

Livelihoods and Food Security of the Migrant Households in the rural community of the Lower-northeastern Region of Thailand

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ABSTRACT

The migrant household has considered as the marginal household that is facing with fluctuated socio-economic changes and climate change which challenges their livelihoods, especially the food security. This paper investigates factors influencing on food security among the migrant households in the rural community of lower-northeastern Thailand. Sequential mixed-method methodology was implemented in research design. A qualitative study was firstly applied to investigate community background and challenges in food security among the migrant households, and then followed by a quantitative study in order to examine factors influencing on food security among the migrant households. Sample group was 385 migrant households who lived in the provinces of Surin, Buriram, and Srisaket, and the samples were selected by multistage cluster sampling method. Interview schedule was implemented in data collection and data analysis was done by descriptive statistics and the path analysis. The results revealed the challenges in food security that the migrant households had been dealing with. The challenges included 1) limited land holding, 2) climate change, and 3) household labor shortage. Quantitative study presented the fairly poor level of food security among the migrant households (59.5 percent), and factors influenced on food security consisted of remittance, land holding, human capital, social capital, physical capital, natural capital, and household risk. Research implication was engaged as a guideline of improving quality of life of the migrant households, especially on food security which directly affected to rural households.

Keywords: food security, livelihoods, capital, the migrant household, and rural.

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INTRODUCTION

The economic and social development of Thailand in the past 50 years has resulted in the migration of people from the countryside into urban areas, where present a large number of jobs. The country's socio-economic development policies recently focus on industrial development and infrastructure development in urban areas, and it results in a large demand of workers. These have become factors that attract rural people, especially people from the northeastern region of Thailand, decided to work in urban areas in order to generate income to support the livelihoods of their households in rural areas. However, the migration of workers from the northeastern region has caused troubles to households in origin area. Many migrant households have been facing labor shortage (Démurger, 2015), lack of occupational skills, or dependent members, elderly and children, who were not labour forces in production activities (Scheffel and Zhang, 2014). These problems have resulted in migrant household in the origin area finding own ways to survive. Migration of the northeastern migrants has pushed their households to create livelihood strategies in order to be able to secure their lives. Conditions for ensuring the stability of livelihoods consists of various indicators, both at the micro level and the macro level (CARE, 2004). Lindenberg (2002) describes elements of livelihood security including economic security, health security, education security, food security, and community security (social security), while Phongsiri (2016) indicated the importance of political capital that the marginal group

used to create livelihood security in order to solve problems. However, to create livelihood security, the northeastern migrant households have had to consider elements of livelihood security in various dimensions especially livelihood security on foods which is a fundamental element that serve migrant households to survive amidst unforeseen economic and social conditions.

Food security has been a global issue that has received widely attention from countries over the world, since food is considered as an important livelihood factor for the household. Food security in the lower northeastern region of Thailand is an issue that needs to be considered intensively due to changes in food production sources. The production areas in the lower northeast region are the flat plain which is faced with flooding in the wet season and drought in the dry season. Quality of soil is fairly poor and cannot absorb water. In addition, many food production areas in the lower northeastern region are transforming into cash crops or economic crops plantation such as sugarcane, cassava, etc. The deterioration of natural resources or even climate change also results in a decreasing of food resources. These have caused a great impact on rural households in the lower northeastern region, especially among the migrant worker households who have more limitations of livelihoods than other northeastern household groups. Therefore, this study has questioned on how relationships between migration and livelihoods are that affect the food security of migrant worker households.

Livelihoods and Food Security of the Migrant Households in the rural community of the Lower-northeastern Region of Thailand

The objective of this paper is to examine factors that have influenced on food security of the migrant worker households in the rural community of the lower northeastern region.

Literature review

This study focuses on a link between livelihoods and food security in the Northeastern region of Thailand. Concepts that use for analysis are defined as follows.

Livelihood security

Livelihood security is a concept that is developed from interdisciplinary academic fields regarding the living of people such as economics, geography, rural development, education, etc. Livelihood security is developed based on a concept of livelihood (Chambers, 1991; DFID, 1999) which is a concept focusing on the creation of living ways to deal against the obstacles that hit people's daily life such as natural disaster, political risks, deterioration of natural resources, poverty, etc. (Chambers, 1992)

Definition of livelihood security has been created by scholars in various dimensions. Chambers and Conway (1991) suggest that livelihood security means the sufficiency of food and cash to meet basic needs of people. Livelihood security is also defined as sufficiency and sustainable accessibility to income and living resources that serve human needs such as food, drinking water, medical treatment, opportunities for education, housing, social relations, etc. Livelihood security can be created from a variety of activities not only the production activity, but also created from social activities that provide security to individuals or households, such as being a member of a community group, etc. Each household has different livelihood patterns depending on the ability to access livelihood resources of households and social positions in society (Drinkwater and McEwan, 1992). In summary, living security refers to a sustainable security of households or accessibility of living resources such as income social relationships, services provided by the government, etc.

Due to definition above, the studies on livelihood security tend to focus on the accessibility of livelihood capital of the household. A number of livelihood indicators have been developed based on livelihood capitals. CARE (2002) defines livelihood capital as following details. 1) Financial capital such as money, which is in forms of savings, credits, remittance, welfare, etc. 2) Human capital including skills and abilities that embedded in individuals or labor force. Human capital has also derived from health condition of individuals that affect individual's capacity, nutrition, education and training, and experiences that individuals use to improve productivity (World Bank, 2012). Social capital is a social resource such as membership of organization, social network, trust, community participation, etc. Physical capital is generally a form of infrastructure provided by community or the government such as roads, communication networks, machinery in industrial plants, etc. Physical capital is used in human production activities to create effectiveness in livelihood activity

(Goodwin, 2006), and 5) natural capital is in the form of natural resource that individuals used for living such as land, animals forest, water resources, and other natural resources (Aronson et al., 2007). This study adopted the concept of livelihoods as indicators including financial capital, human capital, social capital, physical capital, and natural capital in order to explain how these livelihood capitals affect food security of the migrant households.

Food security

Food security is a concept that has been developed since the 1970s. Food security has become a new human security issue that challenges countries over the world. Many countries are attempting to solve food security issue especially the developing countries where this problem is becoming more intense due to global risks such as global warming, energy crisis, deterioration of natural resource, etc. these issued have caused higher food price until population of the country are not able to access food resources (Sararuk and Saennam, 2014; Kaewsong, 2009).

Definition of food security has been developed dynamically under complex dimensions on food security in each period. However, FAO (1996) gave a definition of food security that "Food security, at the individual, household, national, regional and global levels (is achieved) when all people at all times, have physical and economic access to sufficient, safe and nutritious foods to meet their dietary needs and food preferences for an active healthy life" (Bashir and Schilizzi, 2013; Sustainable Agriculture Foundation, 2011).

The Food and Agriculture Organization of the United Nations (FAO) divides food security into 4 dimensions, including 1) the availability of foods which refers to domestic food production, food imports, any food aids from organizations, 2) accessibility of foods which refers to an individual's access to sufficient foods and nutrition. Resource, in additional, might refers to the ability of individuals to manage food materials under the legal, political regulation, or socio-economic context of the community (including traditional legitimacy such as a right to access community forest). 3) Utilization of foods which was evaluated through the sufficiency of foods, water supply, healthcare which relates to nutritional well-being. These physical needs have been related significantly to food security and other food security related factors, and 4) the stability of foods refers to individuals, households, or communities must access to sufficient foods at all times, and they do not get risks of food shortage caused by a sudden crisis such as economic crisis or climate change (Provasov, 2018; Prasertsak, 2013; Richardson, 2010). This study applied 4 dimensions of food security to the study as dependent factor.

In conclusion, to examine food security, conceptual framework has been developed based on concepts of livelihood security and food security. Three factor groups, household characteristics and migration, livelihood capitals, and household risks, are clarified as independent factors, while food security is dependent factor (figure 1).

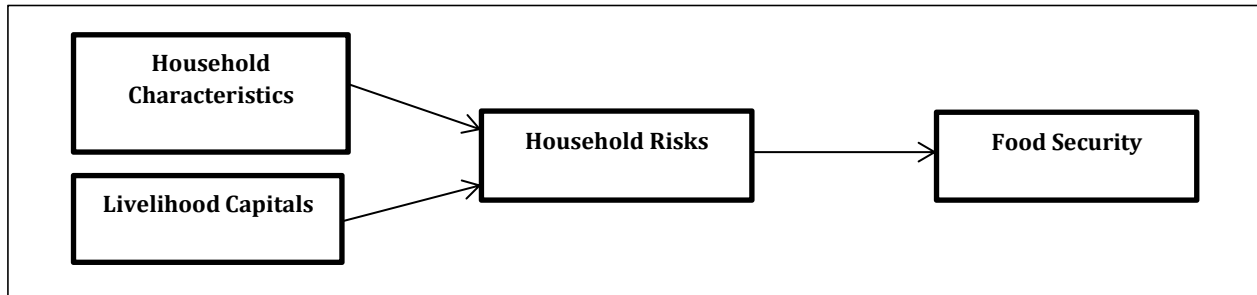


Figure 1 Conceptual Framework

Methodology

This paper employed a sequential mixed-method design in research methodology. Qualitative methodology was firstly introduced to explore the context of migrant community in rural northeastern Thailand, and then followed by a quantitative methodology to examine factors influenced on food security of ISAN migrant households. Qualitative methodology was applied to collect data from 20 migrant households in Surin Province. Inclusion criteria to select key informants were 1) households presented migrant members who had migrated for at least 1 year, and 2) households have live in the community at least for 5 years. A research instrument used to collect data was an observation and an interview guideline on community background and the livelihoods of the migrant households that affected

food security. Data collected, thus, was triangulated from multiple sources of data, and content analysis method was implemented in data analysis. Findings grounded from qualitative study then were modified as quantitative variables.

The research employed quantitative methodology in research design to examine factors influenced on food security of ISAN migrant households. To calculate sample size, sampling technique for unknown population (Cochran, 1977) was applied. The sample size of the study was 385 migrant households at the lower - northeast region of Thailand, where a large number of migrant households presented. Multistage cluster sampling was applied to select research sample in in the Provinces of Surin, Buriram, and Sri Saket (Figure 2).

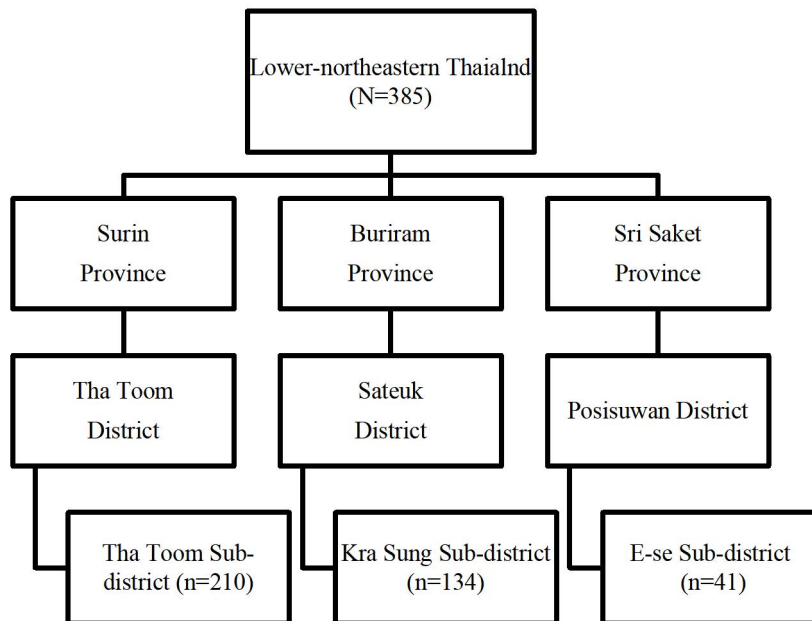


Figure 2. Multistage cluster sampling method to random sample of the study

Research tools used to collect primary data consisted of observation and interview schedule which covered 4 parts included 1) household characteristics, 2) household capitals, 3) household risks, and 4) livelihood security of the ISAN migrant households, which the food security was included in this part.

Questions in the interview schedule were deducted from the literatures on livelihoods and food security, and together with qualitative findings which were grounded through observation and pilot survey. Interview schedule, thus, was brought to test with 30 migrant households

who had similar characteristics to research sample, and interview schedule presented reliability at 0.804. Data collection was conducted during April 2018 and undertaken with representatives of the household.

Independent variables deducted from the literatures and the qualitative findings which covered 3 factors included 1) household characteristics and migration; number of household members, average age of household members, dependent household members, number of migrants, migration year, migration for helping economic household status (dummy variable), migration to work

Livelihoods and Food Security of the Migrant Households in the rural community of the Lower-northeastern Region of Thailand

with neighbors (dummy variable), frequency of remittance received, 2) livelihood capital; economic capital, human capital, social capital, physical capital, natural capital, and 3) household risk, and dependent variable was food security. All variables were measured at interval scale. Descriptive statistics was implemented in univariate analysis, while path analysis was implemented in multivariate analysis to examine factors influenced on food security of the ISAN migrant households in lower-northeastern Thailand.

Research results

Community background and characteristics of the migrant households at places of origin

Pring Village is an agriculture-based community located in Tha Toom District, Surin Province. Most households in the community are Khmer ethnic groups, and some are Thai and Lao ethnic groups who latter have settled community with trading business. Physical location around Pring village is covered by lowland where is suitable for agricultural activities such as rice farming and livestock. Location at the north of the village is close to Moon River, while at the west and the south of village close to the forest area. This geographical diversity has contributed a variety of agro-activity those who have lived in the north generally conducted fisheries and rice farming, while those who live in the south and the west conducted hunting activity in the forest. However, households in the village always have been facing with flooding in the wet season and drought in the dry season. They also held small lands so that they could not produce agro-products commercially. Most agro-productions have made for household consumption only.

Although the community is experiencing in floods and droughts, households still conduct rice farming. Locations around the village are considered as one of the best rice plantations in Thailand. More than 80 percent of households in community conducted rice farming, followed by vegetable gardening, livestock, and some households worked for government organizations. Rice farming in this area is generally made once a year during rainy season. Farmers used water from two water sources, which were rainwater and water from Huai Rawi pond. However, rain is a main water source because most households could not access the irrigation canal connected to Huai Rawi pond. Households here preferred to grow sticky rice for household consumption, while they were growing Jasmine rice commercially. However, the land holdings of people in Pring village was obstructed for livelihoods. Many households held small lands. More than 75.1 percent of households held lands less than 0.8 Hectares, and only 2.1 percent of households held lands more than 2.4 Hectares (Meekaew and Ayuwat, 2019, 2018). Therefore, households had to separate their lands into 2 farming patterns, which were one for household consumption, and another one for commercial purpose. This farm practice resulted in the households were unable to generate sufficient income for living.

The majority of households relied on agro-based activity and many of them owned small land. These conditions caused low annual income to the households. Households generated annual income as USD 5,616 per household (Meekaew, 2019). This was lower than the threshold of poor households surveyed by the Department of Community Development, which was USD 6,250 per year. In addition, over 85.2 percent of the households had

lower income than a Thailand poverty line at household level. Insufficient income inevitably affected household's living conditions, so some households had to seek optional ways to secure economic status of the household (Narongchai, Ayuwat and Chinnasri, 2016).

Low production yield and lack of occupational support from the government pushed households to make a decision to send their household members to work in major cities. Some worked in major cities such as Bangkok, Rayong, and Chon Buri. Many migrants worked in construction and manufacturing works, while some decided to work in fisheries because it was a booming industry at that time, and it produced satisfactory income to migrants.

Food security and its utilization of the migrant household

Due to living troubles that occurred to the migrant households such as flooding or small land ownership, it inevitably caused household members facing with the risk of living, included food insecurity. However, migrant households attempted to create their choices of making food security for themselves through the usage of natural resources that facilitated households to food security. Details are as follows.

Utilization of water resources; the water resources are an important factor related to food security of households as well as the migrant households, that most of the households are farmer households. Although the geographical conditions in the community were suitable for farming, households had encountered problems of water usage. Migrant households were able to use rainwater for farming, while the irrigation system in the community was limited. So, they did rice farming only once a year. Due to limited water usage, migrant households thus preferred growing rice for household consumption rather than commercial purposes. In addition, migrant households were struggling with the use of water for consumption within the household. They used groundwater which had problem regarding the slow flow. To solve the problem, some households had to buy water from stores for drinking and cooking. This caused the household to deal with expenses hardly.

Utilization of forest resources; the forest is widely known as the easiest food source for human. As well as in Pring village, migrant households used benefits from the community forest in the west of the community, where the forest was still richful with wild animals and eatable wild vegetables. Migrant households normally looked for forest products such as mushrooms, wild animals such as wild fowl and squirrels for, and herbs for foods and drugs consumed within the household. Moreover, some households had small vegetable plots at home. This caused less expenses on foods of the household. Migrant households were aware of the benefit of forest resources. They used benefits from the forest as much as they need for consumption without exploitation of forests. These reflected the coexistence of forests and communities which contribute security on foods to households.

According to the utilization of natural resources for food security above, the utilization of natural resources can be analyzed based on a concept of capital. The utilization of those natural resources relates to the ability to manage natural capital and physical capital within the community such as irrigation canal systems in farm activity and using small machine to find out wild products. The consistent relationship between natural capital and physical capital

Livelihoods and Food Security of the Migrant Households in the rural community of the Lower-northeastern Region of Thailand

causes the creation of food-based livelihood strategy of the households. Therefore, it can be said that both natural and physical capital play an important role in securing foods for migrant households.

Characteristics of the migrant household and capital utilization of the migrant household

The majority of migrant households presented 3 household members living in the origin area (38.7 percent), and their average age of household members was between 36-45 years old (39.0 percent). 80.2 percent of migrant households did not present the dependent household member. Regarding the characteristics of migrants, migrant households had 1 member who migrated to work outside community (92.5 percent), and migrants have worked outside community for 4-6 years. Most migrants (37.4 percent) have migrated to work because they wanted to improve the household economic status. 86.8 percent of migrants migrated to work with relatives or neighbors. These migration stakeholders were considered as a crucial social network that encouraged migration decision of the migrants. In addition, it was noted that most households (77.9 percent) received a remittance from their migrant members in monthly basis.

Analysis of the utilization of livelihood capital among the migrant households in rural community found that most migrant households had a medium level of livelihood capital utilization (63.1 percent). Considering livelihood capital by dimension, financial capital (61.8 percent) and human capital (76.9 percent) were utilized in their livelihoods at a medium level. Utilization of social capital was found at a medium level (79.0 percent), and physical capital was presented at a medium level (54.0 percent). However, it was noticed that the utilization of natural capital was found at a low level (47.3 percent) because location around Pring village was facing with a climate issue. Although the location was considered as the best location for the jasmine rice growing, location of Pring village was facing with climate problem. In the dry season, the surrounding location was characterized by drought and salty soil condition, while the location was facing with floods in the wet season. This resulted in low agricultural productivity and a loss of natural resources such as vegetables and wild animals.

Food security of the northeastern migrant worker households

The results found that the majority of the northeastern migrant worker households had food security at a fairly low level (59.5 percent), while 18.4 percent of the migrant households with a fairly high level of food security was observed. Analyzing food security by dimensions, it was found that the migrant households had food security on the availability of foods at a fairly low level (59.0 percent), and they had food security on accessibility of foods at a fairly low level (71.4 percent). This result is in line with the limitation in the land ownership among the migrant households. Moreover, it is the fact that the migrant households are unable to gain sufficient income to buy foods or other consuming products. A decrease in household income greatly affects household basic needs in both food providing and public health services (Piaseu and Mitchell, 2004)

In addition, the migrant households had food security on utilization of foods at a fairly low level (63.1 percent),

and they had food security on stability of foods at a fairly low level (70.6 percent), respectively. It was noticed that the migrant households had utility of foods at a low level (15.6 percent) in which the results reflected limitations on access to community infrastructure such as access to water consumption from irrigation canals, or access to fundamental health care services for a good nutrition of the migrant households. In addition, food stability was found at a fairly low level as much as 70. percent. This reflected the lack of food production capability due to the labor shortage in food production and poor quality of natural resources.

Factor influencing on food security among the northeastern migrant households

A path analysis was conducted to examine the factors which presented a direct effect on food security (*FOOD*) of migrant households at origin area, and the factors which presented an indirect effect on food security of migrant households in origin area through the household risk factor (*RISK*). The analysis found 8 variables that had a direct effect on food security, as follows:

Number of migrants (NUMIG) had a negative direct effect on food security among the migrant households ($b = 0.769$). When the migrant household had migrant member increased 1 person, the migrant households would have food security by 0.769 decreased.

Frequency of remittance received (REMIT) had a positive direct effect on food security among the migrant households ($b = 0.704$). When the migrant household received remittance increased 1 unit, the migrant households would have food security by 0.704 increased.

Land (LAND) had a positive direct effect on livelihood security among ISAN fishing migrant households at their places of origin ($b = 0.019$). When the migrant household had land, every 1 Rai unit would increase food security by 0.019.

Human capital (HUCAP) had a positive direct effect on food security among the migrant households ($b = 0.126$). When human capital among the migrant households increased, each unit would increase food security by 0.126.

Social capital (SOCAP) had a positive direct effect on food security among the migrant households ($b = 0.050$). When social capital among the migrant households increased, each unit increased food security among them by 0.050.

Physical capital (PHCAP) had a positive direct effect on food security among the migrant households ($\beta = 0.125$). When physical capital among the migrant households increased by 1 unit, the food security among them would increase by 0.125.

Natural capital (NACAP) had a positive direct effect on the food security among the migrant households ($\beta = 0.019$). When natural capital among the migrant households increased by 1 unit, food security among them was increased by 0.019.

Household risks (RISK) had a negative direct effect on food security among the migrant households ($\beta = -0.042$). When household risks among the migrant households increased by 1 unit, food security among them would decrease by 0.042.

Additionally, the explanatory variables accounted for 33.94 percent of the variance in explaining food security among the fishing migrant households ($R^2 = 0.3394$) (Table 1).

Livelihoods and Food Security of the Migrant Households in the rural community of the Lower-northeastern Region of Thailand

Table 1: An analysis of factors influencing on food security among the northeastern migrant households in places of origin

Variables	Livelihood Security		
	b	Beta	Sig.
Household characteristics and migration factor			
Number of household members (NUHM)	0.030	0.014	0.791
Dependent household members (DEPHM)	0.169	0.057	0.336
Average age of household members (AGHM)	-0.019	-0.089	0.116
Number of migrants (NUMIG)	-0.769	-0.111	0.019
Migrating year (MIGYR)	0.047	0.062	0.246
Migrating for helping economic household status (MIGRE)	-0.233	-0.041	0.383
Migrating to work with neighbors (MIGME)	-0.372	-0.059	0.184
Frequency of remittance received (REMIT)	0.704	0.152	0.001
Livelihood capital factor			
Lands (LAND)	0.019	0.046	0.533
Annual household income (INCM)	3.593	-0.116	0.146
Agriculture-based income (AGINC)	-5.577	0.075	0.319
Non-agriculture income (NOAGINC)	-1.448	-0.031	0.657
Savings (SAVI)	7.780	0.010	0.844
Debts (DEBT)	-2.152	-0.070	0.154
Agriculture equipment (AGEQ)	1.324	0.083	0.078
Household assets (ASSVL)	5.240	0.062	0.237
Human capital (HUCAP)	0.126	0.305	0.000
Social capital (SOCAP)	0.050	0.177	0.001
Physical capital (PHCAP)	0.125	0.167	0.001
Natural capital (NACAP)	0.019	0.034	0.001
Household risk factor (RISK) (Intervening variable)	-0.042	-0.135	0.004
R² = 0.3394			

The variables which influenced indirectly on food security among the ISAN migrant households, through household risks (the mediator factor), consisted of 6 variables that were 1) *migration year (MIGYR)* had a negative, indirect effect on food security among the ISAN migrant households, 2) migration for helping economic household status (*MIGRE*) had a negative, indirect effect on food security among the ISAN migrant households, 3) annual household income (*INCM*) had a negative indirect

effect on food security among the ISAN migrant households, 4) agriculture-based income (*AGINC*) had a positive indirect effect on food security among the ISAN migrant households, 5) non-agriculture income (*NOAGINC*) had a positive indirect effect on food security among the ISAN migrant households, and 6) household assets (*ASSVL*) had a negative indirect effect on food security among the ISAN migrant households (Table 2).

Table 2: The path coefficient of direct factors and indirect factors influencing on food security among ISAN migrant households

Variables	Direct Effect	Indirect Effect	Total Effect
Household characteristics and migration factor			
Number of migrants (NUMIG)	-0.111		-0.111
Migrating year (MIGYR)		-0.192	-0.192
Migration for helping economic household (MIGRE)		-0.109	-0.109
Frequency of remittance received (REMIT)	0.152		0.152
Livelihood capital factor			
Lands (LAND)	0.046		0.046
Annual household income (INCM)		-0.206	-0.206
Agriculture-based income (AGINC)		0.201	0.201
Non-agriculture income (NOAGINC)		0.217	0.217
Household assets (ASSVL)		-0.118	-0.118
human capital (HUCAP)	0.305		0.305
Social capital (SOCAP)	0.177		0.177
Physical capital (PHCAP)	0.167		0.167
Natural capital (NACAP)	0.034		0.034
Household risk factor (RISK) (Intervening variable)	-0.135		-0.135

Livelihoods and Food Security of the Migrant Households in the rural community of the Lower-northeastern Region of Thailand

According to Path analysis (Figure 3), Path model showed that Human capital has the highest influence on food security (Beta = 0.305) of fishing migrant households. This result reflected an importance of the development of human capacity. Development of human capacity was crucial to create a variety of living chance as same as food security. As confirmed by empirical studies such as Burchi and Muro (2012) who explored that food security is related to an individual's capacity development. It was in fact that households that experienced food insecurity would have low learning capacity among household members. For instance, a case of children, in case households experienced food insecurity, children of households were less likely to

receive sufficient food and lack of opportunities to study in educational institutions because they had to spend time helping households to produce foods. Another interesting finding is revealed, Food security is not only related to livelihood capital, but food security related to household risk. The migrant households who live without migrant member, who mostly is the household leader or the main labour force of the household, are at risk in livings due to the shortage of the labour force in producing rice or other food materials. An increasing of energy crop like sugarcane and cassava also reduce land for food-based cultivation (Ogbonna et al, 2013). This is a challenge for the migrant households to survive in such risky situations.

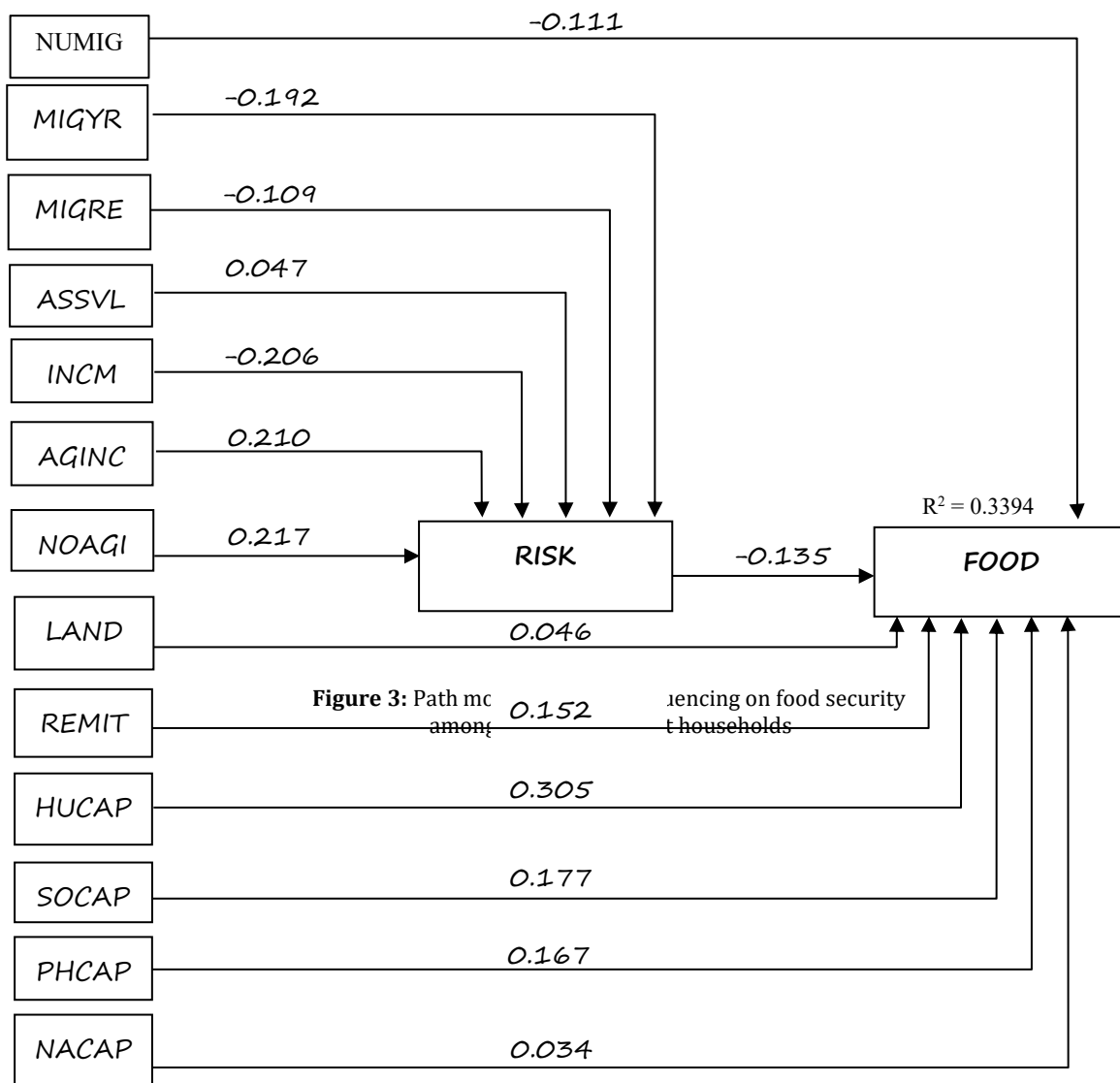


Figure 3: Path model showing the influence of various factors on food security among migrant households.

Conclusion and recommendation

The result found that food security of the migrant households is revealed with a fairly low level which reveals a limitation in accessing foods among the migrant households due to small land owning and insufficient household income. This result found dissimilarity from several studies on food security in Thailand which present the richness of food resources (Fakket et al, 2016; Sararuk and Saennam, 2014). Hence, different characteristics of households may be related to food

security especially households with specific characteristics like the migrant households. Factors that influence on food security of migrant households in the origin area consist of the number of migrants, frequency of remittance received, land, household asset, human capital, social capital, physical capital, natural capital, and household risk. Factors that influence directly on food security of migrant households in the origin area through household risk consist of migrating year, migration for helping economic

Livelihoods and Food Security of the Migrant Households in the rural community of the Lower-northeastern Region of Thailand

household, frequency of remittance received, annual household income, agriculture-based income, non-agriculture income, household asset, social capital, and natural capital.

Therefore, this research has made suggestions for fishing migrant households to use various livelihood capitals, including economic capital, human capital, social capital, physical capital, and natural capital, to create sustainable livelihood strategy. Additionally, livelihood capitals should be used with an integrated approach in order to strengthen the stability of the household. Relevant agencies should focus on a proper guideline to reduce risk of living, both at the community level and household risk. For example, making awareness of savings to households, promoting development of occupational skills, or providing knowledge on rights and welfare. So, households are able to apply these guidelines to avoid risks that may affect the security of the household.

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