THE IMPACT OF INFRASTRUCTURE AND INVESTMENT ON TOURISM INDUSTRY: EMPIRICAL STUDY BASE ON ASEAN COUNTRIES

By

HTIN, Shar

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

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By Htin Shar

Table of Contents

The Impact of Infrastructure and investment on tourism industry: empirical study base on ASEAN Countries

By

Htin Shar

ABSTRACT

Myanmar is the second largest country, has abundance of natural resource, cultural heritages, different kind of tourist attraction, among the ASEAN countries. Investment and infrastructure development have positive relationship between tourism sector development. This paper empirically investigates whether the investment and infrastructure led-growth hyposthesis holds for the ASEAN countries for the period of 2004-2014. A panel data approach is utilized and coefficient estimates are obtaining by using Pooled OLS model, fixed-effects model ans random effect model. As a result, the hyposthesis that investment and infrastructure is conductive to tourism sector development, dependency ratios of dependence and independence variables are verifying base on regression results. As a conclusion, over view of the tourism master plan of Myanmar 2013 to 2020 and policy recommendations for Myanmar's tourism industry have been conducted base on empirical result, literatures and reports of world tourism organizations in this research.

CHAPTER - I

Introduction

According to the WTTC, tourism is one of the most important sectors of national income (WTTC-2015). Many related sectors, such as hotel industry, restaurant, travel agencies, etc,… could be improved by promoting tourism sector. Tourism is commonly believed to trigger a positive spill-over effect on other sectors of the economy of a country. For example, improving Travel and Tourism sector has the positive relationship with Transpiration than improving Hotel or Transpiration has positive relation to Travel and Tourism sector.

The annual research of WTTC showed that the total contribution of Travel and Tourism sector was 9.8% of global GDP in 2015. For the ASEAN countries, Travel and Tourism sectors directly contributed to 5% of the regional GDP and indirect and induce contribution was 7.4%. Over the 32 million of jobs have been supported by Travel and Tourism industries. The table 1.1 show the contribution of ASEAN's Travel and Tourism industry to its regional GDP, is the largest percentage among other global societies.

Table 1.1 (Comparing the World Societies' Travel and Tourism Total Contribution in 2015)

| Middle East	Africa	Asia	Americas	Europe	ASEAN 10
8.0%	8.1%	8.5%	8.6%	9.6%	12.4%

Source - WTTC

This paper is going to study the factors affecting the tourism sector in ASEAN countries and the effects of tourism sector development on total current GDP. Secondly, this study will discuss the policy recommendations for Myanmar's tourism sector development.

1.1. Infrastructure

For tourism sector development, infrastructure and investment improvement is the essential needs for a country. The motivation of this research is the lower development level of Myanmar's Travel and Tourism industry. Myanmar has abandoned tourist attraction such as cultural attractions, historical monuments, nature and so on but tourism revenue is lower among the ASEAN countries. Direct contribution to GDP of tourism sector is 1.96 billion of USD, it is 3.17 percent of total GDP in Myanmar. With regards to the figures of other countries in 2015, it is 15.59 in Indonesia, 13.92 in Malaysia, 33.86 in Thailand and 8.41 in Vietnam,[1] directly contribute to the total GDP of these countries. Why Myanmar's tourism sectors' contribution to GDP is lower than other countries? The answer is the lack of infrastructure and investment. Figure 1.1 show the lowest infrastructure score of Myanmar in comparison to the regional countries. The direct travel and tourism percentage of GDP is higher when the infrastructure score is higher.

Figure - 1.1. The relationship of infrastructure and tourism sector development
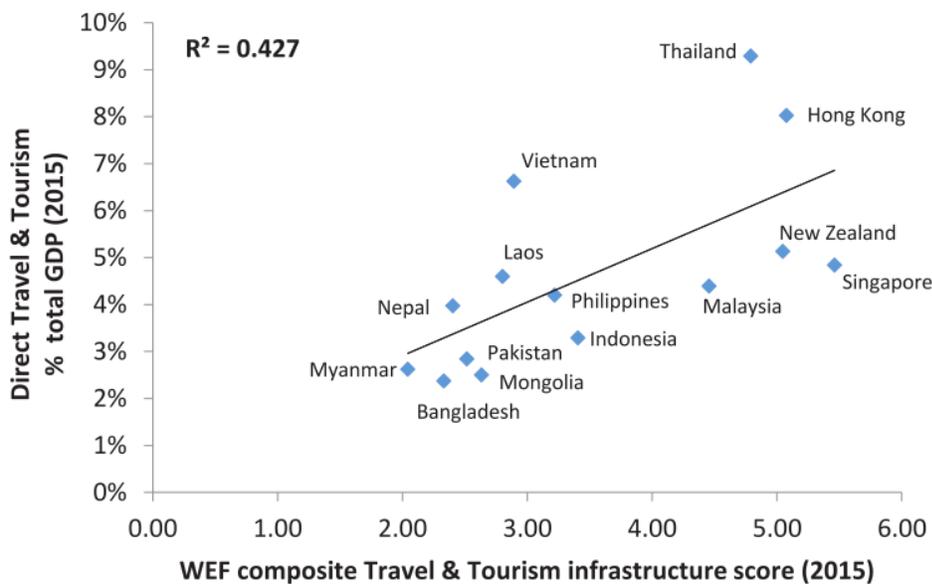
1.2. Tourism Receipts Value

Myanmar has the lowest tourism receipts values and the lowest GDP contribution of by tourism industry. The figure 1.2 show the comparison of tourism receipts among the regional countries.

Figure 1.2 – Tourism receipts of selected regional countries (1995-2015)
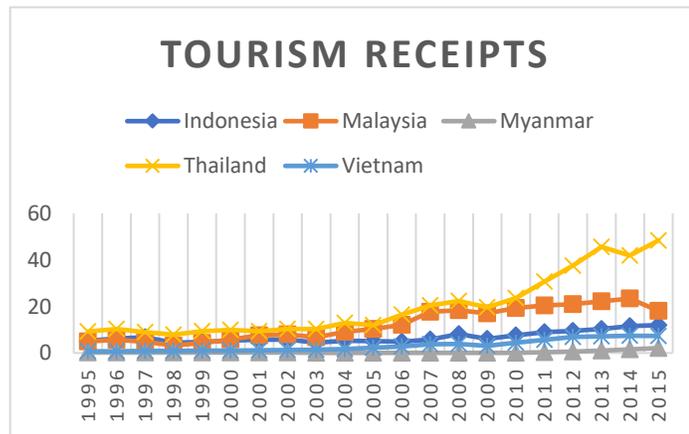
Source – World Bank

1.3. Capital Investment

It might be argued that the reason behind higher or lower tourism revenue in a country, especially Myanmar, might be due to capital investments. Figure 1.3 revealed low capital investment in Myanmar from 1995-2015. Not surprising, tourism revenues for Myanmar were dismally low. Figure-1.3 and Figure-1.1 suggest that if the capital investment and infrastructure development is poor, tourism revenues and its GDP contribution will not be improved. However, the omitted variable bias should be considered in decision making.

Figure 1.3 – Capital investment of the Tourism sector in selected regional countries (1995-2015).
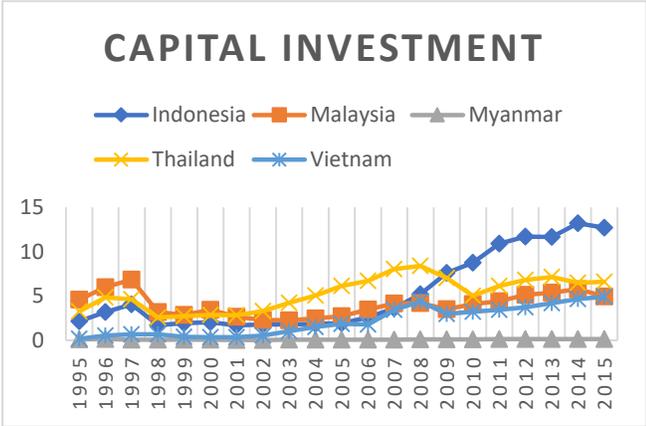
Source - WTTC

CHAPTER - II
Literature Review

The international tourism revenue is increasing annually around the world due to the increase of interest in such kind of tourism, whether be it for leisure, business, and others. According to the WTTC, tourism industry generated 9.8% of global GDP in 2015. "The business of business is business" said Milton Friedman. According to these words we can say a business activity can expand the opportunities in the other related area of economy. Business activities create employment, technology transfers, building the capacity of human capital and generate tax revenues for governments. We can promote peace, stability of economic growth, reduce unemployment, protect the environment, promote regional socio economic development, promote cultural awareness by improving the tourism industry.

Export-led growth analysis will be useful for the calculation of the effect of tourism on economic growth (Ummuhan Gokovali & Ozan Bahar - 2006). The quantity of export increases the foreign currency inflow, thus creating an increase in national revenue. In other words current GDP increases as a result of improving international demand for internal goods and services depending on the value of growth in exports. U. Gokovali and O. Bahar (2006) found a positive relationship between tourism and economic growth as a result of a panel data analysis of 16 years in 13 Mediterranean countries. The result showed that the GDP growth rate increase when the gross fix capital formation, total labor force, and tourism receipt rose. This research highlighted when the share of tourism revenue as a percentage of exports increase by 1%, the growth rate of domestic product increase by 8%.

The tourism industry is dependent on several factors such as air transport, capital investment in tourism, domestic transportation. The consensus among researchers is that tourism can be expanded more when the transportation systems improves. Tourism can be increased by

promoting the linkage of air transportation with foreign countries. Thomas Biegera, Andreas Wittmerb (2006) argue for the existence of an inter-relationship between air transport and tourism. The main responsibility of airline is to transport passengers from one geographical location to another. In other words, air conveyance is the linkage of various tourist attraction. Nwaogbe Obioma, R., Wokili. H, Omoke Victor, Asiegbu Benjamin (2013) presented the positive impacts of air transportation on tourism. Kalkidan Shitemaw investigated an empirical study that present a positive and significant long run and short run relationship between tourism and international air transport by using Vector Error Correction Approach on time series data (1974-2014) in Ethiopia.

The improvement of domestic transportation could be carried out for the benefit of not only international tourists but also for local travelers within a country. There is general agreement among scholars for the improvement in national transportation such as cheap transportation charges, the comfortable railway system, provides different options to travel, etc. around a country boosts growth of travellers. Tehran developed a positive relation of railway transportation and tourism development in the northern district of Iran as a result of empirical analysis. In the paper on Tehran, the estimation revealed the increase of tourists with the increase in investment and government expenditure in rail-way transport.

Vinod Kumar and Dr. J. B. Komaraiah (2014) claimed that tourism in India cannot be imaginable without train journey because it is generally used for public transportation in the country. In their study, they suggested improving the railway transport to boost the number of foreign visitors in the country. M. Delaplace, S. Bazin, F. Pagliara and A. Sposaro (Aug 2014) examined that the demand in the tourism sector was increased due to the improvement of high-speed railway services in France. Zhenhua Chen and Kingsley E. Haynes (2014) analyzed by using

dynamic panel modeling and confirmed the positive elasticity of the high-speed railway network and international tourist arrival, but the elasticity was quite small.

The consensus is that the capital investment in a business is the most important contributor to its growth. This contract conforms that capital investment is necessary for tourism sector development. The investment in all industries which is directly contribute to hotel and tourism such as tourism assets, restaurants and leisure facilities figures are reorganized as the capital investment of tourism (WTTC indicator). A J. Samimi, S. Sadeghi and S. Sadeghi (2013) confirmed that the improvement FDI in the hotel and restaurants sector can be promoted for the tourism sector development. Cem Işik (2015) investigated the significant relation of FDI and tourism sector improvement by using panel data analysis of seven developed countries(D7[2]) countries in the period of 1980 to 2012.

The security and safety condition are the important issue in determining tourism demand. As tourism is an optional activity, the majority of visitors will not visit to a destination where there are low rate of security and safety conditions (Pizam & Mansfeld, 1996)[3]. K. Zimányi said "Safety and security have always been indispensable condition for travel and tourism" page - . Mawby said: "in the case of tourism and crime it appears that risk exceeds fear" in (page 2)[4]. William V. Pelfrey (1998) discovered in his data analysis that there was an inverse relationship between the number of visitors and violent crimes like murder and robbery in Honolulu City. Troy Lorde and Mahalia Jackman (2013) exposed that as crime rate increases by 1%, tourist arrivals declined for

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2 D7 = Canada, France, Germany, Italy, Japan, the United Kingdom and the United States

3 Cited in "Evaluating the impact of crime on tourism in Barbados: a transfer function approach" by Troy Lorde &Mahalia Jackman

4 Cited in "Br, M. (2015). Tourism and Crime – Why Tourists become Victims, (June)".

20 months in Barbados. It effected direct income losses by US$ 47,000 and indirect losses of US$ 108,000.

Adamos Adamou and Sofronis Clerides (2009), argued that many countries can achieve the higher level of growth by specializing in tourism as the result of Barro model regression on cross-sectional data of 21 tourism specialized countries. The positive relation of per-capita GDP and tourism receipt was examined in their study. They also elaborated on the relation of physical capital and tourism specialization. In order to get this estimation, they used the lagged per capita GDP as a proxy variable of physical capital and male enrolment in secondary school and life expectancy as a proxy variable of human capital. The result of Panel fixed-effect test shows the positive relation of the growth rate of tourism receipts and degree of specialization (tourism receipts as a percentage of GDP). Bichaka Fayissa, Christian Nsiah and Badassa Tadasse analyzed 20 years panel data of 42 African countries by using the neoclassical framework in 2008. The test results revealed a positive relation of the contribution of tourism to the economic growth and development.

Sequeira and Nunes (2008) analysed the relation of tourism and economic growth by using two estimators. They were using the GMM estimator (introduced by Blundel and Bond in1998) and the LSDV estimator (corrected by Bruno in 2005). They divided a large sample into groups of countries. Each group of countries were based on the degree of specialization on tourism in the country's economy. The results indicated that 1% increment of tourism receipts is effect on the increase of GDP for 0.03 to 0.05 percent. Given these results, they suggested two interesting research lines. On the other hand, analyses of the determinants of tourism growth with special attention to the calculation of productivity in tourist companies. Researchers such as E. Çağlayan, N. Şak2 and K. Karymshakov investigated the relationship between tourism revenue and the gross

domestic product (GDP) by using the panel data of 135 countries for the period 1995–2008. Panel Granger causality analysis was applied to 11 groups of countries and they found that some groups of countries had a causal relationship between tourism and economic growth but some had no relationship. While, the result of some groups of countries showed that tourism is bi-directionally or unidirectionally linked with economic growth.

Sandra Ajimotokin, Alexandra Haskins and Zach Wade (2015) conducted the effect of unemployment rate on crime condition from Federal Bureau. Their estimation was showing that there is a positive correlation between violent crime and unemployment rate.

This study will attempt to address the research on the gap of tourism sector in Myanmar. The South East-Asian country with its rich cultural traditions and historical sites has a huge tourism potential. It would be useful to see the causal relationship of the factors affecting tourism, based on the previous studies stated above.

CHAPTER III
DATA AND METHODOLOGY

3.1. Data and Descriptions

In this paper, international tourism receipts will be the dependent variable. The research will focus on causal determinants of growth of travel and tourism industry by analyzing the annual 11 years' panel data by using OLS, fixed-effect and random effect Model. The influence of other factors apart from the travel and tourism industry will be studied by applying random and fixed-effects panel data analysis. The regression will be conducted to discuss the relation of tourism and other independent variable. International tourism receipts will be the represented data for tourism revenue and capital investment on travel and tourism sector will be the investment indicator. Air transport (the number of flight departure to worldwide), mobile subscription, the number of internet user and crime rate will be the variables for infrastructure development. This paper is assuming that the crime rate and unemployment rate of countries are positively related. The unemployment rate is used as a proxy variable for crime rate of ASEAN countries in this paper.

This research will explain the relation of international tourism receipts as the dependent variable. The capital investment on tourism sector, Air transport, registered (carrier departure worldwide), Mobile cellular subscriptions (WB), Number of Internet Users(WB) and Unemployment Rate (Proxy Variable For Crime indicator) would be independence variables. All variable are primary data from the sources of World Bank (WB) and World Travel and Tourism Council (WTTC) data base. This research would be focus on the relationship between two main independence variables (Capital Investment on Tourism Sector and Air transport registered) and dependence variable (International tourism receipts). The unemployment rate would be estimated as a proxy data for security and safety condition of the countries.

Table-3.1 Data and Descriptions

DATA	SOURCE	Unit	DISCRIPTION
International tourism receipts	WB Data Base	**(Billion in US$) (Real Price)**	International tourism receipts are expenditures by international inbound visitors, including payments to national carriers for international transport. These receipts include any other prepayment made for goods or services received in the destination country. They also may include receipts from same-day visitors, except when these are important enough to justify separate classification.
Capital Investment on Tourism Sector	WTTC Data Base	US$ in bn (Real prices)	Include capital investment spending by all industries directly involved in Travel and Tourism. This also constitutes investment spending by other industries on specific tourism assets such as new visitor accommodation and passenger transport equipment, as well as restaurants and leisure facilities for specific tourism use. This is consistent with total tourism gross fixed capital formation.
Air transport, registered (carrier departure worldwide)	WB Data Base	Number of departure	Registered carrier departures worldwide are domestic takeoffs and takeoffs abroad of air carriers registered in the country.
Mobile cellular subscriptions	WB Data Base	Number of subscriptions	The indicator includes the number of postpaid subscriptions, and the number of active prepaid accounts. The indicator applies to all mobile cellular subscriptions that offer voice communications.
Number of Internet User	WB Data Base	Number of Internet User / 100	Internet users are individuals who have used the Internet (from any location) in the last 12 months.
Unemployment Rate	WB Data Base	(% of total labor force) (modeled ILO estimate)	The series is part of the ILO estimates and is harmonized to ensure comparability across countries and over time by accounting for differences in data source, scope of coverage, methodology, and other country-specific factors. The estimates are based mainly on nationally representative labor force surveys, with other sources (population censuses and nationally reported estimates) used only when no survey data are available.

Source- world bank and WTTC

3.2. General dependences of international tourism receipts on explanatory variables

In general, the international tourism receipts is positively related with Capital Investment on Tourism Sector, Air transport, registered (carrier departure worldwide), Mobile cellular subscriptions and Number of Internet User. The unemployment rate is negatively related with of international tourism receipts. Figure 3.1 show the general trends of international tourism receipts. In this figure the slope of fitted line are reporting their trends.

Figure 3.1 General trends of dependence variable and independence variables
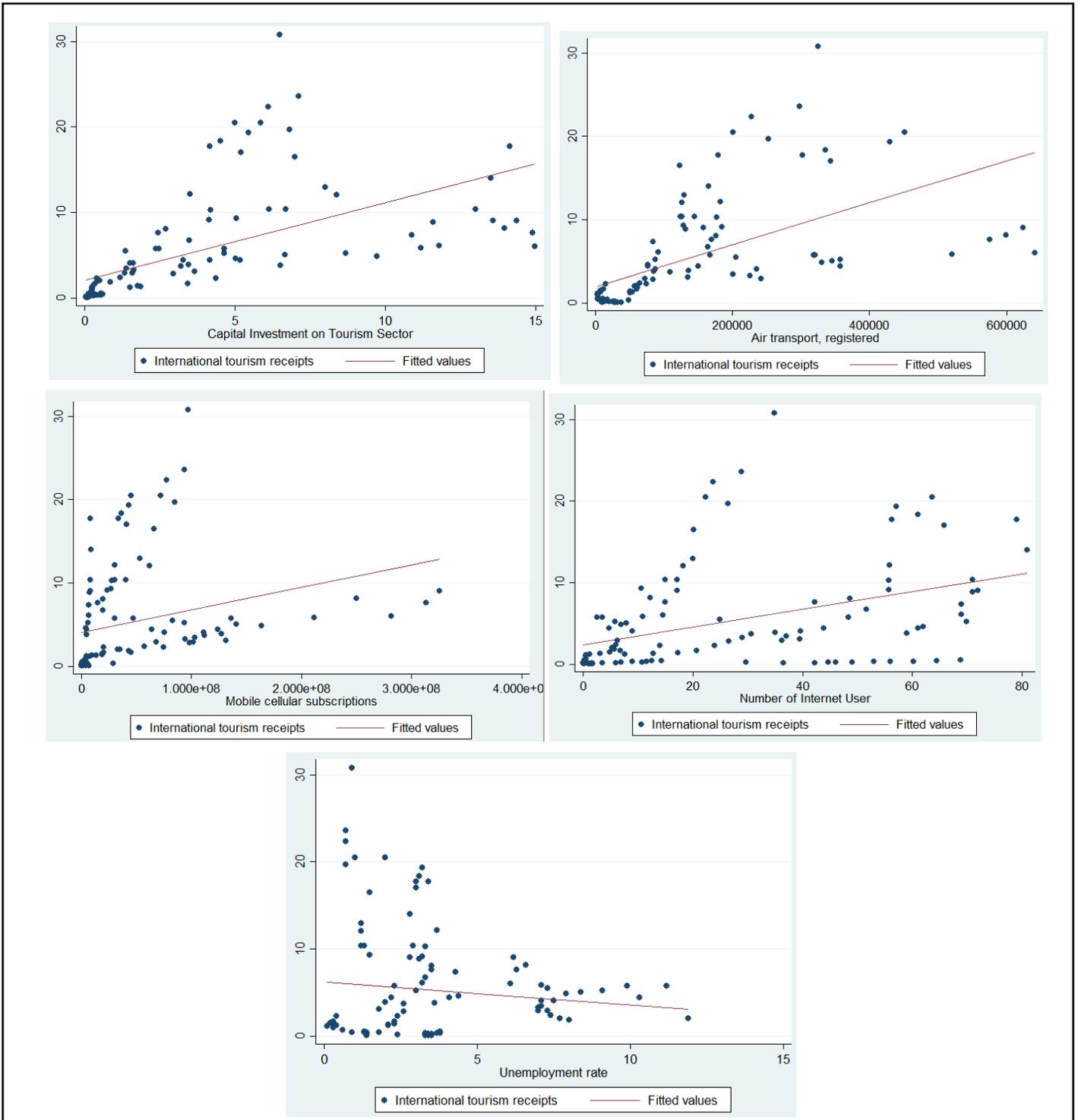
3.3. Methodology

This study will use quantitative methodology. The research is going to focus on causal determinants of the growth of travel and tourism industry in the annual 11 years' panel data using Ordinary lease Square Model, Fixed-Effect Model and Radom-Effect Model. The influence of other factors apart from the travel and tourism industry will be studied by applying random and fixe- effects panel data analysis. The regression analysis will be made for two steps, the first is going to test the panel unit-root by using Levin, Lin (and Chu) (1993) test. The second step will discuss about the relation of tourism receipts and its trends such as capital investment on tourism sector, air transport departure, mobile cellular subscription, number of internet user and unemployment rate. appropriation. The result for each pooled ordinary least squares (OLS) regressions are reported for comparison purposes with respect to fixed effect (FE) and random effects (RE). The following equation is going to be used in this study to explain the research question - "How Tourism revenue is depending on Capital Investment and Infrastructure value?". The results of all estimation will be compared to explain the research question.

$$LNITR = \beta_0 + \beta_1 \, LNCI + \beta_2 \, LNATD + \beta_3 \, LNMCS + \beta_4 \, LNNIU + \beta_5 \, LNUER + u$$

Where;

LNTR   - Natural Log of international tourism receipts
LNCI   - Natural Log of the amount of capital Investment
LNATD   - Natural Log of the number of air transport (Departure to worldwide)
LNMCS - Natural Log of the number of Mobile cellular subscriptions
LNNIU   - Natural Log of the Internet User/100
LNUER   - Natural Log of unemployment rate   - Error term
β - intercept

The estimation will be presented in Log-Log Regression Model. Each variable will be transform to natural log form to reduce the unit gap between each variables, to reduce the variability of the data and it is a widely used method to address twisted data. The data set of this research is constructed in different kind of units such as Billion in US Dollor for Tourism receipts,

number of flight, number of internet user, number of mobile phone subscription and unemployment percentage of total labor force . The gap between each variable are too large. This research could be directly interpreted in percentage change in the effect of X variables over Y variable more easily by using log transformation method. The natural logarithm and its base number have some magical properties, which may remember from calculus. As the result of transformation to Natural Log form, the estimation result would be directly interpreted as the percentage change of each variable.

OLS model is the method to estimate the relationship between dependence variable and independence variables by minimizing the sum of the squares in the difference between the observed and predicted values of the dependent variable configured as a straight line. OLS regression will be discussed in the context of a bivariate model, that is, a model in which there is only one independent variable (X) predicting a dependent variable (Y). However, the logic of OLS regression is easily extended to the multivariate model in which there are two or more independent variables. In the simple OLS regression, there will be the omitted variable bias in the estimation result. Fixed-effects and random-effects models could be used to remove omitted variable bias by measuring change within a group. In the random Effects model, the estimation would be assuming that the individual specific effects are uncorrelated with the independent variables.

Figure - 3.1 The difference between the OLS model and fixed effect model
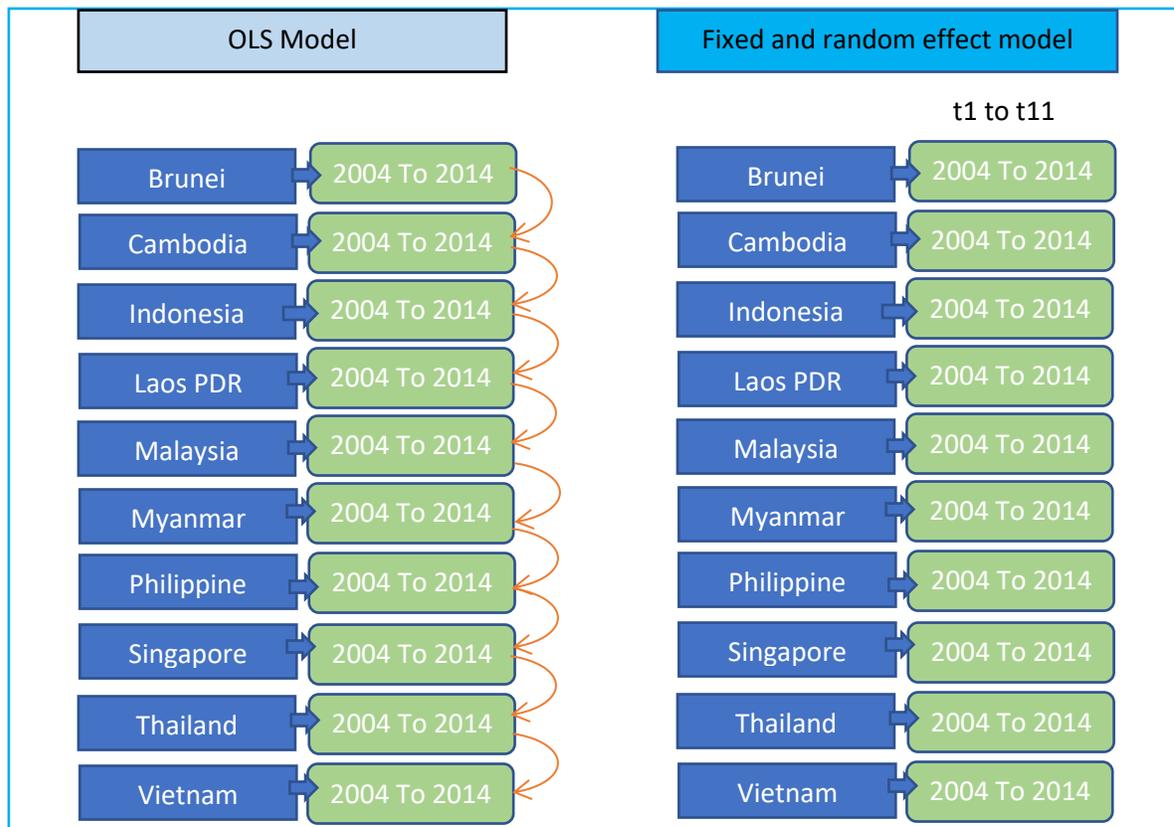
The different between OLS regression is as shown in figure 3.1. The assumptions of the Fixed Effects is that the individual specific effect is correlated to the independent variable. The estimation result would be effected by serial correlation in OLS model regression. When the Fixed or Random effect model is being used in estimation, the serial correlation effect would be removed. OLS model could be assumed that the all observations are in only one groups of series. In the fixed or Random effect model 11 groups of cross section data are being estimated separately.

Before the estimation of all regression model, panel unit roots test will be presented for each variable to prove the data-set as stationary data set. Levin, Lin (and Chu) (1993) test will be used in this research. The null hypothesis of panel unit roots test is "H_0 : Using Panel contain Unit roots or is not stationary and the alternative hypothesis is "H_a : Using panel is stationary.

CHAPTER - IV
Empirical Results

This chapter is going to present the result of empirical estimation by using Statistic software (Stata). The estimation would be based on the following Log-Log regression equation 4.1 to answer the research question "**How Tourism revenue is depending on Capital Investment and Infrastructure value?**".

Equation 4.1

$$LNITR = \beta_0 + \beta_1\ LNCI + \beta_2\ LNATD + \beta_3\ LNMCS + \beta_4\ LNNIU + \beta_5\ LNUER + u$$

4.1. Descriptive Statistics

The Descriptive Statistic explain the Mean, Median, Maximum and Standard Deviation of the sample period data of testing.

Table 4.1 – Summary Descriptive Statistics of Data set

Variable	Obs	Mean	Min	Max	Std. Dev.
LNITR	110	0.559928	-2.81341	3.42591	1.801149
LNCI	110	0.173942	-3.21888	2.70705	1.76603
LNATD	110	10.97519	8.073092	13.37107	1.457288
LNMCS	110	16.16726	11.43444	19.60113	2.147628
LNNIU	110	2.354238	-3.71574	4.393239	1.852584
LNUER	110	0.933813	-2.30259	2.476538	0.894264

Source – Author's Calculation (Stata)

4.2. Panel-Unit Roots Test by using Levin, Lin (and Chu) (2002) Model

Before the testing of three model, this study is going to check the data set to confirm the using data set as stationary. The Panel Unit Roots Test is based on the following general equation.

$$\Delta y\ it = \rho i\ yit + z'it\ \gamma + uit$$

Where i is 1, 2 is the individual, for each individual t is time series observations, z is the deterministic component and u is a stationary process. z could be zero. Levin, Lin (and Chu)

assume that both N and T tend to infinity but T increase at a faster rate, such as $N/T \rightarrow 0$. This model develop a procedure using pooled t-statistic of the estimator to evaluate hypothesis that each individual time series contains a unit root against the alternative hypothesis that each time series is stationary. LLC assume homogeneous autoregressive coefficients between individual, i.e. ρ ρ=i : for all i , and test the null hypothesis H ρ = =pi 0 : the alternative Ha ρ = <pi 0 for all i . Table 4.1 summarize the result of Panel Unit Roots Test for using data set.

The structure of the LLC analysis may be specified as follows;

$$\Delta y_{it} = \rho y_{it-1} + \alpha_{0i} t + u_{it}$$

where a time trend ($\alpha 1it$) as well as individual effects (α_i) are incorporated.

Table 4.2 - Result of Levin-Lin-Chu's Panel unit-root test

Variable	P-value Level	P-value 1st Difference
LNITR	0.7992	0.0000
LNCI	0.0000	0.0006
LNATD	0.6851	0.0000
LNMCS	0.0000	0.0040
LNNIU	0.5279	0.0000
LNUER	0.0117	0.4376

Source – Author's Calculation (Stata)

The null and alternative hypothesis of Panel Unit-root test are "Ho: Panels contain unit roots" and "Ha: Panels are stationary". According to the result of testing, the null hypothesis of the testing could be rejected because the P-value of all variable in both level and first-differencing are less than five percent. It means that the using data for all variable are stationary.

4.3. Ordinary Lease Square (OLS) Estimator

Table 4.3 show the result of Ordinary lease square method of estimation. In this table, every variable (except the number of internet user) are significant. According to the OLS estimation result, while a 1% increase in capital investment increases the international tourism receipts by 0.67%, a 1% increase in air transport increases the international tourism receipts by 0.3%. When the mobile cellular subscriptions increase by 1%, the international tourism receipts increase by 0.12%. The OLS estimator reported that the unemployment rate and tourism receipts are inversely related. The result show when the 1% increase in unemployment rate, the tourism receipts decreases by 0.43%. The reported p-value for the number of internet user show that this variable does not significant. In this reason, number of internet user cannot be explained to the dependence variable.

Table4.3 - estimation result of OLS Estimator

LNITR	Coef.	Std. Err	t	P>|t|	[96% Conf. Interval]	
LNCI	0.6663935	0.795739	8.37	0.000	0.5085956	0.8241915
LNATD	0.2976391	0.099199	3	0.003	0.1009237	0.4943546
LNMCS	0.1210788	0.045936	2.64	0.010	0.0299861	0.2121716
LNNIU	0.0131914	0.044797	0.29	0.769	-0.0756427	0.1020254
LNUER	-0.436079	0.086091	-5.07	0.000	-0.6068006	-0.2653566
LNUER	0	(omitted)				
_cons	-4.403984	0.975689	-4.51	0.000	-6.3388110	-2.4691580

Source – Author's Calculation (Stata)

4.4 Fixed-effect estimator

The table 4.4 is the report of the fixed-effect estimator of the study. The estimation results show that the variables such as LNCI, LNATD and LNMCS are significant but the variables such as LNNIU and LNUER are not significant. It means that LNCI, LNATD and LNMCS can explain to the dependence variable. Otherwise, LNNIU and LNUER are cannot explain to the dependence variable. According to the result of fixed-effect estimator, while a 1% increase in capital

investment increases the international tourism receipts by 0.26%. The 1% increase of air transport effect on the international tourism receipts to increase by 0.58%. The 0.18% increase of international tourism receipts could be affected by 1% increase of mobile cellular subscriptions.

Table4.4 - Estimation result of Fixed-effect Estimator

LNITR	Coef.	Std. Err	t	P>|t|	[96% Conf. Interval]	
LNCI	0.2561292	0.0905602	2.83	0.006	0.0763446	0.4359139
LNATD	0.5777558	0.1019415	5.67	0.000	0.3753763	0.7801353
LNMCS	0.1807964	0.0819230	2.21	0.030	0.0181587	0.3434342
LNNIU	-0.1445877	0.0810799	-1.78	0.078	-0.3055516	0.0163763
LNUER	-0.107055	0.1049687	-1.02	0.310	-0.3154443	0.1013343
_cons	-8.308223	1.6606540	-5.00	0.000	-11.6050400	-5.0114080

Source – Author's Calculation (Stata)

4.5. Random-effect estimator

Table 4.5 is presenting the result of the random-effect model. The p-value of LNMCS, LNNIU and LNUER are showing that these variables are not significant. It means that these variable does not explain the dependence variable. The p-value of LNCI and LNATD prove that these variables can explain the dependence variable. According to this result, the international tourism receipts value could be increased 0.35% by 1% increasing of capital investment. When the air transport departure value increases by 1%, the international tourism receipts value increases by o.54%.

Table4.5 - Estimation result of Random-effect Estimator

LNITR	Coef.	Std. Err	t	P>|t|	[96% Conf. Interval]	
LNCI	0.3454376	0.0846272	4.08	0.000	0.1795713	0.5113038
LNATD	0.5391492	0.0923854	5.84	0.000	0.3580773	0.7202212
LNMCS	0.1164709	0.0682531	1.71	0.088	-0.0173027	0.2502445
LNNIU	-0.0956264	0.0648160	-1.48	0.140	-0.2226635	0.0314107
LNUER	-0.157869	0.0951605	-1.66	0.097	-0.3443799	0.0286426
_cons	-6.927892	1.3324650	-5.20	0.000	-9.5394750	-4.3163090

Source – Author's Calculation (Stata)

4.6. Summary of Empirical Testing

In sum, the table 4.6 reported the comparison of three estimators. In this table, the two main explain variable are significant in all estimators. But the others are cannot explain the international tourism receipts. In this reason, the estimation can prove that the promoting of capital investment and air transport departure could be improved the international tourism receipts.

Table 4.5 – Summary Table of three estimator

Variable	OLS	Fixed	Random
LNCI	0.6663935***	0.2561292**	0.3454376***
LNATD	0.2976391**	0.5777558***	0.5391492***
LNMCS	0.1210788**	0.1807964*	0.1164709
LNNIU	0.0131914	-0.1445877	-0.0956264
LNUER	-0.4360786***	-0.107055	-0.1578686
_cons	-4.4039844***	-8.308223***	-6.927892***
legend: * p<.05; ** p<.01; *** p<.001			

Source – Author's Calculation (Stata)

Policy Recommendation For Myanmar and Conclusion

5.1. Brief Overview of the Myanmar's tourism master plan

The tourism master plan of Myanmar was issued to maximize the contribution of tourism industry in national employment and income generation. The long-term plan's implementation period is 2013 to 2020. Within this period, Myanmar government aim to develop the tourism industry by the following strategic programs.

Strategic Program 1: Strengthen the Institutional Environment.

Strategic Program 2: Build Human Resource Capacity and Promote Service Quality.

Strategic Program 3: Strengthen Safeguards and Procedures for Destination Planning.

Strategic Program 4: Develop Quality Products and Services.

Strategic Program 5: Improve Connectivity and Tourism-related Infrastructure.

Strategic Program 6: Build the Image, Position, and Brand of Tourism Myanmar.

The plan expected to reach the target of 3.01 million of foreign visitor in 2015 and 7.48 million in 2020[5]. The high target of income generation was targeted by $10.18 billion and 1.49 million of jobs in 2020.

The table 5.1 show the average growth rate to reach the target of the plan. The expected growth rate of the plan is 225% in average annually. The average annual growth rate in the period of (2012 to 2013) was 256%. This growth rate of unplanned period was showing the result of government traction of military system to democracy system. On the other hand, the average

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[5] Tourism Master Plan of Myanmar, 2013 - 2020

annual growth rate of planned period was showing the lower than our expected growth rate and

unplanned period. It could be assumed that our tourism master plan did not implement or efficient

to reach the targeted value in the period of 2013 to 2015. The data of World bank and WTTC

shows that Myanmar's tourism sector developed in height rate of growth after the years of 2010

(Table 5.2).

Table 5.1 - The comparison of targeted growth and current condition of income generation

Sector	expected annual growth rate (2013 to 2020)	Average Annual growth rate, before implementation period (2010 to 2012)	Average Annual growth rate of the planned period (2012 to 2015)
Income generation (international tourism receipts)	225%	252%	156%

Source - Calculation base on world bank data bank by Author.

Table 5.2 –Myanmar's Tourism Sector Development, Years 2005 to 2015

Years	International tourism receipts	International Tourist Arrival	Direct contribution to employment	Direct contribution to GDP
	(current US$)	(Number of Arrivals)	(Thousand of Jobs)	(Percentage of GDP)
2005	83000000	660000	282.699	1.59577
2006	59000000	630000	265.735	1.46885
2007	97000000	716000	284.209	1.53844
2008	80000000	731000	281.047	1.48988
2009	75000000	763000	256.301	1.33063
2010	91000000	792000	265.092	1.25005
2011	334000000	816000	384.726	1.55053
2012	550000000	1059000	516.079	2.19407
2013	964000000	2044000	515.115	2.25365
2014	1687000000	3081000	626.607	2.56821
2015	2266000000	4681000	798.478	3.17194

Source – World Bank, WTTC

5.2. Implication and Policy Recommendation

The result of this study (Chapter-IV) shows the international tourism receipts is positively related to capital investment and infrastructure but the dependency rate is quite small. It means that the tourism receipts could not be improved by only focusing on the development of investment and infrastructure. OLS model shows the proxy for crime rate is negatively relative to tourism sector development. It means that a country need to be more secure for tourists to improve the tourism sector.

Political reform and foreign relation policy are important issue for the tourism industry development. The visa liberalization policy and improving facilities to visa application process are recommended policy to develop the tourism industry in Myanmar.

Among the typical foreign relation policies, the visa policy is the most important policy to improve the tourism industry in a country. The joint research of UNWTO and WTTC reported the relation of visa policy and tourist arrival development. This research reported that the facilitative visa policy can improve the tourist arrivals from the market in a range of 5% to 25% in a year on average over a three-year period (2014, WTTC). In 2014 report on WTTC, 10% of tourist need visa to ASEAN countries. This report conducted the visa facilitation policy could be positively affected to destinations attractiveness, tourist arrival and international tourism receipts. In 2009, Republic of Korea's policy for visitors from China (2006) effected to the Chinese visitors to South Korea increased by 64.5% above 2005 level (2014, WTTC). (a) Australia's ETA program (1996), (b) Russian Federation and Hong Kong, China visa waiver for short trips (2009), (c) United States of America waives visa requirements for visitors from Taiwan, Province of China(2012), (d) China waives visa requirements for visitors from Brunei Darussalam, Singapore, and Japan (2003), (e) USA Visa Waiver Program expansion (2008) and (f) Canada visa policy for the Czech Republic

and Mexico are demonstrable visa liberalization policies to promote the tourism industry for a country.

Tourism industry has high level of relationship with culture, environment, and transportation. Promoting tourism industry could not be success without the corporation of its related sectors. For this reason, Ministry of Hotel and Tourism is recommended to build the efficient and sustainable corporation with cultural sector, transportation sector and environment sector for more corporation. The Ministry of Culture, Sports, and Tourism (MCST) of South Korea co-operates with the Ministry of Land, Infrastructure, and Transportation to revitalize tourism through facilitating improved connectivity between air, land and water transportation[6]. The tourism policy and program of Italy was planned in the terms of cultural focus strategy[7]. The adoption of these policy may promote the tourism industry in Myanmar.

5.3. Conclusion

The three models of estimation conduct that investment and infrastructure improvement are positively related with the tourism sector development in this study. Additionally, the OLS estimator conducts unemployment rate is negatively related with tourism receipts value. Unemployment rate is being used as proxy data for crime rate in this study. For this reason, crime rate is an obstacle of tourism sector development.

According to several literatures, tourism industry can support the country's national income as a main income generation source. Tourism has main seven advantages for a country's economy (May 23, 2014 by Travis Bennett) such as (a) promoting employment, (b) increase domestic community spending, (c) diversification, (d) development of infrastructure, (e) social

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[6] OECD TOURISM TRENDS AND POLICIES 2016 © OECD 2016, OECD COUNTRIES PROFILES – KOREA, Tourism in the economy
[7] OECD TOURISM TRENDS AND POLICIES 2016 © OECD 2016, OECD COUNTRIES PROFILES – OECD COUNTRIES PROFILES – ITALY, Tourism policies and programs.

advantages, (f)environmental advantages and (g) opportunities for local entrepreneurs to explore their business. The abandoned of tourist attraction and different kind of geographical conditions are the opportunities for Myanmar's tourism sector development. According to Author's opinion, tourism could be the new model for development of Myanmar's economy.

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