Current Multidimensional Poverty and Human Development Indices of Vietnam and a Number of Countries in Southeast Asia

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Abstract: According to the United Nations Development Programme's (UNDP) Annual Human Development Report and global multidimensional poverty data published by the Oxford Poverty and Human Development Initiative (OPHI) in recent years, Vietnam has made encouraging achievements in human development and multidimensional poverty reduction. However, there still remain limitations in comparison to other countries in the region. Based on the UNDP's Human Development Index (HDI) and OPHI's Multidimensional Poverty Index (MPI) data, this article seeks to analyse, compare and contrast the MPI and HDI indicators of Vietnam with those of a number of other countries in Southeast Asia[3] in order to clarify the trends of human development and reduction in multidimensional poverty in Vietnam compared to other countries in Southeast Asia in recent years.

Keywords: Multidimensional poverty index, human development index, Southeast Asia.

Subject classification: Sociology

1. Introduction

At present, the concept of human's role and poverty in development has changed[4]. Accordingly, the role of people and poverty can be analysed in an increasingly fuller and more comprehensive manner. Poverty is rated not only according to the economic dimension, but also many others. The UNDP Human Development Report is considered one of the most important factors in changing people's points of view and the assessment of people in terms of poverty. In its human development report, the UNDP has developed a set of indicators and methods of calculation for human development and multidimensional poverty of a particular country[5].

The HDI is calculated by the UNDP to assess the progress of each country towards the goal of human development. The HDI is based on the three dimensions of life

expectancy, education and income, and includes a series of indicators for calculation. In 2010, the method to calculate the HDI and the indicators was adjusted by the UNDP to suit development reality. Previously, the HDI was calculated by calculating the arithmetic mean of the three component dimensions of life expectancy, education and income. Since 2010, however, it is calculated by finding the dimensions' geometric mean. This change requires that people be taken care of in all the three dimensions, and if one dimension is limited it will reduce the ability to develop the people. Despite changes in the method of calculation and other indicators, the HDI is still calculated based on the three main dimensions of a healthy life (measured by life expectancy), knowledge (measured by the estimated years of schooling and the average years of schooling), and reasonable living conditions (measured by national income per capita).

The HDI is calculated as follows:

HDI = (Education$^{1/3}$ x Life Expectancy$^{1/3}$ x Income$^{1/3}$)

The values of the three dimensions run from 0 to 1, in which 0 shows a low level of human development and 1 represents a high level of human development.

In respect to multidimensional poverty, according to the UN, "poverty is a state in which a person lacks minimum capacity to effectively participate in social activities. Poverty means not having enough food and clothing, being unable to afford schooling, not having access to healthcare services, having no land for cultivation or jobs to support themselves, having no access to credit. It also means

poor people are unsafe and are excluded, have no rights nor power, are vulnerable to violence, live in risky conditions, and have no access to clean water and/or sanitation facilities" [5]. Therefore, poverty must be approached and evaluated in a multidimensional way and there exist various approaches to and methods of assessment of poverty from a multidimensional perspective. However, most of the studies and assessment of multidimensional poverty conducted by organisations and countries at present, including the UNDP and OPHI, employ the methodology of Alkire and Foster to measure multidimensional poverty [3].

The poverty assessment method of Alkire and Foster is considered comprehensive, as it not only assesses the general poverty rate, but also shows the depth and width of poverty. To assess multidimensional poverty, Alkire and Foster developed a method of measuring the MPI based on 10 indicators, developed from the three dimensions related to the HDI, namely health, education and living conditions. In detail, the health dimension is calculated based on two indicators: nutrition and child mortality; the education dimension is based on the two indicators of years of schooling and child school attendance; the dimension of living conditions is based on six indicators: cooking fuel, sanitation, water, electricity, floor and assets.

MPI is defined by the following formula [6]:

$$MPI = H \times A \qquad H = \frac{q}{n} \qquad A = \frac{\sum_1^q c}{qd}$$

Legend:

H: Rate of multidimensional poverty (headcount ratio)

A: Intensity of people's deprivation

q: Number of multidimensionally poor people

n: Total number of the population

d: Number of indicators input for calculation

c: Total poverty rate with weights

Household deprivation is calculated based on the ten component indicators. A score of 100% is the highest level of deprivation defined by the three (3) dimensions of health, education and living conditions equally (at 33.3% each). It means each of the three dimensions has a different value. As for education and health, each has two indicators; therefore, each indicator accounts for 33.3% ÷ 2 = 16.7%. Meanwhile, the living conditions dimension has six indicators, so each indicator is worth 33.3 ÷ 6 = 5.6%. From the values of those indicators, a household's deprivation rate, resulting from the sum of all the indicators, is used to define whether the household falls into multidimensional poverty or not. A household is defined as multidimensionally poor if the deprivation rate reaches 33.3% or higher.

On measuring multidimensional poverty, there are two concepts that need to be distinguished from each other, namely the multidimensional poverty index (MPI) and the multidimensional poverty rate (H - headcount ratio). While the multidimensional poverty rate (H) only reflects the rate of multidimensionally poor households of a country or community, the MPI, in addition to reflecting the multidimensional poverty rate, also shows the intensity of deprivation of multidimensionally poor people. The H rate takes the value from 0 to 100, while MPI value runs from 0 to 1; the higher the MPI rate, the greater the multidimensional poverty and vice versa [1].

In general, the UNDP's approach to the assessment of human development and multidimensional poverty has helped evaluate human development and poverty in a more comprehensive and humane manner.

2. Multidimensional poverty indices in a number of Southeast Asian countries

Multidimensional poverty indices in a number of Southeast Asian countries in 2011 and 2016

According to the OPHI, Vietnam's MPI in 2016 decreased by 65.5% (from 0.084 points to 0.029 points) compared with the figures in 2011. This is the largest decrease when compared to the six other countries in Southeast Asia (Thailand's figure stays unchanged; Timor-Leste's increased by 0.6%, from 0.358 points to 0.360 points; the Philippines' reduced by 18.8%, from 0.064 points to 0.052 points; Indonesia's decreased by 30.5%, from 0.095 points to 0.066 points; Cambodia's reduced by 44.5%, from 0.263 points to 0.146 points; and Laos' fell by 34.8%, from 0.267 points to 0.174 points). Among the seven countries in Southeast Asia, Vietnam's MPI is higher than Thailand's and lower than the other five countries: Cambodia, Indonesia, Laos, the Philippines, and Timor-Leste (Figure 1).

Figure 1: MPI of a Number of Countries in Southeast Asia in 2011 and 2016[6]
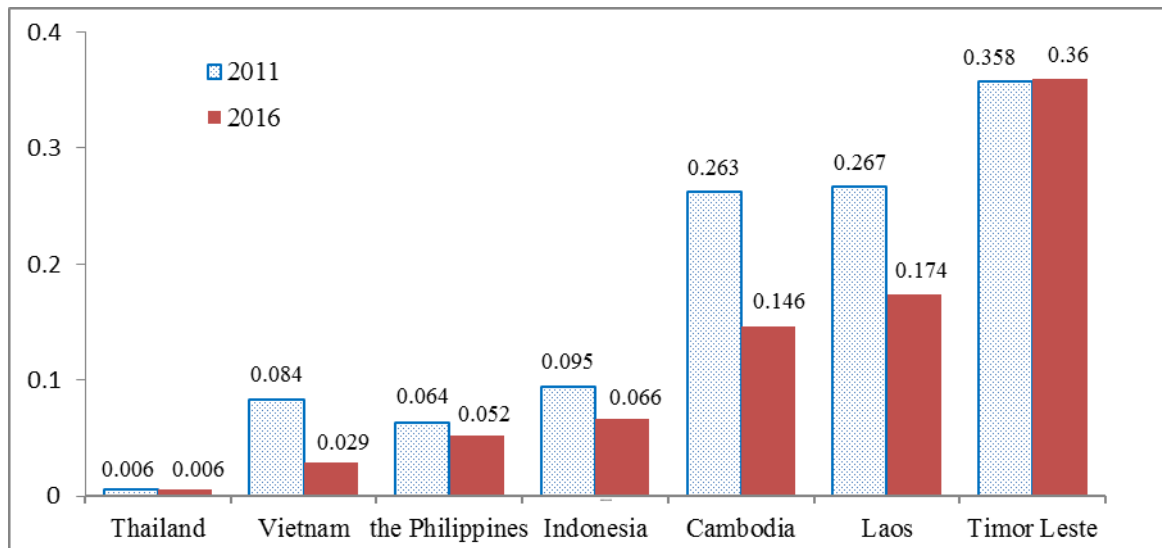
Source: OPHI (2011, 2016), *Global MPI 2011, 2016*.

Rate of poor households, intensity of deprivation and MPI rankings of a number of countries in Southeast Asia in 2016.

According to the MPI rankings by countries in 2016 released by the OPHI, Vietnam is in the low MPI group, not just in Southeast Asia. In 2016, Vietnam ranked 37th out of 102 countries with the multidimensional poverty rate of 7.1% and the intensity of deprivation rate of 40.7%. According to the rankings, among the seven countries in Southeast Asia, Thailand is the best, ranked 19th out of 102 countries. Meanwhile, Cambodia, Laos and Timor-Leste were ranked in the lower group (Cambodia 57th; Laos 62nd and Timor-Leste 86th out of 102 countries).

According to the multidimensional poverty data published by the OPHI in 2016, Thailand has the lowest multidimensionally poor household rate (1.6%), followed by Vietnam (7.1%), the Philippines (11.0%), Indonesia (15.5%), Cambodia (33.0%), Laos (34.1%), and Timor-Leste being the highest (68.1%). The multidimensionally poor household rates of these seven countries in Southeast Asia show that there exist large differences among them. To note, the difference between the country with the lowest rate (Thailand) and the country with the highest rate (Timor-Leste) is up to 40 times (1.6% compared to 68.1%).

Comparing Vietnam's multidimensional poverty rate with the six countries in the region, it can be seen that its rate is four times higher than that of Thailand and 1.5 times lower than that of the Philippines. Vietnam's multidimensional household rate is about nine times lower than that of Timor-Leste.

Table 1: Rate of Poor Households, Intensity of Deprivation and MPI Rankings of a
Number of Countries in Southeast Asia in 2016

Country	Poor household rate/Headcount ratio (H) %	Intensity of deprivation/rate of poverty (A) %	MPI by countries
Thailand	1.6	38.5	19/102
Vietnam	7.1	40.7	37/102
The Philippines	11.0	47.3	43/102
Indonesia	15.5	42.9	45/102
Cambodia	33.0	44.3	57/102
Laos	34.1	50.9	62/102
Timor-Leste	68.1	52.9	86/102

Source: OPHI (2016), *Global MPI 2016*.

Figure 2: Rates of Multidimensionally Poor Households and Income Poverty in Accordance
with National Standards of a Number of Countries in Southeast Asia in 2016 (%)
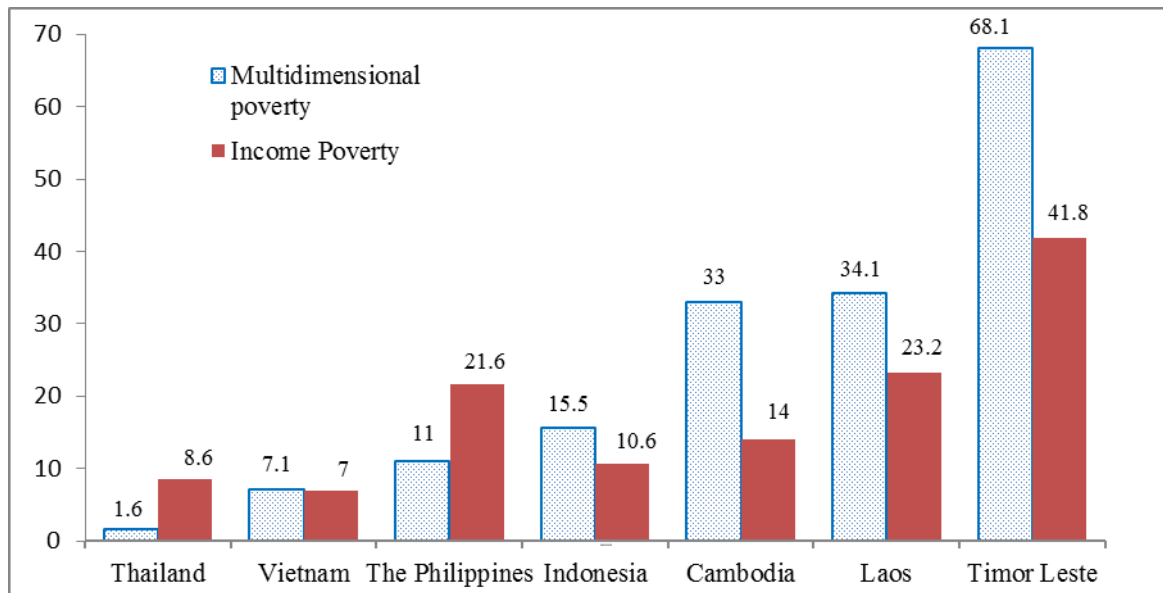
Source: OPHI (2016), *Global MPI 2016;* ADB (2018), *Basic Statistics 2018*.

Rates of poor households and income poverty under national standards of a number of countries in Southeast Asia in 2016.

The statistics in Figure 2 show a significant difference in the multidimensional poverty and income poverty rates of these

countries. Among the seven countries in Southeast Asia, except for Vietnam, where there is no significant difference, the rest experience differences between their multidimensional poverty and income poverty rates. Thailand and the Philippines are two countries where the multidimensional poverty rates are lower than their income poverty rates (the multidimensional poverty rate of Thailand is 5.4 times lower its income poverty rate; the Philippines, nearly two times lower). In contrast, Indonesia, Cambodia, Laos and Timor-Leste have multidimensional poverty rates higher than their income poverty rates (Cambodia 2.3 times higher; Timor-Leste 1.6 times; Indonesia and Laos nearly 1.5 times). This shows that, although Thailand and the Philippines still have high income poverty rates, the people in these countries have less difficulty in accessing social services and meeting their basic needs in daily life. Meanwhile, Cambodia, Indonesia, Laos and especially Timor-Leste not only have high income poverty rates, but many people of these countries also face difficulties in accessing social services and meeting their basic needs in daily life.

Rates of deprived multidimensionally poor households in a number of countries in Southeast Asia in 2016.

Table 2: Rates of Poor Households by Indicators of a Number of Countries in Southeast Asia in 2016 (%)

Indicators	Thailand	Vietnam	Philippines	Indonesia	Cambodia	Laos	Timor-Leste
Years of schooling	1.1	1.8	2.5	2.5	13.5	16.7	16.0
Rate of child schooling	0.4	1.2		2.5	10.4	16.0	30.0
Child mortality	0.7	5.1	8.8	12.1	9.9	19.7	23.4
Nutrition	0.5				16.3	12.0	43.5
Electricity	0.1	0.4	3.4	1.8	23.9	19.8	53.3
Sanitation	0.5	3.5	5.3	8.0	27.5	28.0	47.6
Water	0.5	1.5	1.6	6.1	19.4	16.6	35.7
Floor	0.3	1.3	1.9	2.3	3.7	7.3	51.2
Cooking fuel	1.2	5.0	9.2	9.6	32.1	34.1	67.6
Assets	0.5	0.9	4.3	4.1	6.5	13.9	54.2

Source: OPHI (2016), *Global MPI 2016.*

The rates of deprived multidimensionally poor households in the seven countries in the region show that Thailand and Vietnam are two countries with relatively low rates of deprivation in different indicators. Thailand has the highest rate of deprived

multidimensionally poor households with the indicator of cooking fuel, accounting for 1.2%. As for Vietnam, the highest rate of deprived multidimensionally poor households is with the indicators of child mortality and cooking fuel, accounting for about 5%. Meanwhile, Timor-Leste has the high rates of deprived multidimensionally poor households in most of the indicators. For Timor-Leste, in four out of ten indicators, the rates of deprived multidimensionally poor households reach more than 50%, of which three indicators are more than ten times higher than the rates of Vietnam (Table 2).

According to the OPHI's statistics of the deprivation rates in the indicators of the MPI of the seven countries in Southeast Asia in 2016, there are differences among these countries. Vietnam, the Philippines, Indonesia and Laos are four countries where the rates of child mortality are higher than the other indicators i.e. 60.7% in Indonesia, 58.1% in Vietnam, 56.3% in the Philippines and 18.9% in Laos. For Thailand, the highest rate of deprivation in the MPI is in the indicator of "years of schooling" (29.2%). For Cambodia and Timor-Leste, the nutrition indicator is the highest (18.5% and 20.1%). In general, considering the seven countries in the region, Vietnam is somewhat similar to the Philippines and Indonesia in terms of deprivation in indicators of the MPI (Figure 3).

Figure 3: Rates of Deprivation in Indicators of MPI of a Number of Countries in Southeast Asia in 2016[7]
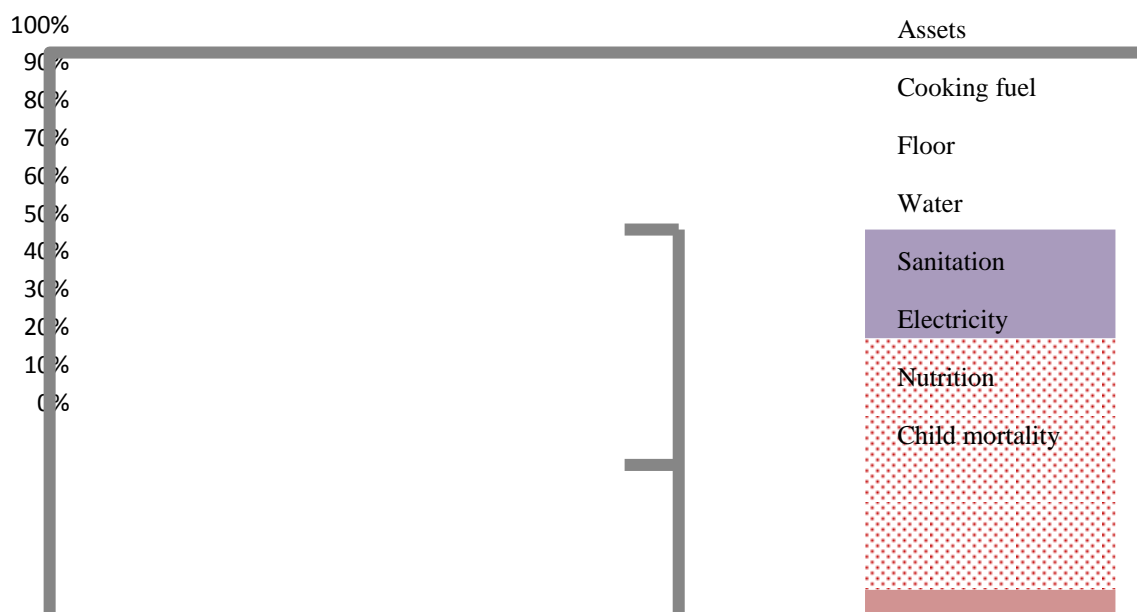
Source: OPHI (2016), *Global MPI 2016.*

In particular, when considering the deprivation rates of the three dimensions in the MPI of these Southeast Asian countries, Vietnam, the Philippines and Indonesia are the three countries with the highest rates of deprivation in the dimension of health (58.1%, 56.3% and 60.7% for Vietnam, the Philippines and Indonesia respectively), followed by the dimension of living conditions (24.2%, 27.4% and 26.7% respectively). The lowest rates are in the dimension of education (17.6%, 16.3% and 12.6% respectively).

Cambodia and Timor-Leste are two countries with the highest rates of deprivation in the dimension of living conditions (42.9% and 47.7% respectively), followed by the dimension of health (29.8% and 31.0% respectively). The lowest rates are in the dimension of education (27.3% and 21.3% respectively). In contrast to these two countries, Thailand has the highest deprivation rate in the dimension of education (40.7%), followed by the health dimension (31.2%), with the lowest being in the dimension of living conditions (28.1%). In Laos, the rate of deprivation in the three dimensions is quite uniform (education 31.4%; health 30.4%; and living conditions 38.3%).

It can be seen, therefore, that compared to the six other countries in the region, Vietnam does not have a high multidimensional poverty rate. However, the intensity of deprivation of multidimensionally poor households in Vietnam is relatively high. In addition, the child mortality rate contributes considerably to the country's MPI.
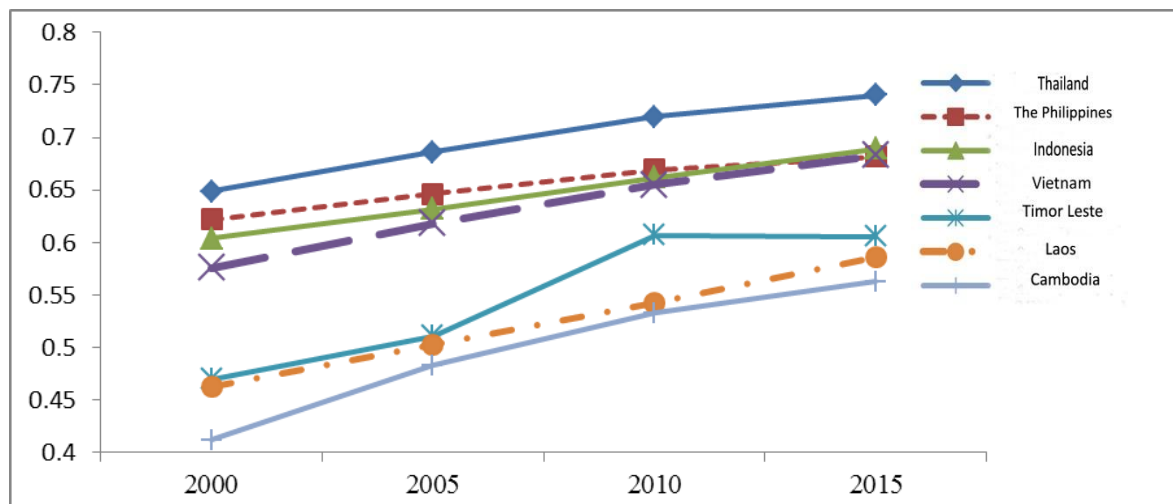
3. Human development indices of a number of countries in Southeast Asia

Since the time the HDI was devised by the UNDP - in general, and for the past 15 years in particular - the human development indices of most countries in Southeast Asia have been on the rise. Among the seven countries from which the article uses the data in order to compare, Cambodia, Laos, Timor-Leste and Vietnam have shown a significant rise over the past 15 years (the index of Cambodia increased by 0.151 points; Timor-Leste by 0.136 points; Laos by 0.123 points; and Vietnam by 0.107 points. The indices of Thailand, the Philippines and Indonesia have tended to increase more slowly (Thailand by 0.091 points, the Philippines 0.060 points; and Indonesia by 0.085 points). The low rate of HDI growth among these countries is explained by the fact that they have been in the group of countries with high (Thailand) and above average (the Philippines and Indonesia) levels of human development for many years. Therefore, it is harder for them to make breakthroughs for quick growth compared with those with lower HDI.

In 2014, the HDI of Vietnam was higher than that of Cambodia, Laos, and Timor-Leste and lower than that of Thailand, Indonesia and the Philippines. However, in 2015, Vietnam surpassed the Philippines. For the past 15 years, Vietnam has narrowed the HDI gap with Indonesia and the Philippines. In 2000, Vietnam's HDI was lower than that of Indonesia by 0.028 points and the Philippines by 0.046 points. Ten years later, in 2010, the disparity

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lessened: just 0.007 points lower than Indonesia and 0.014 points lower the Philippines. In 2015, Vietnam's HDI was 0.005 points lower than that of Indonesia and surpassed the Philippines by 0.001 points. However, compared to Thailand, Vietnam has yet to close the gap in the past 15 years (in 2000, Vietnam's HDI was 0.073 points lower than that of Thailand, and in 2015 the figure was 0.057 points).

Figure 4: Human Development Indices of a Number of Countries in Southeast Asia in the 2000-2015 Period

Source: http://hdr.undp.org/en/data#.

Table 3: Human Development Indices and Sub-indices of a Number of Countries in Southeast Asia in 2016

Country	HDI	Life Expectancy	Estimated years of schooling	Average years of schooling	GNI per capita (PPP USD)	HDI by countries
Thailand	0.740	74.6	13.6	7.9	14,516	87/188
Indonesia	0.689	69.1	12.9	7.9	10,053	113/188
Vietnam	0.683	75.9	12.6	8.0	5,335	115/188
The Philippines	0.682	68.3	11.7	9.3	8,395	116/188
Timor-Leste	0.605	68.5	12.5	4.4	5,663	133/188
Laos	0.586	66.6	10.8	5.2	5,049	138/188
Cambodia	0.563	68.8	10.9	4.7	3,095	143/188

Source: UNDP (2016), *Human Development Report 2016: Human Development for Everyone.*

Looking at the component indicators of the HDI indices of the seven countries in Southeast Asia, Vietnam is not far behind the six other countries in terms of life expectancy, estimated years of schooling and the average years of schooling. In the region, Vietnam even takes the lead in terms of life expectancy. Compared to Thailand, which has the best HDI among the seven Southeast Asian countries, Vietnam has two indicators higher than Thailand's. They are average life expectancy (75.9 vs. 74.6) and average years of schooling (8.0 vs. 7.9). This can be seen as encouraging the achievements that Vietnam has made in recent years in improving average life expectancy and average years of schooling for its people.

However, Vietnam's Gross National Income (GNI) per capita remains low and there is a large gap between it and other countries in the region. Vietnam's GNI per capita is 2.7 times lower than that of Thailand, 1.9 times lower than that of Indonesia; 1.6 times lower than that of the Philippines and even lower than that of Timor-Leste. Vietnam's GDP per capita in 2015 reached USD 5,335, while that of Thailand was USD 14,516; Indonesia USD 10,053; the Philippines USD 8,395; and Timor-Leste USD 5,663. Vietnam's GNI per capita is only higher than two of its neighboring countries: Laos and Cambodia (USD 5,049 and USD 3,095 respectively). Low GNI per capita is one of the reasons that led to the fact that Vietnam's HDI is always lower than that of other countries in Southeast Asia, even though Vietnam has higher results in the remaining indicators.

In the HDI rankings in 2015 - although Vietnam was trailing behind Thailand and Indonesia but ahead of the Philippines, Timor-Leste, Laos and Cambodia - in terms of rankings, Vietnam is 28 levels behind Thailand[8] and 28 levels ahead of Cambodia (the country with the lowest HDI among the seven countries). In the future, it is believed that in order to improve Vietnam's HDI and its HDI rankings, together with maintaining the achievements in the indicators of the dimensions of health and education, Vietnam needs to focus more on indicators of the living conditions dimension. Vietnam's other indicators have reached relatively high levels; therefore, growth rates in these indicators may slow down over time. Meanwhile, the figures of a number of countries in the region that currently have low HDI rankings may increase more quickly, as they have focused on implementing health care and education policies to reduce child mortality and increase average life expectancy as well as average years of schooling. Laos and Cambodia will tend to increase rapidly in the coming years because - for the last five years - these two countries have seen the fastest improvement in the human development indices in the region. In the 2010-2015 period, on average, Laos' HDI increased by 1.59% every year; Cambodia, 1.09%. Also in that period, Vietnam's HDI average annual growth rate was only 0.85%; Indonesia 0.78%; Thailand 0.56%; the Philippines 0.39%. Meanwhile, that index of Timor-Leste decreased by an average rate of 0.03% per year.

4. Multidimensional Poverty Index and Human Development Index

Studies have shown that income poverty or multidimensional poverty affects people's ability to develop [5], [1]. Poverty limits people's access to education, jobs, healthcare services and more - and directly affects human development. This can be seen via the analysis of multidimensional poverty and human development data in some countries in Southeast Asia.

Figure 5: MPI and HDI of a Number of Countries in Southeast Asia in 2016
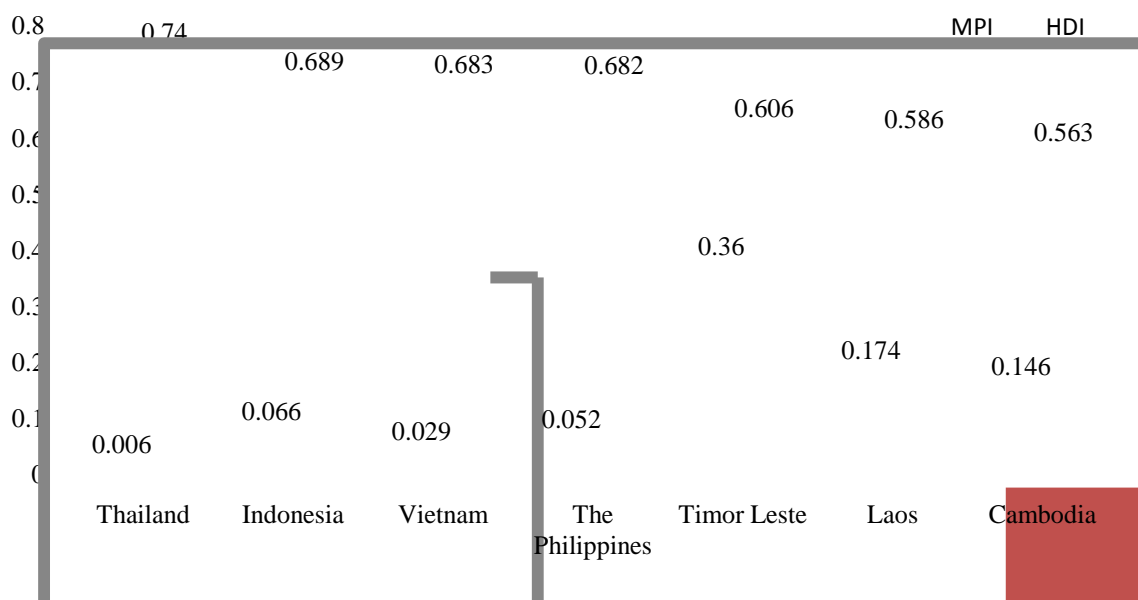
Source: UNDP (2016), *Human Development Report 2016: Human Development for Everyone;* OPHI (2016), *Global MPI 2016.*

MPI and HDI data of some countries in Southeast Asia in Figure 5 show that countries with high MPI have low HDI and vice versa. This means that when a country has a high multidimensional poverty rate, many households still face difficulties in accessing social services and improving living conditions. The limitation in access to social services and development resources and improving living conditions then affects the improvement of human abilities (both mentally and physically) and, more importantly, affects human development.

Among the seven countries in Southeast Asia, Thailand has the lowest MPI and the highest HDI, followed by Vietnam, Indonesia and the Philippines, which are among the countries with low MPI and high HDI. Cambodia and Laos are in the group of high MPI and low HDI. Timor-Leste is

the odd one out, as it is the only country with a relatively high MPI while still having an HDI higher than that of Cambodia and Laos. This can be explained by the fact that Timor-Leste has higher GNI per capita than that of Cambodia and Laos, leading to higher HDI. However, many people in Timor-Leste still have limited access to social services, and living conditions seem to be affecting the country's human development ability; Timor-Leste's MPI has tended to increase, while its HDI has fallen by an average rate of 0.03% per year in the past five years.

5. Conclusion

From the analysis of MPI and HDI data of a number of countries in Southeast Asia, significant differences among countries can be seen. Out of the seven Southeast Asian countries, Thailand has the best rankings in both MPI and HDI. Vietnam also has good rankings compared to the rest. However, when compared to Thailand, Vietnam still has a long way to go to make up the shortfall.

In general, and in recent years, the multidimensional poverty rates of countries in the region have tended to decrease while their HDI indices have tended to increase. However, there remain differences in the trends among countries. Vietnam, Laos and Cambodia are the countries where the multidimensional poverty rates have tended to decrease rapidly, while Timor-Leste has tended to increase slightly. Laos and Cambodia are

the two countries with the highest HDI growth rates among the seven Southeast Asian countries in the past five years.

In the past five years - although not as fast in HDI increase as Laos and Cambodia - Vietnam has narrowed the gap considerably with Indonesia and the Philippines. This fact has shown that Vietnam has implemented its policies well in relation to improving life expectancy, promoting education and reducing multidimensional poverty in this five year period. However, in order to keep this achievement and in addition to the implementation of the above policies, Vietnam should further improve its per capita income, as Vietnam's per capita income is relatively low compared to countries in the region (only higher than that of Laos and Cambodia).

Notes

[1,2] The paper was published in Vietnamese in: *Nghiên cứu Con người*, số 4 (97), 2018. Translated by Nguyen Thu Hung, edited by Diane Lee.

[3] Due to the fact that the OPHI only studied multidimensional poverty rates in seven countries in the Southeast Asian region, namely Cambodia, Indonesia, Laos, Thailand, the Philippines, Timor-Leste and Vietnam, the article only compares Vietnam with those listed countries.

[4] The article is the result of a ministerial-level research project "Multidimensional poverty and challenges to human development in Vietnam" hosted by the Institute of Human Studies.

[5] In the UNDP Annual Global Human Development Report, the approach to and assessment of

multidimensional poverty was devised after those for human development. The Human Development Index (HDI) was introduced for the first time in the Human Development Report in 1990. Meanwhile, the Multidimensional Poverty Index (MPI) was introduced in 2010 and replaced the poverty index of human development, or the Human Poverty Index (HPI).

[6] Although the nations' multidimensional poverty indices were published by the OPHI in 2011 and 2016, the data used for the calculation of the indices was collected a few years before. However, due to insufficient data, not all countries' indices were calculated based on all ten indicators. For example, the MPI in 2016 of the Philippines was built without the indicators of child school attendance and nutrition, while those of Vietnam and Indonesia were defined without the nutrition indicator.

[7] For example, there are no data of Vietnam's and Indonesia's nutrition and the Philippines' years of schooling and nutrition.

[8] According to the 2016 UNDP HDI ranking, in Southeast Asia, Thailand was second only to Singapore, which was listed in the category of countries with very high HDI. The former was ranked among nations with a high HDI, while most of the rest of the regional countries fell into the category of medium HDI.

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