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Myanmar and Korea have many similarities and are complementary relationship. Therefore, we believe that research exchange will expand mutual understanding between Myanmar and Korea, and will be the cornerstone for mutual development.

KOMYRA and YUE have co-published The Myanmar Journal since August 2014. So far, many scholars have published numerous papers through the journal, and We are sure that this journal has helped many people understand Myanmar and Korea more clearly and closely.

The Myanmar Journal covers various issues in Myanmar and Korea. It covers various topics that can promote bilateral development and mutual understanding, not limited to specific topics such as economy, industry, society, education, welfare, culture, energy, engineering, healthcare, and agriculture.

We hope that this journal will continue to promote understanding of the current status and potential capabilities of Myanmar and South Korea and promote in-depth international exchange and cooperation.

We would like to express our deepest gratitude to the editorial board and YUE and KOMYRA for their valuable support in The Myanmar Journal publication.

February 28, 2022

Youngjun Choi *yj choi*

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The Myanmar Journal (ISSN 2383-6563) is the official international journal co-published by Yangon University of Economics (YUE) and Korea Myanmar Research Institute (KOMYRA).

This journal aims to promote the mutual cooperation and development of Myanmar and Korea through intensive researches in the entire filed of society, economy, culture, and industry.

It will cover all general academic and industrial issues, and share ideas, problems and solution for development of Myanmar.

Articles for publication will be on-line released twice a year at the end of February and August every year on the Myanmar Journal webpage (http://www.komyra.com/bbs/board.php?bo_table=articles).

Role of Tourism on Poverty Reduction: A Case Study of Bagan Archeological Zone in Myanmar

Hlaing Hlaing Moe*, Win Thri Aung**, Hnin Hnin Aung and Khin Myat Noe Wai*******
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ABSTRACT : Poverty reduction is currently a main issue for many developing countries including Myanmar. During the last decade of socioeconomic reforms in Myanmar, the tourist arrivals and tourism earnings has been increasing. Myanmar has become an attractive tourist destination and it is worthy the effects of tourism industry on reduction of poverty through the better livings of the people. In this study, the influences of tourism-related and socio-demographic factors on household poverty in Bagan are analyzed. The target population consists of household heads aged above 18 years in Bagan. Data are collected during January and March 2018 using a structured questionnaire and personal interview with 401 households residing in urban area of Bagan. The Chi-square test and binary logistic regression model are used. The results indicate that an increase of employing family members in tourism industry and receiving economic benefits from tourism influence on the poverty reduction of households. The household heads who get tourism income, perceive more the economic impacts of tourism and support for tourism development are found to be significantly less likely to be poor. It has been found that household heads' gender, education, occupation and birthplace show a critical part in poverty reduction of households. Therefore, tourism can play very important roles on economic and sociocultural development and higher living standard of local people that are essential for reduction of poverty.

Key words *: Poverty reduction, Tourism industry, Poverty line of Myanmar, Pro-poor tourism*

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I. Introduction

1. Background

Poverty seems to be a multiple serious problem because of experiencing these problems among poor people (UNESCAP, 2005). Poverty is a chronic problem and the no education, humble health and lack of good health facilities, casual work, unequal income, shortage of basic infrastructure and lack of personal safety are combined (Croes, 2014). Tourism has a lot of contributing the growth of economy in countries by foreign exchange earnings, employment prospects and delivery of public revenues. These economic welfares can play an essential part in the process of poverty reduction. Tourism has become a main industry in both poor and rich countries because of economic and sociocultural expansion (Shah and Gupta, 2000). Because of the action of export revenue, job creation and enterprise establishment, tourism industry has become one of the essential economic sectors (UNWTO, 2013).

In 2018, HDI value of Myanmar was 0.584 and it is ranked 145th out of 189 countries and territories. According to Myanmar Living Conditions Survey (MLCS) 2017, 24.8% are the poor. In Myanmar, tourism has mainly contributed by providing an increase in foreign exchange earnings, employment opportunities and infrastructure development. Myanmar tourism statistics clearly stated that international tourist arrivals increased from 0.79 million in 2010 to 4.36 million in 2019. The tourism earnings increased from US$254 million in 2010 to US$2819 million in 2019. In Myanmar, tourism sector has contributed to US$ 4.9 billion in 2017. In 2018, tourism sector has supported more than 580,000 people working in tourism-related jobs and it expects 914,000 job opportunities in 2028 (WTTC, 2019).

Nowadays, Myanmar is promptly becoming a foremost tourist destination. Bagan is the popular tourist site of Myanmar as well as the UNESCO's world heritage site. The tourist arrivals and tourism receipts increased year by year. The development of tourism has supported job opportunities to the locals. Tourism development has facilitated local people to participate transportation and accommodation. Local residents can receive economic welfares from tourism by acting small and medium enterprises. Hence, this study attempts to investigate the role of tourism industry on reduction of poverty among households in Bagan.

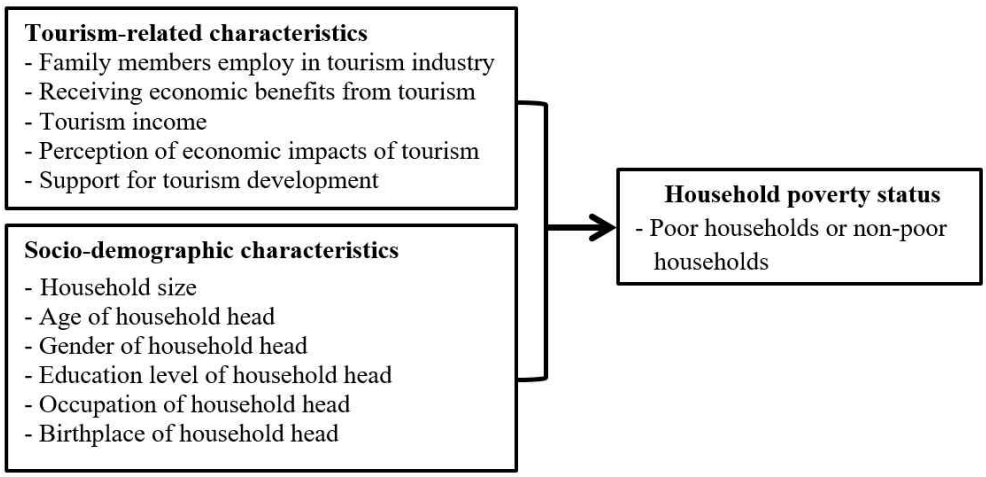
2. Conceptual Framework

Poverty is a multidimensional phenomenon that entails a deficiency of basic needs (ODI and AIRD, 1999). This lack may involve deficient revenue, consumption,

privileges, rights and security (ODI and AIRD, 1999). Tourism plays a vital role of economic growth of destinations and the poor receive its economic benefits (UNWTO, 2010). Tourism contributes greatly to decreasing poverty, increasing job opportunities for youth and migrant workers (UNCTAD, 2013). Zhao et al. (2007) found that tourism plays an important role in accomplishing poverty reduction goals. Ashley et al. (2006) found that tourism is a main source of occupation and a vital portion of the economy. In addition, tourism has contributed the living conditions of the poor.

As discussed above, various scholars and organizations investigated that tourism is related to poverty reduction. This study analyzes that tourism industry is mainly contributed to the poverty reduction in Bagan. The conceptual framework of the study explains the relationships between household poverty status and tourism-related and socio-demographic characteristics.

Figure 1: Conceptual framework



3 Objectives

This analysis uses the most recent survey data from Bagan in Myanmar. The objectives posed for the study are to:

(i) Investigate the tourism-related and socio-demographic characteristics.

(ii) Analyze the relationship between tourism-related and socio-demographic characteristics and household poverty status.

(iii) Explore the determinants of household poverty status.

II. Data and Methods

1. Survey Design

The household sample survey was conducted in Bagan Heritage Zone to obtain the required information. To carry out the survey, the questionnaire can be conducted. The questionnaire consists of the socio-demographic and tourism-related characteristics. The questionnaire was prepared for asking the required information from the household. Only a household head from each household can be answered the questions. The target population consisted of household heads with aged 18 years and above.

A two-stage sampling design was applied to carry out a household sample survey. In line with the proposed sampling design, wards were treated as first stage sampling units and households were treated as second stage sampling units. In the first-stage sampling, six wards out of thirteen wards in Bagan-Nyaung Oo Area were randomly selected. In the second-stage sampling, households (SSUs) were randomly selected from selected wards.

The required minimum sample size was calculated using the following formula (Krejcie and Morgan, 1970).

$$n \geq \left(\frac{pq\ Z^2}{E^2} \right) = \frac{0.5\ (0.5)\ (1.96)^2}{(0.05)^2} = 384$$

where, p = 0.5 (maximum possible proportion) and q=0.5
E = 5% (acceptable margin of error for proportion)
Z = 1.96 for 5% significance level

According to the pilot survey, the response rate was assumed 96%. The minimum sample size was 401. Therefore, the required minimum sample size was 401 households. The selected wards and households were shown in Table 1.

Table 1. List of Selected Households in Bagan

Selected Wards	Number of households in selected wards	Number of selected households
Ward (4)	834	67
Ward (5)	1412	114
Ward (7)	439	35
Kyansittha	773	62
Anawrahta	1057	85
Thiripyitsaya	465	38
Total	4980	401

Source: General Administration Department of Nyaung Oo Township, 2018

2. Key Variables and Measurements

The dependent variable used is household poverty status in Bagan. In order to measure the extent of poverty, per capita consumption expenditure of the households is determined by the threshold level of per capita consumption level at poverty line. In the study, the monetary measure of poverty is determined per capita consumption expenditure approach for those food and non-food consumption expenditure. According to 2012 international poverty line, the international poverty line was $1.25 per capita per day. The average exchange rate of Myanmar's currency in 2018 was 1440 kyats per US$. Therefore, the minimum consumption expenditure of poverty line is determined at 1800 kyats per capita a day. An individual is considered to be poor if each member in a household who has per capita consumption expenditure per day of 1800 kyats or less. Therefore, households which have below poverty line (1800 kyats or below per capita consumption expenditure per day) are coded as 1 and households which have above poverty line (above 1800 kyats per capita consumption expenditure per day) are coded as 0. The independent variables used in this study are tourism-related characteristics and socio-demographic characteristics. The identification and measurement of independent variables considered for fitting models are shown in below.

X_{1i}=Family members employ tourism industry
= 1 if none member
= 2 if 1-2 members
= 3 if 3 members and above

X_{2i}=Receiving economic benefits from tourism
= 1 if few

X_{6i}=Household size
= 1 if below 4
= 2 if 4 and above

X_{7i}=Age of household head
= 1 if below 30 years
= 2 if 30-50 years
= 3 if above 50 years

= 2 if moderate
= 3 if most

X_{3i}=Household head's tourism – related income
= 1 if below 1 lakh
= 2 if 1 lakh – 5 lakh
= 3 if above 5 lakh

X_{4i}=Household head's perception of economic impacts of tourism
=1 if low level
=2 if high level

X_{5i}=Householdhead's support for tourism development
=1 if low level
=2 if high level

X_{8i}=Gender of householdhead
= 1 if female
= 2 if male

X_{9i}=Education level of household head
= 1 if below primary school or primary school
= 2 if middle school
= 3 if high school
= 4 if Diploma or graduate degree

X_{10i}=Occupation of householdhead
= 1 if non-tourism industry
= 2 if tourism industry

X_{11i}=Birthplace of householdhead
= 1 if other areas
= 2 if Bagan

3. Statistical Analysis

STATA 15.1 software is used to analyze the effects of tourism industry on alleviation of poverty. For bivariate analysis, chi-square test is used to determine the relationship between tourism- related and socio-demographic characteristics and household poverty status. For multivariate analysis, a binary logistic regression model is applied to discover the determinants of household poverty status (dependent variable) that is dichotomous (poor or non-poor households) and poor households are considered as reference category. The binary logistic regression model is

$$Y_i = E(Y_i \mid X_i) + \varepsilon_i \quad (1)$$

$$E(Y_i \mid X_i) = p_i = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_i X_i)}} \quad (2)$$

Odds ratio = $\frac{p_i}{1 - p_i}$ (3)

p_i = probability of success

$1 - p_i$ = probability of failure

Taking the natural log of equation (3)

$$L_i = \ln\left(\frac{p_i}{1 - p_i}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_i X_i \quad (4)$$

III. Results and Findings

1. Descriptive Analysis

The descriptive statistics of the information on tourism-related and socio-demographic characteristics are described in Appendix Table 1.

Concerning family members who employ in tourism industry, most of households (54.1%) have 1 to 2 members. Regarding the receiving economic benefits from tourism, 49.4% of households receive the most economic benefits from tourism. Most of household heads (40.1%) have monthly tourism-related income above 5 lakh kyats and 34.4% have monthly tourism income between 1 lakh and 5 lakh kyats. According to household head's perception of economic impacts of tourism, 76.6% of household heads perceive the high level of economic impacts of tourism but 23.4% perceive low level of economic impacts of tourism. According to household head's support for tourism development, 72.1% of household heads support tourism development but 27.9% do not support tourism development.

Regarding household size, 75.4% of households have 4 and above members while 24.6% of households have below 4 members. According to age of household head, 66.8% of household heads are the age group of 30-50 years, 18.7% are the age group of above 50 years and 14.5% are the age group of below 30 years. The average age of household heads is 40 years. Then, 256 household heads (63.8%) are males while 145 household heads (36.2%) are females. Regarding the education level of household heads is classified as below primary school and primary school (17.4%), secondary school (23.7%), high school (27.7%) and diploma and graduate degree (31.2%). Concerning occupation of household heads, the most of household heads (73.3%) work in tourism industry and (26.7%) of household heads work in non-tourism industry. According to the birthplace of household heads, 55.1% of household heads are born in Bagan and 44.9% of household heads are born in other areas.

2. Bivariate Analysis

Cross-tabulation and Chi-square test were done to determine the tourism-related and socio-demographic characteristics are related to poverty status of households. Appendix Table 2 shows the association between tourism-related and socio-demographic characteristics and household poverty in Bagan. Regarding tourism-related characteristics, family members employ tourism industry, receiving economic benefits from tourism, household head's tourism income, household head's

perception of economic impacts of tourism and support for tourism development are significantly associated with household poverty. Concerning the socio-demographic characteristics, household size, household head's age, gender, education, occupation and birthplace are significantly associated with household poverty.

3. Multivariate Analysis

Binary logistic regression model was applied to examine the relationship between tourism-related and socio-demographic characteristics and household poverty. The overall model evaluation criteria of binary logistic regression model are presented in Appendix Table 3. According to the model evaluation criteria (Pseudo R2=0.784), 78.4% of the variation in household poverty can be explained by the tourism-related and socio-demographic characteristics. LR Chi-square test of model coefficients shows that the addition of the independent variables improved the predictive power of the model. Regarding the LR Chi-square test of model coefficients, it has been found that the model is significant (Chi-square=378.19, df=18, p-value=0.000 < 0.01). The results of Hosmer and Lemeshow statistic (Chi-square=2.51, df = 8, p-value = 0.961>0.01) show that there is no evidence of lack of fit of the model.

Binary logistic regression model is performed on poverty status of households in Bagan. The results are shown in Appendix Table 4. Concerning the tourism-related characteristics, family members in a household who work tourism industry have negative effect on household poverty. At least three members and above in a household who work tourism industry are about 0.83 times less likely to be poor as compared to none member in a household who works tourism industry. Receiving economic benefits from tourism has negative effect on household poverty. The households which obtain the most economic benefits from tourism is about 0.78 times less likely to be poor as compared to those obtain the few economic benefits from tourism. In addition, household head's tourism income has negative effect on household poverty. The household heads who receive tour income (1 lakh - 5 lakh) and (above 5 lakh) are about 0.96 and 0.99 times less likely to be poor as compared to they do not receive tourism income. Household head's perception of economic impacts of tourism has negative effect on household poverty. The household heads perceive high level of economic impacts of tourism that is about 0.71 times less likely to be poor as compared to their perception with low level of economic impacts of tourism. Household heads' support of tourism development have negative effect on household poverty. The household heads support tourism with high level that is about 0.84 times less likely to be poor as compared to their tourism support with low level.

According to the socio-demographic characteristics, gender of household head has

negative effect on household poverty. The male-headed households are about 0.94 times less likely to be poor as compared to female-headed household. In addition, education level of household head has negative effect on household poverty. The household heads who attained high school level and diploma/ graduate degree are about 0.92 times and 0.93 times less likely to be poor as compared to household heads who attained below primary school and primary school level. Occupation of household head has negative effect on household poverty. The household heads work in tourism industry is about 0.92 times less likely to be poor as compared to household heads who work in non-tourism industry. Birthplace of household head has negative effect on household poverty. The household heads' birthplace from Bagan are about 0.65 times less likely to be poor as compared to their birthplace from other areas.

IV. Discussion and Conclusion

The findings of this research showed that less than one-fourth of households are poor households in Bagan. The results of the binary logistic regression indicated that family members employ tourism industry, tourism income, receiving economic welfares from tourism, household heads' perception of economic impacts of tourism and support for tourism development, household heads' gender, education, occupation and birthplace are the most important determinants of household poverty. The investigation of relationship between tourism-related and socio-demographic characteristics and poverty of households revealed the following points:

- Family members in household who work tourism industry, get tourism income and receive mostly economic benefits from tourism reduce the risk of household poverty in Bagan. In addition, a household head's high perception level about economic impacts of tourism and support for tourism reduces the risk of household poverty in Bagan.
- A male-headed household shows decreasing the risk of poverty in household.
- A household head with higher education and working tourism industry decreases the risk of poverty in household. In addition, Bagan is the birthplace of household head that decreases the risk of poverty in household.

Therefore, tourism plays a role of poverty reduction in Bagan. The result of the study is consistent with Ashley et al. (2006) and Zhao et al. (2007). Regarding the

results of the study, tourism reduces the household poverty and is the vital source of income for poverty reduction. Government of Myanmar should implement the improvement of travel and tourism. The cultural tourist sites of Myanmar are needed to preserve and conserve. The maintenance of cultural inheritance places and the preservation of native cultures are imperative measurements of human development. Cultural tourism is a niche market of most travel to the developing countries. Therefore, the tourism-related policies and poverty reduction plans are implemented for national development. These tourism policies are to implement a strategic program of the Tourism Master Plan, the Responsible Tourism Policy and the Policy on Community Involvement in Tourism. In addition, the pro-poor tourism principles are carried out a combination of elements from sustainable livelihoods, conservation of local culture, creation of local job and critical approaches to poverty reduction.

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Appendix

Table 1. Percent distribution of households by tourism-related and socio-demographic Characteristics

Variables	Classification	Number	Percent
Family members employ in tourism industry	None member	52	13.0
	1-2 members	217	54.1
	3 members and above	132	32.9
Receiving economic benefits from tourism	Few	84	20.9
	Moderate	119	29.7
	Most	198	49.4
Household head's tourism income	None	30	7.5
	Below 1 lakh	138	34.4
	1 lakh – 5 lakh	72	18.0
	Above 5 lakh	161	40.1
Household head's perception of economic impacts of tourism	Low level	94	23.4
	High level	307	76.6
Household head's support for tourism development	Low level	112	27.9
	High level	289	72.1
Household size	Below 4	99	24.6
	4 and above	302	75.4
Age of household head	below 30 years	58	14.5
	30-50 years	268	66.8
	Above 50 years	75	18.7
Gender of household head	Female	145	36.2
	Male	256	63.8
Education level of household head	Below primary school or primary school	70	17.4
	Middle school	95	23.7
	High school	111	27.7
	Diploma or graduate degree	125	31.2
Occupation of household head	Non-tourism industry	107	26.7
	Tourism industry	294	73.3
Birthplace of household head	Other areas	180	44.9
	Bagan	221	55.1

Source: Survey data (2018)

Table 2. Bivariate analysis of household poverty status by tourism-related and socio-demographic characteristics

Variables	Classification	χ2value	P-value
Family members employ in tourism industry	None member 1-2 members 3 members and above	87.77***	0.000
Receiving economic benefits from tourism	Few Moderate Most	23.88***	0.000
Household heads' tourism income	None Below 1 lakh 1 lakh – 5 lakh Above 5 lakh	100.23***	0.000
Household heads' perception of economic impacts of tourism	Low level High level	96.61***	0.000
Household heads' support for tourism development	Low level High level	179.65***	0.000
Household size	Below 4 4 and above	4.56**	0.033
Age of household heads	below 30 years 30 -50 years Above 50 years	9.96***	0.007
Gender of household heads	Female Male	177.09***	0.000
Education level of household heads	Below primary school or primary school Middle school High school Diploma or graduate degree	104.66***	0.000
Occupation of household heads	Non-tourism industry Tourism industry	167.96***	0.000
Birthplace of household heads	Other areas	12.44***	0.000

Note: ***, **, * represent 1 percent, 5 percent and 10 percent level of significance.
Source: Survey data (2018)

Table 3. Model fitting information for household poverty status

Model fitting criteria	χ2value	df	P-value
LR Chi-square	378.19	18	0.000***
Hosmer and Lemeshow (H-L) Test	2.51	8	0.961
Log Likelihood	-52.1		
Pseudo R Square	0.784		

Note: ***, **, * represent 1 percent, 5 percent and 10 percent level of significance.
Source: Survey data (2018)

Table 4. Parameter estimates of binary logistic regression model for household poverty status

Variables	Classification	Coefficient	Odds Ratio	P-value
	Constant	9.77***	17540.48	0.000
Family members employ in tourism industry	None member (ref)			
	1-2 members	-0.03	0.97	0.971
	3 members and above	-1.78**	0.17	0.050
Receiving economic benefits from tourism	Few (ref)			
	Moderate	-0.47	0.63	0.513
	Most	-1.53**	0.22	0.042
Household head's tourism income	None (ref)			
	Below 1 lakh	-1.7	0.18	0.119
	1 lakh – 5 lakh	-3.30***	0.04	0.007
	Above 5 lakh	-4.37***	0.01	0.001
Household head's perception of economic impacts of tourism	Low level (ref)			
	High level	-1.23**	0.29	0.049
Household head's support for tourism development	Low level (ref)			
	High level	-1.81***	0.16	0.008
Household size	Below 4 (ref)			
	4 and above	-0.38	0.69	0.576
Age of household head	Below 30 years (ref)			
	30 -50 years	0.25	1.28	0.752
	Above 50 years	0.77	2.15	0.462
Gender of household head	Female (ref)			
	Male	-2.75***	0.06	0.000
Education level of household head	Below primary school or primary school (ref)			
	Middle school	-0.64	0.53	0.454
	High school	-2.53***	0.08	0.002
	Diploma or graduate degree	-2.60***	0.07	0.007
Occupation of household head	Non-tourism industry (ref)			
	Tourism industry	-2.58***	0.08	0.000
Birthplace of household head	Other areas			
	Bagan	-1.05*	0.35	0.068

Note: ***, **, * represent 1 percent, 5 percent and 10 percent level of significance.
Source: Survey data (2018)

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