables -ill n.i, ^ <the Red River De,ta). other regions have lower share of from non-farm activities, especially the North Cent IP '\$ ^ ^ •fu OA ^ • ral Coast> Central Highlands with 20.62 percent points and 67 „. .32.67 percent pomts lower respectively. These two regions with their own characteristics facilitating more for farm related activities than non-farm ones.

One more important note is that the rich have higher share of their income generating from non-larm activities than the poor which is supported by the econometric results related to the income quintiles in Table 4.9. The richest group of households earns 21.60 percent points more from non-farm activities than the poorest group, holding other variables constant. This means that household economic transformation is closely linked with income growth and economic development.

Table 4.11 summarizes the analysis results regarding to determinant; of different indicators of income diversification. Among independent var



In electricity are the ones which have the consistent positive impact on the diversification of human capital which is in question. Education is a self-reported wage-earning opportunity of households in managing business. Education also has a positive impact on pursuing various activities to earn income, the number of income sources, men and also in rural income sources. Household head education, production and taking part in non-farm activities, and the number of income sources are positively correlated. Households headed by men have more non-farm activities while households headed by women have fewer. Age of household head and the number of income sources are positively correlated. The management skills of household head are positively correlated with the number of income sources and the SID, and therefore no significant impact. The infrastructure such as the distance to a car road and the period of time to reach the level of diverse income sources, the distance of the household from a car road reduces the number of income sources as well as the Simpson index of diversity due to higher transaction cost and transportation cost.

Access to formal credit enables households to diversify their income sources and gain the balance among these sources. Nevertheless, it has a negative relation with the share of non-farm income, which suggests that rural

household tend to use the credit investing into agricultural production like livestock, fishing and forestry, ect rather than into non-farm business.

Table 4. 10 Summary of results on determinants of income diversification

#### 4.2.5 Impact of income diversification on total income of household **check xong**

I he second part of this section examines the impact of diversification on households' total income by analyzing three models in which household's total income is taken as dependent variable and diversification indicators are included as explanatory variables. As mentioned above, in order to control for the problem of endogeneity, we use the Instrumental Variables (IV) method - two stage least squares (2SLS). In which, the income diversification indicators are the endogenous variables and instruments for them include education, access to formal credit and the household size. These variables influence the household's total income through their impacts on the income diversification. The three models are summarized as below:

$Y_j = c$  (NIS. ethnicity, age, gender, depratio, electric, tapwater, marketdis, road dis, road pass)

$Y, \_ f$  (NI;S. ethnicity, age, gender, dep\_ratio, electric, tapwater, market dis, road dis. road pass)

$Y, f$  (SII). ethnicity, age, gender, dep ratio, electric, tapwater, market dis, road dis. roadjpass)

In which:

$Y_1, y_2, Y_3$  IS household's total income in

model 1, model 2, model 3 respectively

NIS, NFS, SID are income diversification measures, which are considered endogenous variables with the instrumental variables: education, credit and household size

The other variables in the three equations are all exogenous variables.

The regression results in table 4.11 show that all of the three diversification measures have significant and positive impact on household's total income. Specifically, each additional source of income increases household's total income by 47,877,000 VND on average, holding other variables constant (column 1). Column 2 and 3 show that an increase of 10 percent in the share of non-farm income will bring household an average rise of 17,630,000 VND in total income while the same percent increase in the Simpson index of diversity helps to increase the household's total income by 14,127,900 VND, after controlling other variables.

In short, regardless of indicators, income diversification has a significant and positive influence on household's total income, which is in line with Sustainable Livelihood theory and consistent with findings by Babatunde and Qaim (2009), or by Minot et al (2006) in the context of Vietnam. This supports the idea that diversification is a strategy chosen by household to increase their income.

Note: \*, \*\*, \*\*\* Coefficients are significant at the 10%, 5%, 1% level respectively

Source: Vietnam Household Living Standard Survey (VHLSS') 2008

#### 4.3 Chapter remarks

Descriptive results show that household in rural Vietnam tend to obtain their income from a variety of sources, in which income from non-farm activities play an increasing importance to the total household income overtime. However, the level of income diversification is very different among income quintile. The poor has a tendency to be more diversified in terms of the number of income sources but less diverse in the share of non-farm income in a comparison to the rich. The econometric results indicate the significant impact of a range of social econometric factor on the income diversification of household such as: education, farm-size, access to market, access to credit...

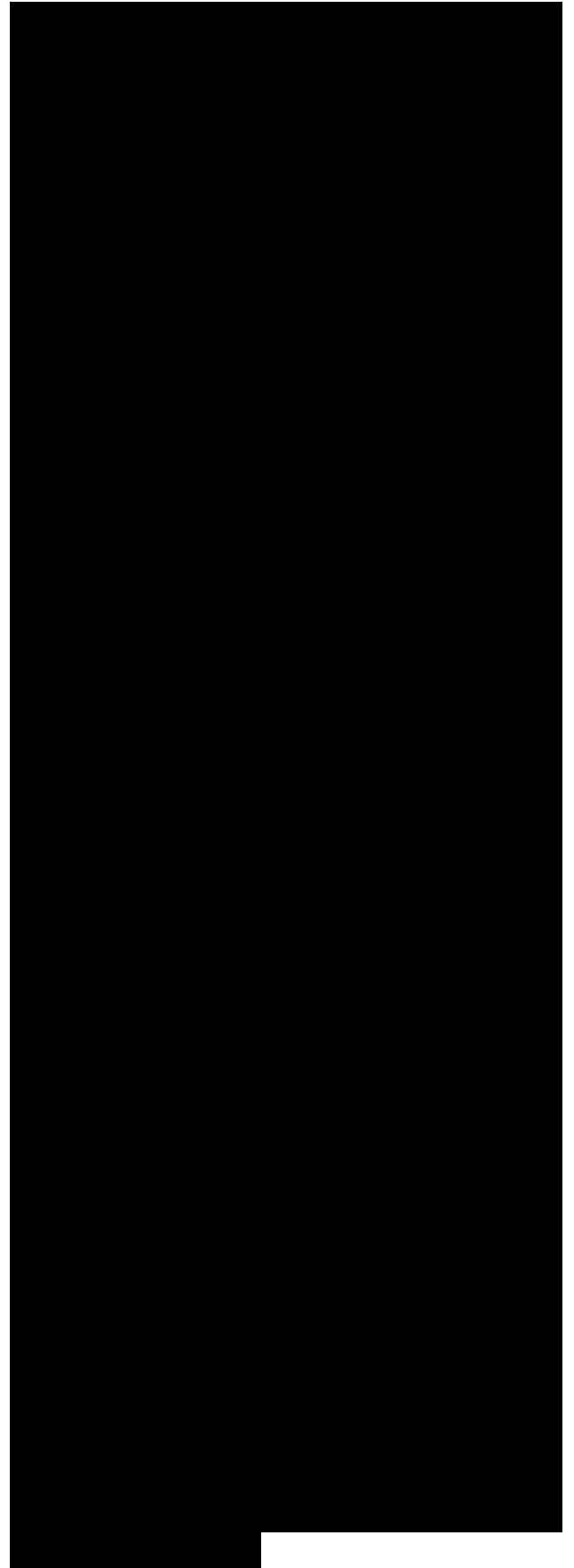
The study of the impacts of income diversification on household total income confirms the significantly positive relationship between diversification and income regardless of indicators used.

#### CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

In this paper, we examine the patterns of income diversification among households in rural Vietnam by taking into account various indicators of diversification. The results show that rural households in Vietnam have fairly diversified income sources. On average, each household has from 3.5 (VHLSS 2008) to 4.3 (VHLSS 2010) sources of income. Besides, the share of income generating from non-farm activities in household's total income tends to grow over time, from 27.4 percent in VHLSS 2002 to reach 37.1 percent in VHLSS 2010.

However, households do not have the same level of diversification. It depends on a variety of socio-economic characteristics of the households as well as the geographical regions in which the household is located. Besides the characteristics of the household head such as age, gender and ethnicity which are found to have significant effect on household's income diversification, education is one of the most consistent variables which significantly and positively influence all the three indicators of diversification in question. This emphasizes the importance of education in enabling household to diversify their income. Household and farm size are also found to be positively and significantly correlated with the share of income from non-farm activities in total income. Non-farm income is an important component of total household's income is impacted by a number of different factors, especially the infrastructure such as the access to electricity, access to tap water, the availability and the quality of car road, etc. in the living area.

The diversification among household also varies across geographical regions. This may be explained by the specific characteristics of each region. The poorest regions such as North East and North West tend to extend to more activities to earn their income than other regions as a means to increase income and reduce the income variation. On the opposite way, regions which have advantageous condition, f,, cc,,nom|c — ^ . 6 \*' °Uth haSt 3re the ones which hav<= 'he highest proportion of income generatmg from non-farm activities in total income compared to



other regions.

In conclusion, pursuing multiple income source strategy is very common among geographical and econometric regions as well as among households of different income quintile and tends to increase in diversity level over time. This is shown in the descriptive statistic part of this paper. However, the diversity degree is varied depending on regions and income quintiles. The poorer have a tendency to be more diversified in terms of number of income sources than the richer. This suggests that diversification is a mean to reduce risks of variation of a certain income source.

However, in terms of non-farm income, the poor are much less diversified than the rich for the fact that the poor often face more constraints compared to the rich. The econometric analysis reconfirms that households have unequal abilities to diversify their income due to the difference in the endowment of different types of capital among them. The socio-economic characteristics such as education, household size, farm size, the availability of electricity, accessibility to credit and good infrastructure conditions influence the level of income diversification. However, it is surprising to note that the access to credit has the negative effect on the diversification of household into non-farm activities. This suggests that households use the credit mostly to invest into agricultural activities rather than non-farm ones, which implies that there is a lack of opportunities for households to join the non-farm activities in rural areas. The regression analysis also point out that the diversification level has significant positive effect, on the total income of households. In other words, rural

households may increase their income by pursuing the diversification strategy.

emphasized:

Firstly, it is essential for the government to ; general and promote the development of the rural areas. The government should improve the rural infrastructure, especially non-farm income. By making increase their income and minimize the risk. Can household government's perspective, it is a means to improve income. Uncertainly- From the reduce the poverty rate in rural areas. Improve the livelihood of its citizens and

Secondly, in order to enhance the rural income, the government should improve diversifying their including roads, electricity, water telecommunication infrastructure, air, telecommunications, both in terms of quantity and quality. The improvement in infrastructure will help to reduce transport and transaction costs for households in rural areas. Moreover, it also makes it easier for households to approach more job opportunities in non-farm sectors in urban areas.

Thirdly, the financial market in rural areas should be improved to finance the production of households in an effective way. It requires the study and execution of the new scheme, in order to meet the loan needs of households and to maintain the sustainable development of the financial system.



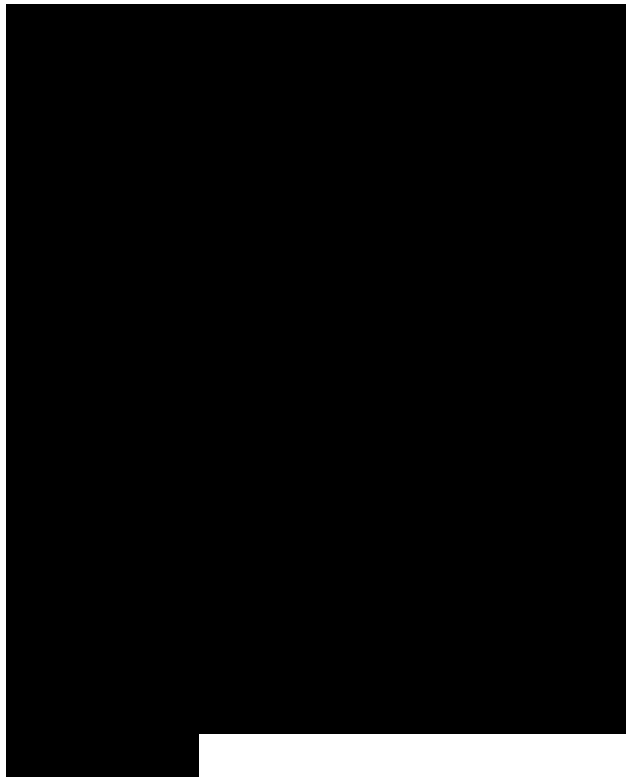
Fourthly, along with improving the formal financial market, it is vital to train households the way to properly invest into agricultural production like crops, fisheries and livestock, as well as providing the technical support for these activities through agricultural extension programs. These programs, recruiting and training the staff for



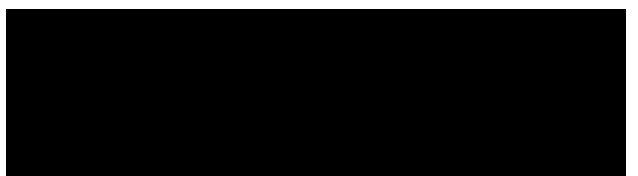
Furthermore, it is necessary to create an environment for non-farm households to invest in non-farm activities. This should be carried out with the expansion of market for output-



Last but not least, the government diversification should pay special attention to mountainous areas who encounter much poverty. The poor in these areas' perspective is that education is an important factor and paid high attention. Education can help households and individuals have a higher level of their income and better the total income in the region. Opportunities to diversify setting up and managing family's own non-farm activities.



Although the income diversification in mountainous households to increase income and reducing the risk of food insecurity, it is always



e,,co»aged take inc0,,c ^ ^ ^  
circumstances, i, is bene, to specialize in  
specif,, activities, \*th hmoeMd has the  
comparative advantages.

At the time this paper is being worked on,  
the VHLSS 2010 results have not fully  
officially announced, therefore, it bases  
its econometric analysis on VHLSS 2008  
rather than the new data from VHLSS  
2010. Moreover, the research must be  
better if it is analyzed on the panel data to  
make the regression results more concrete  
and reliable.

