DEVELOPING INDICATORS AND METHODS FOR EVALUATION OF THE PEOPLE'S LIVING STANDARDS IN BINH DINH PROVINCE

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Abstract. On the basis of an overview of domestic and foreign document sources, this study develops the indicators and clarifies the content of implementing assessment methods of people's living standards (PLS) in Binh Dinh Province. The results show that, among the groups of indicators: economy, education - training, medical and health care and the expanded indicators (electricity use, water for domestic use and housing), the group of economic indicators, income, in particular, plays an important and decisive role, but it is not the unique indicator in ensuring a comprehensive and sustainable living standards. From these evaluation indicators, the author has identified the necessary methods for data collection and data analysis to meet the theoretical and practical urgency in the local PLS. The development of these indicators and assessment methods is deemed an important scientific basis for applying research on the current situation as well as proposing feasible solutions to improve PLS in Binh Dinh Province according to specific timelines.

Keysword: indication evaluation, method evaluation, the people's living standards, Binhdinh province.

1.   Introduction

As an important indicator associated with the ability to meet and satisfy the material and spiritual needs of daily life, the people's standards of living (PLS) or the standards of living of a community, a territory, always receive the attention of the State and agencies. This is because PLS will be a valuable resource to promote and exploit effectively "human capital" in livelihood activities, in order to improve the quality, productivity, income generation and poverty reduction.

In the world and Vietnam today, there are many views on PLS held by scientists and their associates, typically Marx [1], Amartya Sen [2] [3], Marina Moskowitz [4], Martha Nussbaum, Hoang Duc Nhuan [5], Do Thien Kinh, Nguyen Thi Canh [6],... From these perspectives, according to the author, "*PLS is the fulfillment of the comprehensive needs of people in life, reflected by abilities, levels or certain scales; it is determined to be high or low, more or less in comparison with the daily average of living*

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conditions (physical and mental) of households or groups of people. PLS is a constantly changing quantity to meet the increasing needs of people and the development of the current society" [7]. Thus, from the perspective of Geography, the coverage and synthesis of PLS's objects can be seen. In detail, to evaluate the changing status of PLS of a territory or community, it is necessary to make analyses of many aspects and indicators, in which the outstanding group of indicators is, material and spirit, along with the variation over time and in accordance with each geographical circumstance [7].

Up to now, there have been various researches on PLS applied to the Vietnamese territory, typically the group of authors Nguyen Hong Son and Tran Quang Tuyen (2014) with the article "*Improving the living standards of the population in the process of industrialization and modernization in Vietnam: Achievements and challenges*" [8], which analyzed the current situation and proposed solutions to improve Vietnam's PLS in the modern context. The author Do Thien Kinh (2015) has an in-depth study on "*Trends in inequality in living standards in Vietnam and rural areas in the period 1992 – 2012*" [6], here the author also identified the PLS indicators as income, expenditure, accumulation, in which income was confirmed to be the determining factor. Besides, the General Statistics Office, in even years, surveyed and published the results of the survey on living standards of Vietnam and specific to each province. In addition, there are a number of works done in the provincial territory such as the one by Nguyen Thi Canh (2001), entitled "*Evolution of living standards of the population, differentiation between the rich and the poor and poverty reduction solutions in the transition process of changing Vietnam's economy from the practice of Ho Chi Minh City*" [9]. The study is an in-depth analysis, detailing the employment, income and expenditure of the City's residents, thereby demonstrating the increasingly clear differentiation between the rich and poor and in living standards in the most developed city in Vietnam. According to Le Huong (2007) in "*Education, people's living standards and the issue of rational use of resources and environmental protection*" [10], PLS is not realized through specific targets in the daily life, but it has an impact on people's attitudes and behaviors towards the surrounding environment. In general, these studies have identified PLS's assessment indicators at a very general level and are suitable for large-scale territories. In terms of the evaluation methods, most of the projects were conducted in a combination of traditional and modern methods, in which in-depth investigation and interviews were focused to collect the primary data sources from practice.

From the perspective of Geography, there has been a PhD thesis, *Improving the living standards of Son La Province in a sustainable direction* [11], by Tran Thi Thanh Ha (2019), the author has built building 6 groups of indicators to evaluate PLS in Son La Province towards sustainability, focusing on the income level and differentiation by specific research subjects. The work also identified 8 main evaluation methods, including the sociological survey method with 360 households equally distributed in 12/12 districts and cities of Son La Province. Besides, there have been many theses conducted in the provinces and cities of Vietnam such as Ninh Binh, Hai Phong, Bac Giang, Binh Thuan... However, for Binh Dinh Province, there have been no research works in PLS according to the approach that the author has proposed.

The article is expected to develop the indicators, criteria (with attention to the

sustainable direction) and PLS's assessment methods in Binh Dinh Province to meet the urgency of theory and practice in socioeconomic development, the issue of enhancing local PLS. Through this, there will be a more scientific view when approaching PLS's assessment in a sustainable direction applicable to the provincial territory.

The author only builds assessment indicators for PLS regarding physical aspects and does not go into researching on cultural and spiritual aspects because these indicators are of perceptual, emotional levels and psychological factors of the residents. Therefore, it is difficult to quantify those indicators with specific values from a Geographic standpoint. With respect to evaluation methods, the author clarifies the content of the method of collecting, processing documents and the sociological investigation method, because these are the two major methods to obtain scientific data sources in research.

2. Content

2.1. Material and methods

2.1.1. Material

In this article, the data was collected from many sources of units and agencies. Typically, the research employed the PLS survey results in 2010, 2012, 2014, 2016, 2018 by the General Statistics Office of Vietnam [12]; works by Amartya Sen, Marina Moskowitz, Martha Nussbaum, Nguyen Thi Canh, Do Thien Kinh, Hoang Duc Nhuan...; The article theses on the living standards of the population evaluated by scientists; socio-economic development reports; reports on the results of investigating and reviewing poor and near-poor households; issues related to sustainable development, development strategy and planning in Binh Dinh Province. The data was collected, synthesized and carefully selected, categorized into respective groups of indicators, satisfying PLS' requirements of sustainable orientation.

2.1.2. Methods

The main methods employed were collecting and processing documents; analyzing, comparing, synthesizing the collected research works. At the same time, the expert consultation method was also adopted when determining the groups of indicators and criteria for PLS's evaluation applicable to Binh Dinh Province; by gaining access to scientific reports, seminars, and through direct interviews, the author received suggestions and comments from leading scientists to serve as a scientific basis in the research process ... The experts consulted are: Prof. Dr. Le Thong, Assoc. Prof. Dr. Nguyen Minh Tue (Hanoi National University of Education), Assoc. Prof. Dr. Pham Xuan Hau, Assoc. Prof. Dr. Nguyen Kim Hong, Dr. Truong Van Tuan, Dr. Dam Nguyen Thuy Duong (Ho Chi Minh City University of Education), Dr. Pham Quang Anh (University of Natural Sciences - Hanoi National University), Dr. Nguyen Huu Xuan, Dr. Duong Thi Nguyen Ha, Dr. Hoang Quy Chau (Quy Nhon University).

2.2. Results and discussion

2.2.1. The indicators of evaluation the people's living standards in Binh Dinh Province towards a sustainable way

a. Economic indicators group

- GRDP/person

Calculated by the total value of GRDP at real prices (local or foreign currencies) divided by the population in the same period, calculated annually in the provinces or equivalent cities [13]. GRDP/person is an important indicator to compare and evaluate the efficiency of economic development and living standards among the provinces, equivalent cities and regions. When analyzing this indicators, the author paid attention to the scale and growth rate of GRDP and compared with population growth rate to consider the relationship between economic growth and population growth to PLS, according to FAO standards and practice.

- Average income per capita

This is the wage rate that the employee receives in a certain period of time (monthly or yearly), calculated in VND/month or VND/year [12]. This is a significant socio-economic indicator reflecting "income level and income structure" to assess PLS and the differentiation between rich and poor.

Household income: The total amount of money and in-kind value after subtracting the production costs, received by the household and its members for a given period, usually for a year. Household income includes: Income from salaries, wages; Revenue from production of farming, forestry, fishery; Revenue from non-farming, forestry, fishery industries (after deducting production costs and taxes); Other revenues included in income such as those from gifts, congratulations, savings ... [12], [13], [11].

- The rich and poor gap

+ Inequality coefficient in income distribution (GINI): The GINI coefficient is a quantification of value and is calculated based on the LORENZ curve; the LORENZ curve is made up of two factors: the percentage of cumulative population and the percentage of cumulative income. The GINI coefficient is from 0 to 1, the closer the GINI coefficient is to 1, the greater the income inequality of the population. According to World Bank standards, GINI coefficients range from 0 to 1, the more the coefficient approaches 0, the higher the level of equality, from 0.3 to 0.4: low inequality, 0.4 - 0.5: moderate inequality, > 0.5: high inequality [12], [7], [17].

+ Difference 20% of highest income and lowest income groups: This is the number of times the difference between the income of the richest and the poorest; the larger the gap, the deeper the differentiation, and this criterion was carefully analyzed when researching districts and cities in Binh Dinh Province [12], [7] [13] [17].

- The poverty rate

+ The poverty rate: This is the percentage of households with the Per Capita Income level lower than the poverty line in the total number of people or households examined [12], [13].

+ Poverty lines: This is the level of per capita income used as a criterion for determining poor households. People or households with per capita income/ month below the poverty line are considered poor [12], [13], [11].

In the period 2016 - 2020, the poverty line in the multi-dimensional approach has been issued by the Prime Minister, so in addition to the above income criteria, there is a

criterion for the extent of deprivation of access to basic social services [14]. Within the research scope confined to 2018, the author used the multidimensional poverty research results to evaluate PLS and it served as a basis in proposing directions and solutions to improve PLS in the future.

+ *Multidimensional poverty household:* This refers to the household having the per capita income/month equal to or lower than the poverty line, or the per capita income/month higher than the poverty line regarding the income but lower than the minimum standards of living and deprived from 3 or more indicators measuring the level of deprivation of access to basic social services, according to Decision No. 59/2015/QĐ-TTg (dated November 19, 2015) by the Prime Minister [14], [7], [11], [13]. This data was inherited from statistical results of the Department of Labor - Invalids and Social Affairs of Binh Dinh Province.

b. Education – training indicators group

- General enrolment rate: includes *General studying rate* and *Net enrolment rate*

+ *General studying rate:* Correlation of the number of students attending general education levels with the number of school-age children at the respective educational level of the territory [13], [7].

+ *Net enrolment rate:* Correlation of the number of students attending general education at the regulated age with the number of children in the corresponding school-age in the territory. According to Vietnamese regulations, the corresponding age for attending primary schools starts at 6 years old, for lower secondary level, at 11 and for high schools, at 15. This rate is less than 100.0%, indicating that a portion of children reaching school-age do not attend schools, which partly reflects the level of households' investment and interest in the school attendance of their children.

- *Education expenditure/person/year (VND)*

Expenditure on education in everyday life clearly demonstrates PLS because only high-income households have the ability, the opportunity to invest in children's education. This criterion is defined as the correlation between the level of expenditure on education and training in the budget expenditure with the size of the local population in a specified time period (usually 1 year), the unit of calculation is "thousand dong". The higher this correlation is, the more gradually the standards of living is improved in a positive direction and vice versa.

- *Ability of access to educational institutions*

This criterion indicates the students' access to schools, usually determined by the average distance from home to the nearest educational institution. Because of difficulties in the investigation and data processing, the author determined the ability to access educational institutions through the criterion of the distance from the commune center to the nearest high school, by measuring the distance on Google Map following the inter-commune and inter-district transport routes and determined the mean value by district level.

The greater the distance, the lower the level of access to education is, which will definitely affect the children's going to school; this also indicates the ability to invest in and pay for high school attendance of each household.

c. Medical and health care indicators group

- Doctor/Ten thousand people and hopistal bed/ Ten thousand people

Is the correlation between total number of doctors and number of hospital beds per 10,000 people at the same time. The correlation of number of doctors /10,000 people shows the ability, level of care of healthcare staff towards patients, especially trained and highly qualified staff, which are doctors [13]. The correlation of number of hospital beds/10,000 people clearly reflects the investment and improvement of medical facilities, and at the same time shows the need for medical examination and treatment as well as living standards of the majority of the population.

- Medical expenditure/person/year (VND)

Medical expenditure is also an important indicator in the PLS's assessment because it shows the ability to take care of daily health, reflecting the income and living standards of the household. This criterion is defined as the correlation between the level of expenditure on health, the population and the plan in budget expenditure with the size of the local population in a specified time period (usually 1 year), the calculation unit is "thousand dong". The higher the correlation, the higher standards of living are, and vice versa.

- Ability of access to medical institutions

Similar to the criterion of accessibility to educational institutions, here the author determined the distance from the commune center to the district health center by measuring the distance on Google Map and working out the mean value by district level, associated with inter-commune and inter-district traffic routes.

The greater the distance, the lower the accessibility and the lower the level of access, which significantly affects individual and household health care awareness along with the annual level of health spending.

d. Supporting indicators group

- Households using electricity rate

Demand for electricity, especially the national grid, clearly reflects the local socio-economic development level. This is the correlation between the number of households using the electricity grid compared with the total number of households by territory in a defined time period. This indicator reflects the conditions to access and participate in activities and demand for electricity (especially domestic and production electricity) to meet the needs of the people's life [12], [7].

- Households having permanent dwelling rate

The quality of the house is determined by the solidity nature of the house, which is defined by a sturdy material for 3 main structures (columns, roof, wall), based on this property, it is divided into: a stable house is with all 3 structures made of durable materials; a semi-stable house is a house with 2 out of 3 structures made of durable materials; an unstable house is a house with 1 in 3 structures made of durable material; a rudimentary house is a house with all 3 structures made of unstable materials [12]. Proportion of *households with permanent houses*: Correlation of number of households with permanent houses compared to the total number of households at the time of study in the territory.

- Households using safe toilet rate

In the current period, ensuring a living environment towards sustainable PLS is a key issue because it is directly linked to each household. Regarding the living environment factors in PLS, the author chose the indicator, rate of households using hygienic toilets, which is the correlation between the number of people using septic and semi-septic toilets compared to the number of households having toilets at the same time, of the territory. For this indicator, a correlation can be seen with the proportion of households with stable houses.

2.2.2. Methods evaluation the people's living standards in Binh Dinh Province

a. Method of collecting and processing documents

This traditional method is used mostly in research projects. During the implementation process, the author conducted specific steps:

- *Defining the object, content and information types associated with the topic*. They are documents related to the theoretical and practical basis of PLS, quality of life in the population, poverty, livelihoods and human development; documents on local natural, and socio-economic conditions; on the current status of living standards, poverty and socio-economic development plans and orientations in Binh Dinh Province... The main documents include articles, reports, maps, pictures.

- *Collecting documents according to the plan and the established lists*:

+ *Secondary documents*: Collected from archives, departments, publishers, National Library, the Internet ... For this study, the main sources of documents are from General Statistics Office, Department of Statistics, and Division of Labor - Invalids and Social Affairs, annual reports, stages and planning of socio-economic development of Binh Dinh Province; relevant works, projects and reports presented in journals, yearbooks, monographs, textbooks ... by domestic and foreign scientists and ministries.

+ *Primary documents*: Collected through surveys, fieldwork, interviews, photography and investigation in localities.

- *Processing documents*: From the collected documents, especially data from many different sources, the author selected and processed them using Microsoft Office Excel 2016 software; moreover, there is some raw data that should be processed into refined data through calculation formulas, creating new data tables, charts, and maps for research.

b. Method of sociological investigation

Sociological investigation is an important method widely used in research to gather information that secondary data cannot be provided to timely supplement and make reliable conclusions, with objectivity and highly scientific value. Here, the author conducted the survey method by questionnaire, following specific steps:

- *Determining the content of the investigation*

+ *Purposes of investigation*: Supplementing and compensating for the missing or insufficient information to analyze the current situation, confirming and comparing with theory to have scientific conclusions about PLS in Binh Dinh Province.

+ *Subjects of investigation*: The households in selected districts and city.

+ *Contents of investigation*: For an objective and actual assessment of PLS in Binh Dinh Province, the study investigated households in terms of the PLS evaluation criteria selected, and at the same time extended to some contents related to access to education -

training, medical and health care services, the change of PLS as well as recommendations and solutions to contribute to improving PLS in the future ... including association with livelihood strategies and relation with the construction process of new rural localities.

+ *Places of investigation*: 6 districts and cities in Binh Dinh Province, of which 3 districts are in the Eastern plain - coastal subregion (Quy Nhon, Phu Cat, and Hoai Nhon) and 3 districts in the Western highland - mountainous subregion (An Lao, Tay Son, and Vinh Thanh). These are districts and cities with distinctive characteristics and differences in resources and socio-economic development situation among localities; at the same time, localities with many similarities were grouped into one group for investigation. Investigated areas were classified by commune-level administrative units.

+ *Sample choice*: Determining the sample size (number of households) that needs to be investigated is a practice to ensure reliability and scientific level in the research process. There are many formulas to determine sample size, but through investigation, and with agreement among statisticians, the author chose the Cochran formula [15]:

$$n = \frac{N}{1 + N.\delta^2}$$

In which, n: Sample size (Number of households), N: Number of overall observations (Total number of households), δ: Tolerance.

For N (2018): 241,831 households, accuracy 95.0% and tolerance δ 5.0%, the number of samples n to be investigated is 399.3 ≈ 400 households. These are enough households to represent the total number of households in the province

Because the households' numbers in the districts are different, the sample numbers in the districts are also different, the author based on the number of households in the districts or city accounts for a percentage of the total number of households in 6 localities surveyed, then the number of samples was determined. Typically, Quy Nhon City has 71,823 households, accounting for 29.7% of households, the number of samples is 119 households (400 x 29.7%), corresponding to An Lao District having the lowest number of households with 8,464, accounting for 3.5%, the number of samples is 14 households (400 x 3.5%). Distribution of the number of investigations in administrative units of Binh Dinh Province:

Samples are stratified randomly, with each locality having the following requirements: Surveyed subject is a family member over the age of 30; The number of samples by genders must be nearly the same and should pay attention to all ethnic groups in the area, in which the Kinh accounts for more than 90.0% (except for mountainous districts of An Lao and Vinh Thanh, samples of ethnic minority families account for more than 50%); The samples in rural areas do not exceed 70.0% and at the same time, being difficult areas in mountainous areas; coastal communes and islands account for no more than 40%.

+ *Investigation time*: March, April, May and August, September 2019.

- *Developing the questionnaires*:

On the basis of the proposed contents, the author proceeded to design the questionnaire. Content of the questionnaire:

*Table 1. Survey questionnaire on the people's living standards applied
to the households in Binh Dinh Province*

QUESTIONNAIRE FOR HOUSEHOLDS
Dear Sir/Madam, I am currently conducting a research, entitled "Research on the people's living in Binh Dinh Province". Please kindly provide some information and opinions related to the research content. I guarantee that your information and opinions will be kept confidential and for the purpose of scientific research only. I hope to receive your help. Yours faithfully!

A. GENERAL INFORMATION

1. Full name: .... 2. Year of birth (or Age): ....

3. Gender: Male ☐   Female ☐   4. Ethnic group:.......................................

5. Educational background: .... 6. Profession: ....

7. Number of people in the family:...................8. Number of workers: ....

9. Address (hamlet/commune/district)

B. CURRENT SITUATION OF SOME INDICATORS ON HOUSEHOLD'S LIVING STANDARDS

I. Economic indicators' group

1. Income and expenditure

Variables	Questions	Options	Notes
Income_1	It is estimated that in 2018, how much was per capita income/ month of the household?	1. Less than 2 million 2. 2 – 3 million 3. 3 – 3.2 million 4. 3.2 – 6 million 5. Over 6.0 million	
Income_2	What is the main source of income for the household?	1. Salary, wage 2. Farming, Forestry, Fishery 3. Non-Farming, Non-Forestry, Non-Fishery 4. Distant workers	
Income_3	How many members in the household not having jobs/ being underemployed to generate income?	1. 1 person 2. 2 people 3. 3 people 4. 4 people 5. Over 4 people	
Income_4	Why have family members not had jobs /been underemployed so far?	1. Immature/ in the school-age 2. Old/retired 3. Housewife 4. Haven't found a job yet	May choose many options

		5. Others:………………	
Income_5	Compared to 2010, how has the household's income changed?	1. Significant increase 2. No significant increase 3. Unchanged 4. No significant decrease 5. Significant decrease	
Income_6	It is estimated that in 2018, how much was the average spending per capita/month?	1. Less than 1.0 million 2. 1.0 – 2.0 million 3. 2.0 – 3.0 million 4. 3.0 – 4.0 million 5. Over 4.0 million	
Income_7	What were the purposes for household's spendings?	1. Food, drink, smoking 2. Education 3. Health care 4. Investment 5. House construction / repair and facilities associated 6. Others:………	May choose many options
Income_8	Compared to 2010, how has household's spendings changed?	1. Significant increase 2. No significant increase 3. Unchanged 4. No significant decrease 5. Significant decrease	

2. Poverty issue and participation in poverty reduction programs

Variables	Questions	Options	Notes
Poverty_1	In 2018, was the household on the list of poor/near-poor households?	1. No 2. Near-poor household 3. Poor household	
Poverty_2	In the past, has the household been on the list of poor/near-poor households?	1. No 2. Near-poor household 3. Poor household	→ Poverty_6 → Poverty_3 → Poverty_3
Poverty_3	At what time has the household got out of poverty/near poverty?	1. Since 2010 2. Since 2012 3. Since 2014 4. Since 2016 5. Others: …………….	

Poverty _4	What are the reasons for getting out of poverty/near poverty? (Including variables Poverty_4.1 and Poverty _4.2)	1. Benefiting from local policies/projects for economic development, making the family economy less difficult, namely: a. Development investment program 30a, 135 ... b. Project for developing disadvantaged areas for coastal and island communes. c. Construction program of new rural localities. d. Loan support for families in need.	May choose many options
		2. Support, assistance from relatives 3. The family is still in difficulty but is not considered. 4. Others: ……………	

II. Medical and health care indicators' group (health situation and acccessibility)

Order	Questions	Options	Notes
Medical_1	Currently, are there any household members who suffer from a serious illness or injury, not being able to work?	1. No 2. Yes	
Medical_2	How many people in a household having health insurance?	1. No one 2. One person 3. Two people 4. Three people 5. Over three people…	→ Medical_4 Medical_3
Meidcal_3	Where does the health insurance for family members come from (voluntary or subsidized)?	1. Health insurance in disadvantaged areas 2. Children health insurance 3. Poor households' health insurance	May choose many options

		4. Policy health insurance 5. Voluntary	
Medical_4	Does the locality (commune/ward/town) have any medical institutions?	1. No 2. Medical station 3. District medical center 4. Hospital 5. Others: ……………….	May choose many options
Medical_5	How far is it from your house to the nearest medical institutions?	1. 1 – 2 km 2. 2 – 3 km 3. 3 – 4 km 4. 4 – 5 km 5. 5 km	
Medical_6	How far is it from your house to the hospital (in Quy Nhon City)?	1. Less than 10 km 2. 10 – 30 km 3. 30 – 50 km 4. 50 – 70 km 5. Over 70 km (please specify)	

III. Living conditions (housing, electricity, water) indicators' group

Variables	Questions	Options	Notes
LivingC_1	What type of housing do you have?	1. Stable 2. Semi-stable 3. Unstable 4. Rudimentary, temporary	
LivingC_2	What electricity source is the household using?	1. Electricity grid 2. Not electricity grid 3. No electricity	
LivingC _3	What water source is the household using?	1. Tap water 2. Purchase water (bottled water, large jug) 3. Water from wells/built or drilled wells with pumps 4. Filtered spring water 5. Rain water 6. River and lake water 7. Others ……………	May choose many options
LivingC_4	What kind of toilet	1. Septic/ semi-septic /flush and	

	is your household using?	two compartments 2. No toilet	
Surveyor		**Respondent (household's representative)**	

- Conducting investigation

The investigation was conducted by the method of face-to-face interviews, meeting with the head of household or family members to interview, combined with the method of observation and receiving, recording information in the questionnaire.

- Processing the results

From the collected questionnaires, the author synthesized and used SPSS 20.0 software to process and analyze descriptive statistics in terms of percentage of frequency of variables. In addition, the author utilized the Chi - Square Test to examine the independence or dependence between a number of random variables to have a basis for evaluation and conclusion.

c. Statistical grouping method

This is the basic method of statistical synthesis which has been used quite commonly in analyzing socio-economic phenomena when there is the division into groups of different nature for research purposes. Statistical grouping is based on one or several certain criteria to divide the statistical whole into groups and subgroups with different characteristics. The statistical grouping includes: According to the attribute criterion and by the quantity criterion, in which the grouping according to the quantity criterion includes the grouping with equal distance and the grouping with irregular distance [16].

- Grouping with equal grouping distance: It is common to apply grouping to the phenomenon of relatively homogeneous, rhythmic research and development, with no large fluctuations in quantity between units in the whole, with relative homogeneity of economic type.

- Grouping with unequal grouping distance: It is often applied to the research phenomenon with uneven development units, large differences in quantity and quality differences.

The author chose the method of grouping with unequal distance to apply to the grouping for criteria to show the differentiation of PLS by territory in Binh Dinh Province. The criteria are divided into 5 groups in order: Group 1 - Low, Group 2 - Pretty low, Group 3 - Medium, Group 4 - Pretty high and Group 5 - High. The grouping principle applied by the author have to meet the requirements: Taking the provincial average value as a basis for grouping, the values higher than the provincial Mean are considered to be classified into Group 5 - High (if there is a huge value difference) or Group 4 - Pretty high (if the difference is lower), values equal to Mean or with small difference are classified into Group 3 - Medium, values lower than Mean are classified in group 4 - Pretty low or Group 5 – Low.

d. Scale-based evaluation method

The synthetic scale-based method is used to specify the ranking position of PLS in Binh Dinh Province compared to the South central coastal Region and the

differentiation of PLS by district administrative units in Binh Dinh Province by synthesizing criteria, coupled qualitative methods, a picture of the differentiation of PLS in the area will be revealed. The steps to apply the scale-based evaluation method are as follows:

- Selecting evaluation criteria: The selected criteria must be authentic, fully totalled per unit and synthetically reflect the local PLS, the achievements and the limitations that need to be overcome for stability and improvement of PLS in the future. At the same time, it must show the uniformity from territorial units in order from top to bottom: Nationwide → province → subregion → district. In the scope of this study, the author chose 12 criteria of 4 groups of established indicators:

+ Group of economic indicators: (1) - per capita income/ month (thousand VND); (2)-inequality coefficient in income distribution (GINI); (3)-The difference between 20% of the richest group and 20% of the poorest group (times); (4)-the rate of poor households (%)

+ Group of education - training indicators: (5)-Rate of attending school at the right age/ net enrolment rate (%); (6) -access to educational institutions (km)

+Group of medical and health care indicators: (7)-Number of doctors/10,000 people (doctor(s)/10,000 people); (8)-number of hospital beds/10,000 people (bed(s)/ 10,000 people); (9)-access to medical institutions (km).

+ Group of additional indicators: (10)-Rate of households using the national electricity grid (%); (11)- proportion of households with stable houses (%); *(12)*-proportion of households with hygienic toilets (%).

- Determining groups and scores for each group: Criteria are classified into 5 groups in order: Group 1 - Low, Group 2 - Pretty low, Group 3 - Medium, Group 4 - Pretty High and Group 5 - High. The score of each group corresponds to the score of the criteria ranked from low to high as 1, 2, 3, 4, 5 (for criterion number [2], [3], [4], [6], [9], scores are in the opposite 5, 4, 3, 2, 1).

- Determining the coefficients for each criterion: Determining the evaluation coefficient is an important part of this method to discover the impact level of each criterion on the system. In the case of research on PLS aimed at sustainable development, multi-dimensional poverty reduction in order to develop livelihoods, no areas or criteria should be taken lightly. In order to limit the deep differentiation of geographic regions, the author built the aggregate criteria based on the unweighted average method (equal weight) for the criteria.

- Establishing the formula to calculate the combined score: On the basis of the established criteria, groups, scores and coefficients, the formula for calculating the combined score helps to work out the total score of PLS by territory.

$$A = \sum_{i=1}^{n} Si$$

In which: A combined score; Si score specified by group (from 1 to 5), i order of group (from 1 to 12).

- *Rating the evaluation:* After having the combined scores of the criteria, the author used the formula of Armand (1975) to rate the evaluation:

$$I = \frac{I\,max - I\,min}{M}$$

In which: I grouping distance, I_{max} Highest combined score; I_{min}: Lowest combined score, M Number of evaluation groups.

Applying this formula, it is possible to establish the distance I in the PLS ranking in Binh Dinh Province, the highest combined score (I_{max}) was 60 points and the lowest (I_{min}) was 12 points, with the number of evaluation groups (M) being 5 groups, the score distance per group was 9.6 points.

Table 2. Scale of general assessment of PLS

Order	Groups	PLS rankings	Combined scores
1	Group 5	High	Over 50.4 points
2	Group 4	Pretty high	40.8 – 50.4 points
3	Group 3	Medium	31.2 – 40.8 points
4	Group 2	Pretty low	21.6 – 31.2 points
5	Group 1	Low	Under 21.6 points

3.   Conclusions

Studying the change in the living standards of a territory, of a community is a fundamental task to effectively exploit human capital in developing livelihoods, increasing income and reducing poverty in the localities, meeting the requirements of the current sustainable socio-economic development strategy and policy.

For the PLS of a provincial territory, it is essential to identify and develop assessment indicators towards sustainability in each particular period to have a basis for conducting analysis of variation and associating with differentiation by spatial term according to each criterion. At the same time, research methods should also be applied properly to depict the PLS in the area.

With a combination of traditional and modern research methods, the article built a system of indicators and PLS assessment methods applicable to the territory of Binh Dinh Province, in which the group of economic indicators stands out (because this is determinants of other groups of indicators). And the sociological survey methodology was also employed to obtain the necessary data sources. Besides, in order to evaluate the differentiation of living standards by each population group and territory, the application of statistical grouping method and the combined score scale is essential. The results of the development of PLS assessment indicators and methods are the foundation for the author when analyzing the characteristics of living standards in Binh Dinh Province and also a significant reference source when studying PLS of a any other provincial territory from the geographic perspective.

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