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The role of universities in regional economic development based on tourism in Lampung

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ABSTRACT

This study aims to analyze the role of universities in economic development in the areas of tourism-based communities in Lampung. This study uses secondary data related to tourism, higher education, and macroeconomics of Lampung Province during the period of 2000-2016. The analysis is done by using panel regression method. The results show that Higher Education plays an enormous role in the economic development of the economy in the blood-based areas of tourism and which has tourism potential in Lampung. Most of the villagers who are in tertiary education but work in urban areas as a weakness of their contribution and domino effect on low investment, welfare, and lack of employment. This is why they are wandering to the big city. There is also a social gap which has significant economic disparities. They have access to education, health, and supporting infrastructure. In terms of the number of existing universities, it was found that they have not been able to optimally improve economic development in these areas.

ABSTRAK

Penelitian ini bertujuan menganalisis peran Perguruan Tinggi dalam pembangunan ekonomi di daerah-daerah komunitas yang berbasis pariwisata di Lampung. Penelitian ini menggunakan data sekunder terkait dengan pariwisata, pendidikan tinggi, dan makroekonomi Propinsi Lampung periode 2000-2016. Analisisnya dilakukan dengan metode panel regression. Hasilnya menunjukkan bahwa Perguruan Tinggi berperan sangat besar terhadap pembangunan ekonomi ekonomi di daerah-darah yang berbasis pariwisata dan yang memiliki potensi wisata di Lampung. Sebagian besar masyarakat desa mengenyam pendidikan tinggi tetapi bekerja di wilayah perkotaan dan ini menjadi lemahnya kontribusi mereka dan berefek domino pada rendahnya investasi, kesejahteraan, dan kurangnya lapangan kerja. Inilah yang menyebabkan mereka merantau ke kota besar. Terdapat pula kesenjangan sosial yang berakibat disparitas ekonomi yang cukup signifikan. Mereka memperoleh sedikit akses pendidikan, kesehatan, dan infrastruktur pendukung. Dari sisi jumlah Perguruan Tinggi yang ada, ditemukan bahwa mereka belum mampu secara optimal berkontribusi dalam pembangunan ekonomi di daerah-daerah tersebut.

2 INTRODUCTION

Economic development cannot be separated from economic growth because it encourages economic growth. Conversely, economic growth facilitates the process of economic development (Siregar 2008). In addition, economic development is a form of movement/ transformation of the primary agrarian economy (poor and stagnant) into a diversified urban-based economy and able to grow sustainably.

The fact that economic growth has an impact on a growing gap. This increases in income does not spread and concentrated only on a particular group/region only, and generally there are limitations on mobility, whereas in the development of economic equity growth is a target to be achieved, so in this case economic development will not occur if a country does not experience growth (the absolute requirement) even though economic growth

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Table 1
Student Absorption and the Number of Universities Spreading in Lampung in 2013

Regencies/ Cities	Number of University	The University Distribution (%)	University Absorption of Students* (%)
Lampung Barat	-	0.00	2.02
Tanggamus	1	1.39	9.36
Lampung Selatan	5	5.56	17.25
Lampung Timur	3	4.17	19.23
Lampung Tengah	3	4.17	18.93
Lampung Utara	7	8.33	16.03
Way Kanan	-	0.00	13.84
Tulang Bawang	2	2.78	4.88
Pesawaran	-	0.00	10.68
Pringsewu	7	6.94	24.38
Mesuji	-	0.00	1.49
Tulang Bawang Barat	-	0.00	4.26
Pesisir Barat	-	0.00	-
Bandar Lampung	41	55.56	40.09
Metro	9	11.11	43.02
Lampung Province	78	100.00	14.09
Average out of the Regencies/ Cities: Bandar Lampung, Kota Metro, Lampung Utara, Lampung Selatan			10.91
Regencies/ Cities: Bandar Lampung, Metro, Lampung Utara, Lampung Selatan			29.10

Source: Kopertis Wilayah 2 Palembang (2016), Dinas Pendidikan dan Kebudayaan Propinsi Lampung (2014), and the data were processed (2017)

*Note: Universities under the Supervision by the Ministry of tech, Science, and Higher Education

Table 2
Number of Tourist Visit Based on Hotel occupancy Level and Other Accommodation in Lampung Province in 2012-2016

Year	Number of Visits	Development
2012	577.893	-
2013	583.802	1.02
2014	936.461	60.41
2015	1.169.800	24.92
2016	1.546.613	32.21

Source: Burro Statistic (BPS) of Lampung Province, 2017.

itself is not necessarily sufficient economic development.

The data illustrates that the education sector, especially higher education in Lampung province continues to grow from year to year. Based on data from Lampung BPS (Burro of Statistics) in 2016 it is known that economic growth has increased by 5.2 percent, of which growth is mostly centered only in urban areas. This condition is, of course, on the contrary to the condition in rural areas although, geographically, the province of Lampung is predominantly a rural area with dominant agricultural land structure. It also has potential not only in the agriculture sector and plantation but it also has a potential as a tourism (Lampung BPS 2016). The economic growth in urban areas is due to the rapid development of both physical and non-physical as well as development in the education sector, which

continues to increase, including the growth of the number of Universities, even Kopertis Region 2 recorded 40 percent in the provincial capital of Bandar Lampung (Table 1). This condition also illustrates that the development of the education sector, especially higher education in Lampung province has not been implemented well and evenly. One clear picture shows that the majority of villagers only 2 percent who can afford education in Higher Education (BPS Lampung 2016).

Table 1 shows the number of universities and the distribution of high school graduates in Lampung province, where the table shows most of the existing universities in Lampung is in the capital of Bandar Lampung province (40 percent) with the absorption of graduate students high school to the existing universities in Lampung by 55.5 percent. In addition, Table 1 explains the percentage of gra-

duates of upper middle students' absorption in PT in Lampung an average of 10 percent. This condition indicates that there is still considerable inequality in the absorption of graduates of middle school students in 4 big cities (represented in Regency/City: Bandar Lampung, Metro, Lampung Utara and Lampung Selatan) also known that the average of students absorption of about 29 percent of from high school students across the universities in Lampung.

With regard to the development in the tourism sectors in Lampung province, Table 2 and Table 3 describe the development of tourism sector in Lampung province during the period of 2011-2016. This was indicated by a large number of tourist visits both local and foreign to Lampung province. Table 2 shows a significant increase in the number of tourist arrivals over the course of 5 years, indicating that the potential of regions in some areas of Lampung has attracted tourists to visit Lampung. All this is not apart from the increasingly recognized areas of tourism potential, especially new tourist areas are listed in fact most are located in rural areas.

In Table 3, it shows the number of destinations/tourist objects spreading throughout the Regency/City of Lampung province. It shows that most of the tourist destinations are located in rural areas in most districts in Lampung province. This indicates that the tourism potential in Lampung is actually located in rural area, as the characteristic of Lampung tourism. It is mostly is the nature of this tourism (Tourism and Creative Economy of Lampung Province 2017).

Economic development in various sectors (including education and tourism sector) can improve the quality of life of the community, income, as well as the welfare of the community, especially the local community. This is because of the development which can encourage the physical and non physical development whose impact on their welfare level in local area (Mafunzwaini et al. 2005). In this case, there are several factors that affect economic growth and economic development, where the factors can be grouped into two, namely: 1) economic factors, namely factors affecting growth and economic development such as natural resources, human resources, sources capital, and expertise or entrepreneurship, and 2) non-economic factors that include the socio-cultural conditions existing in society, the political, institutional, and evolving and prevailing systems. When looking at Table 4, it shows the description of the welfare level of the Lampung provincial community is expressed

in percentage and number of poverty. Table 4 also shows that the greatest number of poverty and the percentage of the poor are still dominated in rural areas.

The indicators of measurement of numbers, in this case, Lampung BPS using the concept of ability to meet basic needs (basic needs approach). Through the poverty approach, BPS views poverty as an economic inability to meet the basic needs of food and non-food as measured in terms of expenditure. Thus, it can be concluded that Poor people are residents with average monthly per capita expenditure below the poverty line (BPS Lampung 2017).

Klasen, (2002) explains that many of the factors, causing the poverty in rural areas include natural resources, human resources, education, unemployment, and many others. In addition, the low level of education in Indonesia is also one of the factors of poverty. If a person has a high level of education he will have a high quality of life. Thus, education can make them able to compete with the other communities for the job opportunity.

Based on the above arguments, it shows how the structure of economic development, especially the development of the education sector and tourism sector is. On the one hand, the progress is quite good in big cities, but on the other hand, underdevelopment or underdeveloped development is still a lot to do things. Considering the rich natural conditions, actually poverty or backwardness can be removed because there are still many potential areas in Lampung that have not been utilized. This, especially, includes agricultural lands such as rice fields, fields, gardens in the countryside to serve as objects and attractions of tourism where the objects are given touches from local communities that function as a value-added rural tourism coupled with the capacity and level of community education that can be a factor supporting the better physical development. Thus, from the background above, the purpose of this study is to see and analyze the role of Higher Education in economic development in the tourist area in Lampung.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Economic development is a process of increasing total income and income per capita by taking into account the existence of population growth accompanied by fundamental changes in the economic structure of a country. It also includes the income distribution for the population of a country. For that reason, economic development cannot be sepa-

Table 3
Number of Tourism Destination in Lampung Province Based on Regency/ City Areas

Regencies/ Cities	Number of Tourism Destination
Lampung Barat	12
Pesawaran	17
Lampung Selatan	15
Pesisir Barat	10
Tulang Bawang	9
Tanggamus	11
Lampung Tengah	9
Lampung Timur	10
Lampung Utara	9
Way Kanan	4
Tulang Bawang Barat	6
Metro	7
Bandar Lampung	12
Pringsewu	7
Total	138

Source: Processed data (2017) and Tourism and Creative economy Agency Lampung Province (2017).

Table 4
Number of Poor Population and Percentage in Lampung Province in 2015

Cities: Villages	Number of the Poor	Percentage of the Poor
Cities	230.415	10.34
Villages	924.275	15.465
Villages + Cities	1154.69	14.075

Source: Burro of Statistics (BPS) Lampung, 2017.

rated from economic growth. It encourages economic growth, and conversely, economic growth facilitates the process of economic development (Todaro 2009).

There are 4 factors affecting economic development: 1) Natural Resources: Land, minerals and minerals, fuel and season and weather. Natural wealth will facilitate efforts in developing the economy, of course, at the beginning of the process of growth and economic development; 2) Human Resources consisting of: Offering labour, educated professional workers, motivated, disciplined and innovated. Population development will increase the number of labours that encourages an increase in national production and level of economic activity; 3) Formation of Physical Capital: Factory, machinery, bridge, port, road, building, airport, transportation, electricity, communications, and telecommunication. Increasing the number of capital goods and the provision of a qualified infrastructure will facilitate the process of production and market expansion; and 4) Technology: Science, engineering, knowledge, management, and entrepreneurship. Technological advances can heighten the efficiency of production activities that will lower

production costs and increase output quantities.

Economic growth is defined as a process whereby the production capacity of an economy increases over time to generate an even greater level of income. Meanwhile, according to Salvatore (2007) economic growth is a process in which real GDP per capita increases continuously through increased productivity per capita. The targets of increase in real production per capita and living standard (real income per capita) are the main objectives that need to be achieved through the provision and direction of production sources.

The theory of optimum population (Siregar 2008) was developed by the classics. According to the theory, applying the law of diminishing return causes not all residents to be involved in the production process. If imposed, it will lower the level of economic output. In order to increase the workforce for the output increase, they should invest the capital goods and human resources that delay the occurrence of the symptoms of the law of diminishing return.

In addition, development in the tourism sector is one of economic development that needs attention for the government; it is based on the consid-

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erable contribution of the tourism sector to the economic growth (GDP) of a country. Indonesia's BPS in 2012 noted that the contribution of national tourism to GDP is 13.9 percent. As an economic activity, Indonesian tourism is influenced by various factors, both economic and non-economic factors at home and abroad that can influence tourism development (Singgerda 2014).

Based on the Law of the Republic of Indonesia Number 10, Year 2009 on tourism, it stated that tourism serves to meet the physical, spiritual, and intellectual needs of every tourist with recreation and travel and increase the state's income to realize the welfare of the people. In addition to having this function, tourism also has a purpose, namely to increase economic growth, b. improve the welfare of the people, c. eradicate poverty, d. Tackle the unemployment, e. preserve the nature, environment, and resources. It also advances the culture, lift the image of the nation, foster the love of the homeland, strengthen the identity and unity of the nation and cultivate friendship among the nations.

Singgerda, (2016) further states that the main impacts of tourism activities in terms of economics on the national level (macro) can be viewed from two aspects: 1. The direct impacts of tourism on the economic field that include: the impact on the balance of payments, the impact on opportunities work, and its impact on income distribution; and 2. The indirect consequences of tourism activities, including multiplier results, the results in marketing certain products, the results for the government sector (taxes), and artificial results affecting the community.

According to Lordkipanidze et al (2005), the development of tourism has a positive effect on the expansion of business opportunities and work. Business opportunities and work are born because of the demand of tourists. Thus, the arrival of tourists to an area will open opportunities for the community to become a hotel businessperson, guesthouse, restaurant, shop, transportation, street trade, sports facilities, services, and others. These business opportunities will give people the opportunity to work as employees. With the emergence of this business opportunity and work, the unemployment rate can be lowered (Wahab 2003). Even the development of tourism is intended to provide benefits to the fulfillment of community needs and improving the quality of life and welfare of the community.

Tourism development can provide opportunities for all Indonesian people to try to work. Tourist visits to a region provide the greatest benefit for the improvement of people's welfare. Thus, tourism

will be able to contribute significantly to the elimination of poverty through the increase of people's income in various regions with another economic potential other than the natural and cultural potential for tourism interests (Marpaung 2002).

The rural tourism by Ardika (2007) is characterized as follows: a) Oriented trip enjoys the atmosphere of rural life, b) Respect and gain the added value of life from the culture, traditions of the local community and its natural environment, c) Improve the welfare of local communities, and d) The daily life of the local community and its environment is the object and the tourist attraction.

To develop rural tourism there are basic principles that need to be considered are as follows: a) principal of rural tourism, b) The basic criterion of rural tourism development c) rural tourism planning, d) village community involvement. The basic criterion of rural tourism development is by bringing up the existence of objects and tourist attractions of the village associated with the existing travel packages. Efforts to link village tourism objects and attractions are effective when physical access and market access are easy to achieve. The development of physical infrastructure to access tourist objects and attractions appears to be important to do (Mafunzwaini et al. 2005). Potential partnership needs to be done if the object and the new tourist attraction will be opened. Thus, the objects and attractions that are still new, will be very vulnerable if they are without any partnership support from the existing travel packages.

The principle of rural tourism planning is to pay attention to environmental sustainability, pay attention to the carrying capacity; using environmentally friendly materials (recycle). This is related to the necessity of preserving and greening the environment in tourism (green tourism), not exploiting nature, attention to environmental sanitation and healthy living (Xu et al. 2017). Rural tourism scopes that need to be maintained are nature (mountains, valleys, forests, cliffs, flora and fauna landscapes, marine parks) and beautiful and guarded rural environments will support tourist arrivals and length of stay.

The principle of village community involvement is by making the village community as the subject of tourism activities. During this time immigrants often dominate the tourist areas, while local communities have not been able to participate directly in tourism activities. Community-Based Tourism can be applied to the development of micro and small enterprises in the field of rural tourism. Types of micro and small businesses that can

be developed are such as a) Accommodation cottage (homestay) with attention to local uniqueness, b) Food and beverage business featuring local tools, serving, menus and ingredients with hygienic processing, c) Tourist attractions, water sports, fishing, rice fields, forest, making souvenirs (handicrafts/ornaments, typical village shirts) involving tourists.

Human resources as one of the factors of production besides natural resources, capital, entrepreneur to produce output. The higher the quality of manual resources, the more efficiency, and productivity of a country. History notes that a country that implements a human dimension development paradigm has been able to thrive even though it lacks the abundance of natural resources. Emphasis on human investment is believed to be the basis for increasing total factor productivity. Land, labor, physical capital may have a diminishing return, but science does not.

Robert M. Solow in Maryaningsih (2014) emphasizes the role of science and investment in human capital for enhancing the economic growth. Solow's theory, later on, developed a new theory of economic growth known as the new growth theory (H. A. R. Tilaar 2000). Some of the factors that led to the need to develop education levels in efforts to build an economy are: 1) Higher education extends community knowledge and heightens the rationality of their thinking. This allows the community to take more rational steps in acting or making decisions, 2) Education allows the community to learn the technical knowledge necessary to lead and run modern enterprises and other modern activities, and 3) Better knowledge that derived from education into incentives to create innovations in the fields of engineering, economics and in many other aspects of community life.

3. RESEARCH METHOD

This study is an explorative research using documents or reports spreading in various government agencies in Lampung province. The population and sampling indicate that the data are micro-based on primary data field level. The location is in Lampung Province. It was taken based on several considerations, namely: (1) Potential of Lampung tourism sector able to give big contribution to regional economic growth, and (2) No similar research has been done yet.

The data sources collected are secondary data in the form of literature and secondary data, sourced from several government agencies, including the regional development planning agency

(Bappeda) Lampung Province, Central Statistics Agency Jakarta, Central Statistics Agency of Lampung Province, Lampung, Ministry of Research and Technology Higher Education (Dikti), Kopertis Region 2, and many others. The type of data in is quantitative and qualitative data that are macro, among others: Gross Regional Domestic Product of Lampung Province by time series, data of PT in Lampung, number of students recorded and study in Lampung, labor force data of PT graduate, data tourism, and many others.

This study uses an estimation model of panel data whose function is to calculate the magnitude of the influence of factors such as human resources, natural resources, technology and infrastructure of 2000-2016 to economic development in Lampung province, especially in rural areas that have tourism potential. Static panel data consists of three methods, namely pooled least square (PLS), fixed effect model, and random effect model.

In addition, to analyze the influence of these factors on economic development, this study builds a model of economic development equation of Lampung tourism area which is the development of Neo Classical growth theory by Solow (Dornbusch 2010) and Kuznet (Todaro 2009) explaining the role of investment and technological changes to the growth of a State as an element of factors of production. The model developed in this research are as follows:

$$EcDev_{it} = LnTour_{it} + LnAgLand_{it} + LnInfs_{it} + LnUniv_{it} + LnEmphy_{it} + Tech_{it} + e_{it} \quad (1)$$

Note:

EcDev(it) =Lampung economic development year-t (in billion Rupiah)

Tour(it) =Humber of tourism Rural Areas in Lampung tyear-t (in billion Rupiah)

AgLand(it)=Rural lands in Lampung Year-t (in Acres)

Inf(it) =Infrastructures in Lampung Year-t (in billion Rupiah)

Univ(it)= Number of universities in Lampung year-t

Emphy(it)=Workforce of university graduates in Lampung year-t (in millions)

IPM(it)= Index of Human development in Lampung province year-t (in percentage)

Tech(it) =Dummy variables of technology usage in Lampung year-t (1= after technology application , 0 = before technology application).

4. DATA ANALYSIS AND DISCUSSION

Potential of Lampung Rural Areas

Each region in Lampung has the potential to be developed into a tourism area, especially agricul-

Table 5
Area of Rice Field (in Ha) by Regency/City in Lampung

Areas	Area of Rice Fields in 2016		
	Irrigation	Non Irrigation	Total
Lampung Barat	11010	2433	13443
Tanggamus	20713	2367	23080
Lampung Selatan	10734	35051	45785
Lampung Timur	33560	29484	63044
Lampung Tengah	56975	23788	80763
Lampung Utara	12627	6677	19304
Way Kanan	12687	7287	19974
Tulang Bawang	0	47540	47540
Pesawaran	9802	5663	15465
Pringsewu	8676	4852	13528
Pesugi	0	24679	24679
Tulang Bawang Barat	8127	3171	11298
Pesisir Barat	4710	3768	8478
Bandar Lampung	409	535	944
Metro	2954	48	3002
Lampung Province	192984	197343	390327

Source: Burro statistics (BPS) Lampung (2017).

tural lands such as rice fields, fields and gardens. until now, its utilization is only limited to its basic function, that is only as agricultural land. In fact, in addition to being utilized according to its basic functions, the land can also be utilized as an object and tourist attraction to provide additional income for the local population. Table 5 presents data on the area of paddy fields owned by each district in Lampung as a potential natural resource that also has the ability to improve the welfare of the community in Lampung province. In fact, this land can also become a regional tourism potential.

Lampung Province is one of the provinces located on the island of Sumatra with an area of 3528.35 km². According to BPS (2015) data, land use in Lampung Province is the largest for agricultural land. About 390,327 hectares of land is used for rice fields and 768,715 hectares for plantations. This is 32.8 percent of the total area of Lampung is a farming and plantation area. The area of agricultural land and plantation, of course, will become an economic potential that can be developed productively for both the agricultural sector and the plantation itself but also can be a natural tourism potential that can be developed for the tourism sector.

Description of Rural Tourism to Build

Rural tourism to build is a relatively new concept that has not been widely introduced and is really very traditional. This is due to the ability of rural residents to be guides. Taking into account the

enormous potential of the Lampung region, especially agricultural land such as rice fields, fields and gardens, owned by all districts in Lampung with different areas. Based on data from Lampung BPS, in 2016, from 15 districts in Lampung, it turns out that Way Kanan district has the largest technical irrigation rice fields. Then, followed by North Lampung district and so on. The rice fields with semi technical irrigation are the most widely owned by the district of South Lampung. Rice fields with simple irrigation or village (non-technical irrigation) are most widely owned by Lampung Tulang Bawang district and South Lampung district and so on. Until now, the utilization of rice fields in Lampung only functioned as a producer of rice alone, but if more to provide added value in the form of additional income for the owners or farmers. In certain locations that are considered feasible to be a place of rest (comfortable, cool, shady, there are beautiful scenery, easily accessed by motor vehicles), can be built a tourist area in the form of Saung-saung place to gather with family or friends, of course in places like that provided unique heavy meals and cooked on the spot, can also be developed regional special foods or souvenirs whose production can involve visitors.

The concept of rural tourism such as this is likely to grow given the potential of visitors, especially domestic tourists who turned out to be high too, with the largest number of visitors to Pringsewu district followed to Pesawaran and so on (see data on the number of domestic tourist visitors).

Table 6
Number of Tourism Objects and Tourism Business in Lampung Province 2014

Regencies/ Cities	Art Studio	Gift Business	Star hotel level	Jasmine Hotel Level	Tourism Objects	Restaurants
Lampung Barat	48	32	-	17	15	48
Tanggamus	141	8	-	9	77	86
Lampung Selatan	175	14	-	21	37	113
Lampung Timur	128	-	-	9	10	75
Lampung Tengah	18	-	-	17	13	230
Lampung Utara	30	3	-	12	47	45
Way Kanan	249	9	-	5	59	30
Tulang Bawang	17	-	-	10	15	30
Pesawaran	11	-	-	-	10	18
Pringsewu	31	-	-	7	13	73
Mesuji	22	34	-	2	12	41
Tulang Bawang Barat	5	-	-	1	11	56
Pesisir Barat	-	-	-	30	-	16
Bandar Lampung	28	16	14	66	26	194
Metro	79	13	-	10	8	120
Provinsi Lampung	982	129	14	216	353	1175

Source: Burro statistics (BPS) Lampung, 2016.

Table 7
Number of Universities, Lecturers, and Students in Lampung Province 2014 -2015

Year	Number of universities		Lecturers		Students	
	Public	Private	Public	Private	Public	Private
2014	2	80	17 920	76 090	1 655	2 707
2015	3	78	26 240	85 238	1 807	2 889
Rata-rata	50	-2,5	46,42	12,02	9,18	6,72

Source: Institutional Directorate of Research, Tech, Higher education Ministry (Ristekdikti), 2017.

Such as the concept of rural tourism like this has been developed in the village of Batu Menyan, Teluk Pandan district, Pesawaran district, is a village built of natural tourism Lampung province. Potential Batu Menyan village includes river rafting trips Way Sabu, culinary tourism sites, waterfalls and hot water. Based on information from local village officials, it is said that this tourist spot has been developed since the beginning of 2017 ago and until now have developed. In one day, on weekdays, the average number of visitors is 30 motorcycles and 10 cars, on Saturdays and Sundays the average number of visitors can reach 100 motorcycles and 30 cars, especially if a big holiday like Lebaran, August 17 or other holiday can soar three or four-fold i.e. 300-400 motorcycles and 60-90 cars a day. Surely this situation is very helpful to the welfare of the local people whose average livelihood is mainly farmers.

When looking at the development achieved by the village of Batu Menyan, they have built a traditional rural area by utilizing the natural condition of the mountains and rivers. Other areas can im-

itate or follow the concept, just by offering different locations. In addition, the main food dish is similar but also offer the food of local specialties coupled with other creativities that can be built together by empowering young people who are currently unemployed. This can be done by such as games in the fields, gardens, fields and so on. Thus, it is expected that the income of rural people can increase so that rural poverty will decrease.

As presented on Table 6, it can be seen that there is a large enough tourism potential that can be produced and developed in Lampung province. So, there are still many attractions, facilities, and infrastructure that are still not optimally developed. According to Lordkipanidze et al. (2005), that development in the tourism sector positively affects the expansion of business opportunities and work, where business opportunities and work is created by the demand of tourists. Thus, the arrival of tourists to an area will open opportunities for the community to become a hotel businessman, guest-house, restaurant, shop, transportation, street trade, sports facilities, services, and others. Even the de-

velopment of tourism can also be aimed at providing benefits to the fulfillment of community needs and improving the quality of life and welfare of the community. Tourist visits to a region provide the greatest benefit for the improvement of the welfare of the community, including in the area around the tourist attraction in Lampung province.

The Role of Universities in Lampung Economic Development

The development of the education sector, especially higher education during the last few years continues to increase, where according to the data of the Institutional Directorate of Research and Technology Ministry Discussion in 2015 there are recorded 78 private universities and 3 state universities in Lampung province, as in Table 7.

Table 7 shows the profile of the education sector, particularly higher education in Lampung province. The data shows that there is an increase of 9.18 percent of the total students of state universities and 6.72 percent in private universities. Likewise, there is an increase in the number of lecturers both state universities and private universities and the number of state universities during the last 2 years. In contrast, there was a decrease in the number of private universities in Lampung province by 2.5 percent. This condition indicates that there is an overall increase in the education sector.

Similarly, the Human Development Index of Lampung Province also continues to increase. The Human Development Index, an indicator of the assessment of how people can access development outcomes in obtaining income, health, education, and so forth. In addition, HDI is an important indicator to measure success in efforts to build the quality of human life (community or residents).

Table 8 shows that there was an increase in Lampung's HDI and cities in Lampung province. This shows that there has been an increase in the quantity and quality of development both in the economic field (in this case related to income level) as well as non-economic field (which consists of the existence and ability of the community to get access to education and health). One measure of the success of development is as a result of physical development in the form of increased investment and capital formation in the form of infrastructure and infrastructure and other supporting facilities. As for non-physical development, it is known that local governments are also working to improve access to education and public health, especially for rural communities (RJPM Lampung Province 2016).

Estimation of Equation of Economic Development Model of Tourism-Based Area.

Equal economic development of Tourism Based Area (DEVECT) can be seen in Table 9. The results of the estimation equation show that the Chow test using LSDV method is the method to be chosen, where H0: PLS and H1: LSDV with the p-value (0.000). Thus, Hypothesis (H0) is rejected and Hypothesis (H1) is accepted. The estimation results on the LSDV method also show that the university graduate-labor force, infrastructure, Human Development Index (HDI), Use of technology, and tourism potential are the significant variables affecting Economic Development in tourism-based communities in Lampung.

In addition, based on the estimation results using LSDV method as the method used, it shows the effects of independent variables (land, work graduates of PT, infrastructure, HDI, use of technology, tourism potential, and the number of universities) simultaneously affect the economic development at a tourism-based community in Lampung with F-statistics obtained 5.94452 (5 percent real level) > F-Table of 3.84. Thus, H0 is rejected. This condition means that simultaneously, the independent variables significantly influence the economic development at tourism-based community in Lampung.

In contrast, the coefficient of determination (R-squared) is obtained by 0.9217. This indicates that the land, work for of university graduates, infrastructure, HDI, use of technology, tourism potential, and the number of universities can explain the variable of economic development in tourist-based communities in Lampung by 92.2 percent, while the rest of 7.8 percent variation of economic development variables in tourist-based communities in Lampung can be explained by other factors outside the observation.

Partially, the effect of the university-graduate workforce on economic development in tourism-based communities in Lampung is negatively significant with the p-value of 0.0000. This means that if the university-graduate laborforce rose by an average of 1 percent, it actually lowered the rate of economic development in the community-based tourism in Lampung by its change coefficient (2.8%). Based on observation in the field, most of the villagers who are educated in universities, just after they graduated, they work in urban areas. If some of the population in Lampung are found in the villages, with the main livelihoods of farmers and fishermen, the majority of the population is still low level of education. This causes the weak

Table 8
Human Development Index of Regency/Cities in Lampung Province

Areas	Human Development Index						
	2010	2011	2012	2013	2014	2015	2016
Province of Lampung	63.7	64.2	64.9	65.7	66.4	67	67.7
Lampung Barat	60.9	61.9	62.5	63.2	63.5	64.5	65.5
Tanggamus	60.1	60.6	61.1	61.9	62.7	63.7	64.4
Lampung Selatan	61.1	62	62.7	63.4	63.8	65.2	66.2
Lampung Timur	63.2	64.1	65.1	66.1	66.4	67.1	67.9
Lampung Tengah	64.1	64.7	65.6	66.6	67.1	67.6	68.3
Lampung Utara	61.8	62.7	62.9	64	64.9	65.2	66
Way Kanan	61.3	62	62.8	63.9	64.3	65.2	65.7
Tulang Bawang	63.2	63.7	64.1	64.9	65.8	66.1	66.7
3sawaran	58.6	59.4	60	60.9	61.7	62.7	63.5
Pringsewu		64.9	65.4	66.1	66.6	67.6	68.3
Mesuji		57.3	57.7	58.2	58.7	59.8	60.7
Tulang Bawang Barat		60.1	60.8	61.5	62.5	63	63.8
Pesisir Barat		-	-	59	59.8	60.6	61.5
Bandar Lampung	71.1	72	72.9	73.9	74.3	74.8	75.3
Metro	71.4	72.2	72.9	74.3	75	75.1	75.5

Source: Burro Statistics (BPS) Lampung, 2017

Table 9
Estimation Results of Economic Development Equation Model in Lampung-Based Tourism Community

Model	Variables	Coefficients	Pr > t
Economic Development in Lampung-based Tourism Community (DEVECT)	Rural Land	0.077327**	0.0005
	The labor force graduated from university	-2.768302***	0.0000
	Infrastructures	19.46742***	0.0001
	Human Development Index	-2.03441***	0.0000
	Technology used	0.882651***	0.0002
	Tourism Potential	12.95462***	0.0012
	Number of university graduates	17.64628**	0.0015

$F_{stat} = 5.94452$

R-Square = 0.921721

Durbin-Watson = 7.303499

Two side test hypothesis $H_0: \theta = \theta_0$, $H_1: \theta > \theta_0$ or $H_1: \theta < \theta_0$

Source: Processed Data (2017).

role and contribution of rural communities actively in regional economic development and weak government attention due to impartial policy. Such a condition has a domino effect on the low welfare of rural communities, lack of employment, and inadequate infrastructure development (especially education) than in the city. Thus, it can lead them to have little opportunity for the younger generation, so that they go to work in big cities. This is one of the many options taken for them to live in a more decent and adequate condition. Even Suryanto (2013) explains that the rural youth who are being sent to universities to improve their education and family welfare are not much interested in applying the knowledge they have to rebuild the countryside, making it even less developed and lagging. In

the developing community the paradigm that the village does not promise much decent employment so that not a few university graduates of college graduates do not return to their village and migrate/work to big cities (Crivello et al. 2011). This phenomenon can be attributed to a very high rate of urbanization with the reasons mentioned above.

Empirically, the estimation results also indicate that improving infrastructure will significantly improve the economic development of rural-based tourism in Lampung. This shows that with the development of infrastructure as an accumulation of capital formation can improve the welfare of the community, the absorption of labor, and able to move the real sector of local communities. In addition, the distribution of production factors or goods

and services of production depends on the existence of road infrastructure. This phenomenon shows that with the improvement of infrastructure will have an impact on economic growth (Purnomo 2009) and income per capita society (Maryaningsih 2014).

The Human Development Index (HDI) variable has a negative and significant impact on the economic development of the region/region of the tourist-based community in Lampung, which means if there is an increase in HDI of 1 percent will reduce economic development by the coefficient of change. This shows that the effect of the increase in HDI could not directly change to get the achievements of economic development. Thus, the increase of human development is caused by the increase of prosperity, improvement of health education access, other social aspects. They empirically found they it could not increase economic development in such a way, concerning income per capita of local society. Furthermore, this study found a social gap that impacted on the emergence of economic disparity (economic gap) is quite significant despite the increase in human development. This means that in the context of the availability of access to education, health, and supporting infrastructure available in those areas can only be accessed and utilized by a small number of village communities. However, in this case, economic development is still believed to be in line with social development so that economic growth can contribute directly to improving the quality of social welfare. Conversely, social development can contribute directly to economic development (Wardana 2016).

One of the development strategies implemented by the government is to increase the rate of economic growth by enhancing the growth of the dominant sectors. Development in these sectors encourages the availability of job opportunities that ultimately can increase and level the income distribution among community members. So that will encourage the increase of the welfare of the community. Along with it, Siregar (2008) states that the existence of the law of diminishing return causes not all residents that can be involved in the production process. If imposed, it will lower the level of economic output. In order to increase the workforce to increase output, what should be done is an investment of capital goods and human resources that delay the occurrence of the symptoms of the law of diminishing return or the law of diminishing returns. ¹⁴

The estimate in Table 9 also indicates that the use of technology has a significant positive effect on the total economic development of tourist areas.

The influence of the use of technology on the extent of economic development in the tourist villages of Lampung empirically affects the economic development in these areas. This indicates that the change and use of technology in the area can increase the total income (GDP) and income per capita society (GRDP) as result of increasing productivity of society and economic actors that exist in those tourist areas. Likewise, the development of technology can affect also affect the increasing ability of local communities to access market and access raw materials in which they previously found difficult to obtain. In addition, according to Ardika, (2007) and Xu, (2017) with the changes technology will actually increase the involvement of the community in development, especially in tourist areas.

The estimation also shows the positive effect of tourism potential significantly on economic development in the tourist area in Lampung. This shows that the potential of tourist areas to be developed will bring new objects and tourist attraction that will attract investors to invest. In addition, the development of new tourism object in the area of potential will also spur the increase of local people's income either derived from the absorption of workforce that will work in the tourism sector as well as small / micro businesses related to tourism activities such as: accommodation, transportation, crafts or souvenirs, restaurants, tour guides, lifeguards, shipping efforts, and much more.

Similarly, Xu, (2017) stated that with the involvement of the community of tourism village (Community Based Tourism) in the development activities of the potential of tourist areas especially in connection with the direct participation in the areas of local tourism business will not only increase the income of the community but also on the increase production, education, health, innovation and technology and capital formation (investment) as well as overall economic structure. Even Singagerda (2014) stated that economic development should require attention for the government. This is based on the considerable contribution of the tourism sector to the economic growth (GDP) of a country/region. Yet, as an economic activity, tourism is influenced by various factors both economic factors and non-economic factors in the country and internationally that can affect the development of tourism.

Likewise, Lampung province is an area that has an area and the potential of natural tourism that is vast and diverse; even it is one of the 10 most popular tourist destinations in Indonesia, with nature and culture. Thus, Lampung offers a variety of tourist attractions (Singagerda et al. 2016).

In the equation of estimation, the economic development of tourist area also shows a positive and significant effect of the number of universities in Lampung on the development of tourist economy in Lampung. This condition shows that, although, with the increasing number of universities in Lampung, it cannot yet optimally improve the economic development in tourist areas in Lampung province. This, of course, should be a concern for the government, especially the local government of Lampung province, where the existing universities are still largely dispersed in urban areas (mostly located in the city of Bandar Lampung). The existence of Higher Education as institutions to create quality human resource also contribute greatly to the development of rural areas that have potential in the tourism sector.

Human resources are as one of the factors of production to produce output. The higher the quality of human resources, the greater the efficiency and productivity of a country. Even Solow (1970) in Tilaar (2002) stated that there are several factors that cause the need to develop education levels to build an economy: 1) Higher education extends community knowledge and enhances the rationality of their thinking, and, 2) Education allows the public to learn the technical knowledge necessary to lead and run modern enterprises and other modern activities, and 3) Better knowledge gained from education becomes incentives to create technical reforms, economics and in many other aspects of community life.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

This research provides findings for some conclusions. The rural areas in Lampung have natural potentials spreading about 32.8 percent from all area that are agriculture and plantation. This shows a great natural tourism that can be developed for tourism sector. It can also give benefit to fulfill social needs and improve the quality of life and welfare of the surrounding community. Nevertheless, this research actually found a tendency of a negative effect of Human Development Index as an indicator of improving people's welfare on the economic development in the tourist village areas in Lampung province. This also means that the impact of an increase in HDI cannot yet bring about changes in the achievements of economic development (in this case the per capita income of local communities). Furthermore, this study found a social gap affected by the emergence of economic disparity (economic gap) which is quite significant,

despite the increase in human development.

In addition, the effect of the use of technology on the extent of economic development in the tourist villages of Lampung shows significant, and therefore important. The change and use of technology in the region can increase the total income (GDP) and income per capita for the people (GRDP). This can be due to the increasing community productivity and economic actors that exist in these tourist areas. The development of technology can also affect the ability of local communities to get access to the market and raw materials in which they could not get it previously.

This study also found that the development of the number of universities in Lampung province has resulted in an increase in the number of students, including those from rural areas. However, the research found that most of the villagers who study in universities, in urban areas, leads to their weak contribution to their role of rural communities actively contributing to the regional economic development, supported by weak government attention to rural development. Such a condition has a domino effect on the low welfare of rural communities, lack of employment, and inadequate infrastructure development (especially education) than in the city. Therefore, this can make the younger generation leave their village to go to work in big cities.

In addition, the study found that an increase in infrastructure can also enhance the economic development of rural-based tourism areas in Lampung. The development of infrastructure as an accumulation of capital formation can improve the welfare of the community, the absorption of labor, and able to move the real sector of the local community.

Overall, this study also found that there is a significant effect of the university-graduate workforce, infrastructure, human development index, technology use, and tourism potential on the economic development in tourist-based communities in Lampung with the degree of 99.2%. It shows a considerable implication that is to the dominant variables towards the economic development in Lampung province. Finally, the local governments should pay attention to these variables as factors that they must consider when making policies related to economic development, especially for the rural economic development.

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