Non-Farm Employment and Labor Market in Rural Vietnam: Trends and Determinants

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ABSTRACT

Attention has been paid to the role and significance of the non-farm sector (RNS), non-farm employment (RNFE), labor market development and employment/labor market policies in rural Vietnam since the 'DOIMOI' started, in terms of income improvement and employment generation. In this dissertation, the attempts are made to assess the trends and determinants of the involvement of rural employees in the RNS (from household perspective), RNFE, labor market development as well as the effectiveness of a specific labor market policy regarding vocational training (at the personal level) applied for only rural laborers. The studies are based on data collected from (i) a large-scale survey, which was repeatedly conducted in 2007, 2008, 2010 and 2013 in three provinces of Vietnam (consists of Ha Tinh, Thua Thien Hue, and Dak Lak) with the aim of collecting information regarding natural and socioeconomic conditions of living locations (villages); demography, employment, assets and living standard of not only households but also individuals. These surveys are part of an action plan funded by the research project "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging South-East Asian Economies". By using quantitative (regression models) and descriptive methods, the author comes to conclusions that the involvements in the RNS, RNFE, and labor market development are on the increasing trend, and such involvements and developments are affected (either negatively or positively) by various factors regarding local endowment, household-related and personal related characteristics. It has also been found that participating in the vocational training program funded by the government results in higher income for rural laborers. Based on findings presented in this dissertation, the author has made a number of policy implications with the aims of accelerating the development of the RNS, RNFE, and labor market development, as well as maximizing the benefits resulted from the vocational training participation.

ZUSAMMENFASSUNG

Seit der Einführung des Reformprogrammes ''Doi Moi`` wird die Bedeutung des nichtlandwirtschaftlichen Sektors und den damit verknüpften Politikmaßnahmen auf dem Arbeitsmarkt im ländlichen Raum Vietnams hinsichtlich der Generierung zusätzlicher Einkommens- und Beschäftigungspotenziale intensiv diskutiert. Im Rahmen dieser Dissertation wird der Versuch unternommen, die Entwicklungen und die Determinanten für die Integration von Arbeitnehmern im ländlichen Raum in den nichtlandwirtschaftlichen Sektor aus der Sicht von Haushalten zu erörtern. In diesem Zusammenhang wird die außerlandwirtschaftliche Beschäftigung, die allgemeine Arbeitsmarktentwicklung sowie die Effektivität spezifischer politischer Maßnahmen auf dem Arbeitsmarkt z.B. im Rahmen von Berufsausbildungsprogrammen für Arbeitskräfte im ländlichen Raum diskutiert. Die Ergebnisse dieser Arbeit basieren auf Daten, die im Rahmen des Forschungsprojektes „Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging South-East Asian Economies" in den Jahren 2007, 2008, 2010 und 2013 in drei ländlichen Provinzen Vietnams (Ha Tinh, Thua Thien Hue, und Dak Lak) in Haushaltsbefragungen erhoben wurden. Ziel dieser Datenerhebungen war es, natürliche sowie sozioökonomische Lebensbedingungen zu den Themen Demographie, Beschäftigung, Vermögenswerte und Lebensstandard sowohl von Haushalten, als auch von Individuen zu sammeln. Durch die Verwendung deskriptiver und analytischer Statistikverfahren wie z.B. der Regression kommt der Autor zu folgenden Ergebnissen: Erstens, die Entwicklungen des nichtlandwirtschaftlichen Sektors, der außerlandwirtschaftlichen Beschäftigung sowie allgemeiner Trends auf dem Arbeitsmarkt werden durch eine Vielzahl an Faktoren auf der lokalen, Individual- und Haushaltsebene entscheidend beeinflusst. Zweitens, die Teilnahme von Arbeitnehmern in Programmen öffentlicher Berufsbildung kann zu einer positiven Einkommensentwicklung führen. Auf Basis dieser Erkenntnis leitet der Autor Handlungsempfehlungen ab, inwiefern die Politik durch geeignete Maßnahmen den nichtlandwirtschaftlichen Sektor, die außerlandwirtschaftliche Beschäftigung, die allgemeine Arbeitsmarktentwicklung sowie die erhöhten Einkommenspotenziale durch Berufsbildungsprogramme positiv beeinflussen kann.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

ALMP	Active Labor Market Policies
ELMPs	Employment and Labor Market Policies
GDP	Gross Domestic Product
GSO	General Statistical Office
HH	Household
ILO	International Labour Office
ILSSA	Institute of Labour Science and Social Affairs
LFPR	Labor Force Participation Rate
MOLISA	Ministry of Labour, Invalids and Social Affairs
RNFE	Rural Non-farm Employed/Employment
RNS	Rural Non-farm Sector
RLM	Rural Labor Market
SOEs	State-Owned Enterprises
SMEs	Small and Medium-sized Enterprises
TPP	Trans-Pacific Partnership Agreement
UNDP	United Nations Development Programme
UN	United Nations
WB	World Bank

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

1.1. Reasons for the implementation of the dissertation

The 'Doi Moi' reforms of 1986 started to fundamentally change the centrally planned system by adopting market mechanisms in key areas of the economy (J. Revilla Diez, 1995), and this change leads to the comprehensive modifications of the socioeconomic aspects of Vietnam with both achievement and challenges.

From the economic perspective, as generally described by the Vietnam's Central Communist Party (2015) in the 'Summarizing Report on 30 years since DOI MOI', the achievements are as follows: the real ability of the economy has improved; the economic growth rate is considered at a high level. In another word, the country has successfully escaped from the less-developed situation and entered the group of countries with medium income per capita (according to Vietnam General Statistical Office, this income has reached 2200 USD by the year 2015). Nevertheless, a number of obstacles have also been observed. At first, the economic development mostly relies on volume of investing capital and the number of laborers, but not total factor productivity –TFP (refers to the effects in total output growth, with the focus on technological change or technological dynamism). Secondly, the last decade (since the year 2007) has witnessed the uncertainty of the Vietnam macroeconomic situation due to the negative effects derived from external factors (such as the international economic crisis). Apart from that, other issues concerning the increase in public debts, the deduction of firm/enterprise production; the low level of labor productivity, and less competitiveness of the national economy are considered to be the shortages of Vietnam's economy.

With respect to social issues, one of the most important achievements is the success regarding poverty alleviation of Vietnam. It is estimated that the poverty rate of Vietnam has continuously decreased from 58.1% to 5.8%-6% between 1993 and 2014 (Nguyen Huu Dzung, 2015), and this success has been highly appreciated by the United Nations (UN) as well as international communities. Nonetheless, there have been a number of drawbacks observed concerning the increasing trends of regional disparities (J. Revilla Diez, 1999), social stratification, (in terms of economic development and living standard), and the income gap among population/household groups (MOLISA, 2015).

The transformation from a centrally planned system into a market mechanism has also led to numerous changes in the fields of employment and labor market of the whole country in general, as well as in the rural areas in particular. Outstanding among these (at the national level) are: (i) the official recognition and formation of the labor market, along with the promulgation of the labor market institutions. For instance, the labor code and a number of

other laws such as the law on SOEs, the enterprise law, and the law on foreign investment in Vietnam are designed to provide a common legal framework for labor-management relations in both the public and private sectors (Nguyen Huu Dzung and Dao Quang Vinh, 2003); (ii) the shift of employment from the agricultural sector to the non-agricultural sectors (manufacturing/construction and service); (iii) the downsizing of employment in the State-Owned Enterprises (SOEs); and (iv) the appearance and domination of simultaneous migration (compared to planned migration predominated over previously) from rural areas to urban areas/cities. Consequently, a number of achievements have been obtained, such as: (i) quality improvement of the labor force, by which the rate of non-skilled laborers decreased from 77.30% to 50.86% between 2004 and 2014; (ii) sustained high amount of newly-created employment (this figure is about 1.04 million per year during the 2004-2014 period-Nguyen Huu Dzung, 2015); (iii) low rate of unemployment (around 2% within the 2007-2014 period-ILSSA, 2015) and reduction of underemployment rate (decreased from 11.3% to 2.4% between 2007 and 2014[1]); (iv) the downward trend of the share of agricultural employees (decreased from 57.95 in 2007 to 43.65 by the year 2014- GSO, 2015); and (v) the growing tendency of the share of salaried workers (increased from 33.47% in 2009 to 40.98% in 2015- ILSSA, 2015).

Nonetheless, a number of shortages/challenges have also been explored. Firstly, the generation of employment is still one of Vietnam's biggest challenges to the 21st century (Nguyen Huu Dzung and Dao Quang Vinh, 2003), because the main feature of Vietnam (in this field) is the plentiful labor supply of low quality (ILSSA, 2010). Secondly, the low-level of labor productivity and the unstable incomes for laborers (UNDP, 2010) are unchanged. Then, the labor restructuring process took place with the definitely-slow speed compared to that of the economic restructuring process. According to Vietnam GSO, in 2014, there had been 46.36% of total employment belonging to the agricultural sector, but the share of agriculture was just 18.12% of the national GDP. Next, the coverage of the employment/labor market institutions (labor/employment codes and laws) has not extended as expected. This coverage accounts for about 30% (approximately 14 million) of total labor force (Nguyen Huu Dzung, 2015), and mostly focused on those working in the formal sector, while isolating those working in agriculture, in rural areas, and in the informal sector. Apart from that, the employment growth rate is lower than that of the labor force. Indeed, the average annual growth rate of employment is about 2.36% during the 2002-2014 period, while this figure of the labor force is accounted

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[1] Author's calculation from the Labor Force Surveys conducted in 2007 and 2014

for 2.5%[2]. In addition, despite having a low rate of unemployment (of total labor force aged 15 and over), Vietnam still faces with problems concerning the high rate of unemployment of the youth, and the low quality of employment. As mentioned by Nguyen Huu Dzung (2015), the rate of underemployment among the Youth (accounted for 6.26%) is about 4.5 times higher than that of the whole working adults (1.3%). Besides, according to the GSO (2011), the productivity of Vietnam in 2010 was 5877 USD (in terms of the comparative price of the year 1990), and as mentioned by the Conference Board total Economy Database (2011), this figure was equivalent to 1/8.33 of that of Singapore; 1/7.6 of Japan; 1/2.7 of Thailand; and 1/2.5 of China. As mentioned by the ILO, the annual growth rate of Vietnam's productivity since 2008 up until recently was relatively low (3.3%).

Vietnam's rural areas, characterized by the concentration of the major part of the population as well as laborers, have also been faced with numerous challenges in terms of employment and labor market caused by the transition process. At first, the absolute number of workers in agriculture-forestry-fishery is still large and slowly reduced (decreased from 24.6 million in 2009 to 24.4 million in 2014-GSO, 2009, 2014). Secondly, the majority of laborers has been doing non-salary, non-wage work, and therefore is not able to participate in insurance policies or social welfare programs, which have been stipulated in the law (ILSSA, 2010). Thirdly, the amount of people migrating from rural to urban areas is clearly high with the average number per annum of these people accounted for 1.1 million during the 1995-2005 period (Nguyen Huu Dzung, 2015).

Challenges and obstacles concerning rural employment/labor market of Vietnam have been mentioned in the work of different scholars/organizations. For instance, according to the World Development Report (WB, 2008), the main challenges of rural employment in Vietnam are: the decreasing trend of paid employment in the agricultural sector in both supply and demand dimensions; the poor quality of the labor force (considered as one of the bottlenecks of labor restructuring process); the low level of investment in rural agricultural production, and consequently, leading to the inappropriateness of 'on-site jobs' generation in rural areas. Besides, as mentioned by the UN (2010), the excessive migration movement has negatively affected agricultural and rural development by causing shortages regarding skilled and healthy labor force since most migrants are the main laborers in their families. Furthermore, as pointed out by MOLISA (2011), employment generation for the agricultural land-revoked laborers is another imperative issue with the number of losing workplaces reached 13 per 1 hectare of

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[2] Author's calculation based on figures provided by Vietnam GSO 2002, 2014

agricultural land revoked, and the figure of each agricultural land-revoked household is 1.5 people. In addition, as referred by Nguyen Huu Dzung (2015), rural underemployment remains a serious problem that needs to be solved. Indeed, by the year 2014, the underemployed rate in rural areas was 2.96%, and this figure was about 2.5 times higher than that of urban regions. 73.92% of the total underemployed belonged to the agricultural sector. Apart from that, the average income of employees working in agricultural sector (in 2014) is equivalent to two-third of the income of those working in industries, and 50% of the income of those working in services.

Studying on the RNS and rural employment in Vietnam has also attracted attentions of various experts. In terms of the relationships between non-farm employment and poverty alleviation, V. D. Walle and D. J Cratty (2003) concluded that the relationship between the RNS and poverty reduction is unclear with the evidence showing that growing non-farm economy will not be a way out of poverty for every rural household. More specifically, Mausch (2010) confirmed that increasing participation in the RNS does explain lower poverty levels because non-farm households earn significantly higher incomes than farm-only households. Conversely, Luu Duc Khai et al (2012) has pointed out that non-farm participation significantly increases household welfare. Regarding the rural SMEs and rural entrepreneurs, as mentioned by B. Jürgen (2012), the necessity and opportunity entrepreneurs differ in terms of characteristics, and entrepreneurial motivations affect the business performance and outcomes of such SMEs. With respect to income and wages of rural employees in general as well as of rural salaried workers in rural non-farm companies, Mausch (2010) and Schmid (2011) found that wages in medium and large non-farm companies prove to be consistently higher than wages in agricultural jobs, and companies complain about the lack of technical and other working skills among the available workers. Concerning the rural labor market, it is implied that a developed labor market is a good solution to many social issues, and the rural labor market might emerge from rural areas due to the effects of urbanization, industrialization and related events. Nonetheless, rural labor market policies are still in their initial stages of formulation and development (Nguyen Huu Dzung and Dao Quang Vinh, 2003).

In the context of numerous changes (both positively and negatively) taken place in the rural areas of Vietnam, the author conducts a study focusing on aspects concerning the RNS and rural employment/labor market. This study is carried out due to various reasons. At first, it is argued that developing the RNS is one of the key solutions, helping rural laborers to deal with their employment issues without migrating to other urban areas/cities. Secondly, most previous studies regard the RNS and rural labor market in Vietnam as the two separate subjects with less

attention on the relationship between these two fields. Moreover, few studies have given consideration to the impacts caused by affecting factors of the involvement in the RNS and the development of rural labor market. In addition, the major part of these prior studies taking into account the influence of affecting factors, have mainly focused on the country at the macro level, and individuals at the micro level, leaving the meso level regarding the community characteristics un-examined. Furthermore, the assessment of the impact on employment/labor market policies (ELMPs) to rural employment/rural labor market development is almost neglected in Vietnam. Last but not least, not many studies have been undertaken with the focus on the relationships between the rural non-farm sector and rural labor market. For these reasons, the implementation of studies (in this dissertation) focussing on the relationships between the RNS and the rural labor market may contribute to further understanding of rural development in a developing country like Vietnam.

Except the INTRODUCTION and the CONCLUSION, the main contents of this dissertation are reflected in the four separate chapters that further investigate the involvement in the RNS (at the household perspective) and RNFE (at the individual level), and the participation of rural individuals in the development of the rural labor market in Vietnam. These subjects are considered as key solutions to deal with the 'bottlenecks' concerning rural employment and income of rural households/laborers. Firstly, participating in the RNS is used as a diversification strategy by agricultural households/laborers to respond to the uncertainty and low productivity stemmed from agricultural production, and to allocate their human-power resources with the aim of achieving better outcomes (higher income). While involving in the labor market results in the improvement of the labor quality (under the pressures caused by labor market competition as well as a chance to take part in the training system), and better works for rural individuals (probability of taking part in the formal sector). These two participations, theoretically, depend on a set of factors concerning individual, household, and living location characteristics. Secondly, these two subjects play crucial roles in fostering rural development by contributing to the reduction of rural poverty, the increase in labor productivity, and the improvement of the rural labor force.

Conceptually, four different approaches are used: livelihood, labor economics, economic geography, and policy assessment. In this way, it contributes to the further understanding of the employment shift and labor restructuring process of rural laborers in a rural developing context. In short, the first part of this dissertation deals with the involvement in the RNS of rural households. Then, the current situation of rural non-farm employment, and the 'job-search' process of rural individuals will be analyzed. This is followed by analyses of the rural

labor market development with focus on the impacts of factors affecting the probability to participate in the labor force, to work as paid employees, and to be part of the formal sector of non-farm participants. Finally, the impact of a specific labor market policy by conducting an assessment of the effectiveness of the 'vocational training scheme' to rural laborers will be subject of a study. The overall aim of this dissertation is to answer the specific research questions as follows:

Regarding Chapter 1: the non-farm sector involvement.

Q1: How did the rural non-farm sector (RNS) change during the 2007-2013 period?

Q2: How do personal features of the household's head, family-related characteristics, and location-related variations affect rural households to participate in the RNS?

Q3: How do personal features of the household's head, family-related characteristics, and location-related variations affect the patterns of RNS involvement?

Q4: How do the RNS participation and other factors affect the income per capita of household?

Regarding Chapter 2: non-farm employment and job-search.

Q5: What do the RNFE's characteristics look like?

Q6: What are the impacts of factors affecting the individual's probability on participating in RNFE?

Q7: What are the influences of factors affecting the use of formal methods in achieving the current RNFE?

Q8: How do factors concerning RNFE participation, personal, household-related and local-related features affect the income of rural employees?

Regarding Chapter 3: the involvement of rural individuals in rural labor market development.

Q9: How do the RNS and other determinants influence rural laborers taking part in the labor force?

Q10: How do the RNS and other determinants affect rural employees to work as a wage-worker?

Q11: How do the RNS and other determinants affect rural employees to work in the formal sector?

Regarding Chapter 3: An assessment of the effectiveness of the vocational training scheme.

Q12: How is the scheme implemented, and what are the scheme achievements and shortages?

Q13: Which factors affect the involvement of beneficiaries in scheme's training courses?

Q14: How does participating in vocational training affect the income of participants?

The remaining parts of this introduction provide a basis for the chapters that follow. First, some of the conceptual approaches are discussed in Section 1.2. Afterward, the major sources of data

are presented in Section 1.3. Finally, the structure of this dissertation is lined out in Section 1.4.

1.2. Theoretical approaches

Rural non-farm sector and rural employment/labor market development in developing/transitioning countries have been considered as the major concerns of numerous scholars from various disciplines, and through their work, a number of observations have been made as follows:

At the macro level, the role and importance of the Rural Nonfarm Sector (RNS) are debatable. On one hand, the RNS and employment have been rising with development, and this is proved by the high share of labor time spent on non-farm activities in the rural economies (T. C. Sanchez, 1991). As the economies grow, the structure of production changes in a manner where the share of agriculture declines progressively and the share of industry increases (D. N. Reddy et al, 2014). This argument is supported by findings showing that (i) rural non-farm activities and employment in Japan, Korea, and Taiwan have gained significant increases as these economies moved through various stages of development (Mukhopadhyay and Lim, 1985; Oshima, 1984); (ii) rural non-farm labor force increased faster than agricultural labor force during the period 1959-1970 in the Asia-Pacific region (Anderson and Leiserson, 1980). The main characteristic of the rural non-farm production is a low productivity sector producing low-quality goods and mostly consumed by the poor, and the growth in the non-farm sector can tighten agricultural labor markets, raising wages and/or reducing underemployment (J. O. Lanjouw and P. Lanjouw, 2001). Nevertheless, as argued by Kundu *et al* (2003), at the state level, a high share of NFE does not necessarily imply healthy economic development, and a suggestion is made as '…. it would be erroneous to encourage the growth of NFE in rural areas or be complacent about it, unless the productivity of the workforce engaged in this sector can be increased'.

At the household level, non-farm employment is increasingly important for rural households, because participating in such employment helps to increase the household income (S. Wiggins and P. Hazell, 2011). This view is agreed by P. Lanjouw (2007) that '…rural households can, and do participate in a wide range of non-agricultural activities, such as wage employment and self-employment in commerce, manufacturing, and services, alongside the traditional rural activities of farming and agricultural labor. Such non-farm incomes can contribute significantly to total incomes of farming households in developing countries'.

According to P. Lanjouw (2007), there have been close linkages between farm- and non-farm sectors in the rural areas. These linkages can be classified as (i) production linkages, both

backward via the demand of agriculturalists for inputs such as plows, engines and tools, and forward, via the need to process many agricultural goods, e.g., spinning, milling, canning; (ii) consumption linkages were also thought to be important: as agricultural income rose, it would feed primarily into an increased demand for goods and services produced in nearby villages and towns; (iii) furthermore there were potential linkages through the supply of labour and capital. With increased productivity in agriculture either labor is released or wages go up. And the new agricultural surplus would be a source of investment funds for the non-farm sector.

The RNS involvement (of a household or an individual) is affected by a number of factors that are grouped in a hierarchy extending from conditions in the national economy, to requirements at the regional level, to those applying at local level of village, household and individual (S. Wiggins and P. Hazell, 2011). For instance, factors regarding the prosperity of an economic driver, access to the main cities and markets, the nature and quality of the resources found locally, and types of village's (commune's) terrains (P. Lanjouw and A. Shariff, 2004).

Regarding rural nonfarm employment, as mentioned by E. Chuta and C. Liedhom (1979), there are several important sets of issues relating to the extent and nature of rural non-farm activities: (i) the quantitative significance of rural non-farm activities; (ii) their sectoral composition; (iii) equity implications, and (iv) growth prospects. By these it is indicated that rural non-farm activities are quantitatively very important with 30 to 50 percent of the rural labor force in most developing countries. The rural non-farm sector encompasses a wide variety of activities, although manufacturing, commerce, and services generally predominate. Small-scale, rural enterprises are more labor intensive than their larger-scale counterparts. Overall, rural non-farm activities and employment have been increasing in most developing countries. Besides, creating nonfarm employment is crucial for economic development as it is an essential way to absorb fast-growing low-income rural population. Recent arguments for paying attention to RNS generally point out the perceived potential of the sector in absorbing a growing rural labor force; slowing rural-urban migration; contributing to income growth; and promoting an equal distribution of income. In addition, the probability of participating in the RNS is determined by a set of individual-level, household-level, and commune-level characteristics (Pham Thai Hung, 2006).

With respect to the rural labor market, developing a flexible and dynamic labor market to satisfy the demands of a strongly transforming economy is also a significant policy-related issue. More specifically, developing such a rural labor market is essential to enable rural households to adjust the excess or shortages of labor, and rural off-farm labor market opportunities are an important means of offsetting declines or high variances in income (P.

Lanjouw and A. Shariff, 2007). However, in rural areas, where the majority of Vietnam's population resides, paid employment is not easily accessible (Pham Thu Phuong, 2016).

In terms of labor market policy and policy assessment, the evolution of the labor market must be considered in the context of broader economic policies. Labor market policies can be classified as (i) active labor market policies and (ii) passive labor market policies. Of which the former consists of different types, namely: (i) public employment services with the main purpose to make the matching of unemployed workers to vacant jobs more efficient; (ii) training measures, that are used in order to attenuate skills mismatch; (iii) the 'employment incentives' entail wage or job subsidies, as well as start-up incentives to the unemployed; the immediate purpose of these schemes is to increase labor demand; (iv) direct job creation and employment by governmental agencies, which are often considered employment of last resort; nonetheless, it aims at the increase of labor demand and prevention of individual loss of human capital during (long) spells of unemployment (H. Lehmann and J. Kluve, 2008). In the case of Vietnam, these active labor market policies are applied to (i) creating job opportunities. In order to generate employment for people, the government has implemented a number of national target programs; among them is the National Program on Employment (NPE). The government gives priority to providing loans for small projects which generate many jobs and absorb as many female workers, poor, and unemployed as possible; (ii) human capital formulation and skill development. One of the main objectives of the NPE is to increase the proportion of the workforce with skills training. Priority in job expansion is given to vulnerable groups including the disabled, war veterans, demobilized military personnel, redundant workers of state enterprises, and women. Different extension programs in agriculture, forestry, and fishery have provided short-term training courses to hundreds of thousands of people; (iii) matching job seekers. The government provides support to centres for employment services to assist in the implementation of vocational training functions, advice on occupational orientation and provision of job services for workers in the labor market (Nguyen Huu Dzung and Dao Quang Vinh, 2003).

Apart from that, active labor market policies (ALMPs) evaluation has been an important research area in North-America and Western Europe for more than two decades. While earlier works on developing rigorous methods of evaluation were mostly produced in the United States and Canada, the last fifteen years have seen a rapidly increasing share of important works by European-based researchers who have contributed to the refinement of evaluation methods as well as to applying rigorous evaluation methods to a different context than the ones we find in the flexible labor markets of North-America. In Central and Eastern Europe, where the

transition from a centrally planned economy to an economy dominated by market forces started in the early 1990s, some important studies on the efficacy of ALMP have also been undertaken (H. Lehmann and J. Kluve, 2008). There are essentially two types of approaches to evaluate policy interventions, a macro-econometric approach that uses aggregated administrative data, and a micro-econometric approach that is based on individual level data from either unemployment registers or, more frequently, from labor force surveys. The micro-econometric evaluation studies have relied either on hazard rate analyses, often trying to model unobserved heterogeneity between program participants and non-participants econometrically. The basic principle underlying the macro-econometric evaluation of ALMP measures is to establish whether such measures lower the overall unemployment rate holding all other determinants of the unemployment rate constant. The micro-econometric evaluation of ALMP is interested in the impact of program participation on post-treatment labor market outcomes (Heckman, LaLonde, Smith 1999; Blundell and Costas-Dias 2000; H. Lehmann and J. Kluve, 2008).

1.3. Main source of data

Studying on the RNS and rural employment can be implemented based on various types of data collected at either macro, medium or micro levels. At the macro level, a number of analyses on the impact of urban centers to the changes of employment and income of structure of rural areas have been carried out at the state level using workforce data as a proxy for economic variables (A. Kundu *et al*, 2003). In addition, employment patterns in the non-farm sector, based on National Sample Survey data and Census data, have been carefully examined by Visaria and Basant (1994). Regarding the medium-level, Hazell and Haggblade (1990) use Indian state and district level data to look at the relationship between rural non-farm income and total agricultural income interacting with factors thought to influence the magnitude of the multiplier: infrastructure, rural population density, per capita income in agriculture and irrigation. With respect to the micro level, as mentioned by Barret, T. Reardon, and P. Webb (2001), the detailed primary data are valuable sources to study the determinants and effects of diversification behaviors (in Africa). Also, the understanding on RNFE can be achieved through RNFE studies based on micro-level data sets (D. N. Reddy *et al*, 2014).

In this dissertation, the first three chapters are conducted based on the data stemmed from the large-scale surveys under the research project "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging South-East Asian Economies". These surveys covered three provinces (Ha Tinh; Thua Thien-Hue; and Dak Lak) in Vietnam with a total of some 2200 households and were repeatedly conducted in 2007, 2008, 2010, and 2013. This dataset contains information concerning (i) regional/community aspects such as

village infrastructure and institutions; (ii) socioeconomic and demographic conditions of both households and family members. In order to observe the impact derived from district's characteristics, this dataset is enriched by adding some variables at the district level regarding population, urbanization, poverty, non-farm enterprises/firms (both registered and non-registered), and district's GDP derived from the non-farm sector. Then, the data employed to analyze the impact of a specific labor market policy to rural non-farm wage in the last chapter (Chapter 4) is taken from a combination of the Labor Force Surveys conducted by Vietnam General Statistical Office in 2012, 2013, and 2014.

1.4. Structure of the dissertation

As previously mentioned, the main body of this dissertation consists of four independent chapters, which are linked in several aspects concerning the Rural Non-farm Sector (RNS), Rural Non-Farm Employment (RNFE), Rural Labor Market (RLM), and Employment-Labor Market Policies (ELMPs).

Chapter 1: This chapter aims to contribute to the understanding of the livelihood and diversification strategies of rural households by investigating the trends and factors affecting their RNS involvement, the patterns of RNS participation, and the influence of taking part in non-farm activities to the household income. Among others, participating in the RNS is crucial for rural development, poverty reduction (Pham Thai Hung, Dao Anh Tuan and Bui Le Thanh, 2010), and for the increase of household income of rural households in Vietnam (The World Bank, 1998, 2006), and this participation is affected by factors regarding natural characteristics (Readon, 2001), local infrastructure (Jalan and Ravaillon, 1998; Lanjouw and Feder, 2001; Komives et al, 2001; and A. E. Isgut, 2004), household's physical assets (J. R. Davids and D. J. Bezemer, 2004), education (A. Gordon and C. Craig, 2001; Fafchamps and Quisumbing, 1999, 2003; and Yang and An 2002), social capital (A. Gordon, C. Craig 2001), and demographic characteristics of the households (Readon, 1997; Bryceson, 1999; J. Smith, 2000; A. E. Isgut, 2004; and D. B. Rahut et al, 2015). Using different regression techniques and information from 7155 households repeatedly interviewed in the 4-wave survey, the results of this chapter demonstrate that the major part of the surveyed households has been engaged in non-farm activities, or participating in the RNS has currently become popular in the rural areas of Vietnam. In consistence with previous studies conducted by various scholars (e.g. T. Reardon et al, 1999; C. B. Barret, T. Reardon, and P. Webb, 2001; Haggblade et al, 2002), the analysis shows that participation in the RNS and patterns of the RNS involvement are explained by factors mentioned above.

Chapter 2: While chapter 1 explores various aspects of the RNS involvement from the household perspective, chapter 2 adds to the literature by investigating such involvement with respect to some features of non-farm employment (in comparison with agricultural jobs), and methods used during the job-search process for getting the employment in the rural non-farm sector, from the individual level. The analysis is motivated by growing concerns that raising probability to work in the RNS and using the formal methods for job-search may have increased the chance for rural laborers to achieve the 'better' jobs. In light of this, chapter 2 relies on the database derived from the 4-wave survey under the framework activities of the research project "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging South-East Asian Economies" conducted in 2007, 2008, 2010, and 2013. This panel-data contains information of 12837 working individuals; 5351 cases using either formal or informal methods to achieve current non-farm jobs, and 9942 cases having income generated from employment. This database is enriched by adding a number of variables containing information (provided by the provincial GSOs) at the district level. This additional information consists of the total population, urbanization rate, poverty rate, the amount of the non-registered and registered enterprises, and the volume of GDP stemmed from the non-farm sector. In order to analyze these concerns mentioned above, the impacts of factors affecting RNFE and methods used in the job-search process of rural employees are estimated by using different regression techniques (consisting of the probit and OLS models) and instrumental variables to capture the features concerning personal, household, and local endowment.

Chapter 3: Chapter 3 takes account for the portrait regarding rural labor market development by analyzing the differences between rural laborers participating in the development process of the rural labor market in Vietnam. This chapter provides direct evidence of the effects of affecting factors regarding personal-related, household-related and local endowment-related features to the individual probability to participate in the labor force, to work as paid employee, and to take part in the formal sector. In order to identify these impacts, a panel-data, resulted from research project on "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging South-East Asian Economies'', is used that provides detailed information of 27336 individuals aged 15 and over, having information taken into account in assessing the probability to participate in labor force, 20753 persons with information allowing the assessment of the probability of being employed as salaried workers, and 4951 workers with sufficient information for assessing the formal sector involvement. Similar to chapter 2, the dataset of chapter 3 is also enlarged by adding a number of variables containing information

at the district level (as mentioned in chapter 2). Then, the 'Probit' regression technique is applied to quantify potential effects caused by explanatory factors taken into the models.

Chapter 4: The fourth chapter adds to the literature on the influences of the policy interventions in dealing with problems regarding rural employment and is considered a supplemental part that makes this dissertation a completed entity by referring to the aspects of employment and labor market policies (ELMPs) targeting rural employees. In particular, the author conducts an assessment of the impact of a national scheme that provides 'Vocational Training' for only the rural laborers of the whole country. The main contents of this chapter focus on (i) the implementation of the scheme, (ii) factors affecting the scheme-involvement of the beneficiaries; (iii) the effectiveness of this scheme to employment income of rural participants. This chapter uses both the primary and secondary data plus information derived from the administrative reports/meeting minutes as well as relating articles to assess the scheme interventions. Of which, the assessment focusing on scheme implementation is basically approached from the macro level by using information stemmed from the secondary data sources plus those derived from the administrative reports/meeting minutes as well as relating articles. This assessment (based on the analytical and descriptive methods) refers to a number of aspects (as suggested by an analytical framework offered in a book named 'Better Practice Guide' of the Australian Government) of the scheme, through which the achievements and obstacles/shortages have appeared. The influences of factors affecting the scheme-involvement of rural laborers, and the effectiveness of scheme participation are measured with the use of the 'Probit-regression' model and the 'Propensity Score Matching-PSM' method respectively.

CHAPTER 1. RURAL NON-FARM SECTOR INVOLVEMENT FROM THE HOUSEHOLD PERSPECTIVEs

1. Introduction

The 'rural area' is a term that is used to identify rural people, places, and socio-economic issues. It is commonly agreed that there is no single, universally preferred definition of rural (A. F.Coburn, 2007), and the methods for defining rural are based on geographic units, which are sometimes combined with population or provider characteristics. According to the US Census Bureau, the term 'rural area' implies all territory, population, and housing units located outside of urbanized areas and urban clusters. Alternatively, in Canada, the 'rural area' (termed as 'rural and small town') refers to the towns and municipalities outside the commuting zone of large urban centers (R. D. Bollman and N. Rothwell, 2010). In the case of Vietnam, historically, a 'rural area' was defined by some characteristics concerning economic activities; blood and clan relationships; and place of residence or local administrative organizations (named as "village" and "commune"). Presently, a 'rural area' is identified based on the administrative management criteria, by which, the 'rural area' is a location that belongs neither to the inner city, nor to the town, and is locally managed by a 'communal-people committee[3]'

Despite taking the highest share in the land (78.8%-GSO, 2014) and the majority of human resources (66.9% of the total population and 69.3% of total labor force-GSO, 2014), the rural areas in Vietnam are now facing some challenges, regarding socio-economic development. These are the imbalance between rural and urban areas in contributing to the economic growth rate (0.61 percentage point of the total 5.98 % in 2014-GSO, 2014); the majority of employment being working in agriculture (66.44%-GSO, 2014) with low-productivity (900 USD per capita-GSO, 2014), the low-level of income per capita (equivalent to 50% of income per capita in urban areas - Ministry of Agriculture and Rural Development, 2012), and the high share of poverty (92.4%-Ministry of Labor, Invalids and Social Affairs, 2014) compared to the urban areas.

Recent years have seen a recognition that the RNS[4] can contribute to economic growth, rural employment generation, and a more spatially balanced population distribution (J. O. Lanjouw, P. Lanjouw, 2001). Simultaneously, it is widely assumed that the increase of participation in RNS is important to Vietnam's future growth, because promoting a buoyant non-farm sector

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[3] www.khanhhoa.gov.vn
[4] The term RNS (Rural Non-farm Sector) applied has the same meaning as the term Rural Non-Farm Economy (RNFE)

is crucial for rural development and poverty reduction (Pham Thai Hung, Dao Anh Tuan and Bui Le Thanh, 2010), and for the increase of household income (The World Bank, 1998, 2006). It is obvious as seen from the papers mentioned above, that the non-farm sector was referred to as a factor having a positive impact on the development of rural areas. Nevertheless, there is a lack of empirical studies on the non-farm sector in rural Vietnam, a country which has been undergoing a transformation process. For that reason, the author conducted a study that deals with the recent trends, patterns and determinants of the RNS in rural Vietnam, and the influences of RNS involvement from the household's perspective. Specific objectives of the study are: (i) describing and analyzing the main trends in RNS participation; (ii) identifying the impacts of factors affecting the probability of households to participate in the RNS; (iii) identifying the impacts of factors affecting the patterns of RNS involvement; (iv) assessing the RNS influences on income per capita. To achieve these objectives, the study concentrates on answering the following questions:

(1)   How did the rural non-farm sector (RNS) change during the 2007-2013 period?

(2)   How do personal features of the household's head, family-related characteristics, and location-related variations affect rural households to participate in the RNS?

(3)   How do personal features of the household's head, family-related characteristics, and location-related variations affect the patterns of RNS involvement?

(4)   How do the RNS participation and other factors affect the income per capita of household?

Findings and policy implications of this paper are expected to support the policy-makers in achieving further understanding, and as the results, leading to the more relevant processes concerning policy/program/project designing and implementing, with the aim of encouraging and achieving regional development and labor restructuring.

The remainder of this paper is organized as follows: Section 2 focuses on the theoretical discussion on the rural non-farm sector by mentioning the evolution of the 'RNS' definition, the determinants of 'RNS' development; Section 3 describes in details the methodology consisting of data and research methods; Sections 4 refers to the main findings of the study; and Section 5 proposes conclusions and policy implications.

2. Theoretical discussion on the Rural Non-Farm Sector

Although it had been mentioned, but not explicitly considered in the works of W. A. Lewis (1954), Ranis and Fei (1961), Harris-Todaro (1970), the term concerning the RNS, was officially defined in the work co-authored by S. Hymer and S. Resnick (named as the H-R model) in 1969, and since then, it has continuously been developed by various scholars. Indeed,

this definition, at the beginning, had just implied that the non-farm production was separated from agriculture under the name "Z-goods" (produced and consumed within the rural sector) production including manufacturing, construction, service, and distribution activities undertaken either at home or in the village (Hymer and Resnick, 1969). Then, based on the degrees of specialization and market involvement, C. Liedhom modified this concept by classifying the Z-good sector into three sub-groups as (i) non-traded home production for own use; (ii) traded production that is undertaken as the secondary occupation, and (iii) traded production that is undertaken as a primary occupation. Next, aiming to explore the major determinants of dynamism in rural development, from both theoretical and empirical perspectives in the post-colonial era, G. Ranis, F. Stewart et al (1990) revised the H-R model by dividing the Z-good sector into Zt, covering traditional household and village processes and products, and Zm covering nontraditional or modernizing rural non-agricultural processes and products; pointing out the emergence of U-sector (a modern industrial sector) displaced Z-goods; mentioning the role of capital, as well as technology changes in terms of strengthening the linkages between agricultural and non-farm sectors by increasing labor productivity that permitted to release land and labor from agricultural production for the enhanced non-farm production's purposes. Continuously, L. O. Lanjouw and P. Lanjouw (1997) defined the RNS as being all those income generating activities (including income in-kind) that are not agricultural but are located in rural areas, with a key term of 'rural'. Furthermore, the RNS is seen as incorporating jobs which range from those requiring significant access to assets, such as education or credit, to self-employed activities such as the roadside 'hawking' of commodities which have low barriers to entry and low asset requirements (J. Davis, 2001). The expansion of this definition has been marked by the development of research perspectives, theoretical frameworks as well as approaches for both theoretical and empirical study purposes in understanding and analyzing the role and importance of RNS regarding encouraging socio-economic development processes.

The RNS should be discussed as being either part of a growth strategy for the economy (demand-pull), or as a 'defensive' survival strategy for the rural poor (distress-push) with the usage of the term "RNS" (defined by J. Davis, 2001) mostly focused on 'farm' versus 'non-farm' or 'on-farm' versus 'off-farm' activities. Theoretically, there is a common recognition that diversity can be classified into "demand-pull" and "distress-push" diversifications (e.g. Efstratoglou-Todoulo, 1990; Reardon et al, 1999; J. Davis and D. Pearce, 2000; Haggblade et al, 2002). It is assumed that, distress-push diversification will dominate in the lagging rural areas (with the following characteristics: geographical isolation, low-quality physical

infrastructure, low human capital, underdeveloped markets, scarcity of resources, recent shocks to the natural environment, economic system or agricultural sector) and/or in rural households with less well-endowed or lower income. Meanwhile, demand-pull diversification is possible in the rural areas with the presence of expanding technological innovations, market development or intensifying links with markets outside the local economy (J. Davis, 2001), and/or in rural households, who, with their prosperity, can meet the requirements of higher investment to the higher-income activities. In other words, if distress-push diversification dominates, it is expected that poorer households are more involved in diversification than others. Conversely, in the case of predominantly demand-pull diversification, there would be a higher rate of higher income households engaging in non-agricultural diversification than the poorest households.

Determinants of RNS development: There have been various factors that have strongly influenced the development of the RNS. Those factors can be grouped as follows:

- *Natural characteristics:* it is totally agreed upon that the natural characteristics of residential location determine the patterns and scope for RNS's involvement of households in rural areas. Households located in the unfavorable agro-climatic areas with poorly-accessed infrastructure tend to take part in more self-employed-non-farm activities and/or migration than others living in favorable agro-climatic zones with easily-accessed infrastructure (T. Reardon, 2001).

- *"Local infrastructure" factors:* as mentioned by Jalan and Ravaillon (1998); Lanjouw and Feder (2001); Komives et al (2001), 'local infrastructural factors' consist of a number of indicators relating to types and density of the road networks, Proximity to towns, and/or linkages with urban areas. These factors play crucial roles in supporting the rural growth in expanding input-output market, providing services (public, information, credit) as well as economies of scale and agglomerationand connecting rural products with national or global markets (World Bank, 2001). Furthermore, regarding distance, rural areas that are closer to urban centres enjoy greater opportunities for wage non-farm employment. Households located in these areas can commute to work in nearby towns, and perhaps have access to good schools, which provide the necessary skills for that type of employment (A. E. Isgut, 2004).

- *Household's physical assets*: those kinds of resources play an important role in mobilizing financial capital to invest, expanding the scope or setting up new non-farm businesses. It is assumed that a household with high potential of physical resources could easier establish or develop the scale of their non-farm business. Moreover, "asset endowments" (such as land, livestock, real estate) and savings (i.e. wealth, income levels) increase the opportunity to invest

in education, contacts or productive assets that generate income either through entrepreneurship or wage labor (J. R. Davids and D. J. Bezemer, 2004).

-*Education:* Theoretically, education increases skill levels, which are required for some non-farm activities, or contribute to increased productivity, or may be an employment rationing device (A. Gordon, Ann, C. Craig, 2001). Empirically, education is one of the most important factors determining a household's ability to participate in non-farm activities (D. B. Rahut et al, 2015). This argument is strongly confirmed not only in the developing countries in Latin-America (T. Reardon et al, 2001), but also in the rural economies in Africa (Barrett, Reardon, and Webb, 2001) as well as in rural parts of Asia (Fafchamps and Quisumbing, 1999, 2003). Education improves the allocation of household resources between agricultural and non-agricultural activities in rural areas (D. T. Yang and M. Y. An, 2002), and increases household's opportunity in accessing more remunerative non-farm employment.

- *Social capital:* Social capital comprises the social resources (for instance networks, memberships of groups, access to wider institutions of society) upon which people draw in pursuit of livelihoods. Individuals and households with better social networks have greater opportunities in the non-farm sector (A. Gordon and C. Craig, 2001).

- *Demographic characteristics of the households:* It is commonly agreed upon that the employment diversification of a household is affected by factors relating to family size and structure, as well as personal characteristics of the household head. Indeed, the family size and structure of families are also significant determinants for households to participate in the RNS. As argued and confirmed by Readon (1997) and A. E. Isgut (2004), family size and structure positively affect the ability of a household to supply labor to the non-farm sector, and larger households have more opportunities to diversify their participation in economic activities. Some similar findings are also seen in the works of Bryceson (1999) and Smith (2003). Furthermore, the impacts of personal characteristics (gender, education, social capital) of the household's head to the RNS participation are also confirmed, and the empirical results show that these impacts vary across economies and countries depending on social norms and the status of female members of the households and society (D. B. Rahut et al, 2015).

3. Methodology

3.1. Data

The data set, employed to analyse the trends of RNS and to identify the impacts of factors affecting the RNS participation, patterns of RNS involvement and the income per capita of the rural households, is taken from the large-scale surveys under the research project "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging South-East Asian Economies". These surveys covered three provinces (Ha Tinh; Thua Thien-Hue; and Dak Lak) in Vietnam with a total of some 2200 households and were repeatedly conducted in 2007, 2008, 2010, and 2013 (Phung T. D, B. Hardewg, S. Praneetvatakul, and H. Waibel, 2013). The survey locations were purposely chosen to represent the three agro-ecological zones (North-Central Coastal; South-Central Coastal and Central-Highland areas in Viet Nam) and focused on the less-developed provinces with typical characteristics such as low per capita income, poor infrastructure, high share of agriculture in household income, inequality in wealth and development potential.

There have been various kinds of questionnaire forms applied in the survey to collect information on respondents depending on the purposes of the studies. Two of which are the ones named (i) the "Village head questionnaire," which is used to achieve information concerning regional/community aspects such as village infrastructure and institutions; and (ii) the "Household questionnaire," which aims at covering a broad set of questions regarding the socio-economic and demographic conditions of both households and family members.Of which, at the family level: information concerning demography (total number of family members), family resources (education, human resource, physical resources, assets), and the income earned; and at personal level, those mentioning to demography (age, sex, marital status), human capital (education, working experiences, social capital), and employment (both farm and non-farm activities) are also collected.

3.2. Research methods and explanatory variables

a. Research methods

The author uses the descriptive and analytical methods to elucidate the main trends of the RNS during the 2007-2013 period, focusing on the changes and differences of aspects concerning RNS participation, patterns of RNS involvement, and household income. These changes and differences are seen from various dimensions relating to time series (years), surveyed locations (provinces), and types of households (involved or not involved in the RNS).

To identify the impacts of factors affecting the probability of households to participate in the RNS, the author uses the probit regression model (with panel data). This model has the general form as follows:

Log (p /1−p) = α + β1x1+ β2x2+ β3x3+ (1)

Of which:

'p' is the probability of households engaged in the RNS. By which, the RNS involved households refer to those having a minimum of one of their family's member working in the RNS either as the main job or as the second job.

'1−p' is the probability of households not engaged in the RNS. Households without RNS involvement are those having all of their family members working in agriculture.

'x1', 'x2', 'x3' are the explanatory variables.

To identify the impacts of factors affecting the patterns of RNS involvement of households, the author uses the multi-nominal-regression model (with panel data). This model has the general form as follows:

Log (pi/pj) = α ij+ βijx1+ βijx2+ βijx3…. (2)

Of which:

'(pi/pj)' is the probability of the household being involved in the RNS in either one of three different types of RNS participation named: 'only wage-worker', 'only self-employed', and 'both wage-worker and self-employed'.

'x1', 'x2', 'x3' are the explanatory variables.

 To identify the impacts of RNS participation and other factors affecting the income per capita of households (logarithm), the author uses the OLS fixed-effects regression model (with panel data). This model has the general form as follows:

Y = β1+ β2x1+ β3x2+ β4x3 + β5x4 + u (3)

Of which:

'Y' is the household's income per capita (logarithm). This indicator is calculated from the total money derived from activities generating income divided by the total family members. The money not generated from activities (such as pension, interest, insurance payment and so forth) is excluded.

'x1', 'x2', 'x3', 'x4' are the explanatory variables.

b. Explanatory variables

The author uses some explanatory variables to analyze the influences of affecting factors to the RNS participation, patterns of RNS involvement and the income per capita of household mentioned in the previous equations. The details of these independent variables are as follows:

- *Personal characteristics of the household's head:* these will be seen from the perspectives concerning demography, social capital, and education. In which, the demographic aspect is captured by age, gender (male and female), and marital status (currently live with his/her spouse and another status). Social capital is measured by the status of the household's head in attending any local's social organization (for instance: Women Association, Youth Union, Farmers' Association, Veteran Club and so on). Then, education is measured by the number of years attending school by the respondents.

- *Family size and family human resource*: to capture these characteristics of the surveyed households, the author uses two variables concerning total members and total adults (aged 15 and upward) in the household. In addition, an interactive variable concerning education is also used to capture the quality of the family human resource. This variable is measured by the average number of schooling years of total adults in the household.

- *Family physical assets and living standards*: the level of household's financial resources in this study is captured by the total values (in USD) of land(s) owned by the household. Besides, another qualitative variable regarding the household's living level is also taken into the models. Based on the original information observed from the question that classify the household's wealth (in comparison with local residents) into 5 categories named 'Much Richer', 'Richer', 'The Same', 'Poorer', and 'Much Poorer'. The author has re-grouped interviewed households into two groups: those having the 'Much Richer', 'Richer' and 'The Same' levels are considered as the 'living above the poverty line'-group, while those having 'Poorer' and 'Much Poorer' answers are categorized as the 'poor household'-group. In the coming models, the 'poor household'-group is coded as 1 (and '0' otherwise).

- *Natural characteristics*: the author uses two variables to capture these factors of the households. The first one refers to the type of the village's terrain where the households are located. These terrains are divided into (i) plain/flat terrain and (ii) another type of terrain (for instance mountainous-terrain, river-terrain). Furthermore, in the case of Vietnam, there has been a national investment program (funded by the government) under the name of 'the 135's

program' being carried since 1998[5]. Under this program, a number of communes, characterized by a set of difficulties concerning geographical features (located in mountainous and/or remote areas), population (the major part of inhabitants belong to minor ethnicities), less-developed level of socio-economic development (high rate of poverty, poorly-accessed infrastructure), are selected to be the beneficiaries of the program.Therefore, the author uses another variable named 'commune with 135 program's participation' to separate the households located in the unfavorable areas with others. Finally, taking into account differences between regions, the author considers the specification of areas that allowed the 'living-location' effects by separating the surveyed households living in the capital area from others inhabiting other areas of the provinces.

- Local infrastructure: to account for the impacts of factors regarding the local infrastructure's conditions, the author includes two variables measuring the average speed for households to reach the capital of the district and the capital of the province. These two variables are measured by the average number of kilometres per hour for traveling from their houses to the two mentioned destinations.

- Furthermore, the author also puts a dummy variable regarding year into the 'probit-regression' and 'multi-nominal-regression' models with the aim of controlling other influences caused by unobserved factors (for instance the global macroeconomics, inflation rate).

The variables are briefly presented in Table 1 below:

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[5] This program went into service following the Prime-Ministerial Decision number 135/1998/QĐ-TTg dated 31st, July 1998 concerning the ratification of the socio-economic development program for the crucially-poor communes locating in the remote and mountainous areas. The selected communes will receive financial aids and other support to improve their socio-economic condition (for example: upgrading the local infrastructural system).

Table 1. Summary of dependent and explanatory variables of the models

Explanatory variables	Dependent variables used for:		
	RNS participation	Patterns of RNS involvement	Income per capita
Age (continuous, year)	X	X	X
Female (dummy, 1 if female)	X	X	X
Married (dummy, 1 if currently live with spouse)	X	X	X
Schooling year (continuous, year)	X	X	X
Member of a social organization (dummy, 1 if Yes)	X	X	X
Total members in the family (continuous, person)	X	X	X
Total adults in the family (continuous, person)	X	X	X
Average schooling years of HH's adults (continuous, year)	X	X	X
Poor household (dummy, 1 if Yes)	X	X	X
Total values of land(s) (continuous, USD)	X	X	X
Commune with plain-terrain (dummy, 1 if Yes)	X	X	X
Commune with 135-program's participation (dummy, 1 if Yes)	X	X	X
Average speed to reach central district (continuous, km/hour)	X	X	X
Average speed to reach central province (continuous, km/hour)	X	X	X
Belong to the central province (dummy, 1 if Yes)	X	X	X
RNS participation (dummy, 1 if Yes)			X
Year (dummy)	X	X	

4. Research results

4.1. Descriptive results

* RNS participation

Figure 1 shows the increasing trend of household's participation in RNS during the 2007-2013 period, and this involvement differs from province to province. By which, the RNS participation share of the whole period is 78.77%, and this share continuously increased from 73.78% in 2007 to 81.70% in 2013. Of the three surveyed provinces, Thua Thien Hue takes the highest position with 83.13% of total surveyed families involved in non-farm activities, followed by Dak Lak (77.15%), and Ha Tinh (76.19%).

Figure 1. Change in the RNS participation (%)
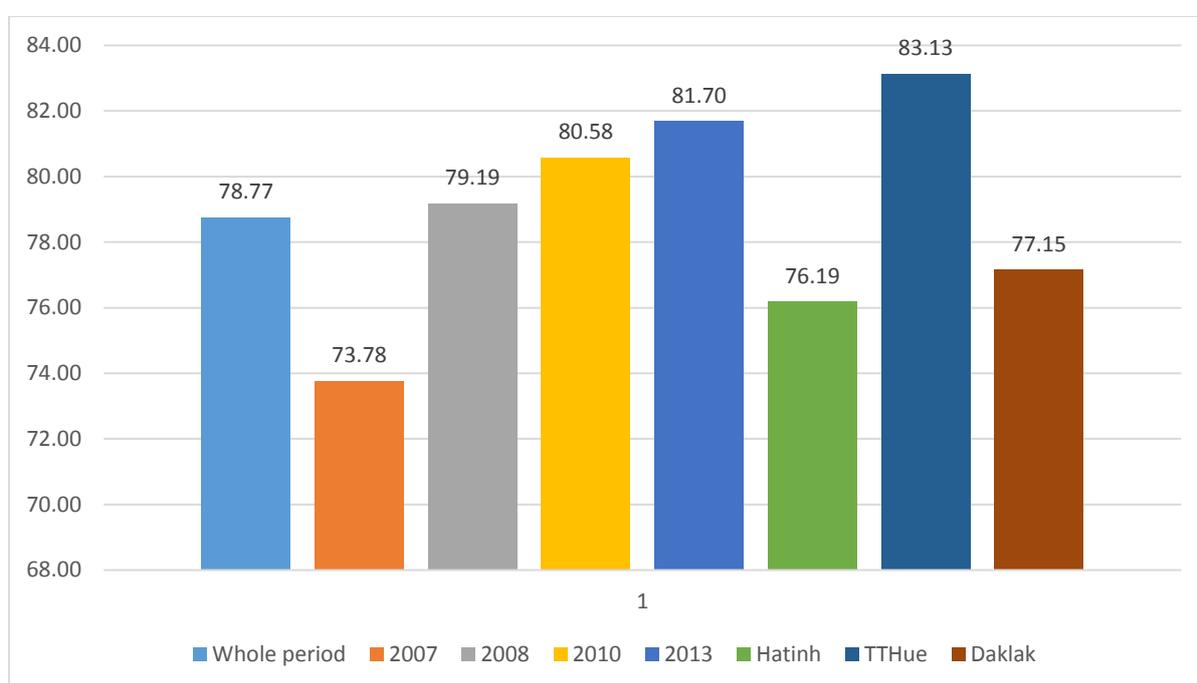
Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies

* Patterns of RNS participation

There have been various trends regarding patterns of RNS involvement among surveyed households, as presented in Figure 2. By which, of the RNS-involved households, the form named 'only wage-worker' (WW) became the most popular type, meanwhile, householdsinvolved in the RNS as 'self-employment' (SE) took the lowest share, and both of these two types showed decreasing trends. Conversely, the type of 'engaging in both wage-worker and self-employment' (WW and SE) took the second largest share and showed an increasing trend. The details are as follows:

As mentioned previously, the major part of the RNS-involved households belongs to the group named 'only wage worker' (65.4% for the whole period). Of the three selected- provinces, the share of this participation in Dak Lak is the highest (72.6%) compared to Ha Tinh (69.7%) and Thua Thien Hue (54.3%). Nevertheless, this participation is on a slightly decreasing trend with the percentage points of contribution down from 67.5% in 2007 to 63.7% by the year 2013.

Figure 2. Distribution of types of RNS participation (%)
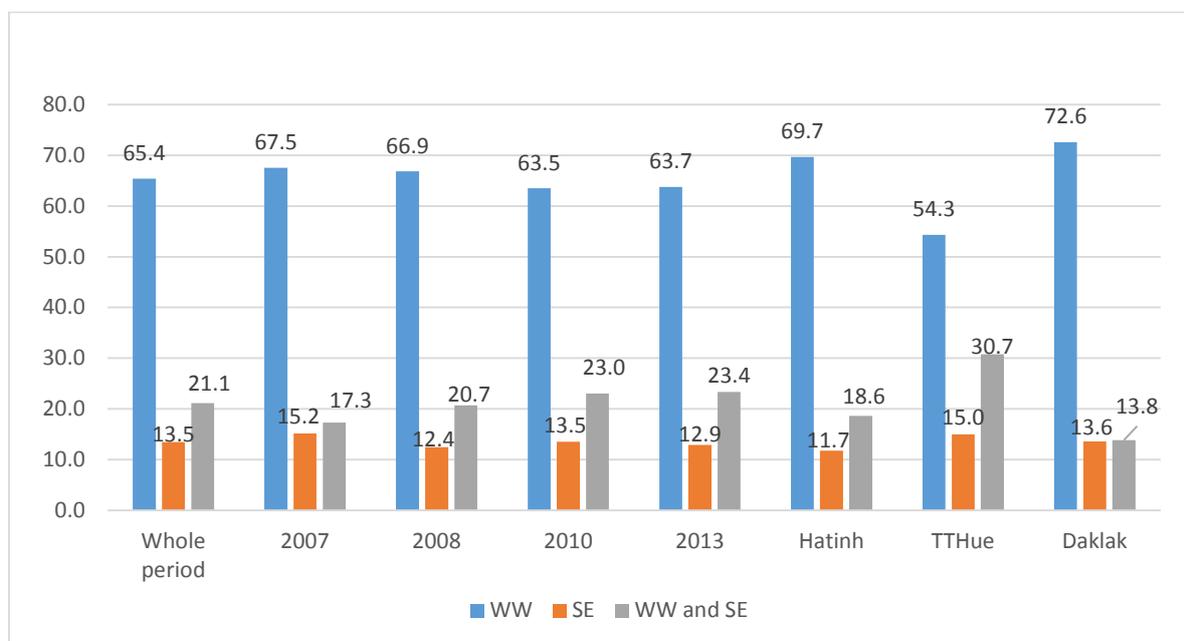
Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies

Participating in the RNS as the type of 'only self-employment-SE' takes the lowest share, compared to the two others with a fluctuated and decreasing trend. Indeed, the share of this pattern accounts for 13.5% for the whole period and decrease from 15.2% in 2007 to 12.9% by the year 2013. Regarding provinces, this highest share belongs to Thua Thien Hue (15.0%), then, followed by Dak Lak (13.8%) and Ha Tinh (11.7%).

Non-farm activities in the form of 'both wage-worker and self-employment' took the second position compared to the forms of 'only wage worker' and 'only self-employment' with an increasing trend. The average percentage point of this type during the whole period was 21.1% and increased from 17.3% in 2007 to 23.4% by the year 2013. Of the three provinces, the highest share belongs to Thua Thien Hue with 30.7% compared to Ha Tinh (18.6%) and Dak Lak (13.8%).

* Non-farm income

Figure 3 shows that about one-third of the households' income stems from non-farm sources with a fluctuating, but increasing trend and this share differs from province to province with the highest level belonging to Thua Thien Hue. In detail, the non-farm income share of the whole period was 31.12%, and this figure reduced from 30.96% in 2007 to 22.02% in 2008 (at the time of the crisis' appearance) before reaching up to 37.08% by the year 2013. Regarding provinces, the non-farm income share of households living in Thua Thien Hue is the highest with 38.70% compared to those in Dak Lak (30.36%) and Ha Tinh (24.53%).

Figure 3. Share of non-farm income in total of HH income (%)
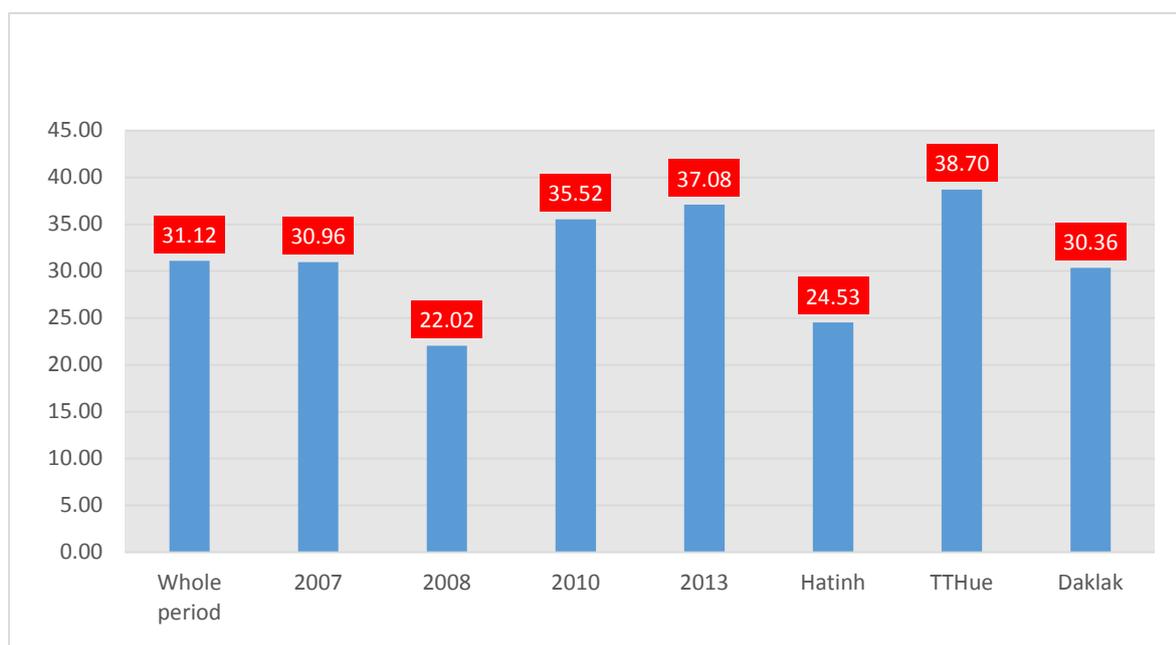
Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies

During the 2007-2013 period, every surveyed household averagely earned 6797 USD in a year, and although having been slightly fluctuated, this income level increased from 5441 USD in 2007 to 8022 USD by the year 2013. In other words, compared to the average income that a household earned in 2007, the average income of a surveyed household in 2013 is about 47.43% higher.

Figure 4. The average annual income of the surveyed household (USD)
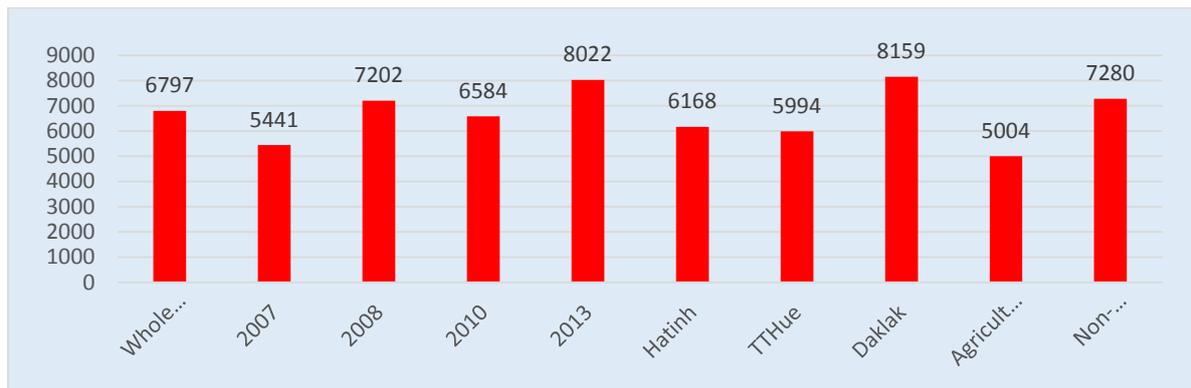
Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies

Of the surveyed provinces, the households living in Dak Lak show the highest income (8159 USD), followed by those living in Ha Tinh (6168 USD) and Thua Thien Hue (5994 USD). To put it differently, the income disparity between the highest and the lowest positions is about 1.37 times.

Similarly, households engaged in the RNS have higher income compared to those involved in only agriculture. Indeed, the average income per year of the RNS-involved households is 7280 USD, and this is about 1.45 times higher than that of the agricultural households (5004 USD).

* Descriptive results on the interviewed households

Regarding living location characteristics, Table 2 shows that the minority (4.46%) of surveyed households are located in the capital of the province, and this share of the RNS-involved households (5.03%) is higher than that of the agricultural households (2.36%). Besides, about half of the interviewed households are located in communes with flat terrain. Again, the share of this concentration of the RNS-involved households (53-51%) is much higher than that of the households engaged in only agricultural activities (39.54%). Also, the share of the total interviewed households inhabiting the communes recorded in the 135-program's list is 32.71%, and this share of the RNS-involved households (31.13%) is obviously lower than that of the agriculture households (38.59%). In terms of the connections from the respondent's house to the capital of the district as well as the capital of the province, the results show that the average speed to travel to the capital of the province (34.42 km/hour) is definitely higher than the ones to reach the capital of the district (27.55km/hour). These figures concerning the RNS-involved households (34.28 km/hour and 27.78 km/hour) are almost the same as those referring to the agriculture households (34.94km/hour and 26.71 km/hour).

Table 2. Descriptive results on interviewed households divided by types of households

| Criteria	Total surveyed HHs	Agricultural HHs	RNS involved HHs
Located in the capital of province (%)	4.46	2.36	5.03
Speed to reach the capital of the district (km/hour)	27.55	26.71	27.78
Speed to reach the capital of the province (km/hour)	34.42	34.94	34.28
Living in communes with flat-terrain (%)	50.55	39.54	53.51
Living in communes that participated in 135's program (%)	32.71	38.59	31.13
Average number of members in the household (persons)	5.13	4.62	5.27
Average number of adults in the household (persons)	4.10	3.67	4.22
Years of schooling of HH's adults (years)	5.27	5.14	5.31
Value of house(s) (USD)	27616	9570	32489
Value of land(s) (USD)	18309	32818	14397
Poor household (%)	35.78	41.73	34.25
Being able to have savings from income (%)	30.73	25.47	32.15
Schooling years of household's head (year)	6.66	5.99	6.84
Being member of socio organization (%)	71.73	70.60	72.03
Age (year)	49.6	52.0	48.9
Female household's head (%)	15.00	15.00	15.00
Currently, live with the spouse (%)	87.00	85.00	87.00

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies

With respect to the family's features, the RNS-involved households have better endowments (regarding human power and physical resources) than agricultural families. Indeed, the average number of family members of the former (5.27) is higher than that of the later (4.62). Additionally, every RNS-involved family has 4.22 persons aged 15 and upwards, whilst this number of an agricultural household is only 3.67 persons. Likewise, the RNS-households are

much better-off than the agricultural households in terms of (i) having higher years of the family's adults attending school (5.31 years compared to 5.14 years) and values of possessed house(s) (32,489 USD compared to 9,570 USD); lower share of households considered as poor compared to local residents (34.25% compared to 41.73%); and higher percentage point of those who are able to save their income (32.15% compared to 25.47%). On the contrary, the households engaged in only agriculture have higher values of land(s) than those involved in the RNS (32,818 USD compared to 14,397 USD).

Concerning personal characteristics of the household's head, although sharing the same characteristics, regarding marital status and gender, it can be said that non-farm family's heads were more competitive than those of agricultural households regarding aspects of education, social capital, and age. Indeed, 15% of the total interviewed households were headed by females, and this figure from the RNS-involved group is the same as that of the agricultural ones. Besides, the majority of the household's (HH's) heads currently live with their spouse (87%), and this figure from the RNS-involved households (87%) is slightly higher than that of those engaged in agriculture (85%). Nevertheless, compared to the agricultural household's heads, the heads of the RNS-involved households are younger (48.91 years of age compared to 52.02 years), more-educated (6.84 years of schooling compared to 5.99 years), and highly-concentrated on the group of having membership of a local's social organization (72.03% compared to 70.06%).

4.2. Quantitative results

The influence of factors affecting RNS participation

Of the independent variables taken into the model, those concerning the personal characteristics of the household's head in terms of marital status (currently live with his/her spouse), and having a membership in a local social organization are excluded from the model, due to their insignificances with the response variable. Then, the values gained from the VIF-test (1.33), Prob>chi2 (0.0000), Wald-test (496.41), as seen in Table 5, have ensured the meaningfulness and significance of the whole model. The calculated results are presented in Table 3.

It is found that families headed by females are significantly more likely to participate in RNS activities than those headed by males (a probability of 22.25 percentage points higher while keeping other variables constant). This can be explained by the diligent virtue of the Vietnamese women and their responsibilities in managing the family budget and ensuring the financial needs concerning the family's expenditures. Therefore, they tend to diversify their family's income sources by participating (themselves) and/or mobilizing their family members to take part in RNS activities.

Table 3. Factors affecting the RNS participation of households

(Random-effects probit regression)

Variable	Coef.	Std. Err.
Female (1 if Yes)	0.2225***	0.0519
Age (year)	-0.0177***	0.0015
Schooling of the household's head (year)	0.0162***	0.0048
Family size (person)	0.0653***	0.0146
Total number of adults in the family	0.0994***	0.0161
Schooling of HH's adults (year)	0.0955***	0.0171
Poor household (1 if Yes)	-0.0749**	0.0381
Total value of land(s) (1000 million VND)	-0.0015*	0.0000
Commune with plain-terrain (1 if Yes)	0.3426***	0.0368
Commune supported/invested by 135's program (1 if Yes)	-0.1757***	0.0379
Speed to reach the capital of the district (km/hour)	0.0067***	0.0017
Speed to reach the capital of the province (km/hour)	-0.0059**	0.0021
Belongs to the capital of the province (1 if Yes)	0.2738**	0.1002
Year	0.0469**	0.0144
Number of observations	7028	
Wald chi2(14)	496.41	
Prob > chi2	0.0000	
Log likelihood	-3281.53	

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies

***significance at 1%; ** significance at 5%; * significance at 10%

As the family's head got older, his (or her) family was significantly less engaged in the RNS (lowered by 1.77%). Households in Vietnam are following a trend of being transformed from the type of traditional family (with multi-generations living together in a house) into the type of nuclear ones (in which only parents live with their children). When the children reach adulthood and/or get married, they tend to live independently from their parents. At that time, the parents, due to various reasons referring to ill-health, less-pressures of feeding the family, and being supported by their children for financial/personal needs, tend to reduce their working hours by giving up some working activities. As a result, their household's involvement in the RNS is reduced.

Education of the family's head (increased by 1.62% for one additional year of schooling), as well as the educational level of the HH's adults (increased by 9.55% for one year added), are positively associated with the RNS involvement of the households. Having a higher educational level results in a better understanding of the effectiveness of doing RNS activities compared to agricultural ones. Moreover, this also supports the more-educated individuals to achieve the skills/knowledge required to carry and/or to run/organize an RNS business more effectively.

Households with a larger number of either family size (increased by 6.53% for each person added) or a total number of adults (raised by 9.94% for each adult added) are more likely to be involved in the RNS. Legislatively, the agricultural land provided to a rural household in Vietnam is based on the total number of the family members with the ownership lasting for 50 years before any redistribution takes place (according to the Land Law promulgated in 2013). Practically, each family member has 0.25 ha to cultivate (Ministry of Agriculture and Rural Development, 2007), while this figure differs across regions. Nonetheless, due to the increasing trends of population, urbanization and industrialization processes, this figure is continuously decreasing, leading to a surplus of labor supply in the rural area. Therefore, households with a higher number of family members and/or adults are more likely to solve this redundancy by having their members participate in the RNS.

Negative relationship (in terms of being involved in the RNS) is observed for the poor households (decreased by 7.49%), compared to those with the higher living standard. As mentioned previously, the majority (92%) of the poor households in Vietnam lives in the rural areas and are mostly concentrated in the unfavorable conditions concerning geography/natural characteristics (MOLISA, 2014). Furthermore, the typical features of poor households are identified as having a high rate of dependency, a low level of education/working skills, low values of physical assets and finance, and a lack of access to financial sources (ILSSA, 2014). These characteristics obviously hinder poor households to participate in the RNS. Similarly, such negative correlation (lowered by 0.15% for each 50 thousand USD added) is also seen for factor concerning the value of HH's land, but this correlation is relatively weak (signified at 5%).

Being locatied in communes with support/investment from the 135's program has reduced the probability of the households being involved in the RNS (decreased by 17.57%). On the contrary, inhabiting communes with a plain terrain significantly improves the household probability of participating in the RNS (increased by 34.26%). Likewise, communes located in the capital of the province are also associated with a higher chance (27.38%) for households to have their members engaged in non-farm activities. As mentioned earlier, support/investment derived from the 135's program is applied only for communes located in the mountainous/remote areas that are characterized by a low level of socioeconomic development and a high rate of poverty. Moreover, due to the geographic characteristics of Vietnam, communes not located in the plain areas are normally embedded with features concerning poorly-accessed infrastructure and are isolated from trade-centers or markets. These reasons result in a lower chance for the local households to participate in the RNS. On the contrary,

being located in the capital of the province means that the local households are more benefited from the agglomeration effects brought by the higher concentration of inhabitants and firms, markets and trade centers, easily-accessed infrastructure, demands for products, and so on. As a result, they are more likely to participate in the RNS.

Unexpectedly, the impacts caused by infrastructure are mixed, with a positive significance shown for factors concerning 'speed to reach the capital of the district' (raised by 0.67% for each kilometer increased), while a negative relationship was observed for factors related to 'speed to reach the capital of the province' (decreased by 0.59% for each kilometer increased). These impacts might be explained from a migration perspective. By which, on one hand, easy access to the capital of the district increases the probability of household members migrating/traveling to another area for doing their non-farm work and then returning to their home within a day. On the other hand, increasing the speed to reach the capital of the province may result in a higher probability of being long-term migrants for household members (leaving their home for more than six months in a year, while other members remained in their hometown and participated in agriculture), and in this case, such members are not conceptually counted as household members anymore, and their former households are left with all remaining members engaged in agricultural activities.

The influence of factors affecting the patterns of RNS participation

Of the independent variables taken into account in the model, variables referring to 'currently live with spouse', 'schooling years of the household's head', and 'values of land(s)' are removed from the model, because of failing to achieve the statistical significances with the response variable. Then, the values gained of VIF-test (1.45), Prob>chi2 (0.0000), LR chi2 (650.1), Pseudo R2 (0.1657), as can be seen in Table 4, have ensured the appropriateness and meaningfulness of the whole model. The quantified results are as follows:

It is seen that the age of the family head is not statistically significant with the pattern of 'only wage worker-pattern 1', but it has a positive association with the pattern of 'only self-employment-pattern 2' and a negative significance with the pattern of 'both wage-worker and self-employment-pattern 3.' Nevertheless, the impact caused by this factor is not strong (increased by 0.12% in the pattern of self-employment and decreased by 0.15% in the pattern of 'both wage-worker and self-employment'). It is explained that working as a self-employed person (for instance, a shop owner) is more appropriate for older individuals because of the higher flexibility of working hours, or the additional freedom of the working environment.

Table 4. Factors affecting the RNS pattern's involvement of the households
(Multinomial logistic regression)

Variable	Pattern 1[6] (Dy/Dx)	Pattern 2[7] (Dy/Dx)	Pattern 3[8] (Dy/Dx)
Age (year)	0.0002	0.0012***	-0.0015***
Female (1 if Yes)	-0.0658**	0.025	0.0408*
Member of social organization (1 if Yes)	0.0555***	-0.0522***	-0.0033
Family size (person)	-0.0249***	0.0087**	0.0161***
Total adults in the family (person)	0.0125**	-0.0248***	0.0123**
Schooling year of HH's adults (year)	0.0191***	-0.0229***	0.0038
Poor household (1 if Yes)	0.1880***	-0.1147***	-0.0733***
Commune supported by 135's program (1 if Yes)	0.0256**	0.0227**	-0.0483***
Commune with plain terrain (1 if Yes)	-0.1000**	0.0215**	0.0785***
Speed to reach the capital of the district (km/hour)	-0.0014*	0.0003	0.0011**
Speed to reach the capital of the province (km/hour)	-0.0015**	0.0015***	0.0000
Belongs to the capital of the province (1 if Yes)	-0.0692**	-0.0064	0.0756***
Year	-0.0051	0.0022	0.0073***
Number of observations	5591		
LR chi2(30)	573.42		
Prob > chi2	0.0000		
Pseudo R2	0.1657		
VIF	1.45		

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies
***significance at 1%; ** significance at 5%; * significance at 10%.

Being headed by females has no significance with pattern 2, but shows a negative correlation with the pattern 1 (reduced by 6.58%) and a positive relationship with pattern 3 (raised by 4.08%). In the case of the nuclear family in Vietnam, the head position in the family is ordinarily handed over to the husband, and the households headed by females almost always belong to those so-called insufficient families (without the appearance of the husband). In such insufficient cases, women have to take the responsibilities concerning both 'bread earning' and 'child-feeding'. Therefore, they are less competitive than others to work as salaried workers. Having the membership of a social organization results in a positive significance with pattern 1 (increased by 5.55%), and a negative correlation with pattern 2 (decreased by 5.22%) while showing no relationship with pattern 3. By attending such organizations, the household's heads

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[6] Refers to the households participated in the RNS in the form of 'only wage-worker'
[7] Refers to the households involved in the RNS in the form of 'only self-employment'
[8] Refers to the households involved in the RNS in the form of 'both wage-worker and self-employment'

have more opportunities to receive not only the information concerning job vacancies but also (in many cases) the commitment derived from other members of the organization; that ensures the acceptance of filling in such working places.

Factors referring to 'family size' and 'total adults in the family' significantly correlate to all of the three patterns of the RNS involvement. By which, these two factors are positively associated (increased 1.61% and 1.23% respectively for each person added) with the form 'both wage-worker and self-employment'. Nevertheless, while the 'family size' showed a negative correlation with the first pattern (reduced by 2.49% for each member added) and a positive relation with the second pattern (increased by 0.87%), the 'total adults in the family' has presented converse results. By which, one 'aged 15 and over' person added to the family results in 1.25% higher chance for a household to participate in the first pattern but reduces the probability of being involved in the second pattern by 2.48%. It is explained that a higher number of 'family size' and 'adults in the family' results in a higher availability of human resource for the household. Therefore, these households tended to have their members participate in the third pattern. Besides, the laborers of the households with a 'higher number of family members' tended to be more likely to participate in the second pattern, because this pattern (with its flexibility) is more appropriate for them to achieve the harmonisation in implementing the responsibilities concerning 'making money' and 'taking care of the family'. Results concerning the 'education of the HH's adults' show a positive significance (increased by 1.91% for one year added to schooling) with the first pattern and a negative relationship with the second ones (decreased by 2.29%) and no significance for the third pattern. As theoretically agreed, higher education results in higher competitiveness in attending the labor market, therefore, households with higher educational levels tend to have adults who prefer salaried employment with the aim of achieving secured jobs. Besides, these findings have also confirmed the role of education in developing the labor market.

Household living standards are also significantly associated with how the households are involved in RNS patterns in different ways. In details, being a 'poor household' has increased the household's probability to take part in the first pattern by 18.80%, but reduced their involvement in the second and third patterns by 11.47% and 7.33% respectively. Indeed, poor households are less able to meet the investment requirements for those businesses running on their own (for instance, setting up a small motorcycle repair workshop) due to a lack of financial resources. Nevertheless, workers from such households can participate in these 'self-employed' activities with low initial investment (such as street vending, bicycle repairing).

The factor regarding belonging to 'poor communes', those are supported/invested by the 135's program, has significantly affected the RNS's patterns participated of the households in various ways. On one hand, this increases the household's probability for participating in both of the first (raised by 2.56%) and the second (increased by 2.27%) pattern, but on the other hand, reduces their probability of involvement in the third pattern by 4.83%. Apart from that, households located in communes with 'plain-terrain' tend to be more likely to participate in the second and third pattern (increased by 2.15% and 7.85%, respectively) while showing a negative correlation with the first one (decreased by 10.00%). Additionally, belonging to the 'capital of the province' has resulted in negative correlations in both of the first (reduced by 6.92%) and the second (decreased by 0.64%) pattern, but improved the chance for participating in the third pattern by 7.56%. This explained by the obligation that comes with the investment provided by the government. It is aimed at upgrading the essential infrastructure system (focusing on road, electricity, school, and medical centers) for the 135's communes (prominently characterized by the high rate of poverty, and less-developed level of the socio-economic situation), which creates more salaried employment for the locals. In other words, due to the impacts generated from the public work-related policies (within the framework of the 135's program), the local households are more likely to have their members work as wage-workers. Meanwhile, thanks to the advantages concerning natural characteristics (such as better connections to other regions; easy-access to trade-centers/markets; higher concentration of population, firms, and other trade-serviced units) of the 'plain-terrain' and the 'capital of the province' areas, higher demand/needs concerning labor supply, as well as 'service-provided' are generated. Therefore, the households located in these areas have more opportunities to engage in running a small business on their own, or diversify their RNS involvement by participating in the pattern of 'both wage-worker and self-employed'.

Higher speed to reach the capital of the district results in a negative significance with the first pattern (reduced by 0.14% for each added kilometer per hour), and a positive association with the third one (raised by 0.11%), while showing no correlation with the second type. Nevertheless, these impacts are not strong and are less significant (signified at 10% for the first pattern, and 5% for the third one). Likewise, the factor regarding 'speed to reach the capital of the province' is also negatively associated (decreased by 0.15%) with the form 'wage-worker' and positively correlated (increased by 0.15%) with the form 'self-employed', while showing no significance with the form 'both wage-worker and self-employed'. It is explained that as the improvement of roads (connecting households to the center areas) are made, more opportunities to become product/service suppliers will be generated. As a result, households

tend to shift their RNS involvement from the first pattern to the other forms with the aim of meeting the increasing needs of the markets (concerning labor supply, products, and services).

The influence of factors affecting household's income

In order to quantify the impacts of explanatory variables to the dependent variable (measured by the logarithm of the household's income per capita), the author uses an OLS regression (fixed-effect model) with panel data. Of the independent variables taken into account, those concerning 'age', 'female', 'currently live with spouse', 'total values of land(s)', 'commune with plain-terrain', and 'commune with 135 program's participation' are removed from the model because of either having multi-collinear effects or failing to capture the statistical significances with an independent variable. Then, the values obtained concerning R-square (0.2204), F (191.28), Prob>chi2 (0.0000), and VIF (1.27) confirmed that the model is appropriate and significant. The results are presented in Table 5.

It is clearly seen that participating in the RNS has positively and significantly affected the income of households. The income per capita of household will be increased by 46.10% for households involved in rural-non-farm activities compared to those engaged in only agriculture, keeping other things constant. Besides, this income is also affected by other factors concerning personal characteristics of the household head; of household features, and of location-related variations.

The educational level of the household head (increased by 3.81% for one year added), and the average years of schooling of the family adults (increased by 1.85%) are also positively associated with the income per capita of household. In fact, a higher education helps individuals to have it easier in either getting the jobs with higher income (for themselves and/or their family members) or in finding more productive ways to run their own business. Conversely, being a member of the local social association results in a lower income per capita of household (decreased by 7.16%). By attending such organizations, the members have to engage in numerous activities assigned that are time-consuming and without payment, and in many cases, they have to mobilize other family members to complete these tasks.

Factors concerning 'family size' and 'household adults' affect the household income differently. While showing a negative association (reduced by 13.96% for each family member added) with the former, results also reveal the positive correlation of the latter (raised by 5.94%) to the income per capita of household. Apart from that, poor households have a lower income per capita (lowered by 65.01%) compared to that of those with higher living standard. Likewise, living in the capital of the province also results in higher income per capita (increased by 15.72%) for the interviewed households. There have been various reasons explaining these

differences. At first, in most cases, large family size may lead to a higher rate of dependency, and therefore, this negatively affects the household income. Then, a higher number of adults may favor household members with a wider social network, and as a result, higher employment opportunities, as well as better income may possibly be generated. In addition, poor households are less competitive in accessing activities that generate higher income due to obstacles concerning demographic features (high rate of dependency, belonging to ethnic minority groups), and human/physical capital (less-educated, lack of access to financial sources). Lastly, in almost all provinces of Vietnam, the capital is considered as the most developed area with a high concentration of economic-administrative-cultural organizations. Therefore, households located in this area have benefited from numerous advantages generated from these concentrations through the agglomerative mechanism. As a result, these households are more likely to have a higher income compared to those living in other areas of the province.

Table 5. Factors affecting total income of households

(Logarithm of the HH's income per capita, 'fixed-effect' regression)

Variable	Coef.	Std. Err.
Participate in the RNS (1 if Yes)	**0.4610*****	0.0278
Average of schooling year of the household's head (year)	0.0381***	0.0029
Member of the local social organization (1 if Yes)	-0.0716***	0.0250
Family size (person)	-0.1396***	0.0086
Total number of adults in the family (person)	0.0594***	0.0088
Average of schooling year of the HH's adults (year)	0.0185*	0.0097
Poor household (1 if Yes)	-0.6501***	0.0240
Speed to reach the capital of the district (km per hour)	0.0046**	0.0011
Speed to reach the capital of the province (km per hour)	0.0041**	0.0013
Belongs to the capital of the province (1 if Yes)	0.2916***	0.0543
Number of observations (household)	6.5204	0.0808
_cons	7028	
F(11,7140)	191.28	
Prob > F	0.0000	
R2	0.2204	
VIF	1.27	

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies

****significance at 1%; ** significance at 5%; * significance at 10%.*

The results show that better connections to the capital of the district, and to the capital of the province also help to improve the household income (per capita). Indeed, increasing the speed to reach the capital of the district 10 kilometers per hour significantly improves this income by

4.6%. Similarly, such improvement of speed to reach the capital of the province lead to the increase of the income per capita of household by 4.1%. These are considered as the outcomes of the activities resulting from the expansion of the market needs.

5. Conclusions and policy implications

5.1. Conclusions

The major part of the rural households has been engaged in the RNS with an increasing trend, but this involvement differs from province to province. Of which, participating in the RNS in the form of 'only wage-worker' takes the major share compared to the two other forms. Furthermore, the result confirms that the third pattern 'both wage-worker and self-employment' is also in growing tendency. Also, the household income has positively increased during the 2007-2013 period, and despite taking a lower share in the total household income (31.12% for the whole period), the income of the RNS-involved households is definitely higher than that of those engaged in only agriculture.

It is confirmed that the household's probability to be involved in the RNS is affected by factors concerning personal characteristics of the household head, family features and living location variations: apart from factors relating to 'female' and 'family size', households with better-off conditions concerning education (either of the household head or of the household adults), human power (higher number of household adults), the household's living standard (higher living standard compared to local residents), if located in the plain terrain communes or more-developed areas (without supports from 135's program or being located in the capital of the province) have higher chance to participate in the RNS. Also, the local transportation system affects the RNS involvement of the households, but the impacts are mixed with a positive correlation of the factor concerning 'speed to reach the capital of the district' and a negative significance of the ones referring to 'speed to reach the capital of the province'.

In conclusion, the RNS-involvement patterns of households are also affected by household head-related characteristics, family-related features, and living location-related variations with different impacts (either positively or negatively). Of which, some factors (including those concerning: schooling years of the household's head, family size, family adults, family living standard, communes with plain-terrain or with supports provided by the 135's program) show significant correlations with all of these three patterns, and the others correlate with two patterns (and have no significance with the remaining one). Regarding the expansion of the the rural labor market, households with local-social-organization engagement, higher number of family adults, and better education of the family adults, are more likely to be involved in the RNS pattern of 'wage-worker'.

It is also concluded that RNS involvement is essential for the improvement of the household income. Besides, other factors concerning better education (either of the household head or of the household adults), a higher number of household adults with higher living standard, better quality of the local transportation (roads) and the vicinity to urban areas are also other crucial reasons for rural households to have their income per capita increased.

Furthermore, it is also suggested that other studies, making comparisons on the RNS involvement between rural households and others living in urban centers, may be essential to achieve a better understanding of the affecting factors mentioned in this paper

5.2. Policy implications

It is proved that RNS can exist and develop in all areas of the three analysed-provinces. Therefore, a 'non-farm employment development/promotion' program at the national level should be considered to be implemented. This program needs to involve various government authorities as well as other social-stakeholders and should be in accordance with the area's advantages in both natural and social-economic aspects.

Moreover, it is pointed out that the better connection to other areas, especially higher-developed locations such as the central province, leads to a higher probability of RNS involvement as well as better income of rural households. For that reason, the role of upgrading/investment on infrastructure (roads, the internet) is crucial for the RNS development in the poorly-developed areas.

Additionally, the importance of education is proved by showing a positive impact with the RNS involvement at the household level. Hence, for further enhancement of the RNS in the future, it is essential to keep all rural laborers (especially the younger generations), who have the intention to work in the RNS, attending both the skill training courses as well as school/university longer. By doing so, rural laborers will be more successful in looking for non-farm jobs.

CHAPTER 2. EMPLOYMENT AND JOB-SEARCH IN THE RURAL NON-FARM SECTOR

1. Introduction

The overall picture of the employment and labor market of Vietnam has shown both positive and negative aspects from the year 2007 up to recently. On one hand, in spite of the negative effects caused by the global and domestic economic crises , a number of achievements have been made concerning: the high average of the number of newly-created employment per year (1.17 million-MOLISA[9], 2013), the positive change of the labor structure with the continuous reduction of the share of employees working in agriculture (decreased from 52.9% to 47.07% by the year 2014-ILSSA[10], 2014), and the improvement in the labor force quality with the proportion of trained labor force with certificate increasing from 14.6% in 2009 to 20.20% by the year 2015 (ILSSA, 2015). Nevertheless, there have been certain flaws/challenges that Vietnam has to face, such as (i) the imbalance between the employment growth rate and economic growth rate (measured by the EEI[11]), and in the context of a country with labor redundancy and a labor-intensive economy as Vietnam, this EEI was estimated as being relatively low and decreased from 0.4 in 2010 to 0.27 by the year 2013 (ILSSA, 2013); (ii) the minor share with slowly-increased growth rate of salaried employment (increased from 33.47% in 2007 to 35.2% in the year 2014- ILSSA, 2014); and (iii) the majority (70.5%-MOLISA, 2013) of total working employees engaged in vulnerable or unstable jobs as self-employed, family workers, and workers of informal firms/enterprises.

Rural areas, in the employment and labor market development context, are the places of the majority regarding not only labor supply (69.3%-GSO[12], 2014), but also employment (69.64%-GSO, 2014) of the whole country. Nonetheless, the rural employment portrait, up to recently, is not yet seen as bright as expected concerning: the lower value of the EEI (0.18) compared to urban (0.48-ILSSA, 2011), the lower share (45.57%) of total newly-created jobs of the whole country (ILSSA, 2013), the highest proportion (65.43%-GSO, 2014) of rural employees working in agriculture (characterized by low-paid, unstable and vulnerable jobs). Moreover, rural employees have been facing other challenges such as underemployment (2.78%, ILSSA,

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[9] MOLISA: Ministry of Labour, Invalids and Social Affairs.
[10] ILSSA: Institute of Labour Science and Social Affairs.
[11] Employment Elasticity Indicator, refers to the growth rate of employment generated when the economic growth increased by 1%.
[12] GSO: General Statistical Office

2014), lower productivity (less than 400 USD per year[13]), and lack of qualification, low social status and informality of works (VUSTA, 2011).

Ha Tinh, Thua Thien Hue and Dak Lak are considered as three less-developed provinces with typical characteristics of low income per capita (Ha Tinh: 1200 USD, Thua Thien Hue: 1570 USD, and Dak Lak: 1384 USD compared to the average amount of 1900 USD per capita of the whole country[14]), and higher share (except Thua Thien Hue) of employees working in agriculture[15]. Of the three provinces, Dak Lak has the highest share (57.22%) of the agricultural sector in total provincial GDP, compared to that of the whole country (18.39%), as well as Ha Tinh (18.29%), and Thua Thien Hue (12.10%)[16].

Studying the rural employment has been mentioned in the works of various scholars/researchers. These studies focused on those aspects concerningthe actual situation of rural employment (Duong Ngoc Thanh and Nguyen Minh Hieu, 2014; ILSSA, 2013, 2014, 2015), rural employment generation (M. Linde-Rahr, 2001; Nguyen Thi Hai Van, 2007), rural household economy (ILSSA and CIEM, 2002, 2004, 2006, 2008, 2012; 2014), migration (Anh Dang, S. Goldstein and J. Mcnally, 1997; V. Junge, J. Revilla Diez and L. Schätzl, 2015), and education and vocational training (Nguyen Huu Dzung, 2005; Mac Van Tien, 2009; C. Pompa, 2013). Unfortunately, there have been only a few papers focusing on aspects regarding rural non-farm employment and rural job-search. Therefore, with the aim of providing further understanding on rural employment in Vietnam, the author conducts a study on the rural non-farm employment (RNFE)[17] and job-search with the specific research questions as follows:

(1)What do the RNFE's characteristics look like?

(2) What are the impacts of factors affecting the individual's probability on participating in RNFE?

(3) What are the influences of factors affecting the use of formal methods in achieving the current RNFE?

(4) How do factors concerning RNFE participation, personal, household-related and local-related features affect the income of rural employees?

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[13] Mentioned by Mr Nguyen Do Anh Tuan on
http://www.thesaigontimes.vn/Home/kinhdoanh/dautu/103576/Nang-suat-lao-dong-nong-nghiep-rat-thap.html
[14] Author's own calculation base on the GSO statistical figure in 2013
[15] According to statistical figures provided by the Department Statistical Offices (DSOs) of Ha Tinh, Thua Thien Hue and Dak Lak, Dak Lak has the highest share of labourers working in Agriculture with the share of 65%, followed by Ha Tinh with 57%, and the last is Thua Thien Hue with 32.9% compared to 46.81% of the whole country.
[16] Author's calculation for the year 2013, based on the GSO's figures
[17] RNFE: Rural Non-Farm Employment

The paper is organized as follows: the next section presents the theoretical discussion concerning rural non-farm employment and job-search. Section 3 gives a description of the dataset and research methods used. Then, it is followed by Section 4 with descriptive and quantified results of the rural non-farm employment characteristics, the impacts of factors that influence: (i) the RNFE participation; (ii) the use of the formal method to achieve RNFE; and (iii) income generated from employment. Finally, the paper ends by summing up the results and potential policy implications.

2. Theoretical discussion

2.1. Rural Non-Farm Employment:

According to V. Abraham (2008) 'rural non-farm employment is defined as any form of employment other than farm employment in the type of wage, self/or unpaid family labor'. Besides, as mentioned in Bernan Press Bulletin (Bernan Press, 2008), 'non-farm employment includes employment in all good-producing and service-providing industries'. Precisely, the term of 'Rural Non-Farm Employment-RNFE' is exactly defined by J. Davis (2001) as 'being all those activities associated with waged work or self-employment in income generating activities (including income in-kind), that are not agricultural, but are located in rural areas'. Regarding the case of rural Vietnam, two prominent features favoring the expansion of the RNS[18] are the strong development of long historical trade villages (termed as '*làng nghề*') characterized by the embeddedness of agricultural-related processes/producing industries (for instance, food processing and handicraft) and the emergence of newly-appeared activities concerning services and tourism (for example, eco-tourism and home-stay business). These two characteristics are co-existent and supplemental for each other. In this paper, the term 'RNFE' [19] will conceptually be applied as defined by J. Davids.

RNFE plays an important role in rural development. Indeed, the RNFE development is essential for accelerating poverty reduction, promoting job creation, increasing income, and enhancing employment sustainability. At first, non-farm activities provide an important source of primary employment in the rural areas of most developing countries, and in particular, those activities are essential for the rural households with little or no land, regarding income distribution (E. Chuta and C. Liedholm, 1979). Secondly, the expansion of the RNFE is seen as a key factor to absorb agricultural redundant-employees, as well as rural laborers (G. Christensen and R. Lacroix, 1997, Oya and Sender, 2009). Then, as confirmed by Reardon (1997), engaging in

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[18] Rural Non-Farm Sector
[19] Rural Non-Farm Employment

RNFE results in higher income (five-times higher) for rural employees compared to that of those who worked in only agriculture. Furthermore, it is evidently confirmed that access to RNFE significantly reduces vulnerability as well as poverty in rural areas (S. Haggblade, P. B.R. Hazell and T. Reardon, 2009; K. S. Imai, R. Gaiha and G. Thapa, 2015). In the case of rural Vietnam, enhancing the development of RNFE is considered as a crucial factor dealing with the 'bottle-necks' of rural labor structural shift, as well as the redundancy of rural laborers toward the trend of 'on-site'-employment generation for rural workers (especially for the youths), with the aim of reducing the rural-urban migration flow.

As defined above, RNFE encompasses a wide range of activities like self-employment in non-farm/rural non-farm enterprise, wage employment in non-farm, and non-farm activities that deal with processing and trade of farm products. Many scholars have attempted to classify the RNFE in different ways based on their research purposes. At first, as classified by Samal (1997a, 1997b), the RNFE can be separated into two sub-groups based on the features concerning informality and formality, and each of which is further subdivided into modern and traditional groups. Apart from that, the RNFE can also be observed from the employment classification that relies on the individual's main occupation. For that, the employment is classified into five categories, consisting of: household work, non-agricultural wage/salary employment, agricultural wage employment, non-agricultural self-employment, and agricultural self-employment (T. Kuroshaki, 2001). In addition, approaching it from the characteristics of jobs carried out by the rural wage employees (R. Hernandez, T. Reardon, and Z. Guan, 2010), RNFE can be grouped into three sub-categories as: (i) skilled rural non-farm employment that refers to participation in the following types of RNFE including managers and public officers, technical, associate and college degree professionals, and army professionals; (ii) un-skilled RNFE that includes those occupations referring to participation in the following types of RNFE as office workers, food sellers, service workers, machine operators and other non-qualified labor; and (iii) agricultural wage workers, which implies that the people are working as paid laborers on other farms instead of their own farm. In this paper, the rural employees are divided into two groups comprising of: (i) agricultural employees – refers to those who work in only agriculture either as on-farm or as off-farm; and (ii) non-farm employees - that refers to those who (with or without agricultural involvement) are involved in the non-farm activities (generating income) either as wage-worker or as self-employed.

2.2. Job search

'Job search' has been defined in several works of various scholars. At first, it is conceptualized as a process by which workers searching for jobs find 'a match' with an employer who has a

job vacancy (H. Bleakley and J. C. Fuhrer, 1997). Besides, this term is also used to refer to the process that aims to match job seekers to suitable job opportunities (A. E. Green et al, 2011). Although having been defined in different ways, it is commonly agreed that job matching is the process leading employees, who have the need to get a job or find a better job, to meet jobs offered by employers. This process is costly but essential for job seekers in order to find employment. The job-matching process is an important component of the labor market. If the matching process is made efficiently, it means that individuals acquire the job that maximizes their wage and their productive contribution, thus making society more productive overall (A. E. Green et al, 2011).

Information concerning employment is the most important factor that contributes to the success of job searching for employees. From the searcher's point of view, the purpose of searching more intensely is to shorten the expected period required to find an acceptable or better job. Nevertheless, as mentioned by D. T. Mortensen (1986), information regarding the vacant jobs is recognized as imperfect, and there have been many channels to transfer the vacant job information from employers to employees.

Job search methods have traditionally been divided into formal and informal methods (A. E. Green et al, 2011). Formal methods are defined as the use of employment service agencies, answering advertisements (published in newspapers, journals), and more recently, the Internet. Whilst, informal methods are conceptualized as those using the personal contacts of employees (through their family members, relatives, friends) contacting the employers directly (P. V. Marsden and E. H. Gorman, 2001). Besides, job-search behavior has also been divided into 'active' and 'passive' methods depending on the level of activity that an individual engages in while seeking employment. The 'active' type refers to some methods used to find information, regarding employment opportunities, and perform a variety of activities to access these. While the 'passive' type implies those who do not conduct any job seeking activity, but still receives information or knows (about) vacant jobs (A. E. Green et al, 2011). Moreover, there are other ways of categorizing job seeking behaviors such as job search by individuals in employment versus job search conducted by unemployed individuals. From the perspective of the government aiming to prioritize the use of its resources, the latter seems more essential. However, given that being in employment is a better position from which to search for work, there may be lessons that unemployed can learn from employed job seekers (A. Weber and H. Mahringer, 2008).

Formal #and informal job-search methods have its advantages and disadvantages. On one hand, using the formal methods (for instance: career fairs, employment services centers, and public

advertisements) may result in a higher opportunity to meet with a number of recruiters in person and in one location; better access to a wide variety of jobs posted by employers; better-counseling in job search skills; and higher readiness of jobs available. Contrarily, there have been certain disadvantages of these methods concerning the less availability of job vacancies for all skills, education and experience levels; the fee-payment associated with the employment services; and a higher level of time-consumption to complete the application process. On the other hand, as suggested by J. D. Montgomery (1991), using the informal job-search methods reduces informational asymmetry by lowering uncertainty about the job match quality for both, employees and the employers. Besides, the 'Social capital '(in the form of personal connections) can make up for a lack of human capital (L. D. Loury, 2006). Nevertheless, these methods also have disadvantages referring to requiring skill in organizing contacts and following through on recommendations received; taking time and efforts to build the personal network; and depending on the size and quality of the network.

In the case of Vietnam, the formal methods are defined, carried out and protected within the legal framework (laws, regulations) provided by the government. While the informal methods are conducted based on personal trusts. Besides, from the job seeker's perspective, the job-search success (either by using formal or informal methods), as socially agreed, is affected by factors concerning (i) family biography, it means that individuals, who are born in the families with higher reputation/influences (in terms of political, economic and cultural aspects) on the community and society, are easier to achieve the expected/better jobs; (ii) financial resources, although the informal methods are commonly estimated as less-costly than the formal methods, but in many cases, the achievement of an expected/better-job (high income, being secured, and potentially to be promoted) can only be guaranteed by the decisive persons with the huge amount of money; (iii) social networking, being in the numerous connections with others is (friends, relatives, other social partners) crucial for individuals in achieving the jobs, but in many times, having the close relationship with VIP persons become the most decisive factor to deal with job-seeking successfully; and (iv) human capital, this normally refers to the educational background of the job-seekers. The higher educational level results in the higher probability of being employed as well as the higher rate of return from employment.

3. Methodology

3.1. Data

This study uses data resulting from the combination of the large-scale survey under the research project "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging South-East Asian Economies"[20] covering three provinces (Ha Tinh; Thua Thien-Hue; and Dak Lak) and the information derived from the secondary source provided by the Provincial Statistic Offices of the three analysed provinces.By which, the former (with a total of some 2,200 households) was repeatedly conducted in 2007, 2008, 2010, and 2013 with data collected ranging from personal, household, village levels, and the latter is annually implemented with data collected focusing on the district level. This data will be used to explore (i) the determinants of the RNFE involvement and the job-search methods used in achieving the current RNFE of rural individuals; (ii) to assess the impacts of RNFE participation and other factors (concerning personal-related, household-related, and local related features) on the income of the rural employees.

The dataset is in the form of the panel data consisting of 4 sub-datasets (referred to 4 years of survey implementation). Each of these datasets is formed by merging the ones containing the individual information of rural employees with those holding information of the households, villages, and districts. Then, these sub-datasets are appended to form the ones used for the analysis purposes. As a result, this dataset contains information of 12837 working individuals; 4445 cases using either formal or informal methods to achieve current non-farm jobs, and 9942 cases having income generated from employment.

3.2. Research methods and independent variables

a. Research methods

The author used the descriptive/comparative analysis method to describe the main features of the RNFE and the job-search process of the interviewed employees.

To explore the determinants of RNFE involvement of rural employees, the author used 'probit-regression' model (with panel data) in the general form as follows:

$$Log\ (p\ /1-p) = \alpha + \beta 1 x 1 + \beta 2 x 2 + \beta 3 x 3 + \ (1)$$

Of which:

'p' is the probability of rural employees involved in RNFE. This involvement refers to individuals engaged in non-farm employment with or without agricultural activities.

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[20] For further details concerning samples of this research project, please have a look at 'Phung T.D, Hardewg.B, Praneetvatakul.S, and Waibel.H, 9.2013: Non-Sampling Error and Data Quality'.

'1−p' is the probability of rural employees not involved in RNFE. This refers to those who work in only agriculture.

'x1', 'x2', 'x3' are the independent variables.

To explore the determinants of the methods used to achieve the current non-farm employment of the respondents, the author uses 'probit-regression' model (with panel data) in the general form as follows:

Log (p /1−p) = α + β1x1+ β2x2+ β3x3+ (2)

Of which:

'p' is the probability of using the formal methods to achieve the current RNFE. By which, these methods consisting of using the advertisement on the public media (newspapers, televisions, and other mass-media communication), through the services provided by employment service organizations.

'1−p': is the probability of using the informal methods to achieve the current RNFE. By which, these methods consisting of those concerning personal network (supports/helps provided by family members, relatives, and friends) and contacting directly to the employers.

'x1', 'x2', 'x3' are the independent variables.

To identify the impacts of RNS participation and other factors affecting the income generated from employment of working individuals (logarithm), the author used 'OLS fixed-effects regression' model (with panel data), with the general form as follows:

Y = β1+ β2x1+ β3x2+ β4x3 + β5x4 + u (3)

Of which:

'Y' is the income (USD) generated from the employment of working individuals in a year.

'x1', 'x2', 'x3', 'x4' are the explanatory variables.

b. Explanatory variables

It is theoretically assumed that RNFE involvement, the use of job-search methods, and income generated from employment of individuals are affected by a number of factors concerning personal characteristics (demography, human capital, and social capital), household features (human resources, living conditions), and local endowment (natural characteristics, local infrastructure, socioeconomic conditions). Therefore, the author used some variables as the explanatory ones for the change of the dependent variables mentioned in the previous equations, with the details (briefly presented in Table 6) as follows:

To capture the personal characteristics, the author used variables concerning: 'age- year of age', 'gender- with 1 if female', 'ethnicity- with 1 if belonging to Kinh's ethnicity', and 'marital status-1 if currently live with his/her spouse', to imply the demographic differences of the

respondents. Similarly, those relating to 'education number of schooling year,' 'working experience- number of years doing the current job', and 'holding the membership of a local organization-1 if Yes' will be used to refer to human capital and social capital of the individuals.

Table 6. Summary of the variables used in the paper

Explanatory variables	Dependent variables		
	RNFE participation	*Job-search methods used*	*Income generated from employment*
Age (continuous, year)	X	X	X
Female (dummy, 1 if female)	X	X	X
Kinh's ethnicity (1 if Yes)	X	X	X
Married (dummy, 1 if currently live with his/her spouse)	X	X	X
Working experience (continuous, year)	X	X	X
Schooling year (continuous, year)	X	X	X
Member of a social organization (dummy, 1 if Yes)	X	X	X
Total members in the family (continuous, person)	X	X	X
Total adults in the family (continuous, person)	X	X	X
Poor household (1 if Yes)	X	X	X
Commune with plain-terrain (dummy, 1 if Yes)	X	X	X
Commune with 135-program's participation (dummy, 1 if Yes)	X	X	X
Average speed to reach central district (continuous, km/hour)	X	X	X
Average speed to reach central province (continuous, km/hour)	X	X	X
Urbanization rate of the district (percentage)	X	X	X
District population (1000 persons)	X	X	X
Number of non-registered firms locating in the district (1000 units)	X	X	X
Number of registered firms locating in the district (1000 units)	X	X	X
Value of 'district's GDP derived from non-farm sector	X	X	X
RNS participation (dummy, 1 if Yes)			X
Year (dummy, 1 if Yes)	X	X	

To consider the household features, the author use variables relating to: 'family size- number of members in the family', 'total adults in the household', and 'poor household' to refer to demography, human resources as well as the living conditions of the households. Of which, the variable regarding 'poor household' is defined exactly the same as the ones mentioned in the first Chapter.

To capture the local endowment, the author used variables referring to: 'commune's terrain-1 if hold the plain terrain', 'commune with 135 program's participation-1 if Yes' to imply the commune's natural characteristics. Likewise, local infrastructure will be captured by factors named 'speed to reach the capital of the district's number of kilometers per hour', and 'speed to reach the capital of the province - the number of kilometers per hour'. Furthermore, the district's endowment will be captured by using variables regarding to 'urbanization rate, measured by the percentage points of the number of district's inhabitants living in urban area divided by total district's population', 'total population of the district', 'number of non-registered films/informal firms locating in the district', 'number of registered enterprises/formal enterprises locating in the district', and 'value of district's GDP derived from the non-farm sector'.

Aiming at controlling the influences derived from other factors regarding macroeconomic, the author takes the 'Year' variable, a dummy ones, into the 'probit-regression' models.

4. Research results

4.1. Descriptive evidence on RNFE's features and labor matching situation.

*<u>*RNFE participation</u>*

Figure 5. RNFE participation divided by years, provinces and gender (%)
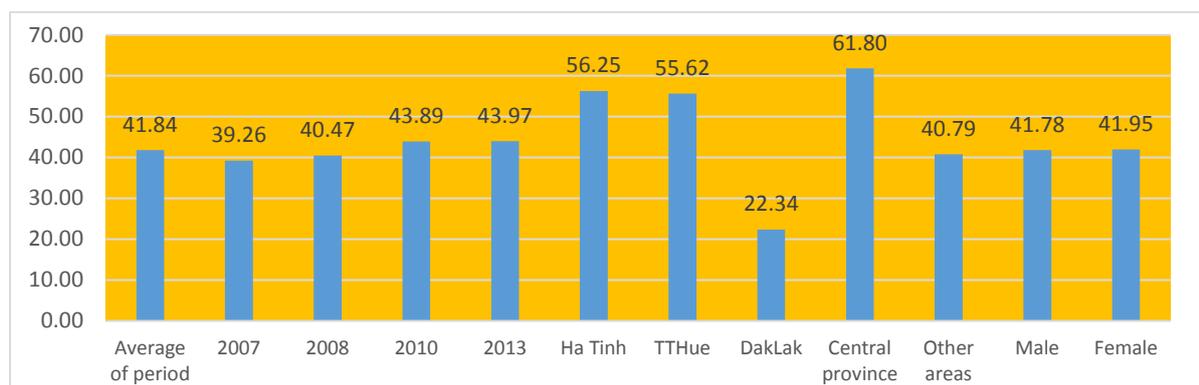
Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies''

Of the total employed respondents surveyed in 4-waves (12890 persons), there was 41.48% of them working in the nonfarm sector. Besides, results in Figure 5 show the increasing trend of rural non-farm activity participation over the2007-2013 period with the RNFE rate rising from 39.26% in 2007 to 43.97% in 2013.

There has been not much difference in RNFE involvement between men (41.78%) and women (41.95%), but different provinces and areas result in different RNFE shares. Of which, DakLak,typically characterized as a large field for coffee growing, has the lowest share (22.34%) of this involvement, meanwhile, the shares of Ha Tinh and Thua Thien Hue are almost the same.

Jobsearch methods used to achieve the current RNFE

Figure6 shows results concerning the situation of applying formal methods to look for job of non-farm workers, and the major characteristic is that non-farm workers are less likely to use formal methods (10.59%) to achieve their current jobs compared to the informal ones, and this share is on the downward trend (gradually decreased from 12.91% in 2007 to 8.56% by the year 2013).

Figure 6. Using formal methods for job achievement of non-farm employees (%)
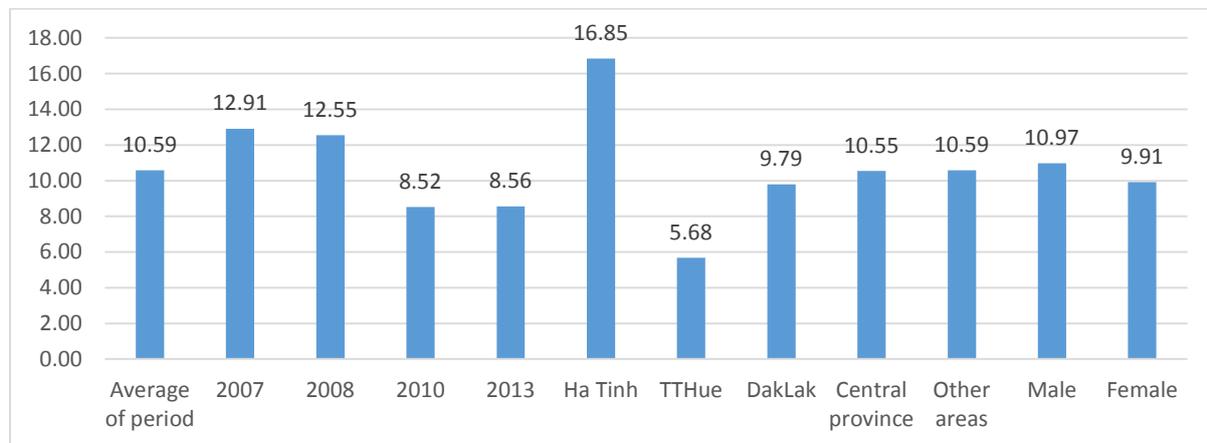
Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies''

Of the three analyzed provinces, the highest share of people using formal methods belongs to Ha Tinh with 16.85%, then, followed by Dak Lak (9.79%), and Thua Thien Hue (only 5.68%). Apart from that, an interesting thing is observed is that the rate of workers using formal methods to achieve their job in the capital of the provinces (10.55%) is almost the same with

that of those living in other areas (10.59%). Besides, the share of males (10.59%) is slightly higher than that of females (9.91%).

Table 7. Summary on job-search of non-farm employees in 2007-2013 (Unit: %)

	2007	2008	2010	2013
I. Fees for achieving job				
1. General	*100.00*	*100.00*	*100.00*	*100.00*
No fee	97.01	97.57	95.82	98.17
Less than 0.5 mill VND	0.69	0.25	1.41	0.70
From 0.5 mill VND and higher	2.30	2.18	2.77	1.13
2. Capital of the province	*100.00*	*100.00*	*100.00*	*100.00*
No fee	99.16	98.31	97.96	98.21
Less than 0.5 mill VND	0.00	0.00	0.00	0.89
From 0.5 mill VND and higher	0.84	1.69	2.04	0.89
3. Fees spent higher than 0.5 mills VND				
Ha Tinh	7.96	6.25	8.64	3.13
Thua Thien Hue	0.30	0.68	0.71	0.28
Dak Lak	0.24	0.12	0.26	0.26
II. Time duration for achieving job				
1. General	*100.00*	*100.00*	*100.00*	*100.00*
No time spent	57.12	64.39	68.74	53.99
Less than 3 months	36.17	29.97	24.31	39.48
From 3 months and over	6.71	5.64	6.59	6.53
2. Central province	*100.00*	*100.00*	*100.00*	*100.00*
No time spent	59.66	51.69	56.12	35.71
Less than 3 months	36.13	42.37	38.78	45.54
From 3 months and over	4.20	5.93	5.10	18.75

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies''

More details of job-searching are presented in Table7, and the results show that searching for a job is obviously free of charge (97.01% in 2007 and 98.17% in 2013). Repeatedly, this popularity is seen in all of three surveyed provinces. Nevertheless, for those who had to pay for searching fees, the major part of them (in each year) have to pay the higher fees (for this purpose) compared to the ones that legally-defined by government regulations[21]. Of those

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[21] As regulated by the Circular numbered 95/2007/TTLT-BTC-BLDTBXH and dated 7th August 2007, the fees paid by the job-seekers concerning employment service provided is not exceeded than 500 thousand VND

analyzed provinces, Ha Tinh is where the rate of people paying fees with a total amount higher than 500 thousand VND highest during 2007-2013 compared to Thua Thien Hue and Dak Lak. Nearly half of job-seekers (42.88% in 2007, and 46.01% in 2013) got their jobs with 'time spent before being employed' either less than three months or longer than three months. Of the three provinces, Ha Tinh is characterized with the highest share of people who had been waiting for three months or longer to get their current job, compared to Thua Thien Hue and Dak Lak.

Table 8. Summary of the most reasons for achieving the current RNFE (Unit: point)

Criteria	Aggregate Score	Rank
Age	2189	1
Support from family and friends	1449	2
Gender	1038	3
Good health	815	4
Having vocational skills/ training	687	5
Job experience	656	6
Holding University degree	149	7
Other reasons	139	8
Having technical/ computer skills	132	9
Labour shortage	124	10

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies''

Regarding the reasons for getting the current job from the respondent's point of view, as can be seen in Table 8, demographic advantages (being male, younger and Kinh's ethnicity) and personal networks (family and friends) are two of the most important reasons (having the two highest aggregated-scores compared to others) contributing to the job-achievement of the job-seekers. Then, followed by other reasons regarding human capital (such as working skills and working experiences) and physical condition (good health) of employees. Those concerning education (ranging from primary to university degrees) and soft-skill (ability to use foreign language or technical/computer skills) are not highly appreciated for getting the current job. This partly reflects the miss-match of labor market concerning education and skills.

* Formal working contract

Being employed with an official working contract (the written and signed contract as legally-regulated) is one of the major concerns of RNFE participants. The details on the official working contract of RNFE's respondents are presented in Figure 7, as follows:

Figure 7. Rate of RNFE participants with official working contract (%)
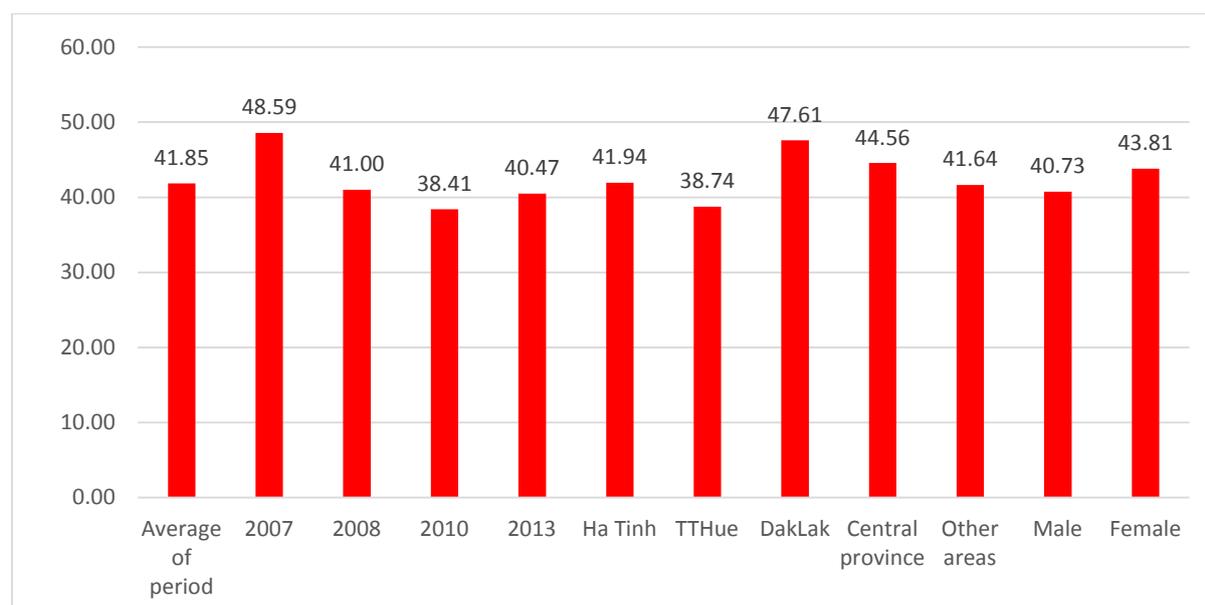
The result shows that about two-fifth of non-farm employees (41.85%) worked with an official working contract either in permanent or short-term forms, but this tends to decrease from 2007 (48.59%) to 2013 (40.47%). Besides, this figure of those involved in RNFE is much higher than that of those working in agriculture (21.53%).

Surprisingly, Dak Lak has the highest share (47.61%) of people working with official contracts compared to Ha Tinh (41.94%), and Thua Thien Hue (38.74%). Also, this share of people living in the capital of the province (44.56%) is higher than that of other areas (41.64%), and similarly, women (43.81%) are more likely to work with written contract than men (40.73%).

* Full-time employment

Another indicator that partly reflected the quality of employment was full-time employment. As currently defined by the GSO, individuals with weekly working hours that reached a minimum of 35 hours are classified as fully-employed, and the author relied on this classification to identify those RNFE respondents working with full-time employment. The detailed results are presented in Figure 8, as follows:

Figure 8 shows that the share of RNFE respondents having full-time employment (for the whole period) is 76.54%. Nevertheless, the trend of this employment situation fluctuates and decreased from 2007 (77.67%) to 2013 (71.95%). Additionally, the share of RNFE participants

with full-time employment is definitely higher than that of those agricultural employees (32.91%).

Figure 8. Rate of RNFE participants with full employment (%)
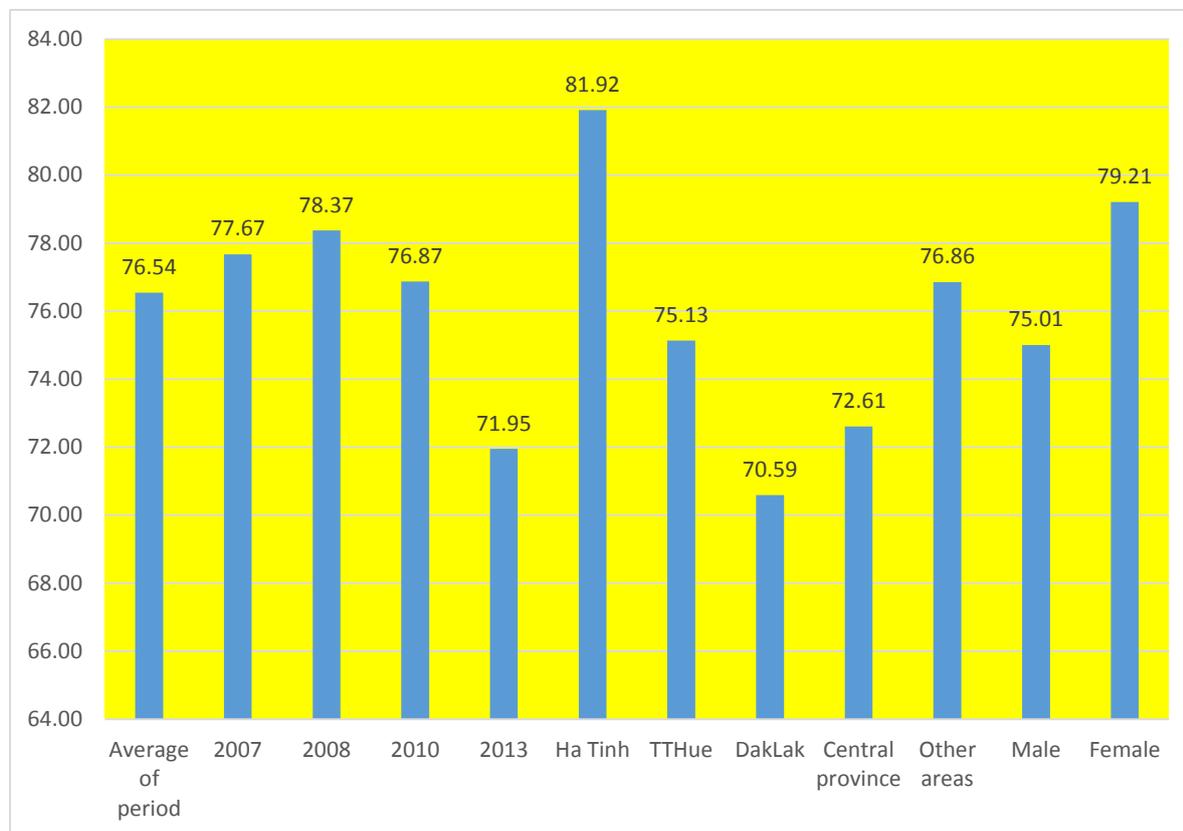
Also, the situation of full-time employment is different between provinces, areas, and gender. By which, Ha Tinh possesses the highest rate with 81.92% of non-farm employees working with full-time employment, then followed by Thua Thien Hue (75.13%), and Dak Lak (70.59%). Workers living in the capital of the province have lower rates (72.61%) of being fully-employed than those living in other areas (76.86%), and this is also seen in males (75.01%) compared to females (79.21%).

* RNFE Income

Income generated from employment is considered as one of the most decisive factors identifying the employment effectiveness. The details on income of RNFE respondents are presented in Figure 9, as follows:

Figure 9. Employment Income of RNFE participant (USD)
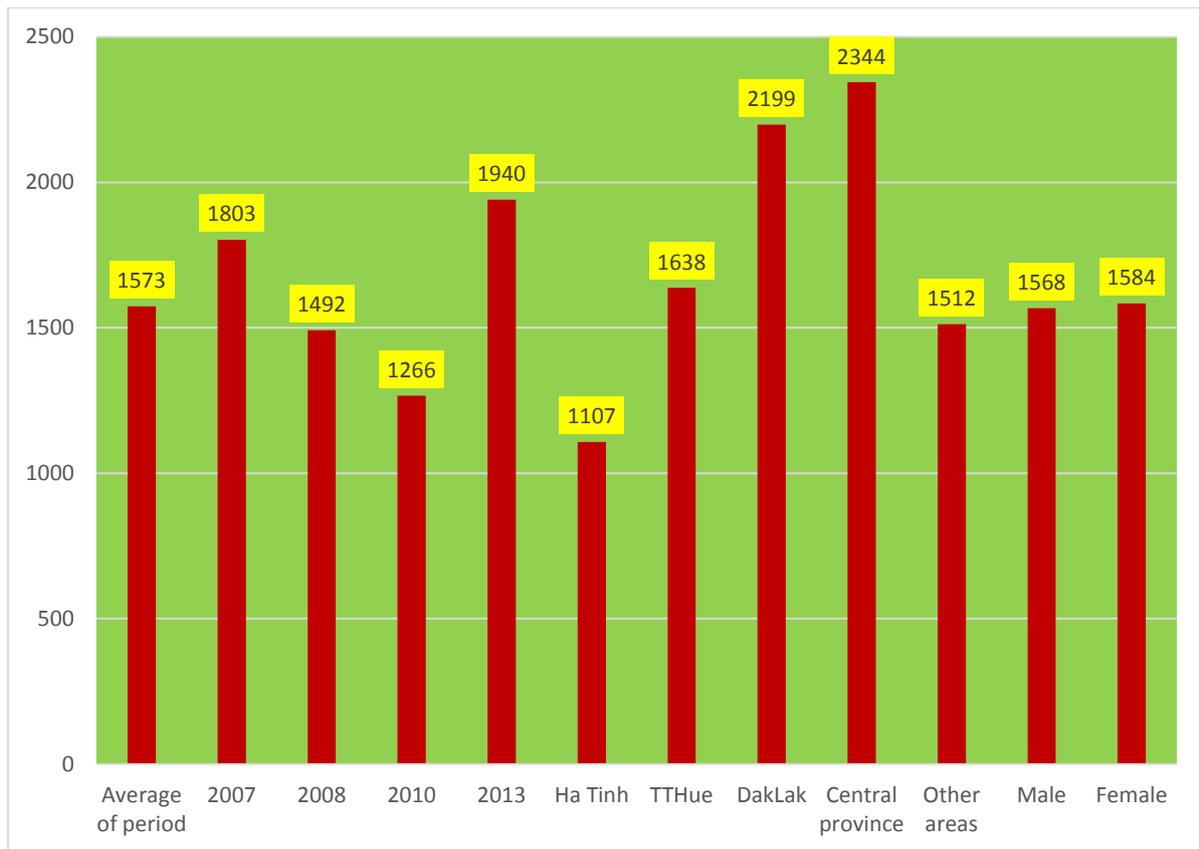
Bar chart showing Employment Income of RNFE participant (USD). Y-axis ranges from 0 to 2500. Values by category:
- Average of period: 1573
- 2007: 1803
- 2008: 1492
- 2010: 1266
- 2013: 1940
- Ha Tinh: 1107
- TTHue: 1638
- DakLak: 2199
- Central province: 2344
- Other areas: 1512
- Male: 1568
- Female: 1584

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies''

The results show that the average income per year of RNFE employees for the whole period is 1573 USD with the fluctuated trend (decreased from 1803 USD in 2007 to 1266 USD in 2013 before reaching 1940 USD by the year 2013). Apart from that, compared to those employed in agriculture (679 USD), this income is extremely higher.

Of the three surveyed provinces, the highest income level belongs to workers living in Dak Lak (2199 USD), and the lowest salary is seen for workers in Ha Tinh (1107 USD). Concerning areas, the income of those living in the capital of the province (2344) is much higher than that of other areas of the province (1,512 USD). Meanwhile, men and women received almost the same amount of money derived from their employment.

* Descriptive summary of independent factors:

The descriptive results concerning the independent variables are presented in Table 9. Almost all of the variables taken into account (except the ones concerning 'Female') are strongly

significant with the probability to participate in non-farm activities of the employed individuals. The details are as follows:

Table 9. Summarization of independent variables divided by types of respondents

| Variable	Total	RNFE group	Agri. group	Pearson-chi2
Age (year)	34.38	32.18	36.12	746.47***
Female (%)	36.57	36.57	36.40	0.04
Kinh's ethnicity (%)	75.10	91.12	63.56	1300***
Currently married (%)	69.76	54.52	81.65	1100***
Working experience (year)	2.20	2.24	2.16	186.58***
Schooling year (year)	7.04	8.86	5.78	114.18***
Member of a local social organization	62.88	66.49	60.74	44.55***
Total members in the family (person)	5.65	5.72	5.59	47.23***
Total adults in the family (person)	3.46	3.52	3.41	47.20***
Poor household (1 if Yes)	42.62	30.80	51.22	709.91***
Commune with plain-terrain (%)	50.53	60.75	42.99	395.54***
Commune participated in the 135's program (%)	34.54	27.78	39.78	199.15***
Average speed to reach the capital of the district (km/hour)	27.73	27.00	28.22	1200***
Average speed to reach the capital of the province (km/hour)	34.06	33.48	34.44	1600***
Urbanization rate (%)	16.11	18.23	14.56	2100***
District's total population (1000 person)	121.72	127.88	116.84	2300***
Number of non-registered firms located in the district (firm)	5793.29	7071.99	4837.48	2300***
Number of registered firms located in the district (firm)	158.46	196.72	129.73	1800***
Average values of non-farm's GDP of the district (billion VND)	551.46	628.37	493.27	2300***
Poverty rate of the district (%)	24.45	22.37	26.04	2200***

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies'' and the Provincial Statistical Figures 2007, 2008, 2010 and 2013
*** Significance at 1%; ** Significance at 5%; * Significance at 10%

Table 9 shows that the average age of the employed respondents is 34.38 years of age, and non-farm workers (32.18 years) are younger than agricultural employees. Besides, 36.57% of all interviewed employees are women, and this share of RNFE respondents (36.57%) is almost

the same as that of agricultural employees (36.40%). Then, the majority of them (75.10%) belong to the Kinh's ethnicity, but this share of the RNFE group (91.12%) is definitely higher than that of the agricultural ones (63.56%). Next, although the major part (69.76%) of respondents was engaged in marriage, RNFE participants are less involved (54.52%) in such situations than farm-employees (81.65%).

On average, each of employees has 2.2 years of working experience doing their current job, and this figure of the RNFE group (2.24) is almost the same as that of agricultural workers (2.16). Similarly, each of the respondents has 7.04 years of schooling, and RNFE participants (8.86) are higher-educated than agricultural employees (5.78 years). Finally, 62.88% of employed interviewees hold membership in a local organization, and the share of this participation among those working in the non-farm sector (66.49%) is higher than that of those employed in agriculture (60.74%).

The average size of the respondent's family is 5.65 persons, and this figure concerning the respondent household's adults is 3.46 persons. These figures from the RNFE group (5.72 persons and 3.52 persons) are almost the same as those of the agricultural employees (5.59 persons and 3.41 persons). Apart from that, the share of total interviewed individuals living in 'poor' households is 42.62%, and this share of those engaged in non-farm activities (30.80%) is much lower than that of those involved in only agriculture (51.22%).

Concerning the natural features of living communes and connection from the living commune to the capital of the district, as well as the capital of the province, the results also showed that about half (50.53%) of the employed interviewees lived in the communes with a plain terrain, but this share of the non-farm group (60.75%) is clearly higher than that of the farm group (42.99%). Also, 34.54% of employees lived in communes with support/aids from the 135's program, but the share of this concentration of RNFE workers (27.78%) is much lower than that of the agricultural laborers (39.78%). Apart from that, the average speed to reach the capital of the district is 27.73 km/hour, and this figure is much lower than that of what is needed to reach the capital of the province (34.06 km/hour). These figures of RNFE group are almost the same with those of agricultural employees.

Regarding district's endowment, the average percentage point of the surveyed districts is relatively low (16.11%), but this figure of the RNFE participants (18.23%) is slightly higher than that of the agricultural employees (14.56%). Similarly, the average size of each interviewed district is about 121.72 thousand inhabitants, and again, the non-farm workers tend to live in the more crowded districts (with the average of 127.88 thousand residents) than agricultural employees (116.84 thousand persons). Likewise, each of these districts has

5793.29 non-registered firms; 158.46 registered enterprises and 551.46 billion VND of GDP derived from the non-farm sector, and once more, these figures of RNFE group are much higher than those of farm employees. Lastly, the average rate of surveyed districts is 24.45%, and this percentage of the non-farm involved group (22.37%) is slightly lower than that of the agricultural group (26.04%).

4.2. Quantitative results of non-farm employment and labor matching

*RNFE participation

Of the independent variables taken into account in the model, factors relating: 'age', 'Kinh's ethnicity'; 'currently live with his/her spouse'; 'head of household'; 'female'; 'working experiences'; 'total family size'; 'district's population'; 'values of district's GDP stemmed from non-farm sector'; and 'district's poverty rate' are excluded from the model due to of either multi-collinear effects or failing to capture the statistical significance of the independent variable. Then, the values gained of VIF-test (1.12), Prob>chi2 (0.0000), and Wald-test (2481.7), as seen in Table 10, have ensured the meaningfulness and significances of the whole model.

Table 10. The impact of factors affecting the RNFE's participation of employees
(Random-effects probit regression)

RNFE participation (0= No; 1=Yes)	Dy/Dx	Std. Err.
Age (year)	-0.0296***	0.0012
Schooling (year)	0.0927***	0.0030
Member of a Social Organization (1 if Yes)	0.767***	0.0263
Poor household (1 if Yes)	-0.3452***	0.0254
Total adults aged 15 and over (person)	0.0214***	0.0083
Commune participated in 135's program (1 if Yes)	-0.2053***	0.0260
Commune with plain-terrain (1 if Yes)	0.3432***	0.0254
Average speed to reach the central district (km/hour)	0.0030***	0.0011
Size of non-registered firms in the district (1000 firm)	0.0161***	0.0000
District's urbanization rate (%)	0.0053***	0.0008
Year	0.0529	0.0097
Wald chi2(10)	2481.7	
Prob > chi2	0.0000	
VIF	1.12	

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies'' and the Provincial Statistical Figures 2007, 2008, 2010 and 2013

***significance at 1%; ** significance at 5%; * significance at 10%

Table 10 shows that longer duration of schooling leads to a higher probability to be part of RNFE, by which, one year added into schooling increases the RNFE involvement of laborers by 9.27%. In fact, better education allows rural individuals to learn the higher/complicated technics required by certain non-farm activities easily, as the result, they are more competitive than those with the lower educational level in participating in RNFE.

Compared to those not engaged in local social organizations, those with such involvement have the higher chance (raised by 7.67%) of participating in RNFE. In reality, local social organizations are considered as part of the local authority system through which, the information concerning local economic development is channeled. Therefore, by attending these organizations, individuals have more chances to access information (in many times, these are valuable and monopolistic) that play a crucial role for them in diversifying their own livelihood strategy, as well as that of their family. Besides, this participation also supports the attendants to be able to expand their social network, and in turn, they could easily create their own non-farm business or get a job in non-farm enterprises.

Being a member of families with the lower living standard (compared to other local residents) is strongly and negatively associated with a lower chance (decreased by 34.52%) for individuals to work as non-farm employees. As theoretically and empirically agreed, it is costly to set up one's own business or to look for a job in the non-farm sector. Therefore, poor households are less likely to be able to afford these expenditures than those with higher living standard due to their lack of financial resource, and as a result, their family members are hindered from being able to participate in non-farm activities. Additionally, 'Total adults aged 15 and over' of the household has also been positively associated (increased by 2.14% per one person added) with the 'non-farm' involvement of rural laborers. This can be interpreted from the human capital perspective, by which, a rural laborer can be benefited from the larger expansion of social network resulted from the higher number of their household's adults in achieving an employment in the RNS.

Communes with difficulties concerning natural-socioeconomic conditions (being supported/invested under the 135's program) have negatively affected local laborers (decreased by 20.53%) for being part of the RNS, but such involvement will be increased by 34.32% if those communes have plain-terrain. In other words, communes with difficult conditions regarding terrain and socioeconomic conditions negatively affect the probability of local employees in terms of involving in RNFE. At first, individuals and/or households in such communes are less able to cover the expenditures concerning RNS involvement (for instance, investment to open an own's shop or fees for job-search). Then, the input costs of non-farm

products/services in these areas are much higher than those of other regions due to higher fees resulting from poorly-accessed characteristics. Furthermore, the purchasing power/market needs in these areas are also not as high as those of other regions with higher development. As a result, the RNS in these areas are less developed than that of those with better conditions. Therefore, the locally employed individuals have a lower probability to be involved in non-farm activities.

Better connection to the capital of the district, thanks to the advantages concerning the higher expansion of the market needs in the destination, resulted in a positive significance (increased by 0.30% per one kilometer added) with RNFE involvement of rural employed individuals. Similarly, 'district's urbanization rate' (increased by 0.53% per one percentage point added) and 'number of non-registered firms' (raised by 1.61% per 1,000 firms added) are positively associated with this participation. This is explained by the expansion of urbanization as measured by the growing number of non-farm inhabitants, as well as the concentrations/appearances of non-farm business and/or enterprises, and as a result, more opportunities to be part of the non-farm sector occurred. Besides, as empirically confirmed in the works of other scholars (for instance: Dao Quang Vinh, 1997; Luu Quang Tuan and Nguyen Trung Hung, 2008), in the context of current labor-restructuring process of Vietnam, the formation and development of the small and/or non-registered firms are the appropriate ways to deal with issues concerning rural employment generation, due to its characteristics of labor-intensive production, using local materials (agriculture-related products), and requiring/accepting laborers with low-skill level.

Factor affecting the use of formal methods to achieve current RNFE of rural employees

This analysis is applied for only those who were engaged in RNFE (5351 individuals). Therefore, employees working in agriculture are not included. Of the independent variables taken into the model, those concerning 'Age' 'Female'; 'Kinh's ethnicity'; 'Currently live with his/her spouse'; 'Holding membership of a local social organization'; 'Working experience'; 'Family size'; 'Commune with plain terrain'; 'Commune with support from 135's program'; 'District's poverty rate'; 'District's population'; 'Number of non-registered firms located in the district'; and 'Values of district's GDP derived from non-farm sector' are excluded from the model, due to either of having multi-collinear effects or failing to achieve the statistical significances with the response variable. Then, the values gained of VIF-test (1.55), Prob>chi2 (0.0000), and Wald-test (189.49), as seen in Table 11, have ensured the meaningfulness and significances of the whole model. The quantified results are as follows:

Table 11. The impact of factors affecting the use of formal job-search methods

(Random-effects probit regression)

Using formal job-search methods (0= No; 1=Yes)	Dy/Dx	Std. Err.
Personal schooling	0.0373***	0.0056
Poor household (1 if Yes)	-0.4548***	0.0606
Number of adults in the family (person)	0.0439***	0.0163
District's urbanization rate (%)	-0.0077***	0.0021
Average speed to reach the capital of the district (km/hour)	-0.0115***	0.0022
Average speed to reach the capital of the province (km/hour)	0.0055**	0.0026
Number of registered firms located in the district (firm)	0.0004***	0.0001
Year	-0.0313**	0.0126
Wald chi2(8)	189.49	
Prob > chi2	0.0000	
VIF	1.55	

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies'' and the Provincial Statistical Figures 2007, 2008, 2010 and 2013.

***significance at 1%; ** significance at 5%; * significance at 10%

Table 11 shows that RNFE participants with higher educational levels are more likely (increased by 3.73% per one year added) to use the formal methods for their current RNFE achievement. As discussed earlier that formal job-search methods have numerous advantages regarding (i) higher level of legal guarantee/commitment from all parties involved; (ii) more opportunities of non-farm jobs that require employees with knowledge and skills, but in turn, offer better income and/or better employment. To put it differently, laborers with higher levels of education are more likely to use the formal methods, because of their advantages regarding working knowledge/skills learned during their training career in combination with higher 'payoffs' derived from the job achieved. Similarly, living in a family with higher number of adults also encourage laborers to use the formal methods in looking for job (increased by 4.39% per one person added), because laborers of such crowded-households can be benefited from their 'social-network' advantages concerning job information and other material support to cover the expenses arisen during their job-search process. On the contrary, 'Poor household' shows the negative correlation with the use of these formal methods of RNFE participants (decreased by 45.48%). Because such methods normally result in higher expenditures, therefore, poor households are less able to cover these expenses.

Apart from that, the results also reveal that better connection to the capital of the province leads to a higher probability of using formal methods (raised by 0.55% per one added kilometer). Presently in the major part of provinces of Vietnam, 'employment-service' organizations/agencies (for instance, the provincial employment service centers) are located

only in the capital of the province. Besides, up to recently, although various patterns of formal methods regarding 'job-service' provision were made (for example Career-Fair, and Employment-Trade Floor), but these types of services are held mostly in the capital of the province. Therefore, proximity or better connection to the capital of the province has positively affected the use of formal methods of rural employees. Similarly, 'number of registered firms/enterprises located in the district' has also improved (increased by 0.4% per each registered firm/enterprise added) the probability of local laborers in using formal methods to achieve the current RNFE. This is explained that, on one hand, the increasing number of such firms/enterprises results in higher labor demand in the formal sector. On the other hand, in reality, of Vietnam, these firms and enterprises (in the major part of cities/provinces in Vietnam) are preferable to have good connections with local authorities/agencies in meeting their requirement (of not only filling the job vacancies but also of other production/business purposes).

In addition, negative influences are also seen for factors relating to 'district's urbanization rate' (reduced by 0.77%) and 'speed to reach the capital located in the district' (decreased by 1.15% per 1 kilometer added). As mentioned previously, these factors have positively affected the RNFE involvement of local individuals. Nevertheless, except for the capital of the province, the RNS development in these districts is presently characterized by the domination of the informal firms (each district has about 5793 non-registered firms) compared to formal enterprises (approximately 158 enterprises). Therefore, the major part of the district's RNFE participants involve in non-farm activities in the forms of either 'salaried worker' at non-registered firms or 'self-employed', and these patterns of RNFE do not require the formal methods.

Employment income

In order to quantify the impacts of factors affecting income generated from the employment of individuals, the author applied the fixed-effects regression model with the dependent variables measured by the logarithm of the monthly income of surveyed employees. Of the independent variables taken into consideration in the model, those concerning: 'Currently live with spouse'; 'Kinh's ethnicity'; 'Total adults in the family'; 'Commune with plain-terrain', 'Commune with supports from 135's program'; 'Speed to reach the capital of the district'; 'Speed to reach the capital of the province'; 'Population of the district'; 'District's urbanization rate'; 'Value of district's GDP derived from the non-farm sector'; and 'District's poverty rate' are excluded from the model, due to of either having multi-collinear effects or failing to achieve the statistical significances with the response variable. Then, the values gained of R-square

(0.1864), VIF-test (2.15), Prob>chi2 (0.0000), and F-test (203.13), as seen in Table 12, have ensured the meaningfulness and significance of the whole model. The calculated results are as below:

Table 12 shows that participating in RNFE results in much higher income (approximately 2.1 times) for participants compared to that of those engaged in only agriculture. This finding has, again, confirmed the important role of the RNS in dealing with issues concerning employment generation and income improvement for rural laborers. Besides, this income is also affected by a number of factors concerning personal-related, household-related, and local endowment-related factors as follows:

Table 12. The impact of factors affecting income of employees

(fixed-effects regression model)

Logarithm of monthly income	Coef.	Std. Err.
RNFE participation (1 if Yes)	1.0794***	0.0323
Age (year)	0.0065***	0.0014
Female (1 if Yes)	-0.2727***	0.0293
Schooling (year)	0.0348***	0.0036
Working experience (year)	0.0150***	0.0029
Member of a local social organization (1 if Yes)	0.1086***	0.0303
Family size (person)	-0.0385***	0.0080
Poor household (1 if Yes)	-1880***	0.0295
Number of non-registered firms in the district (1000 firms)	0.0062**	0.0026
Number of registered firms in the district (100 firms)	0.0325**	0.0123
_cons	5.8556	0.0826
F(10,9927)	203.13	
Prob > F	0.000	
R2	0.1864	
VIF	2.15	

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies'' and the Provincial Statistical Figures 2007, 2008, 2010 and 2013

***significance at 1%; ** significance at 5%; * significance at 10%

Regarding personal characteristics, result concerning 'age of employees' has exposed the positive influence of this factor to the income of employees by showing the increasing rate of 0.6% per one additional year. The fact is that older employees are highly estimated due to their embeddedness concerning their longer working experience as well as their maturity at work (compared to the younger laborers), and as the result, higher productivity and outcomes are made. Besides, the results have also confirmed the important roles of factors concerning

education, working experience and the involvement of employees in the local social organizations in improving employment income for rural employees. Indeed, one year added to schooling significantly improves this income by 3.48%, and this positive association is also seen for factors regarding 'working experience' (increased by 1.50% per one year added) and 'member of a local social organization' (raised by 10.86%). These findings are consistent with theoretical assumptions, as well as other empirical confirmations that better education and working experience resulted in a higher rate of return for individuals, and holding membership in the social organization leads to better access to effective information in doing business and/or in looking for better jobs.

Regarding household-related features, results show that 'family size' has a negative correlation with income of employed individuals (reduced by 3.85% per one person increased). In the case of Vietnam, with the major part of population concentrating on the younger group, large family is usually synonymous with higher dependency rate, and this negatively affects the employment of family members. For example, sometimes, employees (especially women) have to accept jobs with lower income, because this employment fits for them to look after their families. Likewise, factor concerning 'poor household' households has negatively affected to this income by reducing this at 18.80%. Again, this finding goes in line with the theoretical assumption that compared to poor households, households with the higher living standard are more able to afford their members in helping them obtain 'better-working' skills and educational level, as well as in covering the financial needs/expenses concerning business investment and job generation. As the result, these members are more likely to involve in activities generating higher income.

With respect to local endowment-related factors, the concentration of both non-registered/informal and registered/formal enterprises located in the district has positively affected the monthly income of local employees. Of which, increasing the number of non-registered firms by 1,000 units raises this income by 0.62%. Similarly, increasing the density of district's registered enterprises by 100 units also results in the higher income for local employed-laborers (increased by 3.25%).

5. Conclusions and policy implications

5.1. Conclusions

RNFE is on the increasing trend in rural Vietnam, but RNFE involvement differs from province to provinces. The majority of rural RNFE participants rely on personal contacts or support provided by family/relatives/friends to get their current employment, and almost all of these individuals have paid no fee for their job-search. Nevertheless, evidence concerning the reasons for getting the current employment have confirmed the mismatch of the rural labor market regarding skill training and education.

Interestingly, nearly half of the RNFE individuals work in the formal sector (with a written contract). However, results also showed that 'formal sector' participation differs between provinces, and in general, this is on the downward trend.

The major part of individuals engaged in RNFE work with full-time employment, but with a fluctuated and decreased trend. Again, different provinces resulted in a different share of those who were fully employed.

With the average income per year reaching nearly 1,600 USD, it can be concluded that RNFE participation has resulted in a much better income for RNFE participants compared to that of the agricultural employees (about 400 USD- Nguyen Do Anh Tuan, 2012). Additionally, despite fluctuating, this income is on a slightly increasing trend. Nevertheless, the income differences are seen among analyzed provinces.

Compared to agricultural employees, RNFE participants are younger, less involved in marriage, highly-educated, and are more engaged in local social organizations. Besides, the share of people belonging to Kinh's ethnicity involved in RNFE is definitely higher than that of those belonging to other ethnic minorities. Apart from that, this share of people living in households with the higher living standard is also totally higher than that of those living in poor households. Also, RNFE participants have been highly concentrated in communes embedded with better natural and socioeconomic characteristics. Similarly, this higher concentration is also seen in districts with better local endowment concerning urbanization rate, the size of the population, the size of firms/enterprises located in the district (both registered and non-registered firms), values of district's GDP stemmed from the non-farm sector, and poverty rate. To put it differently, RNFE participants have more advantages than agricultural laborers regarding personal, household-related and local endowment-related features.

The RNFE participation of rural employees is affected by factors regarding personal characteristics, household embeddedness, and local endowment. Of which, those concerning: human capital (education), social capital (involving in the local's social organization),

household living standards, natural and socioeconomic features, and district's labor demand show the positive influences with this participation. In other words, better conditions concerning personal competitiveness, household embeddedness, and local endowment play crucial roles to foster the development of RNFE in rural Vietnam.

There have been some factors affecting the use of formal methods to achieve the current RNFE of rural laborers with different influences. Of which, factors concerning household living standard and accessing the capital of the province show the positive impacts, while the others concerning human capital (working experience), household human resource (family members, family adults), local urbanization, and connection to the capital of the district have the negative significances.

RNFE participation is confirmed as a crucial factor to improve income for rural employees, and this finding is consistent with not only a theoretical assumption but also with other empirical results derived from the works of various scholars mentioned previously. Besides, the increasing income of rural workers also goes in line with the improvement of other factors regarding education, working experience, social organization's participation, household living standard, the concentration of enterprises within the district.

Poor employees (those living in households with lower living standard compared to local residents) are less competitive to participate in RNFE as well as less able to use the formal methods to achieve the current jobs, and consequently, have lower income.

Besides, the understanding and literature on RNFE should be enriched by conducting other studies focusing on expanding the coverage of public labor market infrastructure to the rural areas; the role of education and vocational training facilities in shortening the labor mismatch in rural areas; the impact of further integration of Vietnam (for instance, impact caused by the TPP participation, and the formation of a public-ASEAN community) to the RNFE.

5.2. Policy implications

Findings have proved and confirmed the roles and importance of RNFE as well as the RNS in rural Vietnam to deal with problems concerning employment generation and income/living standard improvement. Therefore, in the coming time, it is crucial to have the RNS and RNFE expanded by focusing on: fostering the participation of rural laborers in RNFE; improving the formalization of job-search activities; and improving income for rural employees. By which the main objectives/targets of supporting policies/programs provided government be as follow:

Improving rural labor quality: such objective can be achieved through the implementation of programs concerning skill training and education. These programs need to be in accordance

with the demands/requirements of the local labor market and focus on the actual quality-side, rather than the quantity side of courses/services provided.

Increasing the RNFE participation of poor laborers. In fact, some policies/programs targeting poor households have been implemented with the aim of helping these households to escape from a poverty situation. Nevertheless, these policies/programs would rather focus on the social security aspect than the labor market/employment issues and less-integrated each other (each organization/agency has their own program)). Therefore, in order to improve such participation of the poor laborers, these supporting policies and programs need to diversify with more focus on the content concerning the labor market/employment issues (such as skill training, access to financial sources to set up small-non-farm business), as well as to be more integrated during the policy/program implementation.

Improving the interactions between local laborers with the public employment service centers. From the author's point of view, these organizations are considered as important agencies, due to its advantages concerning legal entity; organizational framework/equipment/human resources; relationship with employers, to provide the highly-committed/secured services for rural laborers to achieve the RNFE. Nevertheless, these centers (presently focused on the capital and nearby areas of the province) need to enlarge their activity scale reaching to other districts within the province.

Besides, encouraging the development of small and medium size (SME) enterprises, trade villages, through the policies/programs are also essential. This is because it helps to bring priorities about the formation of newly-established firms in accordance with local characteristics.To do so, these policies should be aimed at dealing with problems such as: acting as the guarantee for the individuals/households having business projects with high feasibility to access financial sources, improving the quality of infrastructure (especially roads, markets/trade centers), reducing time spent for entrepreneurs to complete their tax responsibilities.

CHAPTER 3. LABOR MARKET IN RURAL AREAS: THE IMPACTS OF THE RNS TO THE DEVELOPMENT OF LABOR MARKET

1. Introduction

As commonly agreed, the Vietnamese labor market is less-developed with a number of challenges needed to be solved concerning: the asymmetry of employment structure and economic distribution (agricultural sector takes the highest share of employment-45.25%, but generates the lowest share of GDP-16-75%, ILSSA, and GSO, 2014); the majority of non-farm employment belongs to the informal sector without legal protections, and much lower income (62.1%-MOLISA, 2011); the shortages of skilled workforce (reached the share of 20.2%-ILSSA, 2015); and the inappropriateness of labor distribution among geographical regions[22]. Toward the year 2020, improving and accelerating 'Labor Market Development' become the priority target of Vietnam Government. These priorities are detailed by the approval and promulgation of a separate Labor Market Development Scheme. In which, the overall object of labor market development, by the year 2020, is defined as 'to developing the labor market toward the trend of modernization with high effectiveness, more-competitiveness, better equitableness, and reach the share of 40% employees working as a wage-worker' (MOLISA, 2011).

Labor market development is a subject attracting the concerns of numerous scholars from different disciplines, ranging from economics to other social sciences. From the theoretical perspective, the labor market is seen from the various contexts concerning economic development (W. A. Lewis, 1954; S. Kuznets, 1955), human capital theory (T. W. Schultz, 1961; Becker, 1975), dual labor market (P. B. Doeringer and M. J. Piore, 1971; M. Wachter, 1974), and labor market segmentation (G. S. Fiels, 2010). In which, labor market and factors affecting the movement of labor market are assessed with the use of various data as: (i) Micro cross-sectional data (J. Bound, D. A. Jaeger, and R. M. Baker, 1995; D. Staiger and J. H. Stock, 1997; A. Deaton, 1997); (ii) Panel data (Heckman, 2001; Ravallion, 2008; Kugler, 2005; Ravallion et al, 2005); (iii) Aggregate cross-sectional and time series data (G. S. Fields, M. Leibbrandt and J. Wakeford, 2000; T. Besley and R. Burgess, 2004; A. Ahsan and C. Pagés, 2009); (iv) Experimental data (E. Duflo and R. Hanna, 2005; O. Attanasio, C. Meghir and M. Vera-Hernandez, 2007). Through these works, the labor market in developing countries appeared with typical features regarding: (i) the highest share of employment engaged in agriculture; (ii) greater majority of employed individuals engaged in the informal sector with

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[22] Mostly concentrated in the Red River Delta (22,41%) and Mekong River Plain (19.05%)- GSO, 2014

unsecured job (G.S. Field, 2010); own-account work, rather than paid employment was considerably greater (D. Campbell and I. Ahmed, 2012). Apart from that, a number of studies on the Vietnam labor market have pointed out that: (i) labor market institutions (regarding the labor/employment-related laws and regulations legally promulgated by the government) are not yet efficiently implemented (Pham Minh Chinh et al, 2014), for instance, the high rate of firms/enterprise eluding/avoiding the payment regarding social insurance fees for employees (with the total money of debt reached 5.69 thousand billion VND-ILSSA, 2015); the huge number (about 25 thousand cases recorded every year-MOLISA, 2015) of labor conflicts occurred concerning working contract, working condition, wage/salary, unfair dismissal; the mismatch between labor supply and labor demand seems to be widened (Nguyen Thi Lan Huong et al, 2010); the lack of the labor market infrastructure in rural areas (Nguyen Trung Hung and Le Hong Thao, 2005); the increasing trend on wages and gender differences in labor market (ILSSA 2012, 2013).

Nevertheless, the majority of these existing studies had concentrated on the labor market from the national, urban and firm's levels, and/or studied the rural wage-workers from the migration perspective, while less-mentioned the rural labor market. For these reasons, the author conducts a study focusing on the labor market in rural Vietnam in the interaction with the rural-non-farm sector (RNS[23]), with the aim of contributing for the further/comprehensive understandings of how the rural labor market is affected. Then, the appropriateness and accuracy of further decisions concerning plans/activities to encourage this development should be recognized and obtained. Therefore, this paper aims to assess the influences of factors affecting: (i) labor force participation rate; (ii) salaried employment; and (iii) formal sector involvement. To achieve these objectives, the study focus on answering the following research questions:

(1) How do the RNS and other determinants influence rural laborers taking part in the labor force?

(2) How do the RNS and other determinants affect rural employees to work as a wage-worker?

(3) How do the RNS and other determinants affect rural employees to work in the formal sector?

The paper is organized as follows: the next section presents a theoretical discussion concerning labor market development; interactions between labor market with determinants. Section 3 gives a description of the methodology of this study (data, research methods used). Then it is

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[23] RNS: Rural Non-farm Sector

followed by Section 4, with the empirical evidence and quantified results on the rural labor market development (RLMD), as well as the impact of factors that affect the RLMD. Finally, the paper ends by summing up the results and potential policy implications in Section 5.

2. Theoretical discussion.

2.1. Brief discussion on labor market

Labor market can be termed from different perspectives. For instance, as defined by economists, a labor market is the place where employees and employers interact with each other (The Economic Times). Meanwhile, according to the sociologists, this term refers to 'a set of social mechanisms through which labor is bought and sold' (A. Crossman, 2006). In the case of Vietnam, labor market can generally be understood as the place where the exchanges concerning employment/wage/and other working conditions between employees and employers taken place following the 'rules of agreement' under the forms of working contracts. As the results, the employment commitments are made (Nguyen Huu Dung, 2014).

The labor market plays key roles for regions or countries, especially those in the transition process, to achieve economic growth; to reach the success of the human development, and to deal with problems concerning employment issues. As argued by Pham Minh Chinh et al (2014), building and developing the labor market are the most important purposes for Vietnam to transform the economy successfully from central planning regime into a market-oriented mechanism. Because, in the context that the labor market is well-functioning, the employers are seeing it easier to find the employees fitting for their firm's production (in turn, the employees also get the job that is most suitable for them), and that leads to higher productivity. As a result, economic growth is achieved and higher income/better living standards for workers is generated. Besides, developing the labor market results in better human development. Indeed, under the increasing pressure concerning market competition, the laborers need to continuously improve their working skills (including technical and other soft-related skills), as well as their physical condition (good health) to compete successfully in the labor market. Also, the labor market development also positively contributes to the success of job-generation and labor restructuring. In fact, an effective labor market will help workers/laborers in areas/sectors (rural area/agriculture) with labor redundancy to connect with the areas/sectors with a job vacant surplus through its 'employment-bridge' function.

What is labor market development? By far, it is hard to say the term 'labor market development' is conceptually defined thoroughly. From the narrow sense concerning labor market outcomes (employment), the author combines the term 'labor market' with the term 'development' to conceptualize the 'labor market development'. By which, 'labor market

development' of a region or country is understood as the place where the laborers have a higher chance to work as a salaried worker with better employment. Better employment or better jobs, as mentioned by ILO, refers to aspects concerning the outcome (high productive and income), sustainability, and security (working without discriminated, exploitative and abusive conditions) of employment. In developing countries, better employment are, as commonly agreed and empirically confirmed in the works of numerous researchers (P. Lanjouw and A. Shariff, 2004; G. S. Field, 2010; J. P. Cling *et* al, 2010), embedded in the formal sector, where the workers work with written contract and are protected/secured by Law. In the case of Vietnam, as pointed out by M. Meissner (2012), the major part (87.4%) of the formal workers are covered by social security services (compared to none of the informal employees has accessed to such services), and almost all of the formally employed (95%) benefit from other working subsidies (holidays, gratuity/rewards).

2.2. Determinants of labor market

The rural non-farm sector (RNS): The RNS can be measured by either the share of rural non-farm-employed (RNFE[24]) in total employment, and the share of rural non-farm units/firms in total economic units/firms, or the share of rural GDP stemmed from the non-farm sector in total GDP generated. The RNS plays a predominant role in rural development, because, as pointed out by Fisher *et al* (1997), participating in the RNS helps participants to be better paid, less poor and more educated. From the labor market perspective, RNS influences the LMD through its heterogeneity and stages of development; those lead to the transformation of both labor demand and labor supply. Concerning the heterogeneity, the rural non-farm sector is highly heterogeneous, comprised of activities with a wide range of labor and capital productivities with regards to the manufacturing techniques used, and the types and qualities of final products. Therefore, enterprises in the sector range from a single self-employed worker at home to large factories and types of jobs vary from well-paid regular employment to low paid casual labor. In other words, the RNS interact with the labor market and this results in the changes of not only labor supply (labor force participation rate) and labor demand (non-farm firms/enterprises/household unit), but also the outcomes of labor market interaction (RNFE).

Other local endowments: RLMD is also affected by other local endowments (consisting of natural and socioeconomic features) directly and indirectly on both supply-demand sides. From the supply-side, numerous studies (W. Naud and Serumage-Zake, 2001; Mduma and Wobest, 2004; T. Glauben et al, 2008; M. Z. Faridi and A. B. Basit, 2011) have theoretically and

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[24] RNFE: Rural Non-Farm Employed/Employment

empirically agreed, and confirmed that regional endowments (such as location, infrastructure, socio-economic and demography characteristics) seem to be the critical factors in determining the rural labor force participation. From the demand side, the location's characteristics affect labor demand via channels concerning 'accessibility' and 'availability', through which, the labor demands are set. Changes in the endowment of infrastructure & production factors might lead to a change in the supply and demand, therefore, affect the industry of a region (C. Werker and S. Athreye, 2005). Besides, as mentioned by J. Huovari *et al* (2001), high accessibility and availability lead to the higher ability to perpetuate and attract mobile production factors. Success in attracting these factors creates higher regional competitiveness, so as to further enhance the economic fortune of a region as well as the expansion of firms and industry, leading to the change of labor supply as well as employment composition with the increase of non-farm jobs, as the results, the labor market is expanded. Also, the urbanization process is also considered as a determinant of the labor market development. This term refers to the population shift from rural to urban areas. Urbanization process takes place due to the appearance of the industrial process, and along with this process, a shift in employment structure is also taking place with the growing trend of non-farm employment, as well as the development of the labor market.

Household-related features: households play an important role in the allocation of resources to its members. The household's features affect the labor market positions of individuals through the transmission of demographic structure and physical resources. As confirmed by J. Herrera and C Torelli (2013), the household size (extended or larger households) has a significant impact on labor division as well as labor market and employment choices of individuals. Additionally, assets of households have positive influences on the outcomes of individual's RNFE. Because wealthier households are able: to afford their members achieving better human capital (education, working skills); to access the financial sources (mobilizing and/borrowing) needed for their business; to build/expand their social relationships/networks due to the high degree of household reputation. Furthermore, as pointed out by J. K. Mduma and P. Wobst (2004), members of poor households (in Tanzania) tend to be more likely to attend in the labor market as a salaried - worker because it does not require any complementary physical resource, and the assets of the poor are their labor power.

Individual-related factors: these factors can be divided into (i) human/social capital resources; and (ii) demographic characteristics. By which, the former consists of education, working experience and social network, and the latter comprises of those concerning age, gender, ethnicity, marital status. At first, according to G. S. Becker (1975), human capital corresponds

to any stock of knowledge or characteristics the worker has (either innate or acquired) that contributes to his or her "productivity" and human capital increases a worker's productivity in all tasks. Besides, social capital referred to a combination of the number of people who can be expected to provide support, and the resources those people have at their disposal (E. A. W. Boxman *et al*, 1991) is a means of production that produces better working conditions. Therefore, social networks are also important to people in the labor market. Then, there have been interactions between these capitals. According to Granovetter (1988, 1995), human capital produces social capital, and in turn, social capital multiplies revenues of human capital as well as working experience (J. S. Colleman, 1988). As a result, better employment for individuals holding such capitals is achieved. Empirically, as confirmed by L. P. Doumer (2013b), entering the formal sector depends crucially on the level of education. Furthermore, social capital positively affects the economic activity outcomes at both firm's level (the firm's investment in the social capital of its employees yields significant economic returns- R. M. Fernandez *et al*, 2001) and employee's circumstance, for instance, higher income, better chance of employment promotion (L. K. Njagi, 2012). Regarding the demographic characteristics, as mentioned by World Bank (2007), demographic characteristics (such as gender, age, marital status, ethnicity) can have direct implications for labor markets through three primary channels: labor supply, labor productivity, and labor demand (because of shifts in the structure of aggregate demand). It is also empirically confirmed that there has been a gender gap between males and females regarding labor market participation and employment (Fitzenberger *et al*, 2001). Moreover, it is also confirmed that the impacts of such factors on the labor market behaviors of laborers are mixed (L. P. Doumer, 2013b; J. Herrera, 2013).

3. Methodology

3.1. Data

The author employs data from repeated surveys (4 waves) conducted in 2007, 2008, 2010, and 2013 at three provinces (Ha Tinh, Thua Thien Hue, and Dak Lak) in Vietnam. These surveys belong to a research project "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging South-East Asian Economies'' to form the panel data. Owing to the use of various questionnaires in these surveys, the author can organize the dataset with the plentiful information of rural individuals regarding demography, socioeconomic characteristics, and economic behaviors at the personal, household and communal levels. Then, this dataset is enriched and completed by adding some information (at the district level) derived from the sources of the Provincial Statistical Office. These added information consists of district's features population, poverty, urbanization, the values of non-farm GDP, the number

of non-farm registered enterprises, and non-farm household/non-registered firms/units. As the result, the data contains 27.336 individuals aged 15 and over having information taken into account in assessing the probability to participate in labor force; 20.753 persons with information that allow the assessment of the probability of being employed as the salaried worker taken place; and 4951 workers have sufficient information for the assessment focusing the influences of factors affecting the probability to be involved in the formal sector.

3.2. Research methods and variables

a. Research methods:

To deal with the first question concerning the influences of factor affecting the labor force participation of individuals, the author uses a Probit regression model in the general form of:

$$Log (p /1−p) = α + β1x1+ β2x2+ β3x3+ (1)$$

Of which

'p' is the probability of individuals involved in the labor force.

'1−p' is the probability of individuals not involved in the labor force.

'x1',' x2', 'x3' are the explanatory variables.

Similarly, the Probit regression model is also used to specify the impacts of factors affecting the individual's probability to work as the salaried employee, and this model has the general form as follows:

$$Log (p /1−p) = α + β1x1+ β2x2+ β3x3+ (2)$$

Of which

'p' is the probability of individuals working as the wage-worker.

'1−p' is the probability of individuals not working as the wage-worker.

'x1', 'x2', 'x3' are the explanatory variables.

Likewise, the impacts of factors affecting the individual's probability involved in the formal sector will be measured by using a Probit-Model in the general form of:

$$Log (p /1−p) = α + β1x1+ β2x2+ β3x3+ (3)$$

Of which

'p' is the probability of individuals working in the formal sector.

'1−p' is the probability of individuals not working in the formal sector.

'x1', 'x2', 'x3' are the: explanatory variables.

b. Explanatory variables

It is assumed that three models mentioned above have the same explanatory variables, and the details of these variables are as follows:

To capture the RNS differences among individuals, the authors takes three variables concerning the values of district's GDP derived from the non-farm sector; the district number of non-registered firms/household units participating the RNS; and the district number of non-farm registered enterprises to be the independent variables.

To consider the impacts derived from other local endowment's factors, the author uses some explanatory variables concerning: natural and socioeconomic conditions; quality of local infrastructure (roads); population size. In more details, the natural characteristic differential is separated by criterion relating to plain-terrain (with 1 if Yes, and 0 otherwise), while the socioeconomic difference is distinguished from the ones referring the 135 program's participation (with 1 if Yes, and 0 otherwise). Then, the quality of local roads is measured by 'speed to reach the capital of the district-kilometers per hour', and 'speed to reach the capital of the province-kilometers per hour'. Next, population size is expressed by a total number of district's inhabitants (measured in 1000 persons).

The impacts of household-related factors for the response variables are seen from household human resource and household living standard. By which, the authors uses various variables referring: HH's size (number of family members staying permanently in the house); Number of HH's adults (number of family members aged 15 and upward, staying permanently in the house); and HH's living standards (a dummy variable, of which, '1' refers to households having lower living standard compared to local residents, and '0' otherwise. The way of defining this variable is exactly the same as the way defining the 'Poor household' variable mentioned in Chapter 1 and Chapter 2), as the independent variables.

Regarding personal characteristics, some factors regarding personal demography and human capital are also taken into the model as the explanatory variables. These are: Age (years); Gender (0 equivalent to male and 1 refers to female); Marital status (1 if currently live with his/her spouse and 0 otherwise); Ethnicity (0 for other minority ethnic groups, and 1 for Kinh's ethnicity); Education (years of school enrolling); Social capital (with 1 equivalent to the person holding the membership of a local social organization, and 0 otherwise).The variables taken into three models are briefly presented in Table 13 below:

Table 13. Variables taken into the models

Variable	Model 1: Labor force participation	Model 2: Salaried employment engagement	Model 3: Formal sector participation
Age (year)	X	X	X
Female (1 if Yes)	X	X	X
Currently, live with spouse (1 if Yes)	X	X	X
'Kinh' Ethnicity (1 if Yes)	X	X	X
Schooling (year)	X	X	X
Member of a local social organization (1 if Yes)	X	X	X
Poor household (1 if Yes)	X	X	X
Family's size (person)	X	X	X
Total number of adults in family (person)	X	X	X
Commune with plain-terrain (1 if Yes)	X	X	X
Commune participated in 135's program (1 if Yes)	X	X	X
Speed to reach central district (km/hour)	X	X	X
Speed to reach central province km/hour)	X	X	X
Non-farm GDP of district (billion VND)	X	X	X
District's urbanization rate (%)	X	X	X
District's poverty rate (%)	X	X	X
Number of private non-farm firms (firm)	X	X	X
Number of non-farm registered enterprises (firm)	X	X	X
District's total population (1000 person)	X	X	X
Year	X	X	X

4. Research results

4.1. Descriptive results

Labor force participation rate (LFPR)

The average figure of the LFPR for the 2007-2013 period of respondents aged 15 and over is 75.53%, and this rate in 2013 is almost the same with the ones of the whole country in the same year-77.5% (ILSSA, 2014). Compared to the year 2007 (77.25%), the LFPR of 2013 is almost the same (77.48%).

Figure 10. Labor force participation rate (%)
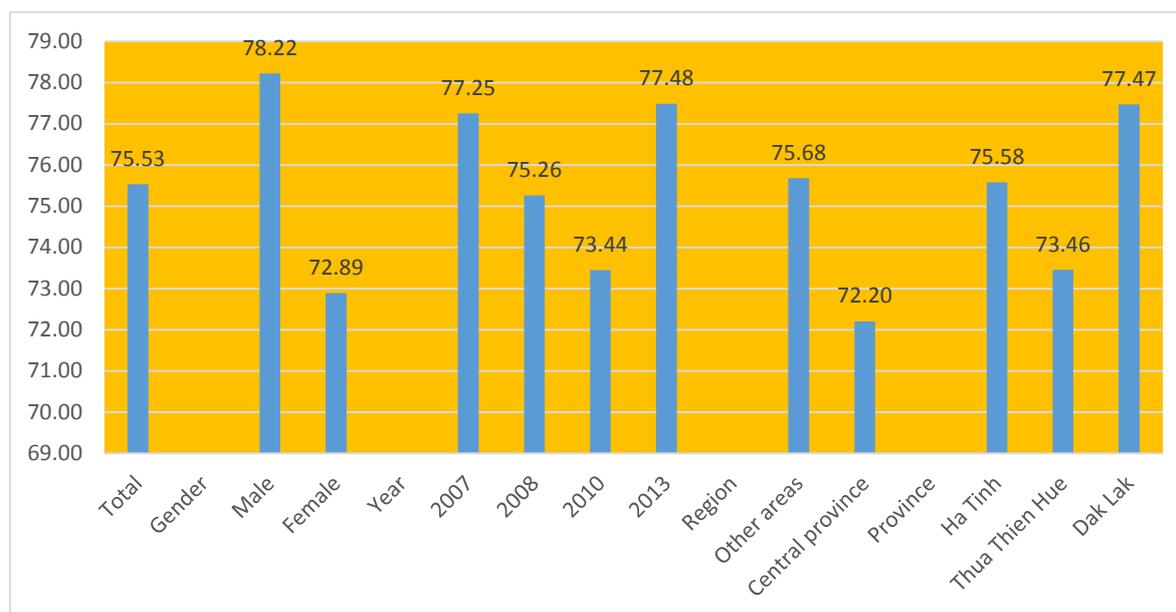
Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies''.

The results show a fluctuated trend of the LFPR during the 2007-2013 period. In 2007, it was 78.22%, in 2008 it reduced to 72.89%, then increased in 2010 and declined in 2013.

Gender differentials also exist with the higher rate of males (78.22%) taking part in the labor force than females (72.89%).

Compared to other areas of the province, the LFPR in the capital of the province is slightly higher with 75.68%. It implies that in the most developed area of the province, people are more likely to take part in the labor force.

Finally, with respect to the locations (provincial level) of respondents, the data show that the highest rate of LFPR belongs to Dak Lak (77.47%), then followed by Ha Tinh (75.58%) and Thua Thien Hue (73.46%).

Wage worker

As can be seen in Figure 11, about one-quarter (25.57%) of total surveyed employees involved in salaried employment, and this share is far lower than that of the whole country in the year 2013 (35.6%-ILSSA, 2014). Again, the differences in the shares of salaried employees can be observed from various classifications of respondents regarding gender, year and location.

Figure 11. The share of salaried employment (%)
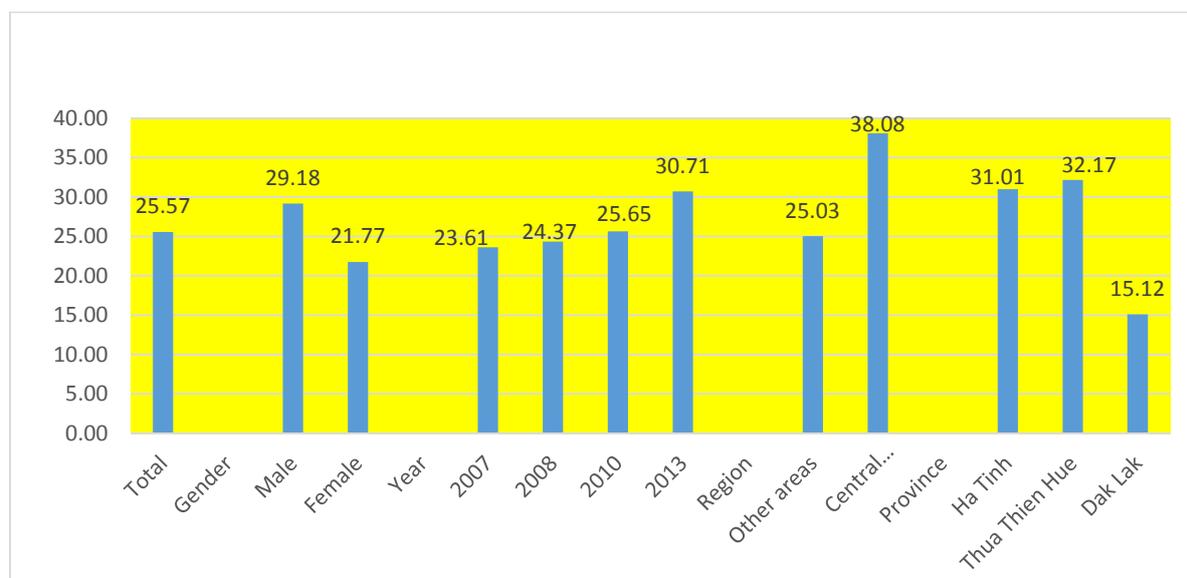
Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies''.

From the gender perspective, the distribution of the wage - worker among men (29.18%) is obviously higher than female (21.77%). Besides, working as a paid worker has been on the rise for the whole period with the rate continuously increased from 23.61% in 2007 to 30.71% by the year 2013. Also, results showed the differentials on the shares of salaried people between the capital of the province/the core area (38.08%) compared to other areas within the province (25.03%). Furthermore, among the analyzed provinces, the highest share of the wage-worker belongs to Thua Thien Hue (32.17%), then followed by Ha Tinh (31.01%), and Dak Lak (15.12%).

Formal sector

Figure 12 shows that there have been 30.35% of total wage-worker respondents working with official contracts (under either permanent or short-term forms), and this is much lower than that of the whole country in the year 2013 (44.9%-GSO, 2014). Besides, the results also reveal that respondent's participation in the formal sector varies by gender, year and location.

Indeed, males (31.24%) are more likely to work with an official working contract than females (29.09%). Noticeably, the formal sector showed a decreasing trend during the 2007-2013 period, with the share continuously decreased from 34.73% in 2007 to 21.18% in 2013.

Figure 12. Rate of the wage worker working in the formal sector (%)
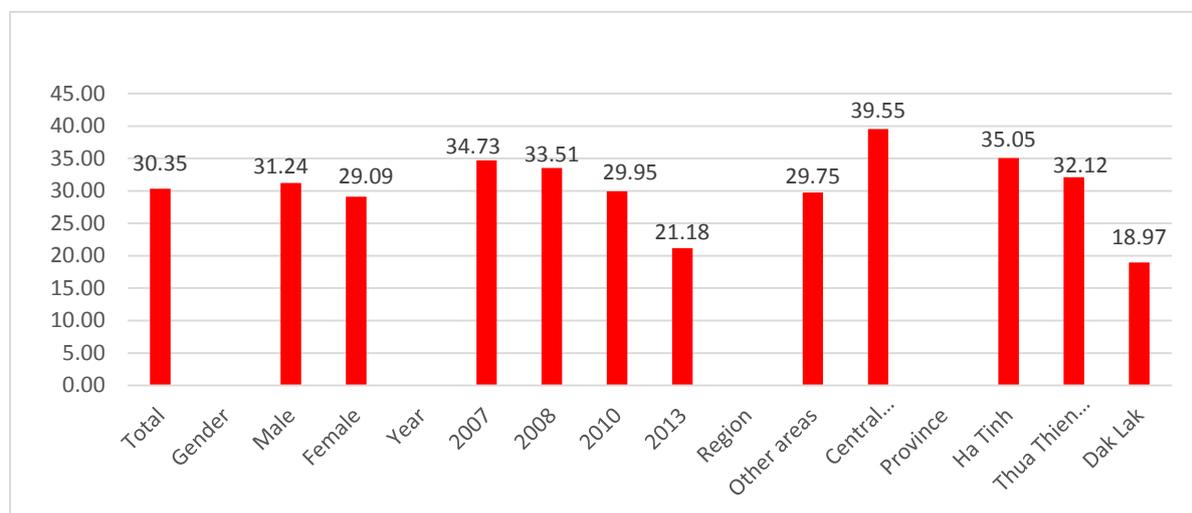
Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies''.

Besides, with respect to the sub-region of the province, this share of the provincial capital (39.55%) is higher than that of other areas/districts within the province (29.75%). Of the surveyed provinces, this share of Ha Tinh (35.05%) is the highest, then followed by Thua Thien Hue (32.12%), while Dak Lak takes the lowest (18.97%).

Summary of respondent characteristics

The average age of respondents involved in the labor force is 35.91, and wage-workers, as well as those engaged in the formal sector, are slightly older with the average age reach 36.32 years and 36.33 years respectively. Also, about half of the LF involved individuals are female, and the share of females among those involved salaried employment (41.47%), as well as the formal sector (39.80%), is much lower. Apart from that, 58.51% of the LF involved currently live with their spouse, but this share is reduced for those employed as wage worker (46.99%) and as those involved in the formal sector (48.58%). Moreover, nearly four-fifths of the active respondents belong to Kinh's ethnic, and this share is increased for groups involved in paid employment (88.52%) and formal sector (95.52%).

Every active respondent has spent (on the average) 5.4 years attending school, and this figure is much lower than that of the wage-workers (7.23 years) and formal-sector participants (8.14

year). Next, about 65% of the active interviewees are involved in at least one social organization that existed at their communes, but this participation of those involved in paid employment and the formal sector is slightly lowered.

Table 14. Summarization of respondent characteristics divided by employment status

Variable	Involved in the labor force	Involved in non-farm salaried employment	Involved in non-farm formal sector
Age (years)	35.91	36.32	36.33
Female (%)	50.51	41.47	39.80
Currently live with his/her spouse (%)	58.51	46.99	48.58
Kinh's ethnicity (1 if Yes)	77.20	88.52	95.52
Schooling (years)	5.35	7.23	8.14
Member of the local organization (%)	64.94	59.39	62.36
Family size (persons)	5.91	5.96	5.99
Amount of family adults (persons)	3.56	3.66	3.57
Poor household (%)	38.35	40.73	32.06
Commune participated in 135 program (%)	33.69	28.04	23.30
Commune with plain-terrain (%)	51.18	62.14	68.48
Speed to reach the capital of the district (km/hour)	27.49	27.11	25.81
Speed to reach the capital of the province (km/hour)	34.25	33.73	33.35
District's poverty rate (%)	23.69	22.31	21.04
District's urbanization rate (%)	15.12	17.19	18.43
District's population size (1000 persons)	119.40	128.91	131.45
District's non-farm unregistered firms (units)	5791.25	7050.37	6984.45
District's non-farm registered firms (units)	149.82	184.74	204.22
District's non-farm GDP (billion VND)	548.35	641.83	650.30

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies'' and the Provincial Statistical Figures 2007, 2008, 2010 and 2013.

Each household of the working respondent has 5.91 family members and 3.56 family adults, and these figures are almost the same in groups of those non-farm salaried employees (5.96 persons and 3.56 persons respectively), as well as non-farm formal sector participants (5.99 persons and 3.57 persons respectively). Then, nearly two-fifth (38.35%) of active individuals belong to households with the lower living standard compared to local residents, these figures of those working as wage worker and of those involved in the formal sector are 40.73% and 32.06% respectively.

About one-third of the working individuals reside in communes that participated in the 135 program, but in the two latter groups (concerning non-farm salaried worker and non-farm formal sector), this figure is sharply lowered to 28.04% and 23.30% respectively. Conversely, the rate of the LF involved group living in communes with plain terrain is 51.18% and is continuously increasing in the two latter groups (61.14% and 68.48% respectively). Apart from that, three groups have almost the same figures concerning the speed to reach the capital of the district, and speed to reach the capital of the province.

The average of district poverty rate of the active respondents is 23.69%, and this figure is definitely higher than that of the whole country (7.6% in 2013, MOLISA, 2014). Nevertheless, those involved in non-farm paid employment and involved in non-farm formal sector live in districts with a lower rate of district poverty. On the contrary, the district urbanization rates of the latter groups are slightly higher than that of the LF participant group (15.12%). Likewise, the similarities are also seen for district population size, the number of district non-farm registered firms/household units, the amount of district non-farm registered enterprises, and volume of district non-farm GDP.

4.2. The influence of factors affecting rural labor market development (RLMD)

Labor force participation (LFP)

Of the independent variables taken into account in the model, those concerning: ethnicity, working experience of individuals; family size; total amount of family adults; communes with supports from 135's program; non-farm GDP of the district; amount of non-farm registered firms located in the district; and district total population are excluded from the model, because of either having the multi-collinear effects or failing to capture the statistical significances with the response variable. Then, after running the model with those having statistical significances, the values concerning parameters such as Wald's test (Wald chi2 (11) = 89080.9); Log likelihood (-7534.4); Prob > chi2 = 0.0000, and VIF (1.25) obtained have confirmed the appropriateness and significance of the model. Hence, the impacts of affecting factors are presented in Table 15, as follows:

At first, the result shows that 'number of non-farm unregistered firms has the statistical and positive influence on the labor force participation (LFP) probability of rural laborers (increased by 0.49% for 1000 added units). The increasing number of such economic entities has resulted in the growing number of working places, and consequently, leading to the higher attractions of local individuals involved in economic activities.

Table 15. The impact of factors affecting the LFP of rural respondents
(***Random-effects probit regression***)

Labor force participation	(Dy/Dx)	Std. Err.
Age (year)	0.0390***	0.0013
Currently live with his/her spouse (1 if Yes)	1.0890***	0.0299
Female (1 if Yes)	-0.1059***	0.0231
Schooling (year)	0.1586***	0.0026
Member of a local social organization (1 if Yes)	-0.2985***	0.0237
Poor household (1 if Yes)	0.3547***	0.0240
Commune with plain-terrain (1 if Yes)	-0.1895***	0.0243
Speed to reach the capital of the district (km/hour)	-0.0025**	0.0011
Speed to reach the capital of the province (km/hour)	-0.0039***	0.0014
District poverty rate (%)	0.0021***	0.0007
District urbanization rate (%)	-0.0029***	0.0008
Number of private-non-registered firms (1000 units)	0.0049***	0.0018
Year	0.0203*	0.0111
Log likelihood	-7534.4	
Wald chi2(11)	9080.9	
Prob > chi2	0.0000	
VIF	1.25	

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies'' and the Provincial Statistical Figures 2007, 2008, 2010 and 2013.
***significance at 1%; ** significance at 5%; * significance at 10%

Secondly, factors relating to 'age' (increased by 3.9% for one year added) and 'currently live with his/her spouse' (2.1 times higher) have statistical and positive influences with labor force participation probability of rural individuals, while factor relating 'female' reduces this probability by 10.59%. The fact is that when a person is getting older and especially being

involved in the family responsibilities, she/he needs to take part in economic activities generating income in order to be able to afford their own and/or their family's life. Besides, due to the labor division (at the household scale), women are normally in charge of work 'inside' the households (doing housework, taking care of children), while men are responsible for the work 'outside'. Therefore, females are less likely to participate in the labor force than males.

Thirdly, higher education leads to higher probability of labor force participation (raised by 15.86%), while 'holding the membership of a local social organization' reduces this probability by 29.85%. It is explained that people with a lower educational level are less competitive than those having higher education in terms of involving in economic activities generating income. Therefore, they are more likely to withdraw from this business to focus on non-generating income activities (housework) or to be non-active. Apart from that, there has been a Vietnam traditional idiom 'to have one's trouble for one's pain' referring to people involved in community/commune's works without payment in rural areas. Currently, this work is mainly assigned as the main tasks of the local organizations and is implemented by their members, and thus, negatively affects those members from participating in other activities generating income. Next, 'poor household' is positively associated with the probability of being part of the labor force. Evidently, being a member of households with lower living standard (compared to local residents) increases this probability of respondents by 35.47%. This is consistent with the theoretical assumption that families with better living conditions are more likely to have their members being well-prepared (for instance, spending more time in education/skill training) before participating in the workforce.

Then, there have been statistically negative impacts between workforce participation with those factors concerning 'commune with plain-terrain' (reduced by 18.95%), 'speed to reach the capital of the district' (decreased by 0.25% per 1 kilometer added), and 'speed to reach the capital of the province' (declined by 0.39% per 1 additional kilometer). It is explained that living in communes with such features results in an easier probability of local individuals in achieving either of higher education/skill levels (through their easier access to the higher level/better education facilities, which are more available in these areas than in others without such conditions) or looking for better opportunities for employment.

Furthermore, the results also reveal that 'district's poverty rate' is statistically and positively associated with the LFP of respondents (increased by 0.22%), but on the contrary, this association is statistically negative (reduced by 0.29% per 1% increased). Normally, higher poverty and lower urbanized percentage are often embedded with less-developed areas

regarding economic development. In such areas, local individuals are highly-pressured to engage in economic activities more so than those living in higher-developed locations.

Working as wage worker

Similarly, factors concerning 'Kinh's ethnicity'; 'family size'; 'speed to reach the capital of the province'; 'amount of non-farm registered firms located in the district'; and 'district total population' are excluded from the model, due to either having the multi-collinear effects or failing to capture the statistical significances with the response variable. Then, after running the model with those having statistical significances, the values concerning parameters concerning Wald's test (Wald chi2 (15) = 3691.14); Log likelihood (-9260.9); Prob > chi2 = 0.0000; and VIF (1.24), have confirmed that the model applied to quantifying correlations between an individual's probability of working as a wage worker and independent variables, in general, is meaningful and statistically significant. Hence, the results are presented in Table 16 as follow:

Table 16 shows that factor relating to 'number of non-farm unregistered firms' is positively associated with the probability of being salaried employees of rural laborers (increased by 1.28% per 1000 units added), and this positive correlation is also seen for factor concerning 'district's non-farm GDP' (raised by 0.5% per 10 billion VND added). Actually, on the labor demand side, the growing number of non-farm unregistered firms located in the district, and the growing number of district GDP values generated by non-farm sector normally goes along with the increasing needs of non-farm employment in general, as well as the non-farm salaried working place in particular.

Regarding personal demographic characteristics, results also express that higher age, currently living with his/her spouse, and being female negatively deal with the lower probability of working as paid employees (decreased by 2.61%, 65.05%, and 32.01% respectively). At first, in rural areas, the older people are often embedded with the long occupational career involved in agriculture, therefore, they are less competitive to work as the wage worker (or less preferred by the employers), and are more preferably working as a self-employed than the younger. Besides, currently living with his/her spouse and being female results in higher time amounts consumed to deal with family responsibilities, and in the context of the rural areas with less-developed labor market (compared to urban areas), employees with such characteristics are less likely to be accepted by the local employers.

Likewise, regarding the social network, due to the obstacle concerning time division between organization works and economic activities, individuals with the membership of 'local social organizations' are less likely (lowered by 8.17%) to participate in paid employment.

Conversely, this participation is positively influenced by factor regarding education with the increase of 2.75% per 1 year added of schooling. The reason is that individuals with higher education are more successful to compete in the labor market.

Table 16. The impact of factors affecting the 'wage-worker' participation

(*Random-effects probit regression*)

Working as wage worker	(Dy/Dx)	Std. Err.
Age (year)	-0.0261***	0.0012
Currently live with his/her spouse (1 if Yes)	-0.6505***	0.0270
Female (1 if Yes)	-0.3201***	0.0214
Member of a local social organization (1 if Yes)	-0.0817***	0.0227
Schooling (year)	0.0275***	0.0027
Poor household (1 if Yes)	0.1419***	0.0223
Number of household adults	0.0103**	0.0069
Commune with aid/support from the 135's program	-0.1406***	0.0234
Commune with plain-terrain (1 if Yes)	0.2954***	0.0235
Speed to reach the capital of the district (km/hour)	-0.0026***	0.0009
District's poverty rate (%)	-0.0034***	0.0007
District's urbanization rate (%)	0.0026***	0.0007
Number of non-farm unregistered firms (1000 units)	0.0128***	0.0017
Non-farm GDP of district (billion VND)	0.0005***	0.0000
Year	0.0155	0.0062
Wald chi2(12)	3691.14	
Prob > chi2	0.0000	
Log likelihood	-9260.9	
VIF	1.24	

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies'' and the Provincial Statistical Figures 2007, 2008, 2010 and 2013.

***significance at 1%; ** significance at 5%; * significance at 10%

With respect to household-related features, results show that factors concerning 'poor household' and 'number of household adults' have the positive correlation with the involvement of respondents in non-farm paid employment. Of which the living in the 'poor household' improves this participation by 14.19% while having 'one person' added to the total

number of household adult raises this probability of 1.03%. Obviously, households with the higher living standard are much better than the poor, in terms of mobilizing physical resources used for their members to compete in the labor market. Additionally, employees in more adult-crowded households can benefit from the large social network established by other household adults to be more competitive in the labor market.

Concerning other local endowments, living in communes participated in the 135's program is associated with a lower chance to work as wage worker (reduced 14.06%) for rural employees. Similarly, negative impacts are also seen for factors concerning 'speed to reach the capital of the district' (declined by 0.26% per 1 kilometer added); 'district poverty rate' (declined by 0.34% per 1% added to the poverty rate of the district). Conversely, positive influence is observed for factors concerning 'communes with plain-terrain' (raised by 29.54%); 'district's urbanization rate' (increased by 0.26% per 1% added). These are explained by communes without 135 program's participation and/or located in districts with higher urbanization rate are much better-off regarding socioeconomic development as well as natural conditions (for instance, being more easily-accessed) than those participated in this supporting program and/or located in districts with lower urbanization rate. Besides, areas with plain-terrain are more preferred to locate firms/enterprises. Such reasons result in a higher amount of paid employment offered for local inhabitants. Apart from that, in the context of rural labor redundancy, and the majority of them embedded with less competitive abilities regarding education and working skills: better connection to the capital of the district help these laborers to be involved in the RNS as self-employed rather than as a paid worker.

Formal sector participation

Likewise the previous models, variables regarding: age; female; member of the local social organization; amount of adults in the household; speed to reach the capital of the district; district urbanization rate; and amount of private unregistered firms located in the district, are excluded from the model, because of either having the multi-collinear effects or failing to capture the statistical significances with the response variable.Then, after running the model with those having statistical significances, the values of parameters concerning: Wald's test (Wald chi2 (13) = 259.38); Log likelihood (-2877.15); Prob > chi2 = 0.0000; VIF (1.41) achieved, have confirmed the overall significance of the model. Thus, the results are presented in Table 17, as follows:

Table 17 shows that factors regarding 'non-farm registered enterprise' (formal firms) and 'non-farm GDP' of the district have statistically had the positive influence on 'formal sector' participation of rural workers. Indeed, increasing the total number of formal enterprises by 100

units results in 3% higher probability for respondents to be part of the formal sector. Similarly, raising the district's 'non-farm' GDP values by 100 billion (or 50 million USD) leads to the increase of 'formal sector' participation of rural workers by 3%. The reason is that since the amount of district non-farm GDP, and especially of the formal enterprises increased, it results in the growing number of labor demand in the formal sector, and consequently, more opportunities for this sector involvement are created for local employees.

Table 17. The influence of factors affecting the formal sector involvement

(Random-effects probit regression)

Participating in formal sector	Dy/Dx	Std. Err.
Currently live with his/her spouse (1 if Yes)	0.1380***	0.0398
Kinh's ethnicity (1 if Yes)	0.5455***	0.0811
Schooling (year)	0.0264***	0.0049
Size of household (person)	0.0228**	0.0111
Poor household (1 if Yes)	-0.1957***	0.0415
Commune with support from 135 program (1 if Yes)	-0.1200***	0.0459
Commune with plain-terrain (1 if Yes)	0.1156***	0.0433
Speed to reach the capital of the province (km/hour)	0.0050**	0.0019
Size of district population (1000 persons)	-0.002***	0.0022
District poverty rate (%)	-0.0041***	0.0005
Number of registered firms located in the district	0.0003***	0.0015
Non-farm GDP of district (billion VND)	0.0003***	0.0001
Year	-0.0840	0.0154
Log likelihood	-2877.15	
Wald chi2(11)	259.38	
Prob > chi2	0.0000	
VIF	1.41	

Source: author's calculation, based on the dataset (2007, 2008, 2010, and 2013) of the DFG 756's project: "Impact of Shock on the Vulnerability to Poverty: Consequences for the Development of Emerging Southeast Asian Economies'' and the Provincial Statistical Figures 2007, 2008, 2010 and 2013.

***significance at 1%; ** significance at 5%; * significance at 10%

Apart from that, this involvement of local laborers is also affected by other factors concerning personal characteristics. At first, belonging to the 'Kinh's ethnicity' obviously results in much higher probability to work in the formal sector compared to other ethnic minorities (increased by 54.55%), and then, this positive association is also observed for factor regarding education

(boosted by 2.88% per 1 year added to schooling). It is explained that the older person is more highly rated than the younger, regarding formal sector participation, because of their longer/richer working/real-life experience, social network, and community reputation in the community/society. Besides, compared to other ethnic-minority laborers, the Kinh's employees are labeled with various advantages concerning human capital (better education/working/other soft skills), social-cultural integration (more open-minded), and physical resources (Kinh's households/individuals are normally wealthier). Also, as commonly agreed, higher education results in better competitiveness for individuals to compete in the labor market, as a result, workers holding a higher educational level are more likely to be part of the formal sector than those with a lower degree of education.

Regarding the household-related features, while showing the positive correlation between formal sector involvement and factor concerning 'family size', Table 17 also reveals that 'poor household' is negatively correlated with the formal sector participation of respondents. Of which, due to the benefits brought by the larger social network established by household members, workers in more-crowded families have the higher chance (increased by 2.28% per 1 person added) to work with the written/official working contract at hand. Similarly, compared to households with the lower living standard, richer households are better able to afford their members to deal with financial issues for achieving better human capital (education, working/other soft skill), covering the expenses for job-search. Therefore, workers in such households are more likely (raised by 15.26%) to participate in employment with the written contract than those living in poorer households.

Regarding natural and socioeconomic characteristics of the living communes, results express that communes with plain terrain are positively associated (escalated by 11.56%) with the RNS participation of rural employees. Conversely, communes participating in the 'government supporting' program (135's program) reduces this probability by 12%. The reasons are as follows: plain terrain areas are considered as the geographically-advantaged places to attract not only the economic entities (household units, firms/enterprises) but also other business-service suppliers (bank/financial organization, telecommunication units) and training facilities to locate, compared to other areas without such conditions. Then, communes participated in 135's program are socially and economically defined as being less-developed areas with a low degree of economic agglomeration (less concentration of economic entities) compared to other communes without such participation. Consequently, the amount of formal sector employment offered for local employees in areas with a plain terrain, as well as without '135's program'

participation, are higher than that of those without plain terrain or participating in the 135program.

Concerning other local endowments, the 'district population size' has the negative relationship (decreased by 0.2% per 1,000 persons added) with the formal sector involvement, and this negative association is also observed for factor relating to 'district poverty rate' (declined by 0.41% per one additional percentage point). On the contrary, increasing the 'speed to reach the capital of the province' by one-kilometer results in 0.50% higher probability of respondents to work in the formal sector. It is explained that the capital of the province is currently the most developed place compared to other areas of the province with the highest concentration of formal social/cultural/economic organizations/enterprises, as a result, the amount of formal employment in this place is more available than in others. Therefore, the improvement of transportation connecting to the capital of the province leads to the better connection with the large formal sector at the destination. On the other hand, large district population size normally goes along with a higher amount of labor supply, and in the context of labor redundancy as well as low-level of economic development of most rural areas; this results in the higher competition for local laborers regarding labor market engagement. In consequence, the probability of taking part in the formal sector of rural individuals is negatively affected. Similarly, a higher rate of district poverty is one of the important indicators reflecting the less development of district economy. Consequently, the 'formal sector' employment in such area is less available as compared to others with a lower rate of poverty.

5. Conclusions and policy implications

5.1. Conclusions

Findings show that nearly four-fifths of the rural respondents aged 15 and over are participating in the labor force, and this is almost the same with that of the whole country. Although showing the fluctuated trend during the 2007-2013 period, but the LFPR figure of the beginning year is almost unchanged by the end of the period, and the LFPR differs from province to province.

Labor market size (measured by the share of paid employment in total employment) of the surveyed provinces is on a continuously growing trend during the 2007-2013 period. Nevertheless, the share of salaried employment of those provinces is clearly lower than that of the whole country, and differentials concerning gender, provinces results in different shares of wage-worker involvement.

About one-third of salaried employees engaged in the formal sector, but this participation is on the declining trend during the 2007-2013 period. Again, differentials regarding gender, province lead to the differences in formal sector involvement.

In comparison with individuals of the LF-involved group, people engage in the 'non-farm paid employment', and 'non-farm formal sector' have the same characteristics concerning family size, the amount of family adults, and transportation (speed to reach the capital of the district and speed to reach the capital of the province). Nevertheless, these members of the two latter groups are slightly older; less-engaged in marriage (currently live with their spouse); highly dominated by Kinh's ethnicity; more-educated; less involved in local social organizations; highly-distributed in households the higher living standard, as well as in communes with the better conditions concerning natural and socioeconomic features (represented by plain terrain and 135 program participation); highly concentrated in district with better endowment concerning non-farm sector (regarding to district non-farm GDP, district non-farm registered enterprises, and district non-farm unregistered firms/household units); population size; urbanization; and poverty.

Findings detect that rural labor market (regarding labor force participation, paid-employee involvement, and formal sector engagement) is statistically influenced by some factors concerning the RNS, personal characteristics, household-related features, and other local endowments. By which:

At first, the expansion of the RNS (measured by district GDP stemmed from non-farm sector, the amount of non-farm enterprises located in the district in either unregistered or registered forms), play a crucial role in helping the rural labor market to develop by showing a statistically positive influences with the growing probability of respondents to take part in the labor force; and in paid employment of the RNS, as well as in the formal sector.

In terms of personal demographic characteristics, the influences resulted by factor regarding 'age' are mixed with positive impact to LFP, but the negative influence of 'wage-worker' involvement, and no significance with 'formal sector' engagement. The mixed influence is also seen for factors concerning 'currently live with his/her spouse' (increasing probability to take part in LF and formal sector and decreasing the probability to be involved in paid employment). On the other hand, the 'female' factor almost negatively affects the rural labor market development by showing the declined probability of the 'LF' as well as 'wage-worker' involvement, while not being statistically signified with the 'formal sector' participation. Conversely, the 'Kinh's ethnicity', although it failed to achieve the statistical significance with 'LFPR' and 'salaried-employment', is positively associated with the 'formal sector' participation.

Regarding the human and social capitals, findings go in line with theoretical assumptions as well as other empirical findings on the role of human capital (education) in fostering the labor

market development by showing the positive influence of this factor to not only LFPR but also 'wage-worker' and 'non-farm sector' involvement. Nevertheless, in the current context of Vietnam rural, the factor concerning 'social organization involvement' has negatively been linked to this development.

The essential roles of household-related features with the rural labor market development are also confirmed with the positive influence generated (if any) for the growing probability of labor force participation, 'non-farm paid employment as well as 'non-farm formal sector' involvement.

With respect to the commune's characteristics, findings also confirm that better conditions of natural (regarding plain terrain) and socioeconomic (regarding 135 program's participation) features are of favorable conditions to foster the rural labor market development. Nevertheless, impacts stemmed from infrastructure conditions (quality of road connecting to the capital of the district, and also the capital of the province) are mixed.

Findings concerning another district endowment regarding poverty and urbanization also confirm that the lower poverty rate and the higher urbanization degree are also factors affecting rural labor market development positively. Nonetheless, this development is negatively affected by the factor related to district population size.

This study can be considered as a minor contribution to the comprehensive understanding of rural labor market development in developing countries, particularly the case of a country experiencing the transitioning process as Vietnam. For the more enriched literature concerning this issue, the paper suggests that further studies focusing on building rural labor market development index; enhancing the role of labor market infrastructure (for instance, the employment service/labor market information systems); in rural areas; investigating the inter-relatedness between rural labor market development and rural labor restructuring should be essentially taken place.

5.2. Policy implication

Rural non-farm sector expansion is confirmed as a key condition for the formation and development of the rural labor market. Therefore, policy interventions focusing on the encouragement of investors to set up non-farm enterprises (in both registered/formal and unregistered/informal forms) in rural areas, in the fields of agricultural product's processing; traditional village's restoring/developing, should be prioritized.

Keeping on improving rural labor quality is also essential for the expansion of rural labor market. This improvement can be achieved through the implementation of occupational skill training programs provided by either government/public facilities or private/NGO's providers.

Therefore, in the coming period, the policy interventions concerning working/vocational training should focus on: (i) bringing the training courses closer to the rural laborers; (ii) targeting the labor-demand requirements; (iii) encouraging the involvement of other social partners (individuals, non-governmental organizations, and especially, firms/enterprises) on the works of providing training services.

Social network (including personal network and other social organization involvement) is theoretically and empirically considered as the key channel connecting laborers to the labor market effectively. Nevertheless, a negative influence of labor market participation resulted from the massive involvement in the local social organizations (taking an important position on the Vietnam political-social system) have led to an implication that such organizations need to be renovated by increasing the economic/employment-related content in their regular activities, and focusing on the actual/daily-life requirements of their members.

Although there have been some policies aimed at supporting the vulnerable/disadvantageous laborers to enter the labor market, but findings show that such employees (poor household members, ethnic-minor workers, employees living in the disadvantaged areas) are yet less-achieved better outcomes of the labor market. Therefore, to deal with this challenge, the upcoming interventions focused on improving the effectiveness of such policy implementation (for instance, resources, working mechanism, organization's structure) need to be renovated and considered as one of the most preferred targets.

Better connection to the more-developed areas (in this case, these are the capital of the district as well as the capital of the province), and the better-offs of other local endowment have also resulted in higher outcomes of the rural labor market. Therefore, policy initiatives and government commitments that help to mobilize effectively and carry the resources (from government budgets, private/non-public investors, and other donors) used for rural development are of other successful solutions.

CHAPTER 4. ASSESSMENT ON THE VOCATIONAL TRAINING PROGRAM FOR RURAL LABORERS

1. Introduction

Low-paid employment and underemployment are the two currently imperative challenges that need to be solved in rural areas of Vietnam. Indeed, as pointed out by ILSSA[25] (1st –Quarterly Bulletin on the Vietnam Labor Market Situation, 2014), the average monthly income of rural salaried employees in 2013 (3.5 million VND - 180 USD) was about 72.31% of that of urban workers (4.8 millionVND - 240 USD), and the majority (85%) of the 1.2 million workers regarded as under-employees live in rural areas.The main reason for such issues was the poor quality of the rural labor force (ILSSA, 2011, National Master Plan on Labor Market Development, pages 10-11), with only 11.71% of the total rural labor force possessing formal vocational qualifications in 2013 (ILSSA, 1st–Quarterly Bulletin on Vietnam Labor Market Situation, 2014).

The role of improving labor quality in order to deal with these difficulties as well as to foster the labor market development in rural areas, the Vietnamese Government has promulgated a number of employment labor market policies/programs (ELMPs), with the aim of enhancing competitive capacities in the labor market and improving employment efficiency for the rural laborers. One of these policies, focusing on the provision of vocational training, is regarded as a comprehensive active -labor market program covering all the rural laborers in Vietnam until recently. This program was officially approved and has been implemented since 2010, following Decision No. 1956 of the Prime -Minister dated 27 November 2009 under the title of 'Scheme on Vocational Training for Rural Laborers until the Year 2020'. In the remainder of the chapter, this program is referred to as 'the scheme' for short.

Although both of the results achieved and the shortcomings occurring during the implementation of the scheme since 2010 have been reported annually/periodically and assessed in the administrative term, no work has yet been conducted which focuses on the real effectiveness as well as on how the scheme implemented, especially from a scientifically approach perspective. Consequently, the future decisions/stages concerning the implementation of this scheme may not be well-founded. For this reason, the author conducts a study focusing on the assessment of two aspects of this scheme: (i) the implementation of the scheme; and (ii) the actual effectiveness derived from participation in the scheme's training

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[25] Institute of Labour Science and Social Affairs- ILSSA, Ministry of Labour-Invalids-and Social Affairs (MOLISA)

courses for rural individuals. Findings of this study help policy-planning agencies understand the determinants of the successful implementation of the scheme as well as the actual effectiveness/impact generated from the scheme's involvement for the beneficiaries. Then, the appropriateness and accuracy of further decisions concerning future plans/activities (within the scheme framework) are obtained. The study focuses on answering the following questions:

(1) How is the scheme implemented, and what are the scheme achievements and shortages?

(2) Which factors affect the involvement of beneficiaries of scheme's training courses?

(3) How participating in vocational training affect the income of participants?

The remainder of the paper is structured as follows: Section 2 provides a theoretical discussion concerning the definition of ELMPs and the methods applied to assess the ELMPs. Then, in Section 3, the author presents the research methodology used to assess the implementation of the scheme and to estimate the effect of participating in the scheme's training courses on the participant employment (regarding income). Section 4 (research results) concentrates on the description and analyses of the implementation of the scheme, and quantitative results on the effectiveness of the scheme. Finally, the paper concludes in Section 5 with a summary of findings and with policy implications.

2. Theoretical discussion

2.1. Concepts and role of employment and labor market policies (ELMPs)

Labour market regulations, as mentioned by M. L. S. Puerta (2010), include a wide range of topics going from wage-setting mechanisms (collective bargaining, minimum wages), labour tax policies, product market regulation, EPL (employment protection legislation), to active and passive labour market programs (training, public works, unemployment insurance). In other words, labor market regulations cover many aspects, ranging from how employers draw up contracts for the services of workers to the nature of the exchange, including terms and conditions of employment (G. Betcherman and R. Islam 2001). According to the ILO, labor market regulations consist of labor market institution (for instance, Labor Code), and employment and labor market policies (ELMPs).

As mentioned by T. Bredgaard *et al* (2013), ELMPs are defined as a group of selective policies aimed at situations on the labor market defined as problematic (e.g. mismatch between supply and demand for labor, unemployment, skills shortages, discrimination,etc.). The main purpose of these policies is to improve the functioning of the labor market in achieving politically desirable outcomes (G. Schmid et al. 1997; T. Bredgaard et al. 2013). ELMPs can basically be classified into (i) Passive ELMPs, those comprise public income benefits to the unemployed or inactive (unemployment insurance benefits, social assistance/cash benefits, early retirement

benefits, etc.); and (ii) Active ELMPs consist of policies concerning Labor market training (classroom training, on-the-job training, and work experience); Private sector incentive programs (wage subsidy and self-employment grants); Direct employment programs in the public sector (comprising the production and provision of public works or other activities that produce public goods and services); and Job search assistance (job search courses, job clubs, vocational guidance, counselling and monitoring, and sanctions). Of the ELMP's functions, the two following are regarded as the most importances: (i) helping the unemployed people return to employment successfully (Kozeva, 2001) through the implementation of the active labor market policies, (ii) and providing social subsidies (income compensation) for the unemployed during their off-working duration within the activity framework of the passive labor market policies.

In the case of Vietnam, as mentioned by Nguyen Huu Dzung (2014) and Pham Minh Chinh *et al* (2014), ELMPs play the crucial role in: (i) contributing to the improvement of the Human Development Index. Indeed, through the implementation of the active labor market and promoting employment policies/programs, the laborers have more opportunities to obtain better education/working skills as well as to achieve higher-income employment, as a result, their personal education and living standards (two key indicators for calculating the HDI) increased; (ii) forming form the legal framework for the operation of the labor market to define, and ensuring the effectiveness of the labor market operations; (iii) accelerating the integration process of Vietnam into international labor division by applying international standards, criterion, and indicators in setting legal framework; monitoring, assessing, and planning the domestic labor market as well as the internal labor force. In turn, the compatibility of Vietnam's ELMPs with international standards results in higher effectiveness of international integration for Vietnam such as improving human resource quality; attracting investment and high-skilled workers from foreign countries; promoting better/decent employment; upgrading industrial relationship; (iv) acting as 'the safety net' for the disadvantaged groups.In the context of labor surplus and the high share of employment in agriculture, informal sector, the implementation of the specific-ELMPs (for instance, the credit program for poor households and the vocational training program for rural laborers) targeting the disadvantaged individuals is essential for them to have better opportunities to participate and/or reintegrate in the labor market, as well as to achieve jobs in the formal sector.

2.2. Determinants of an efficient policy implementation and approaches to policy assessment

As suggested by T. Bredgaard *et al* (2013), a policy can be considered as efficient ones, when it is implemented smoothly and generates positive changes/outcomes for its beneficiaries. Therefore, when making an assessment of a policy intervention, it is essential to see how the policy intervention was implemented, what results are achieved from the implementation of such policy/program (regarded as the policy intervention outcomes), and finally, what are the influence generated from that policy participation (regarded as the policy intervention effectiveness).

According to the handbook titled 'Better Practice Guide' (Australia Government, 2014), factors regarding 'Engaging Stakeholder', 'Planning', 'Resources', 'Monitoring, Review and Evaluation', and 'Governance' play the crucial role in the success of the policy implementation. At first, *'Engaging Stakeholder'* (including those who are involved in delivering the initiative, those who are affected by the initiative, and those who will use monitoring, review and evaluation findings to inform decision-making) ensures the high degree of unanimity between different partners involved in policy from the first to the final steps of policy implementation. Besides, *'Governance'* encompasses many facets, including leadership, policies, relationships and control and accountability measures. Good governance is an essential precondition for successful implementation. Then, 'Planning' provides a 'map' of how an initiative will be implemented, addressing matters such as time-frame, dependencies with other policies or activities, program logic, phases of implementation, roles and responsibilities, resourcing, and compliance with legal and policy requirements. Experience shows that implementation planning reduces the risk of delay to and dilution of outcomes. In addition, *'Resources'* is crucial for policy implementation to achieve the expected policy objectives. Last but not least, *'Monitoring, Review and Evaluation'* provide a basis for the active management of the implementation. Establishing effective feedback loops enables the timely adjustment of the other building blocks to facilitate successful implementation.

Measuring the effects of policy intervention is crucial to conduct a policy evaluation. Theoretically, it is possible to classify the impact/effects into various types. For instance, based on duration, impact can be classified into (i) short-term impact, with about one year after the completion of the program; (ii) medium-term impact, with approximately 2 years since the completion of the program; and (iii) long-term impact, for about 3 years after completion (D. Card, J. Kluve, and A. Weber, 2009). Also, based on nature of effects, these can be grouped into *direct and indirect effects* (T. Bredgaard *et al* 2013). Of which, *direct effects* consist of: *(i) Motivation effects*: Mandatory job search requirements or obligations to participate in active

programs may increase the transition rate from unemployment to employment before participation; *(ii) Locking-in effects*: Participants in active programs may reduce their job search intensity during participation, thereby reducing their transition rate from unemployment to employment; *(iii) Participation effects*: Participants may improve their qualifications and competencies during participation, thereby improving their employment opportunities. Meanwhile ***indirect effects*** comprise: (i) *Selection effects*: The chances of finding regular employment may not be significantly higher for program participants than non-participants because some participants are selected at the expense of other participants; *(ii) Deadweight effects*: Employers may hire subsidized program participants that they would have hired even in the absence of employment subsidies; (iii) *Displacement effects*: The policy may have improved the employment opportunities for participants at the cost of a decline in job opportunities for non-participants; *(iv) Substitution effects*: A program may have unintended side effects that lie beyond the intended target area, for instance, firms employing subsidized program participants gain a competitive advantage over firms not benefiting from program subsidies.

The assessment (or evaluation) of the policy interventions can theoretically be approached from either the macro-econometric or micro-econometrics approaches. Of which, the macro-econometric approach that uses aggregated administrative data, and the micro-econometric approach that is based on individual level data from either unemployment registers or, more frequently, from labor force surveys. Of the two types mentioned above, the latter takes the major share. Then, different indicators are used to measure the impact/effects of policy interventions. Of which, as can be seen from many studies conducted by different scholars, those concerning change of individual employment situation, earning of employment after a certain period since the completion of the program, are among the most popular. Indeed, as discussed by D. Card *et al*. (2009), the program can be measured either regarding the probability of employment, earnings, or time duration to switch-over to the new job or to exit from unemployment. These similarities can be seen from other authors, for instance, C. Riddell (1991) uses the earning-effect to measure the effect of training program participation in the United States; R. Hujer, K. O. Maurer and M. Wellner (1999) consider the distinction between employment or unemployment or by the duration of unemployment (or employment) after the interventions have been completed as the main outcomes of the active labor market policy interventions; T. Bredgaard *et.al* (2013) stated that 'Impacts are assessed by comparing measurable outcomes for the participant group with a reference group of non-participants, so as to estimate the net impact of the program or intervention'. In addition, as argued by H.

Lehman and J. Kluve (2008), quantifying the impact of ELMP's intervention can be achieved by using the micro-econometric evaluation to observe the differences between individuals with and without participation in such programs/policy interventions or the differences (in terms of employment) within program participants between pre-post participation.

3. Methodology

3.1. Data

Concerning the assessment of scheme implementation, the author uses the secondary data and administrative reports/meeting minutes, mostly provided by the General Department of Vocational Training (belongs to MOLISA) and other authority agencies involved in scheme implementation. Besides, another source of information concerning personal statement of scheme staff/officials and articles are also used. These kinds of information will be used to describe and analyze the implementation; results achieved, and the obstacles/difficulties occurred.

Regarding the assessment of scheme's effectiveness, the author uses the dataset combined from three Labor Force Surveys conducted in 2012, 2013 and 2014. At first, from the total rural laborers surveyed in LFS 2013, the author divides surveyed employees into a group containing only people achieving the 'short-term vocational training' certificate (labelled as the 'treated group'), and a group consisting of the remainders (without such certificate, and regarded as the 'control group'). Then in the next step (collecting information before treatment), these two groups will be traced back to the year 2012 to form the first sub-dataset containing information relating to personal, employment and location's features of individuals at the year before treatment. This step will be taken by merging LFS2013 with 2014 based on some personal identification variables. Next, this merging process will be repeated to combine the LFS2013 with the LFS2014 with an aim of forming the second sub-dataset that house the similar information of individuals of two groups in the year after treatment. Finally, the first and second sub-datasets will be appended to form the dataset used for the research purposes. Of which, 2012 is considered as the year before treatment, and 2014 is the year after treatment.

3.2. Research methods

This paper uses both descriptive and analytical methods to answer the research questions as follows:

* *The first research question* will be elucidated with the descriptive illustration and qualitative assessment focusing on the issues regarding 'Engaging Stakeholder'; 'Planning'; 'Resources': 'Monitoring, Review and Evaluation'; and 'Governance' of the scheme.

* ***The second research question*** will be solved by using the Probit-technique. It is assumed that the involvement of rural individuals in the vocational training courses is affected by some factors regarding personal, employment, and location's features as well as the interaction between living locations and working sectors (formal and informal sectors) of the respondents. Therefore, in order to quantify the influence of factors affecting the involvement of surveyed individuals in such training courses, the author takes factors concerning these aspects mentioned earlier as the independent variables. The form of the Probit regression model is as:

$$Log\ (p\ /1-p) = β_0 + β_1X1 + β_2X2 + β_3X3 + β_4X4 + β_5X5 + ε$$

Of which:

'p' is the probability of people taking part in the Scheme's training course.

'1-p' is the probability of people not taking part in the Scheme's training course.

'X1' is the independent variables concerning personal demographic features.

'X2' is the independent variables concerning personal human capital.

'X3' is the independent variables concerning employment features.

'X4' is the independent variables concerning regional differences[26].

'X5' is the independent variables concerning the interaction between working sectors and living regions.

To capture the demographic characteristics of the respondents, authors uses variables regarding age (measured by years of age); gender (with 1 if Male and 0 otherwise); ethnicity (1 if Kinh's ethnicity and 0 refers to other ethnic minorities); marital status (with 1 refers to currently live with his/her spouse and 0 otherwise).

To consider the effects of human capital on the scheme's training course involvement, the author uses variables regarding education (measured by the number of schooling years) and working experience (number of years of working duration) to separate the respondents.

To capture the employment features, the author takes the variables concerning working industry (with 1 refers to working in agriculture, and 0 otherwise), and working sector (with 1 refers to those working with written contracts/formal sector, and 0 otherwise) into the model.

To quantify the impact of living location, the authors divide the living locations (at the provincial level) of the respondents into the four groups based on the classification applied to define the minimum-wage differences. By using this classification, the author is able to observe

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[26]As classified by theGovernmental Decree numbered 103/2014/NĐ-CP, dated 11st, November 2014, region 1 refers to the most-developed provinces/areas, and labelled with the highest level of minimum wage. On the contrary, region 4 are those considered as the lowest level in term of socio-economic development context compared to others, and labelled with the lowest level of minimum wage

the impact stemmed from the regional differences (regarding socioeconomic development) to the vocational training participation of rural laborers. In this paper, individuals are categorized into four regions ranging from region 1 (consist of a number of cities/provinces with the highest degree of socioeconomic development) to region 4 (consist of a number of provinces with the lowest degree of socioeconomic development).

In addition, to capture the influence resulted from the differences of the combination between inhabiting locations and working sectors, the author uses the variable regarding the interaction of the formal sector (measured by those working with written contracts) and four regions mentioned above.The details of variables are presented in Table 18 below:

Table 18. Summarization of the variables taken into the model

Variable	Noted
I. Dependent variable	
Participate in the scheme's vocational training (1 if yes)	1: Yes; 0: No
II. Independent variables	
Age (years)	Continuous
Male (1 if Yes)	Dummy
'Kinh' Ethnicity (1 if Yes)	Dummy
Currently, lives with spouse (1 if Yes)	Dummy
Working experience (years)	Continuous
Schooling (years)	Continuous
Working in Agriculture (1 if Yes)	Dummy
Working with written contract (1 if Yes)	Dummy
Inhabiting in the Region 1 (1 if Yes)	Dummy
Inhabiting in the Region 2 (1 if Yes)	Dummy
Inhabiting in the Region 3 (1 if Yes)	Dummy
Inhabiting in the Region 4 (1 if Yes)	Dummy
Working with written contract in region1 (1 if Yes)	Dummy
Working with written contract in region2 (1 if Yes)	Dummy
Working with written contract in region3 (1 if Yes)	Dummy
Working with written contract in region4 (1 if Yes)	Dummy

* *The third research question* will be unfolded by using the log-regression on the income of employed individuals and the Propensity Score Matching method (PSM). The log-regression of income is explained by some independent variables, as mentioned in the Mincer's equation (for instance: age, education, working experience, working industries, employment sector), affecting that income. Then, as mentioned by Khandker *et al.* (2010), the PSM constructs a statistical comparison group that is based on a model of the probability of participating in the treatment by using observed characteristics. Participants are then matched, on the basis of this

probability or propensity score, to non-participants. The average treatment effect of the program is then calculated as the mean difference in outcomes across these two groups. Besides, with the aim of making analyses meaningful, two assumptions are made: (i) all participants have taken part in courses that fit their abilities and aspiration; (ii) there is no difference between individuals regarding capacity and resources to do their jobs efficiently. The process to measure the net impact of attending a training program to income of participants consists of steps as follows:

Step 1: Calculating the income differences between the year before attending training (2012) and the year after training completion (2014) of participants. This will be calculated based on variables referring to the monthly income of workers in 2012 and 2014.

Step 2: Calculating the propensity score: this will be done by using the PSM method. By which, those who have attended training course will be matched with those who did not with the similar characteristics concerning personal characteristics (age, gender, marital status, ethnicity); personal human capital (education and working experience); living locations (ranging from region 1 to region 4); and employment features (working industries and working sectors). Of which, the dependent variable is the probability of taking part in a training course, and the explanatory factors are those mentioned in Table 18 having significances with the response variable.

Step 3: Measuring the net impact of attending training courses to current income of participants. This will be quantified by the use of several techniques referring to PSM method (including Nearest Neighbor Matching; Radius Matching; Kernel Matching method; and Stratification). Of which, the dependent variable is income in 2014; the independent factors are treatment variable (training participation) plus those used to calculate PSM score in the 2rd-step.

Step 4: Quantifying the net impact of attending training courses to income differences between before and after training participation of treated and control groups. The process to conduct this measurement is the same to those conducted in the 3rd step, but the dependent variable is substituted by variable concerning income difference's difference of individuals (calculated in step 2).

4. Research results

4.1. Summary of policies focusing on providing vocational training for rural laborers prior to 1956's Scheme and the main content of 1956's Scheme

Prior to the scheme, the involvement of rural laborers in vocational training was particularly and legally stipulated in various policies with a number of aids/support provided, for instance: short-term vocational training fees/expenditures; or being accepted to keep enrolling in higher levels or in-depth skill training courses (if the participants are ethnic minorities). These

supporting policies had been realized in reality through the implementation of different activities such as: opening short-term training courses at local vocational training facilities; co-operating with firms to provide occupational skills for rural apprentices; establishing mobilized vocational training classes at the residential locations of trainees. As a result, during the 2000-2006 period, about 0.3 million of rural laborers of the whole country have annually been supported to participate in vocational training courses (Nguyen Manh Hai-CIEM and Nguyen Trung Hung-ILSSA, 2009). A majority of the beneficiaries is of prioritized groups regarding rural youth, rural laborers with agricultural land revoked. Nevertheless, these supporting activities are considered as the permanent tasks of the 'Labor-Invalids and Social Affairs' branches, with the limited resources and restricted involvement of other agencies/associations as well as of the whole society, and the amount of beneficiaries involved in such programs do not meet the expected objective.

Since 2009, the Vietnamese Government has approved and promulgated a 'National Master Plan on Vocational Training for Rural Laborers' (or 'the scheme' for short), with the general aim of 'Improving labor quality and strengthening labor market opportunities for rural laborers through providing vocational training'. In which, every rural laborer[27] has the right and responsibility to enroll in vocational training. The main objective of the scheme is to provide occupational training for about 1 million rural laborers every year during 2011-2020 period[28]. Supporting activities, which are directly delivered to the participant, are about: covering training fees and other relating expenditures; funding subsistence expenses and transportation costs; providing assistances for employment generation (supporting for job-search and own business setting) after training completion[29].

4.2. Description and analyses on the Scheme's implementation

a) The engagement of the stakeholders:

As mentioned earlier, stakeholders are those who are involved in delivering the initiatives, those who are affected by the initiatives, and those who will use monitoring. From now on, the stakeholder engagement is seen from the participation of (i) government agencies, those who provide Scheme's initiatives; (ii) social associations; (iii) rural laborers and enterprises/firms, those who are affected by the implementation of the scheme; and (iv) other social partners.

At first, the authority agencies at national level[30] (formed the National Steering Committee) take the key role in: designing the overall scheme's framework and action plan; setting the

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[27] who lives in rural areas, belongs to the working age, be able to meet health and education conditions required
[28] This amount is set based on the preliminary assessment on the vocational training needs of rural labourers and the capacity of the vocational training facility system
[29] For example, sources derived from 'National Funds for Employment Generation; state-owned banks; and other credit associations
[30] According to 1956 Decision of Prime Minister, the involving ministries/agencies at national level are: Labour Invalids and Social Affairs; Finance; Agriculture and Rural Development; Planning and Foreign Investment;

regulations, and monitoring the scheme's implementation; evaluating the scheme's implementation, as well as the effectiveness of the scheme (at national level); and then, deciding the Scheme's activities/content for the coming period based on the assessment made annually or periodically of the whole country.

Secondly, the local authority agencies[31] take charge all of these activities and responsibilities (as the same as what the national counterparts do) within the provincial territory. Each of these participating agencies is appropriately assigned part of scheme's activities and responsibilities, in accordance with the fields that their agency is responsible for. By doing so, it allows these agencies to take their advantages, regarding their own resources and vertical system of organizations (from central to local levels) for implementing scheme's activities.

Then, other stakeholders such as political-social associations, and professional organizations (for example, the Farmer Association, Women Union, Vocational Training Association)[32] are also mobilized to take part in the Scheme from central to grassroots levels. The main responsibilities of these stakeholders are: conducting the propagandizing activities to absorb the participations and increase the awareness on the role of vocational training within their association's member in particular, as well as that of the whole society in general; and co-operating with other agencies involved to conduct the scheme's activities as assigned by the leader in charge of scheme's implementation.

Next, with the aims of providing training services with high-quality meeting the requirement of the employers/enterprises, the participation of beneficiaries and enterprises are also observed. As briefly mentioned in Table 19, the involvement of these stakeholders has been seen in all stages of the scheme. The main responsibilities of them are: providing information concerning their actual situation of employment and labor quality, the desires of skills to be trained, and the expected employment to perform after the completion of training, as well as preferred employees to be hired and/or to fill in the job vacancies of the firms (in the planning stage); participating in the training courses provided by the scheme (the beneficiaries), and co-operating (for instance, letting the trainees to have their practical examination done at the firms) with vocational training facilities to conduct the training courses during the implementation of the scheme; collaborating with relating agencies to deal with the employment generation issues after training completion; providing feedback information on the scheme's implementation as well as scheme's effectiveness (for the evaluating stage).

Education and Training; Home Affairs; Information and Communication; Bank for Social Policies; General Department for Vocational Training.

[31] The involvement of these local agencies is stipulated by a Decision of Head of Provincial People Committee with the involvement of representatives of agencies the same as those listed on the 1956 Decision, but at the provincial level.

[32] These are Farmer Association, Youth Union, Women Association; Vietnam Vocational Training Association; and Trade-Village Organization

Table 19. Summarizing the Engagement of Stakeholders in 1956 Scheme

	Stages of Actions of 1956 Scheme		
	Designing/Planning	*Implementing*	*Evaluating*
Authority agencies at central level (Central ministries/agencies)	- Establishing the Scheme's organization at the national level - Identifying objectives; resources; target groups at the national level. - Assigning specific responsibilities and activities of involving ministries/agencies	- Promulgating legal document for the operation of the Scheme at the national level. - Mobilising resources for the whole country. - Approving the provincial action plans. - Monitoring the Scheme activities for the whole country	- Conducting the inspecting/checking missions in the whole country. - Making assessment on the Scheme implementation at the national level. - Providing legal document and others relating the corrections of Scheme's shortages.
Authority agencies at local levels (local authorities within province)	- To establish the Scheme's organization at the provincial level - Identifying objectives; resources; target groups within the province. - Assigning specific responsibilities and activities of involving departments	- To establish the Scheme's organization at the provincial level. - Building provincial action plans. - Mobilizing resources for Scheme implementation at the province. - Monitoring the Scheme activities within the province - Providing training services	- Conducting the inspecting/checking missions within the province. - Making and submitting Scheme implementation and results gained to the higher levels. - Providing legal document and others for correcting Scheme's shortages at the provincial levels
Social associations (Farmer Association, Women Union)	- Member of the Steering Committee, and responsible for providing consultations.	- Being in charge of propagandizing to absorb the attention of beneficiaries	- Cooperating with authority to conduct inspecting/checking missions
Rural laborers, enterprises/firms	- Being consulted on the actual situation prior to the Scheme	- Providing information concerning Scheme's planning in the province. - Participating in the training services. - Cooperating with training facilities to provide training services, and receiving participants to work at firms after their training completion	- Being asked for information concerning training activities during training courses. - Being asked information concerning employment after training completion
Other social partners (Newspaper, other mass-media)	-	- Popularizing and improving the awareness of society about Scheme through the propagandizing activities.	- Providing urgent information concerning Scheme effectiveness and shortages

Sources: author's summarization made based on the 1956 Prime-Ministerial Decision on Providing Vocational Training for Rural Laborers.

Finally, the involvement of other social partners has also been recorded. In fact, these partners are mainly newspapers and other mass media communications, and their participation is purposely targeting to accelerate the spreading of society's awareness of the existence of the scheme, and to provide feedback information, especially information concerning the mistakes and/or shortages/drawbacks of the scheme's implementations occurred at locals, so as to lead to the 'in-time' responses and correction of the scheme.

Such engagement of these stakeholders mentioned above has ensured the success of the scheme's implementation. Generally speaking, the involvement of not only authority agencies, but also political-social associations and beneficiaries since the beginning stage (Scheme designs) is a firm guarantee for the feasibilities and practicalities between stages of the Scheme. Also, these multi-sided participations have generated a highly social unanimity, as well as a strong commitment among involving agencies and individuals to carry out the Scheme's activities. Furthermore, it has also resulted in the expansion of Scheme's popularity, therefore, leading to the right awareness of society on the role of improving labor quality for rural workers, as well as the importance of vocational training. Besides, another achievement of stakeholder engagement has also resulted in the encouragement of all political-social associations, newspaper and communication agencies, residential communities, as well as of the whole society involving in the scheme implementation.

Nevertheless, there have been some obstacles/drawbacks explored during the scheme implementation. At first, authority agencies outweigh these other stakeholders in determining Scheme's activities at all stages. For instance, political-social associations are not allowed to interfere and/or to make the final decision on the issues concerning technical (which, when and how the training program be conducted) and financial aspects of the scheme (how to mobilize and use the budget for the scheme implementation). Instead, they are just focusing on propagandizing activities (during the scheme implementation) and co-operating with other involving agencies to conduct the scheme's activities. Secondly, not all of rural laborers, except those who are directly consulted/propagandized by Scheme's staff, is fully aware of the Scheme as well as what is offered if participating in the Scheme's training courses (for example, the case of Ha Tinh). Then, despite being involved in all stages of the scheme implementation, the lack of the official membership of the 'employer's representative[33]' in the 'Steering Committees' at all levels means that their concerns on labor needs are not fully

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[33] For instance, none of representatives coming from either Vietnam Cooperative Union or Vietnam Chamber of Commerce and Industry are mobilized to be the official member of the Scheme's steering Committee.

estimated/considered. Finally, the co-operations/integrations between vocational training facilities and firms/enterprises at grassroots levels (in providing training services as well as in dealing with employment generation after training completion for participants) are not sufficiently implemented, with the effectiveness differ between provinces (or even between locals within the province).

b) Governance

The governing activities are embedded in the organizational structure and working mechanism of the Scheme, as presented in graph 1. By which, a hierarchically specialized institution ranging from national to commune levels, is formed to take responsibility for the Scheme's implementation. This institution consists of serial Scheme committees (at national and provincial levels); group (at the district level); and team (at commune level), that are administratively established following the administrative decisions by the jurisdictional government at various levels. Each of these committees/group/team is headed by a leader of the government, and constituted by the involvement of representatives coming from relating agencies/departments (at the same level), as regulated in the 1956 Decision of Prime Minister. Of which, the position of a permanent member is handed over to the representative of 'Labor-Invalids and Social Affairs' branch[34]. Besides, due to the specific characteristics and responsibilities for which they are in charge of, every Scheme's committee at national and provincial levels is supported by a group of skillful and experienced experts (mainly come from General Department or Department of Vocational Training) to deal with technical tasks/activities.

The working mechanism of the Scheme's institution is also legally regulated. At first, the 'Scheme's National Committee' is directly established following a Decision promulgated by the leader of the Central Government[35], and administratively managed by the Central Government. Then, the Scheme committee/group/team at lower levels is also formed by the administrative decisions of the government at the same level. Besides being administratively managed by the government at the same level, these committee/group/team is vertically/technically administered by the Scheme's committee/group at the upper levels in carrying out the Scheme's activities. The main tasks/responsibilities of the Scheme's institution

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[34] At the national level, the permanent member is a Vice-Minister of Ministry of Labour-Invalids and Social Affairs; at provincial level, this member is a leader of Provincial Department of Labour-Invalids and Social Affairs; at district level, this position is handed over to a leader of district's section of Labour-Invalids and Social Affairs; and at commune level, the commune staff in charge of issues concerning Labour-Socio and Culture will be the permanent member

[35] Decision number 962/QĐ-TTg of Prime Minister dated 25th, June, 2010 on the Establishment of the National Steering Committee of 1956 Scheme

are: (i) promulgating legal document so as to build the Scheme's legal framework for implementation activities to be carried out in the reality; (ii) instructing/guideline Scheme implementation at local levels; (iii) conducting an inspection/monitoring missions; (iv) encouraging and mobilising the involvement of other social partners (such as newspapers and other mass media) in propagandizing and monitoring Scheme's activities; (v) approving, financing for local action plans, and providing training services and supporting to deal with employment generation for beneficiaries; (vi) convincing beneficiaries to attend training courses; preparing and providing vocational training services for rural laborers; (vii) supporting and collaborating with other stakeholders to deal with employment generating issues for rural laborers after training completion. Of which, the first five tasks are in charge of committees at national and provincial levels, whereas, the last two missions are mainly completed by the district groups or commune teams.

Figure 13. Administratively organizational structure of the scheme
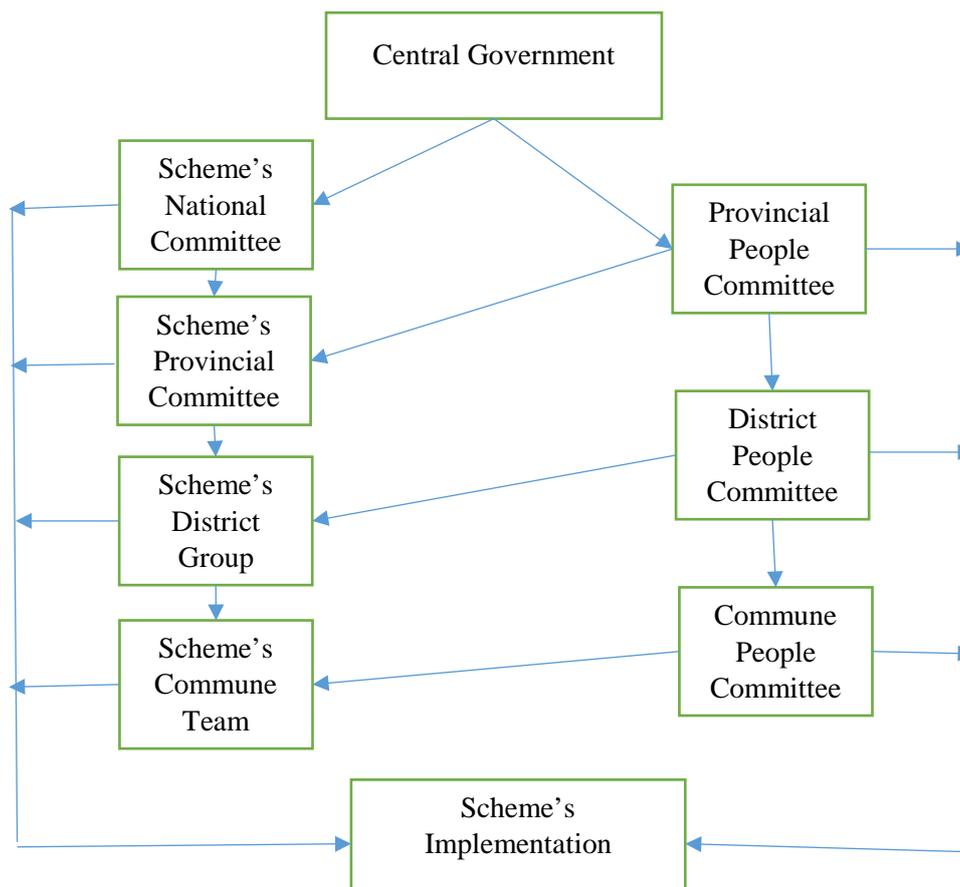
Source: author's drawing, based on 1956 Decision of Prime Minister

These organizing structures; working mechanism; and responsibilities are considered the main pillars for the achievement of Scheme after 5-year implementation since 2010. For instance, it is estimated that the National Committee has actively cooperated with relating ministries to promulgate, and issue timely almost all essential and synchronous legal documentation, which are used to be the fundamentals of Scheme implementation in reality[36]. Also, the formation of Scheme machinery from central to commune levels have been completely established. Moreover, the local government agencies have raised their sense of initiative in building the annual action plan on providing vocational training for rural laborers; checking and assessing the appropriate occupations to be trained, directing the implementation of Scheme, according to the rule of 'vocational training need to be embedded with the advantages of locals and must be focused on the quality aspect'[37]. Nevertheless, there have been certain shortages concerning governing aspect. At first, 396 communes in 8 provinces[38] are off without the establishment of 'steering committees' or 'task-force' teams. Secondly, some provinces/cities did not follow the ratification on fees/expenditures subsidized for beneficiaries to attend training courses, as instructed/guidelines by the National Steering Committee. Secondly, due to lack or insufficiency of resources (finance), and full awareness on the role of providing training courses for rural laborers, many locals had paid less attention to activities regarding propagandizing, consulting, and convincing rural laborers to participate in Scheme's training courses. As a result, the knowledge and thorough awareness about this Scheme (among the local inhabitants) are not as sufficient and popularized as expected. Thirdly, the co-operations between authority, representatives of the national steering committees, sometimes, are not close, frequently and effectively, and that results in the overlapping of beneficiaries, as well as the dispersion (or dissipation) of Scheme's resources. For instance, the Scheme's regulation (1 rural laborer is allowed to take part in 1 training course, the special case with more than 1 involvement will be assessed and decided by the head of the steering committee) could be violated by the participations of 1 nominee, at the same time, into the training courses managed by agencies belonging to Labor-Invalids and Social Affairs and Agriculture and Rural Development branches. Next, the basic principles of working mechanism this scheme are that of 'lower levels comply the higher ones' and 'application-approval mechanism'. Hence, these

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[36] According to MOLISA (2015), the National Steering Committee and relating ministries/agencies have promulgated 11 announcements of Head of National Steering Committee; 4 inter-ministerial circulars; 4 ministerial circulars; and 33 official documents to operate and manage the implementation of Scheme.
[37] Central Steering Committee of 1956 Scheme's, 2015: Preliminary Warp-Up Report on Situation of 5-year Implementation of the 1956 Scheme.
[38] Those are cities/provinces named as: Hai Phong, Da Nang, Binh Dinh, Kon Tum, Can Tho, Kien Giang, and Ca Mau

may result in different obstacles in providing training services at grassroots levels, such as: less flexible and passively in dealing with emergencies; the dispersion (instead of concentration) of the scheme resources distributions in term of space (every province of total 63 provinces is treated equally in asking for resources provided by agencies at central government), and purposes (each province has the same multi-purpose plan consisting of total number of beneficiaries participated, upgrading training facilities; training of trainers as well as commune's staff and so on). Additionally, the circular number 117 the Ministry of Finance, which did not allow locals to use the fund of the previous financial year for the activities of the following year. As the result, several activities of the scheme at local levels are in financial shortages/worries. Furthermore, the plurality of government staff involving in the scheme (at all levels), in combination with the tardy promulgation of the legal document (in terms of defining and guideline the roles, responsibilities and how to implement the Scheme's activities), has also negatively affected the scheme implementation. Last but not least, due to the insufficiency in understanding the scheme's content, and the vagueness in 'getting better hold' of own roles/responsibilities of their scheme's participation, a number of district staff, who are in charge of scheme's implementation at the district level, have failed or been unsuccessfully to provide consultancy or to manage for what they are responsible for.

c) Planning

As mentioned earlier, implementation planning reduces the risk of delay to, and dilution of, outcomes. In the 1956 Scheme, planning activities are carried out at all levels. At first, the National Master Plan is completed at the national level. This plan is mainly conducted by a team of top-ranking and skill-full experts from General Department of Vocational Training (MOLISA) and other ministries/agencies involved in the Scheme, based on the latest and accurate information/evidence collected. This Master Plan, after having been approved by the Prime Minister, is considered as the framework, and basics for provincial committees of 63 provinces, and other relating agencies/ministries to set up their own action plans. Then, the provincial action plans are built (focusing on aspects of expected outputs, resources mobilized, responsibilities of involving agencies, time schedule, methods of plan's implementation and so forth), by a 'task force' team comprising skill full- experts/officers from relating agencies (authority departments within province). Once the provincial action plan is completely built, it will be concretized into different activities to be carried out at provincial, district and commune levels, and these activities are planned and implemented by involved agencies/associations and individuals in accordance with their functions/responsibilities defined by laws, and Head of the Provincial Steering Committee. The most important requirements for planning's activities (at

the national and provincial levels) are: drawing exactly the current situation of the whole country and provinces in the fields of human resources and employment (advantages and disadvantages); setting the appropriate goals/objectives to be achieved for the scheme; ensuring the feasibility of the scheme implementation (between goals achieved, resources mobilized, time scheduled, methods utilized). By doing so, the 'Scheme' Planning has ensured requirements concerning the involvement of appropriately skilled and experienced experts; applying a systematic and structured approach, and as the result, 'the Scheme's Steering Committees have explored in time the limitations and shortcomings during earlier years (the first 3 years) of Scheme implementation, and proposed effective solutions to reduce these mistakes for the coming years' (MOLISA, 2015). Nevertheless, there have been certain shortages concerning the Scheme Planning. At first, the planning process is conducted based on the 'top-to-bottom' approach. Therefore, in some cases, differences between the national level and provincial levels (regarding real situations, expected objectives/goals; methods of implementations, and resource mobilization) are remaining. Moreover, during the local planning process, the needs of beneficiaries are collected by commune level's staff, and then, submitted to authorities at higher levels, but these are not utilized, or taken into account as the actual basis for planning activities (as previously happened in the case of Ha Tinh and Dak Lak). Also, at some provinces (for example, Phu Tho), activities pertaining to data collecting on the needs of vocational training of rural laborers are not sufficiently implemented, and that lead to the less accuracy of input data for planning activities[39].

d) Resources

The expected amount of Scheme's financial resources for the whole period (2010-2020) is about 25980 billion VND (approximately 1.3 billion USD), with 95.05% of this amount used to cover directly the expenditures concerning fees, and other subsidies for participants to enroll in training courses. The financial resources are mobilised from different sources as provincial budgets (applied for provinces with the source of revenue of provincial budgets equal or higher than provincial budget expenditures); central government's budget (covered for provinces without the ability to mobilise money from provincial budgets); and others (domestic and international organizations/associations; vocational training facilities; enterprises; and other social partners). After 5-years of Scheme implementation, the total financial resources mobilized and utilized for Scheme's activities are approximately 7.4 thousands billion VND

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[39] Statement of Mr Phan Trong Tung, Vice-director of Phu Tho Department of Labor-Invalids and Social Affairsat the 5-year Preliminary Summing-Up Meeting dated 30th, December, 2014

(or 3.7 billion USD). These amounts are used for purposes of covering the participant's training fees/subsidies (2003 billion VND-100 million USD); building capacity for local training facilities (3139 billion VND-150 million USD); capacity building for commune's staff involving in Scheme (231 billion VND-11 million USD). Additionally, another 2000 billion VND (or 100 million USD) derived from province's budgets and other sources are also utilized for Scheme implementation (MOLISA, 2015). Consequently, the purpose concerning building capacity for vocational training system is successfully achieved as scheduled, with the total of 623 vocational training facilities being invested and upgraded; about 408 thousand of commune's staff were trained (81.5% as expected); and nearly 2.2 million of rural laborers (90.4% as expected) participated in vocational training courses (MOLISA, 2015). Nonetheless, there have been various shortages concerning resources at both national and local levels. At first, the low disbursement rate of resources from the national budget, with only 45% of the total amounts of money being disbursed, compared to those of as planned after 5-years of Scheme implementation (5373 billion VND compared to 13275 billion VND). Secondly, the tardiness of approval concerning the Scheme's resource apportionment between ministerial agencies for local's action plans. For instance, it took two months for the Finance Ministry to complete the legal documents regarding local's Resources approval[40]. Thirdly, the 'lock-ins' of the financial mechanism of using the national budget for Scheme's activities results in the 'money are available, but not ready in use' situation. Furthermore, the overlaps (in terms of using financial support derived from the Government budget) between agencies in providing training services for rural laborers still exist. Currently, along with training courses undertaken by the Scheme, there are different other projects/programs with the same activities/beneficiaries, taken place, but under the management and implementation of other ministries/associations (MOLISA, 2015). Last but not least, the lack of resources for building capacity, as well as the lack of synchronization in investing on local training facilities has also restricted the outputs of scheme's implementations. Taking the case of Vocational Training Centre of Cu Kuin district (Dak Lak province) for an example, despite being invested 15 billion VND (0.75 million USD) in building new headquarters/workshops, there were only 500 million VND (25 thousand USD) provided under the Scheme's policy utilized for the purpose of buying materials (machines, raw materials) used for providing training courses. As a result, the

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[40] As stated by Mr Nguyen Ngoc Phi, Vice-Minister of MOLISA at Meeting of National Steering Committee dated 08th, September, 2012

Centre is not able to provide training courses in accordance with the participant's preferences and requirements of employers.

e) Monitoring, Review, and Evaluation

In 1956 Scheme, 'Monitoring, Review, and Evaluation' missions are periodically carried out at all levels. By which, the 'National Steering Committee-NSC' organize these activities for the whole countries (at all local levels), and the 'Provincial Steering Committee-PSC' are responsible for these duties at the local levels within the province. At the national level, each of NSC's member has been assigned specific activities and provinces, for which they are responsible for (of which, the main/prioritized focuses are 11 provinces, 12 districts and 4 groups of occupations to be trained), according to the official assignment of the Committee's Head. Also, the permanent officers (in collaboration with members of 'task-force group') have also provided instructions and guidelines for provinces/cities to plan and implement these activities at the local levels during the 2012-2014 period. Statistically, there have been 45 'monitoring, evaluating' missions completed by the NSC's members, and some National Conferences/Meetings (with the involvement of leaders of 63 PSCs) organized annually. At the local level, periodically (6 months and 12 months), the PSCs have to report and submit the results, achievement and obstacles occurred during the Scheme implementation at their locals to the NSC. Additionally, these committees are also active in setting their own plan concerning monitoring, reviewing and evaluating the activities within their provinces. Consequently, within 5-years of Scheme implementation, about 18000 missions focusing these activities were conducted by PSC (equal to 60 missions per province per year ranging from provincial, district through commune levels). By carrying out such missions, a number of obstacles and shortcomings of the scheme concerning: content and objectives; resources mobilization and utilization; working mechanisms and legal document, were discovered/explored and solved in a timely fashion.

Nevertheless, there have been some drawbacks concerning the 'Monitoring and Evaluation' needed to be solved in the coming period. At first, due to the tardiness of report-submitting procedures from the provincial to the national levels, numerous administrative reports lack sufficient or updated information, especially those concerning the results of the scheme's implementation within the province. Then, the managing and monitoring activities on the provision of local staffs of training courses, at training facilities in some provinces (for instance, the case of Thua Thien Hue) are not as effective as required by the PSCs. Moreover, the abilities to carry out the managing tasks of local staff (particularly at district and commune

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112

levels) are another restriction, which limits the effectiveness of inspecting and evaluating missions (as mentioned in the case of Phu Tho).

4.3. Results achieved and effectiveness of the Scheme

a) Results achieved of the Scheme after 5-year implementation (2010-2014 period)

After a 5-year implementation, the total amount of rural laborers who participated in the scheme's training courses was about 2.17 million persons (about 0.43 million per year), taking the major share (67.81%) of total vocational training participants (about 3.2 million) of the whole country during this period. Nevertheless, compared to the expecting goal as planned (2.4 million), this figure is slightly lower (equivalent to 90.42%).

Of the total scheme's training course attendances mentioned above, the amount of those involved in non-farm training courses was about 1.24 million (57.26%), whereas the remainder (42.74%) were engaged in agricultural training classes. Apart from that, there have been approximately 172 thousand (7.93%) of these vocational apprentices who belonged to the 'priority groups' concerning: 'revolution devotees' families (46 thousand persons); 'ethnic minorities' (44 thousand); 'poor families' (24 thousand); 'families with agricultural land revoked' (46 thousand); and 'disabled/vulnerable groups' (12 thousand).

Regarding the distribution of the scheme's vocational participants by regions (6 regions ranging from the North West region to the South West/Mekong River Delta area), results in Table 20 showed that the majority of the scheme's apprentices lived in populated regions with outstanding characteristics concerning paddy-growing (such as Red River Delta and South West/Mekong River Plain) and the highest share of agricultural employees (North West region, with 63.47% employed in agriculture).The amount of the scheme's training participants in these regions (Red River Delta-0.45 million, South West/Mekong River Plain-0.62 million, and North West- 0.41 million) is 1.48 million people (68.20% of total scheme's apprentices), while the other regions with less-populated (Central Highland-0.1 million, and Central Coastal-0.39 million), and highly-industrialized (SouthEast-0.15 million) take the lower share of total distribution (31.80%).

With respect to employment situation of the participants after training completion, the rate of those who achieved job after training completed is 78.66%, and this figure is totally higher than the ones referring the expecting goal of the Scheme's National Master Plan (70% of completed trainees achieving jobs/employment after training completion).Of those participants getting jobs (1.53 million) after training completion, 0.35 million (or 22.78% of total) among them were recruited by firms. The remainder of the 'training-completed' participants worked either

as self-employed (1 million-65.97%) or others (for instance, owners or co-owners of newly-established firms/enterprises, heads of farmhouses).

Table 20. Vocational training and employment situation after training completion of rural laborers under supports of 1956 Scheme. Unit: person

Location	Total participants (1)	Total completed training (2)	Employed after training completion (3)	Recruited by firms (4)	Self-employed (5)	Others (6)	Rate of participant achieved job after training (7)
1. Whole country	2,169,562	1,941,168	1,526,883	347,915	1,007,284	171,684	78.66
Agriculture	927,291	898,752	719,325	42,702	646,618	30,005	80.04
Non-Farm	1,242,271	1,042,416	807,558	305,213	360,666	141,679	77.47
2. Regions							
Northwest	*409,657*	*395,264*	*300,727*	*36,377*	*247,167*	*17,183*	*76.08*
Agriculture	246,289	244,347	197,523	3,022	188,063	6,438	80.84
Non-Farm	163,368	150,917	103,204	33,355	59,104	10,745	68.38
Red River Delta	*447,503*	*407,647*	*316,828*	*120,997*	*148,194*	*47,637*	*77.72*
Agriculture	138,158	128,569	106,882	20,202	81,390	5,290	83.13
Non-Farm	309,345	279,078	209,946	100,795	66,804	42,347	75.23
North-Central Coastal	*394,078*	*325,981*	*260,270*	*64,170*	*172,630*	*23,470*	*79.84*
Agriculture	162,268	156,273	123,345	3,071	110,338	9,936	78.93
Non-Farm	231,810	169,708	136,925	61,099	62,292	13,534	80.68
Central Highland	*95,527*	*88,747*	*69,669*	*5,315*	*58,522*	*5,832*	*78.50*
Agriculture	57,493	54,880	45,247	2,028	41,726	1,493	82.45
Non-Farm	38,034	33,867	24,422	3,287	16,796	4,339	72.11
Southeast	*147,403*	*131,065*	*106,716*	*22,984*	*80,260*	*3,472*	*81.42*
Agriculture	79,707	75,001	62,629	12,296	49,314	1,019	83.50
Non-Farm	67,696	56,064	44,087	10,688	30,946	2,453	78.64
Southwest	*617,527*	*546,390*	*426,611*	*75,018*	*289,609*	*61,984*	*78.08*
Agriculture	243,376	239,682	180,917	2,083	175,787	3,047	75.48
Non-Farm	374,151	306,708	245,694	72,935	113,822	58,937	80.11

Source: MOLISA, 2015: Administrative statistics on the achievement of 1956 Scheme implementation for the 2010-2014 period.

Note: (3)= (4) + (5) + (6). (7) = (3)/(2)*100

Concerning the effectiveness (regarding economic aspect) of attending Scheme's training courses, 59.3 thousand of families with members participating in such courses have

successfully escaped poverty; 98 thousands of families with members involving in Scheme's training have the income higher than the local's average income[41]. Nevertheless, with the minor share of those employed as wage worker7recruited by firms, and the majority of scheme's training participants remained as 'self-employment' and others, it is obviously seen that the role of the scheme in fostering the rural labor market is not as sufficiently as expected.

b) Evaluating the effectiveness of training program participation

<u>*Descriptive statistics on the features of respondents*</u>

After a random selection comprising of merging and appending steps to combine the three LFS surveys in 2012, 2013, and 2014, there have been 15520 rural employees being selected to form the dataset because of meeting the requirements concerning: (i) being repeatedly surveyed in 3 years; (ii) having information on income in 2012 and 2014. Of those selected respondents, 1448 people (9.33%) are grouped into 'treated' group because of their vocational training participation in the year 2013 (but not in the year 2012); and 14072 others (90.67%) are classified as 'control' group because of not involving in such training courses during 2012-2014 period. Results on respondent characteristics are presented in Table 21.

Table 21 shows the slight domination of female in the treated group. Nevertheless, this domination has shifted from female to male in the control group with 60.87%. Besides, people participated in Scheme's vocational training program are slightly older, and better-educated than those who did not. Also, the two groups share the similarity on the domination of Kinh's ethnic people.

Additionally, results also show that the share of those involved in agriculture of the 'treated group' is much lower than that of the control group. On the contrary, the first group (84.68%) has a higher rate of members working in the formal sector (with official working contract) compared to the second group (52.50%). Regarding the regional distribution, 'treated' group have the higher share (29.14%) of members inhabiting in region 1 (classified as the region with the highest degree of socio-economic development as well as living standard of the locals[42]) and the lower percentage points (32.73%) of those living in region 4 (with the lowest degree of socioeconomic development as well as living standard) compared to the control group.

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[41] MOLISA, 2015: Preliminary Warp-Up Report on Situation of 5-year Implementation of the 1956 Scheme (page 3).

[42] This classification is made following the Minimum Wage Law

Table 21. Some descriptive characteristics of respondents

Criteria	Treated group		Control group	
	Obs	Mean	Obs	Mean
Male (%)	1448	47.38	14072	60.87
Age (year)	1448	36.33	14072	33.75
Kinh's ethnicity	1448	94.41	14072	87.24
Schooling (year)	1448	13.40	14072	9.56
Working in Agriculture (%)	1447	0.55	14069	12.75
Having written working contract (%)	248	84.68	2423	52.50
Living in region 1 (%)	1448	29.14	14072	13.63
Living in region 2 (%)	1448	15.47	14072	11.15
Living in region 3 (%)	1448	22.65	14072	19.53
Living in region 4 (%)	1448	32.73	14072	55.69

Author's calculation based on own-dataset stemmed from the LFS2012 and LFS2014.

Regarding the income of respondents, as can be seen from Table 22, the average monthly income of treatment is obviously higher than that of those in the control group. Indeed, in 2012, a 'treated' worker had received about 3.7 million VND-185USD compared to 2.6 million VND-130 USD of worker not participating in training courses, and the income difference between two groups at this year was 1.1 million VND (55USD). Then by the year 2014, this income difference had increasingly reached 1.9 million VND (95USD), leading the income difference's difference of the whole 2012-2014 period resulted in 0.8 million VND (40 USD).

Table 22. Descriptive results on income of respondents in two groups

	Treated group		Control group	
	Number of Cases	*Income (1000 VND)*	*Number of Cases*	*Income (1000 VND)*
Average income per worker in 2012	1448	3731	14072	2627
Average income per worker in 2014	1448	6789	14072	4867
Income difference within group between 2012-2014		3058		2240
Income difference between two groups in 2012		1104		
Income difference between two groups in 2014		1921		
Income difference's difference between two groups of the whole 2012-2014 period		818		

Author's calculation based on own-dataset stemmed from the LFS2012 and LFS2014.

Probit Model on the Determinants of Vocational Training Participation

Of the independent variables taken into account in the model (as mentioned in Table 18), those concerning: 'currently live with spouse', 'official working contract', 'living in region1/region2/region3', 'interaction of living in region1/region2/region3 with working with written contract' are excluded from the model, because of either having the multi-collinear effects or failing to capture the statistical significances with the response variable. Then, after running the model with those having statistical significances, the values concerning parameters such asPseudo R2 (0.1972); VIF (1.2); Prob > chi2 = 0.0000; and LR chi2 (8) (325.51) obtained have confirmed the appropriateness and significance of the model.

Table 23. Determinants of Scheme's training course participation

(Random-effect-probit regression)

Variable	Dy/Dx	SE.
Gender (1 if Male)	-0.0195***	0.0068
Age (year)	0.0013***	0.0004
Ethnicity (1 if Kinh)	0.0566***	0.0152
Working experience (year)	0.0027**	0.0012
Schooling (year)	0.0094***	0.0013
Working in Agriculture (1 if Yes)	-0.0848***	0.0278
Living in region4 (1 if Yes)	-0.0740***	0.0153
Living in region4 with the written contract (1 if Yes)	0.0530***	0.0159
LR chi2(8)	325.51	
Prob > chi2	0.0000	
Pseudo R2	0.1972	
VIF	1.2	

Author's calculation based on own-dataset stemmed from the LFS2012 and LFS2014.

The estimates of Probit Model on the determinants of Vocational Training Participation of rural workers are shown in Table 23. The model indicates that men are less likely to attend the

Scheme than women, with 1.95% lower probability. Besides, people with a higher age, long working experience, higher educational level, and belonging to Kinh's ethnicity are more likely to participate in Scheme's training courses. By which, one year older results in 0.13% higher probability to involve in Scheme's training; Kinh's individuals have 5.66% higher chance to do so compared to other minority ethnic people, and one year added to the working experience as well as to schooling result in 0.27% and 0.94% higher chances respectively.

Furthermore, working in agriculture, and living in Region 4(the less-developed area) tends to reduce the probability to be part of the training course for rural workers by 8.48% and 7.40% respectively. Nevertheless, locating in the Region 4, but working with the written contract has increased this chance by 5.30%.

Effectiveness of vocational training participation to monthly income of participants

The impact of scheme's training participation is measured by the changes in monthly income of participants (treated group) and non-participants (control group) before and after attending the training course, with the use of Propensity Score Matching method (PSM) available in STATA.

At first, it is essential to estimate the PSM score (based on this score, those respondents in both groups are defined, and then being taken into the calculation of the scheme's influence. This score is accepted just in case the balancing property is satisfied together with the value of the 'common support' identified). The identification of this score is based on independent variables (regarded as the single characteristics that distinguish the treatment and control groups, with the aim of trying to make them more alike) statistically signified with the probability of individuals to take part in the scheme's training courses as listed in Table 23. Then, after running the model, results show that the archived PSM score is confirmed by showing the common support [ranging from 0.00397799 to 0.44199361] with the balancing property satisfied[43].

Next, the PSM method uses a variety of techniques (consisting of Nearest Neighbor Matching; Radius Matching; Kernel Matching; and Stratification Matching) to compare results of treatment and control groups, and each technique has its own advantage and limitation. As pointed out by M. Caliendo (2005), the 'Nearest Neighbour Matching', regarded as the most straightforward matching estimator, is a technique by which the individual from the comparison group is chosen as a matching partner for a treated individual that is closest in

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[43] The PSM score is not confirmed if the balancing property is not satisfied. In such case, the calculation on the PSM score has to be re-conducted with new independent variables taken into the model.

terms of the propensity score. Then, the 'Radius and Caliper Matching', as the 'Nearest Neighbor Matching faces the risk of bad matches, if the closest neighbor is far away, this can be avoided by imposing a tolerance level on the maximum propensity score distance (caliper). Imposing a caliper works in the same direction as allowing for replacement. Bad matches are avoided and hence the matching quality rises. Next, the 'Kernel Matching' is non-parametric matching estimators that use weighted averages of all individuals in the control group to construct the ten counterfactual outcomes. Thus, one major advantage of these approaches is the lower variance which is achieved because more information is used. A drawback of these methods is that possibly observations are used that are bad matches. Finally, the 'Stratification Matching' is used to partition the common support of the propensity score into a set of intervals (strata) and to calculate the impact within each interval by taking the mean difference in outcomes between treated and control observations. Based on these techniques, the author calculates the impact of using different techniques to check the consistency (with bootstrapped standard errors). The values of T in each technique applied have confirmed that those results calculated are all significant. The results are presented in Table 24:

Table 24. The Treatment Effect on the Treated concerning monthly income in 2014

	Treatment (cases)	Control (cases)	*ATT*[44]	SE	T
1. Monthly income in 2014					
Nearest Neighbor Matching	248	311	1582	200	7.90
Radius Matching	248	2051	1785	169	10.54
Kernel Matching	248	2051	1581	180	8.77
Stratification	248	2051	1545	192	8.07
2. Income difference between 2012 and 2014					
Nearest Neighbor Matching	248	311	964	186	5.18
Radius Matching	248	2051	700	156	4.49
Kernel Matching method with	248	2051	782	116	6.74
Stratification	248	2051	834	131	6.36

Author's calculation based on own-dataset stemmed from the LFS2012 and LFS2014.

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[44] The Average Treatment effect on the Treated (ATT)

In terms of monthly income in 2014, with the application of four different techniques of PSM, the Scheme's training participation is found to increase the monthly income of participants at all four techniques with the increasing income ranging from 1.54million VND (75USD) in the Stratification to 1.78 million VND (89USD) in the Radius Matching. As suggested by Khanker et al. (2010), the result calculated by using Kernel Matching technique is the better ones compared to those estimated by others. Therefore, it can be said that participating in vocational training has increased the income of participants by 1.58 million VND (79USD) compared to non-participants.

Similarly, Table 24 also shows that vocational training participation has positively affected the income difference's difference between 2012 and 2014 of the participants with the ATT's values ranging from 700 thousand VND (35 USD) in the Radius Matching to 964 thousand VND (48 USD) in the Nearest Neighbor Matching, and all of the results calculated are significantly confirmed based on the values of T. Taking the result quantified by using Kernel Matching techniques, it is estimated that by attending Scheme's vocational training, participants have increased their income difference's difference, between two years, by about 782 thousand VND (39 USD) compared to those who did not.

5. Conclusions and policy implications

5.1. Conclusions

By far, it is confirmed that this program is on the way to successfully achieve its objectives. The success of this Scheme has obviously resulted from factors/activities concerning 'Engagement of stakeholders', 'Governance', 'Planning', 'Resource mobilization', and 'Monitoring, review and evaluation'. The accomplishment of the scheme are: (i) the completion of Scheme's machinery establishment at all levels, together with the perfection of Scheme's legal document promulgating; (ii) the mobilisation of the whole political-social system in propagandizing, implementing, and monitoring for Scheme implementations; (iii) the popularization of Scheme, along with the change of attitudes of society on the role and importance of vocational training.

Apart from that, there have been some shortages/drawbacks occurred during the implementation of the scheme. Those are: (i) the scheme is basically implemented by the 'top-down' approach and less-flexible mechanism of working co-operations between the agencies involved; (ii) the participation of firms/enterprises in planning and implementing stages is yet restricted in many provinces; (iii) the imbalance, in terms of financial resource distribution concerning headquarters building and equipment/material investing, is remained, especially at the district levels; (iv) the less effectiveness of scheme resulted because of the insufficient

involvement of the local staff (particularly at the district level) is also recorded; and (v) the low share of participants involved in the labor market (recruited by firms) after training completion is still observed.

It is concluded that the Scheme's vocational training participation is influenced (both positively and negatively) by some factors regarding personal characteristics (both demography and human capital), socio-economic development of the inhabiting region, and employment features. Of which, the results obtained have confirmed that people with less- working experience, low-education, working in agriculture, belonging to ethnic minorities, and living in a region classified as the less-developed area (region 4) are less likely to have a chance to take part in such training courses. These findings have led to another implication that scheme's activities concerning recruitment do not fully capture the main idea of the scheme's credo (to support and enhance the capacity for those who are less competitive in integrating the labor market, and/or being disadvantaged in generating employment. Anyhow, this paper focuses on only those who work as wage-workers-a minor part of rural employees, while neglecting those who work as self-employed and/or unpaid workers. Therefore, the results obtained may not fully reflect the whole picture of the Scheme regarding determinants for Scheme's participation of the whole rural laborers.

It is also confirmed that scheme's training participation has positively influenced the employment outcome of participants by showing the positive effects on the current income as well as the increasing value of income between before and after taking part in such training courses for rural individuals. Again, these positive impacts of Scheme's participation mentioned are applied for only those working as a wage worker.

This study, as far as the author knows, is the first paper evaluating vocational training program provided for rural laborers, by using a methodology derived from a combination of (i) program implementation and effectiveness assessment; (ii) the use of data coming from administrative statistics, and labor force survey. Consequently, the paper has partly contributed to the comprehensive understandings in the field of labor market policies in the case of rural Vietnam. Nevertheless, some gaps yet needed to be filled. Of which, research focuses on issues regarding: (i) the actual role and participation of enterprises/firms in collaborating with scheme's agencies to carry out the program implementation; (ii) which factors hinder the scheme participants to work not as paid workers after training completion; (iii) what are the factors improving the quality of vocational training class; (iv) how the activities concerning job-promoting/supporting after training completion are implemented, and what are the

effectiveness/influences generated from these activities, are needed to be carried out in the future.

5.2. Policy implications

Modifying the implementation of the scheme by paying more attention to the needs of rural participants and requirements of enterprises/employers rather than focusing on what the vocational facilities and the service suppliers have in their hand. As mentioned earlier, some 'Provincial Steering Committees' have outweighed their own availabilities than the labor market needs for their planning establishment. Besides, other activities/programs concerning capacity building for staff involved the scheme at the district level is also crucial to be taken into account for the coming period. Apart from that, the implementation process regarding administrative report submission also needs to be renovated toward the in-time and professional manner. Also, it is also needed to set up, and/or to integrate the specific objectives of achievement relating to rural labor market development in the national and provincial master plans. These objectives should be clearly concretized into the feasible action plans that embed with the necessary and sufficient conditions.

Encouraging the involvement of enterprises/employers in the implementation of the scheme is another essential factor in the scheme's successes. Presently, the involvement of these counterparts has been yet limited in activities concerning: (i) providing information on job vacancies, types of occupations needed during the planning stage; (ii) working with scheme's staff and making the decision on the recruitment of participants (who completed the training) to work in the firms. Therefore, the further engagement of the 'employer' side should be enlarged to the fields concerning: having the official membership in the 'Scheme's Steering Committee' at al levels; directly participating in activities regarding the implementation of vocational training course program (for instance, teaching, providing practical examinations); being more closely cooperated with other partners related (particularly the vocational training centers and local employment service agencies) of the scheme to foster the job-recruitment after training completion.

Encouraging the involvement of the mass media communications, as well as of the whole society in activities regarding monitoring and criticizing the Scheme's activities/stages, to discover and correct mistakes or failures resulted from Scheme implementation, as well as to prevent the potential risks. At first, a hotline telephone to receive and assess the accuracy of information concerning the Scheme's activities may be essential.

Conducting an overall assessment of the Scheme implementation and effectiveness. This report should be done by a third party (consisting of skill full and experienced experts) to ensure the objectiveness and the accurateness of findings, conclusions, and recommendations on the achievement and shortages/disadvantages of Scheme.

CONCLUSION

1. Answers to the Research Questions

This dissertation is a combination of topics focusing on the involvement in the RNS, the current situation concerning employment, and the job-search process of non-farm employees, the participation in the rural labor market development of rural laborers, and the effectiveness of labor market policy at the individual/household (micro), and living local (medium) levels. Theoretically based and proofed in the empirical studies, it could be found that rural employment and rural nonfarm sector have close relationships and are affected by a set of factors encompassing internal and external characteristics. In order to achieve the explanations on the influences of factors affecting the involvement of rural individuals in the RNS, RNFE, rural labor market development, and the effectiveness of the labor market policies, the author uses various quantitative models with the explanatory elements from the different scientific disciplines(economic geography, labor economics, and sociology). In the following section, the guiding research questions set up in the 'Introduction' will be taken up and conclusively answered.

Q1: How did the rural non-farm sector (RNS) change during the 2007-2013 period?

The changes of the RNS are seen from the household perspective in different aspects concerning the RNS involvement of households, the patterns of the RNS participation, and income derived from the RNS participation with the use of the descriptive/comparative methods. At first, as conceptually defined that the RNS-engaged households are those having their member(s) worked in the non-farm sector, findings have supported the argument mentioned by S. Wiggins and P. Hazell (2011) on the crucial role of the RNS in rural areas by showing the growing shares (increased from 73.78% to 81.70% between 2007 and 2013) of households involved in the RNS during the 2007-2013 period. Compared to other empirical results derived from the studies of Fisher, Mahajan and Singha (1997) with the share of RNS involvement in rural India ranging from 18-25 percent; S. Wiggins and P. Hazell (2011) with the percentage points of households engaged in non-farm sector in Asia and Latin America (30%), and in North Africa (20%), the share of such involvement in rural Vietnam is much higher. Then, depending on their different circumstances, the rural non-farm households have diversified their household employment strategies differently in either the form of 'wage worker-WW', or the form of 'self employment-SE', or the form of 'both WW and SE', but the 'WW' pattern takes the dominating role. Apart from that, evidences show the increasing trend of income of rural households during the 2007-2013 period (increased from 5441 USD to 8022

USD between 2007 and 2013), and support the view that participating in non-farm activities improve the household income by showing the higher income of the RNS-engaged households (7280 USD) compared to that of those involved in only agriculture (5004 USD). Regarding the share of income derived from the RNS participation, the finding regarding this share of the whole period (31.12%) is almost similar with those mentioned by P. Lanjouw and A. Shariff (2004) with 34 percent in India, as well as by S Wiggins and P. Hazell (2011) with 35% in Africa. Nevertheless, the income share shows the fluctuated trend between years, especially in the year 2008, when the economic crisis occurred this share is sharply decreased. In short, findings are consistent with other empirical results and indicate that involving in the RNS becomes the popular trend in terms of employment strategy of rural households in Vietnam, and this participation plays the crucial role for households to obtain the higher income.

Q2: How do personal features of the household's head, family-related characteristics, and location-related variations affect rural households to participate in the RNS?

Participating in the RNS is crucial for rural development, poverty reduction (Pham Thai Hung, Dao Anh Tuan and Bui Le Thanh, 2010), and this participation is affected by factors regarding natural characteristics (Readon, 2001); local infrastructure (Jalan and Ravaillon, 1998; Lanjouw and Feder, 2001; Komives et al, 2001;and A. E. Isgut, 2004); household's physical assets(J. R. Davids and D. J. Bezemer, 2004); education (A. Gordon and C. Craig, 2001; Fafchamps and Quisumbing, 1999, 2003; and Yang and An 2002); social capital (A. Gordon and C. Craig, 2001); and demographic characteristics of the households (Readon, 1997; Bryceson, 1999; Smith, 2000; A. E. Isgut, 2004; and D. B. Rahut et al, 2015), and such impact caused by these factors should be quantified. Besides, as mentioned in a document named 'Non-Farm Income in Rural Areas' of the Department For International Development-DFID (2002) ''access to non-farm opportunities are highly segmented by socio-economic class, gender, ethnicity and other social markers. Lack of economic assets, including capital, labor, skills and information, are key constraints, but social structures, including social networks and kin groupings, are important too''

 In order to achieve the quantified influences of affecting factors, the author uses the 'Probit' regression technique, benefiting from the models applied by other authors in their empirical work with a number of explanatory variables concerning personal characteristics of the household's head; household-related features; and local endowment.

At first, findings go in line with the hypothesis that the involvement in the RNS of rural households is affected by the personal characteristics of the household's head. It could be identified that households headed by females and/or younger person have a higher probability

of taking part in the RNS, thanks to the characteristic concerning the higher flexibility of such individuals. Secondly, inconsistency with the argument provided by S. Wiggins and P. Hazell (2011), findings also confirm that education (at both of personal and household levels), human resources (family size and the number of household adults), and household living standard (poor households compared to richer families) of households are key factors that positively determine the RNS involvement. Then, the results are also in accordance with the theoretical assumption that better endowment of living location results in a higher probability of households to engage in the RNS by showing positive relationships between villages characterized by having plain-terrain; not being supported by the 135 program; and having the higher speed to travel to the capital of the district with the RNS participation of households.

The model used in this thesis is confirmed as the appropriate ones to quantify the impact of affecting factors. Besides, the use of location-related variables as the explanatory factors has contributed to the further understanding of the RNS development by showing the results regarding the measurement on the influences of the 'mesolevel' determinants (local endowment). In addition, such further understanding is also enriched by the explanation on the role of females in the RNS involvement of rural households in Vietnam, where the women are embedded with the virtues concerning 'economical wife' as well as 'self-motivated person'. Therefore, in the context of rural Vietnam, when the women take the position of 'household's head', they tend to actively diversify their household income sources by having their family member engaged in different activities, including the RNS.

Q3: How do personal features of the household's head, family-related characteristics, and location-related variations affect the patterns of RNS involvement?

As different as the term 'pattern' used by P. Visaria and R. Basant (1994) relying on the occupational classification to examine the non-farm employment patterns in India, the 'pattern' term in this dissertation refers to the working status of those working in the non-farm sector. By which, based on the working status in the RNS of household members, rural households are divided into three types of RNS involvement named 'Wage Worker-WW'; 'Self Employed-SE', and 'both WW and SE'.Households with different characteristics and resources have different decisions for their patterns of RNS engagement. Therefore, advantages concerning demography, household resources and local endowment play the crucial roles in the employment diversification strategy of households, and the influences caused by these factors are quantified by using the 'multi-nominal' regression technique.

Working as the paid employee basically depend on employment information, skill levels of individuals, and the availability of labor demand. In this context, households headed by persons

participating in the local social organizations (resulting in a higher probability to access the information concerning employment opportunities or employment commitment from others) will enable their family members to achieve a paid employment offer. Similarly, higher education of household adults results in a higher probability of household members to be accepted by the employers. Contrary to the assumption mentioning that living in less-developed regions results in higher probability involving in non-farm self-employment (Readon, 2001), the results reveal that households located in the remote villages with support derived from 135 program's investments have higher chances to have their members participated in non-farm activities as paid worker thanks to public investment provided by the government on local infrastructure (road, electricity, school, and clinic/hospital). Because such investment programs acted as the public-employment generation.

With respect to the 'self-employed' pattern, the nature of this pattern is that the business is invested and carried by self-investor (or with the help of their family members) in the flexible manner and timetable, and the requirement concerning education/skills is not essential, instead, the local demand is crucial for such activity to be implemented. Therefore, advantages regarding the higher living standard, natural and socioeconomic features of the communes (plain terrain, and areas without investment provided by the 135 program), and close vicinity to the capital of the provinces are seen as the essential reasons for households to participate in the RNS as 'self-employed'.

The third pattern is a combination of the two patterns mentioned previously, therefore, advantages concerning those mentioned previously are of essential factors that positively affect the involvement of households in this pattern. Besides, households headed by women are more likely to participate in the pattern named 'both WW and SE' due to the social values/norms concerning 'economical wife' and/or 'self-motivated person' that are labeled/embedded for Vietnamese women. In addition, this involvement is further enhanced if households have a higher number of family members (either of family size or the number of household adults). Because, the higher amount of household members allows the households to easily diversify (and to some extent, it forces the households) their employment strategy.

Q4: How do the RNS participation and other factors affect the income per capita of househol*d?*
The income derived from non-farm sources is already of great importance to rural households. Most recent studies agree that cash and in-kind RNFI is a substantial contribution to total household income (DFID, 2001). Besides, non-farm activities have an important impact on the distribution of income in rural areas. Additionally, participation in non-farm activities has a

positive spillover effect on household farm production (A. Janvry, E. Sadoulet, and N. Zhu, 2005).

In terms of household income contribution, findings support the mentioned argument by pointing out that the share of non-farm income accounts for more than 30% of total household income, and households engaged in the RNS have a higher amount of income compared to agricultural families. Furthermore, when taking into account the impact of factor regarding the RNS involvement and others concerning household head's and household features as well as the local endowment to the household income with the use of the OLS - regression model. The argument concerning the role of the RNS in contributing to household income is again confirmed by the evidence showing the 22.28% increased income of households engaged in non-farm activities, compared to that of those totally involved in agriculture, and this finding is almost consistent with the ones observed by A. Janvry *et al* (2005) for the case of households living in rural China. In short, involving in the RNS is crucial for rural households to improve their income.

Apart from that, compared to those with better-living standard, the poor households can spend a large share of their time in non-farm activities, but in turn, they can receive the lower payment due to obstacles concerning entry barriers (for instance, business/employment investment, skills acquisition). In addition, activities characterized by skilled-labor intensive, often result in higher productivities and income for employees. Therefore, households with better education (either of the household's head or of household adults) have a higher income. This higher income is also observed for households with a higher number of adults (resulting in the higher number of income sources). Furthermore, easy access to to the developed areas is theoretically and empirically confirmed as a key factor for the improvement of income of both individuals and households, and findings in this dissertation support that argument by showing the higher income for households living in communes that have the roads permitting the higher speed to travel to the capital of the district as well as to travel to the capital of the province.

Q5: What do the RNFE's characteristics look like?

As conceptually defined by J. Davids (2001), rural non-farm employment (RNFE) are not agricultural, but located in rural areas with the essential roles in accelerating poverty reduction; promoting job creation; increasing income; and enhancing employment sustainability. The results show that about two-fifth of rural employees interviewed has participated in non-farm activities at their home towns (together with or without agriculture's participation) instead of migrating to other cities/provinces. These shares differ from the time series (showing the

growing trend over the 2007-2013 period) and provinces, but the rates of RNFE involvement between males and females are almost the same.

The RNFE's characteristics are seen from aspects concerning methods used to obtain the current RNFE, working contract, working hour and income of rural employees involved in non-farm activities compared to those of rural individuals working in agriculture, with the use of the comparative and descriptive methods.

Despite a number of advantages concerning legal commitment (ensuring the responsibilities and interest of all parties, including employees, employers, and employment agents) cover the whole process of job-search, the avails of job-offers, the formal methods are used by a minor part (about 10 percent for the whole period) of rural laborers. Instead, the majority of them prefer to use the informal ways (especially relying on their personal contacts or the help provided by their family members, and/or friends/relatives) to obtain their working places in the non-farm sector due to reasons regarding the costlessness of expenditures/fees and time spent during the job-search process. Of the reasons that are essential for rural employees to achieve their current RNFE, surprisingly, those regarding age, gender, good health, and support from family and friends are ranked at the top, while those concerning education, skills, and working experience are estimated at the bottom of the classification. Two implications are made from those mentioned as follows: (i) the 'unofficial' process (in terms of the job-search process) outweigh the formalization in the rural labor market, and (ii) there have been the miss-match between labor supply and labor demand.

With respect to RNFE's characteristics regarding working contract, working hour, and income, it is commonly agreed that that involving in RNFE offers the better jobs for rural individuals compared to those engaged in only agriculture (Reardon, 1997; WB, 2007; S. Haggblade, P. B.R Hazell and T. Reardon, 2009). Indeed, the RNS offers more opportunities to work as the salaried worker, the higher amount of activities that need to be done in a certain time (for instance, in a working month), and higher productivity than the agricultural sector. Therefore, involving in the RNFE enable the participants to have the higher opportunities to work in the formal sector, to receive the full-time employment, as well as to earn the higher income than those working as the farmer. These arguments are confirmed by the empirical findings in this dissertation showing the higher shares of RNFE participants working with the written contract (41.85%), obtaining the full-time employment (76.54%), as well as receiving the higher-income (1573 USD per year) compared to those of people working in agriculture (21.53%, 32.91%, and 679 USD respectively).

Q6: What are the impacts of factors affecting the individual's probability on participating in RNFE?

There have been numerous factors that affect the RNFE participation of individuals. These factors can be classified into different groups. For some authors, these affecting factors are grouped as demography (Readon, 1997; Bryceson, 1999; Smith, 2000; A. E. Isgut, 2004; and D. B. Rahut *et al*, 2015); human capital (Reardon, et al, 2001; Yang and An 2002); social capital (A. Gordon and C. Craig, 2001); household resources (J. R. Davids and D. J. Bezemer, 2004); local infrastructure (Jalan and Ravaillon, 1998; Lanjouw and Feder, 2001; A. E. Isgut, 2004); and natural characteristics (Reardon, 2001). For the others, these factors can be approached from a vertical dimension ranging from the micro level to medium and macro levels (Z. J. Acs and C. Armington, 2006; S. J. Goetz and A. Rupasingha, 2011). Based on these determinants mentioned above, the author has taken a number of variables in a 'Probit-regression' model as the explanatory factors for the involvement in the non-farm activities of rural laborers. These are grouped into personal-related characteristics; household-related features and local endowment (at village and district levels).

Individuals participate in non-farm activities due to 'Push and Pull Factors' (E. Chuta and C. Liedholm, 1979; Readon, 1997; J. R. Davids, 2001; J. Brünjes, 2012). This argument is confirmed by findings in this study. On one hand, push-factors concerning education, social capital (represented by the membership of individuals participating in the local social organizations), and household's living standard (richer households) have increased the probability of involving in non-farm activities of rural individuals. In other words, individuals embedded with such advantages are more able to compete in the labor market to achieve their jobs in the RNS as the 'wage worker', or being able to meet the requirements concerning investment of their own business (in this case, they become the employer or the self-employed). On the other hand, in the context of restricted resources of agricultural production (for instance, agricultural land) and the low-level of agricultural productivity/revenue/income, laborers living in the more crowded households are also forced to take part in non-farm activities.

In terms of factors regarding local endowments, findings confirm that local endowments creating better conditions for the development of the RNS are crucial factors for the RNFE involvement of individuals. In the case of Vietnam, villages without support provided by the 135's program have better conditions regarding natural and socioeconomic features than those funded by such program, and this lead to the higher development/expansion of the RNS, and as the result, laborers living in these areas are easier to participate in the RNFE. Similarly, the plain terrain is considered as an advantage of transportation, therefore, it enables to develop

the RNS. Besides, less time-consumption to reach either the capital of the district or the capital of the province help local employees to improve their access to highly-developed areas, where the demand for not only labor but also goods is more available. Additionally, as theoretically agreed, the higher concentration of the local population and firms lead to higher economic agglomeration, more availability of employment offer, and higher demand for non-farm products consumed. Therefore, laborers living in areas with such concentration have higher chances to work in the RNS.

Q7: What are the influences of factors affecting the use of formal methods in achieving the current RNFE?

Job-search process is an important component of the labor market because it helps to improve the overall productivity of the society (A. E. Green et al, 2011). Of the factors that contribute to the success of a job-search mission, information on employment vacancies and financial resource covering the job-search fees/expenditures are of the prominent elements D. T. Mortensen (1986). Job-search methods can be divided into informal and formal methods and each type of these has various advantages and disadvantages. Regarding the formal methods, the use of such methods help the job-seekers to meet numerous recruiters in person; to access to a wide variety of jobs or higher readiness of the job - offer. In the case of Vietnam, the use of such methods, from the author's point of view, is essential for all parties involved to be free from troubles due to the protection of the laws. Nevertheless, the fee-payment and a higher level of time-consumption are estimated as the obstacles for the application of the formal methods (A. E. Green et al, 2011).

The fact is that despite the numerous advantages mentioned above, there have been quite a few of non-farm employees (about 10 percent) using the formal methods to obtain their current employment. This situation may be further understood by answering the question on which factors affect the use of formal methods during the job-search process. In order to tackle this research question, the author uses a regression technique (Probit model) with a number of explanatory variables concerning individual-related and household-related characteristics, and local endowments of non-farm employees to measure the influences caused by these factors to the application of the formal job-search methods.

Not many factors regarding individual-related characteristics affect the use of formal methods except those concerning 'age' and 'working experience', and these two factors show the contrary influences with positive impacts for the former and the negative effect of the latter. Similarly, household-related characteristics affect this application differently. Job-search fees/expenses, as mentioned previously, are of obstacles for job-seekers to use the formal

methods, and for that reason, households with 'richer' living conditions are more able to afford their members to use the formal methods compared to those with the lower living standard. Conversely, 'more-crowded household' (in terms of either the family size or the number of adults) is a factor that encourages the employees to rely on the informal methods for their job-search purposes because of benefiting from the network or support provided by others living in their families. Finally, regarding the local endowments, access to the capital of the province (measured by the average speed), the only place of the province where the job-seekers can directly approach the job-service organizations/centers, is another factor encouraging non-farm employees to achieve their current RNFE by using formal methods. On the contrary, those concerning access to the capital of the district and district's urbanization rate present the negative influences.

Q8: How do factors concerning RNFE participation, personal, household-related and local-related features affect the income of rural employees?

Income derived from employment is affected by numerous factors concerning personal characteristics, household-related features and local endowments (Readon 1997; J. Davids, 2001; and B. Su and A. Hesmahti, 2013). Those refer to human capital, demography, employment, household human and physical resources, and natural/socioeconomic endowments of living locations.

These factors mentioned above are taken into the OLS model as the explanatory variables for the income differentials between rural employees. It is found that income was especially promoted by the involvement in non-farm activities of individuals. Alongside with this factor, others concerning age, marital status (live with his/her spouse), gender (male), Kinh's ethnicity, education, working experiences, social organization involvement, household with richer living condition, concentration of non-farm enterprises/firms (either registered or non-registered firms) are other essential factors that improve the income of rural non-farm employees. On the contrary, female and household size are the two elements that reduce the amount of money earned by RNFE participants.

The answers to this question and the research question concerning the household income (mentioned previously) have shed the light on the determinants of income of rural employees, who decide to stay and work in their hometown, instead of migrating to other urban areas/cities to look for jobs. Additionally, findings observed from this dissertation, along with other empirical evidences concerning the determinants of income inequality in rural areas (for instances, from the works conducted by L. Putterman, 1992b; D. Yang and H. Zhou, 1999; R.

Kanbur and X. Zhang, 2005; and B. Su and A. Hesmahti, 2013) have contributed the further understandings on rural employment income of developing countries.

Q9: How do the RNS and other determinants influence rural laborers taking part in the labor force?

It is theoretically and empirically agreed that decisions to participate in the labor force of individuals are affected by numerous factors regarding the development of rural non-farm sector (Fisher *et al*, 1997), local endowments (Naud and Serumage-Zake, 2001; Mduma and Wobest, 2004; Glauben et al, 2008; M.Faridi and A. B. Basit, 2011), household-related features (J. Herrera, 2013; Jatta, 2013), and personal characteristics (Becker, 1975; E. A. W. Boxman *et al*, 1991), and these are used (as the independent variables) by the author to quantify the impacts of affecting factors to the labor force participation (LFP) of rural laborers in this dissertation with the use of a regression technique (the Probit model).

It is concluded that the LFP of individuals is improved by factors concerning personal characteristics but in different dimensions. Normally, individuals in Vietnam (as conceptually defined) take part in the labor force at the age of 15, and this debt can be delayed temporarily or permanently for a number of years due to reasons concerning schooling, military joining, being disabled and others depending on their personal circumstances. Anyhow, almost individuals have to become the 'active person' when they get older, and this argument is confirmed with the positive relationship between factor regarding 'age' and the LFP of individuals. Similarly, taking the 'family' responsibilities is another determinant encouraging people to be part of the labor force. Nevertheless, because of playing the crucial role in taking care of family, as well as organization's duties, women and individuals holding the membership of the local organizations are less participating in the labor force than men and other persons who did not involve in such organizations.

Of the other factors concerning household features and local endowments, findings indicate that poorly-conditioned situation (represented by the higher rate of district's poverty rate) and higher amount of local demand in the informal sector (seen from the amount of private-non-registered enterprises engaged in the RNS) at district level are of factors improving the LFP of local citizens.On the opposite site, advantages concerning household living standard, natural-terrain of the village, access to the capital of the district as well as of the province, and degree of district's urbanization are considered as those reducing the labor force involvement of rural laborers.

Q10: How do the RNS and other determinants affect rural employees to work as a wage-worker?

Another indicator (as mentioned by the KILM indicators of the ILO) that refers to the labor market development is the share of people working as the 'wage-worker' in total employment. Therefore, in terms of rural labor market development, it is essential to understand which factors increase the probability of individuals to be the paid employee.

In order to quantify the impacts of affecting factors to the probability of rural laborers to work as the 'paid-employed', the author use the 'Probit model' with the explanatory variables mentioned in the research question number 9.

It is concluded that the influences of independent variables taken into the model are different. On one hand, those concerning education, household living standard (richer households), amount of household adults, communes without support provided by the 135's program, advantage regarding the natural-terrain of villages (plain-terrain), degree of district urbanization, district's labor-demand of the informal sector (amount of non-registered firms engaged in the RNS), and the volume of district's non-farm GDP are essential for local employees to work as paid worker. On the other hand, this working status is negatively affected by others relating to personal characteristics (individuals with older age, involved in marriage, gendered as female, and engaged in local social organization's duties).

Q11: How do the RNS and other determinants affect rural employees to work in the formal sector?

Apart from the indicator regarding the working status (wage-worker) mentioned above, the author also uses another indicator regarding the involvement of individuals in the formal sector, to refer to the labor market development (implying the qualitative aspect of the development) in the rural areas of Vietnam. Similar to the research question number 10, understandings of how the affecting factors influence the individual probability to be a part of the formal sector is also crucial (in terms of rural labor market development), and this will be tackled by using a regression technique with a number of independent variables (exactly the same with those mentioned in the research questions number 9 and number 10) taken into the model (Probit model).

Findings lead to the conclusions that working in the formal sector is affected by numerous factors concerning personal characteristics, household-related features, and local endowments, and the impacts caused by these factors are different. Of which, those regarding marriage (currently live with wife/husband), Kinh's ethnicity, education, family size, household living standard (richer families), communes with advantages concerning natural terrain (plain-terrain)

and/or socioeconomic development (without support provided by the 135 program), access to the capital of the province, amount of the formal enterprises of district, and volume of district's non-farm GDP are essential to enhance the probability of rural employees in achieving their employment in the formal sector. Contrarily, this involvement is negatively affected by factors concerning the density of district's inhabitants and district poverty rate.

Q12: How is the scheme implemented, and what are the scheme achievements and shortages?
Theoretically, a policy can be considered as an efficient ones, when it is implemented smoothly and generates positive changes/outcomes for its beneficiaries (T. Bredgaard *et al*, 2013), and factors regarding 'Engaging Stakeholder', 'Planning', 'Resources', 'Monitoring, Review and Evaluation', and 'Governance' play the crucial role in the success of the policy implementation (Australia Government, 2014).

Numerous studies have revealed and confirmed that ELMPs are determined as a group of selective policies aimed at situations on the labor market defined as problematic (T. Bredgaard *et al*, 2013), with the main goal is to enhance the functioning as well as the effectiveness of the labor market in achieving politically desirable outcomes (Schmid *et al*. 1997; Bredgaard *et al*. 2011a). In the case of Vietnam, these policies play crucial roles in contributing to the improvement of the Human Development Index; forming form the legal framework for the operation of the labor market to define, and ensuring the effectiveness of the labor market operations; accelerating the integration process of Vietnam into international labor division; acting as 'the safety net' for disadvantaged groups (Nguyen Huu Dzung, 2014; Pham Minh Chinh, 2014).

The 'Vocational training program for rural laborers' scheme (or the scheme for short) is one of the various employment/labor market policies/programs provided by the Vietnam government since 2010. Since then, the assessments on this scheme (focusing on the outcomes achieved and obstacles occurred during the implementation process) are periodically carried out by the managing agencies, those belong to the scheme-hierarchical management system. Nevertheless, these assessments are merely conducted following the administrative term, and less focussed on the effectiveness of the scheme's participation to participant's employment after training completion.

The large involvement of various state administrative authorities and other political/social/professional associations/unions in the scheme implementation has proved for the success of the scheme in achieving a highly social unanimity, as well as a strong commitment among involving agencies and individuals to carry out the Scheme's activities. Then, the establishment of 'Scheme Steering Committees/Groups/Task Forces' has formed the

united entity of the scheme-managing regime that contribute to the smoothness of the scheme implemented as planned and scheduled at all levels. Besides, the 'Planning' undertaken by skilled and experienced experts (outstanding among these are the staff working at General Vocational Training Department and Provincial Department of Labor-Invalids and Social Affairs at 63 provinces) has ensured for the appropriateness of the master plans and action programs in collaboration with the current situation (in terms of exploring the imperative issues concerning rural employment and the quality of rural labor force) and resources of locals. Furthermore, in the context of Vietnam, the socialization of resource mobilization (of which, the 'state-budget' source takes the dominant role) has confirmed the appropriate method used in implementing the scheme to meet the financial requirements. As the result, within 5 years of implementation, the scheme has provided vocational training services for about 2.17 million rural laborers. This figure takes the largest share of the total number of vocational participants of the whole country. Of which, 78.66% participants have achieved/generated employment after training completion.

Nevertheless, findings also refer to a number of drawbacks that need to be solved in the coming period concerning the 'top-down' approach and less-flexible mechanism of working co-operations between the agencies involved; the restricted participation of firms/enterprises in planning and implementing stages; the imbalance, in terms of financial resource, of distribution between investing requirements, especially at the district levels; the less effectiveness of scheme resulted due to the insufficient involvement of the local staff (particularly at the district level); and the low share of participants involved in the labor market after training completion.

Q13: Which factors affect the involvement of beneficiaries in scheme's training courses?

The participation of rural laborers (in number) in scheme vocational training is seen as one of the indicators implying the success of scheme implementation. This participation is affected by different factors concerning personal characteristics and regional features. In this study, the author quantifies the impacts of such factors to the involvement in the scheme of rural laborers by taking a number of variables regarding personal demography (age, gender, ethnicity), individual human capital (education), employment (working experience, working industries), and living regions into the 'Probit-model' as the explanatory variables for the scheme participation of rural individuals.

Findings reveal that the probability of rural laborers to take part in the scheme's vocational training is influenced (both positively and negatively) by a number of factors regarding personal characteristics (both demography and human capital), socioeconomic development of the inhabiting region, and employment features. Of which, factors regarding 'male', older age,

Kinh's ethnicity, working experience, education and working in the formal sector in the poorest region have positively affected rural individuals to take part in the scheme. Conversely, those concerning females, working in agriculture, living in the poorest region show the negative relationship with the individual's scheme participation. The implication made from such results is that vocational training services provided by the scheme seem not to be appropriate (as previously expected) for rural laborers, those are female, or working in agriculture, or living in the poorest areas.

Q14: How participating in vocational training affect income of participants?

Assessing the policy intervention can theoretically be approached from a perspective that combines the assessments on both policy implementation, and policy effectiveness (measured by the change in income between pre-post policy treatment). Besides, as mentioned previously, there have been fewer studies and assessments (in Vietnam) pay attention on measuring the effectiveness of the policy interventions, and in terms of the scheme, none of the assessment (so far) refers to the question concerning the impact of participating in the scheme to the income of the participants since their training completion. For such reasons, the author conducts an assessment of how the scheme participation has affected the employment of scheme participants by measuring the change of income with the use of the 'Propensity Score Matching-PSM' method.

Consistent with theoretical prediction, scheme's training participation has positively influenced the employment outcome of participants by showing the positive effects on the current income as well as the increasing value of income between before and after taking part in such training courses for rural individuals. Indeed, participating in the scheme vocational training results in the higher income for participants (ranging from 75 USD to 89 USD depending on calculating techniques) compared to non-participants. Besides, in terms of income earned before taking part in the scheme (or income difference's difference), rural employees involved in the scheme also have the higher difference of income than those who did not (with the higher income ranged from 35 USD to 48 USD).

2. Contributions, Limitations, and Further Researches Proposed

Contributions

Chapter 1 provides a number of contributions. At first, the approached methodology, consisting of analytical methods (using various regression techniques) and the primary data (at the micro level), used in this chapter is helpful for researchers to produce other empirical studies aiming at measuring/estimating the impacts caused by affecting factors to the fields concerning

livelihood and diversification of the households. Next, a number of policy implications are recommended for the policy makers regarding: providing a national program on 'non-farm employment development/promotion'; upgrading/investing in local infrastructure in the poorly-developed places; enhancing the participation of rural laborers in the education/vocational training systems.

Similarly, in Chapter 2, the combination of primary data on individual and household levels collected through the in-depth surveys with secondary data derived from the administrative sources (the provincial GSOs) has allowed the author to quantify the impacts of those variables regarding local endowment at the district level on the change and differences of RNFE and methods used for job-search purpose of rural laborers. Then, findings have confirmed the view that developing the RNS is essential to deal with the growing pressure in terms of employment generation, and income improvement in rural areas of Vietnam. In addition, these findings can be considered as the practical evidence for policy makers to rely on in designing and providing intervention programs for further development of the rural labor market as well as rural employment generation.

Also, Chapter 3 partly contributes to the enrichment of literature concerning rural labor market development in Vietnam by presenting a research approach combining labor economics and economic geography perspectives, as well as the use of a database formed by the combination of a primary data set with other information derived from the secondary sources. Again, the research results can be useful clues for the policymakers in designing and implementing their policy interventions that aim to encourage the development of rural labor market integrating with the expansion of the RNS. Apart from that, a number of policy interventions concerning the improvement of rural labor quality; reforming the activities of the local social organization system; improving the effectiveness of policy interventions targeting the vulnerable groups; and upgrading the local infrastructure of the less-developed regions are also recommended.

Finally, Chapter 4 has further contributed to the enrichment of literature relating to the role of employment and labor market policy in dealing with issues on rural employment of a developing country as Vietnam. At first, findings support the view that approaching the assessment of a specific policy intervention by combining the assessment on the policy implementation with the measurement of the effectiveness resulted from such intervention involvement of participants has usefully presented the whole picture of the final outcomes. Secondly, based on findings observed, this essay has suggested some policy implications for further effective enhancement of the scheme implementations focusing on: modifying the implementation of the scheme by paying more attention to the needs of rural participants and

requirements of enterprises/employers; encouraging the involvement of enterprises/employers in the implementation of the scheme; encouraging the involvement of the mass media communications, as well as of the whole society in activities regarding monitoring and criticizing the Scheme's activities/stages; conducting an overall assessment of the Scheme implementation and effectiveness.

Limitations

Besides the contributions and success achieved, this dissertation has certain limitations. From the 'theoretical-framework' perspective, this study covers only the household/employee/living location sides, while leaving those concerning the employers totally 'un-examined'. For instance, the accuracy of conclusions and recommendations, regarding the involvement of rural employees in the RNFE as well as the development of the labor market in rural areas, will be improved by adding further explanatory factors regarding employer's characteristics.Apart from that, the explanatory/independent variables taken into the regression models should not be used in the only separate way, but also by the interactive approach. In other words, further explanatory factors stemmed from the interactions between single factors may result in the more convinced-explanations and findings on the roles of the determinants that foster the development of the RNS, and rural labor market development.For example, an independent variable generated by the interaction between education and social capital factors will help the author be more successful in explaining the role of human capital in terms of employment of rural laborers following the theoretical point of view mentioned by Colleman (1988) 'human capital produces social capital, and in turn, social capital multiplies revenues of human capital as well as working experience. As a result, better employment for individuals holding such capitals is achieved'. Furthermore, due to obstacles regarding data collection of the labor force surveys, the author has failed to capture a number of essential factors (especially those concerning the household-related and local-related features of rural individuals) that help to achieve further understanding of the determinants of the 'SchemeVocational Training' from the participant perspective. Finally, the output of this study should be seen as exploratory and explanatory rather than conclusive and definitive. These investigations are useful for refining our understanding of the topics referred rather than accepting or rejecting theoretical propositions.

Further Researches Proposed

As previously mentioned, rural employment and rural labor market development remain the imperative issues in Vietnam for the coming period. Therefore, further studies in these fields should essentially be conducted for the improvement of the comprehensive understanding (in both of theoretical and empirical perspectives) and the actual achievement of political interventions. Regarding the RNS development, this study suggests that topics concerning the comparability of the RNS involvement between rural households and others living in urban centers may be essential to achieve more clear impacts of affecting factors mentioned in this paper. Besides, further researches focusing on: expanding the coverage of public labor market infrastructure in the rural areas; enhancing the role of education and vocational training facilities in shortening the labor mismatch in rural areas; measuring the impact of further integration of Vietnam (for instance, the impact caused by the TPP participation, and the formation of a public-ASEAN community) to the RNFE development are also crucial for topic regarding the change of rural labor restructuring process. Similarly, those refer to aspects on: building rural labor market development index; enhancing the role of labor market infrastructure (such as, the employment service/labor market information systems) in rural areas; investigating the inter-relatedness between rural labor market development and rural labor restructuring should be essential for not only academic scholars (in understanding), but also policy makers in achieving the expansion of the rural labor market. Finally, to achieve the further success of policy interventions concerning ELMPs, the author proposes that further studies should be conducted. These studies need to provide the comprehensive answers for research questions concerning: the actual role and participation of enterprise/firms in collaborating with scheme's agencies to carry out the program implementation; which factors hinder the probability of scheme participants to work not as wage worker; what are the factors that improve the quality of vocational training class; how activities concerning job-promotion/support after training completion are carried out, and what are the effectiveness/influences generated from these activities.

REFERENCE

V. Abraham, 2008. Rural Non-Farm Sector Employment in India: Distress-Driven or Growth Driven. Working paper 404, International Conference on Employment Opportunities and Public Employment Policy in Globalising India.

Z. J. Acs and Armington. C, 2006. Entrepreneurship, Geography, and American Economic Growth, Cambridge University Press, Cambridge, 250pp.

A. Ahsan and C. Pagés 2009. Are All Labor Regulations Equal? Evidence from Indian Manufacturing. *Journal of Comparative Economics 37 (1): 62–75.*

A. Alasia and R. Bollman, 2009. The Importance of Rural Labor Market. *Journal of Rural Studies 25 (2009) 12–24*

D. Anderson and M. W. Leiserson, 1980. Rural Nonfarm Employment in Developing Countries. *Economic Development and Cultural Change 28, no. 1 (1980): 227-248.*

Anh Dang, S. Goldstein, and J. Mcnally 1997. Internal Migration and Development in Vietnam. *International Migration Review 31(2):312 · June 1997.*

A. C. Armengol, 2004, Job Contact Networks. *Journal of Economic Theory 115 (2004) 191–206.*

O. Attanasio, C. Meghir and M. Vera-Hernandez, 2007. Investigating Different Benefits of Workfare Programs. Working Paper. Paper presented at Second IZA/ World Bank Conference on Employment and Development. Bonn, June 8-9.

C. B. Barret, T. Reardon, and P. Webb, 2001. Non-Farm Income Diversification and Household Livelihood Strategies in Rural Africa: Concepts, Dynamics, and Policy Options. *Food Policy 26 (2001) 315–331*

C. F. Baum, 2013. Propensity Score Matching: Regression Discontinuity Limited Dependent Variables. EC 823: Applied Econometrics, Boston College, Spring 2013.

G. S. Becker, 1975. Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education. University of Chicago press, 2009.

Bernan Press, 2008, Employment, Hours, and Earnings (Third Edition). Edited by M. M. Ryan. http://www.eymundsson.is/nanar/?productid=442caad0-b88a-4596-8082-fb751dae51e6.

T. Besley and R. Burgess, 2004. Can Labor Regulation Hinder Economic Performance? Evidence from India. *The Quarterly Journal of Economics (2004) 119 (1): 91-134.doi:10.1162/003355304772839533.*

G. Betcherman and R. Islam, 2001. "East Asian labor markets and the economic crisis: An overview", in Betcherman, G. et al. 2001, pp. 3-41.

Ö. Bilgili, 2015. Evaluating Impact: Lessons Learned from Robust Evaluations of Labour Market Integration Policies. Working Paper, project "Integration Policies: Who benefits? The development and use of indicators in integration debates". http://mipex.eu/sites/default/files/downloads/files/mipex_evaluating-impact-lessons-learned-from-robust-evaluations-of-labour-market-integration-policies.pdf

H. Bleakley and J. C. Fuhrer, 1997. Shifts in the Beveridge Curve, Job Matching, and Labor Market Dynamics. *New England Economic Review 28, 3-19.*

U. Blien, Phan Thi Hong Van, 2015. The Interaction between Culture and Economy in Vietnam. *Labor market and industrial relations in Vietnam, Baden-Baden: Nomos, S. 23-58.*

U. Blien and Phan Thi Hong Van, 2015. Vietnam: Geography and Socioeconomic Background of Further Analyses. *Labor market and industrial relations in Vietnam, Baden-Baden: Nomos, S. 109-142.*

Blundell and Costas-Dias, 2000. Evaluation Methods for Non-Experimental Data. *The Journal of Applied Public Economics. Volume 21, Issue 4, Pp. 427–468, December 2000.*

R. D. Bollman and N. Rothwell (editors), 2010. Rural and Small Town Canada Analysis Bulletin 2010, *ISSN 1481-0964 (ISBN 978-1-100-13352-2).*

J. Bound, D. A. Jaeger, and R. M. Baker, 1995. Problems With Instrumental Variables Estimation When the Correlation Between the Instruments and the Endogenous Explanatory Variable Is Weak. http://www.djaeger.org/research/pubs/jasav90n430.pdf

E. A. W. Boxman *et al*, 1991. The Impact of Social and Human Capital on the Income Attainment of Dutch Managers. *Social Networks, 13(1), 51-73.*

T. Bredgaard et al, 2011a. Dansk arbejdsmarkedspolitik, Copenhagen: Jurist- og Økonomforbundets forlag. http://www.boghandleren.dk/productsamples/9788757494983.pdf

T. Bredgaard et al, 2013. Evaluating What Works for Whom in Employment Services. Working Paper, International conference on Public Policy (ICPP) 26-28 June 2013 Grenoble, France.

J. Brünjes, 2012. Nonfarm Wage Labour and Entrepreneurship in Rural Vietnam. *Ph.D. Dissertation. ISBN 978-3-86376-027-4.*

Bryceson, D. 1999a. "African rural labor income diversification and livelihood approaches. A long-term development perspective". *Review of African Political Economy*, 80: 171-89.

G. Buchenrieder and J. Möllers, 2006, a Synthesis of Theoretical Concepts for Analysing Non-Farm Rural Employment. *Journal of International Agriculture 44(25475).*

M. Caliendo, 2005. Some Practical Guidance for the Implementation of Propensity Score Matching. *IZA Discussion Paper No. 1588.*

M. Caliendo et al, 2010, Social Network, Job Search Methods and Reservation Wages: Evidence for Germany. *IZA Discussion Paper No. 5165.*

D. Campbell and I. Ahmed, 2012: The Labour Market in Developing Countries. Working Paper.

D. Card, J. Kluve, and A. Weber, 2009. Active Labor Market Policy Evaluation- a Meta-Analysis. *IZA Discussion Paper No. 4002.*

G. Christensen and R. Lacroix, 1997. Competitiveness and Employment A Framework for Rural Development in Poland. WORLD BANK DISCUSSION PAPER NO. 383. http://documents.worldbank.org/curated/en/235511468763463844/pdf/multi-page.pdf.

E. Chuta and C. Liedholm, 1979. Rural Nonfarm Employment: A Review of the State of the Art. MSU Rural Development, Paper No. 4, 1979.

J. P. Cling, Nguyen Thi Thu Huyen, Nguyen, Huu Chi, Phan, Thi Ngoc Tram, Razafindrakoto, M. and Roubaud, F., 2010. The Informal Sector in Vietnam. A focus on Hanoi and Ho Chi Minh City. Hanoi: The Gioi Publisher.

J. S. Colleman, 1988. Social Capital in the Creation of Human Capital. The American Journal of Sociology, Vol. 94, Supplement: Organizations and Institutions: Sociological and Economic Approaches to the Analysis of Social Structure (1988), pp. S95-S120. Published by: The University of Chicago Press.

Conference Board, 2011. https://www.conference-board.org/ilcprogram/.

A. F. Coburn, 2007. Choosing Rural Definition: Implication for Health Policy. Working Paper. http://www.rupri.org/Forms/RuralDefinitionsBrief.pdf.

A. Crossman, 2006. Labor Market Concept. http://sociology.about.com/od/L_Index/g/Labor-Market.htm.

Dao Quang Vinh, 1997. Small and Medium Enterprises in Vietnam. Book published by the Socio-Labor Publishing House, Ha Noi, 2001.

S. K. Dary and N. Kuunibe, 2012, Participation in Rural Nonfarm Economic Activities in Ghana. *American International Journal of Contemporary Research, Vol. 2 No. 8; August 2012.*

J. Davis and D. Pearce, 2000. The Rural Non-farm Economy in Central and Eastern Europe. https://assets.publishing.service.gov.uk/media/57a08d86ed915d3cfd001aa0/dp0004.pdf.

J. Davis, 2001. Conceptual Issues in Analysing the Rural Nonfarm Economy in Transition Economies. *Natural Resources Institute Report No. 2635.*

J. Davis and D. I. Bezemer, 2004. The Development of the Rural Non-Farm Economy in Developing Countries and Transition Economies. Chatham, UK: Natural Resources Institute.

A. Deaton, 1997. The Analysis of Household Surveys: A Microeconomic Approach to Development Policy, Johns Hopkins University Press, Baltimore, MD.

Department For International Development-DFID (2002). Non-Farm Income in Rural Areas. https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/3173.pdf.

J. R. Diez, 1995, Systemtransformation in Vietnam: industrieller Strukturwandel und regionalwirtschaftliche Auswirkungen. *Hannoversche Geographische Arbeiten* 51 (1995).

P. B. Doeringer and M. J. Piore, 1971. Internal Labor Markets and Manpower Analysis. Lexington, Mass: Heath, 1971.

L. P. Doumer, 2013b. Intergenerational transmission of self-employed status in the informal sector: The constrained choice or better income prospects? Evidence from seven West-African countries. *Journal of African Economies, 22(1): 73-111.*

E. Duflo and R. Hanna, 2005. Monitoring Works: Getting Teachers to Come to School. Working Paper 11880. http://www.nber.org/papers/w11880.

Duong Ngoc Thanh and Nguyen Minh Hieu, 2014: the Actual situation of Rural Employment. *Scientific Journal of Can Tho University, January 2014.*

S. Efstratoglou-Todoulou, 1990. Pluriactivity in different socio-economic contexts: a test of the push-pull hypothesis in Greek farming. *Journal of rural studies, ISSN: 0745-0167.*

T. O. Fadaytomi and O. I. Oluranti, 2014. Determinants of Labor Force Participation in Nigeria: the Influence of Household Structure. *Journal of Economics and Development Studies, Vol. 2, No. 2, pp. 169-190.*

M. Fafchamp and A. Quisumbing, 1999. Human Capital, Productivity, and Labor Allocation in Rural Pakistan. *Journal of Human Resources*, *1999, vol. 34, issue 2, pages 369-406.*

M. Fafchamp and A. Quisumbing, 2003. Social Roles, Human Capital, and the Intrahousehold Division of Labor: Evidence from Pakistan. Oxford Economic Papers, 55.

M. Z. Faridi and A. B. Basit, 2011. Factors Determining Rural Labor Supply: A Micro Analysis. *Pakistan Economic and Social Review, Volume 49, No. 1 (Summer 2011), pp. 91-108.*

R. M. Fernandez *et al*, 2001. Social Capital at Work: Network and Employment at a Phone Center. *American Journal of Sociology, Volume 105, Issue 5, 1288-1356.*

G. S. Fields, M. Leibbrandt and J. Wakeford, 2000. "Key Labour Market Elasticities." Unpublished Report for the Department of Finance.

G. S. Fields, 2007. Labor Market Policy in Developing Countries: A Selective Review of the Literature and Needs for the Future. Working Papers. http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1082&context=working papers.

G. S. Fields, 2010. Labor Market Analysis for Developing Countries. Working Papers. http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1156&context=working papers.

T. Fisher, V. Mahajan and A. Sigha, 1997. The forgotten Sector, Intermediate Technology Publications, London. 274p.

Fitzenberger *et al*, 2001. The Gender Gap in Labor Market Participation and Employment: A Cohort Analysis for West Germany. *Journal of Population Economics 17(1):83-116.*

General Department of Vocational Training, 2015. Wrap-up Report on 1956's Scheme Implementation on Providing Vocational Training for Rural Laborers.

B. Gibson and B. Kelley, 1994. A Classical Theory of the Informal Sector. *The Manchester School, Volume LXII No 1, March 1994, 0025-2034, 81-96.*

T. Glauben, T. Herzfeld, and X. Wang, 2008. Labor market participation of Chinese agricultural household: Empirical evidence from Zhejiang province. Food Policy, *Science Direct, Volume 33, pp. 329-340.*

S. J. Goetz and A. Rupasingha, 2011. The Determinants of Rural Non-Farm Self-Employment: Insights from County-Level Data. Paper prepared for the Federal Reserve Bank Conference on Small Business and Entrepreneurship during an Economic Recovery, Board of Governors of the Federal Reserve System, Washington, DC, November 9-10, 2011.

A. Gordon, Ann, C. Craig and Catherine, 2001. Rural Non-Farm Activities and Poverty Alleviation in Sub-Saharan Africa. (NRI Policy Series 14). *Natural Resources Institute Policy Series. Natural Resources Institute, Chatham Maritime, Kent. ISBN 0-85954-533-4.*

M. Granovetter and C. Tilly. 1988. Inequality and Labor Processes. Pp. 175-221 in Neil Smelser, editor, *Handbook of Sociology.* Sage Publications. Stanford University.

M. Granovetter, 1995. The Economic Sociology of Firms and Entrepreneurs. Pp. 128-165 in Alejandro Portes, editor, *The Economic Sociology of Immigration: Essays in Networks, Ethnicity, and Entrepreneurship.* Russell Sage Foundation. Stanford University.

A. E. Green *et al*, 2011. Jobs Search Studies: Literature Review and Analysis of the Labor Force Survey. Department for Work and Pensions, Research Report No 726.

L. Grilli and C. Rampichini, 2011. Propensity Scores for the Estimation of Average Treatment Effects in Observational Studies. Working Paper. http://www.bristol.ac.uk/media-library/sites/cmm/migrated/documents/prop-scores.pdf.

D. Haggblade, P. Hazell and T. Reardon, 2002. Strategies for stimulating poverty-alleviating growth in the rural nonfarm economy in developing countries. EPTD Discussion Paper, No. 92, Rural Development Department, The World Bank, Washington, DC.

S. Haggblade, P. B.R. Hazell and T. Reardon, 2009. Transforming the Rural Nonfarm Economy: Opportunities and Threats in the Developing World, Baltimore, Johns Hopkins University Press, pp. 141-182.

J. R. Harris and M. P. Todaro, 1970. Migration, Unemployment and Development: A Two-Sector Analysis. https://assets.aeaweb.org/assets/production/journals/aer/top20/60.1.126-142.pdf.

P. B. Hazell and S. Haggblade, 1990. Rural-Urban Growth Linkages in India. Working Paper. Agriculture and Rural Development Department. The World Bank. May 1990. WPS-430.

J. J. Heckman, R. J. Lalonde and J. A. Smith, 1999. Handbook of Labor Economics. The Economics and Econometrics of Active Labor Market Programs (Chapter 31). Pp. 1865-2097. Published-1999.

R. Hernandez, T. Reardon, and Z. Guan, 2010. Rural Nonfarm Employment and Agricultural Mechanization and Diversification in Guatemala. Selected Paper prepared for presentation at the Agricultural & Applied Economics Association 2010 AAEA, CAES, & WAEA Joint Annual Meeting, Denver, Colorado, July 25-27, 2010. http://ageconsearch.umn.edu/bitstream/61686/2/11868.pdf.

J. Herrera and C. Torelli, 2013. Domestic Work and Employment in Africa: What Is the Trade-Off for Women? In Urban Labor Markets in Sub-Saharan Africa. Published: June 2013. World Bank. Pages: 221 – 249. http://dx.doi.org/10.1596/9780821397817_CH07.

P. Huber *et al*, 2002. Regional Labor Market Adjustments in the Accession Candidate Countries. Workpackage No. 1, Project Startup and Setting the Common Starting Point. The European Union.

P. Huber, 2006. Regional Labor Market Development in Transition. World Bank Policy Research Working Paper 3896.

Huber, P. (2007). Regional labor market developments in transition: A survey of the empirical literature. *The European Journal of Comparative Economics*, *4*(2), 263.

R. Hujer and M. Caliendo, 2000. Evaluation of Active Labor Market Policies- Methodological Concepts and Empirical Estimates. Discussion Paper No. 236.

R. Hujer, K. O. Maurer and M. Wellner, 1999. Estimating the Effect of Vocational Training on Unemployment Duration in West Germany - A Discrete Hazard Rate Model with Instrumental Variables, in Jahrbücher für Nationalölkonomie und Statistik, Vol. 218, No. 1.

J. Huovary, A. Kangasharju, and A. Alanen, 2001. Constructing An Index for Regional Competitiveness. Working Paper No. 44, June 2001. Pellervo Economic Research Institute.
http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.200.737&rep=rep1&type=pdf.

Hymer, S. and S. Reznick. "A Model of an Agrarian Economy with Non-agricultural Activities." *The American Economic Review 50 (1969): 493-506.*

ILO's concept on Labor Market Policies and Institutions. *http://www.ilo.org/empelm/areas/labour-market-policies-and-institutions/lang--en/index.htm.*

ILO's Hand Book on KILM. KILM 1. Labour Force Participation Rate. http://www.ilo.org/global/statistics-and-databases/research-and-databases/kilm/WCMS_422090/lang--en/index.htm.

ILO's Hand Book on KILM. KILM 3. Status in Employment. http://kilm.ilo.org/2015/download/kilm03EN.pdf.

ILO's Hand Book on KILM: KILM 8. Employment in the Informal Economy. http://www.ilo.org/global/statistics-and-databases/research-and-databases/kilm/WCMS_422437/lang--en/index.htm.

ILSSA, 2009, 2010, 2014. National Reports on Social-Employment Trends.

ILSSA, 2011. National Master Plan on Labor Market Development, pages 10-11.

ILSSA, 2013, 2014, 2015: Quarterly Updating Bulletins on Labor Market and Employment.

ILSSA and CIEM, 2002, 2004, 2006, 2008, 2012; 2014. Periodical Reports and Papers on the Household's Economic and Employment. Funded by the CIEM-DANIDA Research Project.

K. S. Imai, R. Gaiha and G. Thapa, 2015. *Does non-farm sector employment reduce rural poverty and vulnerability? Evidence from Vietnam and India. Journal of Asian Economics*, *36*(2), 47-61. DOI: 10.1016/j.asieco.2015.01.001. Publication link: 20ae4149-459b-4a7e-aafa-4843b72f6935.

E. G. Irwin *et al*, 2010. A Century of Research on Rural Development and Regional Issues. *American Journal of Agricultural Economics, Volume 92, Issue 2, PP. 52-553.*

Institute for Government, 2010. What Makes A 'Successful' Policy? Analysis of Political Studies Association. http://www.instituteforgovernment.org.uk/sites/default/files/PSA_survey_results.pdf.

Institut National De Santé Publique, 2012. A Framework for Analyzing Public Policies-Practical Guide. http://www.ncchpp.ca/docs/Guide_framework_analyzing_policies_En.pdf.

A. E. Isgut, 2002. Non-Farm Income and Employment in Rural Honduras: Accessing the Role of Location Factors. *Journal of Development Studies 40(3):59-86.*

J. Jalan and M. Ravallion, 1998. Determinants of Transient and Chronic Poverty: Evidence from Rural China. Policy Research Working Papers. Published June 1998. http://dx.doi.org/10.1596/1813-9450-1936.

A. Janvry, E. Sadoulet, and N. Zhu, 2005. The Role of Non-Farm Incomes in Reducing Rural Poverty and Inequality in China. Working Paper. http://are.berkeley.edu/~esadoulet/papers/RNF-Nong.pdf.

T. A. Johannes and N. Tonda, 2011. Understanding the Role of Labour Markets and Employment within the Growth-Poverty-Inequality Linkages in Cameroon. Working Paper under the Collaborative Research Project on Understanding the Links between Growth and Poverty in Africa.

http://www.gdn.int/admin/uploads/editor/files/2013Conf_Papers/TabiAtemnkkngJohanne s_Paper.pdf.

V. Junge, J. R. Diez and L. Schätzl, 2015. Determinants and Consequences of Internal Return Migration in Thailand and Vietnam. *World Development, Volume 71, July 2015, Pages 94–106.*

R. Kanbur and X. Zhang, 2005. Fifty Years of Regional Inequality in China: A Journey through Central Planning, Reform, and Openness. *Review of Development Economics, 9, 1: 87– 106, 2005.*

Karta Graphic Publishing House, Romania, 2011. The Role of Labour Markets and Human Capital in the Unstable Environment. ISBN 978-606-8312-46-0.

K. Kerem and M. Randveer, 2008. Assessment of the Estonian Labor Market Development. *International Business & Economics Research Journal – February 2008 Volume 7, Number 2.*

M. Khamis, 2009. A Note on Informality in the Labor Market. IZA Discussion Paper No. 4676, 2009.

M. A. Khan, 2005. Patterns of Rural Non-Farm Activities and Household Access to Informal Economy in Northwest Pakistan. Discussion Paper Nr 42, Institute of Rural Development, University of Goettingen.

S. R. Khandker, G. B. Koolwal and H. A. Samad, 2010. Handbook on Impact Evaluation. Quantitative Methods and Practices. The World Bank. Washington, D. C.

J. Kim, 2010. Past and Future of the Labor Force in Emerging Asian Economies. ADB Economics Working Paper Series No. 218. September 2010.

M. Kitson, R. Martin and P. Tyler, 2004, Regional Competitiveness- An Elusive Yet Key Concept. *Regional Studies. Vol. 38.9, pp. 991-999, December 2(K) 4.*

Komives, Kristin, Dale Whittington, and Xun Wu, 2001. *Infrastructure coverage and the poor: A global perspective*. Vol. 2551. World Bank Publications, 2001.

A. Kundu *et al*, 2003. Rural Non-farm Employment: an Analysis of Rural-Urban Interdependencies. Working Paper 196, February 2003. Overseas Development Institute, 111 Westminster Bridge Road, London, UK.

S. Kuznets, 1955. Economic Growth and Income Inequality. *The American Economic Review, Volume XLV, March 1955, Number. 1.* https://assets.aeaweb.org/assets/production/journals/aer/top20/45.1.1-28.pdf.

T. Kurosaki, 2001. Effect of Human Capital on Farm and Nonfarm Productivity in Rural Pakistan.http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.202.7744&rep=rep1 &type=pdf.

M. Kuiper, G. Meijerink and D. Eaton, 2006. Rural Livelihoods Interplay between Farm Activities, Nonfarm Activities, and Resource Base. Contributed paper prepared for presentation at the International Association of Agricultural Economists Conference, Gold Coast, Australia, August 12-18, 2006.

L. O. Lanjouw and P. Lanjouv, 1997. The Construction of Poverty Lines: Methods and Assumptions, Mimeo, Yale University.

L. O. Lanjouv and P. Lanjouv, 2001. The Rural Nonfarm Sector: Issues and Evidence from Developing Countries. *Agricultural Economics 26 (2001) 1–23.*

P. Lanjouw and G. Feder, 2001. *Rural non-farm activities and rural development: From experience towards strategy*. World Bank Rural Development Family, 2001.

P. Lanjouw and A. Shariff, 2004. Rural Nonfarm Employment in India: Access, Incomes, and Poverty Impact. *Economic and Political Weekly, Vol 39, No 40, October 02, 2004*.

H. Lehmann and J. Kluve, 2008. Assessing Active Labor Market Policies in Transition Economies. Working Paper. https://ideas.repec.org/p/bol/bodewp/646.html.

H. Lehmann and A. Muravyev, 2009. How Important Are Labor Market Institutions for Labor Market Performance in Transition Countries? IZA Discussion Paper No. 4673, December 2009.

W. A. Lewis, 1954. Economic Development with Unlimited Supplies of Labour. The Manchester School. Volume 22, Issue 2, May 1954, Pages 139–191.

C. Liedholm, 1973. Research on Employment in the Rural Non-Farm Sector in Africa. Working Paper. http://pdf.usaid.gov/pdf_docs/PNAAA359.pdf.

M. Linde-Rahr, 2001. Rural Shadow Wages, Labor Supply and Agricultural Production under Imperfect Market: Evidence from Vietnam. Selected Paper, Americal Agricultural Economics Association Annual Meeting, Chicago, IL, August 5-8, 2001.

L. D. Loury, 2006. Some Contacts Are More Equal than Others: Informal Networks, Job Tenure, and Wages. *Journal of Labor Economics, Vol. 24, No. 2 (April 2006), pp. 299-318.*

R. Lupton, T. Burchardt, J. Hills, K. Stewart and P. Vizard, 2013. A Framework for Analysing the Effects of Social Policy. London: CASE, LSE, 2013. (Social Policy in a Cold Climate Research Note).

Luu Duc Khai et al, 2012. Non-farm Income, Diversification, and Welfare: Evidence from Rural Vietnam. Working Paper. http://www.ciem.org.vn/Portals/1/CIEM/IndepthStudy/VARHS12_diversification_welfare_final.pdf.

Luu Quang Tuan and Nguyen Trung Hung, 2008. Assessment of the current situation of the SMEs in the Industrial Zones. Working Paper.

Mac Van Tien, 2009. Theoretical and Empirical Basis for Enhancing the Embeddedness between Vocational Training and Labor Demand. The Ministerial Research Project coded CT 2009- 01. MOLISA, 2009.

Mai Ngoc Cuong, 2013. Social Policies for the Rural-Urban Migrants. Working Paper.

P. V. Marsden and E. H. Gorman, 2001. Social networks, Job changes and recruitment." Pp. 467- 502 in I. Berg and A. L. Kalleberg (Eds.), Sourcebook of Labor Markets: Evolving Structures and Processes. New York: Plenum Press.

K. Mausch, 2010. Poverty, Inequality, and the Non-Farm Economy: the Case of rural Vietnam. Published by Logos Verlag (1825), B01FELBSNM.

S. McDonal *et al*, 2012. Dual Embeddedness: Informal Job Matching and Labor Market Institution in the United State and Germany. Social Forces, Volume 91, Number 1, September 2012, pp. 75-97 (Article). Published by Oxford University Press.

J. K. Mduma and P. Wobst, 2004. Determinants of Rural Labor Market Participation in Tanzania. Working Paper under the Policy Analysis for Sustainable Agricultural Development (PASAD) Project at the University of Bonn, Germany.

P. R. Mecharla, 2002. Determinants of Inter-district Variations in Rural Non-Farm Employment in Andhra Pradesh: A District Level Analysis. PRUS Working Paper N0. 13, September 2002. https://www.sussex.ac.uk/webteam/gateway/file.php?name=wp13.pdf&site=260.

M. Meissner, 2012. Informal Sector and Informal Employment in Vietnam. Presentation at VASS, Institute of Labour Science and Social Affairs. http://www.humanrights-business.org/files/ppp_matthias_meissner.pdf.

L. P. Merlino, 2014. Formal and Informal Job Search. Working Paper. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.706.7273&rep=rep1&type=pdf

Ministry of Labor Invalids and Social Affairs, 2011, 2014, 2015. Statistical Figures.

J. D. Montgomery, 1991. Social Network and Labor Market Outcomes. *The American Economic Review, Vol. 81, No. 5 (Dec 1991), 1408-1418.*

J. Möller and M. Zierer, 2014. The Impacts of the German Autobahn Net on Regional Labor Market Performance: a Study Using Historical Instrument Variables. IZA DP No. 8593, October 2014.

D. T. Mortensen, 1986. Job Search and Labor Market Analysis. *Handbook of Labor Economics, Volume 1L.* http://www.tau.ac.il/~yashiv/mortensen1986.pdf.

D. T. Mortensen, 1999. New Developments in Models of Search in the Labor Market. *Handbook of Labor Economics, Volume 3, Part B, 1999, Pages 2567–2627.*

Mukhopadhyay, S. and Chee Peng Lira, 1985. "Rural Non-farm Activities in the Asian Region: An Overview." In the 'Rural Non-farm Sector in Asia'. Edited by Mukhopadhyay and Lim. Kuala Lumpur: Asian and Pacific Development Center.

W. Naud and Serumage-Zake, 2001. An analysis of the determinants of labor force participation and unemployment in South Africa's Northwest province. *Development Southern Africa, Volume 18(3).*

L. K. Njagi, 2012. The relationship between Social Capital and Employee Promotion. *International Journal of Business and Commerce Vol. 1, No.10: Jun 2012[01-13],*

Nguyen Huu Dzung and Dao Quang Vinh, 2003. Social Protection in Vietnam. Working Paper.

Nguyen Huu Dzung, 2005. Labor Market and Occupational Orientation for the Youth. The National Reseach Project. Published by the Labor-Socio Publishing House, Ha Noi, 2005.

Nguyen Huu Dzung, 2014. Improving the Effectiveness of the Labor Market and Employment Policies. Working Paper, 2014.

Nguyen Huu Dzung, 2015. Solutions on Labor Market Development in Vietnam. Working Paper, 2015.

Nguyen Khanh Duy et al, 2013. Investment in Human Capital and Labor Productivity in Southern Key Economic Zone: An Application of Propensity Score Matching Method. *Journal of Economic Development (JED) No.215 January 2013 | 61.*

Nguyen Manh Hai and Nguyen Trung Hung, 2009. Assessment of Labor Market Policies in Vietnam. Working Paper under the Social Protection and Wage Project funded by DANIDA.

Nguyen Xuan Thanh, 2006. Estimating the Benefit-Ratio of Education in Vietnam: the Application of the DID's Method. Research Paper, Fulbright Economics Teaching Program. http://www.fetp.edu.vn/cache/MPP04-522-R1002E-2012-11-14-15104731.PDF

Nguyen Thi Hai Van, 2007. Administrative Report on Employment Generation. MOLISA, 2007.

Nguyen Thi Lan Huong et al, 2010. Labour and Social Trends in Vietnam 2009/10. ILSSA, 2010.

Nguyen Trung Hung and Le Hong Thao, 2005. Assessing the Effectiveness of the Labor Market Infrastructure. Working Paper. ILSSA, 2005.

H. T. Oshima, 1984. The Significance of Off-farm Employment and Incomes in Post-war East Asian Growth. *Asian Development Bank Economic Staff Paper No. 21, 1984*.

N. R. Planas and J. Benus, 2006. Evaluating Active Labor Market Programs in Romania. Working Paper, May 2006 (last revised May 2007). http://digital.csic.es/bitstream/10261/1701/1/69907.pdf.

C. Pompa, 2013. Business engagement to promote quality vocational training in Vietnam. Working Paper, December 2013. https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8960.pdf.

C. C. Potter and J. Harries, 2006. The Determinants of Policy Effectiveness. *Bulletin of the World Health Organization*. 2006; 84 (11):843.

Prime-Ministerial Decision numbered 1956 and dated 27th, November 2009 on the Approvement of Vocational Training for Rural Laborers.

M. L. S. Puerta, 2010. Labor Market Policy Research for Developing Countries: Recent Examples from the Literature: What Do We Know and What Should We Know? SP Discussion Paper No. 1001, January 2010. http://siteresources.worldbank.org/SOCIALPROTECTION/Resources/SP-Discussion-papers/Labor-Market-DP/1001.pdf.

R. H.Oostendorp, Tran Quoc Trung and Nguyen Thanh Tung, 2008. Changing Role of Non-Farm Household Enterprises in Vietnam. *World Development, 37 (3), 632-644. doi: 10.1016/j.worlddev.2008.07.007*.

E. R. Oreggia, D. C. Medeiros and P. P. Parra-Diaz, 2014. Measuring a Territorial Labor Market Development Index. MPRA Paper No. 54439, posted 19. March 2014 07:39 UTC.

C. Oya, 2010, Rural Inequality, Wage Employment and Rural Labor Market Formation in Africa. Working Paper No. 97. Policy Integration Department, International Labour Office, Geneva. August 2010.

Pham Duc Chinh, 2005, Disciplinary Theories on Employment, Underemployment, and Labor Market. Working Paper.

Pham Minh Chinh et al, 2014. Vietnam Labor Market Policies: Actual Situation and Policy Implications. Working Paper in the National Research Project on Labor Market Policies.

Pham Thai Hung, 2006. Trade Liberalization and Rural Nonfarm Employment in Vietnam, 1993-2002. https://mpra.ub.uni-muenchen.de/6476/1/MPRA_paper_6476.pdf.

Pham Thai Hung, Bui Anh Tuan and Dao Le Thanh, 2010. Is Nonfarm Diversification A Way Out of Poverty for Rural Households? Evidence from Vietnam in 1993-2006. *Poverty and Economic Poverty- PMMA Working Paper 2010-17*.

Pham Thu Phuong, 2016. The Shaping of Women's Salaried Employment during Economic Reform in Vietnam. Ph.D. Dissertation. http://hhd.psu.edu/media/hdfs/files/PhuongPhamFA15.pdf.

V. D. Plessis, 2004. Trends in Non-Farm Self-Employment Activity for Rural Women 1981-2001. Research Paper. Catalog no. 21-601-MIE — No. 071. ISSN: 1707-0368. ISBN: 0-662-37775-3.

S. Pratap and E. Quintin, 2004. Are Labor Markets Segmented in Developing Countries? A Semiparametric Approach. *European Economic Review 50 (2006) 1817–1841.*

L. Putterman, 1992b. Dualism and Reform in China. *Economic Development and Cultural Change, 40: 467-93.*

G. Ranis, and Fei, J.C.H. (1961), "A Theory of Economic Development," American Economic Review, Vol. 51, pp. 533-565.

G. Ranis and Frances Stewart et al*, 1990. Linkages in developing economies: a Philippine study. San Francisco, California: International Center for Economic Growth ICS Press distributor.* ISBN 9781558150492.

D. B. Rahut *et al*, 2015. Rural Non-farm Employment, Income, and Inequality: Evidence from Bhutan. *Asian Development Review, September 2015, Vol. 32, No. 2, Pages 65-94.*

G. Ranis, 1993. Rural Non-agricultural Activities in Development: Theory and Application. *Journal of Development Economics, 40, (1), 75-101.*

T. Reardon, 1997. Using Evidence of Household Income Diversification to Inform Study of the Rural Nonfarm Labor Market in Africa. *World Development 25(5):735-747 · May 1997.*

T. Reardon et al 1999. "Global Change in Agrifood Grades and Standards: Agribusiness Strategic Responses in Developing Countries," International Food and Agribusiness Management Review, 2 (3/4): 421-435.

T. Reardon, C. Barrett, V. Kelly, and K. Savagado, 1999. Policy Reforms and Sustainable Agricultural Intensification in Africa. *Development Policy Review, Volume 17, Issue 4, December 1999, Pages 375–395.*

T. Reardon, 2001. Rural Non-Farm Income in Developing Countries. Working Paper (prepared for the FAO). http://siteresources.worldbank.org/DEC/Resources/ruralNonfarmIncomeinDevelopingCountries.pdf.

T. Reardon et al, 2001, Rural Non-Farm Employment and Incomes in Latin America: Overview and Policy Implications. *World Development, Vol. 29, No. 3, pp. 395-409, 2001.*

D. N. Reddy *et al*, 2014. Rural Non-Farm Employment and Rural Transformation in India. Working Paper Series No. 57. ICRISAT Research Program. Markets, Institutions, and Policies. http://vdsa.icrisat.ac.in/Include/reports/wps57.pdf.

C. Riddell, 1991. Evaluation of Manpower and Training Programmes: The North American Experience. In OECD, ed., Evaluating Labor Market and Social Programs. Paris: OECD. 43-72.

K. C. Samal, 1997a. Rural Non-Farm Activities in Specific Regions of Orissa. *Journal of Rural Development, 16(3), pp 457-464.*

K. C. Samal, 1997b. Features and Determinants of Rural Non-Farm Sector in India and Orissa. *Journal of Indian School of Political Economy, 9(1), pp 65-93.*

T. C. Sanchez, 1991. Rural Labor Market, Rural Nonfarm Enterprises and Agrarian Reform in the Philippines: A Review of Literature. Working Paper Series No. 91-17. http://dirp4.pids.gov.ph/ris/wp/pidswp9117.pdf.

G. Schmid, L. O'Reilly, and K. Schömann, 1997. International Handbook of Labour Market Policy and Evaluation, Cheltenham: Edward Elgar.

D. Schmid, 2011. The Rural Non-farm Sector in Thailand and Vietnam: Structure, Vulnerability and Institutional Environment. Ph.D. Dissertation at Department of Geography, Justus-Liebig University of Giessen. 2011.

T. W. Schultz, 1961. T. W. Investment in Human Capital. *American Economic Review, 51, 1-17.*

J. Shen, 2015, The Third Type of Job-Search Behavior: The Use of the Formal-Informal Joint Channel in Matching Individual Qualification with Hiring Requirements in Urban China. *The Journal of Chinese Sociology, 2015 2:3, DOI: 10.1186/s40711-015-0007-9.*

D. Smith, 2003. The Spatial Dimension of Access to the Rural NonFarm Economy. NRI Report No: 2673. March 2003. Chatham, UK: Natural Resources Institute.

J. Smith, 2000. Evaluating Active Labor Market Policies-Lessons from North America. Working Paper, Version of August 15, 2000.

H. Soininen, 2006, Empirical studies on Labor Market Matching. Publications of the Swedish School of Economics and Business Administration. No. 159. ISBN 951-555-916-2, ISSN 0424-7256.

H. H. Son, 2010. Human Capital Development. ADB Economics Working Paper Series, No. 225, October 2010. https://www.adb.org/sites/default/files/publication/28427/economics-wp225.pdf.

H. H. Son, 2012. On Measuring Human Capital: A Case Study of Viet Nam. ADB Economics Working Paper Series, No. 311, September 2012.

D. Staiger and J. H. Stock, 1997. Instrumental Variables Regression with Weak Instruments. *Econometrica,* Vol. 65, No. 3 (May 1997), pp. 557-586.

D. Start, 2001. The Rise and Fall of the Rural Non-Farm Economy: Poverty Impacts and Policy Options. *Development Policy Review, Volume 19, Issue 4, December 2001, Pages 491–505.*

E. A. Stuart, 2010. Matching Methods for Causal Inference: A review and A Look Forward. *A review journal of the Institute of Mathematical Statistics 25.1 (2010): 1.*

B. Su and A. Hesmahti, 2013. Analysis of the Determinants of Income and Income Gap between Urban and Rural China. IZA Discussion Paper No. 7162, January 2013.

F. Stewart and E. Ghani, 1991. How Significant Are Externalities for Development? *World Development, Volume 19, Issue 6, June 1991, pp. 569-594.*

R. S. Stukel, K. Deininger and S. Jin, 2006, Fostering Growth of the Rural Nonfarm Sector in Africa: The Case of Tanzania. Selected Paper prepared for presentation at the American Agricultural Economics Association Annual Meeting, Long Beach, California, July 23-26, 2006.

P. Taubman and M. L.Wachter, 1986, Segmented Labor Markets. Handbook of Labor Economics, Volume 2, 1986, Pages 1183–1217.

The Economic Times. Definition of 'Labour Market'. *http://economictimes.indiatimes.com/definition/labour-market.*

Tran Viet Tien, 2012. Employment Policies in Vietnam-The Actual Situation and the Orientation of Revision. Working Paper.

Vietnam's Central Communist Party, 2015. Summarizing Report on 30 years since DOI MOI, 2015.

Vietnam General Statistical Office, 2011, 2014, 2015. Statistical Figures. https://www.gso.gov.vn/Default.aspx?tabid=217.

Vietnam General Statistical Office, 2007-2014. Data collected from the Labor Force Surveys collected during the 2007-2014 period. https://www.gso.gov.vn/Default.aspx?tabid=217.

Vietnam Union of Science and Technology Associations (VUSTA), 2011. Research Report on Rural Labor Employment in Vietnam. Discussion Paper. http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-hanoi/documents/publication/wcms_171760.pdf.

P. Visaria and R. Basant, 1994. Non-Agricultural Employment in India-Trends and Prospects, Sage Publications, New Delhi.

V. D. Walle and D. J. Cratty, 2003. Is The Emerging Non-Farm Market Economy the Route out of Poverty in Vietnam. Policy Research Working Paper 2950, Development Research Group Public Services, WorldBank, Washington DC.

T. Wandschneider, 2003. Determinants of Access to Rural Non-farm Employment: Evidence from Africa, South Asia, and Transition economies. NRI Report No: 2758, March 2003.

D. Wang, Y. Du and F. Cai, 2002. Regional Disparity and Economic Growth in China: The Impact of Labor Market Distortions. *China Economic Review 13 (2002) 197 – 212.*

C. Wang, 2012. The Influence of Labor Market Development to Labor Relations in 21st and Measure of Labor Relations in China. Working Paper, ILERA 16th World Congress, July 2012.

M. Wachter, 1974. Primary and Secondary Labor Markets: A Critique of the Dual Approach." Brookings Papers on Economic Activity 3:637-80.

A. Weber and H. Mahringer, 2008. Choice and Success of Job Search Methods. *Empirical Economics, 2008, vol. 35, issue 1, pages 153-178.*

C. Werker and S. Athreye, 2005, Marshall's Disciple: Knowledge and Innovation Driving Economic Development and Growth. *Journal of Evolutionary Economics, 14(5), 505-23.*

S. Wiggins and P. Hazell, 2011. Access to Rural Non-farm Employment and Enterprise Development. Background Paper for the IFAD Rural Poverty Report 2011.

World Bank. 1998. *Vietnam: advancing rural development - from vision to action.* Washington, DC: World Bank. http://documents.worldbank.org/curated/en/728491468780601023/Vietnam-advancing-rural-development-from-vision-to-action.

World Bank. 2001. World Development Report 2000/2001: Attacking Poverty. World Development Report. New York: Oxford University Press. © World Bank. https://openknowledge.worldbank.org/handle/10986/11856 License: CC BY 3.0 IGO.

World Bank. 2006. *Vietnam - Food safety and agricultural health action plan.* Washington, DC: World Bank.

http://documents.worldbank.org/curated/en/398891468124788088/Vietnam-Food-safety-and-agricultural-health-action-plan.

World Bank (2007), From Red to Gray. Third Edition. Edited by M. Chawla et al. http://siteresources.worldbank.org/ECAEXT/Resources/publications/454763-1181939083693/full_report.pdf.

World Bank, 2008. World Development Report on Agriculture for Development. *ISBN-13: 978-0-8213-6807-7. ISSN: 0163-5085. eISBN-13: 978-0-8213-6809-1. DOI: 10.1596/978-0-8213-7233-3.*

F. Yamauchi *et al*, 2009. Spatial Networks, Labor Supply and Income Dynamics: Evidence from Indonesian Villages. Contributed paper prepared for the presentation at the International Association of Agricultural Economists Conference, Beijing, China, August, 16-22, 2009.

D. T. Yang and M. Y. An, 2002. Human Capital, Entrepreneurship, and Farm Household Earnings. *Journal of Development Economics 68(1):65-88 · February 2002.*

D. Yang and H. Zhou, 1999. Rural-Urban Disparity and Sectoral Labor Allocation in China-*Journal of Development Studies, 35(3): 113-137.*

J. Zuwarimwe and J Kirsten, 2011, Social Network and Social Learning among Small-Scale Rural Non-Farm Enterprises Development and Implication for Poverty Reduction among Rural Households in Zimbabwe. *Journal of Geography and Regional Planning Vol. 4(6), pp. 344-354, June 2011.*

Erklärung Zur Dissertation

Ich versichere, dass ich die von mir vorgelete Dissertation selbstständig angefertigt, die benutzten Quellen und Hilfsmittel vollständig angegeben und die Stellen der Arbeit-einschlißlich Tabellen, Karten und Abbildungen-, die anderen Werken im Wortlaut oder dem Sinn nach entnommen sind, in jedem Einzelfall als Entlehnung kenntlich gemacht habe; dass diese Dissertation noch keiner anderen Fakultät oder Universität zur Prüfung vorgelegen hat; dass sie-abgesehen von unten angegebenen Teilpublikationen-noch nicht veröffentlicht worden ist sowie, dass ich eine solche Veröffentlichung vor Abschluss des Promotionsverfahrens nicht vornehmen werde.

Die Bestimmingen dieser Promotionsordnung sind mir bekannt. Die von mir vorgelegte Dissertation ist von Professor. Doctor Javier Revilla Diez betreut worden.

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