

EFFECTS OF URBANIZATION ON PEOPLE'S LIVELIHOODS FROM THE ANGLE OF LIVELIHOOD VULNERABILITY: THE CASE OF THAI NGUYEN

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ABSTRACT

Urbanization is an inevitable development process of Vietnam in the context of deep and broad international economic integration like nowadays. Urbanization has directly affected different aspects of life such as economic development, social issues including inequality, employment, human resource quality and migration from rural to urban areas. Therefore, it is necessary to study the livelihood vulnerability of people due to impacts of urbanization, especially for localities with a rapid urbanization like Thai Nguyen province. The DFID sustainable livelihood analysis framework (1999) was chosen as the theoretical foundation for this research. Data used for the study were collected from a survey of 168 households affected by urbanization. With these collected data, the study calculates the adaptive capacity of each group of people's resources including physical resources, human resources, financial resources, social resources and natural resources. The author will then calculate the livelihood vulnerability of the people compared to the urbanization process. The research results show that the human resources and financial resources of households have the lowest adaptive capacity index among five resources. Based on that finding, the author proposes recommendations to improve the adaptive capacity of the people in the context of urbanization in Thai Nguyen province.

Keywords: Urbanization, resources, adaptive capacity, Thai Nguyen province.

1. Introduction

In recent years, Vietnam has experienced the process of urbanization with many achievements but also encountered many difficulties and challenges. Thai Nguyen province is no exception of this trend. According to Thai Nguyen Statistical Office in 2018, the economic growth rate in 2018 in Thai Nguyen province was 10.44%, the average income per capita was VND 77.7 million VND, about VND 19. 2 million higher than the national average.

One of the key engine of Thai Nguyen's economy is the foreign direct investment (FDI). There are currently 128 projects in the province with total registered investment capital of over USD 7.5 billion and disbursed capital of nearly USD 7 billion. Particularly, Thai Nguyen's industrial parks have created jobs for nearly 120,000 people, earning an average of VND 6.5 million per month.

Along with the socio-economic development, architectural planning and urban development are always paid a great attention by the Provincial People's Committee. Until now, the province's natural land area is covered with construction, from provincial planning to industrial urban areas and new rural commune planning. Based on construction planning, urban areas are thriving both in size and speed.

From 2018 to 2020 according to the urban development planning of Thai Nguyen province, the province has 17 urban centres including 1 grade-I urban centre, 1 grade-II urban centre, 1 grade-III urban centre, 4 urban areas of grade IV and 10 urban areas of grade V.

Table 1: Proportion of urbanization in provinces

Years	2000		2015		2030
Province, City	Proportion of urbanization	Rank in the Capital region	Proportion of urbanization	Rank in the Capital region	Proportion of urbanization
Ha Noi	34,5	1	48,8	1	56-70
Vinh Phuc	10,7	6	23,3	5	63-68
Bac Ninh	9,5	7	28,6	3	55-60

Hai Duong	14,1	4	24,1	4	55-60
Hung Yen	9,4	8	13,1	9	50-55
Ha Nam	8,0	10	15,5	8	43-48
Hoa Binh	13,8	5	15,5	8	43-48
Thai Nguyen	21,9	2	34,1	2	45-50
Bac Giang	8,2	9	11,4	10	40-45
Whole country	24,2		33,9		50

Source: Statistics Yearbook 2015 and Capital Region construction planning

The urbanization rate of different provinces in the region show that Thai Nguyen province has a high urbanization rate, ranking the second in the planning area till the year 2015 with the urbanization rate of 34.1%.

The process of urbanization has affected many aspects of life, and has positive effects on the economy such as raising income for people, creating more jobs. However, it also causes negative effects such as employment issues, environmental degradation. Therefore, it is necessary to study the effects of urbanization on people's livelihoods, and this research tries to apply the calculation of livelihood vulnerability of people in the case of Thai Nguyen province using the sustainable livelihood analysis framework of DFID (1999).

2. Overview of research

Vulnerability is used to determine the characteristics of a person or a group of people and their living conditions that affect their ability to cope, resist, and recover from the impact of the risk (Binh, 2011; Adger, 2006; Wisner et al, 2004; Adger et al, 2001). The vulnerability consists of three main components: expression, sensitivity and the capacity to respond to perils. When studying vulnerability, a sustainable livelihood analysis framework is used to establish adaptive capacity indicators under the influence of external factors. These indicators include the expression or influence and sensitivity of urban development (Vo Hong Tu, Nguyen Thuy Trang, 2012; Vo Hong Tu et al, 2015).

Several studies conducted in Vietnam have shown a mixed effect of urbanization on people's livelihoods, a part of the population not adapting to the new conditions, especially the elderly and the labourers. There are no qualifications or low levels ... In other words, the vulnerable context makes people face the difficulties of life and must choose a new livelihood strategy that is more appropriate to what real events (Nguyen Van Suu, 2009; Le Du Phong, 2007; Nguyen Quoc Nghi, 2012). Due to limited qualifications and skills, the adaptability of these people is not high. As the city changes in the direction of development, a large number of jobs will be created, but due to limited qualifications, self-exclusion occurs due to low competitiveness in the job, the implementation of non-supportive policies has made a relatively large part of labourers who are residents of land acquired for development of urban facilities unemployed or freelance workers. A part of this skilled, qualified and trained labour force able to adapt to this new environment can hold on and live well.

Some studies were conducted to analyze the effects of losing agricultural land due to the process of urbanization and industrialization and affecting the income of the people given by Tran Quang Tuyen et al (2014), Le Thi Yen, Pham Van Hung (2015). These findings show that, according to the views of Tran Quang Tuyen et al (2014), urbanization has had a positive effect when viewed from the perspective of microeconomic, losing agricultural land has a positive impact on people's income through receiving compensation and moving to a new livelihood strategy. However, when the process of industrialization took place, in views of Le Thi Yen, Pham Van Hung (2015), Nguyen Van Suu (2009), agricultural land acquisition has both positive and negative effects. People after land acquisition will receive compensation, if household receives compensation using reasonable amount of money, the household's income will change positively, but, if used improperly, after using up the compensation amount, it will have negative impact on people's income in the long term. Besides to the positive effects of industrialization and urbanization, there are also negative effects such as unemployment will occur with workers who do not meet the requirements, thereby negatively affecting their income.

This study tries to calculate the adaptive capacity and vulnerability of people due to the urbanization process in the case of Thai Nguyen.

3. Research Methodology

3.1. Data collection methods

The author uses a standardized questionnaire to collect information about household resources. The members surveyed are individuals/households affected by urbanization and can provide information about the resources of the households/their human resources as well as information on the impact of urbanization. The total observation survey sample is 196, after the data cleaning process, the total number of samples used for analysis was 168 samples.

3.2. Analytical Methods

Because these indicators are evaluated and measured on different scales so before calculating the adaptive capacity index (ACI), the criteria will be standardized and then calculated according to the average principle in accordance with the formula of Human Development Index (HDI) by Anand and Sen (1994). Specifically the formula is described as follows:

$$SI_i = (In_i - In_{min}) / (In_{max} - In_{min}) \quad (1)$$

Which:

SI_i : Indicators that are standardized according to criteria i

In_i : The average index of criteria i

In_{max} và In_{min} : The maximum and minimum indicators of criteria i

After each criteria has been standardized, all criteria of a capital source will be averaged to form the criteria of each resource (Human, society, material, financial and natural). The formula for calculating indicators of resources is as follows:

$$IC_j = \sum_1^i SI_i / i \quad (2)$$

Which:

IC_j : is the index of each resource, j has values from 1 to 5

SI_i : is the normalized values of each criteria

i : is the total criteria of resource

After calculating the index of each resource, adaptive capacity index (ACI) is calculated as follows. The ACI index will be weighted average according to the importance of each criteria to contribute to adaptive capacity. These weighted values are inherited from the study of Vo Hong Tu et al (2015). The adaptive capacity index is calculated by the following formula:

$$ACI = \sum_1^5 W_j \times IC_j / \sum W_j \quad (3)$$

where:

W_j : The weight of the j resource

IC_j : The index of each resource j

Learning from previous research, the weigh of specific resources to the financial resources and human resources is valued at 10, social and natural resources at 9 and physical resources at 8.

4. Research findings

Using the survey data collected, we first calculate the adaptive index of each group of resources, then calculate the general adaptive capacity of the people in the changing context (specifically may be the process of urbanization).

The scales used in the study are from the studies of Tran Quang Tuyen et al (2014), Le Thi Yen, Pham Van Hung (2015), Nguyen Van Suu (2009), Vo Hong Tu et al (2015) and DFID's sustainable livelihood analysis framework (1999). The results of resources are shown as follows:

*) For the group of physical resources

Table 2: Adaptive capacity indicators of physical resources

Physical resources	Transportation after urbanization	Clean water after urbanization	Percentage of reviews of the survey object on access to education is better when urbanization	Percentage of reviews of survey object on health care quality is better after urbanization	Percentage of evaluation of the survey object on environmental quality changes to negatively when urbanization
Real value	3,21	3,08	61,4	63,8	76,8
Min	1	1	0	0	0
Max	5	5	100	100	100
Normalized Adaptive index (SI _i)	0,55	0,52	0,614	0,638	0,768
IC index of physical resources			0,618		
Adaptive capacity index (ACI)			0,4944		

Source: Authors' calculations based on survey results

Physical resources are made up of different criteria, inheriting the research of Saumik Paul et al (2013), Le Thi Yen and Pham Van Hung (2015), Vo Hong Tu et al (2015) in this study, the criteria are selected by the author:

The quality of the transportation system in the process of urbanization, the author used the 5-level Likert scale to review the assessment of households with this traffic criteria. The result of the survey is that the average value for this criterion is 3,21, which the maximum value is 5, corresponding to the people who are very satisfied with the transportation system after urban development and the smallest value is 1 corresponding to the people are very dissatisfied. The average value shows that people assess the transport system before and after urban development is not much difference.

Clean water system after urban development, similar to the way to build the quality criteria of the transportation system, the survey results show that the average value of the criteria is 3,08. This is a low number compared to the author's expectation, after urban development, this figure is low compared to the expectations of the author because percentage of evaluation of the survey object on environmental quality changes to negatively when urban development, people have normal assessments with the water system here, this has also greatly affected the lives of people.

The scale of access to education, the author studies households' assessments of their access to education after urbanization, the author calculates the evaluation level of the survey respondents about the education system, the maximum value is 100% of households evaluate the education system better and the minimum is 0%, similarly for the access with the percentage of evaluation target of the surveyed people on the better health quality after urban development, with the medical quality criteria, the author encodes the data from 1 to 5 according to people's evaluation level from very bad to very good.

Quality of living environment after urbanization, the result returns 1 if the household assesses that it is affected and returns 0 if it is not affected in urban development. It is found that about 76,8% of households assessed that urbanization was affected.

Calculation results from criteria, adaptive capacity index after calculating the weight of physical resources is 0,4944.

*) *Human resources*

Inheriting the research of Saumik Paul et al. (2013), Le Thi Yen, Pham Van Hung (2015), Vo Hong Tu et al (2015), Tran Quang Tuyen et al (2014), the scales were selected when analyzing human resources as follows:

Table 3: Adaptive capacity indicators of human resources

Human resources	Number of family members	Age of labour average	Number of labours in the family	Average education level of resources	The number of jobs increased when urbanization	The number of direct workers in urban areas	Number of unemployed laborers during urbanization
Real value	3,28	38,5	2,16	13,08	1,26	1,02	0,81
Min	1	18	1	0	0	0	0
Max	6	50	3	15	3	2	2
Adaptive index is normalized (SI_i)	0,456	0,6406	0,58	0,872	0,42	0,51	0,405
IC index of human resources			0,5548				
Adaptive capacity index (ACI)			0,5548				

Source: Authors' calculations based on survey results

When considering human resources, the specific criteria for this resource are the number of family members, average age, number of family workers, education level, and number of jobs available. Besides, in urban development, the number of direct labour in urban areas and the number of unemployed labourers in the process of urbanization

In terms of the number of household members, the number of members that each household has is measured, the minimum value is 1 and the maximum value is 6, the average value returned for this criterion is based on the result of the survey are 3,28 members/household

The age criterion is measured by the specific age of the survey subjects, the average value of the household head age is 38,5, and this is the young age when considering the labour capacity of the survey subjects.

About the criteria for the number of labours in the family: The author only considered members of the labour force, not considering other objects in the family, the results calculated from the survey data returned an average of 2,16 employees/each household.

About the criteria for the number of jobs increased when urban development: The author measures the number of both direct and indirect jobs available when urbanization takes place, the average value returned from the data collected from survey results is 1,26. Meanwhile, the average number of unemployed labourers from data collected through the author's calculation process in urban development is 0,81 employees.

The adaptive capacity index calculated after taking into account the weight of human resources is 0,5548.

*) *Natural resources*

Inheriting the research of Le Thi Yen, Pham Van Hung (2015), Vo Hong Tu et al (2015), DFID (1999), the scales selected for analyzing natural resources are as follows:

Table 4: Adaptive capacity indicators of natural resources

Natural resources	The agricultural land area after urban development	The area of land is acquired by urban development.	Non-agricultural land area when urban development	The acquired land area due to urban development	Land position when urban development
Real value	2,56	2132,31	1065,2	1283,6	62,5
Min	1	0	50	0	0
Max	5	4351,2	3200	2160	100
Adaptive index is normalized (SI_i)	0,39	0,49	0,32	0,59	0,625
IC index of natural resources		0,48			
Adaptive capacity index (ACI)		0,43			

Source: Authors' calculations based on survey results

Criteria of natural resources include:

Criteria of quality of agricultural land: Considered based on the people's assessment of the quality of agricultural land after urban development, the evaluation of this indicator is similar to the indicator of transportation quality after urban development. The result from the survey data returns an average (actual value) of 2,56.

Criteria of agricultural land area: Measured by the actual agricultural land area of the surveyed object after land acquisition due to urbanization, unit is m². The real value of this criterion after calculation, the average agricultural land area is 2132,31m² / per household.

Criteria of non-agricultural land area, criterion of land area recovered due to urban development: This criterion is measured similar to the criterion of agricultural land area.

Criteria of land position: Measure the level of convenience of the land location of the surveyed entities for business activities when urbanization takes place. The result returns value 1 if the respondents think that they have favourable conditions for production and business activities from their current land location and vice versa is value 0. Calculation results show that the real value achieved is 62,5% of households think that their land location is more favourable when urbanization takes place.

The result of calculating the adaptive capacity index of natural resources is 0,43.

**) Social resources*

Inheriting research from Le Thi Yen, Pham Van Hung (2015), Vo Hong Tu et al (2015), DFID (1999) the scales selected for analyzing social resources are as follows:

Table 5: Adaptive capacity indicators of social resources

Social resources	Percentage rate of households participating in training courses	Percentage rate of human resources participating in social organization	Percentage rate of human resources received support from the government and local authorities
Real value	71,2	63,5	58,2
Min	0	0	0
Max	100	100	100
Adaptive index is normalized (SI_i)	0,712	0,635	0,582
IC index social resources			0,643
Adaptive capacity index (ACI)			0,5787

Source: Authors' calculations based on survey results

Percentage of households participating in training courses, the percentage of human resources participating in social organization and the percentage of human resources received support from the government and local authorities, are the expression criteria of social resources, these criteria are measured by answer the yes or no question of resources, if the answer is that the result is coded to calculate 1 and vice versa is 0.

Results calculated from survey data of the author, the adaptive capacity index of social resources is 0,5787 after taking into account the weight of resources.

*) *Financial resource*

Inheriting the research of Le Thi Yen, Pham Van Hung (2015), Vo Hong Tu et al (2015), Tran Quang Tuyen et al (2014), DFID (1999) the scales were selected when analyzing financial resources is as follows:

Table 6: Adaptive capacity indicators of financial resources

Financial resource	Non-agricultural investment	Cost of living	The amount is compensated	Average annual income	Percentage rate of members who loans from bank	Percentage rate of members have increase income after urban development
Real value	58,26	86,99	486,42	123,86	62,1	61,2
Min	0	12	0	0	0	0
Max	120	156	750	300	100	100
Adaptive index is normalized (SI_i)	0,49	0,52	0,65	0,41	0,621	0,612
IC index of financial resources			0,55			
Adaptive capacity index (ACI)			0,55			

Source: Authors' calculations based on survey results

The criteria of financial resources calculated by the author include:

Non-agricultural investment criteria: It is measured by the amount of non-agricultural investment amount of the survey subjects.

Criteria of cost of living: Measure the average cost of living of the subjects surveyed

Compensation criteria: This cost is the cost of compensation for households whose land is acquired for urbanization. Households without land acquisition, when coding the data to calculate, the data will return a value of 0

Criteria of income of survey subjects: Measure the total income of the surveyed subjects

Criteria of the percentage of survey members borrowing capital from banks and percentage of members whose income increases after urban development: This criterion is measured by members who have access to capital as well as members assessing whether or not the added income. Adaptive capacity index of financial resources after considering the weight of resources is about 0,55

From the calculation of own adaptive capacity of resources after taking into account the weight of resources, the adaptive capacity of the people due to the effects of the changing context: the urbanization process is: 0,52158. This indicator shows that people have initially adapted to the changes due to urbanization, however, the vulnerability to livelihoods remains relatively high (about 0.47842), this implies that measures should be taken to support people in the urbanization process, to help them adapt and develop new livelihood strategies more appropriately.

5. Recommendations

The research findings show that to improve the adaptive capacity or vulnerability mitigation of resources in the context of urbanization, some solutions are proposed as follows:

- + In the coming time, it is necessary to pay attention to improving the education level for young labourers and professional qualifications through vocational training for older labourers, too old to go to school to improve competitiveness and income.
- + Besides, needing more attention to vulnerable groups and impact of the development process or negative effects of urban development
- + Creating conditions for members to access support policies of the government such as credit policies, participation in training classes...
- + Providing information about jobs, services ... to human resources, thereby, planning for future work.

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