

**YANGON UNIVERSITY OF ECONOMICS**

**DEPARTMENT OF STATISTICS**

**PhD PROGRAMME**

**MODELLING RESIDENTS' SUPPORT FOR TOURISM**

**DEVELOPMENT WITH SPECIAL REFERENCE TO**

**BAGAN-NYAUNG OO AREA, MYANMAR**

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WITH SPECIAL REFERENCE TO BAGAN-NYAUNG OO AREA, MYANMAR**

**Submitted in Partial Fulfillment of the Requirements for the  
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## **CERTIFICATION**

I hereby certify that the content of this dissertation is wholly my own work unless otherwise referenced or acknowledged. Information from sources is referenced with original comments and ideas from the writer herself.

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## **ABSTRACT**

Tourism is a crucial sector of economic growth in many developing countries. Its development can contribute to the achievement of Sustainable Development Goals (SDGs). This study aims to analyze the causal relationship among the residents' attitude of community attachment, personal benefits from tourism, the residents' perception of economic, environmental, social and cultural impacts of tourism and residents' support for tourism development using Structural Equation Modelling (SEM). The secondary data were obtained from Myanmar Tourism Statistics and Hotels and Tourism Office in Bagan and the primary data were collected in Bagan-Nyaung Oo Area by using two-stage random sampling method to analyze the influencing factors for residents' support for tourism development. This study finds that residents' attitude of community attachment, personal benefits from tourism, residents' perception of economic and cultural impacts of tourism are important factors. The residents' perception economic and cultural impacts of tourism are also mediation factors to support for sustainable tourism development. Generation of employment and income, contributions to the government revenue and standard of living are the essential economic impacts of tourism for tourist destinations. In addition, the preservation of traditional culture, sustainability of cultural heritage and acculturation are the main cultural impacts of tourism for tourist destinations. Therefore, these economic and cultural impacts should be carried out to implement sustainable tourism development in Bagan-Nyaung Oo Area. It is also discovered that the positive impacts of tourism outweigh negative ones and type of occupation is moderator variable between residents' perception of tourism impacts (economic and cultural) and support for tourism development in Bagan-Nyaung Oo Area.

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## LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AGFI	Adjusted Goodness-of-Fit Index
AIC	Akaike Information Criterion
ASEAN	Association of South East Asian Nations
AVE	Average Variance Extracted
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CIT	Policy on Community Involvement in Tourism
CR	Composite Reliability
EFA	Exploratory Factor Analysis
ESCAP	Economic and Social Commission for Asia and the Pacific
FSUs	First Stage Units
GDP	Gross Domestic Product
GFI	Goodness-of-Fit Index
GLS	Generalized Least Squares
GNP	Gross National Product
HMR	Hierarchical Multiple Regression
KMO	Kaiser-Meyer-Olkin Measure
LDCs	Least Developed Countries
ML	Maximum Likelihood
MOHT	Ministry of Hotels and Tourism
MONREC	Ministry of Natural Resources and Environmental Conservation
MTF	Myanmar Tourism Federation
NFI	Normed Fit Index
NGOs	Non-Government Organizations
PNFI	Parsimony Normed Fit Index
RMR	Root-Mean-Square Residual
RMSEA	Root-Mean-Square Error of Approximation
RTP	Myanmar Responsible Tourism Policy
SDGs	Sustainable Development Goals
SEM	Structural Equation Modelling
SRMR	Standardized Root-Mean-Square Residual

SRSWOR	Simple Random Sampling without Replacement
SSUs	Second Stage Units
TLI	Tucker-Lewis Index
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNSTAT	United Nations Statistics Division
UNWTO	United Nations World Tourism Organization
WTTC	World Travel and Tourism Council

# **CHAPTER I**

## **INTRODUCTION**

Tourism has become a significant industry in both developed and developing countries because it can create income and employment. Nowadays international tourist arrivals and tourism receipts are rapidly growing in the world. In Southeast Asia, tourism industry is the most economic development with a high level of employment. In Myanmar, tourism is the vital industry which can lead to economic growth. Myanmar's tourism sector is growing rapidly with international tourist arrivals and tourism receipts (MOHT, 2013). Regarding the development of tourism, the essential impacts of tourism have needed to observe and analyze. The development of tourism industry depends on the local residents and community. Sustainable tourism development for community should be aimed to improve the residents' life by optimizing local economic benefits and protecting the natural environment. The cooperation of the local residents is essential for the success and sustainability of tourism development.

### **1.1 Rationale of the Study**

Tourism is an essential sector of economic growth in many countries. Many countries have proceeded to attract international tourist arrivals and to reap international tourism receipts. Tourism can contribute to the achievement of Sustainable Development Goals (SDGs) among nations. Therefore, tourism development is an important agenda of policy making process international, national, regional and local level. Tourism is a vital source of income in many developing countries including Myanmar.

Sustainable tourism allows the development of tourism in a tourist destination by taking into account the basic principles of sustainable development. Sustainable tourism is delivering economic benefits to destinations and communities through competitive tourism businesses that create employment opportunity and it is minimizing adverse impacts on the environment. The regional development is an important role in the economy. So tourism is used as a leading economic sector for development.

Nowadays tourism, one of the economic sectors of Myanmar, is known as a smokeless industry. Tourism industry has been named as a smokeless industry

because it differs from other industries which can cause pollution. Tourism industry is as a service industry which does not manufacture an actual product. Therefore, tourism industry is non-polluted.

In order to ensure that tourism sector is managed for the benefit of the nation and its people, MOHT has closely collaborated with internal stakeholders, the Government of Norway and Asian Development Bank (ADB) to develop the Myanmar Tourism Master Plan<sup>1</sup>. The Government of Myanmar published a tourism policy asserting tourism as an essential tool for the economic development of the country. It predicted that tourism would increase the socioeconomic well-being of the people.

The goal of Master Plan is to maximize tourism's contribution to national employment and income generation and to ensure that the social and economic benefits of tourism are distributed equitably (MOHT, 2013). The Master Plan has set a high target of 7.48 million in 2020. Based on this growth scenario, tourism receipts are projected to increase from a baseline of US\$534 million in 2012 to US\$10.18 billion in 2020, with the tourism-related jobs rising from 293,700 to 1,490,000 (MOHT, 2013).

Tourism has mainly contributed to Myanmar by providing an increase in foreign exchange earnings, and creating employment opportunities and infrastructure development. Myanmar tourism statistics clearly stated that international tourist arrivals increased from 0.66 million in 2005 to 0.79 million in 2010, to 3.08 million in 2014 and to 3.44 million in 2017. The tourism receipts increased from US\$254 million in 2010 to US\$1789 million in 2014 and to US\$1969 million in 2017. The tourism industry accounted for 4.8 per cent of gross domestic product (GDP) and created about 6.5 per cent of the job opportunities in 2015.

The Government of the Republic of the Union of Myanmar is transforming its political and economic system to enhance inclusive economic growth and to raise the living standards of Myanmar's multiethnic population. Owing to its ability to rapidly create jobs and stimulate the expansion of many economic sectors, responsible tourism development is a national priority (MOHT, 2012).

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<sup>1</sup> Ministry of Hotels and Tourism (MOHT), 2013. Myanmar Tourism Master Plan 2013- 2020: Final-Draft Report, Myanmar.

Myanmar has gained a momentum of success in tourism and significantly strengthened in relation with the international community<sup>2</sup>. It has become an emerging tourist destination for international travellers who are keen to get experience Myanmar's abundant wealth of cultural and natural heritage, genuine hospitality and spiritual values (MOHT, 2013). The most popular tourist sites in Myanmar are Yangon, Mandalay, Bagan, Inle and Pindaya, Ngapali, Ngwe Saung, Kyaikhtiyo and Mrauk Oo. Among these tourist attractions, Bagan, Mrauk Oo and Pindaya are the historical heritages. The Pyu ancient cities of Myanmar (Hanlin City, Beikthano City, Sri Ksetra City) were first inscribed on UNESCO's World Heritage List in June 2014. In July 2019, Bagan was also inscribed on UNESCO's World Heritage List. Bagan is also one of Asia's most archaeological sites. Bagan, one of the prominent tourist destinations in Myanmar, is situated on the eastern bank of Ayeyarwady River. Bagan has over 2000 well-preserved pagodas and temples during the eleventh and thirteenth centuries. These sites are already gained economic benefits but it has initiated to experience environmental, social and cultural pressures from tourism (MOHT, 2013)

It seems that tourism industry becomes an essential sector for economic development of Myanmar. There is the relationship between tourism development and standard of living for residents in tourist destinations. Tourism not only directly contributes to employment and income of residents but also indirectly contributes to improving health, education and infrastructure in the area. The residents should recognize to support tourism development because it can give employment opportunities and make their income and living standard high.

Regarding the development of tourism, there are various impacts of tourism on local residents and tourist destinations. The studies of tourism impacts emerged in the 1960s with much emphasis on economic growth as a form of national development, measured in terms of Gross National Product (GNP), rate of employment and the multiplier effect. In the 1970s, the impacts of tourism undertook to sociocultural issues (Bryden, 1973). In the 1980s, the environmental impacts of tourism became the sole concern of tourism researchers (Butler, 1980). In the 1990s, the preceding impacts are integrated in studying tourism impacts, leading to a shift from "Mass Tourism" to "Sustainable Tourism" in the form of ecotourism, heritage tourism and community tourism.

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<sup>2</sup> Ministry of Hotels and Tourism (MOHT, 2013). Myanmar Tourism Master Plan 2013–2020: Final-Draft Report, Myanmar



These tourism impacts may have positive or negative effects on local residents and tourist destinations. The impacts of tourism are the influencing factors of the residents' support for tourism development which is the crucial factor of tourism development in tourist destinations. Therefore, the development of tourism industry mainly depends on the residents' support for tourism development.

In this regards, residents' support for tourism development as well as economic, environmental, social and cultural impacts of tourism are needed to analyze in tourist destinations. This study explores the economic, environmental, social and cultural impacts on residents' support for tourism development tourism in Bagan-Nyaung Oo Area. This study aims to develop a model of residents' support for tourism development by means of Structural Equation Modelling (SEM).

## **1.2 Objectives of the Study**

The following objectives are set in this study:

- (i) To investigate the demographic, socioeconomic and tourism-related characteristics of residents in Bagan-Nyaung Oo Area.
- (ii) To analyze the influencing factors of residents' support for tourism development in Bagan-Nyaung Oo Area.
- (iii) To examine types of occupation as moderator variable between residents' perception of tourism impacts and residents' support for tourism development.

## **1.3 Method of Study**

Structural Equation Modelling (SEM) was employed for studying the residents' support for tourism development in Bagan-Nyaung Oo Area. Both primary and secondary data were used in this study. For secondary data, this research was based on the information from MOHT (Myanmar), internet websites, the data from General Administration Department of Nyaung Oo Township and Department of Hotel and Tourists Information (Bagan office) and Statistical Yearbooks (Myanmar), Publication of Population and Housing Census in Myanmar (2014), relevant published books, related research papers and theses.

According to General Administration Department of Nyaung Oo Township in 2018, there were 9,677 households and 44,255 residents living in the urban area of Bagan-Nyaung Oo. The required primary data were collected by using a two-stage

sampling with simple random sampling without replacement (SRSWOR) at both stages. A structured questionnaire was used to collect primary data.

The questionnaire involves three main sections. The first section consists of the socioeconomic and demographic characteristics of household members, tourism-related characteristics of household members, their attitudes of community attachment and personal benefits from tourism. The second section includes the questions concerned with residents' perception of economic, environmental, social and cultural impacts of tourism development. The third section includes residents' support for tourism development. In questionnaire, a five-point Likert type scale (1= strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree) has been used in determining attitude and perception of respondents.

This study analyzes how the exogenous latent variables are directly related to the endogenous latent variables and it examines directional relationship between endogenous latent variables using SEM. The exogenous latent variables are residents' attitude of community attachment and personal benefits from tourism. The endogenous latent variables are the residents' perception of economic, environmental, social and cultural impacts of tourism and residents' support for tourism development.

#### **1.4 Scope and Limitations of the Study**

The study aims at explaining the residents' support for tourism development in Myanmar. The famous cultural heritages are Bagan, Mrauk Oo, Kyaikhtiyo, Inle and Pindaya. Covering all states and regions in the country is impossible because of the limited time frame for this research, communication problems and budget constraints. For these reasons, Bagan-Nyaung Oo Area was selected as the prime tourist destination in Myanmar because it has a large number of tourism records, high rate of tourist arrivals, Myanmar's abundant wealth of cultural heritage and the investment in tourism is mainly found in that area. Bagan is also one of the UNESCO's World Heritage Sites. The tourism development is mostly concerned with local residents in the urban area of Bagan-Nyaung Oo because most of the hotels, recreation places, lacquerware businesses and other interesting places are located in there. This study emphasize on the local residents at aged 18 and above. The study is concerned with the internal tourism in Bagan-Nyaung Oo Area.

## **1.5 Organization of the Study**

This study is organized into six chapters. Chapter 1 presents rationale of the study, objectives of the study, method of study, scope and limitations of the study and organization of the study.

Chapter 2 is literature review, which consists of the definitions of tourism, classifications of tourism, growth of international tourism, tourism development, community-based tourism, sustainable tourism development, social exchange theory, assessing the impacts of tourism development such as economic, environmental, social and cultural impacts of tourism, community attachment, personal benefit from tourism, residents' support for tourism development and related studies.

Chapter 3 mentions overview of tourism industry in Myanmar which includes sustainable tourism development in Myanmar, responsible tourism framework, tourist attractions in Myanmar, tourism impacts in Myanmar, growth of tourism industry in Myanmar, international tourist arrivals and tourism receipts in Myanmar and tourism industry in Bagan-Nyaung Oo Area.

Chapter 4 presents research methodology which includes conceptual framework, statistical methodology, reliability and validity, latent and measured variables of the model and survey methodology. The statistical methodology includes structural equation modelling, theorized diagram model, measurement model, structural model, directionality assumptions, model fit measures and hierarchical multiple regression. Latent and measured variables of the model include exogenous latent variables and endogenous latent variables. Survey design includes questionnaire design, pilot survey, data collection, sampling design, sample size determination and choice of samples.

Chapter 5 describes analysis on residents' support for tourism development. It includes demographic and socioeconomic characteristics of residents, tourism-related characteristics of residents, assessing normality, factor analysis, confirmatory factor analysis, analysis of proposed model and analysis of moderation effects. The analysis of proposed model includes measurement model, structural model and analysis of direct, indirect and total effects.

The conclusion of the study with major findings, suggestions and needs for further research are described in Chapter 6.

## CHAPTER II

### LITERATURE REVIEW

This chapter reviews literature and studies related to the tourism industry, impacts of tourism and residents' support for tourism development. Tourism is one of the world's largest industries. The aim of this literature review is to analyze the knowledge of the theoretical and conceptual research on tourism impacts and residents' support for tourism development derived from different studies. This study presents definitions of tourism, classifications of tourism and growth of international tourism. This literature review of the study consists of tourism development, social exchange theory, assessing the impacts of tourism, community attachment, personal benefits from tourism, residents' support for tourism development and related studies.

#### **2.1 Definitions of Tourism**

United Nations World Tourism Organization (UNWTO) defined tourism as "It comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited". Leiper (1979) stated that tourism may be thought of as a whole range of individuals, businesses, organizations and places which combine in some way to bring a travel experience. Tourism is a multidimensional and multifaceted activity which touches many lives and many different economic activities.

The definitions of tourism have been created to cater for particular needs and situations. Four different perspectives of the tourism industry can be identified as follows:

##### ***Tourists***

The tourists seek various psychic and physical experiences and satisfaction. The nature of these will largely determine the destinations chosen and the activities enjoyed there.

##### ***Business Providing Tourist Goods and Services***

Business people see tourism as an opportunity to make a profit by supplying the goods and services that the tourist market demands.

### ***Government of the Host Community***

Politicians view tourism as a rich factor in the economy. Their perspective is related to the income and their citizens can earn from this business. Politicians also consider the foreign exchange receipts of international tourism as well as the tax receipts collected from tourist expenditures either directly or indirectly. The government can play an important role in tourism policy, development, promotion and implementation.

### ***Host Community***

Local people usually see tourism as a cultural and employment factor. The importance of this group is the effect of interaction between large numbers of international visitors and residents. This effect may be beneficial or harmful or both. Therefore, tourism may be defined as the processes, activities and outcomes arising from the relationships and the interactions among tourists, tourism suppliers, host governments, host communities and surrounding environments that are involved in the attracting and hosting visitors.

## **2.2 Classifications of Tourism**

According to UNWTO and United Nations Statistics Division (UNSTAT) conventions, the three key classifications of tourism are the type of movement, the purpose of visit, and the length of stay. The first classification makes reference to the tourist's trip which can be identified as the four basic types of tourism:

### ***Domestic Tourism***

Domestic tourism comprises the activities of resident visitors within the region of reference.

### ***Inbound Tourism***

Inbound tourism comprises the activities of non-resident visitors within the region of reference.

### ***Outbound Tourism***

Outbound tourism comprises the activities of resident visitors travelling to other regions of the world.

### ***Transit Tourism***

Transit tourism comprises activities of visitors while passing by a region which is neither the region of origin nor the region of destination.

In other words, it is also possible to identify other typologies of tourism which are used to distinguish the different types of travellers:

### ***National Tourism***

The national tourism is the sum of both domestic and outbound tourism.

### ***Internal Tourism***

The internal tourism is the sum of both domestic and inbound tourism, that is, tourism in a specific region by residents and non-residents.

### ***International Tourism***

The international tourism is the sum of both inbound and outbound tourism, that is, tourism that implies crossing over the borders of a region.

The second classification deals with the reasons for travelling which can be classified as:

### ***Leisure Purposes***

This consists of the travelers with free and leisure time at the travelers' own expenses. In addition, many tourists travel as supporters of a sport team or participants in a sport event, visit family and friends who live far away.

### ***Professional Reasons***

These are trips where expenses are paid for by a company or organization.

### ***Other Personal Reasons***

There are many other reasons for a person to travel such as education and training, health and medical care, religious pilgrimages, and shopping.

The third classification distinguishes the types of visitor according to the length of stay:

### ***Excursionists (Same-day Visitors)***

Excursionist refers to a visitor who does not spend the night in a collective or private accommodation in the place visited.

***Tourists (Overnight Visitors)***

A tourist is a visitor who stays at least one night in collective or private accommodation in the place that is visited.

In addition, there are several forms of tourism according to the types of attractions and purposes of visit which are as follows:

***Cultural Tourism***

Cultural tourism serves to enrich information and knowledge about other countries and satisfies the need for entertainment. It includes visitation to exhibit cultural events, places of natural interest and archeological excavations.

***Heritage Tourism***

Heritage tourism is directed travel toward experiencing the heritage of a city, region state and country. This travel enables the tourist to learn about local customs, traditions, history and culture.

***Recreational Tourism***

Recreational tourism is similar to holiday tourism. It serves the restoration of physical and mental capacities of the individual tourist and involves recovering from work induced weariness and exhaustion in resort areas.

***Ecotourism***

Ecotourism aims to encourage the preservation of the environment. It includes visitation to study the endangered species such as wildlife, flora and fauna. Hence, its focus is on environmental issues.

***Sustainable Tourism***

It is an approach to development aimed at balancing social and economic objectives with environmentally sound management.

***Health Tourism***

It satisfies the need for medical treatment in other countries or places with curative facilities.





### 2.3 Growth of International Tourism

Many countries have been trying to attract international tourists and to reap international tourism. World tourism is experienced by a very rapid increase in international tourism flows with regard to both tourist arrivals and tourism receipts. In addition, many new destinations have emerged in the world.

Tourism has played an essential role in contributing foreign exchange revenues for developing countries and least developed countries. These countries have great potential for the rapid development of international tourism because of their labor costs and many unexploited natural resources. According to Pro-poor Tourism Partnership (2004), tourism is the main export for developing countries and is important among the poorest and least developed countries in the world<sup>3</sup>.

An ever-increasing number of destinations worldwide has opened up and invested in tourism, turning it into a key driver of socio-economic progress through the creation of jobs and enterprises, export revenues and infrastructure development. Over the past six decades, tourism has experienced continual expansion and diversification to become one of the largest and fastest-growing economic sectors in the world.

The UNWTO forecasted that international tourism will continue growing at the average annual rate of 4 per cent in 2015. International tourist arrivals increased from 25 million globally in 1950 to 278 million in 1980, to 527 million in 1995 and to 1326 million in 2017. Likewise, international tourism receipts earned by destinations worldwide surged from US\$2 billion in 1950 to US\$104 billion in 1980, to US\$415 billion in 1995 and to US\$1340 billion in 2017 (UNWTO, 2017).

International tourist arrivals worldwide are expected to increase by 3.3 per cent per year between 2010 and 2030 to reach 1.8 billion in 2030 according to UNWTO's long term forecast tourism towards 2030. The market shares of economy were increased from 30 per cent in 1980 to 45 per cent in 2014 and are expected to reach 57 per cent in 2030 that is equivalent to over 1 billion international tourist arrivals.

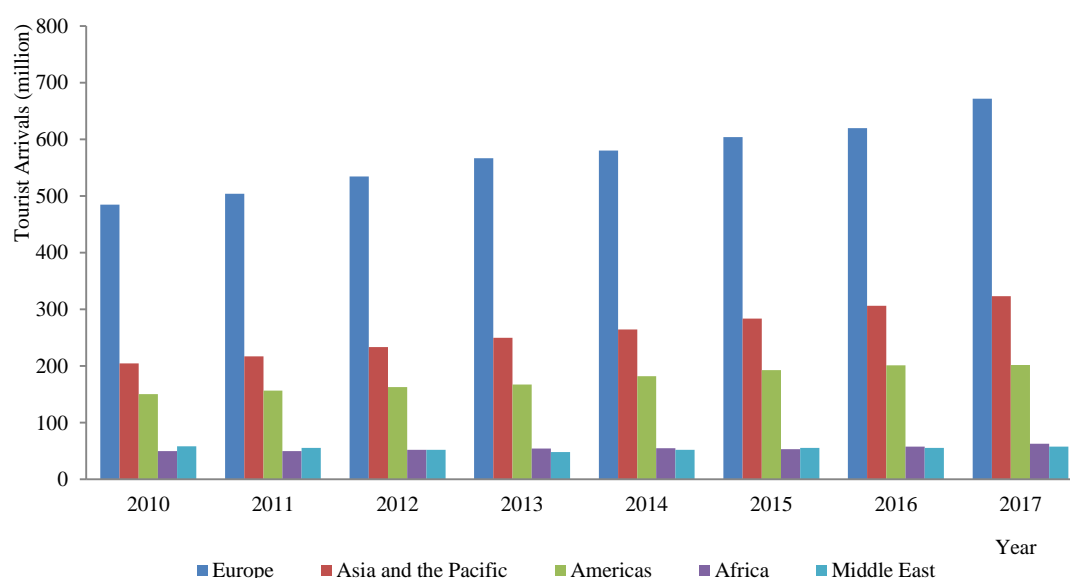
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<sup>3</sup>Pro-poor Partnership (2004), *Tourism and the Poor: Analyzing and Interpreting Tourism Statistics from a Poverty Perspective*.

**Table (2.1): International Tourist Arrivals Worldwide, 2010-2017**

Region	Tourist Arrivals (million)							
	2010	2011	2012	2013	2014	2015	2016	2017
Europe	484.8	504	534.2	566.4	580.2	603.7	619.5	671.7
Asia and the Pacific	204.9	217	233.6	249.8	264.3	284.0	306.4	323.1
Americas	150.6	156.6	163.1	167.5	181.9	192.7	201.3	201.9
Africa	49.9	50.2	52.4	54.4	55.3	53.4	57.7	62.7
Middle East	58.2	55.4	52.0	48.4	52.4	55.6	55.6	58.1
World (Total)	948	983	1035	1087	1134	1189	1240	1326

Source: UNWTO Tourism Highlights (2010-2018) Edition



Source: UNWTO Tourism Highlights (2010-2018) Edition

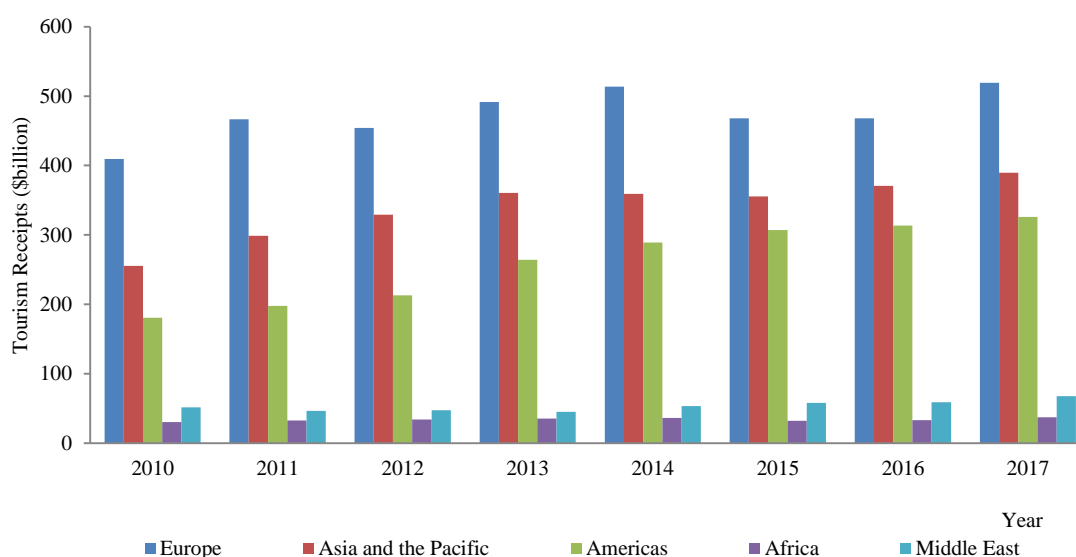
**Figure (2.2): International Tourist Arrivals Worldwide, 2010-2017**

According to Table 2.1 and Figure 2.2, Asia and the Pacific region has become a major tourist destination over recent decades, and many countries have seen increases in tourist arrivals in recent years. Europe received the largest number of tourist arrivals with 51.2 per cent among the regions. Asia and the Pacific received the second largest number of tourist arrivals with 23.5 per cent. In 2017, Asia and the Pacific recorded 323.1 million tourist arrivals and an increase of 16.7 million tourist arrivals compared with that of year 2016. Between 2010 and 2015, the average annual growth of tourist arrivals was 6.2 per cent.

**Table (2.2): International Tourism Receipts Worldwide, 2010-2017**

Region	Tourism Receipts (US\$ billion)							
	2010	2011	2012	2013	2014	2015	2016	2017
Europe	409.3	466.7	454.2	491.7	513.7	468.0	468.1	519.2
Asia and the Pacific	255.3	298.6	329.1	360.7	359.0	355.6	370.8	389.6
Americas	180.7	197.9	212.9	264.2	288.9	307.3	313.7	326.2
Africa	30.4	32.7	34.3	35.5	36.5	32.2	33.0	37.3
Middle East	51.7	46.4	47.5	45.2	53.6	58.0	59.0	67.7
World (Total)	927	1042	1078	1197	1252	1221	1245	1340

Source: UNWTO Tourism Highlights (2010-2018) Edition



Source: UNWTO Tourism Highlights (2010-2018) Edition

**Figure (2.3): International Tourism Receipts Worldwide, 2010-2017**

According to Table 2.2 and Figure 2.3, Asia and the Pacific were the second highest tourism receipts among the regions. In 2017, Asia and the Pacific earned \$389.6 billion (30 per cent) among the regions. Europe remained the highest tourism receipts with 38 per cent among the regions.

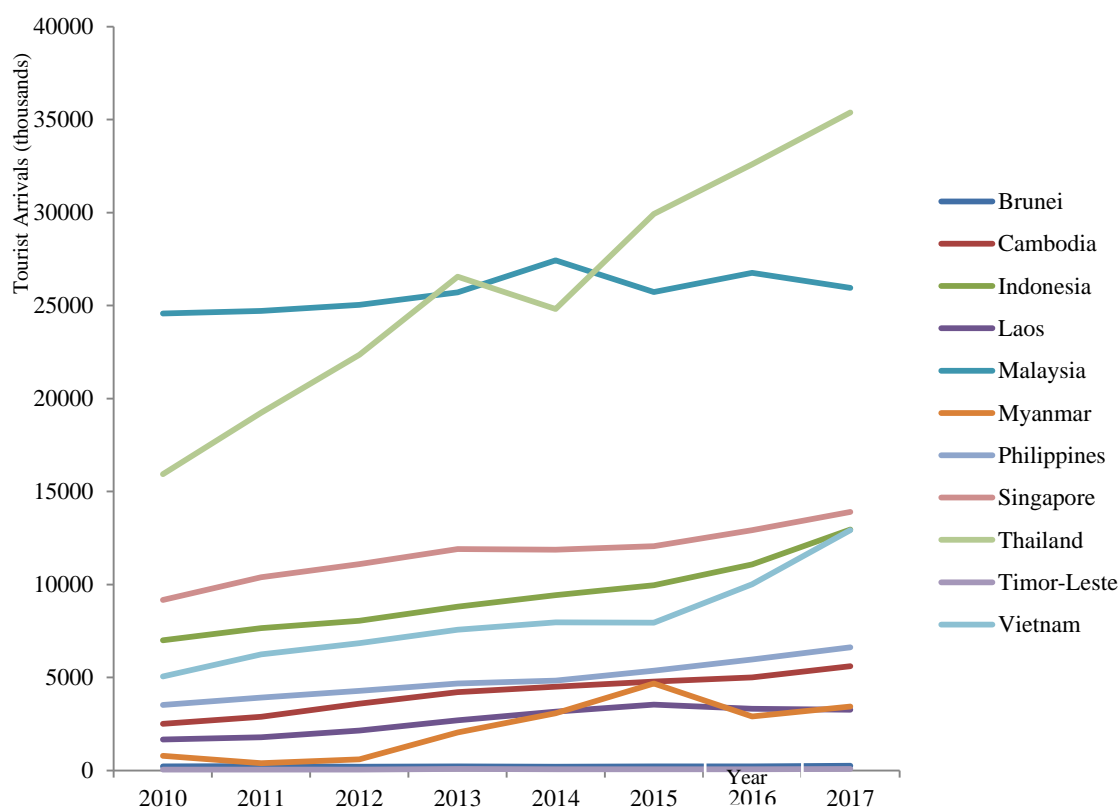
Building on the momentum of the ASEAN Tourism Strategic Plan 2011-2015, ASEAN tourism seeks to make a greater contribution towards the ASEAN integration goal that is more inclusive, green and knowledge-based. The vision for ASEAN tourism over the next decade to 2025 is: “By 2025, ASEAN will be a quality tourism destination offering a unique, diverse ASEAN experience, and will be committed to responsible, sustainable, inclusive and balanced tourism development, in order to contribute significantly to the socioeconomic wellbeing of ASEAN people”<sup>4</sup>.

<sup>4</sup>ASEAN Secretariat (2015), ASEAN Tourism Strategic Plan 2016-2025, Jakarta: ASEAN.

**Table (2.3): International Tourist Arrivals in ASEAN, 2010-2017**

Country	Tourist Arrivals (thousand)								Total
	2010	2011	2012	2013	2014	2015	2016	2017	
Brunei	214	242	209	225	201	218	219	259	1787
Cambodia	2508	2882	3584	4210	4503	4775	5012	5602	33076
Indonesia	7003	7650	8044	8802	9435	9963	11072	12948	74917
Laos	1670	1786	2140	2700	3164	3543	3315	3257	21575
Malaysia	24577	24714	25033	25715	27437	25721	26757	25948	205902
Myanmar	792	391	593	2044	3081	4681	2907	3443	17932
Philippines	3520	3917	4273	4681	4833	5361	5967	6621	39173
Singapore	9161	10390	11098	11898	11864	12052	12914	13906	93283
Thailand	15936	19230	22354	26547	24810	29923	32588	35381	206769
Timor-Leste	40	50	55	79	60	61	66	74	485
Vietnam	5050	6251	6848	7572	7960	7944	10013	12922	64560
Total	70471	77503	84231	94473	97348	104242	110830	120361	759459

Source: ASEAN Tourism Statistics Database, (2010-2018)



Source: ASEAN Tourism Statistics Database, (2010-2018)

**Figure (2.4): International Tourist Arrivals in ASEAN, 2010-2018**

**Table (2.4): International Tourism Receipts in ASEAN, 2010-2017**

Country	Tourism Receipts (\$ million)								Total
	2010	2011	2012	2013	2014	2015	2016	2017	
Brunei	na	na	92	96	79	140	144	177	728
Cambodia	1519	2084	2463	2659	2953	3130	3208	3636	21652
Indonesia	6958	7997	8325	9119	10261	10761	11206	12520	77147
Laos	382	406	451	596	642	581	712	648	4418
Malaysia	18115	19656	20250	21496	22595	17584	18075	18323	156094
Myanmar	72	281	534	959	1612	2101	2197	2260	10016
Philippines	2645	3190	4061	4690	5030	5272	5143	6986	37017
Singapore	14178	18086	19023	19209	19134	16563	18945	19707	144845
Thailand	20104	27184	33862	41780	38423	44922	48792	57477	312544
Timor-Leste	31	21	21	29	35	51	58	73	319
Vietnam	4450	5710	6830	7250	7330	7350	8250	8861	56031
Total	68454	84615	95912	107883	108094	108455	116730	130668	820277

Source: ASEAN Tourism Statistics Database, (2010-2017)

The rate of growth of ASEAN countries has been increasing very fast as a result of economic development and diversification of world tourism destinations. Table 2.3 and Table 2.4 show international tourist arrivals and tourism receipts in ASEAN Countries. The international tourist arrivals increased from 21 million in 1990 to 29 million in 1995, to 36 million in 2000, to 49 million in 2005, to 70.4 million in 2010 and to 120.4 million in 2017. Likewise, international tourism receipts surged from US\$33.8 billion in 2005 to US\$68.5 billion in 2010 and to US\$130.5 billion in 2017. In ASEAN countries, Thailand and Malaysia received the largest number of tourist arrivals and tourism receipts between 2010 and 2017. Myanmar received the smallest number of tourist arrivals and tourism receipts compared with Thailand and Malaysia between 2010 and 2017.

According to the UNWTO, international arrivals to ASEAN are expected to increase 123 million by 2020, 152 million by 2025 and 187 million by 2030. The direct contribution of tourism to GDP is expected to grow by US\$209.4 billion in 2025. In 2025, tourism is predicted to support 39,227,000 job prospects. Therefore, tourism development in ASEAN has reached a prodigious level due to newly and rapidly changing opportunities for tourism.

## 2.4 Tourism Development

Christaller (1963) stated that tourism has become increasingly a characteristic feature of contemporary societies and global markets, and new destinations, attractions and facilities are constantly evolving. Places and regions are being planned and transformed in order to attract more tourists, and also to attract non-local investors in tourism. The author pointed out that tourism can be used to achieve economic development in peripheral regions because tourists travel from core metropolitan areas to the periphery.

Jenkins (1980) pointed out a number of reasons why LDCs want to use tourism as a development tool. The first reason is that international tourism has been continuously growing since 1960. Secondly, tourism helps to redistribute the wealth between rich and poor countries. Finally, there are no trade barriers compared with other industries and tourism requires low capital investment. For these reasons, many countries regarded tourism as an important and integral tool of their development strategy.

Britton (1982) stated that tourism provides foreign revenues, increases employment, attracts foreign and domestic private capital for development and promotes economic independence. In developing countries and least developed countries (LDCs), tourism is considered as an effective tool for achieving economic development because these countries are characterized poverty, low capital income, uneven distribution of income and wealth, low level of industrial development, high unemployment rate and small domestic market.

Wall (1993) developed a tourism typology consisting of attraction types (cultural, natural and recreational), location, spatial characteristics, and development strategies. Accommodation type is regarded as a key element in the tourism system. The authors suggested that a mix of tourist types and accommodation types can be integrated to promote sustainable development.

Lankford and Howard (1994) suggested that tourism development is widely viewed as an important set of economic activities to enhance local economies. The development and promotion of tourism is a source of new employment, revenues, additional tax receipts, foreign exchange benefits, and enhances community infrastructure that will, in turn, attract other industries.

World Travel and Tourism Council (WTTC, 2008) predicted a steady growth for world travel and tourism between 2009 and 2018 with average growth of 4.4% per annum over the period, supporting 297 million jobs and contributing 10.5% of global GDP by 2018.

#### **2.4.1 Community-Based Tourism**

The United Nations (1995) defined community development as “a process designated to create conditions of economic and social progress for the whole community with its active participation and the greatest possible reliance on the community’s initiative”. Therefore, the local community needs to participate in tourism activities because it wants to get benefits from the development of tourism.

Hinch and Butler (1996) noted that community-based tourism can also be linked to some forms of indigenous tourism. Indigenous tourism is defined as tourism activities in which indigenous people are directly involved and their cultures are served as the essence of the attraction. There are two goals of community-based tourism. The first goal is to be socially sustainable. The second goal is to respect local culture, heritage and traditions.

Smith (1996) identified four interrelated elements in indigenous tourism such as the geographic setting (habitat), the ethnographic traditions (heritage), the effects of acculturation (history) and the marketable handicrafts. The author noted that although there are conflicts among some indigenous people over the desirability of tourism in their home communities, there is an economic element to be considered as it can provide jobs and income.

Hatton (1999) pointed out that community-based tourism is developed local communities in innovative ways by various individuals and groups, small business owners, entrepreneurs, local associations and local governments. The author identified a number of recurring themes. The first theme focuses on community-based tourism which is started in the various destinations. The second theme is leadership which is linked to the initiative from one person to a small group. The third theme identifies cultural heritage which is one of the important aspects of community-based tourism and it is attraction for tourists. The natural environment is a key theme for many communities where tourists are drawn to experience the environment. The fifth theme is the growth of employment opportunities, particularly for women, young people and indigenous people.

Cleverdon and Kalisch (2000) suggested that one of the major challenges facing community-based tourism is the competition and threat posed by large-scale resorts in the vicinity. Concerning the key challenge for the tourism industry, policy makers and tourism planners discover a way for the large and small firms to work together with an integrated local economic development policy.

#### **2.4.2 Sustainable Tourism Development**

UNWTO (1981) proposed seven dimensions for constructing benchmarks of sustainable tourism such as tourism assets (natural resources and cultural assets), tourism activities, tourism-related linkage effects, tourism-related leakage effects, environmental and social sustainability, overall infrastructure and regional attractiveness. Tourism industry has been developed by using some sustainable tools such as global partnership networking, green economy pillars and green passport campaign.

Bramwell and Lane (1993) believed that a sustainable approach will reduce tension and friction created by tourism through its interaction among tourists, tourism industry and host communities. The authors stated that a sustainability approach will maintain the capacity and quality of natural and man-made resources.

World Conference (1995) stated that tourism development must be based on sustainability criteria which must be long term economically bearable and ethically equitable for the local residents in the destinations. Tourism should contribute to the sustainable development and be integrated with the natural, cultural and human environment.

UNWTO (1999) defined sustainable tourism as “tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities”. A fundamental characteristic of the tourism sector is its ability to link the economic, social, cultural and environmental aspects of sustainability.

UNWTO (2002) stated sustainable tourism development in the following manner. Sustainable tourism development meets the needs of tourists and host communities while protecting and enhancing opportunities for the future. It is envisaged as leading to management of all resources in such a way that economic,



social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems. From this description, the goals of sustainable tourism are: to develop greater awareness of the environment and economy, to promote equity and development, to improve the life of the host community, to provide a high quality of experience for the visitor and to maintain the quality of the environment.

Miller (2001) found out sustainable tourism development concept that includes the environmental, physical and human issues, employment, financial leakages, business development, entrepreneurial activities, consumer behaviour and environmental aspects. Miller pointed out that sustainable tourism surveys are focused on the development of indicators measuring tourism sustainability in the physical and human environment.

Choi and Sirakaya (2006) stated that sustainable tourism development for community should aim to improve the residents' quality of life by optimizing local economic benefits and by protecting the natural environment, and to provide a high quality experience for visitors. The concept of sustainability has its roots in environmentalism. Economic activities have been negatively affecting the environment and biodiversity, creating depletion of the ozone layer and contributing to increase pollution. Therefore, protecting the environment is essential. Policymakers realize environmental needs to support for sustainable growth.

UNEP (2014) stated that regarding the United Nations Environment Programme (UNEP), the sustainability of the tourism sector development is fixed on the strategic goals with pointed dimensions: (i) support the integration of sustainability in tourism development policies, (ii) support to governments and other institutional stakeholders in the local, regional and international level, (iii) promotion of sustainable production patterns in the tourism value chain, (iv) cooperation with the tourism industry, (v) encourage demand for sustainable tourism services and consumer based activities, and (vi) cooperation with NGOs having programmes on sustainable tourism.

## 2.5 Social Exchange Theory

Perdue, Long, and Allen (1990) revealed host residents' reactions towards tourism development in the context of social exchange theory. Regarding this study, social exchange theory is a relevant theory because this theory is based on how residents assess the perceived positive and negative impacts due to tourism development. Therefore, social exchange theory is applied as the framework and theoretical background for this study.

Ap (1992) stated that social exchange theory has been used to assess the support of residents for tourism development. The residents of a community decide whether to become dependent on the benefits and costs of tourism by weighting economic, social, cultural and environmental concerns. Social exchange theory is based on how residents assess the expected cost and benefits of tourism. The author applied social exchange theory to explain the changes in a host destination in response to tourism. The theory involves an exchange of resources between individuals and groups interacting, and there is the exchange during the processes of interaction between host residents and visitors. The theory explains the variability in response to tourism by individuals and various groups in the social exchange process which engage at the individual and community stage.

Madrigal (1993) said that this theory is likened to an economic analysis of interaction that focuses on the exchange and mutual dispensation of rewards and costs between tourism actors. The author also pointed out that the underlying assumption of this exchange is a disposition of maximizing the rewards and minimizing the costs of residents' experience. This proposition is that residents will be willing to exchange with tourists if they can acquire some benefits without incurring unacceptable costs.

Allen et al. (1993) proposed that people who perceive benefits from tourism to be greater than costs may be willing to participate in the exchange and support tourism development. The author also advised that social exchange theory can explain positive and negative perceptions, and can examine interactions at the individual or community level.

## **2.6 Assessing the Impacts of Tourism**

Mathieson and Wall (1982) contended that tourism impacts result from a complex interrelationship among host communities, tourists, and natural environments. This notion is vital for understanding the complicated dynamics of tourism impacts. It is also important for the result from tourism impacts may be either beneficial or detrimental.

McCool and Martin (1994) investigated that mountain residents' attitudes toward tourism revealed four factors including impacts, benefits, equity and extent. However, researchers noticed that respondents' greatest concern is the sociocultural impacts of tourism with regard to the demonstration effect and different cultural values of tourists.

Lankford and Howard (1994) examined host residents' perception of the impact of tourism development on their community. The considering of tourism impact in tourism literature has been increasing. The authors found that tourism development leads to not only positive but also negative outcomes at the local level.

Long & Kayat (2011) investigated residents' perceptions of tourism impacts and their support for tourism development in Cuu Phyong National Park. This study also explored how demographic factors (age, gender, ethnicity, place of birth, marital status, level of education, household monthly income, job status and length of residency) explain residents' perceptions and their support. It was found that residents in general have positive perceptions in socio-cultural and environmental impacts, and they strongly support tourism development.

### **2.6.1 Economic Impacts of Tourism**

Pizam (1978) examined that the existence of negative impacts of tourism in Cape Cod, Massa Chusetts. The sample of 1636 residents and 212 entrepreneurs were collected in Cape Cod. Comparisons are made between the respondents' attitudes toward tourism and their dependence on tourism for a livelihood. The author found that respondents view the cost of land and housing as a negative economic impact.

Sheldon and Var (1984) found that the residents agree that economic gains of tourism are greater than social costs. Tourism is widely considered an effective initiator of employment opportunities in both the formal and informal sectors. In some

developing countries, wages in the tourism industry may be higher than those in other sectors thereby attracting workers from other sectors.

Var and Kim (1989) stated that residents feel tourism which improves the standard of living, and it helps them earn more foreign revenues. Tourism enhances to generate employment and revenue for local business and shopping facilities. The authors concluded that tourism related to foreign domination of tourist services and facilities which could lead to an increase in the cost of land and housing, an increase in the prices of goods and services and a shortage of commodities.

Cukier (2002) pointed out four generalizations about the relationship between tourism employment and income in developing countries. Firstly, there is a positive correlation between income and employment generation with tourism development. Secondly, generation of employment depends on the type of tourism product. Thirdly, the development of tourism creates more jobs for unskilled or semi-skilled workers. Finally, employment in the tourism industry is attractive to locals due to low pay in other sectors.

Tosun (2002) stated that tourism development may lead to inflation with respect to retail prices during the tourist seasons. The spending power of tourists may exceed local residents which can lead to inflation in the price of goods, properties and lands. The author found that the residents perceive employment opportunities as a positive economic impact but they perceive an increase in the price of goods and services as the negative economic impacts of tourism.

United Nations Environmental Programme (UNEP, 2014) stated that the revenue can be classified into direct contributions generated by taxes on income from employment and business in tourism industry and by direct levies on tourists, and indirect contributions generated by taxes on goods and services supplied to tourists. Government has used such revenue to fund further development and promotion of tourism. Tourism may also be a significant source of revenue for governments. In addition, international tourism increases significantly the share of government tax revenues throughout the world.

### **2.6.2 Environmental Impacts of Tourism**

Pizam (1978) found residents' opinion in Cape Cod that tourism negatively affects air and water quality, noise and litter. The most environmental impacts of tourism are the inevitable result of the activities of tourists. The impacts of tourist activities are unintentional. Both natural and built environments are adversely affected by the tourists with the destruction of delicate areas through walking, cycling or other activities. There are numerous environmental consequences arising from the activities of tourists.

Liu and Var (1986) reported that residents experience crowdedness during the peak tourism seasons in Hawaii. Tourism increases traffic congestion and crowdedness in the public area which can lead to environmental problems. Hence, tourism contributes to the increased traffic congestion and overcrowding because of visitors. Several studies also found that residents perceive that traffic is a major problem.

Var and Kim (1989) described that the residents believe tourism which helps a greater awareness and appreciation to preserve the environment, to capture its natural beauty for tourist and to increase investments in the environmental infrastructure of the host country. However, they found that tourism causes environmental pollution, the destruction of natural resources, the degradation of vegetation and the depletion of wildlife.

Perdue et al. (1990) described that residents have expressed that tourism improves the appearance of their town or surroundings with the following statements. The development of tourism may perform as a catalyst for environmental protection and improvement. The designation of nature reserves, national parks, wildlife reserves and protected areas are directly related to tourism development while the expenditure on environmental improvements may be made to enhance the attraction of tourists' area. Similarly, specific historic sites often benefit from tourism.

Lankford and Howard (1994) showed that respondents feel that tourism brings more littering and waste problems. Tourism is a significant generator of waste materials in the pollution of land, air and water resources. Tourism involves the different modes of tourist transportation which represent a major source of air and noise pollution. Water pollution occurs as a result of tourist transport. Resorts and other tourism-related environments can create waste and pollution. Tourism generates a significant amount of solid waste, and the improper disposal may lead to land contamination, degraded environment and health risk.

### 2.6.3 Social Impacts of Tourism

Fox (1977) stated that the social and cultural impacts of tourism is contributing to changes in value systems, individual behavior, family relationship, collective life styles, safety levels, moral conduct, creative expressions, traditional ceremonies and community organization. Tourism has an impact on destination societies. Such impacts are likely to be more evident in tourist destinations for developing countries and least developed countries. The social impacts may think as the immediate effects of tourism on local people and their lifestyles.

Sethna and Richmond (1978) indicated that tourism may have a variety of beneficial consequences for the local community. These consequences include infrastructural development, the improvement of environment and local services. The residents in the Virgin Islands agree that the money earned from tourism contributes to the improvement of public services.

Pizam and Milman (1984) defined the socio-cultural impacts of tourism as “the ways in which tourism is contributing to changes in value systems, individual behavior, family relationships, collective lifestyles, moral conduct, creative expressions, traditional ceremonies and community organization”. In accordance with this definition, changes in tourism destinations may be either structural such as shifting livelihoods and population increases from immigration or less tangible in the form of changes in morals and traditions.

Liu and Var (1986) discovered that the residents perceive tourism which increases crime generally, and only 37% of respondents feel that tourism contributes to crime in Hawaii. However, tourism brings more opportunities to upgrade facilities such as outdoor recreation facilities, parks and roads.

Smith (1992) found that tourism development brings prostitution, drug abuse, sex related diseases, injuries and police corruption in Pattaya. Tourism may cause the social problems for local residents and community. Crime is conceptualized as an anti-social behaviour including increased consumption of drugs and alcohol in the society.

Haralambopoulos and Pizam (1996) reported social impacts of tourism in the Greek island of Samos, including increases in individual crimes, brawls, vandalism, sexual harassment and drug use. Many of the same studies also describe positive socio-cultural changes. The authors found that new jobs for women and youths have led to their increased social and economic independence and to the integration of youths into the society.

#### **2.6.4 Cultural Impacts of Tourism**

Liu and Var (1986) stated that acculturation takes place when two or more cultures come into contact for a sustained period. As the result, ideas are exchanged. Acculturation is difficult to separate the influence of tourism from other factors which induce cultural change. Acculturation is the process whereby two cultures come into contact over time and they become more like each other through a process of borrowing. The authors found that local cultures and customs in undeveloped countries tend to be overwhelmed by more developed cultures, especially Western ones. Furthermore, the youths in tourist destinations can emulate the speech, clothes and bad behaviour of tourists.

Var and Kim (1989) stated that tourism contributes to the renaissance of traditional arts and crafts. Tourism preserves and increases local cultural awareness, thereby contributing to the renaissance of traditions and the revitalization of culture through increased expenditures on both the purchase of cultural materials and non-material cultural activities, pride in national heritage and indigenous culture, cultural arts and crafts.

Johnson et al. (1994) viewed tourism as providing cultural exchange opportunities and more recreational facilities, and also disrupting various quality of life factors. The authors found that few residents (7%) perceive that tourism will offer valuable social and cultural exchanges with visitors, and the majority of residents (63%) state that tourism will cause change in the traditional culture of the region.

Wall and Xie (2005) identified the five themes for the role of cultural tourism and development. These five themes are spontaneity versus commercialism, economic development versus cultural preservation, cultural evolution versus museumification, ethnic autonomy versus state regulations, and mass tourism versus sustainable cultural development. The authors found that there is a desire to celebrate and portray ethnicity through commodification, and mass tourism is desirable as it leads to job security and economic prosperity.

## **2.7 Community Attachment**

McCool and Martin (1994) suggested that the concept of community attachment is an important issue in the assessment of social impacts. The authors found that the attached residents perceive more positive dimensions of tourism than the unattached residents but attached residents are more concerned about sharing the costs of tourism development. Therefore, community attachment reflects an individual's rootedness and sense of belonging to a community.

On the other hand, Jurowski et al. (1997) indicated that attached residents appear to evaluate the economic and social impacts positively but the environmental impacts negatively. Thus, the community attachment is more affected by perceived tourism impacts.

Based on research by Kyle et al. (2004), the findings of this study indicates that residents' attachment to their community is demonstrated through the concepts of community identity, community dependence, social bounding within a community, and affective responses to feelings regarding a community.

Gursoy and Kendall (2006) reported that community attachment positively, directly and significantly affects perceived benefits, and therefore indirectly affects the support of the host residents for tourism development.

Gursoy and Rutherford (2004) reported that community attachment significantly affects perceived economic benefits and social benefits but insignificantly affects perceived social costs, perceived cultural benefits and cultural costs.

## **2.8 Personal Benefits from Tourism**

Murphy (1983) found that respondents depend upon a tourism-related job which has a significant positive relationship with the tourism factors. This means that residents economically relate to tourism industry and they are likely to recognize the impacts of tourism development.

Allen and Gibson (1987) described that residents involve in community decision making process, so they appear to be more favourable of community development. Regarding tourism planning, the industry could get some benefits from the community consultants and policy participation.



Perdue et al. (1990) discovered that there is a positive relationship between personal benefits from tourism and perceptions of tourism impacts. Concerning with the benefits of tourism in the community, resident's benefits from tourism have a closer relation with residents' support for tourism development. According to the social exchange theory, if the residents receive more benefits from tourism, they perceive to maximize the positive tourism impacts and to minimize the negative tourism impacts.

Lankford and Howard (1994) found that residents depend on a tourism-related income which has a significant positive relationship with the tourism impacts. This means that residents get income from tourism industry and then residents are likely to know the impacts of tourism development.

## **2.9 Residents' Support for Tourism Development**

AP (1992) proposed regarding the perspective of social exchange theory. The local residents are likely to take part in an exchange in terms of tourism (i.e. support for tourism development) as long as the gains from tourism exceed the costs of tourism. Past studies also agreed that residents' support for future tourism development is influenced by their perceived impacts of tourism in terms of the social exchange model. Residents with a perceived positive tourism impacts are more likely to support additional tourism development. Therefore, they will have a higher willingness to participate in an exchange with visitors. On the other hand, residents are likely to oppose tourism development when they perceive more costs than benefits from tourism development.

Gursoy et al. (2002) stated that understanding the host residents' support for sustainable tourism development is a critical factor in the successful management and marketing of community-based tourism. They pointed out that support for sustainable tourism development related to nature-based tourism, ecotourism, rural tourism, and heritage site has been examined in Western nations but remains an intensely debated subject in Eastern nations.

Untong et al. (2010) found that residents see private cooperation as an important factor in their support for local tourism development. The economic impact is the main factor influencing local residents' support for tourism development especially in traditional tourist destinations such as Phuket and Pattaya.

Lee (2013) described that the understanding of residents' view and support is great importance for local government, policymakers and businesses. If positive impacts outweigh the potential negative consequences (costs), the residents support actively to tourism development. As such, the support of residents in tourism is an important consideration for the successful development and operation of tourism in this study.

## **2.10 Related Studies**

There are many researchers and tourism scholars who carried out the studies related to the residents' attitudes or perceptions and their supports for tourism development. According to their studies, the tourism sector can promote the economy of a country but cause many positive and negative impacts. The nature of tourism impacts depends on different factors, types of tourism, the tourist sites and the infrastructure of these tourist sites. Local residents' participation and support of tourism is important for the process of sustainable development in this sector. This study analyzed the previous studies of tourism researches comparing the performance of tourism model developed by using modelling techniques.

Kim (2002) investigated how tourism affects the quality life of residents in tourism destinations that vary in the stage of development. The proposed model depicts satisfaction with particular life domains. The model posits that residents' perception of economic, social, cultural, and environmental impacts of tourism affects their satisfaction of particular life domains. The author proposed four major hypotheses. The sample of 321 residents in Virginia is analyzed. Structural Equation Modeling and Hierarchical Multiple Regression are used to test research hypotheses. The author found that the residents' perception of tourism impacts affects their satisfaction with particular life domains significantly, and their satisfaction with particular life domains influences their overall life satisfaction.

Gursoy, Jurowski and Uysal (2002) studied about the residents' attitudes in five countries surrounding a Virginia (USA) using the structural modeling approach. They proposed a model of host community support for tourism development. Three mediating endogenous variables are the state of the local economy, perceived benefits and perceived costs. They examined two dimensions of the perceived impacts such as perceived benefits and perceived costs. There are four exogenous constructs (community concern, community attachment, ecocentric attitudes and the utilization

of tourism resource base by residents). Their findings revealed that the host community support for tourism development is affected by the level of concern, ecocentric values, utilization of resource base, perceived costs and benefits of the tourism development.

Gursoy and Rutherford (2004) studied the host attitudes toward tourism. They proposed that model and hypothesized paths are tested on the survey data collected from the residents of selected countries of Washington and Idaho by utilizing a two stage structural equation modeling approach. According to their findings, the host community backing for tourism development is affected by nine determinants of residents' support such as the level of community concern, ecocentric values, utilization of tourism resource base, community attachment, the state of the local economy, economic benefits, social benefits, social costs, and cultural benefits.

Kitnuntaviwat and Tang (2008) presented a structural model that explores residents' attitudes towards tourism development and to what extent residents interface with destination sustainability strategies. The 432 respondents are analyzed in Bangkok, Thailand. By using confirmatory factor analysis and structural equation modelling procedure are performed on the collected data. The authors indicated that the residents' support is likely to be strongly affected by most constructs except the relationship between sustainability attitudes and perceived negative tourism impacts.

Rahman (2010) performed a study in Cox's Bazar, Bangladesh to investigate the socio-economic impacts of tourism development on the local community. The country wants to utilize tourism as an economic development tool to reduce poverty and stimulate socioeconomic wellbeing. The author adopted a methodology incorporating a qualitative research paradigm to guide, collect, interpret and analyze the data and used a case study as the research methodology. The sample respondents in the study are 10 entrepreneurs, 10 employees, 10 local people and 5 government officials. The author concluded that the majority of the tourism assets and well-paid jobs are enjoyed by non-locals, and the local community is not fully aware of the value of their cultural heritage, and a major difference from other tourism studies is that tourism does not contribute to rising crime, gambling, and prostitution in Cox's Bazar. The study found that the local community is totally excluded from the policy formulation process and policymakers do not consider the socio-economic impacts of tourism development on the local community.

Untong et al. (2010) analyzed the causal relationship among a destination's tourism potential, the impact of tourism and local resident support for tourism development in four tourist destinations in Thailand (Phuket, Chiang Mai, Pattaya and Pai). The model contains 15 observable variables (12 independent and 3 dependent variables). Five latent variables are used in the model: four independent variables (destination's potential, economic impact, social and cultural impact, and environmental impact) and one dependent variable (support for local tourism development). The study found that local residents see private cooperation as an important factor in their support for local tourism development. The economic impact is the main factor influencing local residents support for tourism development. Increase in investment and business opportunities are important economic impacts for traditional tourist destinations such as Phuket and Pattaya. Local residents in newer tourist destinations (Chiang Mai and Pai) give more importance to local employment opportunities. Regarding the areas of development, local residents in traditional destinations would like to see development in social and cultural attractions while local residents in newer destinations prefer to see continuous development in physical attractions and amenities. Then, the negative tourism impacts have little influence on local support for tourism development.

Nunkoo & Ramkissoon (2011) developed a model of community support with the social exchange theory and collected data from the residents of Grand-Baie, Mauritius. The model is based on social exchange theory and examined the determinants of support using the structural equation modeling method. The model has been developed for the postulate of social exchange theory and incorporated three determinants of residents' trust in government institutions such as power, perceived benefits and perceived costs of tourism. The authors suggested that support for tourism is influenced by residents' perceived benefits of tourism, perceived costs of tourism and their trust in government institutions. The findings of the study suggested that support for social exchange theory is mixed because perceived cost of tourism has an insignificant effect on support and inconsistent with the predictions of the theory. Their results suggested that residents' trust in government institutions is a significant predictor of their support for tourism development.

Marzuki (2011) studied resident attitudes towards impacts from tourism development in Langkawi Islands, Malaysia. The study was conducted to explore and identify impacts of tourism development to the islands and local residents. This study used household survey based on stratified random sampling method. An exploratory factor analysis (EFA) is carried out to identify the residents' perception of tourism impacts from tourism development. The findings of the study suggested that tourism development in Langkawi Islands has provided more benefits than costs to the residents.

Lee (2013) concluded research using data of the residents in Cigu wetland, Southwest Taiwan to assess the support of community residents for sustainable tourism development using the latent variables of community attachment, community involvement, perceived benefits, perceived costs and support for sustainable tourism development. The author reported that community attachment and community involvement are critical factors that affect the level of support for sustainable tourism development, and the perceived benefits of residents affects the support for sustainable tourism development.

Li and Wan (2013) focused on residents' perceptions and attitudes of tourism development in Macao. The authors explored the structural relationships between residents' support for tourism development and their perceived positive and negative tourism impacts, job dependency, community attachment, and decision involvement. Path analysis is used for data analysis. The study found that residents' perceptions of tourism impacts are influenced by community attachment and decision involvement, and their support for tourism development can be predicted by their perceptions of tourism impacts and decision involvement.

Stylidis et al. (2014) stated finding out the economic, socio-cultural and environmental impacts of tourism. The residents' perception of these impacts and the role of residents' place image are measured in shaping their support for tourism development in Kavala, Greece. This study found that residents' place image directly affects their perceptions of tourism impacts and indirectly affects their support for tourism development. Moreover, the authors recommended that more favourable perceptions of the economic, socio-cultural and environmental impacts lead to greater support of tourism development.

Homsud and Promsaard (2015) proposed a model of residents' support to test the relationship among residents' image, residents' perceived tourism impacts and residents' satisfaction and support. Then, the effect of the model is examined by using empirical testing. The sample involves 400 people in Hua-hin Prachubkirikhan, Thailand. The structural equation modelling is used in the study. The authors found that all hypothesized affect the positive results significantly except environmental impacts.

Canalejo and Maria (2016) explored that the local residents see tourism as an essential interest in analyzing and managing the economic, socio-cultural and environmental impacts of tourism development in a certain region. The author analyzed the attitude of the residents in the islands of Sal and Boa Vista, archipelago of Cape Verde (Africa). The study showed that the residents are largely in favour of tourism development due to the personal benefits from it, and they are aware of the negative economic, socio-cultural and environmental impacts of tourism which do not benefit the community. The author concluded that the residents have more benefits of tourism development than the costs, and they have a large potential for sun and sand tourism development.

Phyu Win Ei (2016) analyzed that the residents' attitudes towards support for tourism development in Myanmar. The model was analyzed with survey data of 360 respondents from the local residents who live in Bagan and Mandalay area where the most tourist destination places in Myanmar using SEM. The model is comprised of two independent variables (perceived benefits and perceived costs that include positive and negative impacts of economic, social, cultural, and environmental concern) and two dependent variables (residents' trust and support for tourism). The results of this study indicated that there is a significant positive relationship between perceived benefits and support for tourism development. Trust is used as a mediating variable. The relationship between perceived benefits and trust for tourism institutions and other people is slightly significant. The study suggested that the further studies are needed in many areas to analyze the different positive and negative impacts in Myanmar.

Win Min Thant (2017) investigated an integrated model of residents' satisfaction with tourism development (RSTD) in Inle Region and explored the antecedent constructs that were likely to affect RSTD. The model was analyzed with survey data of 470 residents of twenty-two villages in Inle Region by cluster random sampling method. The model RSTD has been constructed by SEM. The model is comprised of community attachment, residents' expectations for tourism development, distribution of personal benefits from tourism, residents' participation in tourism development, perceived benefits of tourism development, perceived costs of tourism development and residents' satisfaction with tourism development. The results from this study indicated that the perceived benefits of tourism development effects on RSTD are the most influential factors among the other influencing factors.

## CHAPTER III

### OVERVIEW OF TOURISM INDUSTRY IN MYANMAR

Tourism industry is one of the most important sectors of the economy in Myanmar. Myanmar possesses great tourist potential attractions in many places. Tourism industry has a great chance to prosper in the future because of the cultural and natural resources, people with a sense of genuine hospitality and friendliness, and people who still take pride in wearing traditional customs. To overview the tourism industry of Myanmar, sustainable tourism development in Myanmar, responsible tourism framework, tourist attractions in Myanmar, tourism impacts in Myanmar and the growth of tourism industry in Myanmar are described. Then, tourism industry in Bagan-Nyaung Oo Area is presented in this chapter.

#### 3.1 Sustainable Tourism Development in Myanmar

The Government of the Republic of the Union of Myanmar is transforming its political and economic system to enhance inclusive economic growth, accelerate poverty reduction and increase living standard of Myanmar's multiethnic population<sup>5</sup>. Owing to its ability to rapidly create jobs and stimulate the expansion of many economic sectors, responsible tourism development is a national priority<sup>6</sup>. As a result of sweeping political and economic reforms, Myanmar enjoys unprecedented tourism growth. Between 2011 and 2012, tourist arrivals increased by 29.7% and for the first time in its history, Myanmar received over 1 million international visitors<sup>7</sup>. The international tourist arrivals and tourism receipts were 4.68 million and US\$ 2122 in 2015. International tourism generated 4.8% of GDP and supplied about 6.5 % of job prospects.

Myanmar welcomes tourists from all parts of the world and will continue to facilitate smooth and efficient access to the country. Together with Myanmar Tourism Federation (MTF), Ministry of Hotels and Tourism (MOHT) will work to develop Myanmar as a year-round destination with a geographically spread product base. Importantly, the value of tourism will take precedence over simply increasing the volume of international visitors. The government will closely monitor the expansion

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<sup>5</sup> National Sustainable Development Strategy for Myanmar: NCEA, MOF, UNEP, RRC, AP, August 2009.

<sup>6</sup> Ministry of Hotels and Tourism (MOHT) 2013, Myanmar Tourism Master Plan 2013-2020.

<sup>7</sup> Myanmar Tourism Statistics 2011-2012.



of the sector and encourage forms of quality tourism in accordance with the objectives of national, state and regional development.

Myanmar will balance the need to ensure the well-being of host communities and the protection of its natural and cultural heritage with the need to boost tourism's contribution to foreign exchange earnings and gross domestic product (GDP) growth<sup>8</sup>. Consequently, the government has prioritized tourism development in its framework for economic and social reforms. To make sure that tourism growth delivers broad and equitable social, economic and environmental benefits, the government adopted the Myanmar Responsible Tourism Policy in 2012. The policy is also endorsed by the Myanmar Tourism Federation (MTF) and is highly acclaimed by both civil society and development partners. The Ministry of Hotels and Tourism (MOHT) formulated the Myanmar Tourism Master Plan 2013–2020. Preparation of the Master Plan was undertaken between October 2012 and May 2013 with technical assistance from the Asian Development Bank (ADB) financed by a grant from the Government of Norway.

Together with Myanmar's abundance of outstanding cultural and natural tourism assets, ongoing reforms have fueled a surge in international visitors. Other key drivers of growth include rapidly expanding scheduled inbound flights, progressive easing of tourist visa-on-arrival privileges at gateway airports, improving conditions for business and investment, and strong demand for international travel among regional and long-haul markets. While the increase in international visitors is a positive result of the Government's reform process, rapid tourism growth is presenting the country with many social and environmental challenges.

Building a sustainable tourism industry in Myanmar requires strong public and private sector partnerships as well as inclusion and support from the local communities and civil societies. The role of the private sector is driving development and investment in tourism services. A participatory integrative approach shall be adopted where local communities, the private sector, NGOs, the general public and other stakeholders are given opportunities to take part in the planning and decision-making process of the sustainable tourism industry.

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<sup>8</sup> Ministry of Hotels and Tourism (MOHT) 2013, Myanmar Tourism Master Plan, 2013-2020.

Tourism development in Myanmar shall be beneficial to both visitors and participants of the tourism industry. Myanmar uses Responsible Tourism as part of its strategy for the sustainably social and economic development of the country. Sustainable tourism plays a vital role in Myanmar by conserving natural heritage and biodiversity, reducing poverty, giving employment opportunities, preserving local culture, balancing social and economic development and implementing political reforms. Therefore, current and future economic benefits, environmental protection, social and cultural benefits, the ability of society to benefit from tourism and to meet the tourists' needs and expectations are the important fundamentals in the sustainability of tourism.

### **3.2 Responsible Tourism Framework**

The Republic of the Union of Myanmar is currently experiencing rapid growth in tourism demand. Myanmar has become fast-growing tourist destination in South East Asia. In the first six months of 2012, international visitor arrivals increased by over 30 per cent compared to 2011. In the short run, success is assured and tourism will continue to grow rapidly. However, Myanmar risks potentially unsustainable tourism growth and negative impacts relating to the environment, culture and society.

MOHT and MTF recognized that rapid tourism development may succeed in boosting the sector and creating swift economic development, but it may fail in the long-term success for sustainable tourism development in the country. To meet expectations in tourism development, the MOHT developed three policies. The first policy is “Myanmar Responsible Tourism Policy (RTP)” which aims to realize sustainable tourism development. “Responsible Tourism” means maximization of benefits in economic, social and environmental aspects as well as minimization of cost to the destination through proper coordination and management. To achieve this, the RTP indicates nine objectives.

The second policy is “Policy on Community Involvement in Tourism (CIT).” The CIT is prepared to accelerate the involvement of the local community in tourism. The CIT shows guidelines and action points to progress with the involvement of local communities in tourism which is mentioned in the RTP. The last one is Myanmar Tourism Master Plan. The Myanmar Tourism Master Plan is developed to materialize the 9 objectives of the RTP under cooperation with Government of Norway and the

Asian Development Bank (ADB) and begun in November 2013. The recently approved Labor Organization Law and Settlement of Labor Dispute Law as well as the draft Minimum Wage Law, safeguard the rights of tourism workers to organize and seek fair wages and safe working conditions. Other laws and policies are highly relevant to tourism which include the 2012 Foreign Investment Law and 2012 Myanmar Responsible Tourism Policy.

The vision described in the Myanmar Tourism Master Plan defines that Myanmar tourism creates a better living environment, more employment and more business opportunities to contribute to natural and cultural heritages and welcome foreign peoples who respect indigenous Myanmar.<sup>9</sup> The Master Plan begins with an overview of Myanmar's tourism system including an analysis of regional trends, tourism activity and assets, institutional and regulatory issues, investment environment, infrastructure and human resources. The Master Plan adopts the nine aims of the Myanmar Responsible Tourism Policy as its guiding principles. These principles are:<sup>10</sup>

- (i) To develop tourism as a national priority sector
- (ii) To promote broad-based local social and economic development
- (iii) To maintain cultural diversity and authenticity
- (iv) To conserve and enhance Myanmar's protected areas and natural environment
- (v) To compete on product richness, diversity and quality
- (vi) To ensure the health, safety and security of visitors
- (vii) To strengthen institutional capacity to manage tourism
- (viii) To develop a trained and rewarded workforce
- (ix) To minimize unethical practices

The goal of the Master Plan is to maximize tourism's contribution to national employment and income generation, and ensure that the social and economic benefits of tourism are distributed equitably. It sets out strategic programs, priority projects, and activities in a long-term implementation framework. The key objectives for each strategic program are:<sup>11</sup>

- (i) To strengthen the institutional environment
- (ii) To build human resource capacity and promote services quality
- (iii) To strengthen safeguards and procedures for destination planning

<sup>9</sup> Myanmar Responsible Tourism Policy, September 2012.

<sup>10</sup> Ministry of Hotels and Tourism (MOHT), 2013. Myanmar Tourism Master Plan 2013-2020

<sup>11</sup> Myanmar Responsible Tourism Policy: Myanmar Tourism Master Plan Report (TA-8136)

- (iv) To develop quality products and services
- (v) To improve connectivity and tourism-related infrastructure
- (vi) To build the image, position and brand of tourism Myanmar

The Master Plan has set a high target of 3.01 million international visitors in 2015 and 7.48 million international visitors in 2020. Based on this high growth scenario, tourism receipts are projected to increase from a baseline of \$534 million in 2012 to \$10.18 billion in 2020, with the corresponding number of tourism-related jobs rising from 0.29 million to 1.49 million<sup>12</sup>. To ensure that this growth is managed responsibly for the benefit of people, the Master Plan includes thirty-eight projects with an indicative cost of \$486.6 million. Twenty-one of these projects with an indicative cost of \$215.6 million are critical to the successful implementation of the Master Plan.

Responsible Tourism creates better places for people to live in and better places for tourists to visit. A responsible tourism approach aims to achieve the three principal outcomes of sustainable development such as economic growth, environmental sustainability and social justice. Responsible Tourism is a multi-stakeholder process involving a partnership between the public and private sectors to take effective action and to address challenges from tourism. Regarding the Myanmar Responsible Tourism Policy, the Republic of the Union of Myanmar commits to develop and promote a tourism industry that emphasizes cultural responsibility and social justice, environmental sustainability and economic viability.

### **3.3 Tourist Attractions in Myanmar**

Myanmar developed its own rich history and culture bringing in elements of cultures. Sharing borders with Thailand, Laos and Bangladesh implies that Myanmar will benefit from cross border trade as well as tourism as the country opens up more and more. Covering 420,405 square miles it inherits diversity of terrain, biological and plant species and natural resources as well as encompassing various cultures and several races. Concerning these unique and distinctive qualities, Myanmar has great potential in accommodating different types of tourists.

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<sup>12</sup> Ministry of Hotels and Tourism (MOHT), 2013. Myanmar Tourism Master Plan 2013-2020.

Myanmar has currently ten flagship tourist destinations that are Yangon, Bagan, Mandalay, Inlay Lake in Shan State, Naypyidaw, Kalaw, Kyaikhtiyo in Mon State and Ngapali Beach and Mrauk U in Rakhine State, Mount Popa and Pyay in Bago Region. The emerging areas of tourist attraction are the mountains of Putao, Nagaland, Hakha and Natmataung (Mt Victoria) in Chin State, and Loikaw in Kayah State. The Pyu ancient cities of Myanmar (Hanlin City, Beikthano City, Sri Ksetra City) were first inscribed on UNESCO's World Heritage List in June 2014. In July 2019, Bagan was also inscribed on UNESCO's World Heritage List. The Myeik Archipelago in Tanintharyi Division has recently become more accessible for tourists.

### **3.4 Tourism Impacts in Myanmar**

In Myanmar, tourism promotion has been highlighted since 1992. The Myanmar Hotels and Tourism Law was promulgated on 23 October 1993 with the objectives to promote hotels and tourism systematically, to enable the tourists, to study the cultural heritage and natural beauty, to safeguard the natural environment, to contribute to international friendship and to increase job opportunities. The number of tourists entering Myanmar increased gradually but it was still low compared to other countries.

Tourism activities could serve as a catalyst for the development of other sectors of the Myanmar economy such as agriculture, fisheries, manufacturing, construction and crafts production. Tourism activities could contribute to poverty reduction, and enhance economic benefits for the local community. Responsible and sustainable tourism development can significantly contribute to raising the standard of living of entire communities by increasing the availability of health services, infrastructure and education.

In Myanmar, the economic benefits of tourism can be derived directly or indirectly. The primary effect is direct benefits that result from direct tourist expenditures for goods and services in the destination. Indirect benefits are caused by the movement of tourism expenditures in the destination through domestic inter-business transactions. Indirect benefits can be caused by investment and spending in business that benefits directly from tourism expenditures. Besides, tourism spending

within the destination can create induced benefits. Therefore, the tourist expenditures at the destination can create direct benefits in tourism-related businesses and other sectors such as accommodation, transport, hospitality, tour operators and attractions. This spending can create a significant amount of indirect and induced benefits in other sectors such as agriculture, construction and manufacturing.

The tourism sector can enable environmental protection mechanisms and has the potential to raise awareness about the environment. The increased tourism in Myanmar also has potential to increase public appreciation of the environment and to spread awareness of the country's environmental problems. The tourism sector in Myanmar is seasonal and vulnerable to external and internal impacts. The tourism sector can also contribute to climate change through the generation of greenhouse gas emissions through road and air transport, as well as energy consumption by air conditioning, heating and lighting in tourism establishments. Deforestation due to land acquisition for hotel zones is also a concern.<sup>13</sup>

The growth of the tourism industry can have positive cultural impacts on a country and its population, including through the promotion and preservation of tangible and intangible cultural heritage and traditions, development of new forms of cultural expression and promotion of exchanges with other languages and cultures. Tourism can increase the demand for traditional handicrafts such as Myanmar art and paintings, lacquerware, silverware, woodcarving and weaving.

The behaviour of tourists can also have negative social and cultural impacts. These may include the lack of respect for local traditions, customs and religion, including respect for religious buildings, the consumption of alcohol and drugs and gambling practices. Tourism may also contribute to economic inequality, which can fuel conflicts and an increase in crime and prostitution.

Myanmar has weak regulatory guidelines for natural resource management and pollution prevention. The major challenges of tourism are lack of well-trained human resources, weak regulatory environment, insufficient coordination between public and private sectors, insufficient public services and financial systems and lack of accurate information. To overcome these challenges, the government conducts to support infrastructure and investment, to maximize positive impacts from tourism and to avoid negative impacts of tourism.

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<sup>13</sup> Ministry of Hotels and Tourism Myanmar (MOHT) 2012, Hotel & Tourism Review.

### 3.5 Growth of Tourism Industry in Myanmar

The MOHT has encouraged the tourism industry and also foreign ones to make investment and opportunities for tourism development and to create investment opportunities on a large scale in the private industries. The MOHT is identified as intending to lead participatory processes, to develop a national policy, to promote visitor safety and consumer satisfaction and to integrate tourism services into national laws on consumer protection. The Ministry issues the following licenses to private entrepreneurs. The enterprises and businesses are accommodation, tourist transport businesses, tour enterprises and tour guides businesses. Tables 3.1, 3.2, 3.3 and 3.4 present the numbers of tour enterprises, tour guides, tour transport businesses and accommodation. Figure 3.1 shows the numbers of tour enterprises, tour guides and tour transport businesses.

**Table (3.1): Licensed Tour Companies in Myanmar, 2008-2017**

Type Year	Foreign Company	Joint Venture Company	Local Company	Total
2008	1	16	692	709
2009	1	16	574	591
2010	1	17	640	658
2011	1	15	743	759
2012	1	17	1008	1026
2013	1	25	1324	1350
2014	1	33	1589	1623
2015	1	39	1906	1946
2016	1	42	2410	2453
2017	1	40	2552	2593

Source: Myanmar Tourism Statistics Brochures, 2008-2017

Table 3.1 shows the number of licensed tour companies from 2008 to 2017. Most of the local tour companies are small and medium enterprises. These data show that private participation in tourism industry has increased after 2010. This brought a huge growth in the tourism sector from 1906 local tour companies in 2015, to 2410 local tour companies in 2016 and to 2552 local tour companies in 2017.

**Table (3.2): Licensed Tour Guides in Myanmar, 2008-2017**

Types of Tour Guide	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
English	3093	2920	2598	1931	2058	2187	2296	2349	2586	2815
Spanish	101	101	101	106	110	111	110	106	335	108
Japanese	598	548	484	343	350	403	384	352	272	342
French	283	293	280	231	246	277	282	278	261	295
Chinese	217	241	171	125	139	132	131	123	163	146
Thai	214	203	108	106	108	132	138	150	124	206
German	122	114	235	219	230	264	268	261	106	271
Russian	38	48	36	35	40	68	69	66	70	77
Italian	26	37	44	43	48	64	68	64	63	65
Korean	20	22	20	21	24	29	30	26	30	46
Total	4712	4527	4077	3160	3353	3667	3776	3775	4010	4371

Source: Myanmar Tourism Statistics Brochures, 2008-2017

The number of licensed tour guides is shown in Table 3.2. Among the types of licensed tour guides, English speaking guides are more than other guides because English is an international language. Some of English speaking guides perform as well as other language speaking guides. The number of licensed tour guides increased up to 2008 but decreased in 2009 because tour guides were being rechecked. At that time, most of the tour guides have not licensed as real guides. Increasing tourist arrivals caused maximizing the licensed tour guides from 2012 to 2017. The regional tour guides had 3449 in 2017.

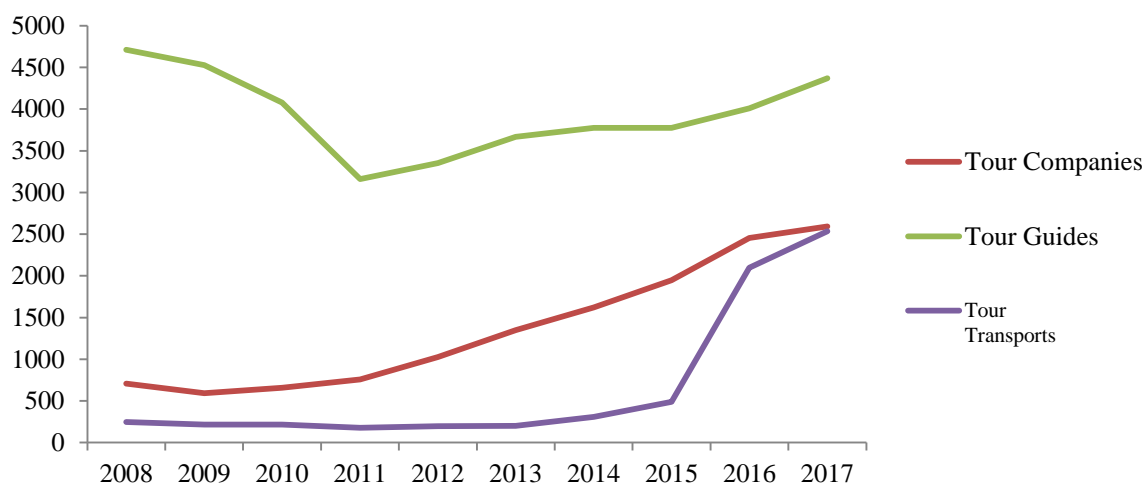
**Table (3.3): Licensed Tourist Transportation in Myanmar, 2008-2017**

Types of Transportation	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Coach (26 - 50 seater)	88	76	73	63	61	62	129	208	264	360
Mini Bus (13 - 25 seater)	27	29	38	27	27	24	30	60	104	139
Hiace/Townace (5 to 12 seater)	16	15	3	13	16	17	31	69	322	454
Saloon/Van (4 seater)	21	21	18	19	23	17	18	39	163	243
Motor Boat	52	29	34	12	22	46	55	58	1194	1277
Boat	12	16	16	17	17	19	24	30	33	44
Yacht	30	30	34	26	31	15	21	21	16	14
Hot Air Balloon	1	1	1	1	1	1	2	3	3	3
Total	247	217	217	178	198	201	310	488	2099	2534

Source: Myanmar Tourism Statistics Brochures, 2008-2017



The tourist transport businesses are described in Table 3.3. The number of tourist transport businesses fell sharply during the period 2008 and 2013. The reason is due to imperfect license rules and regulation system. The number of tourist transport businesses has gone up with the increase in international tourist arrivals from 2014 to 2017. Remarkably, the hot air balloon services have been established since 1999.



Source: Myanmar Tourism Statistics Brochures, 2008-2017

**Figure (3.1): Licensed Tour Companies, Tour Guides and Tour Transports in Myanmar, 2008-2017**

**Table (3.4): Licensed Hotels, Motels and Guest Houses in Myanmar, 2008-2017**

Year	Hotels, Motels and Guest Houses (Number)	Number of Rooms
2008	616	19975
2009	620	20234
2010	691	23454
2011	731	25002
2012	787	28291
2013	923	34834
2014	1106	43243
2015	1279	49946
2016	1432	56429
2017	1590	63978

Source: Myanmar Tourism Statistics Brochures, 2008-2017

Table 3.4 illustrates the numbers of hotels, motels and guest houses with their rooms. According to Table 3.4, the numbers of hotels, motels and guest houses have gradually increased. The Myanmar Hoteliers Association has requested a review of the current star-rating system in 2011. Hotel staff members have increased efforts to operate according to the ASEAN standards.

According to Tourism Master Plan (MOHT, 2013), Myanmar tourism has risen with the economic change of Myanmar. The requirements of hotels and hotel rooms have gone up with the increased tourist arrivals. The policies of government can make the improvement of hotel industry and tourism. Regarding the upgrading of hotel standards, the expansion of vehicles is needed in hotel industry.

### 3.6 International Tourist Arrivals and Tourism Receipts in Myanmar

International tourist arrivals and tourism receipts of Myanmar are studied in this section.

**Table (3.5): Visitors in Myanmar by Region, 2008-2017**

Region Year	Asia	West Europe	North America	Oceania	East Europe	Other Americas	Middle East	Africa	Total
2008	128279	37156	15229	6079	3729	1379	929	539	193319
2009	161133	48527	17440	1222	8005	4623	1564	764	243278
2010	212454	59817	18911	8695	6118	2208	1669	816	310688
2011	259692	80895	25365	11622	7622	2607	2380	993	391176
2012	380404	130296	44074	20650	9077	3747	3535	1598	593381
2013	630399	158163	62628	28079	10183	4625	3396	2688	900161
2014	807806	186828	74899	33421	13592	7043	4714	3321	1131624
2015	938487	209300	83866	35566	15433	9575	5527	3829	1301583
2016	864523	237889	91526	39172	17568	10999	7140	3779	1272596
2017	953801	239358	87153	37644	20069	12592	6465	5866	1362948
Total	5336978	1388229	521091	222150	111396	59398	37319	24193	7700754

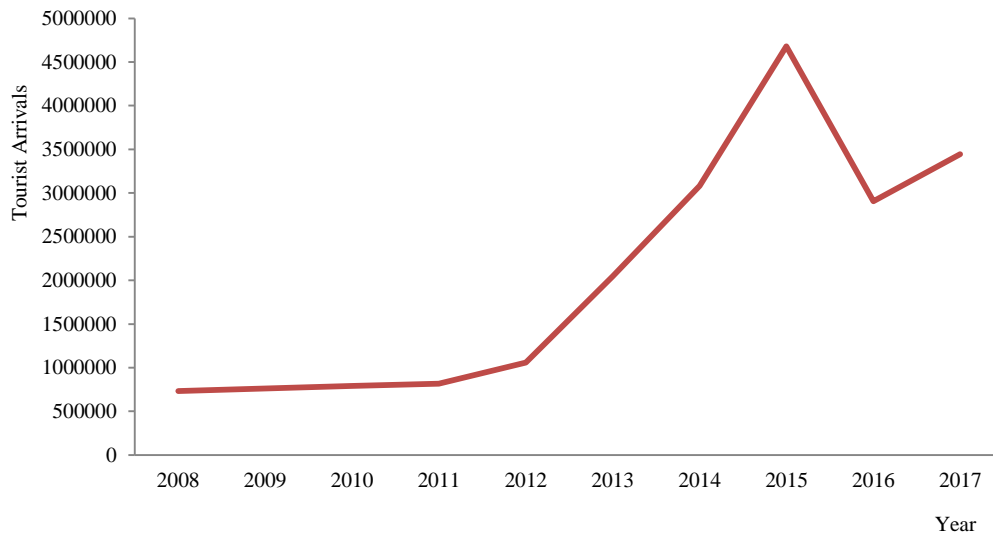
Source: Myanmar Tourism Statistics Brochures, 2008-2017

The international tourist arrivals can be classified by region that is shown in Table 3.5. According to the Myanmar tourism statistics, 65% to 70% of tourists came from Asia, around 20% to 30% of tourists came from West Europe and about 6% to 9% of tourists came from North America.

**Table (3.6): Tourist Arrivals by Entry Point in Myanmar, 2008-2017**

Year	Entry Point					Total
	Yangon	Mandalay & Bagan	Naypitaw	Mawlamyine	Border Tourism	
2008	187766	5553	-	-	537911	731230
2009	234417	8861	-	-	519269	762547
2010	297246	13442	-	-	480817	791505
2011	364743	20912	5521	-	425193	816369
2012	559610	32521	1250	-	465614	1058995
2013	817699	69596	11842	1024	1144146	2044307
2014	1022081	90011	19261	271	1949788	3081412
2015	1180682	107066	13835	-	3379437	4681020
2016	1080144	128387	16224	47841	1634611	2907207
2107	1146069	157860	17077	41942	2080185	3443133
Total	6890457	634209	85010	91078	12616971	20317725

Source: Myanmar Tourism Statistics Brochures, 2008-2017



Source: Myanmar Tourism Statistics Brochures, 2008-2017

**Figure (3.2): Tourist Arrivals by Entry Point in Myanmar, 2008-2017**

Tourists enter into Yangon and Mandalay that are the main gateways for tourists entering the country by air transport. Nay Pyi Taw gateway currently receives only domestic flights and international charter services. Mawlamyine Gateway has started Mawlamyine-Chin Mai flight only from 2013. According to Visit Myanmar Year 1996, Myanmar opened checkpoints along the borders with the neighbouring countries such as China, Thailand and Laos. These border checkpoints allowed to enter the tourists by means of border pass without requiring visa entry stamps. According to Table 3.6, plenty of tourists arrived from the border as though tourist arrivals have increased yearly.

Many foreign travellers tend to visit without assistance from authorized tour operators or travel agents. According to MOHT (2013), travellers can easily get to global distribution networks and are able to obtain the necessary information and reservation arrangement. The percentage of independent travellers is twice as much as the percentage of the package tour group. The package tour groups and business travellers stay for a long time. Hence, they spend a huge amount of money during their stay.

**Table (3.7): Tourism Receipts in Myanmar, 2008-2017**

Year	Tourism Receipts (US\$ million)	Average Expenditure per Tourist per Day (US\$)	Average Length of Stay (days)
2008	165	95	9
2009	196	95	8.5
2010	254	102	8
2011	319	120	8
2012	534	135	7
2013	926	145	7
2014	1789	170	9
2015	2122	171	9
2016	2197	154	11
2017	1969	153	9

Source: Myanmar Tourism Statistics Brochures, 2008-2017

The total international tourism receipts, average expenditure per tourist per day and average length of stay are shown in Table 3.7. The tourism receipts increased during the period between 2008 and 2017, except for 2017. The increase in tourism receipts is due to the increase in average length of stay, the increase in average expenditure per day and the increase in tourist arrivals. In 2017, the package tours and tourism receipts are decreased due to Rohingya conflict of northern Rakhine State in Myanmar.

### **3.7 Tourism Industry in Bagan-Nyaung Oo Area**

This section describes historical, geographical and demographic backgrounds, cultural heritage attraction, international tourism growth, socioeconomic situation, tourism-related infrastructure in Bagan-Nyaung Oo Area.

#### **3.7.1 Historical, Geographical and Demographic Backgrounds**

##### **(i) Historical Factors**

Bagan is one of the most significant archaeological sites of South East Asia. The ancient temples of Bagan stand today as they have been standing for a thousand years. King Anawrahta founded the Bagan Empire in 1044. Bagan, an ancient city, was the capital of the prosperous Bagan Empire. Bagan was upgraded and formed by the Ministry of Home Affairs on 25<sup>th</sup> September 1973. Bagan was placed under Nyaung Oo Township. Then, Nyaung Oo Township was upgraded to the district level on 4<sup>th</sup> April 1996. The former Ngathayauk group of villages in the Nyaung Oo

District was upgraded to an associate township in Nyaung Oo District on 16<sup>th</sup> February 2003. Nowadays, Nyaung Oo District consists of Nyaung Oo Township and Kyaukpadaung Township. Nyaung Oo Township is formed with Nyaung Oo, Bagan and Ngathayout, with 17 ward in the urban area and 74 village tracts in the rural area. Moreover, the Government has emphasized on Bagan tourism and encouraged the private sector to invest in the region. Thus, the role of tourism industry in urban area of Nyaung Oo Township is essential.

## **(ii) Geographical Features**

Nyaung Oo Township is situated between North Latitude  $20^{\circ} 15' 38''$  and  $25^{\circ} 18' 33''$  and East Longitude between  $94^{\circ} 39' 32''$  and  $95^{\circ} 13' 50''$  in Mandalay Region at 206 feet above the sea level. It is surrounded by Pakkoku Township and Magway Region in the north, Taungtha, Kyaukpadaung Township and Mandalay in the east, Chauk Township and Magway Region in the south and Ayeyarwady river in the west. The township has a coverage area of 438.47 square miles.

Concerning the topography, Tuyunn Mountain with a height of 1171 feet and the length of 10 miles lies in the east. Pykehlan Mountain range and Thagyar Mountain range lie in the south of the township. There is a flat region. Regarding the climate, May is the hottest month with the highest temperature being approximately  $110^{\circ} F$ . The lowest temperature is nearly  $50^{\circ} F$  in the cold season. Concerning the rainfall, it is surprisingly small compared to other regions. It does less rain in July but more rain in September and October than the other months. The average annual rainfall is 25 inches. The average temperature is relatively high above  $30^{\circ} C$  all year round. Hence, it is regarded as a type of dry hot climate.

Due to this climate, the flora of Bagan is generally different from other areas and protected national parks and conservation areas. In general, national parks in Myanmar are defined the “Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law”, and managed by Ministry of Natural Resources and Environmental Conservation (MONREC). According to the law, habitation, harvesting and hunting in the protection area are prohibited, but visiting such as trekking and eco-tour is permitted.

### (iii) Population Factors

The population is an important factor, which must be taken into account studying the impacts and development of tourism in a tourist destination. The population is very important for the future development of tourism and increasing volume of tourists. Table 3.8 shows the number of households and population in Nyaung Oo Township.

**Table (3.8): Population in Nyaung Oo Township, 2017**

Area	Household		Total Population			
	Number	Percent	Male	Female	Total	Percent
Urban	11187	20.11	23671	27102	50773	20.41
Rural	44436	79.89	90770	107231	198001	79.59
Total	55623	100	114441	134333	248774	100

Source: General Administration Department of Nyaung Oo Township, 2018

According to Table 3.8, there are 55623 households and 248774 persons in Nyaung Oo Township. The sex ratio is 85. Hence, there are 85 males per 100 females. In this township, approximately 50773 people (i.e 20.41% of population) lived in the urban area, whereas the rest about 198001 people (i.e 79.59% of population) lived in the rural area. Regarding races, although the majority is Bamar, there are other races in the township.

### 3.7.2 Cultural Heritage Attractions

#### (i) Cultural Heritage Monuments

As there were 2230 historical monuments built between the 11<sup>th</sup> century and 13<sup>th</sup> century in Bagan, the region provides the development of tourism. Bagan is considered one of the most important archaeological sites in Asia (Association of Myanmar Architects, 2017). 3822 monuments were located at Bagan, including temples, stupas, monasteries and pagodas. Bagan has been inscribed a UNESCO World Heritage Site at a meeting in Baku, Azerbaijan capital in July 2019. Bagan has been the second World Heritage Site in Myanmar.

There are 2826 cultural heritage buildings in the area of Bagan according to the survey conducted by P. Pichard.<sup>14</sup> Among these cultural heritage buildings, about a hundred monuments are located within the area of old Bagan surrounded by the

<sup>14</sup> Pichard, Pierre. (1999). "Inventory of Monuments at Bagan". UNDP/UNESCO.

ancient city wall. The other monuments are located outside of the ancient city wall. The most of monuments are concentrated in the northern area of the main road connecting to Nyaung Oo airport, Minnanthu village, new Bagan and Thiripyitsaya ward along the Ayeyarwaddy River. Some of the monuments are situated within the area of human settlements.

Among 2826 cultural heritage buildings, 422 of them were selected for classifying the grades into their archaeological value. According to the master plan from UNESCO, the grading list of monuments was proposed for the conservation works and an effective “Site Management Program” focusing on historical, archaeological and technological criteria. The grading list consisted of 34 monuments in grade I which is the most important, 100 monuments in grade II, 288 monuments in grade III. The Gazetteer from the Township Development Committee states that Alodawpyit, Ngatpittaung and Myazaydi have become interesting monuments. Thirty-four grade I outstanding monuments need to be systematically inspected and preserved. One hundred grade II exceptional monuments need to be regularly inspected, maintained and repaired. Two hundred and eighty-eight grade III important monuments need to be periodically inspected, maintained and repaired.

Bagan is a very important archaeological site to show the national identity of Myanmar architecture. In addition, the authority demarcated the zones that need to conserve the value of cultural heritage buildings. The authority demarcated cultural heritage structures into 3 zones: (i) archaeological zone, (ii) monumental zone and (iii) preservation zone. In the heritage zone, the height of new public buildings is no more than thirty feet.

In addition, Bagan is an ancient monument zone. The local residents should be accepted in line with the ancient heritage conservation laws. Bagan archaeological zone plans have to reflect a balance of tourism features, ancient heritage conservation and community development. The Master Plan for Bagan is mainly intended for the long-term sustainability of local community development, heritage conservation and tourism development. Department of Archaeology, National Museum and Library should plan to limit the sunrise and sunset viewing over pagodas starting from the next tourist season. Therefore, local residents should conserve and protect these valuable heritage buildings.

### **(ii) Lacquerware Museum**

The Lacquerware Museum founded in 1972. It located on a side street of Old Bagan, not far from Tharabar Gate. It was attached to Myanmar Lacquerware Technology College in Bagan. The Museum collects antique lacquerware from 12<sup>th</sup> century to early 20<sup>th</sup> century. Nearly three hundred items of Myanmar ancient cultural lacquerware were displaced at the Museum. There are seven rooms in the Museum. They are exhibition room, process room, musical instruments room, international lacquerware room, daily use items room, lacquerware painting room and religious items room. The Museum exhibits various kinds of lacquerware such as alms rice bowls, cupboards, betel boxes and lacquerware products of other places in Myanmar. It serves as a treasure trove of information and a visit to this worthwhile for tourists.

### **(iii) Archaeological Museum**

The Archaeological Museum was inaugurated in 1904 in the Old Bagan. Archaeological Museum was reconstructed in 1995 and reopened in 1997. The Museum is a two-story building and the ground floor is exhibited the display room for objects of visual arts of the Bagan Period such as terra cotta, stucco works, wood carvings, stone sculptures metal works and lacquer works. The building is fully furnished with Myanmar handicrafts. Therefore, the Bagan Archaeological Museum is one of the most important cultural places.

### **(iv) Lacquerware Technology College**

The Lacquerware Training School was first established in 1924. In 1995, the school was elevated to Myanmar Lacquerware Institute. The institute was upgraded to Lacquerware Technology College in December 2003. Lacquerware Technology College is one and only in the whole of South-east Asia. The objectives of this college are:

- (i) to preserve Myanmar lacquerware technology
- (ii) to invent and disseminate new methods without endangering the traditional lacquerware technology
- (iii) to continuously produce lacquerware technicians
- (iv) to develop lacquerware technology through school education and
- (v) to nurture business minded scholars.



### **(v) Hot Air Balloon**

International tourists to Myanmar have been inspired by the magic of Bagan. By floating in air balloons over Bagan, tourists can get a unique opportunity to see the ancient Bagan Kingdom. The balloon is guided by gentle winds not exceeding 15 mph, on average, the flight takes between 45 minutes and 60 minutes. Flight inclusions have a classic flight (340 USD per person) and premium flight (450 USD per person). Classic balloon baskets fit up to around 10 or 14 riders each. Premium balloon baskets fit at most eight travellers each. In Bagan, the companies of hot air balloon are Oriental Ballooning, Balloons over Bagan and Golden Egle.

### **(vi) Traditional Pagoda Festivals**

Since many pagodas and temples exist in Bagan, their seasonal pagoda festival are held throughout the year according to each month in the places. The four celebrated festivals in the region are Lawkananda in August, Shwezigon in November, Ahlodawpyit in December, Ananda in January. Regarding these pagoda festivals, evening entertainments such as zats, a variety of dances and songs, short and long plays can be enjoyed. A popular fair of local and traditional products are sold in these festivals. The interesting aspect of these festivals is the caravan of bullock-carts in the pagoda compound, camped under the shady trees.

## **3.7.3 International Tourism Growth**

### **(i) Tourism Businesses**

In the region, eighty-five accommodations were registered under the MOHT in 2017. Hence, the region is one of the cities having a large number of hotels and room in Myanmar. There are seven tour companies and 576 tour guides in the region. There are 367 licensed tour guides and 209 regional tour guides in Bagan. Among the types of tour guides, English speaking guides are more than other guides in Bagan-Nyaung Oo Area. Some of English speaking guides perform as other language speaking guides. Licensed tour guides tend to work mostly with package tour operators accompanying such groups for the entire duration of their stay. Regional tour guides can provide regional or local services.

The regional accommodation industry mirrors the tastes and purchasing power of the tourist market according to various sizes of hotels, price and service offering capacity. There are 85 hotels (including motels, inns and guest houses) that can accommodate foreign visitors in 2017. The total number of rooms has reached 2845. The range of high-end luxury hotels to modest guest houses exists, ranging from US\$ 10 per night to US\$500 per night. Hotels are classified into 5 grades such as five-star, four-star, three-star, two-star, one-star and unrated hotels. The number of five-star, four-star and three-star hotels are accounted for 15%, 2-star and 1-star hotels are accounted for 20% and unrated hotels are accounted for 65%. The number of licensed hotels, motels and guest houses are shown in Table 3.9.

**Table (3.9): Licensed Hotels, Motels and Guest Houses in Bagan, 2007-2017**

Year	Number of Hotels
2007	75
2008	75
2009	75
2010	75
2011	75
2012	75
2013	76
2014	77
2015	78
2016	83
2017	85

Source: Hotels & Tourism Office in Bagan, 2018

According to interviews, the average number of employees per room for five-star, four-star and three-star hotels are between 2 and 3. Similarly, the average number of employees per room for 2-star and 1-star hotels is between 1 and 2. In unrated hotels, the average number of employees per room is less than 1. The unrated hotels are mostly run by family.

Except for the hotel managers who are mostly university graduates, almost all employees including supervisors are locally appointed from within Bagan and its surrounding areas that are not graduates. Staff capacity is another challenge faced by hoteliers. Most hotel staffs have a little or no formal training. From the observations, the level of hospitality, language skill and attitude toward the guests differs from one employee to another. The teamwork spirit may help such insufficiencies among them. Therefore, the quality of private training institute and hotel and tourism school should be established in Bagan-Nyaung Oo Area.

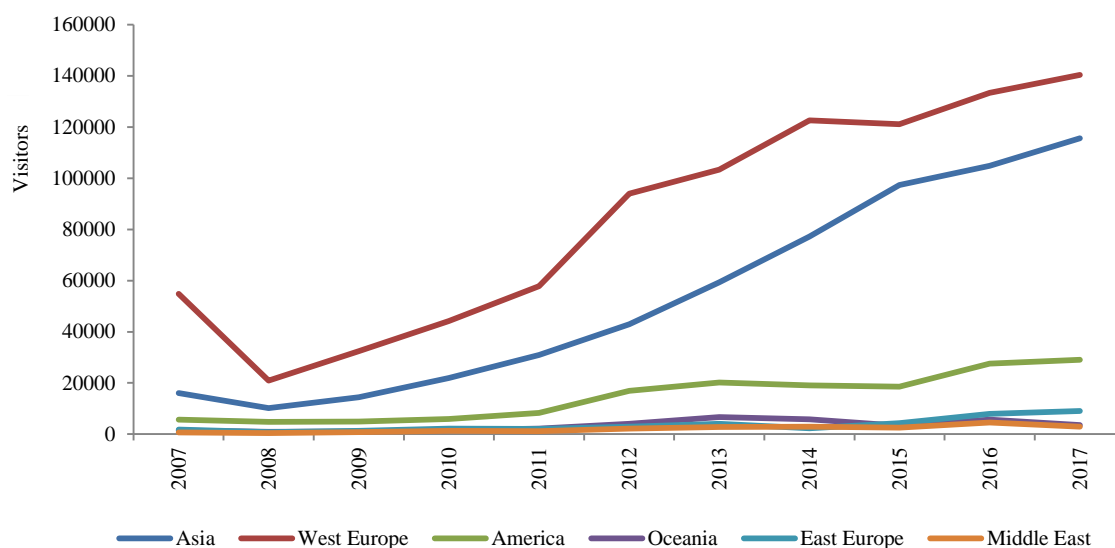
## (ii) International Tourist Arrivals

The international tourist arrivals in Bagan can be classified by region.

**Table (3.10): Visitors in Bagan by Region, 2007-2017**

Region Year	Asia	West Europe	America	Oceania	East Europe	Middle East	Total
2007	16061	54797	5670	1388	1802	692	80410
2008	10230	20924	4863	876	795	447	38135
2009	14416	32445	4962	1111	1280	847	55061
2010	21874	44133	5879	1516	2161	1268	76831
2011	30968	57817	8337	2133	2096	1236	102587
2012	42994	93968	16894	4022	2906	2200	162984
2013	59331	103271	20207	6726	4034	2796	196365
2014	77234	122605	19104	5869	2357	2960	230129
2015	97263	121090	18565	3281	4354	2587	247140
2016	104853	133299	27550	5701	7908	4566	283877
2017	115528	140384	29046	3543	9033	2907	300441
Total	590752	924733	161077	36166	38726	22506	1773960

Source: Hotels & Tourism Office in Bagan, 2018



Source: Hotels & Tourism Office in Bagan, 2018

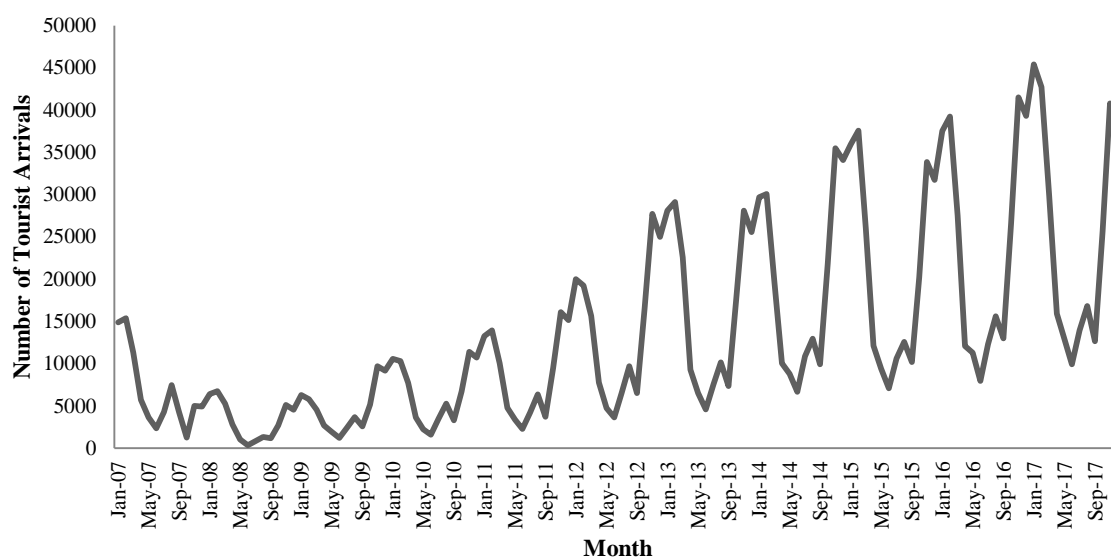
**Figure (3.3) Visitors in Bagan by Region, 2007-2017**

According to Table 3.10, 48% of tourists came from West Europe, 38% of tourists came from Asia, 10% of tourists came from America, 3% of tourists came from East Europe and 1% of tourists came from Oceania and Middle East. Concerning international tourist arrivals in Bagan between the year 2007 and 2017, West Europe is the largest and Asia is the second largest among the regions. Moreover, it can be said that the international tourist arrivals in Bagan-Nyaung Oo Area have increased in the annals.

**Table (3.11): International Tourist Arrivals in Bagan, 2007-2017**

Year Month	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
January	14887	6384	6288	10560	13237	19999	28083	29669	35929	37529	45418
February	15357	6720	5806	10293	13939	19231	29109	30047	37554	39245	42700
March	11323	5273	4553	7718	10042	15621	22550	19850	26008	27509	29880
April	5715	2787	2672	3621	4760	7751	9272	10018	12113	12079	15894
May	3627	1011	1913	2229	3372	4745	6495	8784	9378	11281	13001
June	2340	331	1196	1585	2262	3649	4570	6677	7067	7964	9914
July	4278	826	2413	3483	4210	6504	7519	10866	10593	12318	13928
August	7444	1329	3652	5255	6349	9691	10161	12939	12573	15583	16798
September	4279	1156	2572	3287	3723	6524	7353	9915	10167	12966	12636
October	1241	2670	5134	6700	9459	16565	17574	21788	20201	26585	25656
November	4999	5108	9703	11379	16101	27732	28110	35485	33836	41522	40801
December	4920	4540	9159	10721	15133	24972	25569	34091	31721	39296	33815
Total	80410	38135	55061	76831	102587	162984	196365	230129	247140	283877	300441

Source: Hotels & Tourism Office in Bagan, 2018



Source: Hotels & Tourism Office in Bagan, 2018

**Figure (3.4): International Tourist Arrivals in Bagan, 2007-2017**

The international tourist arrivals to Bagan-Nyaung Oo Area were about 300441 in 2017. In recent years, tourist arrivals have dramatically increased except for the year 2008 and 2009 due to strong cyclones that occurred in May 2008. The tourist arrivals have changed between high season and low season. The high season is from October to March and the low season is from April to September. According to Table 3.11 and Figure 3.4, the lowest tourist arrivals are from May to July and the highest tourist arrivals were from November to February.

### 3.7.4 Socioeconomic Situations

Concerning the study of tourism development in any destination, it is initially needed to analyze the progress of both education and health sectors. The equity-oriented tourism development can enhance local economic development and social infrastructure. Therefore, the current situations of education, health and economic sectors in Nyaung Oo Township are discussed in this section.

#### (i) Education Sector

In regard to higher education, there is a Myanmar Lacquerware Technology College in the township. Myanmar lacquerware industry plays an important role because domestic and international tourists buy lacquerware items in the township. Moreover, it is a tourism-related industry. Furthermore, both male employees and female employees work in the production of lacquerware and at lacquerware selling shops. Myanmar Lacquerware College were 44 faculty members in teaching department, 10 members in research and development department and 35 members in administration department. This college had headmaster and pro-headmaster. The above 200 candidates were studying at this college in 2017.

With regard to basic education, there were 6 basic high schools, 15 secondary schools, and 194 primary schools. Table 3.12 describes numbers of schools, teachers and students in Nyaung Oo Township. Concerning basic education, there were 319 teachers and 9424 students at the high school level. For the middle school level, the total number of teachers and students were 299 and 6370 respectively. Meanwhile, there were 1250 teachers and 24283 students at the primary school level. Therefore, the teacher-student ratio was 1:30 at high school level, 1:20 at the middle school level and 1:19 at primary school level. Certainly, it can be said that although basic education is developed, higher education still needs to be developed in Nyaung Oo Township. There is no training centres and institution related to tourism industry in the region.

**Table (3.12): Numbers of Schools, Teachers and Students, 2017**

Basic Education	No. of schools	No. of teachers	No. of students	Teacher Student Ratio
High school	6	319	9424	1:30
Middle school	15	299	6370	1:20
Primary school	194	1250	24283	1:19

Source: General Administration Department of Nyaung Oo Township, 2017

## (ii) Health Sector

The infrastructure of health sector in Nyaung Oo Township is described in Table 3.13. There were 54 physicians, 126 nurses and 9 assistant health personnel in 2017. There were a two-hundred bedded hospital, twenty-five bedded hospital and sixteen bedded hospital in 2017. Moreover, a local health centre, 6 rural health care centres and 33 rural health care branches existed there. In addition, there was a traditional medicine clinic in Bagan. Regarding the private sector, Moon and Sun hospital and 8 medical clinics have been opened in the region. Therefore, the standard of health care centres and services seems like low for international tourists.

**Table (3.13): Hospitals, Health Centres and Clinics, 2017**

Types	Number
Public Sector	
District Hospital (Two-hundred bedded Hospital)	1
Ngathayauk Hospital (Twenty-five bedded Hospital)	1
Taungzin Hospital (Sixteen bedded Hospital)	1
Traditional medicine clinic	1
Rural health care centres	6
Rural health care branches	33
Local health care centres	1
Maternal and child health centres	1
Private Sector	
Moon and Sun Hospital	1
Medical Clinics	8

Source: General Administration Department of Nyaung Oo Township, 2017

## (iii) Economic Sector

The agriculture sector is one of the main contributing sectors to the total GDP in the economy of Myanmar. Similarly, agriculture is one of the most important sectors in rural area of Nyaung Oo Township. Concerning manufacturing sector, there is no governmental factory but private sectors and enterprises are established in the region. There are many business firms and services in the region. The souvenir shops, art galleries and restaurants have the largest proportion. There were 129 hotels, inns and guest houses and 7 tour companies in 2017. The services sector and travel agencies are developed in the domestic market of Nyaung Oo Township.

There are many lacquerware products and shops in the region. Sand Paintings vividly remind many tourists to admire the beauty of the scenery in Bagan. Some traditional hotels in Bagan are still using the local textile for curtains, bed covers,

pillows and so on. It is expected that traditional products will be produced more and consumed locally. The lacquerware of Bagan is now mainly exported to Thailand and Asia countries. Therefore, the economy of the region is dependent on tourism industry.

### **3.7.5 Tourism-Related Infrastructure**

The infrastructure of the region is the key factor influencing tourism development. In this section, the region's infrastructure comprises transportation, water supply facilities, electricity and communications.

#### **(i) Transportation**

Easy access to transportation in tourism destinations is generally considered to be prerequisites for development. Transportation infrastructure comprises land transport system, water transport systems and air transport systems.

#### ***Land Transport Systems***

Regional roads are in a variety of conditions and are currently being upgraded and sealed. Regarding road transport, there are eight highway roads leading to Nyaung Oo Township. They are Nyaung Oo-Myingyan road (19 miles), Kyaukpagaung-Nyaung Oo-Bagan road (27.5 miles), Chauk-Singu-Bagan road (17.75 miles), Nyaung Oo-Popa road (14.875 miles), Myout Young road (2.5 miles), Nyaung Oo-Pakokku road (2.375 miles), the road from the airport to new Bagan (new road, 5.25 miles) and the road from the airport to new Bagan (old road, 2.375 miles). Among them, Kyaukpadaung-Nyaung Oo-Bagan road was mostly used by both local people and tourists. Nyaung Oo-Popa road is more useful for tourists because tourists have used it when visiting Mt. Popa and Shan state.

Because of good highway roads, there are fifteen travel express services operated in the township. Township Development Committee takes the responsibilities for convenient transportation with urban area, electric-bike, tricycle, bicycle, horse carts and bullock carts are able to take for travelling and sightseeing. The hotel can arrange for car rental services, and taxies are available on the way to the tourist sites. Another accessible way of land transport systems is by rail. There are three routes leading to Nyaung Oo Township. They are Bagan-Mandalay (119.75 miles), Bagan-Nay Pyi Taw (117.75 miles) and Bagan-Yangon (360 miles).

### ***Air Transport Systems***

Tourists to Bagan normally use Nyaung Oo airport. Nyaung Oo airport is the fourth largest airport in Myanmar in terms of the number of domestic passengers. The annual average number of flight has been increasing by 30% annually in the last 5 years. There are seven airlines in the region. These airlines are Air KBZ, Yangon Airway, Mann Yadanarpon, Asian Wings, Air Mandalay, Air Bagan and Golden Myanmar.

### ***Water Transport Systems***

As Nyaung Oo Township situated on the eastern bank of the Ayeyarwaddy River, it is easily accessible by water. Between Mandalay and Bagan, visitors can take in the natural beauty of the Ayeyarwaddy and explore the fascinating view of Sagaing, Pakokku, Myingyan and other well-known cities by cruising. There are five water transport lines in the region.

#### **(ii) Water Supply Facilities**

One of the most important requirements for the development of tourism facilities is an adequate supply of safe water for drinking purposes as well as domestic and recreational use. Township Development Committee distributed water by the direct pumping system. Although safe drinking water could be distributed by using sedimentation in Nyaung Oo, such qualified water could not be distributed in Bagan. Therefore, 80% of the population has accessed to safe clean water, whereas the rest 20% are still using wells.

#### **(iii) Electricity**

The electricity demand reflects the expectations of international visitors who want the standard of services. Although the electrical department has distributed 6 megawatt (MW) across the district, enough electricity supply is still needed in the region. Thus, some organizations and private enterprises have used their own generators. Similarly, the private entrepreneurs in rural area use self-reliant biogas generators and diesel generators. Nyaung Oo Township is the lowest utilization of



electricity in the Mandalay Region because 31% of households use electricity.<sup>15</sup> It is undeniable that there is a need for the infrastructure of electricity in the region.

#### **(iv) Communication**

The accessibility of post and telecommunication services is crucial for the region. Many visitors use mobile services, smartphones and internet technology for communication to access tourism information when travelling. To preserve historical heritage sites, government and local authorities don't permit base stations for telecom companies. Therefore, residents can get a mobile phone connection only within the coverage area of the towers in Nyaung Oo and Old Bagan. Telephone calls for transportation are very limited because routes in the districts are rarely covered by those towers. Thirty-six per cent of households use the mobile phone in Nyaung Oo Township.<sup>16</sup>

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<sup>15</sup> Department of Population, Ministry of Immigration and Population (May 2017), The 2014 Myanmar Population and Housing Census, Nyaung Oo Township Report.

<sup>16</sup> Department of Population, Ministry of Immigration and Population (May 2017), The 2014 Myanmar Population and Housing Census, Nyaung Oo Township Report.

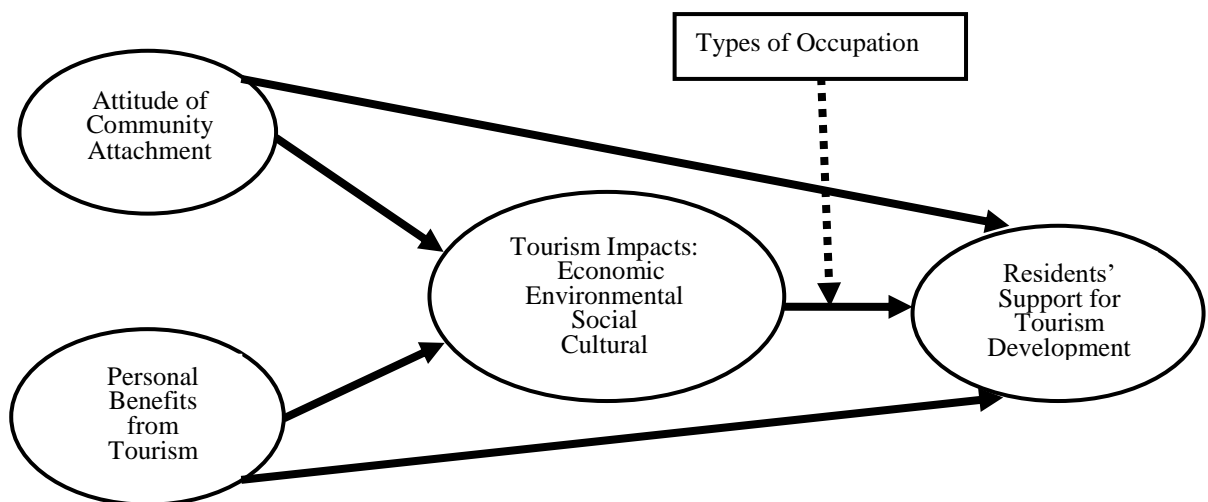
## CHAPTER IV

### RESEARCH METHODOLOGY

This chapter mainly mentions the statistical tools in research and data analysis. The importance of the problem statement and research questions is presented the conceptual framework. The statistical methodology, reliability and validity, latent and measured variables of the model and survey design are discussed. The statistical methodology includes structural equation modelling, theorized diagram model, measurement model, structural model, directionality assumptions, model fit measures and hierarchical multiple regression. The latent and measured variables of the model comprise exogenous variables and endogenous variables. Survey design contains questionnaire design, pilot survey, data collection, sampling design, sample size determination and choice of samples.

#### 4.1 Conceptual Framework

This study investigates the relationship among the residents' attitude of community attachment, personal benefits from tourism, residents' perception of tourism impacts and residents' support for tourism development. The exogenous latent variables are the residents' attitude of community attachment and personal benefits from tourism. The residents' perception of tourism impacts (economic, environmental, social and cultural) and residents' support for tourism development are treated as endogenous latent variables. This study has five structural equations which are conducted based on the review of literatures.



Source: Own Compilation

Figure (4.1): Conceptual Framework

Regarding the conceptual framework, the residents' perception of tourism impacts and residents' support for tourism development are considered by the following relationships.

$$Eco = f(ACA, PBT)$$

$$Env = f(ACA, PBT)$$

$$Soc = f(ACA, PBT)$$

$$Cul = f(ACA, PBT)$$

$$RSTD = f(ACA, PBT, Eco, Env, Soc, Cul)$$

where *ACA* = the residents' attitude of community attachment

*PBT* = personal benefits from tourism

*Eco* = the residents' perception of economic impacts of tourism

*Env* = the residents' perception of environmental impacts of tourism

*Soc* = the residents' perception of social impacts of tourism

*Cul* = the residents' perception of cultural impacts of tourism

*RSTD* = the residents' support for tourism development

## 4.2 Statistical Methodology

This study uses structural equation modelling (SEM) and hierarchical multiple regression (HMR) to analyze the proposed model. This section presents structural equation modelling, theorized diagram model, measurement model, structural model, model fit measures and hierarchical multiple regression (HMR).

### 4.2.1 Structural Equation Modelling

Structural equation modelling can examine a series of dependence relationships simultaneously. It is particularly useful in testing theories that contain multiple equations involving dependence relationships. Thus, a hypothesized endogenous variable becomes an exogenous variable in a subsequent dependence relationship. SEM deals with measured and latent variables. A measured variable can be directly observable and measurable. A latent variable cannot be directly observed and it must be inferred from measured variables. The structural equation model is

divided into two parts such as measurement model and structural model. The measurement model deals with the relationships between measured variables and latent variables. The structural model deals with the relationships between latent variables only. All structural equation models are distinguished by three characteristics: (i) estimation of multiple and interrelated dependence relationships, (ii) an ability to represent unobserved concepts in these relationships and account for measurement error in the estimation process and (iii) defining a model to explain the entire set of relationships.

The aim of SEM is to depict the simultaneous relationships among a set of latent variables in which each latent variable is measured by more observed variables. SEM includes more linear regression equations describing how the endogenous latent variables depend upon exogenous and other endogenous latent variables. Additionally, SEM is particularly useful because one dependent variable can simultaneously cause another. SEM is a powerful method for tracing direct and indirect effects. SEM techniques can analyze models with feedback loops. Moreover, all aspects of SEM must be directed by theory, which is critical for developing and modifying models. In addition, SEM models are commonly estimated using covariance structure analysis.

Compared with standard statistical techniques, there are even more assumptions in a typical application of SEM. These assumptions concern the model, inferences about the directionality of effects in structural models or measurement models, and data. The structural equation model presents specification of directionalities of presumed casual effects.

The main steps in developing a structural equation model include:

**Model Specification:** Model specification involves using all of the available relevant theory, research and information to develop a theoretical model. The available information is used to decide which variables include in the theoretical model and how these variables are related. A given model is properly specified when the true population model is deemed consistent with the implied theoretical model being tested- that is, the sample covariance matrix ( $S$ ) is sufficiently reproduced by the implied theoretical model. The goal of the researcher is to determine the best possible model that generates the sample covariance matrix.

**Model Identification:** In structural equation modelling, model identification depends on the designation of fixed and free parameters. A free parameter is unknown parameter which needs to be estimated. A fixed parameter is a parameter which is fixed to a specified value, typically 1. If all of the parameters of a model are identified, then the entire model is identified. If one or more of the parameters are not identified, then the entire model is not identified.

Traditionally, there have been three levels of model identification which depend on the amount of information in the sample variance-covariance matrix ( $S$ ). In determining identification, the order and rank condition is considered. The order condition satisfies that the number of free parameters must be less than or equal to the number of distinct values in the sample covariance matrix ( $S$ ). The number of distinct values in the sample covariance matrix ( $S$ ) is  $[p(p+1)/2]$ , where  $p$  is the number of measured variables in the matrix. The three levels of model identification are as follows:

- (i) A model is under-identified if one or more parameters may not be uniquely determined because there is not enough information in the sample covariance matrix ( $S$ ).
- (ii) A model is just-identified if all of the parameters are uniquely determined because there is just enough information in the sample covariance matrix ( $S$ ).
- (iii) A model is over-identified when there is more than one way of estimating a parameter because there is more than enough information in the sample covariance matrix ( $S$ ).

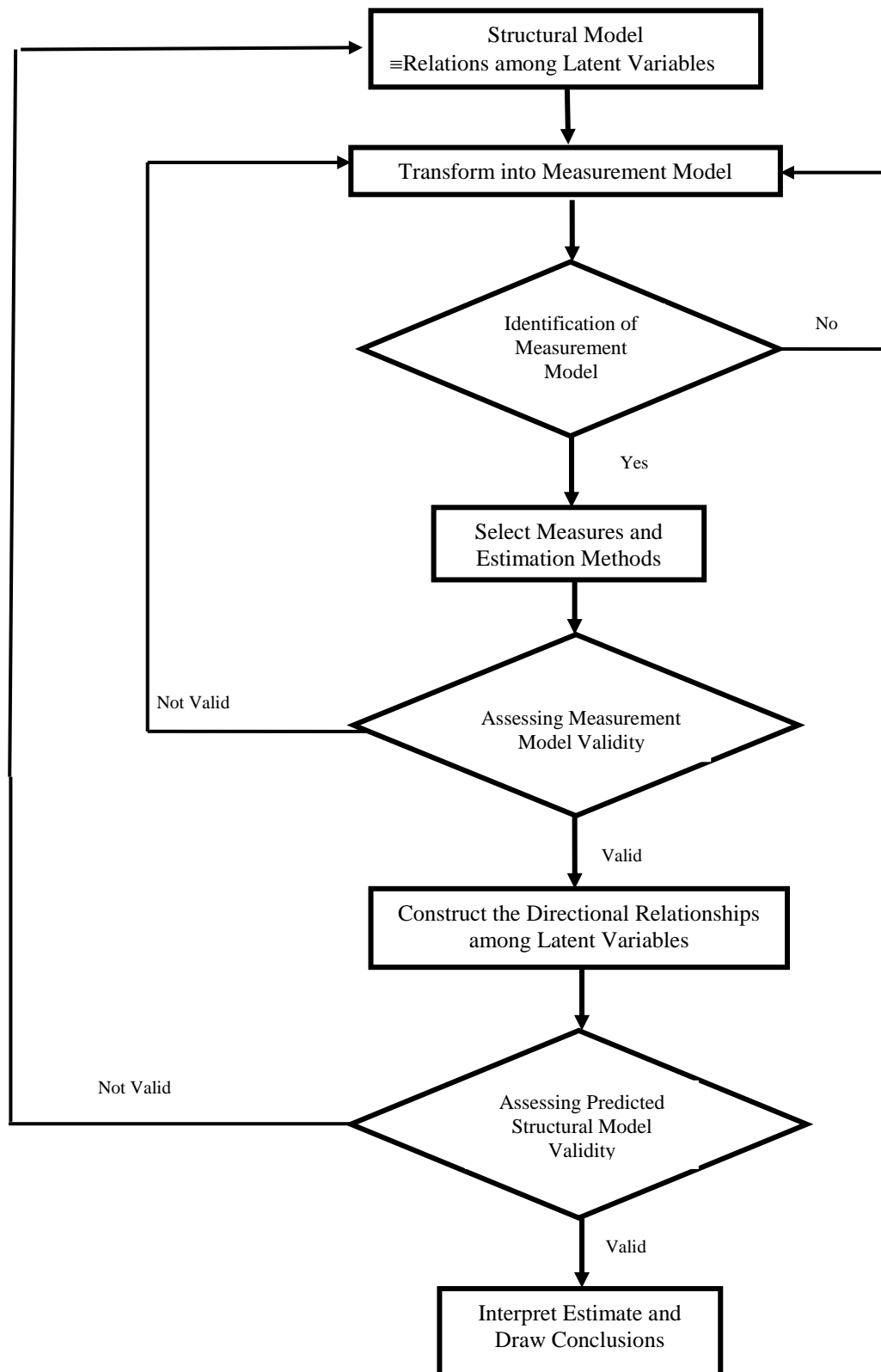
If a model is either just-identified or over-identified, the model is identified. If a model is under-identified, the degree of freedom for the model is negative. If a model is identified, the degree of freedom is equal to 0 or greater than 0 (positive value).

**Model Estimation:** The estimation process involves the use of a particular fitting function to minimize the difference between implied covariance matrix ( $\Sigma$ ) and sample covariance matrix ( $S$ ). Some of the estimation methods include weighted least squares, ordinary least squares, generalized least squares and maximum likelihood. The weighted least squares estimation method generally requires a large sample size and does not depend on the normality assumption. The generalized least squares (GLS) and maximum likelihood (ML) methods are scale-free. Both GLS and ML

estimation methods have desirable asymptotic properties such as minimum variance and unbiasedness. Also, both GLS and ML estimation methods assume multivariate normality of the observed variables. If the observed variables are at least ordinal scale and multivariate normal, the ML estimation method is appropriate.

**Model Testing:** The tests in SEM are known as model fit criteria. Unlike many statistical procedures, there are a large number of model fit indices. Many of these measures are based on a comparison of the model implied covariance matrix ( $\Sigma$ ) to the sample covariance matrix ( $S$ ). If  $\Sigma$  and  $S$  are similar, one may say that the data fit the theoretical model. If  $\Sigma$  and  $S$  are quite different, one may say that the data do not fit the theoretical model. Three main features of the individual parameters can be considered. One feature is whether a free parameter is significantly different from zero. A second feature is whether the sign of the parameter agrees with the expected direction. A third feature is that the parameter should be within an expected range of values.

**Model Modification:** The final step in SEM is considered model modification to achieve a better model fits data. If the structural equation model has model fit indices that are less than satisfactory, a specification search must be performed to find a better fitting model to the sample variance-covariance matrix. Model modification occurs in the measurement model because the measurement model is the foundation of the structural model. The insignificant parameters might be eliminated and the additional parameters should be considered in model modification.



Source: Modification based on Flowchart of the Basic Steps of SEM (Kline: 2011, p-91)

Figure 4.2: Basic Steps of Structural Equation Modelling

### 4.2.2 Theorized Diagram Model

The main purpose of drawing a theorized diagram model in SEM is to find a model that not only fits the data well from a statistical point of view but also has the property that every parameter of the model can be given a substantively meaningful interpretation (Joreskog, 1993). The process of drawing the theorized diagram model requires compliance with the following basic rules:

- (i) Latent variables are depicted with circles.
- (ii) Measured variables are represented with squares.
- (iii) A line with arrow in one direction represents a hypothesized direct relationship between the two variables.
- (iv) A curved line with arrows in both directions shows a covariance between two variables.
- (v) Only exogenous variables have covariance arrows.
- (vi) Endogenous variables should have a residual term. A residual term is depicted by a circle.
- (vii) Parameters are the variances, regression coefficients and covariances among variables.
- (viii) Variances are indicated by a two-headed arrow with both ends of the same arrow pointing at the same variable.
- (ix) Regression coefficients are depicted along with single-headed arrows indicating a hypothesized pathway between two variables.
- (x) Covariance is represented by double-headed curved arrows between two variables or error terms.

### 4.2.3 Measurement Model

The measurement model is defined by the distinction between measured variables and their corresponding latent variables and specification of directional effects between measured and latent variables. In a standard measurement model, scores on observed variables are presumed to be caused by hypothetical constructs. The presumption that constructs affect observed scores and not vice versa. The reflective measurement models have the following assumptions.



- (i) The indicators are specified as endogenous.
- (ii) The measurement error is represented at the indicator level. Because the indicators are endogenous, their observed variances and covariances can be compared to values predicted by a reflective measurement model.
- (iii) The latent variables and measurement errors are uncorrelated.

The measurement model in SEM is a confirmatory factor model. The use of confirmatory factor analysis (CFA) ensures the unidimensionality of the scales measuring each latent variable in the model. Before testing the overall measurement model, the unidimensional measurement of each latent variable is assessed individually (Sethi and King, 1994). Unidimensional measures mean that a set of measured variables (indicators) can be explained by only one underlying latent variable (construct).

After assessing the unidimensionality of each latent variable individually, a measurement model for each pair of latent variables is estimated, combining them two by two (Jöreskog, 1993). The relationships between the measured variables and the latent variables are indicated by factor loadings. The factor loadings provide the extent to which a given observed variable is able to measure the latent variable (a squared factor loading indicates variable communality or amount of variance shared with the factor). The factor loadings are validity of coefficients because multiplying the factor loading times with the measured variable score indicates how much of the measured variable score variance is valid.

After making sure that the fit of each latent variable is acceptable, the fit of two latent variables (a pair) is measured and all latent variables are paired with each other. Then the overall measurement model fit is examined model fit indices (Sethi and King, 1994).

The measurement model has the following form.

$$X = \Lambda_x \xi + \delta \quad (4.1)$$

$$Y = \Lambda_y \eta + \varepsilon \quad (4.2)$$

where,  $X$  is  $q \times 1$  vector of exogenous measured variables

$\xi$  is  $n \times 1$  vector of exogenous latent variables

$\Lambda_x$  is  $q \times n$  matrix of factor loadings for the relationship between exogenous measured and latent variables

$\delta$  is a  $q \times 1$  measurement error vector

$Y$  is  $p \times 1$  vector of endogenous measured variables

$\eta$  is  $n \times 1$  vector of endogenous latent variables

$A_y$  is  $p \times n$  matrix of factor loadings for the relationship between endogenous measured and latent variables

$\varepsilon$  is a  $p \times 1$  measurement error vector.

Equation (4.1) is the measurement model of the exogenous latent variables and Equation (4.2) is the measurement model of the endogenous latent variables. The mean and covariance of exogenous and endogenous measured variables are

$$E(X) = \Lambda_x \kappa$$

$$E(Y) = \Lambda_y \{(I - B)^{-1} (\alpha + \Gamma \kappa)\}$$

$$Cov(X'X) = \Lambda_x \Phi \Lambda_x' + \theta_\delta$$

$$Cov(Y'Y) = \Lambda_y \{(I - B)^{-1} (\Gamma \Phi \Gamma' + \Psi) ((I - B)^{-1})'\} \Lambda_y + \theta_\varepsilon$$

$$Cov(YX') = \Lambda_y \{\Gamma \Phi (I - B)^{-1}\} \Lambda_x'$$

#### 4.2.4 Structural Model

The specification of directionalities of presumed casual effects is presented in structural model. The structural model in SEM represents hypotheses about presumed direct or indirect causal effects among variables measured either simultaneously (cross-sectional designs) or at different points in time (longitudinal designs). The assumptions of structural model are:

- (i) The presumed cause exogenous variable ( $X$ ) must occur before the presumed effect endogenous variable ( $Y$ ).
- (ii) There is an association between  $X$  and  $Y$  or an observed covariation between  $X$  and  $Y$ .
- (ii) There is isolation, which means that there are no other plausible explanations of the covariation between  $X$  and  $Y$ ; that is, their statistical association holds controlling for other variables that may also affect  $Y$ .
- (iv) The form of the distribution of the data is known; that is, the observed distributions match the method used to estimate associations.
- (v) The direction of the causal relation is correctly specified; that is,  $X$  indeed causes  $Y$  instead of the reverse, or  $X$  and  $Y$  cause each other in a reciprocal manner.

The substantive rationale is needed for specifying that  $X$  in fact is a cause of  $Y$ . This rationale should have a solid basis in both theory and results of empirical studies. It should also identify other relevant variables to measure and control for in statistical analysis. Without such a rationale, any inference about causation in a non-experimental design has little justification. The following data-related assumptions are needed in structural model.

- (i) The observations are independent and the variables are unstandardized.
- (ii) There are no missing values when a raw data file is analyzed.
- (iii) The joint distribution of the endogenous variables is multivariate normal.
- (iv) The exogenous variables are measured without error.

The joint distribution of the endogenous variables should be multivariate normal, which implies that (i) all univariate distributions should be normal, (ii) all bivariate scatterplots are linear and (iii) the distribution of residuals is homoscedastic. The normality assumption in ML estimation is critical. Therefore, the distributional characteristics of the data match the selected estimation method.

There are two types of structural models, recursive and nonrecursive. A recursive structural model has no reciprocal relationships and no covariances among the error terms of the equations (the disturbance of one equation is uncorrelated with the disturbances of all other equations). A nonrecursive structural model has reciprocal relationships (feedback loops) and at least some disturbances are correlated. Both recursive and nonrecursive structural models assume that exogenous variables are unrelated to the disturbances of the endogenous variables.

The most basic specification in structural model is the distinction between exogenous variables and endogenous variables. The presumed causes of exogenous variables are not represented in structural model. Instead, the causes of exogenous variables are unmeasured and exogenous variables are considered free both to vary and to covary. In contrast, the presumed measured causes of endogenous variables are explicitly represented in the model. It implies that endogenous variables are not free to vary or to covary. Endogenous variables have direct effects on exogenous variables or other endogenous variables. The specification of at least one endogenous variable as a direct cause of another endogenous variable implies an indirect effect.

The structural model shows how latent variables are related. The structural model specifies certain relationships among the latent variables depicted by the direction of the arrows. The proposed structural model can be specified and analyzed to determine prior hypothesized relationships supported by sample variance-covariance data. These structural equations specify the estimation of the structure coefficients to indicate the magnitude and direction (positive or negative) of the prediction. Each structural equation contains a prediction error or disturbance term that indicates the portion of the latent dependent variable that is not explained by the other latent variables in that equation. Model fit indices should be used to assess the fit of the structural model.

The structural model has the following form.

$$\eta = B\eta + \Gamma\xi + \zeta \quad (4.3)$$

where,  $\eta$  is  $m \times 1$  vector of endogenous latent variable

$B$  is  $m \times m$  matrix of regression coefficients for the relationships between endogenous latent variables

$\Gamma$  is  $m \times n$  matrix of regression coefficients for the relationships between endogenous and exogenous latent variables

$\xi$  is  $n \times 1$  vector of exogenous latent variables

$\zeta_k$  is  $m \times 1$  vector of random disturbance terms

The exogenous latent variables have an assumed multivariate normal distribution with  $E(\xi) = \kappa$ ,  $Cov(\xi\xi') = \Phi$

Since the relation between the fractions is linear, the endogenous latent variables have an assumed multivariate normal distribution with

$$E(\eta) = (I - B)^{-1}(\Gamma\kappa)$$

$$Cov(\eta\eta') = (I - B)^{-1}(\Gamma\Phi\Gamma + \Psi)((I - B)^{-1})'$$

$$Cov(\eta, \xi') = \Gamma\Phi(I - B)^{-1}$$

$$E(\zeta) = 0$$

$$Cov(\zeta\zeta') = \Psi$$

#### 4.2.5 Directionality Assumptions

(i) The residents' attitude of community attachment directly affects the perception of tourism impacts (economic, environmental, social and cultural) and residents' support for tourism. It also affects residents' support for tourism development through the perception of tourism impacts (indirectly). These directional effects would be represented in the diagram of a structural model with the paths.

ACA  $\longrightarrow$  Perceptions of tourism impacts (Eco, Env, Soc, Cul)

ACA  $\longrightarrow$  Perceptions of tourism impacts (Eco, Env, Soc, Cul)  $\longrightarrow$  RSTD

(ii) Personal benefits from tourism directly affect the residents' perception of tourism impacts (economic, environmental, social and cultural) and residents' support for tourism. It also affects residents' support for tourism development through the perception of tourism impacts (indirectly). These directional effects would be represented in the diagram of a structural model with the paths.

PBT  $\longrightarrow$  Perceptions of tourism impacts (Eco, Env, Soc, Cul)

PBT  $\longrightarrow$  Perceptions of tourism impacts (Eco, Env, Soc, Cul)  $\longrightarrow$  RSTD

(iii) The residents' perception of tourism impacts (economic, environmental, social and cultural) directly affects residents' support for tourism development. These directional effects would be represented in the diagram of a structural model with the paths.

Perceptions of tourism impacts (Eco, Env, Soc, Cul)  $\longrightarrow$  RSTD

#### 4.2.6 Model Fit Measures

A number of statistical measures can be analyzed to evaluate a model in SEM. These model-fit indices have the advantage of examining the whole model and may be able to reveal model inadequacies. These fit indices may indicate an overall good fit. The fit indices do not evaluate the predictive ability of a particular equation but  $R^2$  values can calculate for each equation.

Many of the model-fit criteria are computed based on knowledge of the saturated model, independence model, sample size, degree of freedom and the chi-square values. An index of model fit ranges in value from 0 (no fit) to 1 (perfect fit). These various model-fit indices are interpreted to determine an acceptable model fit. In the structural equation model, a model-fit value at least 0.90 is acceptable whereas standardized root-mean-square residual (SRMR) and root-mean-square error of approximation (RMSEA) values at least 0.08 is acceptable. It is recommended that various model-fit criteria can be used in combination to assess model fit, model comparison and model parsimony.

### **(i) Model Fit**

Model fit determines the degree to which the sample variance-covariance data fit the structural equation model. Model fit criteria commonly used are chi-square ( $\chi^2$ ), the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), standardized root-mean-square residual (SRMR) and root-mean-square error of approximation (RMSEA). These criteria are based on differences between the observed variance-covariance matrix ( $S$ ) and the reproduced implied variance-covariance matrix ( $\Sigma$ ).

**Chi-Square ( $\chi^2$ ):** A significant  $\chi^2$  value indicates that the observed and implied variance-covariance matrices differ. A significant  $\chi^2$  value indicates that this difference is due to sampling variation. A non-significant  $\chi^2$  value indicates that the implied theoretical model significantly reproduces the sample variance-covariance relationships in the matrix. The chi-square test of model fit can lead to erroneous conclusions regarding analysis outcomes.  $\chi^2$  model-fit criterion is very sensitive to sample size (generally above 200). The  $\chi^2$  statistic has a tendency to indicate a significant probability level and frequently results in the rejection of a well-fitting model. Hair et al. (2014) recommended that normed  $\chi^2$  (the ratio of  $\chi^2$  to the degree of freedom) is better goodness-of-fit than  $\chi^2$ .

**Goodness-of-Fit Index and Adjusted Goodness-of-Fit Index:** The goodness-of-fit index (GFI) is based on the ratio of the sum of the squared differences between the observed and reproduced matrices. The GFI measures the amount of variance and covariance in  $S$  is predicted by the reproduced matrix  $\Sigma$ . The adjusted goodness-of-fit index (AGFI) is adjusted for the degree of freedom of a model relative to the number of variables. The cutoff criterion of GFI and AGFI are greater than 0.9 which indicates a good model fit.

The GFI index is computed as

$$GFI = 1 - \left[ \frac{\chi_{model}^2}{\chi_{null}^2} \right] \quad (4.4)$$

The AGFI index is computed as

$$AGFI = 1 - \left[ \frac{k}{df} (1 - GFI) \right] \quad (4.5)$$

where,  $k$  is the number of unique distinct values in  $S$ , which is  $p(p + 1)/2$ , and  $df$  is the number of degree of freedom in the model.

**Root-Mean-Square Residual Index and Standardized Root-Mean-Square Residual Index:** The root-mean-square residual index (RMR) uses the square root of the mean-squared differences between matrix elements in  $S$  and  $\Sigma$ . Since it has no defined acceptable level, it is used to compare the fit of two different models with the same data. The RMR index is computed as

$$RMR = \left[ \left( \frac{1}{k} \right) \sum_{ij} (s_{ij} - \sigma_{ij})^2 \right]^{\frac{1}{2}} \quad (4.6)$$

Calculation of the range of the RMR is based on the scales of each measured variable. Therefore, the RMR becomes difficult to interpret if a questionnaire contains items with varying levels (Kline, 2005). The standardized root-mean-square residual index (SRMR) resolves this problem and is more meaningful to interpret. A cutoff criterion of SRMR is less than 0.08 which indicates a good model fit.

**Root-Mean-Square Error of Approximation:** The root-mean-square error of approximation (RMSEA) is one of the most informative fit indices due to its sensitivity to the number of estimated parameters in the model. Recommendation for RMSEA is considered that the value of RMSEA between 0.08 and 0.10 provides a moderate fit, the value of RMSEA below 0.08 shows a good fit and the value of RMSEA above 0.10 indicates poor fit (MacCallum et al, 1996). The root-mean-square error of approximation is computed as

$$RMSEA = \left\{ \frac{(\chi_{model}^2 - df_{model})}{(N - 1)df_{model}} \right\}^{1/2} \quad (4.7)$$

## (ii) Model Comparison

If the chi-square has in the model fit of latent variable models, three other indices have emerged as variants for comparing alternative models such as Tucker-Lewis index (TLI), normed fit index (NFI) and comparative fit index (CFI). These criteria compare a proposed model with a null model (independence model).

**Normed Fit Index and Tucker-Lewis Index:** Normed fit index (NFI) assesses the model by comparing the  $\chi^2$  value of the proposed model to the  $\chi^2$  value of the null model. A major drawback of this index is sensitive to sample size and underestimating fit for sample less than 200 (Bentler, 1990). Bentler presented that this problem is rectified by the Tucker-Lewis index (TLI). TLI is scaled from 0 (no fit) to 1 (perfect fit). A cutoff criterion of TLI is greater than 0.9 indicates a good fit. The TLI is computed as

$$TLI = \frac{(\chi_{null}^2 / df_{null}) - (\chi_{model}^2 / df_{model})}{(\chi_{null}^2 / df_{null}) - 1} \quad (4.8)$$

**Comparative Fit Index:** The comparative fit index (CFI) is a revised form of NFI which takes into account sample size that performs well even when sample size is small. A cutoff criterion of CFI is greater than 0.9 indicates that a good fit. This index is one of the most popularly reported fit indices because it is least affected by sample size. The comparative fit index (Bentler, 1990) is computed as

$$CFI = 1 - \left[ \frac{(\chi_{model}^2 - df_{model})}{(\chi_{null}^2 - df_{null})} \right] \quad (4.9)$$



### (iii) Model Parsimony

Parsimony refers to the number of estimated parameters required to achieve a specific level of model fit. Basically, an over-identified model is compared with a restricted model. The AGFI provides an index of model parsimony. Other indices of model parsimony are the parsimony normed fit index (PNFI) and the Akaike information criterion (AIC). The goodness-of-fit indices take into account the number of parameters required to achieve a given value for chi-square. Lower values for PNFI and AIC indicate a better model fit given a specified number of parameters in a model.

**Parsimony Normed Fit Index:** The parsimony normed fit index (PNFI) measure is a modification of the NFI measure. The PNFI takes into account the number of degree of freedom used to obtain a given level of fit. Parsimony is achieved with a high degree of fit for fewer degrees of freedom in specifying the coefficients to be estimated. The PNFI is used to compare models with different degree of freedom and is calculated as

$$PNFI = \left( \frac{df_{\text{model}}}{df_{\text{null}}} \right) NFI \quad (4.10)$$

**Akaike Information Criterion:** The Akaike Information Criterion (AIC) measure is used to compare models with differing numbers of latent variables (Akaike, 1987). The AIC can be calculated in two different ways:  $\chi^2 + 2q$ , where  $q$  = number of free parameters in the model, or as  $\chi^2 - 2df$ . The first AIC is positive, and the second AIC is negative, but either AIC value close to zero indicates a more parsimonious model. The AIC indicates model fit ( $S$  and  $\Sigma$  elements similar) and model parsimony (over-identified model).

$$\begin{aligned} \text{Model AIC} &= \chi_{\text{model}}^2 + 2q \\ \text{Null AIC} &= \chi_{\text{null}}^2 + 2q \end{aligned} \quad (4.11)$$

**Table (4.1): Cutoff Criteria for Model Fit Indices in SEM**

Model-Fit Criterion	Cutoff for Acceptable Fit
Normed $\chi^2$	Ratio of $\chi^2$ to $df \leq 2$ or $3$
Goodness-of-fit index (GFI)	$GFI \geq 0.9$
Root mean square error of approximation (RMSEA)	$RMSEA \leq 0.08$
Root mean square residual (RMR)	$RMR \leq 0.08$
Standardized RMR (SRMR)	$SRMR \leq 0.08$
Normed fit index (NFI)	$NFI \geq 0.90$
Tucker–Lewis index (TLI)	$TLI \geq 0.90$
Comparative fit index (CFI)	$CFI \geq 0.90$
Parsimony normed fit index (PFI)	Compares values in alternative models
Akaike information criterion (AIC)	Compares values in alternative models

Source: A Beginner Guide to of Structural Equation Modelling, 3<sup>rd</sup> eds. (Schumacker and Lomax, 2010).

#### 4.2.7 Hierarchical Multiple Regression

The hierarchical multiple regression (HMR) is widely used to estimate moderating (interacting) effects. HMR can examine the moderating effects on both dichotomous and continuous scales (Cohen and Cohen, 1983). An interaction between categorical and continuous exogenous variable can arise if the slope of the relation between the continuous exogenous variable and the endogenous variable varies across the different groups of the categorical exogenous variable. This means that the original categorical and continuous exogenous variables in the model to test the effect of their interaction.

In addition, testing the effect of the interaction should include the centred form of the continuous exogenous variable. Centring reduces the collinearity between the main effect and interaction term, and provides a meaningful interpretation for the coefficient on the continuous exogenous variable. HMR provides important information about slope difference for groups. Therefore, this study used the HMR technique to analyze the moderating (interacting) effects of occupation types.

### 4.3 Reliability and Validity

Reliability deals with how consistently measures produce similar results. The dimension of internal consistency refers to the ability of a scale item to correlate with other items of the sample scale that are intended to measure the same construct. The adequacy of the individual items is assessed by measures of reliability and validity. The reliability of the measurement instrument is assessed by Cronbach's alpha. Cronbach's alpha and composite reliability estimate of 0.70 or higher indicate that the measurement scale of a construct which is moderately reliable. If the composite reliability is not high enough to be accepted, the scales are revised by deleting items as a result of the reliability analysis.

Validity refers to how well the measurement captures what it is designed to measure. The several different types of validity are content validity, criterion validity and construct validity. Content validity regards the sampling adequacy of a measuring instrument. It usually depends on the judgment of experts in the field because there is no statistical test.

Criterion validity provides evidence about how well scores on the new measure correlate with other measures of the same construct that theoretically should be related. It is crucial that these criterion measures are valid themselves. The ability of the test is evaluated to predict accurately the criterion.

Construct validity is the degree to which a test measures what it claims to be measuring. Construct validity is the appropriateness of inferences made on the basis of observations or measurements, specifically whether a test measures the intended construct. Construct validity is essential to the perceived overall validity of the test. It includes convergent validity, discriminant validity and nomological validity.

The validity of the measurement model can access through convergent and discriminate validity. Convergent validity means that each measurement item has high correlations with other items which measure the same hypothetical construct. In other words, convergent validity actually evaluates the indicators of a specific construct should converge or share a high proportion of variance in common whereas discriminate validity means the extent to which a construct is truly distinct from other constructs. In order to investigate the convergent and discriminate validity of constructs, factor loadings, composite reliability and average variance extracted

(AVE) values are examined. The composite reliability (CR) is calculated using the formula (Fornell and Larcker, 1981).

$$CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(e_i)} \quad (4.11)$$

where;  $\lambda_i$  = standardized factor loading for each indicator

$\lambda_i^2$  = reliability of an indicator

$Var(e_i) = 1 - \lambda_i^2$

AVE is calculated as the mean variance extracted for the items loading on a construct. AVE can be calculated using the formula (Fornell and Larcker, 1981).

$$AVE = \frac{(\sum \lambda_i^2)}{n} \quad (4.12)$$

where,  $\lambda_i$  = standardized factor loading for each indicator

$n$  = number of items (or) number of observed variables

CR is like the reliability of a summated scale and AVE is the variance in the indicators explained by the common factor. At least 0.7 of CR estimate indicates that the measurement scale is moderately reliable in research. If the CR is not high enough to be accepted, the scales are revised by deleting items. To evaluate discriminant validity, AVE is used and AVE of all latent variables have at least 0.5.

#### **4.4 Latent and Measured Variables of the Model**

A model involves a hypothesis about a pattern of linear relationships among a set of latent variables, with each latent variables measured by multiple observed variables. The observed variables in SEM represent the scale for each latent variable to measure. Each latent variable in the proposed model is designated as either an endogenous latent variable or an exogenous latent variable. An endogenous latent variable is hypothesized to be affected by other latent variables in the model (MacCallum, 1986). An exogenous latent variable typically exerts directional influences on one or more endogenous latent variables.

The proposed model comprises seven latent variables such as the residents' attitude of community attachment, personal benefits from tourism, residents' perception of economic, environmental, social and cultural impacts of tourism and residents' support for tourism development. The residents' attitude of community attachment and personal benefits from tourism are exogenous latent variables. The residents' perception of economic, environmental, social and cultural impacts of tourism and residents' support for tourism development are endogenous latent variables. The survey questionnaire is developed in several stages. The validity and reliability of questionnaire is assessed through a pilot survey. The latent and measured variables of the model are conducted in the following sections.

#### **4.4.1 Exogenous variables**

The two exogenous latent variables (residents' attitude of community attachment and personal benefits from tourism) are presented in the proposed model. The measurement scales of each latent variable are selected to measure residents' attitude level of community attachment and receive benefits from tourism.

##### ***Residents' Attitude of Community Attachment***

The study analyzes that the residents' attitude of community attachment influences on the perception of tourism impacts and residents' support for tourism development. The previous literature has provided diverse perspectives on the relationship between the residents' attitude of community attachment and their support for tourism development. Some authors indicated that community attachment directly and significantly affects the residents' perception of tourism impacts and support for tourism development, whereas other authors found that residents' attitude of community attachment does not influence on the perception of tourism impacts and support for tourism development. In this study, five variables are used to measure the residents' attitude of community attachment. All measured variables are rated on a five-point Likert-type scale with 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree'.

- (i) The community is a beautiful place. (aca1)
- (ii) The community is a good place for job opportunity. (aca2)
- (iii) The community has increased residents' standard of living. (aca3)
- (iv) The community is a safe place to live. (aca4)
- (v) This community is more enjoyable than other communities. (aca5)

### ***Personal Benefits from Tourism***

This study analyzes personal benefits from tourism. Personal benefits from tourism influence on the residents' perception of tourism impacts and support of residents for tourism development. In this study, five variables are used to measure the personal benefits from tourism. All measured variables are rated on a five-point Likert-type scale with 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree'.

- (i) Personal income is related to tourism. (pbt1)
- (ii) Personal job is related to tourism. (pbt2)
- (iii) Family member's job is related to tourism. (pbt3)
- (iv) The individual conservation of local culture is related to tourism. (pbt4)
- (v) The individual preservation of the environment is related to tourism. (pbt5)

#### **4.4.2 Endogenous variables**

The five endogenous latent variables (residents' perception of economic, environmental, social and cultural impacts of tourism and residents' support for tourism development) are presented in the proposed model. The measurement scales of each latent variable are selected to measure residents' perception of tourism impacts and support for tourism development.

### ***Economic Impacts of Tourism***

The residents' perception of economic impacts of tourism (Eco) can be categorized into four dimensions such as generation of employment and income, contribution to government revenue, standard of living and cost of living. In this study, four variables for generation of employment and income, three variables for contribution to government revenue, standard of living and cost of living are used to measure residents' perception of economic impacts of tourism. Therefore, the residents' perception of economic impacts of tourism is measured thirteen variables. All measured variables are rated on a five-point Likert-type scale with 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree'.

- (i) Tourism development has incredibly increased income and employment opportunities of residents. (eco1)

- (ii) Tourism development has caused more investments in the economy of the community. (eco2)
- (iii) Hotels, guest houses, restaurants, lacquerware firms and cane firms have got more income from tourists because of tourism development. (eco3)
- (iv) The local economy depends on tourism. (eco4)
- (v) Tourism has generated tax revenues for local government. (eco5)
- (vi) Tourism has created to cooperate between local government and foreign countries. (eco6)
- (vii) Tourism is important because of getting foreign earnings. (eco7)
- (viii) Tourism development has raised living standard of local residents than before. (eco8)
- (ix) Tourism development has caused to get better roads and highways in the community. (eco9)
- (x) Local residents can get higher education and improved health care facilities from tourism development. (eco10)
- (xi) The price of many goods and services in the community has significantly increased because of tourism development. (eco11)
- (xii) The price of real estate and dwelling houses in the community has risen because of tourism development. (eco12)
- (xiii) Tourism development has led to more spending in the community. (eco13)

### ***Environmental Impacts of Tourism***

The residents' perception of environmental impacts of tourism (Env) can be categorized into four dimensions such as environmental protection and improvement, congestion, activities of tourists and generation of waste and pollution. In this study, three variables for environmental protection and improvement, congestion, activities of tourists, and generation of waste and pollution are used to measure residents' perception of environmental impacts of tourism. Therefore, the residents' perception of environmental impacts of tourism is measured twelve variables. All measured variables are rated on a five-point Likert-type scale with 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree'.

- (i) Tourism has contributed to the preservation of the natural environment in the community. (env1)
- (ii) Tourism has provided an incentive for the restoration of historical buildings and the conservation of natural resources. (env2)
- (iii) Tourism is a smokeless industry. (env3)
- (iv) Tourists have crowded into cultural heritage monuments because of tourism development. (env4)
- (v) Tourists have crowded into hotels, guest houses and other recreational places because of tourism development. (env5)
- (vi) Tourism development has caused a traffic jam for local residents. (env6)
- (vii) Tourist activities (boating and cruise ship) produce serious water pollution in lakes and rivers. (env7)
- (viii) Construction of hotels and guest houses for tourists has destroyed the natural environment. (env8)
- (ix) Transportation for tourists has caused air pollution. (env9)
- (x) Tourism development brings environmental pollution. (env10)
- (xi) Tourism development has caused littering and noise. (env11)
- (xii) Tourism development has destroyed natural scenery and irrigated lands. (env12)

### ***Social Impacts of Tourism***

The residents' perception of social impacts of tourism (Soc) can be categorized into two dimensions such as improvement of local services and increasing social problem. In this study, five variables for improvement of local services and three variables for increasing social problem are used to measure residents' perception of social impacts of tourism. Therefore, the residents' perception of social impacts of tourism is measured eight variables. All measured variables are rated on a five-point Likert-type scale with 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree'.

- (i) Tourism development provides the social benefits of local residents in the community. (soc1)
- (ii) Because of tourism development, local services in the community are well maintained. (soc2)
- (iii) Tourism is a major reason for the variety of traditional entertainment in the community. (soc3)



- (iv) Tourism development can provide more parks and other recreational places for local residents. (soc4)
- (v) Tourism development can provide pagoda festivals in the community. (soc5)
- (vi) Tourism development has increased crime rate. (soc6)
- (vii) Tourism development has contributed to drugs. (soc7)
- (viii) Tourism development has contributed contraband between the residents and tourists. (soc8)

### ***Cultural Impacts of Tourism***

The cultural impacts of tourism (Cul) can be categorized into three dimensions such as preservation of the local culture, acculturation and deterioration of local culture. In this study, three variables for preservation of the local culture, acculturation and deterioration of local culture are used to measure residents' perception of cultural impacts of tourism. Therefore, the residents' perception of cultural impacts of tourism is measured nine variables. All measured variables are rated on a five-point Likert-type scale with 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree'.

- (i) Tourism development has increased residents' pride in the local culture. (cul1)
- (ii) Tourism development encourages the conservation of cultural activities for local residents. (cul2)
- (iii) Tourism development maintains the ethnic of the historical areas and pagodas in the community. (cul3)
- (iv) Precious cultures of many countries can be learned from tourists. (cul4)
- (v) The cultural exchange between tourists and residents is valuable for local residents. (cul5)
- (vi) Tourists can appreciate and study Myanmar traditional cultures because of tourism development. (cul6)
- (vii) The commercial demand of tourists has caused undesirable changes in the forms of traditional arts and crafts. (cul7)
- (viii) The residents have imitated the inappropriate behaviour and clothing style of tourists because of tourism development. (cul8)
- (ix) Tourism development has caused the disruption of traditional culture of local residents. (cul9)

### ***Residents' Support for Tourism Development***

This study explores influencing factors of the residents' support for tourism development. In this study, five variables are applied to measure the residents' support for tourism development (RSTD). All measured variables are rated on a five-point Likert-type scale with 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree'.

- (i) The residents should financially invest in tourism development. (rstd1)
- (ii) The residents should participate to increase the volume of tourists. (rstd2)
- (iii) The residents should actively participate in sustainable tourism development plans. (rstd3)
- (iv) The residents should promote tourism-related products. (rstd4)
- (v) The local residents should adhere to Myanmar Responsible Tourism Policy. (rstd5)

## **4.5 Survey Design**

Sample surveys are the most commonly used method for primary data collection. The household sample survey was conducted in Bagan-Nyaung Oo Area to obtain the required information. To carry out the survey, it is needed to state clearly the objectives of the survey. The objectives of the survey under the study are:

- (i) To collect data on demographic, socioeconomic and tourism-related characteristics of residents, their attitude of community attachment, personal benefits from tourism and the perceptions of tourism impacts in Bagan-Nyaung Oo Area.
- (ii) To analyze the crucial factors for tourism development in Bagan-Nyaung Oo Area.

### **4.5.1 Questionnaire Design**

When the survey objectives have been determined, the relevant questionnaire can be developed. The questionnaire plays a central role in the survey process. Questionnaires are used to collect information about the opinions and behaviour of individuals. A questionnaire should be administered to achieve a balance between timeframe and funding available for the study. Interviewer-administered questionnaires have the advantages that unclear questions can be clarified to the respondent.

The questionnaire used to collect the required information. The questionnaire basically consists of three main sections. The first section is the demographic and socioeconomic characteristics of a household. It includes basic characteristics of household members, tourism-related characteristics of household members, the residents' attitude of community attachment and personal benefits from tourism. The second section is the statements of tourism impacts. It includes the residents' perception of economic, environmental, social and cultural impacts of tourism. The third section includes support of residents for tourism development. The questionnaire was prepared for asking the required information from a household head or an adult person in the household. Only one person from each household can be answered the questions.

#### **4.5.2 Pilot Survey**

Although the main purpose of this study is to analyze the impacts of tourism and the residents' support for tourism development in Myanmar, there are many constraints to collect the nationally representative sample. These constraints are a limited time frame, budget, communication problems and skilled interviewers. Therefore, a household sample survey has been collected in Bagan-Nyaung Oo Area, Mandalay Region. The reasons for choosing this area are a large number of tourism records, high rate of tourists visiting, Myanmar's abundant wealth of cultural heritage destination. Before conducting the main survey, a pilot survey has been conducted in this area. The 40 household heads were interviewed in the wards during the period 11<sup>th</sup> to 13<sup>th</sup> August 2017. The 32 household heads answered the complete questionnaires. Therefore, the response rate of the pilot survey would be 80%.

The pilot survey provides the researcher with ideas, suggestions and clues which may not have been foreseen before conducting the pilot survey. Such ideas and clues increase the chances of getting clearer findings in the main study. It can greatly reduce the number of unanticipated problems because it reveals an opportunity to redesign parts of the study to overcome difficulties.

### **4.5.3 Data Collection**

The training of interviewers was held in the first week of October 2017. The training involved explaining the objectives of the household sample survey, discussing the questionnaires and visiting enumeration areas. After completing the interviewers' training, a total of 5 trainees were recruited and instructed interviewing techniques, field procedures for the survey and the detailed review of the questionnaires.

The target population consisted of permanent residents of Bagan-Nyaung Oo Area who are 18 years and above. Data were collected during December 2017 to February 2018 using a structured questionnaire and personal interview with 446 households. The interviewers provide a brief explanation of the study to answer the questions by the respondents. Therefore, this method has the potential to achieve a higher response rate.

To minimize possible bias due to interviewer-participant interaction, the interviewers encourage the participants to state their own personal opinion as truthfully as possible. Four hundred and thirty-three complete questionnaires were used for data analysis because the incomplete questionnaires have been excluded in the survey.

### **4.5.4 Sampling Design**

In this study, a two-stage sampling design was used to carry out a household sample survey. The sampling design proposed to be employed was two-stage sampling with simple random sampling without replacement (SRSWOR) at both stages. In line with the proposed sampling design, wards in this area were treated as first stage units (FSUs) and households in the FSUs were treated as second stage units (SSUs).

In the first-stage sampling, wards were randomly selected from the sampling frame of Bagan-Nyaung Oo Area. The sampling frame is a complete list obtained from the General Administration Department of Nyaung Oo Township. At the first-stage sampling, the SRSWOR method has been used to select 50% of wards from Bagan-Nyaung Oo Area. Therefore, six wards were selected from the sampling frame of Bagan-Nyaung Oo Area.

In the second-stage sampling, a household listing operation has been carried out in the selected FSUs to provide the sampling frame at the data collection period for the selection of households. The household listing operation consists of (i) visiting each of six selected wards from Bagan-Nyaung Oo Area to draw a location map and a detailed sketch and (ii) listing the eligible households together with households' address and the name of household head for each of FSUs. The lists of households served as the sampling frame for the selection of households in the second-stage sampling. In the second-stage sampling, households (SSUs) were randomly selected in each selected FSUs by SRSWOR technique.

#### 4.5.5 Sample Size Determination

In a household sample survey of Bagan-Nyaung Oo Area, wards were taken as the FSUs and households were taken as SSUs. In the first stage, SRSWOR method was used to select 50% of wards. Therefore, six wards from Bagan-Nyaung Oo Area were selected in the first stage and total households in the selected wards were 4980 households. In the second stage, SRSWOR method was used to select sample households from each ward. To determine the appropriate sample size for the second stage, Cochran's method for quantitative data and Krejcie and Morgan's method for qualitative data were used.

##### *For Quantitative Data*

According to Cochran (1977), the required minimum sample size for quantitative data was calculated using the following formula.

$$m_0 \geq \left( \frac{z^2 \times s^2}{d^2} \right) = \frac{(1.96)^2 (1.25)^2}{(0.15)^2} = 267$$

where,  $z=1.96$  for 5% significance level

$d$ =acceptable margin of error for mean = $5 \times 0.03=0.15$

(i.e points on primary scale=5 and acceptable margin of error=0.03)

$s$ =estimate of standard deviation =  $\frac{5}{4} = 1.25$

[i.e the estimate of standard deviation for 5 points scale is calculated by using 5 (inclusive range of scale) divided by 4 (number of standard deviations that include almost all approximately 94% of the possible values in the range)].

The households in selected wards were 4980 and the selected households (sample size) were 267. Since sample size exceeds 5% of the population ( $4980 \times 0.05 = 249$  households), Cochran's (1977) correction formula was used to calculate the final sample size. Therefore, the final sample size becomes

$$m = \frac{m_0}{1 + \frac{m_0}{\text{population}}} = \frac{267}{1 + \frac{267}{4980}} = 254$$

In many education and social research surveys, the response rates are normally well below 100%. According to the pilot survey, the response rate was assumed 80%. The minimum sample size was ( $254 \div 0.8 = 318$ ). Therefore, the required minimum sample size was 318 households.

### ***For Qualitative Data***

According to Krejcie and Morgan (1970), the required minimum sample size for qualitative data was calculated using the following formula.

$$m_0 \geq \left( \frac{pq z^2}{d^2} \right) = \frac{0.5 (0.5) (1.96)^2}{(0.05)^2} = 384$$

where,  $p = 0.5$  (maximum possible proportion)

$d = 5\%$  (acceptable margin of error for proportion)

$z = 1.96$  for 5% significance level

The households in selected wards were 4980 and the selected households (sample size) were 384. Since sample size exceeds 5% of the population ( $4980 \times 0.05 = 249$ ), Cochran's (1977) correction formula was used to calculate the final sample size. Therefore, the final sample size becomes

$$m = \frac{m_0}{1 + \frac{m_0}{\text{population}}} = \frac{384}{1 + \frac{384}{4980}} = 357$$

In many education and social research surveys, the response rates are normally well below 100%. According to the pilot survey, the response rate was assumed 80%. The minimum sample size was ( $357 \div 0.8 = 446$ ). Therefore, the required minimum sample size was 446 households. This study has required using both quantitative data and qualitative data in the analysis. Therefore, the minimum sample size of 446 households was used in the study.

#### 4.5.6 Choice of Samples

Fifty per cent of wards were selected with SRSWOR at the first-stage sampling. Since there were thirteen wards in Bagan-Nyaung Oo Area, six wards were selected with SRSWOR. The wards with a total number of households are described in Table 4.2.

**Table (4.2) List of Households in Bagan-Nyaung Oo Area**

Wards	Number of Households	Cumulative Frequency	Range	$P_i$	Random Numbers	Number of Households in Selected Wards	Number of Selected Households
Ward (1)	1679	1679	1-1679	0.174			
Ward (2)	554	2233	1680-2233	0.057			
Ward (3)	1149	3382	2234-3382	0.119			
Ward (4)	834	4216	3383-4216	0.086	3981	834	75
Ward (5)	1412	5628	4217-5628	0.146	5467	1412	127
Ward (6)	587	6215	5629-6215	0.061			
Ward (7)	439	6654	6216-6654	0.045	6221	439	39
Kyansittha	773	7427	6655-7427	0.080	6767	773	69
Anawrahta	1057	8484	7428-8484	0.109	8466	1057	95
Eastyanaung	265	8749	8485-8749	0.027			
Shwetwin	191	8940	8750-8940	0.020			
Thiripyitsaya	465	9405	8941-9405	0.048	9186	465	41
Gangar	272	9677	9406-9677	0.028			
Total	9677			1.00		4980	446

Source: General Administration Department of Nyaung Oo Township, 2017

The random numbers 3981, 5467, 6221, 6767, 8466 and 9186 were selected by using generated random numbers. Hence, six wards such as Ward (4), Ward (5), Ward (7), Kyansittha, Anawrahta and Thiripyitsaya were chosen as the first stage units from Bagan-Nyaung Oo Area. Then, 446 households were selected by using SRSWOR method at the second stage units. Among 446 sample households, 13 were found to be incomplete. So, the response rate of this survey was 93%. Therefore, 433 sample households were used for data analysis.

## CHAPTER V

### ANALYSIS ON RESIDENTS' SUPPORT FOR TOURISM DEVELOPMENT

The purpose of this chapter is to analyze the influencing factors of residents' support for tourism development in Bagan-Nyaung Oo Area. This chapter presents the results of the data analysis. First, the demographic and socioeconomic characteristics of residents and tourism-related characteristics of residents are presented. Second, assessing normality and factor analysis are shown. The third section discusses the results of the confirmatory factor analysis conducted to confirm the factor structure of the seven latent variables. Finally, the study describes data analysis using measurement model, structural model and hierarchical multiple regression.

#### 5.1 Demographic and Socioeconomic Characteristics of Residents

The information on demographic and socioeconomic characteristics of residents included in the study is described in Table 5.1. The demographic and socioeconomic characteristics are gender, marital status, religion, birthplace, age, household size, length of residency, education, resident's income, household income and expenditure.

**Table (5.1):Demographic and Socioeconomic Characteristics of Residents**

Characteristics	Number of Respondent	Percent (%)
<b>Gender</b>		
Male	260	60.0
Female	173	40.0
<b>Marital status</b>		
Single	123	28.4
Married	253	58.4
Widowed	40	9.2
Divorced	11	2.5
Separated	6	1.5
<b>Religion</b>		
Buddhist	402	92.8
Christian	21	4.8
Muslim	5	1.2
Hindu	5	1.2
<b>Birthplace (Born at Bagan-Nyaung Oo Area)</b>		
Yes	239	55.2
No	194	44.8



**Table (5.1): Demographic and Socioeconomic Characteristics of Residents (Contd.)**

Variables	Number of Respondent	Percent (%)
<b>Age (years)</b>		
18 - 20	8	1.8
21 - 30	80	18.5
31 - 40	149	34.4
41 - 50	114	26.3
51 - 60	73	16.9
Above 60	9	2.1
<b>Household size</b>		
1-3	132	30.5
4-6	234	54.0
7-9	61	14.1
Above 9	6	1.4
<b>Length of residency (years)</b>		
0 - 10	94	21.7
11 - 20	100	23.1
21 - 30	87	20.1
31 - 40	56	12.9
41 - 50	54	12.5
Above 50	42	9.7
<b>Education</b>		
Below primary level	18	4.1
Primary level	61	14.1
Secondary level	84	19.4
Tertiary level	67	15.5
Diploma	59	13.6
Bachelor's degree	144	33.2
<b>Resident's income (kyats in lakh)</b>		
Below 1	18	4.2
1 - 2	135	31.2
2 - 3	80	18.5
3 - 4	44	10.2
4 - 5	44	10.2
Above 5	112	25.8
<b>Household income (kyats in lakh)</b>		
1 - 2	23	5.3
2 - 3	53	12.2
3 - 4	57	13.2
4 - 5	58	13.4
Above 5	242	55.9
<b>Household expenditure (kyats in lakh)</b>		
Below 1	13	3.0
1 - 2	198	45.7
2 - 3	130	30.0
3 - 4	29	6.7
4 - 5	48	11.1
Above 5	15	3.5

Source: Survey Data (2018)

According to gender, 260 residents (60%) are males while 173 residents (40%) are females. In terms of the marital status, majority of the residents (58.4%) are married and followed by single (28.4%), widow (9.2%), divorce (2.5%) and separate (1.4%).

The majority of the residents (92.8%) are Buddhist, followed by Christian (4.8%), Muslim (1.2%) and Hindu (1.2%). According to the birthplace, 55.2% of residents are born in the community and 44.8% of residents are not born in the community.

Most of the residents (34.4%) are the age group of 31-40 and followed by the 41-50 age group (26.3%), the 21-30 age group (18.5%), the 51-60 age group (16.9%), the above 60 age group (2.1%) and 18-20 age group (1.8%). The average age of residents is 40 years. It is found that most of the residents are working-age population in the area.

Regarding household size, 54% of residents have 4 to 6 members, 30.5% of residents have 1 to 3 members, 14.1% of residents have 7 to 9 members and 1.4% of residents have above 9 members in each household.

Most residents (23.1%) live from 11 to 20 years in the area. The least residents (9.7%) live above 50 years. The average length of residency is 26 years. This means that most residents have been living quite a long time in the area.

The education level of residents is classified as below primary level (4.2%), primary level (14.1%), secondary level (19.4%), tertiary level (15.5%), diploma (13.6%) and Bachelor's degree (33.3%).

Concerning monthly income of residents, the majority of residents (31.2%) have earned between 1 and 2 lakh kyats per month, followed by above 5 lakh kyats (25.8%). The minority of residents (4.2%) have below 1 lakh kyats.

Relating to monthly income of the household, the majority of households (55.9%) have earned above 5 lakh kyats, followed by between 4 and 5 lakh kyats per month (13.4%). The minority of households (5.3%) have between 1 and 2 lakh kyats per month.

In relation to monthly expenditure of household, the majority of households (45.7%) have spent between 1 and 2 lakh kyats per month. The minority of households (3.5%) have spent above 5 lakh kyats.

## 5.2 Tourism-Related Characteristics of Residents

The descriptive statistics of tourism-related characteristics of residents included in the study are presented in Table 5.2. The tourism-related characteristics are occupation, tourism-related income, tourism policy participation, residents' opinion on tourism development, community growth and condition of tourist arrivals.

**Table (5.2): Tourism-Related Characteristics of Residents**

Variables	Number of Respondent	Percent (%)
<b>Occupation</b>		
Residents work in tourism industry	300	69.3
Residents do not work in tourism industry	133	30.7
<b>Tourism-related income (kyats in lakh)</b>		
Below 1	33	7.6
1 - 2	91	21
2 - 3	62	14.3
3 - 4	45	10.4
4 - 5	36	8.3
Above 5	166	38.3
<b>Tourism policy participation</b>		
Yes	90	20.8
No	343	79.2
<b>Residents' opinion on tourism development</b>		
Beginning stage	5	1.2
Growth stage	220	50.8
Maturity stage	200	46.2
Decline stage	8	1.8
<b>Residents' opinion on community growth</b>		
Slow	13	3.0
Moderate	190	43.9
Rapid	212	49.0
Very rapid	18	4.2
<b>Residents' opinion on condition of tourist arrivals</b>		
Very crowded	20	4.6
Crowded	60	13.9
Moderate	230	53.1
Few	90	20.8
Very few	33	7.6

Source: Survey Data (2018)

The most of residents (69.3%) work in tourism industry and (30.7%) of residents do not work in tourism industry. Most of residents (38.3%) have monthly tourism-related income above 5 lakh kyats. The minority of residents (8.3%) have monthly tourism-related income below 1 lakh kyats. Therefore, the residents have fairly tourism-related income.

The majority of residents (79.2%) do not involve in making any tourism-related policies in their area. The minority of residents (20.8%) involve in making tourism-related policies in their area. Therefore, the residents are working in tourism industry but they do not participate in making tourism policy.

Concerning the residents' opinion on tourism development, 50.8% of residents replied that tourism development is in growth stage and 46.2% of residents replied that tourism development is in maturity stage. Regarding the residents' opinion on the growth of Bagan-Nyaung Oo Area, 43.9% of residents replied that their community growth is moderate and 49% of residents responded that their community growth is rapid. According to the residents' opinion on the condition of tourist arrivals, 53.1% of residents responded that the condition of tourist arrivals is moderate and 20.8% of residents responded that the condition of tourist arrivals is few. It is discovered that the growth of Bagan-Nyaung Oo Area is very rapid because tourism development of this area is the growth stage and condition of tourist arrivals is moderate.

### **5.3 Assessing Normality**

Normality refers to the shape of data distribution for an individual metric variable and its correspondence to the normal distribution. If the variation from the normal distribution is sufficiently large, all resulting statistical tests are invalid. Univariate normality for a single variable is easily tested. Multivariate normality means that the individual variables are normal in a univariate sense and that their combinations are also normal. In most cases, assessing univariate normality for all variables is sufficient.

The shape of any distribution can be described by two measures such as kurtosis and skewness. Kurtosis refers to the "peakedness" or "flatness" of the distribution compared with the normal distribution. The distribution that is more peaked than the normal distribution is termed leptokurtic, whereas a distribution that is flatter peaked than the normal distribution is termed platykurtic. Whereas kurtosis refers to the height of the distribution, skewness is used to describe the balance of the

distribution. If a distribution is unbalanced, it is skewed. A positive skewness denotes a distribution is skewed to the right whereas a negative skewness reflects a distribution is skewed to the left. The distribution of the data is exactly normal if the value of skewness is 0. In addition to examining the normal probability plot, one can use statistical tests to assess normality. A simple test is a rule of thumb based on the skewness and kurtosis values. The  $Z$  values for the skewness and kurtosis are calculated as

$$Z_{skewness} = \frac{skewness}{\sqrt{\frac{6}{n}}}$$

$$Z_{kurtosis} = \frac{kurtosis}{\sqrt{\frac{24}{n}}}$$

If calculated  $Z$  value exceeds the specified critical value, the distribution is nonnormal. The critical value is from a  $Z$  distribution based on the significance level. The most commonly used critical values are  $\pm 2.58$  (1% significance level) and  $\pm 1.96$  (5% significance level). With these simple tests, the skewness and kurtosis of the distribution vary from the normal distribution can be assessed. The results of skewness and kurtosis for measured variables are shown in Table 5.3. Based on the results of  $Z$  value for skewness and kurtosis, all measured variables are between -1.96 and +1.96. Therefore, all measured variables are normal.

**Table (5.3): Results of Skewness and Kurtosis for Measured Variables**

Latent and Measured Variables	Skewness		Kurtosis	
	Statistic	Z value	Statistic	Z value
<b>Attitude of community attachment</b>				
aca1	-0.080	-0.681	0.240	1.027
aca2	-0.098	-0.839	0.270	1.152
aca3	-0.090	-0.769	0.318	1.357
aca4	-0.118	-1.009	0.350	1.497
aca5	-0.080	-0.686	0.237	1.014
<b>Personal benefits from tourism</b>				
pbt1	-0.066	-0.565	0.105	0.448
pbt2	-0.061	-0.521	0.054	0.232
pbt3	-0.063	-0.537	0.044	0.186
pbt4	-0.060	-0.509	0.049	0.210
pbt5	-0.118	-1.010	0.376	1.606

**Table (5.3): Results of Skewness and Kurtosis for Measured Variables (Contd.)**

Latent and Measured Variables	Skewness		Kurtosis	
	Statistic	Z value	Statistic	Z value
<b>Economic impacts of tourism</b>				
eco1	-0.116	-0.994	0.209	0.895
eco2	0.222	1.899	0.387	1.653
eco3	-0.089	-0.758	0.163	0.697
eco4	-0.097	-0.831	0.227	0.969
eco5	0.227	1.944	0.366	1.564
eco6	0.157	1.345	0.413	1.765
eco7	-0.066	-0.562	0.095	0.408
eco8	-0.132	-1.132	0.408	1.745
eco9	0.122	1.045	0.434	1.854
eco10	-0.138	-1.177	0.453	1.934
eco11	-0.065	-0.553	-0.016	-0.068
eco12	-0.065	-0.553	-0.005	-0.023
<b>Environmental impacts of tourism</b>				
env1	-0.100	-0.855	-0.263	-1.124
env2	-0.090	-0.765	-0.310	-1.323
env3	-0.114	-0.976	-0.231	-0.231
env4	-0.027	-0.228	-0.193	-0.823
env5	-0.012	-0.102	-0.185	-0.789
env6	0.225	1.923	0.361	1.541
env7	0.168	1.432	0.283	1.211
env8	0.001	0.011	-0.293	-1.251
env9	0.011	0.092	-0.271	-1.158
env10	-0.026	-0.218	-0.198	-0.848
env11	-0.025	-0.213	-0.152	-0.648
env12	-0.030	-0.254	-0.171	-0.732
<b>Social impacts of tourism</b>				
soc1	-0.106	-0.907	0.251	1.071
soc2	-0.090	-0.765	0.144	0.614
soc3	-0.075	-0.644	0.138	0.589
soc4	-0.122	-1.044	0.442	1.887
soc5	-0.106	-0.910	0.293	1.251
soc6	0.113	0.966	0.413	1.767
soc7	0.134	1.144	0.340	1.455
soc8	0.148	1.266	0.321	1.372
<b>Cultural impacts of tourism</b>				
cul1	-0.109	-0.935	-0.195	-0.833
cul2	-0.086	-0.738	-0.294	-1.255
cul3	-0.092	-0.785	-0.281	-1.202
cul4	-0.069	-0.587	-0.364	-1.557
cul5	-0.080	-0.682	-0.328	-1.401
cul6	-0.078	-0.664	-0.328	-1.401
cul7	0.134	1.145	0.450	1.922
cul8	0.119	1.021	0.335	1.432
cul9	0.115	0.986	0.286	1.221

**Table (5.3): Results of Skewness and Kurtosis for Measured Variables (Contd.)**

Latent and Measured Variables	Skewness		Kurtosis	
	Statistic	Z value	Statistic	Z value
<b>Residents' support for tourism development</b>				
rstd1	-0.088	-0.751	0.455	1.944
rstd2	-0.101	-0.864	0.450	1.922
rstd3	-0.062	-0.526	0.428	1.829
rstd4	-0.085	-0.727	0.458	1.957
rstd5	-0.090	-0.768	0.410	1.750

Source: Survey Data (2018)

#### 5.4 Factor Analysis

Factor analysis attempts to determine which sets of observed variables share common variance-covariance characteristics that define theoretical constructs (latent variables). Factor analysis is used for data reduction as well as to screen variables for subsequent analysis. In factor analysis, the variables must be at least ordinal level. Several variables should be included to represent each proposed factor and the sample size required is at least 100. The assumptions of factor analysis are normality, linearity and significant correlations in data matrix.

One of the objectives of this study is to establish a unidimensional scale for the measurement of latent variable. Unidimensionality indicates the existence of a latent variable explaining a set of measured variables. To detect scale dimensionality, an exploratory factor analysis (EFA) with a principal component method is conducted for each latent variable. To determine the appropriateness of factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity are examined in the study.

KMO compares the observed correlation coefficients to the partial correlation coefficients. KMO index ranges from 0 to 1. KMO value 0.9 is the best and KMO value below 0.5 is unacceptable. KMO value with 0.6 suggests as the minimum value for good factor analysis and the statistical significance for Bartlett's test of sphericity is required. The factor loadings are the correlations between the factors and their related variables. Eigenvalue represents the strength of a factor. Eigenvalue of the first factor is the sum of the squared factor loadings. Eigenvalue is used as a cutoff because it is the sum of the squared factor loadings of all variables. The sum of the squared

factor loadings divided by the number of variables in a factor equals the average percentage of variance explained by that factor. An eigenvalue 1 means that the variable explains at least an average amount of the variance. A factor with an eigenvalue of less than 1 means the variable is not contributing an average amount to explain the variance. In interpreting factors, variables with large factor loadings indicate representative of the factor while variables with small factor loadings suggest that they are not representative of the factor. A rule of thumb suggests that factor loadings greater than 0.33 are considered to meet the minimal level of practical significance. The results of factor analysis for latent variables are presented in Table 5.4.

**Table (5.4): Results of Factor Analysis for Latent Variables**

Latent and Measured Variables	Factor Loadings	Eigenvalue	Variance Explained
<b>Attitude of community attachment</b>		3.33	66.7%
aca1	0.772		
aca2	0.845		
aca3	0.826		
aca4	0.828		
aca5	0.810		
KMO measure of sampling adequacy	0.880		
Bartlett's test of sphericity	0.000		
Cronbach's alpha	0.874		
<b>Personal benefits from tourism</b>		2.98	59.6%
pbt1	0.821		
pbt2	0.812		
pbt3	0.789		
pbt4	0.769		
pbt5	0.658		
KMO measure of sampling adequacy	0.834		
Bartlett's test of sphericity	0.000		
Cronbach's alpha	0.829		



**Table (5.4): Results of Factor Analysis for Latent Variables (Contd.)**

Latent and Measured Variables	Factor Loadings	Eigenvalue	Variance Explained
<b>Economic impacts of tourism</b> eco1 eco3 eco4 eco7 eco8 eco10 eco11 eco12 KMO measure of sampling adequacy Bartlett's test of sphericity Cronbach's alpha	0.833 0.839 0.797 0.798 0.853 0.773 0.721 0.743 0.889 0.000 0.914	5.07	63.3%
<b>Environmental impacts of tourism</b> env4 env5 env8 env9 env10 env11 env12 KMO measure of sampling adequacy Bartlett's test of sphericity Cronbach's alpha	0.833 0.850 0.810 0.729 0.832 0.813 0.798 0.923 0.000 0.912	4.594	65.6%
<b>Social impacts of tourism</b> soc1 soc2 soc3 soc4 soc5 KMO Bartlett's test of sphericity Cronbach's alpha	0.854 0.849 0.843 0.775 0.807 0.876 0.000 0.884	3.413	68.3%
<b>Cultural impacts of tourism</b> cul1 cul2 cul3 cul4 cul5 cul6 KMO measure of sampling adequacy Bartlett's test of sphericity Cronbach's alpha	0.823 0.928 0.830 0.902 0.890 0.797 0.873 0.000 0.931	4.469	74.5%
<b>Residents' support for tourism development</b> rstd1 rstd2 rstd3 rstd4 rstd5 KMO measure of sampling adequacy Bartlett's test of sphericity Cronbach's alpha	0.792 0.800 0.704 0.815 0.411 0.803 0.000 0.756	2.60	51.9%

Source: Survey Data (2018)

The residents' attitude of community attachment is measured by five variables. Regarding a principal component factor analysis, all factor loadings are greater than 0.7 and load on only one factor. Results of the KMO measure of sampling adequacy 0.880 and Bartlett's test of sphericity ( $p\text{-value}=0.000 < 0.001$ ) indicate that data are acceptable for factor analysis presented in Table 5.4. Cronbach's alpha reliability for five variables is 0.874, and the factor represents 66.7% of the explained variance of the scale. It is concluded that the residents' attitude of community attachment can be measured by five variables, and all these variables are valid and reliable.

Personal benefits from tourism are measured by five variables. Relating to a principal component factor analysis, all factor loadings are between 0.66 and 0.82. Results of the KMO measure of sampling adequacy 0.834 and Bartlett's test of sphericity ( $p\text{-value}=0.000 < 0.001$ ) indicate that data are acceptable for factor analysis presented in Table 5.4. Cronbach's alpha reliability for five variables is 0.829, and the factor represents 59.6% of the explained variance of the scale. It is discovered that personal benefits from tourism can be measured by five variables, and all these variables are valid and reliable.

The residents' perception of economic impacts of tourism is measured by thirteen variables. According to a principal component factor analysis, factor loadings for eight variables are above 0.7 but those of five variables such as eco2, eco5, eco6, eco9 and eco13 are less than 0.33. Therefore, these five variables are excluded and only eight variables are used in the factor analysis. Results of the KMO measure of sampling adequacy 0.889 and Bartlett's test of sphericity ( $p\text{-value}=0.000 < 0.001$ ) indicate that data are acceptable for factor analysis shown in Table 5.4. Cronbach's alpha reliability for eight variables is 0.914, and the factor represents 63.3% of the explained variance of the scale. It is found that the residents' perception of economic impacts of tourism can be measured by eight variables, and all these variables are valid and reliable.

The residents' perception of environmental impacts of tourism is measured by twelve variables. Regarding a principal component factor analysis, factor loadings for seven variables are above 0.7 but those of five variables such as env1, env2, env3, env6 and env7 are less than 0.33. Therefore, these five variables are excluded and only seven variables are used in the factor analysis. Results of the KMO measure of sampling adequacy 0.923 and Bartlett's test of sphericity ( $p\text{-value}=0.000 < 0.001$ ) indicate that data are acceptable for factor analysis given in Table 5.4. Cronbach's

alpha reliability for seven variables is 0.912, and the factor represents 65.6% of the explained variance of the scale. Thus, the residents' perception of environmental impacts of tourism can be measured by seven variables, and all these variables are valid and reliable.

The residents' perception of social impacts of tourism is measured by eight variables. Concerning a principal component factor analysis, factor loadings for five variables are above 0.7 but those of three variables such as soc6, soc7 and soc8 are less than 0.33. Therefore, these three variables are omitted and only five variables are used in the factor analysis. Results of the KMO measure of sampling adequacy 0.876 and Bartlett's test of sphericity ( $p\text{-value}=0.000 < 0.001$ ) indicate that data are acceptable for factor analysis presented in Table 5.4. Cronbach's alpha reliability for five variables is 0.884, and the factor represents 68.3% of the explained variance of the scale. Therefore, the residents' perception of social impacts of tourism can be measured by five variables, and all these variables are valid and reliable.

The residents' perception of cultural impacts of tourism is measured by nine variables. According to a principal component factor analysis, factor loadings for six variables are greater than 0.8 but those of three variables such as cul7, cul8 and cul9 are less than 0.33. Therefore, these three variables are excluded and only six variables are used in the factor analysis. Results of the KMO measure of sampling adequacy 0.873 and Bartlett's test of sphericity ( $p\text{-value}=0.000 < 0.001$ ) indicate that data are acceptable for factor analysis shown in Table 5.4. Cronbach's alpha reliability for six variables is 0.931, and the factor represents 74.5% of the explained variance of the scale. Therefore, the residents' perception of cultural impacts of tourism can be measured by six variables, and all these variables are valid and reliable.

Residents' support for tourism development is measured by five variables. In relation to a principal component factor analysis, five factor loadings are between 0.41 and 0.81. Results of the KMO measure of sampling adequacy 0.803 and Bartlett's test of sphericity ( $p\text{-value}=0.000 < 0.001$ ) indicate that data are acceptable for factor analysis presented in Table 5.4. Cronbach's alpha reliability for five variables is 0.756, and the factor represents 51.9% of the explained variance of the scale. Therefore, residents' support for tourism development can be measured by five variables, and all these variables are valid and reliable.

## 5.5 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is used to test the measurement model specifying the posited relations of the measured variables to the underlying latent variables. The CFA approach examines whether or not the collected data are consistent with a prior specified model. Therefore, CFA allows sample data set that fits the theoretical model which confirms the validity of the hypothesized model.

For this study, confirmatory factor analysis (CFA) is used to confirm the measurement scale of the residents' attitude of community attachment, personal benefits from tourism, the residents' perception of tourism impacts (economic, environmental, social and cultural) and residents' support for tourism development. In the previous section, the residents' attitude of community attachment consists of five measured variables, personal benefits from tourism also consist of five measured variables, the residents' perception of economic impacts of tourism consists of eight measured variables, the residents' perception of environmental impacts of tourism consists of seven measured variables, the residents' perception of social impacts of tourism consists of five measured variables, the residents' perception of cultural impacts of tourism consists of six measured variables and residents' support to tourism development comprises five measured variables.

The estimation process for the specified model is provided along with statistical results. Modification indices, absolute fit measures, incremental fit measures, and parsimonious fit measures are utilized to evaluate the specified model. Maximum Likelihood (ML) estimation method is used in confirmatory factor analysis. Since, the collected sample is quite large and the measured variables met normality according to the results of skewness and kurtosis. ML estimation has been widely used because this estimation method has been found to be unbiased, consistent and efficient.

To test the reliability of the latent variables, composite reliability (CR) and average variance extracted (AVE) are used in the study. CR is the reliability of a summated scale and AVE is the variance in the measured variables explained by the latent variable. At least 0.7 of composite reliability estimate indicates that a latent variable is moderately reliable in research. If the composite reliability is not high enough to be accepted, the scales are revised by deleting measured variables as a result of the reliability analysis. To evaluate discriminant validity, AVE is used and AVE of all latent variables have at least 0.5. The results of the confirmatory factor analysis for each latent variable are presented in Table 5.5.

**Table (5.5): Results of Confirmatory Factor Analysis for Latent Variables**

Latent and Measured Variables	Standardized Loading	CR	AVE	Number of Deleted Items
<b>Attitude of community attachment</b> aca1 aca2 aca3 aca4 aca5	0.69 0.81 0.78 0.78 0.75	0.88	0.59	0
<b>Personal benefits from tourism</b> pbt1 pbt2 pbt3 pbt4	0.80 0.74 0.75 0.67	0.83	0.55	1
<b>Economic impacts of tourism</b> eco1 eco3 eco4 eco7 eco8 eco10	0.85 0.81 0.78 0.73 0.83 0.75	0.91	0.63	2
<b>Environmental impacts of tourism</b> env4 env5 env8 env10 env11	0.77 0.80 0.76 0.69 0.70	0.86	0.56	2
<b>Social impacts of tourism</b> soc1 soc2 soc3 soc4 soc5	0.82 0.82 0.80 0.70 0.74	0.88	0.6	0
<b>Cultural impacts of tourism</b> cul1 cul2 cul4 cul5 cul6	0.84 0.93 0.87 0.88 0.84	0.94	0.76	1
<b>Residents' support for tourism development</b> rstd1 rstd2 rstd3 rstd4	0.74 0.71 0.62 0.75	0.82	0.53	1

Source: Survey Data (2018)

Five observed variables are utilized to measure the residents' attitude of community attachment. The final results of the CFA are shown in Table 5.5 and Appendix Table A-1. The specified model results in a Chi-square value of 1.47 with 5 degree of freedom ( $p$  value=0.916 > 0.01). All other indices show that the data successfully fit the model with TLI =1, CFI=1, RMSEA =0.001, and SRMR =0.007. The coefficient of determination is 0.879. The standardized factor loadings reveal comparatively high loadings, ranging from 0.69 to 0.81. The squared multiple correlation coefficients for measured variables which range between 0.5 and 0.7. The composite reliability results in 0.88, which highly exceeds the recommended level of 0.70. The average variance extracted is 0.59, which exceeds the recommended level of 0.50. Therefore, the latent variable (the residents' attitude of community attachment) retains five measure variables with acceptable results.

Five observed variables are utilized to measure personal benefits from tourism. The results of the initial estimation of CFA are not acceptable. Therefore, refinement is needed for better goodness-of-fit indices for the confirmatory factor model. After reviewing the  $Z$ -value, standard error, modification indices, squared multiple correlations and standardized loadings, a measured variable (pbt5) is deleted due to its low  $Z$ -value, high standard error and low explained variance. After deleting the measured variable and reanalyzing the data, the final results of CFA for the personal benefits from tourism are shown in Table 5.5 and Appendix Table A-2. The specified model results in a Chi-square value of 5.42 with 2 degree of freedom ( $p$ -value=0.066 > 0.01). All other indices show that the data successfully fit the model with TLI =0.984, CFI=0.995, RMSEA =0.063 and SRMR=0.016. The coefficient of determination is 0.84. The standardized factor loadings reveal comparatively high loadings, ranging from 0.67 to 0.8. The squared multiple correlation coefficients for measured variables which range between 0.5 and 0.7. The composite reliability results in 0.83, which highly exceeds the recommended level of 0.70. The average variance extracted is 0.55, which exceeds the recommended level of 0.50. Therefore, the latent variable (personal benefits from tourism) retains only four measured variables with acceptable results.

Eight observed variables are used to measure the residents' perception of economic impacts of tourism. The results of the initial estimation of CFA are not acceptable. Therefore, refinement is needed for better goodness-of-fit indices for the confirmatory factor model. After reviewing the  $Z$ -value, standard error, modification

indices, squared multiple correlations and standardized loadings, two measured variables (eco11 and eco12) are deleted due to its low *Z*-value, high standard error and low explained variance. After deleting two indicators and reanalyzing the data, the final results of residents' perception of economic impacts are shown in Table 5.5 and Appendix Table A-3. The specified model results in Chi-square value of 13.08 with 9 degree of freedom ( $p\text{-value}=0.159 > 0.01$ ). All other indices show that the data successfully fit the model with TLI =0.996, CFI=0.997, RMSEA =0.032 and SRMR =0.014. The coefficient of determination is 0.915. The standardized factor loadings reveal comparatively high loadings, ranging from 0.73 to 0.85. The squared multiple correlation coefficients for measured variables which range between 0.53 and 0.71. The composite reliability results in 0.91, which highly exceeds the recommended level of 0.70. The average variance extracted is 0.63, which exceeds the recommended level of 0.50. Thus, the latent variable (residents' perception of economic impacts of tourism) retains only six measured variables with acceptable results.

Seven observed variables are used to measure the residents' perception of environmental impacts of tourism. The results of the initial estimation of CFA are not acceptable. Therefore, refinement is needed for better goodness-of-fit indices for the confirmatory factor model. After reviewing the *Z*-value, standard error, modification indices, squared multiple correlations and standardized loadings, two measured variables (env9 and env12) are deleted due to its low *Z*-value, high standard error and low explained variances. After deleting two measured variables and reanalyzing the data, the final results of the residents' perception of environmental impacts are shown in Table 5.5 and Appendix Table A-4. The specified model results in Chi-square value of 10.57 with 5 degree of freedom ( $p\text{-value}=0.061 > 0.01$ ). All other indices show that the data successfully fit the model with TLI=0.977, CFI=0.988, RMSEA=0.052 and SRMR=0.022. The coefficient of determination is 0.866. The standardized factor loadings reveal comparatively high loadings, ranging from 0.69 to 0.80. The squared multiple correlation coefficients for measured variables which range between 0.47 and 0.65. The composite reliability results in 0.86, which highly exceeds the recommended level of 0.70. The average variance extracted is 0.56, which exceeds the recommended level of 0.50. Hence, the latent variable (residents' perception of environmental impacts of tourism) retains only five measured variables with acceptable results.

Five observed variables are used to measure the residents' perception of social impacts of tourism. The final results of the CFA are shown in Table 5.5 and Appendix Table A-5. The specified model results in Chi-square value of 10.69 with 5 degree of freedom ( $p\text{-value}=0.058 > 0.01$ ). All other indices show that the data successfully fit the model with TLI =0.990, CFI=0.995, RMSEA =0.051 and SRMR=0.016. The coefficient of determination is 0.89. The standardized factor loadings reveal comparatively high loadings, ranging from 0.7 to 0.82. The squared multiple correlation coefficient for measured variables which range between 0.5 and 0.7. The composite reliability results in 0.88, which highly exceeds the recommended level of 0.70. The average variance extracted is 0.60, which exceeds the recommended level of 0.50. Hence, the latent variable (residents' perception of social impacts of tourism) retains only five measured variables with acceptable results.

Six observed variables are used to measure the residents' perception of cultural impacts of tourism. The results of the initial estimation of CFA are not acceptable. Therefore, refinement is needed for better goodness-of-fit indices for the confirmatory factor model. After reviewing the Z-value, standard error, modification indices, squared multiple correlations and standardized loadings, a measured variable (cul3) is deleted due to its low Z-value, high standard error and low explained variances. After deleting a measured variable and reanalyzing the data, the final results of the residents' perception of cultural impacts are shown in Table 5.5 and Appendix Table A-6. The specified model results in Chi-square value of 13.14 with 5 degree of freedom ( $p\text{-value}=0.056 > 0.01$ ). All other indices show that the data successfully fit the model with TLI =0.971, CFI=0.986, RMSEA =0.06 and SRMR=0.016. The coefficient of determination is 0.948. The standardized factor loadings reveal comparatively high loadings, ranging from 0.84 to 0.93. The squared multiple correlation coefficient for measured variables which range between 0.70 and 0.87. The composite reliability results in 0.94, which highly exceeded the recommended level of 0.70. The average variance extracted is 0.76, which exceeds the recommended level of 0.50. Therefore, the latent variable (residents' perception of cultural impacts of tourism) retains only five measured variables with acceptable results.



Five observed variables are utilized to measure residents' support for tourism development. The results of the initial estimation of CFA are not acceptable. Therefore, refinement is needed for better goodness-of-fit indices for the confirmatory factor model. After reviewing the *Z*-value, standard error, modification indices, squared multiple correlations and standardized loadings, a measured variable (rstd5) is deleted due to its low *Z*-value, high standard error and low explained variances. After deleting a measured variable and reanalyzing the data, the final results of CFA of the residents' support for tourism development are shown in Table 5.5 and Appendix Table A-7. The specified model results in Chi-square value of 2.15 with 2 degrees of freedom ( $p\text{-value}=0.341 > 0.01$ ). All other indices show that the data successfully fit the model with TLI =0.999, CFI=1, RMSEA =0.013 and SRMR=0.012. The coefficient of determination is 0.806. The standardized factor loadings reveal comparatively high loadings, ranging from 0.62 to 0.75. The squared multiple correlation coefficient for residents' support for tourism development which ranges between 0.4 and 0.6. The composite reliability results in 0.82, which highly exceeded the recommended level of 0.70. The average variance extracted is 0.53, which exceeds the recommended level of 0.50. Thus, the latent variable (residents' support for tourism development) retains only four measured variables with acceptable results.

After measuring the adequacy of the individual observed variable, the composite reliability score and variance extracted estimate for each latent variable have been measured. In Table 5.5, the composite reliabilities for all measured variables are found to be above 0.80 and the variance extracted estimates for all measured variables are also above 0.50, which indicate acceptable results of fit. It is revealed that 34 measured variables have high reliability and validity.

## **5.6 Analysis of Proposed Model**

Structural equation modeling is a statistical model that seeks to explain the relationships among multiple variables. To estimate the parameters of structural equation models, maximum likelihood method and generalized least squares method are mostly used. Maximum likelihood method is the most popular method of estimation in the SEM program. In the study, all measured variables meet multivariate normal distribution. Hence maximum likelihood method is used the data analysis. The

advantages of the maximum likelihood estimates are unbiased, consistent and efficient. Therefore, the proposed model is analyzed by combining with the two-stage process such as measurement model and structural model.

### 5.6.1 Measurement Model

The proposed measurement model consists of 7 latent variables and 34 measured variables. The seven latent variables are ACA, PBT, Eco, Env, Soc, Cul and RSTD. Each latent variable has at least four measured variables. These latent and measured variables are presented in Table 5.6.

**Table (5.6): Latent and Measured Variables for Measurement Model**

Latent and Measured Variables
<p><b>Attitude of community attachment (ACA)</b></p> <p>aca1: The community is a beautiful place.</p> <p>aca2: The community is a good place for job opportunity.</p> <p>aca3: The community has increased residents' standard of living.</p> <p>aca4: The community is a safe place to live.</p> <p>aca5: This community is more enjoyable than other communities.</p>
<p><b>Personal benefits from tourism (PBT)</b></p> <p>pbt1: Personal income is related to tourism.</p> <p>pbt2: Personal job is related to tourism.</p> <p>pbt3: Family member's job is related to tourism.</p> <p>pbt4: The individual conservation of local culture is related to tourism.</p>
<p><b>Economic impacts of tourism (Eco)</b></p> <p>eco1: Tourism development has incredibly increased income and employment opportunities of residents.</p> <p>eco3: Hotels, guest houses, restaurants, lacquerware firms and cane firms have got more income from tourists because of tourism development.</p> <p>eco4: The local economy depends on tourism.</p> <p>eco7: Tourism is important because of getting foreign earnings.</p> <p>eco8: Tourism development has raised living standard of local residents.</p> <p>eco10: Local residents can get higher education and improved health care facilities from tourism development.</p>

**Table (5.6): Latent and Measured Variables for Measurement Model (Contd.)**

Latent and Measured Variables
-------------------------------

<p><b>Environmental impacts of tourism (Env)</b></p>
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<p>env4: Tourists have crowded into cultural heritage monuments because of tourism development.</p>
---

<p>env5: Tourists have crowded into hotels, guest houses and other recreational places because of tourism development.</p>
--

<p>env8: Transportation for tourists has caused air pollution.</p>
--

<p>env10: Tourism development has caused littering and noise.</p>
---

<p>env11: Tourism development has destroyed natural scenery and irrigated lands.</p>
--

<p><b>Social impacts of tourism (Soc)</b></p>
---

<p>soc1: Tourism development provides the social benefits of local residents in the community.</p>
--

<p>soc2: Because of tourism development, local services in the community are well maintained.</p>
---

<p>soc3: Tourism is a major reason for the variety of traditional entertainment in the community.</p>
---

<p>soc4: Tourism development can provide more parks and other recreational places for local residents.</p>
--

<p>soc5: Tourism development can provide pagoda festivals in the community.</p>
---

<p><b>Cultural impacts of tourism (Cul)</b></p>
---

<p>cul1: Tourism development has increased residents' pride in the local culture.</p>
---

<p>cul2: Tourism development encourages the conservation of cultural activities for local residents.</p>
--

<p>cul4: Tourism development maintains the ethnic of the historical areas and pagodas in the community.</p>
---

<p>cul5: The cultural exchange between tourists and residents is valuable for local residents.</p>
--

<p>cul6: Tourists can appreciate and study Myanmar traditional cultures because of tourism development</p>
--

**Table (5.6): Latent and Measured Variables for Measurement Model (Contd.)**

Latent and Measured Variables
<b>Residents' support for tourism development (RSTD)</b>
rstd1: The residents should financially invest in tourism development.
rstd2: The residents should participate to increase the volume of tourists.
rstd3: The residents should actively participate in sustainable tourism development plans.
rstd4: The residents should promote tourism-related products.

Source: Survey Questionnaire (2018)

Identification deals with whether enough information exists to identify a solution to a set of structural equations. Information is provided by the sample covariance matrix. In determining the identification of the measurement model, the order condition is assessed. The order condition satisfies that the number of free parameters to be estimated must be less than or equal to the number of distinct values in the matrix  $S$ . The number of distinct values in the matrix  $S$  is  $[p(p+1)/2]= [34(34+1)/2]=595$ , where  $p$  is the number of measured variables in the matrix. The measurement model has 89 free parameters (27 factor loadings, 34 measurement error variances, 7 variances and 21 covariances). The number of free parameters is less than the number of distinct values in the matrix  $S$ . Therefore, the order condition is satisfied and the proposed measurement model is overidentified.

Regarding the measurement model, the relationships between the measured variables and latent variables are indicated by factor loadings. The factor loadings are provided information about the extent to which a given observed variable is able to measure the latent variable. The unique measurement error is estimated. Each measured variable has a factor loading and a unique measurement error that forms an equation to compute the latent variable. The measurement model has 34 measurement equations which can be illustrated as follows:

$$aca1 = \text{factor loading} \times ACA + \text{measurement error} = \lambda_1 ACA + \delta$$

$$aca2 = \text{factor loading} \times ACA + \text{measurement error} = \lambda_2 ACA + \delta$$

$$aca3 = \text{factor loading} \times ACA + \text{measurement error} = \lambda_3 ACA + \delta$$

$$aca4 = \text{factor loading} \times ACA + \text{measurement error} = \lambda_4 ACA + \delta$$

$$\text{aca5} = \text{factor loading} \times \text{ACA} + \text{measurement error} = \lambda_5 \text{ACA} + \delta$$

$$\text{pbt1} = \text{factor loading} \times \text{PBT} + \text{measurement error} = \lambda_6 \text{PBT} + \delta$$

$$\text{pbt2} = \text{factor loading} \times \text{PBT} + \text{measurement error} = \lambda_7 \text{PBT} + \delta$$

$$\text{pbt3} = \text{factor loading} \times \text{PBT} + \text{measurement error} = \lambda_8 \text{PBT} + \delta$$

$$\text{pbt4} = \text{factor loading} \times \text{PBT} + \text{measurement error} = \lambda_9 \text{PBT} + \delta$$

$$\text{eco1} = \text{factor loading} \times \text{Eco} + \text{measurement error} = \lambda_{10} \text{Eco} + \delta$$

$$\text{eco3} = \text{factor loading} \times \text{Eco} + \text{measurement error} = \lambda_{11} \text{Eco} + \delta$$

$$\text{eco4} = \text{factor loading} \times \text{Eco} + \text{measurement error} = \lambda_{12} \text{Eco} + \delta$$

$$\text{eco7} = \text{factor loading} \times \text{Eco} + \text{measurement error} = \lambda_{13} \text{Eco} + \delta$$

$$\text{eco8} = \text{factor loading} \times \text{Eco} + \text{measurement error} = \lambda_{14} \text{Eco} + \delta$$

$$\text{eco10} = \text{factor loading} \times \text{Eco} + \text{measurement error} = \lambda_{15} \text{Eco} + \delta$$

$$\text{env4} = \text{factor loading} \times \text{Env} + \text{measurement error} = \lambda_{16} \text{Env} + \delta$$

$$\text{env5} = \text{factor loading} \times \text{Env} + \text{measurement error} = \lambda_{17} \text{Env} + \delta$$

$$\text{env8} = \text{factor loading} \times \text{Env} + \text{measurement error} = \lambda_{18} \text{Env} + \delta$$

$$\text{env10} = \text{factor loading} \times \text{Env} + \text{measurement error} = \lambda_{19} \text{Env} + \delta$$

$$\text{env11} = \text{factor loading} \times \text{Env} + \text{measurement error} = \lambda_{20} \text{Env} + \delta$$

$$\text{soc1} = \text{factor loading} \times \text{Soc} + \text{measurement error} = \lambda_{21} \text{Soc} + \delta$$

$$\text{soc2} = \text{factor loading} \times \text{Soc} + \text{measurement error} = \lambda_{22} \text{Soc} + \delta$$

$$\text{soc3} = \text{factor loading} \times \text{Soc} + \text{measurement error} = \lambda_{23} \text{Soc} + \delta$$

$$\text{soc4} = \text{factor loading} \times \text{Soc} + \text{measurement error} = \lambda_{24} \text{Soc} + \delta$$

$$\text{soc5} = \text{factor loading} \times \text{Soc} + \text{measurement error} = \lambda_{25} \text{Soc} + \delta$$

$$\text{cul1} = \text{factor loading} \times \text{Cul} + \text{measurement error} = \lambda_{26} \text{Cul} + \delta$$

$$\text{cul2} = \text{factor loading} \times \text{Cul} + \text{measurement error} = \lambda_{27} \text{Cul} + \delta$$

$$\text{cul4} = \text{factor loading} \times \text{Cul} + \text{measurement error} = \lambda_{28} \text{Cul} + \delta$$

$$\text{cul5} = \text{factor loading} \times \text{Cul} + \text{measurement error} = \lambda_{29} \text{Cul} + \delta$$

$$\text{cul6} = \text{factor loading} \times \text{Cul} + \text{measurement error} = \lambda_{30} \text{Cul} + \delta$$

$$\text{rstd1} = \text{factor loading} \times \text{RSTD} + \text{measurement error} = \lambda_{31} \text{RSTD} + \delta$$

$$\text{rstd2} = \text{factor loading} \times \text{RSTD} + \text{measurement error} = \lambda_{32} \text{RSTD} + \delta$$

$$\text{rstd3} = \text{factor loading} \times \text{RSTD} + \text{measurement error} = \lambda_{33} \text{RSTD} + \delta$$

$$\text{rstd4} = \text{factor loading} \times \text{RSTD} + \text{measurement error} = \lambda_{34} \text{RSTD} + \delta$$

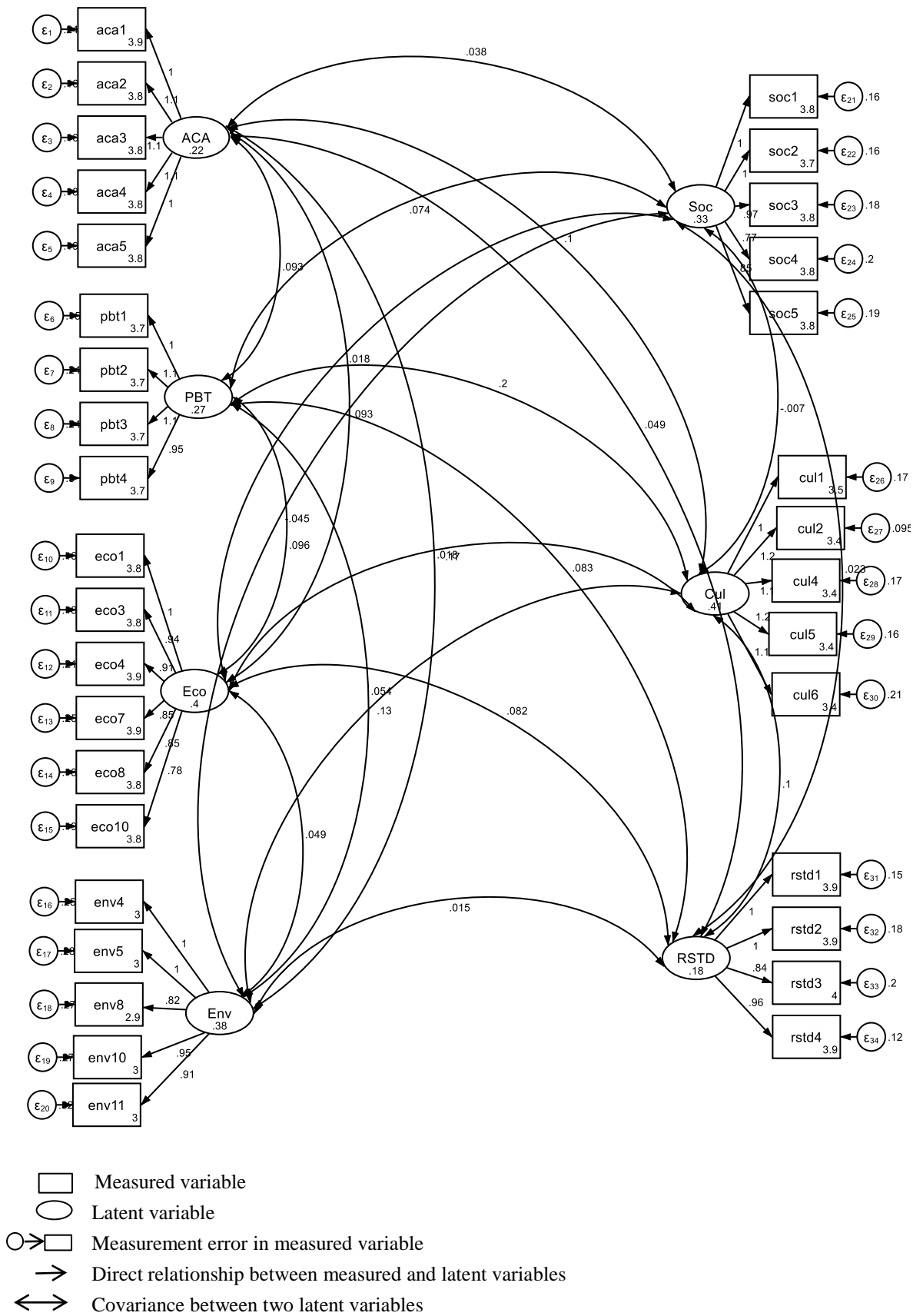
A double-headed line between latent variables is shown a covariance between two latent variables. The observed variance-covariance matrix indicates the relationships among the latent variables. The observed variance-covariance matrix can be illustrated as follows:

$$\begin{bmatrix} \text{var}(ACA) & \text{cov}(ACA, PBT) & \text{cov}(ACA, Eco) & \text{cov}(ACA, Env) & \text{cov}(ACA, Soc) & \text{cov}(ACA, Cul) & \text{cov}(ACA, RSTD) \\ \text{cov}(PBT, ACA) & \text{var}(PBT) & \text{cov}(PBT, Eco) & \text{cov}(PBT, Env) & \text{cov}(PBT, Soc) & \text{cov}(PBT, Cul) & \text{cov}(PBT, RSTD) \\ \text{cov}(Eco, ACA) & \text{cov}(Eco, PBT) & \text{var}(Eco) & \text{cov}(Eco, Env) & \text{cov}(Eco, Soc) & \text{cov}(Eco, Cul) & \text{cov}(Eco, RSTD) \\ \text{cov}(Env, ACA) & \text{cov}(Env, PBT) & \text{cov}(Env, Eco) & \text{var}(Env) & \text{cov}(Env, Soc) & \text{cov}(Env, Cul) & \text{cov}(Env, RSTD) \\ \text{cov}(Soc, ACA) & \text{cov}(Soc, PBT) & \text{cov}(Soc, Eco) & \text{cov}(Soc, Env) & \text{var}(Soc) & \text{cov}(Soc, Cul) & \text{cov}(Soc, RSTD) \\ \text{cov}(Cul, ACA) & \text{cov}(Cul, PBT) & \text{cov}(Cul, Eco) & \text{cov}(Cul, Env) & \text{cov}(Cul, Soc) & \text{var}(Cul) & \text{cov}(Cul, RSTD) \\ \text{cov}(RSTD, ACA) & \text{cov}(RSTD, PBT) & \text{cov}(RSTD, Eco) & \text{cov}(RSTD, Env) & \text{cov}(RSTD, Soc) & \text{cov}(RSTD, Cul) & \text{var}(RSTD) \end{bmatrix}$$

Before evaluating the proposed measurement model as a whole, it is necessary to evaluate the parameter estimates. First of all, parameter estimates need to determine the significance of parameters. The standard error values of parameters are presented and the test statistic used is the *Z*-statistic, which represents the parameter estimate divided by its standard error. The *Z*-statistic tests whether or not the parameter estimate is statistically difference from zero at 1% level of significance. Figure 5.1 and Table 5.7 present the unstandardized parameter estimates for the proposed measurement model. An examination of the unstandardized parameter estimation reveals that all parameter estimates are both reasonable and statistically significant.

The observed variance-covariance matrix of latent variables is

$$\begin{bmatrix} 0.223 & 0.093 & 0.093 & 0.018 & 0.038 & 0.102 & 0.049 \\ 0.093 & 0.265 & 0.096 & 0.054 & 0.074 & 0.195 & 0.083 \\ 0.093 & 0.096 & 0.400 & 0.049 & 0.018 & 0.167 & 0.082 \\ 0.018 & 0.054 & 0.049 & 0.379 & -0.045 & 0.127 & 0.015 \\ 0.038 & 0.074 & 0.018 & -0.045 & 0.325 & -0.007 & 0.023 \\ 0.102 & 0.195 & 0.167 & 0.127 & -0.007 & 0.411 & 0.101 \\ 0.049 & 0.083 & 0.082 & 0.015 & 0.023 & 0.101 & 0.177 \end{bmatrix}$$



**Figure (5.1): The Estimated Measurement Model**



**Table (5.7): Parameter Estimates for Measurement Model**

Measured Variables		Latent Variables						
		ACA	PBT	Eco	Env	Soc	Cul	RSTD
aca1	Coefficient	1						
	Constant	3.878***						
	S.E	0.033						
aca2	Coefficient	1.148***						
	S.E	0.077						
	Constant	3.794***						
aca3	S.E	0.032						
	Coefficient	1.073***						
	S.E	0.074						
aca4	Constant	3.850***						
	S.E	0.031						
	Coefficient	1.133***						
aca5	S.E	0.078						
	Constant	3.822***						
	S.E	0.033						
pbt1	Coefficient	1.039***						
	S.E	0.074						
	Constant	3.811***						
pbt2	S.E	0.031						
	Coefficient	1						
	Constant	3.693***						
pbt3	S.E	0.031						
	Coefficient	1.07***						
	S.E	0.069						
pbt4	Constant	3.737***						
	S.E	0.035						
	Coefficient	1.073***						
eco1	S.E	0.069						
	Constant	3.7***						
	S.E	0.035						
eco3	Coefficient	0.954***						
	S.E	0.071						
	Constant	3.721***						
eco4	S.E	0.035						
	Coefficient	1						
	Constant	3.762***						
eco7	S.E	0.036						
	Coefficient	0.938***						
	S.E	0.046						
eco8	Constant	3.788***						
	S.E	0.035						
	Coefficient	0.908***						
eco10	S.E	0.047						
	Constant	3.855***						
	S.E	0.035						
eco10	Coefficient	0.856***						
	S.E	0.05						
	Constant	3.859***						
eco10	S.E	0.036						
	Coefficient	0.857***						
	S.E	0.041						
eco10	Constant	3.788***						
	S.E	0.031						
	Coefficient	0.78***						
eco10	S.E	0.043						
	Constant	3.820***						
	S.E	0.031						

**Table (5.7): Parameter Estimates for Measurement Model (Contd.)**

Measured Variables		Latent Variables						
		ACA	PBT	Eco	Env	Soc	Cul	RSTD
env4	Coefficient				1			
	Constant				2.991***			
env5	S.E				0.038			
	Coefficient				1.05***			
env8	S.E				0.066			
	Constant				2.954***			
env10	S.E				0.039			
	Coefficient				0.82***			
env11	S.E				0.059			
	Constant				2.942***			
soc1	S.E				0.035			
	Coefficient				0.966***			
soc2	S.E				0.063			
	Constant				2.975***			
soc3	S.E				0.038			
	Coefficient				0.92***			
soc4	S.E				0.065			
	Constant				2.995***			
soc5	S.E				0.038			
	Coefficient				1			
cul1	Constant				3.776***			
	S.E				0.033			
cul2	Coefficient				1.017***			
	S.E				0.054			
cul4	Constant				3.718***			
	S.E				0.034			
cul5	Coefficient				0.982***			
	S.E				0.055			
cul6	Constant				3.758***			
	S.E				0.034			
cul1	Coefficient				0.771***			
	S.E				0.050			
cul2	Constant				3.831***			
	S.E				0.030			
cul4	Coefficient				0.846***			
	S.E				0.051			
cul5	Constant				3.767***			
	S.E				0.031			
cul1	Coefficient					1		
	Constant					3.476***		
cul2	S.E					0.037		
	Coefficient					1.235***		
cul4	S.E					0.047		
	Constant					3.360***		
cul5	S.E					0.041		
	Coefficient					1.15***		
cul6	S.E					0.049		
	Constant					3.397***		
cul1	S.E					0.041		
	Coefficient					1.176***		
cul2	S.E					0.049		
	Constant					3.402***		
cul4	S.E					0.041		
	Coefficient					1.097***		
cul5	S.E					0.05		
	Constant					3.351***		
cul6	S.E					0.04		

**Table (5.7): Parameter Estimates for Measurement Model (Contd.)**

Measured Variables		Latent Variables						
		ACA	PBT	Eco	Env	Soc	Cul	RSTD
rstd1	Coefficient							1
	Constant							3.894***
rstd2	S.E							0.027
	Coefficient							0.999***
rstd3	S.E							0.077
	Constant							3.868***
rstd4	S.E							0.029
	Coefficient							0.837***
rstd3	S.E							0.075
	Constant							3.979***
rstd4	S.E							0.027
	Coefficient							0.961***
rstd4	S.E							0.073
	Constant							3.871***
rstd4	S.E							0.026

Note: \*\*\*, \*\*, \* represent 1%, 5% and 10% level of significance

Source: Survey Data (2018)

Next, the fit indices of proposed measurement model are assessed in the study. The most common index of fit is Chi-squared goodness-of-fit test, which is derived directly from the value of the fitted function. Therefore, Chi-squared goodness-of-fit test is examined. In this case, the Chi-squared value ( $\chi^2$ ) for the model is 757.95 ( $df = 506$ ,  $p\text{-value} = 0.000 < 0.01$ ) (see Appendix Table A-8). However, it should be noted that Chi-squared mode-fit criterion is very sensitive because sample size (generally above 200) and the number of measured variables become large. The Chi-squared statistic has a tendency to indicate a significant probability level and frequently results in the rejection of a well-fitting model. Therefore, normed  $\chi^2$  ( $\chi^2 / df$ ) is better goodness-of-fit than  $\chi^2$ . Normed  $\chi^2$  is 1.50, which is less than cutting value of 2, indicating the measurement model is an adequate fit. Furthermore, other fit indices are TLI =0.966, CFI=0.969, RMSEA =0.034 and SRMR=0.038 (see Appendix Table A-8). The coefficient of determination is 0.993. The results of goodness-of-fit statistics indicate that the theoretical model is supported by the sample data. Therefore, the proposed measurement model fits the data.

### 5.6.2 Structural Model

One of the objectives of this study is to examine the residents' support for tourism development in Bagan-Nyaung Oo Area. The proposed structural model deals with the relationships among the seven latent variables. Regarding the structural model, the structural coefficient estimates provide the basis for research analysis. Figure 5.2 presents the estimated structural model.

After identifying the measurement model, the structural model specifies to indicate how these latent variables are related to the study. In determining the identification of the structural model, the order condition is assessed. The order condition satisfies that the number of free parameters to be estimated must be less than or equal to the number of distinct values in the matrix  $S$ . The number of distinct values in the matrix  $S$  is  $[p(p+1)/2] = [34(34+1)/2] = 595$ , where  $p$  is the number of measured variables in the matrix. The structural model has 83 free parameters (27 factor loadings, 39 measurement error variances, 2 variances, 1 covariance and 14 structural coefficients). The number of free parameters is less than the number of distinct values in the matrix  $S$ . Therefore, the order condition is satisfied and the proposed structural model is overidentified.

The structural model can be analyzed to determine the extent to which these prior hypothesized relationships are supported by the sample variance-covariance matrix. The structural model includes two latent exogenous variables and five latent endogenous variables. Therefore, the structural model has five structural equations and five prediction errors or disturbances.

These five structural equations can be illustrated as follows:

Eco = structural coefficient  $\times$  ACA + structural coefficient  $\times$  PBT + prediction error

$$\text{Eco} = \gamma_1 \text{ACA} + \gamma_2 \text{PBT} + \zeta$$

Env = structural coefficient  $\times$  ACA + structural coefficient  $\times$  PBT + prediction error

$$\text{Env} = \gamma_3 \text{ACA} + \gamma_4 \text{PBT} + \zeta$$

Soc = structural coefficient  $\times$  ACA + structural coefficient  $\times$  PBT + prediction error

$$\text{Soc} = \gamma_5 \text{ACA} + \gamma_6 \text{PBT} + \zeta$$

Cul = structural coefficient  $\times$  ACA + structural coefficient  $\times$  PBT + prediction error

$$\text{Cul} = \gamma_7 \text{ACA} + \gamma_8 \text{PBT} + \zeta$$

RSTD = structural coefficient  $\times$  ACA + structural coefficient  $\times$  PBT +  
 structural coefficient  $\times$  Eco + structural coefficient  $\times$  Env +  
 structural coefficient  $\times$  Soc + structural coefficient  $\times$  Cul +  
 prediction error

$$\text{RSTD} = \gamma_9 \text{ACA} + \gamma_{10} \text{PBT} + \beta_1 \text{Eco} + \beta_2 \text{Env} + \beta_3 \text{Soc} + \beta_4 \text{Cul} + \zeta$$

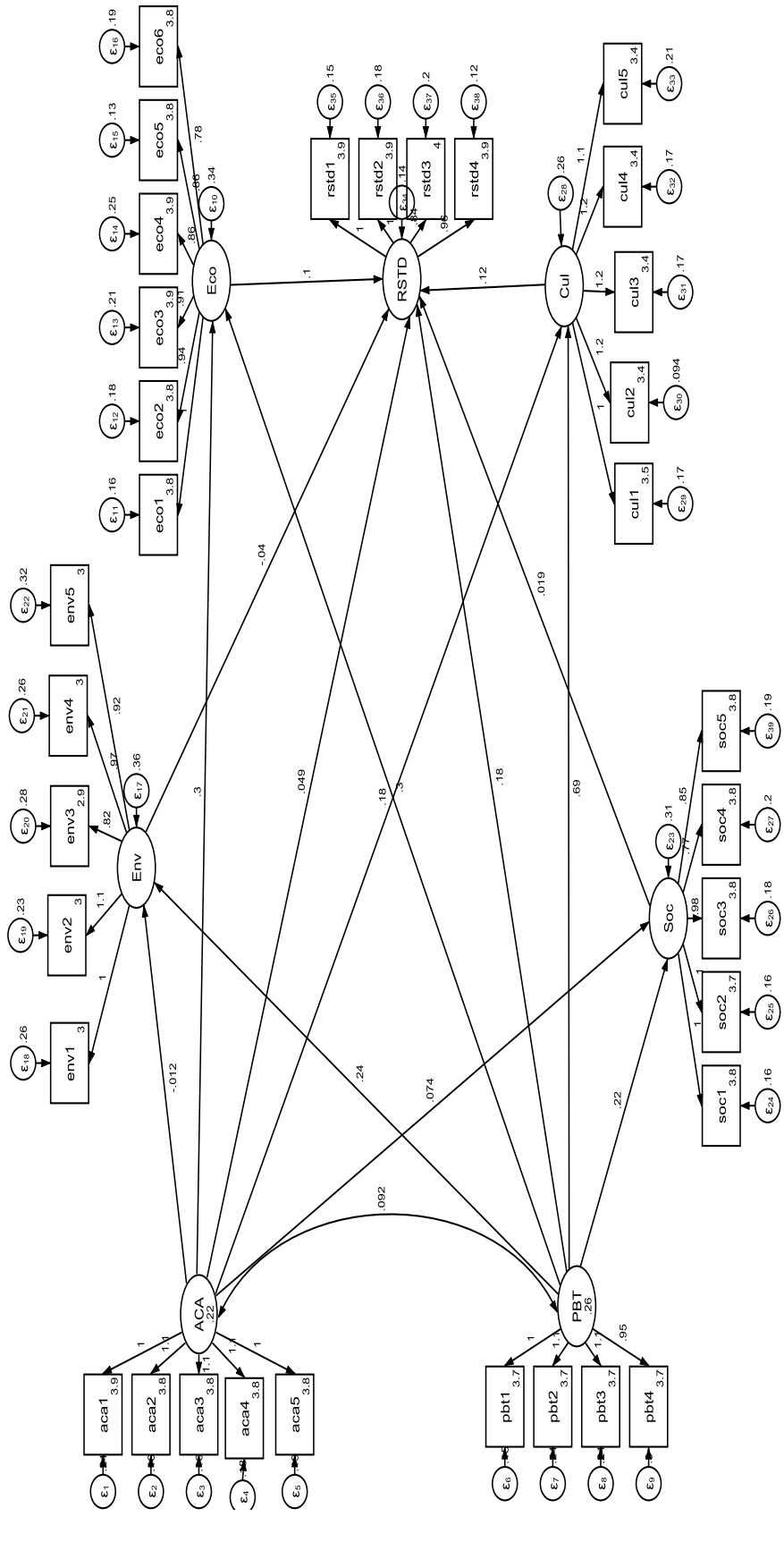
The structural model is performed for residents' support for tourism development in the study. The unstandardized coefficients of the structural model indicate how much the endogenous latent variable varies with an exogenous latent variable, controlling the other exogenous latent variables. Table 5.8 and Figure 5.2 present the unstandardized parameter estimates for the proposed structural model.

**Table (5.8): Parameter Estimates for Structural Model**

Exogenous Variables		Endogenous Variables				
		Eco	Env	Soc	Cul	RSTD
ACA	Estimate	0.300	-0.012	0.074	0.176	0.049
	S.E	0.077	0.078	0.071	0.068	0.054
	Z value	3.9***	-0.15	1.04	2.59**	0.90
PBT	Estimate	0.298	0.242	0.219	0.693	0.176
	S.E	0.072	0.075	0.068	0.072	0.066
	Z value	4.12***	3.23***	3.22***	9.63***	2.67***
Eco	Estimate					0.102
	S.E					0.040
	Z value					2.57**
Env	Estimate					-0.040
	S.E					0.039
	Z value					-1.04
Soc	Estimate					0.019
	S.E					0.041
	Z value					0.47
Cul	Estimate					0.121
	S.E					0.048
	Z value					2.52**

Note: \*\*\*, \*\*, \* represent 1%, 5% and 10% level of significance

Source: Survey Data (2018)



Measured variable  
 Latent variable  
 Prediction error in latent endogenous variable  
 Direct relationship between latent exogenous and endogenous variables  
 Covariance between latent exogenous variables

**Figure (5.2): The Estimated Structural Model**

The unstandardized coefficient of the residents' attitude of community attachment (ACA) is  $\gamma_1 = 0.3$ . This means that 1 point increase in the residents' attitude of community attachment (ACA) predicts 0.3 point increase in the residents' perception of positive economic impacts (Eco), controlling personal benefits from tourism (PBT). The unstandardized coefficient of personal benefits from tourism (PBT) is  $\gamma_2 = 0.298$ . This means that 1 point increase in personal benefits from tourism (PBT) predicts 0.298 point increase in the residents' perception of positive economic impacts (Eco), controlling the residents' attitude of community attachment (ACA). This study shows that the residents' attitude of community attachment and personal benefits from tourism directly and significantly affect residents' perception of positive economic impacts of tourism. It is found that residents will perceive positive economic impacts of tourism development if they receive benefits from tourism and attach their community.

The unstandardized coefficient of the residents' attitude of community attachment (ACA) is  $\gamma_3 = -0.012$ . This means that 1 point increase in the residents' attitude of community attachment (ACA) predicts 0.012 point decrease in residents' perception of negative environmental impacts (Env), controlling personal benefits from tourism (PBT). The unstandardized coefficient of personal benefits from tourism (PBT) is  $\gamma_4 = 0.242$ . This means that 1 point increase in personal benefits from tourism (PBT) predicts 0.242 point increase in the residents' perception of negative environmental impacts (Env), controlling the residents' attitude of community attachment (ACA). This study presents that personal benefits from tourism directly and significantly affect residents' perception of negative environmental impacts of tourism. It is discovered that residents receive benefits from tourism but they will perceive negative environmental impacts of tourism development.

The unstandardized coefficient of the residents' attitude of community attachment (ACA) is  $\gamma_5 = 0.074$ . This means that 1 point increase in the residents' attitude of community attachment (ACA) predicts 0.074 point increase in the residents' perception of positive social impacts (Soc), controlling personal benefits from tourism (PBT). The unstandardized coefficient of personal benefits from tourism (PBT) is  $\gamma_6 = 0.219$ . This means that 1 point increase in personal benefits from

tourism (PBT) predicts 0.219 point increase in the residents' perception of positive social impacts (Soc), controlling residents' attitude of community attachment (ACA). This study shows that personal benefits from tourism directly and significantly affect the residents' perception of positive social impacts of tourism. It is found that residents will perceive positive social impacts of tourism development if they receive benefits from tourism.

The unstandardized coefficient of the residents' attitude of community attachment (ACA) is  $\gamma_7 = 0.176$ . This means that 1 point increase in the residents' attitude of community attachment (ACA) predicts 0.176 point increase in residents' perception of positive cultural impacts (Cul), controlling personal benefits from tourism (PBT). The unstandardized coefficient of personal benefits from tourism (PBT) is  $\gamma_8 = 0.693$ . This means that 1 point increase in personal benefits from tourism (PBT) predicts 0.693 point increase in residents' perception of positive cultural impacts (Cul), controlling the residents' attitude of community attachment (ACA). This study indicates that the residents' attitude of community attachment and personal benefits from tourism directly and significantly affect residents' perception of positive cultural impacts. It is discovered that residents will widely perceive positive cultural impacts of tourism development if they receive benefits from tourism and attach their community.

The unstandardized coefficient of the residents' attitude of community attachment (ACA) is  $\gamma_9 = 0.049$ . This means that 1 point increases on residents' attitude of community attachment (ACA) predicts 0.049 point increase in the residents' support for tourism development (RSTD), controlling other variables. The unstandardized coefficient of personal benefits from tourism (PBT) is  $\gamma_{10} = 0.176$ . This means that 1 point increase in personal benefits from tourism (PBT) predicts 0.176 point increase in the residents' support for tourism development (RSTD), controlling other variables. The unstandardized coefficient for residents' perception of positive economic impacts (Eco) is  $\beta_1 = 0.102$ . This means that 1 point increase in residents' perception of positive economic impacts of tourism (Eco) predicts 0.102 point increase in the residents' support for tourism development (RSTD), controlling other variables. The unstandardized coefficient of residents' perception of negative

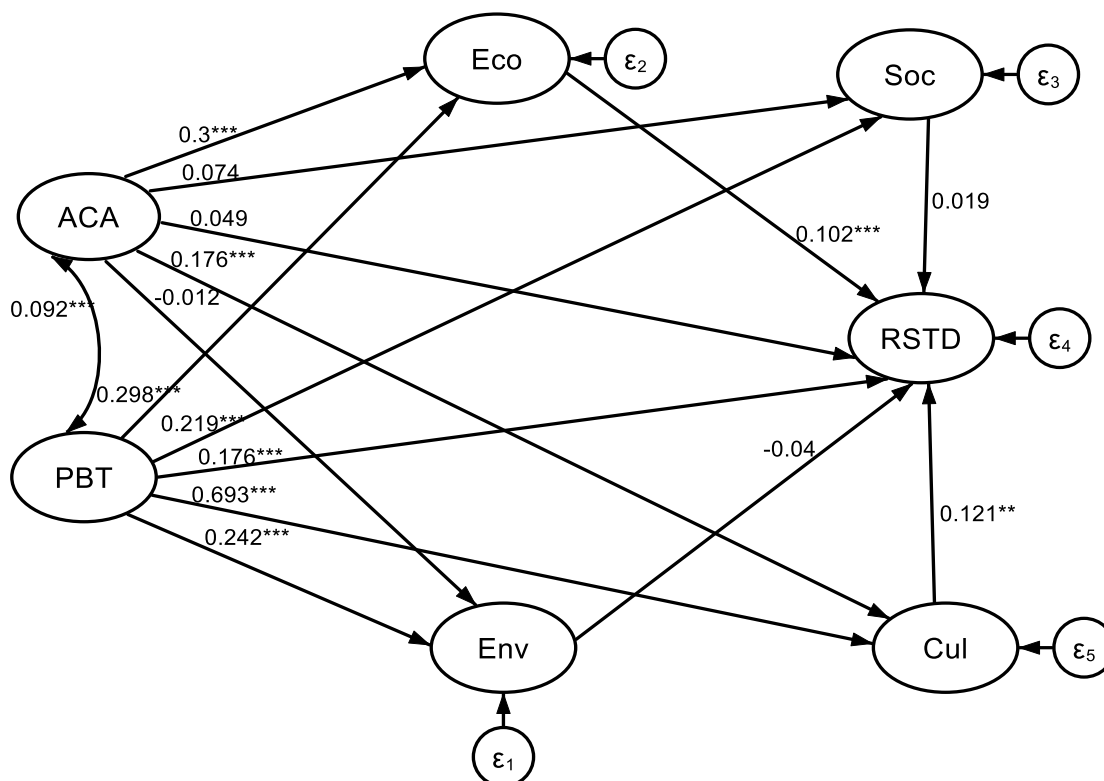


environmental impacts (Env) is  $\beta_2 = -0.04$ . This means that 1 point increases in residents' perception of negative environmental impacts of tourism (Env) predicts 0.04 point decrease in the residents' support for tourism development (RSTD), controlling other variables. The unstandardized coefficient of the perception of positive social impacts (Soc) is  $\beta_3 = 0.019$ . This means that 1 point increase in residents' perception of positive social impacts of tourism (Soc) predicts 0.019 point increase in the residents' support for tourism development (RSTD), controlling other variables. The unstandardized coefficient of residents' perception of cultural impacts (Cul) is  $\beta_4 = 0.121$ . This means that 1 point increase in residents' perception of positive cultural impacts of tourism (Cul) predicts 0.121 point increase in the residents' support for tourism development (RSTD), controlling other variables. It is found that personal benefits from tourism and residents' perception of positive tourism impacts (economic and cultural) directly and significantly affect residents' support for tourism development. It is discovered that residents will actively support for future tourism development if they widely perceive positive economic and cultural impacts of tourism development as well as they receive benefits from tourism.

The structural model shows that the Chi-square value  $\chi^2$  is 833.99 with 512 degree of freedom (p-value=0.000 < 0.01) (see Appendix Table A-9). However, it should be noted that Chi-square statistics is very sensitive because sample size (generally above 200) and the number of measured variables become large. Therefore, normed  $\chi^2 (\chi^2 / df)$  is better goodness-of-fit than  $\chi^2$ . Normed  $\chi^2$  is 1.63, which is less than cutting value of 2, indicating the structural model is an adequate fit. Furthermore, other fit indices are TLI =0.957, CFI=0.961, RMSEA =0.038 and SRMR=0.064 (see Appendix Table A-9). The coefficient of determination is 0.98. The results of goodness-of-fit statistics indicate that the theoretical model is supported by the sample data. Therefore, the proposed structural model fits the data.

### 5.6.3 Analysis of Direct, Indirect and Total Effects

The results of the structural model are analyzed to examine the relationships among the latent variables based on Z-values associated with path coefficients. In this study, a total of fourteen paths and the results of each path are presented in Figure 5.3 and Table 5.9.



ACA= Residents' attitude of community attachment

PBT= Personal benefits from tourism

Eco=Residents' perception of economic impacts of tourism

Env= Residents' perception of environmental impacts of tourism

Soc= Residents' perception of social impacts of tourism

Cul= Residents' perception of cultural impacts of tourism

RSTD=Residents' support for tourism development

Note: \*\*\*, \*\*, \* represent 1%, 5% and 10% level of significance

**Figure 5.3: The Estimated Structural Model for Latent Variables**

**Table (5.9) Results of Direct, Indirect and Total Effects**

Path	Direct effects		Indirect effects		Total effects	
	Coefficient	Z	Coefficient	Z	Coefficient	Z
ACA→ Eco	0.300***	3.90	-		0.300***	3.90
ACA→ Env	-0.012	-0.15	-		-0.012	-0.15
ACA→ Soc	0.074	1.04	-		0.074	1.04
ACA→ Cul	0.176**	2.59	-		0.176**	2.59
ACA→ RSTD	0.049	0.90	0.054***	2.89	0.103*	1.89
PBT→ Eco	0.298***	4.12	-		0.298***	4.12
PBT → Env	0.242***	3.23	-		0.242***	3.23
PBT → Soc	0.219***	3.22	-		0.219***	3.22
PBT → Cul	0.693***	9.63	-		0.693***	9.63
PBT → RSTD	0.176***	2.67	0.108***	2.92	0.284***	5.27
Eco → RSTD	0.102**	2.57	-		0.102**	2.57
Env → RSTD	-0.040	-1.04	-		-0.040	-1.04
Soc → RSTD	0.019	0.47	-		0.019	0.47
Cul→ RSTD	0.121**	2.52	-		0.121**	2.52

Note: \*\*\*, \*\*, \* represent 1%, 5% and 10% level of significance

Source: Survey Data (2018)

The result of SEM indicates that relationship between the residents' attitude of community attachment (ACA) and perception of economic impacts of tourism (Eco) is significant. Its relationship has the direct positive effect ( $Z=3.9$ ,  $p\text{-value}=0.000 < 0.01$ ) (see Appendix Table A-10). The relationship between the residents' attitude of community attachment (ACA) and perception of cultural impacts of tourism (Cul) is significant. Its relationship has the direct positive effect ( $Z=2.59$ ,  $p\text{-value}=0.01 < 0.05$ ) (see Appendix Table A-10). The result shows that the indirect relationship between the residents' attitude of community attachment (ACA) and residents' support for tourism development (RSTD) is significant ( $Z=2.89$ ,  $p\text{-value}=0.004 < 0.01$ ) (see Appendix Table A-11). The residents' attitude of community attachment indirectly influences on the residents' support for tourism development through economic and

cultural impacts of tourism as mediator variables. Therefore, the economic and cultural impacts of tourism fully mediate the relationship between the attitude of community attachment and residents' support for tourism development. This study is found that residents will actively support for future tourism development if they widely perceive positive economic and cultural impacts of tourism development as well as they attach their community.

The result indicates that the relationship between personal benefits from tourism (PBT) and the residents' perception of economic impacts of tourism (Eco) is significant and direct positive effect ( $Z=4.12$ ,  $p\text{-value}=0.000<0.01$ ) (see Appendix Table A-10). The relationship between personal benefits from tourism and residents' perception of environmental impacts of tourism is significant and direct positive effect ( $Z=3.23$ ,  $p\text{-value}=0.001<0.01$ ) (see Appendix Table A-10). The relationship between personal benefits from tourism (PBT) and residents' perception of social impacts of tourism (Soc) is significant and direct positive effect ( $Z=3.22$ ,  $p\text{-value}=0.001<0.01$ ) (see Appendix Table A-10). The relationship between personal benefits from tourism (PBT) and residents' perception of cultural impacts of tourism (Cul) is significant and direct positive effect ( $Z=9.63$ ,  $p\text{-value}=0.000<0.01$ ) (see Appendix Table A-10). These results investigated that personal benefits from tourism (PBT) directly and significantly influence on the residents' support for tourism development (RSTD) ( $Z=2.67$ ,  $p\text{-value}=0.008<0.01$ ) (see Appendix Table A-10). In addition, personal benefits from tourism (PBT) indirectly and significantly influence on residents' support for tourism development (RSTD) ( $Z=2.92$ ,  $p\text{-value}=0.004<0.01$ ) (see Appendix Table A-11). Thus, personal benefits from tourism not only directly but also indirectly influence on the residents' support for tourism development through economic and cultural impacts of tourism as mediator variables. Therefore, the economic and cultural impacts of tourism partially mediate relationship between personal benefits from tourism and the residents' support for tourism development. This study is discovered that residents will actively support for future tourism development if they widely perceive positive economic and cultural impacts of tourism development as well as they receive benefits from tourism.

The result indicates that the residents' perception of the economic impacts of tourism (Eco) positively and directly affects the residents' support for tourism development (RSTD) ( $Z=2.57$ ,  $p\text{-value}=0.01<0.05$ ) (see Appendix Table A-10). Therefore, residents will actively support for future tourism development in the area if they perceive widely positive economic impacts of tourism. The result indicates that the residents' perception of the cultural impacts of tourism (Cul) positively and directly affects the residents' support for tourism development (RSTD) ( $Z=2.52$ ,  $p\text{-value}=0.012 < 0.05$ ) (see Appendix Table A-10). It is discovered that residents will actively support for future tourism development in the area if they perceive widely the positive cultural impacts of tourism.

### **5.7 Analysis of Moderation Effects (Interaction Effects)**

Moderation refers to a change in the relationship between an exogenous variable and an endogenous variable, depending on the level of a third variable, termed the moderator variable. This data analysis deals with the interaction effects of occupation types on the relationship between the residents' perception of tourism impacts and residents' support for tourism development. The basic premise of these interaction effects is that responses to variation in residents' support for tourism development depend on the types of occupation. This study was used hierarchical multiple regression (HMR) to examine these interacting (moderating) effects.

The endogenous variable (residents' support for tourism development) is regressed on exogenous variables (residents' perception of economic, environmental, social and cultural impacts of tourism) and a moderator with the types of occupation designated as a dummy variable. The qualitative variables indicate the presence or absence of an attribute. A variable take on values of 0 and 1, 0 indicating the absence of an attribute and 1 indicating the presence of that attribute. Hence, "1" may indicate residents work in the tourism industry and "0" may designate residents do not work in the tourism industry in the model. To analyze the moderation effects of occupation types on the relationship between the residents' perception of tourism impacts and support for tourism development, the following procedures were employed.

- (i) Centre the continuous variables (the residents' perception of economic, environmental, social and cultural impacts of tourism) expected to interact with a categorical variable by creating a new variable.
- (ii) Multiply the centred continuous variables by the dummy variable (types of occupation) to create cross-product terms.
- (iii) Regress the endogenous variable (residents' support for tourism development) on the exogenous variables of interest using simultaneous equation.
- (iv) Add the interaction term. Check the statistical significance of the  $\Delta R^2$  to determine whether the interaction is statistically significant.
- (v) The moderating effect is verified by observing the statistical significance of  $\Delta R^2$ .  
 $\Delta R^2 = R_2^2 - R_1^2$ , which indicates the proportion of variance in  $Y$  explained by the interaction effect above and beyond the variance explained by the first-order effects of  $X$  and  $Z$ . If  $\Delta R^2$  is significant, conduct separate regression for each level of the categorical variable.

The types of occupation variable are designated as a dummy variable. The two groups are explained below.

Group 1: Residents do not work in tourism industry (n=133).

Group 2: Residents work in tourism industry (n=300).

Now consider the following models:

$$\text{Model 1: } RSTD = \alpha_1 + \alpha_2 D_i + \beta_1 Eco + \beta_2 Env + \beta_3 Soc + \beta_4 Cul + u$$

$$\begin{aligned} \text{Model 2: } RSTD = & \alpha_1 + \alpha_2 D_i + \beta_1 Eco + \beta_2 Env + \beta_3 Soc + \beta_4 Cul + \beta_5 (EcoD_i) \\ & + \beta_6 (EnvD_i) + \beta_7 (SocD_i) + \beta_8 (CulD_i) + u \end{aligned}$$

where RSTD= Residents' support for tourism development

Eco = Residents' perception of economic impacts of tourism

Env = Residents' perception of environmental impacts of tourism

Soc = Residents' perception of social impacts of tourism

Cul = Residents' perception of cultural impacts of tourism

$D_i = 1$  if residents work in tourism industry, and 0 if residents do not work in tourism industry.

The multiple regression models of residents' support for tourism development are obtained the following results.

**Table (5.10) Results of Hierarchical Multiple Regression Analysis**

Variables	Model 1			Model 2		
	Coefficients	t	P value	Coefficients	t	P value
Constant	3.500***	102.368	0.000	3.569***	92.389	0.000
D <sub>i</sub>	0.582***	13.518	0.000	0.516***	11.693	0.000
Eco	0.073**	2.338	0.020	0.112***	2.565	0.009
Env	-0.003	-0.117	0.907	-0.059	-1.086	0.298
Soc	0.059	1.093	0.206	0.054	0.964	0.125
Cul	0.086***	3.308	0.001	0.282***	6.052	0.000
Eco D <sub>i</sub>				0.084**	2.625	0.013
Env D <sub>i</sub>				0.057	0.935	0.351
Soc D <sub>i</sub>				0.071	1.062	0.289
Cul D <sub>i</sub>				0.284***	5.108	0.000
F	57.278***			39.578***		
R	0.634			0.705		
R <sup>2</sup>	0.401			0.497		
Adjusted R <sup>2</sup>	0.394			0.488		
$\Delta R^2$				0.096***		0.000

Note: \*\*\*, \*\*, \* represent 1%, 5% and 10% level of significance

Source: Survey Data (2018)

Regarding Model (1), the regression equations of residents' support for tourism development on residents' perception of tourism impacts (economic, environmental, social and cultural) for both residents do not work in tourism industry (group 1) and work in tourism industry (group 2) are as follows:

$$\text{Group 1: } RSTD = 3.5 + 0.073 Eco - 0.003 Env + 0.059 Soc + 0.086 Cul$$

$$\text{Group 2: } RSTD = 4.082 + 0.073 Eco - 0.003 Env + 0.059 Soc + 0.086 Cul$$

Regarding Model (2), the regression equations of residents' support for tourism development on residents' perception of tourism impacts (economic, environmental, social and cultural) for both residents do not work in tourism industry (group 1) and work in tourism industry (group 2) are as follows:

$$\text{Group 1: } RSTD = 3.569 + 0.112 Eco - 0.059 Env + 0.054 Soc + 0.282 Cul$$

$$\text{Group 2: } RSTD = 4.085 + 0.196 Eco - 0.002 Env + 0.125 Soc + 0.566 Cul$$

R square change ( $\Delta R^2$ ) shows the increase in variation explained by the addition of the interaction term. In Model 1,  $R^2=0.401$  means that Eco, Env, Soc, Cul and  $D_i$  explain about 40.1% of the variation in the residents' support for tourism development. In Model 2,  $R^2=0.497$  means that Eco, Env, Soc, Cul,  $D_i$ ,  $EcoD_i$ ,  $EnvD_i$ ,  $SocD_i$  and  $CulD_i$  explain about 49.7% of the variation in the residents' support for tourism development. R square change ( $\Delta R^2=9.6\%$ ) which is the percentage increase in the variation explained by the addition of the interaction term ( $EcoD_i$ ,  $EnvD_i$ ,  $SocD_i$  and  $CulD_i$ ). This increase is statistically significant at 1% level (p-value=0.000<0.01). It is found that the relationship between residents' perception of tourism impacts (economic and cultural) and support for tourism development is moderated by types of occupation.

Regarding Model 1, the intercepts of residents' support for tourism development are 3.5 for residents do not work in tourism industry and (3.5+0.582=4.082) for residents work in tourism industry, respectively. The coefficient of dummy variable (types of occupation) ( $\alpha_2=0.582$ ) is statistically significant at 1% level. This means that residents' support for tourism development is expected to be higher by about 0.582 point for residents work in tourism industry than



for residents do not work in tourism industry, controlling the residents' perception of tourism impacts (economic, environmental, social and cultural).

Concerning Model 2, the interaction effects of  $EcoD_i$  and  $CulD_i$  are statistically significant at 5% and 1% level, respectively. A regression equation shows that the intercepts of the residents' support for tourism development are about 3.569 for residents do not work in tourism industry (group 1) and about 4.085 for residents work in tourism industry (group 2). The residents' perception of tourism impacts (economic and cultural) positively relates the residents' support for tourism development for both residents do not work in tourism industry and work in tourism industry. The study is discovered that the relationship between the residents' perception of tourism impacts (economic and cultural) and support for tourism development is stronger for residents work in tourism industry than residents do not work in tourism industry.

## CHAPTER VI

### CONCLUSION

This chapter presents findings and suggestions of the study. The needs for further research are discussed in this study.

#### 6.1 Findings

Tourism has sustainably developed in Myanmar. Bagan-Nyaung Oo Area is one of the most attractive tourist destinations in Myanmar. Bagan, a rich cultural heritage of Myanmar, is one of the UNESCO World Heritage Sites. The study explores the influencing factors of residents' support for tourism development in Bagan-Nyaung Oo Area.

In relation to the economy of Bagan-Nyaung Oo Area, agricultural sector and tourism industry are mainly developed. Regarding tourism industry, there are 85 accommodations, 7 tour companies and 576 tour guides. Most of the people work in tourism industry and tourism-related businesses. It has been found that the economy of Bagan-Nyaung Oo Area has more increasingly developed than other tourist destinations in Myanmar.

The study examines the support of residents for tourism development with an emphasis on the impacts of tourism development. Residents are asked to complete a survey questionnaire based on their perceptions of tourism impacts and support for tourism development. A sample of 433 residents is used in the data analysis. Sixty per cent of the residents are male. Fifty-five point two per cent of the residents are born in the community and 69.1% of the residents work in the tourism industry. Thirty-three point three per cent of the residents achieve Bachelor's degree and 25.8% of the residents have tourism-related income above five lakh kyats per month. These results imply that males working in tourism industry have median income 3 lakh kyats per month. Moreover, most of the residents work in tourism industry, and are born in this area.

Concerning the residents' opinion on tourism development level of Bagan-Nyaung Oo Area, tourism development is in growth stage. Regarding the residents' opinion on the growth of Bagan-Nyaung Oo Area, this area is in rapid growth. According to the residents' opinion on tourist arrivals, the number of tourist arrivals is moderate. It is found that the development of Bagan-Nyaung Oo Area is rapid

because tourism development of this area is in growth stage and tourist arrivals are moderate.

The proposed measurement model is examined to observe whether the theoretical measurement model fits the data well. A measurement model for the seven latent variables (ACA, PBT, Eco, Env, Soc, Cul and RSTD) is developed and analyzed. Each latent variable is measured by several observed variables. The unstandardized parameter estimation of the measurement model is statistically significant, and model fit indices are acceptable. Therefore, the proposed measurement model fits the data.

The proposed structural model is examined to observe whether the theoretical structural model fits the data well. A structural model for the seven latent variables is developed and analyzed. The structural relationships among latent variables are analyzed in the study. An analysis of the estimated path coefficients in the proposed structural model reveals the significance and direction of each proposed path. Ten of the fourteen proposed paths in the structural model are statistically significant while four paths are not significant. The fit indices of the structural model are acceptable. Therefore, the proposed structural model fits the data.

Concerning the study, the residents' attitude of community attachment directly and significantly affects the residents' perception of tourism impacts (economic and cultural). In addition, residents' attitude of community attachment indirectly and significantly affects the residents' support for tourism development through economic and cultural impacts of tourism as mediator variables. Therefore, the residents' perception of economic and cultural impacts of tourism fully mediates the relationship between the residents' attitude of community attachment and support for tourism development. These findings of the study are in line with previous researches such as Lee (2013), Li and Wan (2013) and Win Min Thant (2017). It is found local residents who lived in Bagan-Nyaung Oo Area very attached to their region and they don't move to other regions. It is exposed that residents perceive more economic and cultural impacts of tourism as well as they attach their community and they would like to support future tourism development.

Personal benefits from tourism directly and significantly affect the residents' perception of tourism impacts (economic, environmental, social and cultural) and residents' support for tourism development. Then, Personal benefits from tourism indirectly and significantly affect residents' support for tourism development through

economic and cultural impacts of tourism as mediator variables. Therefore, the residents' perception of economic and cultural impacts of tourism partially mediates the relationship between the residents' attitude of community attachment and support for tourism development. These findings of the study agree with previous researches by Perdue et al. (1990) and Ko and Stewart (2002). It is found that residents perceive a wide range of positive economic and cultural impacts of tourism as well as they receive benefits from tourism, and they are likely to support future tourism development.

In addition, the residents' perception of tourism impacts (economic and cultural) directly and significantly affects residents' support for tourism development. These findings of the study agree with previous researches by Lee (2013), Lin and Wan (2013), Styliadis et al. (2014) and Canalejo and Maria (2016). It is discovered that residents perceive positively economic and cultural impacts of tourism and they are likely to support future tourism development.

This study finds that personal benefits from tourism, the residents' perception of economic and cultural impacts of tourism are the influencing factors of residents' support for tourism development. The significant factors in personal benefits from tourism are (i) personal income is related to tourism, (ii) personal job is related to tourism, (iii) family member's job is related to tourism, and (iv) the individual conservation of local culture is related to tourism. These factors are the essential factors for residents' support for tourism development in Bagan-Nyaung Oo Area and other tourist attractions.

The important factors in the residents' perception of economic impacts of tourism are (i) tourism development has incredibly increased income and employment opportunities of residents, (ii) hotels, guest houses, restaurants, lacquerware firms and cane firms have got more income from tourists because of tourism development, (iii) the local economy depends on tourism, (iv) tourism is important because of getting foreign income, (v) tourism development has raised living standard of local residents than before, and (vi) local residents can get higher education and improved health care facilities from tourism development. These economic impacts are the principal factors of residents' support for tourism development in Bagan-Nyaung Oo Area and other tourist attractions.

The major factors in the residents' perception of cultural impacts of tourism are (i) tourism development has increased residents' pride in the local culture, (ii) tourism development encourages the conservation of cultural activities for local residents, (iii) tourism development maintains the ethnic of the historical areas and pagodas in the community, (iv) the cultural exchange between tourists and residents is valuable for local residents, and (v) tourists can appreciate and study Myanmar traditional cultures because of tourism development. These cultural impacts are the main factors for residents' support for tourism development in Bagan-Nyaung Oo Area and other tourist sites.

This study also analyzes the moderation effect of occupation types on relationship between the residents' perception of tourism impacts and support for tourism development. It is discovered that the relationship between the residents' perception of tourism impacts (economic and cultural) and support for tourism development is stronger for residents who work in tourism industry than residents who do not work in tourism industry. So, the residents who work in the tourism industry would actively support to tourism development. Hence, the residents' support in tourism industry is essential to develop sustainable tourism in Bagan-Nyaung Oo Area and other tourist destinations.

## **6.2 Suggestions**

Tourism industry of Myanmar is rapidly increasing. Emerging the tourism development in Bagan-Nyaung Oo Area and other tourist attractions, the major findings of the study have the following suggestions for government, local authorities, tourism planners and academic scholars.

For the first suggestion of the study, the model provides a theoretical basis of residents' support for tourism development. The proposed tourism model contributes a theoretical foundation for the relationship among the residents' attitude of community attachment, personal benefits from tourism, residents' perception of economic, environmental, social and cultural impacts of tourism development and residents' support for tourism development. The theoretical model may help in determining future researches.

For the second suggestion of the study, the residents' attitude of community attachment is the important factor to support for tourism development. Therefore, government and tourism planners should carry out to create the community as a beautiful place, a good place for job opportunity, a safe place to live and more enjoyable place.

The third suggestion of the study is that personal benefits from tourism are the main factors of residents' support for tourism development. Therefore, government and tourism planners should implement receiving benefits from tourism in Bagan-Nyaung Oo Area and other tourist sites.

The fourth suggestion of the study is that residents' perception of economic impacts of tourism is the key factor of residents' support for tourism development. Therefore, government and tourism planners should implement getting income and job opportunities, receiving foreign earnings, raising standard of living and developing education and health care facilities in Bagan-Nyaung Oo Area and other tourist sites. In line with these economic impacts of tourism are implemented to increase tourist arrivals and tourism receipts.

The fifth suggestion of the study is that residents' perception of cultural impacts of tourism is the crucial factor of residents' support for tourism development. Therefore, government and tourism planners should carry out preservation of local culture, conservation of heritage monuments and acculturation in Bagan-Nyaung Oo Area and other tourist sites. In line with these cultural impacts of tourism are implemented to increase tourist arrivals and tourism receipts.

The final suggestion of the study is sustainable tourism. Therefore, government and tourism planners should implement to increase the positive impacts of tourism, whereas negative impacts of tourism are mitigated by acting sustainable tourism. The government should implement sustainable tourism in Bagan-Nyaung Oo Area and other tourist sites. The residents should obediently act in line with Tourism Master Plan (2013-2020) and Myanmar Responsible Tourism Policy to support sustainable tourism development. Tourism industry should emphasize responsible tourism acting on cultural responsibility, social justice, environmental sustainability and economic viability. Moreover, the cultural heritage monuments in Bagan should be maintained by acting sustainable and responsible tourism as it is one of UNESCO's World Heritage Sites.

As Bagan has been inscribed on UNESCO's World Heritage List, there may be positive economic and cultural impacts of tourism on the one hand, but on the other hand, negative environmental impacts may be found. Therefore, government and policy makers should manage fee of entering for tourists not only into the region but also into the heritage monuments as other ASEAN countries. Then, the tasks of showing cultural traditions should be carried out. In addition, environmental pollution, defects of hotel zone, the loss of agricultural and scenic areas should be reduced to the least by making policy.

### **6.3 Further Research**

This study makes some essential contributions to further research. First, the proposed model is examined only in relation to a developed tourist destination and thus the generalizability of the findings may be restricted. Hence, further researches should consider other tourist destinations in Myanmar such as Yangon, Mandalay, Sagaing, Inle and Pindaya, Mrauk Oo and so on. Moreover, the development of tourism industry can be analyzed making a comparison between Bagan and other tourist destinations. Second, the study is conducted during a specific time (cross-sectional design). Residents' perception of tourism impacts may change into different stages of the lifecycle of a destination. Therefore, further research should analyze the proposed model at different points (longitudinal design). Finally, the study focuses only on local residents and the local community. Information on tourists' satisfaction and appreciations are not collected. Therefore, it is suggested that tourist facilities should be considered in the further researches.

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## **APPENDICES**

## Appendix A: Appendix Tables for Analysis of Bagan-Nyaung Oo Survey Data

**Appendix Table (A-1): Results of CFA for Residents' Attitude of Community Attachment**

Fit Statistic	Value
Chi-square	
Value	1.47
Degree of freedom ( <i>df</i> )	5
P-value	0.916
Normed chi-square	0.294
Root mean square error of approximation (RMSEA)	0.001
Comparative fit index (CFI)	1
Tucker-Lewis index (TLI)	1
Standardized root mean squared residual (SRMR)	0.007
Coefficient of determination	0.879

**Appendix Table (A-2): Results of CFA for Personal Benefits from Tourism**

Fit Statistic	Value
Chi-square	
Value	5.42
Degree of freedom ( <i>df</i> )	2
P-value	0.066
Normed chi-square	2.71
Root mean square error of approximation (RMSEA)	0.063
Comparative fit index (CFI)	0.995
Tucker-Lewis index (TLI)	0.984
Standardized root mean squared residual (SRMR)	0.016
Coefficient of determination	0.84



**Appendix Table (A-3): Results of CFA for Residents' Perception of Economic Impacts of Tourism**

Fit Statistic	Value
Chi-square	
Value	13.08
Degree of freedom ( <i>df</i> )	9
P-value	0.159
Normed chi-square	1.45
Root mean square error of approximation (RMSEA)	0.032
Comparative fit index (CFI)	0.997
Tucker-Lewis index (TLI)	0.996
Standardized root mean squared residual (SRMR)	0.014
Coefficient of determination	0.915

**Appendix Table (A-4): Results of CFA for Residents' Perception of Environmental Impacts of Tourism**

Fit Statistic	Value
Chi-square	
Value	10.57
Degree of freedom ( <i>df</i> )	5
P-value	0.061
Normed chi-square	2.11
Root mean square error of approximation (RMSEA)	0.052
Comparative fit index (CFI)	0.988
Tucker-Lewis index (TLI)	0.977
Standardized root mean squared residual (SRMR)	0.022
Coefficient of determination	0.866

**Appendix Table (A-5): Results of CFA for Residents' Perception of Social Impacts of Tourism**

Fit Statistic	Value
Chi-square	
Value	10.69
Degree of freedom ( <i>df</i> )	5
P-value	0.058
Normed chi-square	2.14
Root mean square error of approximation (RMSEA)	0.051
Comparative fit index (CFI)	0.995
Tucker-Lewis index (TLI)	0.99
Standardized root mean squared residual (SRMR)	0.016
Coefficient of determination	0.89

**Appendix Table (A-6): Results of CFA for Residents' Perception of Cultural Impacts of Tourism**

Fit Statistic	Value
Chi-square	
Value	13.14
Degree of freedom ( <i>df</i> )	5
P-value	0.056
Normed chi-square	2.63
Root mean square error of approximation (RMSEA)	0.06
Comparative fit index (CFI)	0.986
Tucker-Lewis index (TLI)	0.971
Standardized root mean squared residual (SRMR)	0.016
Coefficient of determination	0.948

**Appendix Table (A-7): Results of CFA for Residents' Support for Tourism Development**

Fit Statistic	Value
Chi-square	
Value	2.15
Degree of freedom ( <i>df</i> )	2
P-value	0.341
Normed chi-square	1.08
Root mean square error of approximation (RMSEA)	0.013
Comparative fit index (CFI)	1
Tucker-Lewis index (TLI)	0.999
Standardized root mean squared residual (SRMR)	0.012
Coefficient of determination	0.806

**Appendix Table (A-8): Results of Fit Statistic of Measurement Model**

Fit Statistic	Value
Chi-square ( $\chi^2$ )	
Value	757.95
Degree of freedom ( <i>df</i> )	506
P-value	0.000
Normed chi-square	1.5
Root mean square error of approximation (RMSEA)	0.034
Comparative fit index (CFI)	0.969
Tucker-Lewis index (TLI)	0.966
Standardized root mean squared residual (SRMR)	0.038
Coefficient of determination	0.993

**Appendix Table (A-9): Results of Fit Statistic of Structural Model**

Fit Statistic	Value
Chi-square	
Value	833.99
Degree of freedom ( <i>df</i> )	512
P-value	0.000
Normed chi-square	1.63
Root mean square error of approximation (RMSEA)	0.038
Comparative fit index (CFI)	0.961
Tucker-Lewis index (TLI)	0.957
Standardized root mean squared residual (SRMR)	0.064
Coefficient of determination	0.98

**Appendix Table (A-10): Results of Direct Effects for Structural Model**

Latent Variables		Coefficient	Standard Error	Z	P-value	95% Confidence Interval	
Eco	ACA	0.300	0.077	3.900	0.000	0.149	0.451
	PBT	0.298	0.072	4.120	0.000	0.156	0.440
Env	ACA	-0.012	0.078	-0.150	0.881	-0.165	0.142
	PBT	0.242	0.075	3.230	0.001	0.095	0.389
Soc	ACA	0.074	0.071	1.040	0.298	-0.066	0.214
	PBT	0.219	0.068	3.220	0.001	0.086	0.352
Cul	ACA	0.176	0.068	2.590	0.010	0.043	0.308
	PBT	0.693	0.072	9.630	0.000	0.552	0.834
RSTD	Eco	0.102	0.040	2.570	0.010	0.024	0.179
	Env	-0.040	0.039	-1.040	0.300	-0.117	0.036
	Soc	0.019	0.041	0.470	0.640	-0.062	0.100
	Cul	0.121	0.048	2.520	0.012	0.027	0.215
	ACA	0.049	0.054	0.900	0.367	-0.057	0.154
	PBT	0.176	0.066	2.670	0.008	0.047	0.305

**Appendix Table (A-11): Results of Indirect Effects for Structural Model**

Latent Variables	Coefficient	Standard Error	Z	P-value	95% Confidence Interval		
Eco	ACA	0	(no path)				
	PBT	0	(no path)				
Env	ACA	0	(no path)				
	PBT	0	(no path)				
Soc	ACA	0	(no path)				
	PBT	0	(no path)				
Cul	ACA	0	(no path)				
	PBT	0	(no path)				
RSTD	Eco	0	(no path)				
	Env	0	(no path)				
	Soc	0	(no path)				
	Cul	0	(no path)				
	ACA	0.054	0.019	2.890	0.004	0.017	0.090
	PBT	0.108	0.037	2.920	0.004	0.036	0.181

**Appendix Table (A-12): Results of Total Effects in Structural Model**

Total Effects		Coefficient	Standard Error	Z	P-value	95% Confidence Interval	
Eco	ACA	0.300	0.077	3.900	0.000	0.149	0.451
	PBT	0.298	0.072	4.120	0.000	0.156	0.440
Env	ACA	-0.012	0.078	-0.150	0.881	-0.165	0.142
	PBT	0.242	0.075	3.230	0.001	0.095	0.389
Soc	ACA	0.074	0.071	1.040	0.298	-0.066	0.214
	PBT	0.219	0.068	3.220	0.001	0.086	0.352
Cul	ACA	0.176	0.068	2.590	0.010	0.043	0.308
	PBT	0.693	0.072	9.630	0.000	0.552	0.834
RSTD	Eco	0.102	0.040	2.570	0.010	0.024	0.179
	Env	-0.040	0.039	-1.040	0.300	-0.117	0.036
	Soc	0.019	0.041	0.470	0.640	-0.062	0.100
	Cul	0.121	0.048	2.520	0.012	0.027	0.215
	ACA	0.103	0.054	1.890	0.058	-0.004	0.208
	PBT	0.284	0.054	5.270	0.000	0.179	0.390

**APPENDIX B: Questionnaire for Residents' Perception of Tourism Impacts and Support for Tourism Development in Bagan-Nyaung Oo Area**

**Questionnaire for Residents' Perception of Tourism Impacts and Support for Tourism Development in Bagan-Nyaung Oo Area**

Cluster Number -----

Name of Ward -----

Household Sample Number -----

Name of Household Head -----

Name of Street -----

Interviewer Name -----

Date of Interview -----

(Respondent: Head of the household or any other competent adult at home at the time of the visit)

**Section (A)**

1. Respondent's Name:-----

2. Respondent's HH Member ID Code:-----

3. Total Household Member (Including household member away from home)-----

**4. Basic Characteristics of Household Members**

HH member ID code	Name	Sex 1.Male 2.Female	The relationship of household head	Age (years)	Ethnicity	Religion 1.Buddhist 2.Christian 3.Muslim 4.Hindu 5.Others (Specify)	Remarks
01							
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							



#### 4. Basic Characteristics of Household Members (Contd.)

HH member ID code	Marital Status 1.Single 2.Married 3.Windowed 4.Divorced 5.Separated 6.Others (Specify)	Educational Status 1.Illiterate 2.Below Primary Level 3.Primary Level 4.Middle Level 5.Tertiary 6.Any Diploma 7.Bachelor Degree 8.Post-Graduate Degree 9.Others (Specify)	Occupation	Monthly Income	Monthly Expenditure	Remarks
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						

#### 4. Basic Characteristics of Household Members (Continued)

HH member ID code	Is this place your birthplace? 1.Yes 2.No	How long have you been living in this house? (Year)	Before moving here, how long did you live in the last area?	What was the main reason you moved here? 1.Looking for a job 2.For education 3.Marriage 4.For family 5.Job transfer 6.Improved living standard 7. Others (Specify)	Remarks
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					

5. Number of family members work in tourism industry-----

6. Monthly tourism-related income of a household-----

7. How do you rate the development level of tourism in your community?

Beginning stage  Growth stage  Maturity stage  Decline stage

8. Do you agree that the benefits from tourism outweigh its problems in Bagan-Nyaung Oo Area?

Strongly disagree  Disagree  Neutral  Agree  Strongly agree

9. How do you think about the condition of tourist arrivals in Bagan-Nyaung Oo Area?

Very few  Few  Moderate  Crowded  Very crowded

10. Have you involved in making any tourism-related policy for your community?

Yes  No

11. How do you rate the growth of Bagan-Nyaung Oo Area?

Slow  Moderate  Rapid  Very rapid

12. The following statements are about the residents' attitude of community attachment in your community. Please indicate to which level you agree or disagree with the statements by circling the appropriate number. [1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

1. The community is a beautiful place.	1	2	3	4	5
2. The community is a good place for job opportunity.	1	2	3	4	5
3. The community has increased residents' standard of living.	1	2	3	4	5
4. The community is a safe place to live.	1	2	3	4	5
5. This community is more enjoyable than other communities.	1	2	3	4	5

13. The following statements are about the personal benefits from tourism in your community. Please indicate to which level you agree or disagree with the statements by circling the appropriate number. [1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

1. Personal income is related to tourism.	1	2	3	4	5
2. Personal job is related to tourism.	1	2	3	4	5
3. Family member's job is related to tourism.	1	2	3	4	5
4. The individual conservation of local culture is related to tourism.	1	2	3	4	5
5. The individual preservation of the environment is related to tourism.	1	2	3	4	5

## Section (B)

### Statements on Residents' Perception of Tourism Impacts

#### (i) Economic Impacts of Tourism

The following statements are about the residents' perception of economic impacts of tourism in your community. Please indicate to which level you agree or disagree with the statements by circling the appropriate number. [1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

<b>I. Generation of Employment and Income</b>					
1. Tourism development has incredibly increased income and employment opportunities of residents.	1	2	3	4	5
2. Tourism development has caused more investments in the economy of the community.	1	2	3	4	5
3. Hotels, guest houses, restaurants, lacquerware firms and cane firms have got more income from tourists because of tourism development.	1	2	3	4	5
4. The local economy depends on tourism.					
<b>II. Contribution to Government Revenue</b>					
1. Tourism has generated tax revenues for local government.	1	2	3	4	5
2. Tourism has created to cooperate between local government and foreign countries.	1	2	3	4	5
3. Tourism is important because of getting foreign earnings.	1	2	3	4	5
<b>III. Standard of Living</b>					
1. Tourism development has raised living standard of local residents than before.	1	2	3	4	5
2. Tourism development has caused to get better roads and highways in the community	1	2	3	4	5
3. Local residents can get higher education and improved health care facilities from tourism development.	1	2	3	4	5
<b>IV. Cost of Living</b>					
1. The price of many goods and services in the community has significantly increased because of tourism.	1	2	3	4	5
2. The price of real estate and dwelling houses in the community has risen because of tourism development.	1	2	3	4	5
3. Tourism development has led to more spending in the community.	1	2	3	4	5

## (ii) Environmental Impacts of Tourism

The following statements are about the residents' perception of environmental impacts of tourism in your community. Please indicate to which level you agree or disagree with the statements by circling the appropriate number. [1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

<b>I. Environmental Protection and Improvement</b>					
1. Tourism has contributed to the preservation of the natural environment in the community.	1	2	3	4	5
2. Tourism has provided an incentive for the restoration of historical buildings and the conservation of natural resources.	1	2	3	4	5
3. Tourism is a smokeless industry.	1	2	3	4	5
<b>II. Congestion</b>					
1. Tourists have crowded into cultural heritage monuments because of tourism development.	1	2	3	4	5
2. Tourists have crowded into hotels, guest houses and other recreational places because of tourism development.	1	2	3	4	5
3. Tourism development has caused a traffic jam for local residents.	1	2	3	4	5
<b>III. Activities of Tourists</b>					
1. Tourist activities (boating and cruise ship) produce serious water pollution in lakes and rivers.	1	2	3	4	5
2. Construction of hotels and guest houses for tourists has destroyed the natural environment.	1	2	3	4	5
3. Transportation for tourists has caused air pollution.	1	2	3	4	5
<b>IV. Generation of Waste and Pollution</b>					
1. Tourism development brings environmental pollution.	1	2	3	4	5
2. Tourism development has caused littering and noise.	1	2	3	4	5
3. Tourism development has destroyed natural scenery and irrigated lands.	1	2	3	4	5

**(iii) Social Impacts of Tourism**

The following statements are about the residents' perception of social impacts of tourism in your community. Please indicate to which level you agree or disagree with the statements by circling the appropriate number. [1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

<b>I. Improvement of Local Services</b>					
1. Tourism development provides the social benefits of local residents in the community.	1	2	3	4	5
2. Because of tourism development, local services in the community are well maintained.	1	2	3	4	5
3. Tourism is a major reason for the variety of traditional entertainment in the community.	1	2	3	4	5
4. Tourism development can provide more parks and other recreational places for local residents.	1	2	3	4	5
5. Tourism development can provide pagoda festivals in the community.	1	2	3	4	5
<b>II. Increasing Social Problems</b>					
1. Tourism development has increased crime rate.	1	2	3	4	5
2. Tourism development has contributed to drugs.	1	2	3	4	5
3. Tourism development has contributed contraband between the residents and tourists.	1	2	3	4	5

#### (iv) Cultural Impacts of Tourism

The following statements are about the residents' perception of cultural impacts of tourism in your community. Please indicate to which level you agree or disagree with the statements by circling the appropriate number. [1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

<b>I. Preservation of Local Culture</b>					
1. Tourism development has increased residents' pride in the local culture.	1	2	3	4	5
2. Tourism development encourages the conservation of cultural activities for local residents.	1	2	3	4	5
3. Tourism development maintains the ethnic of the historical areas and pagodas in the community.	1	2	3	4	5
<b>II. Acculturation</b>					
1. Precious cultures of many countries can be learned from tourists.	1	2	3	4	5
2. The cultural exchange between tourists and residents is valuable for local residents.	1	2	3	4	5
3. Tourists can appreciate and study Myanmar traditional cultures because of tourism development.	1	2	3	4	5
<b>III. Deterioration of Local Culture</b>					
1. The commercial demand of tourists has caused undesirable changes in the forms of traditional arts and crafts.	1	2	3	4	5
2. The residents have imitated the inappropriate behaviour and clothing style of tourists because of tourism development.	1	2	3	4	5
3. Tourism development has caused the disruption of traditional culture of local residents.	1	2	3	4	5

### Section (C)

#### Statements on Residents' Support for Tourism Development

The following statements are about the residents' support for tourism development in your community. Please indicate to which level you agree or disagree with the statements by circling the appropriate number. [1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree]

1. The residents should financially invest in tourism development.	1	2	3	4	5
2. The residents should participate to increase the volume of tourists.	1	2	3	4	5
3. The residents should actively participate in sustainable tourism development plans.	1	2	3	4	5
4. The residents should promote tourism-related products.	1	2	3	4	5
5. The local residents should adhere to Myanmar Responsible Tourism Policy.	1	2	3	4	5



```

      _____ (R)
     /_/_/ /_/_/ /_/_/ /_/_/ /_/_/
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Notes:

1. Unicode is supported; see [help unicode advice](#).
2. Maximum number of variables is set to 10000; see [help set maxvar](#).
3. New update available; type `-update all-`

```

. sem (ACA -> aca1, ) (ACA -> aca2, ) (ACA -> aca3, ) (ACA -> aca4, ) (ACA -> aca5, ) (ACA -> Eco, ) (ACA -> E
> nv, ) (ACA -> Soc, ) (ACA -> Cul, ) (ACA -> RSTD, ) (PBT -> pbt1, ) (PBT -> pbt2, ) (PBT -> pbt3, ) (PBT ->
> pbt4, ) (PBT -> Eco, ) (PBT -> Env, ) (PBT -> Soc, ) (PBT -> Cul, ) (PBT -> RSTD, ) (Eco -> eco1, ) (Eco ->
> eco3, ) (Eco -> eco4, ) (Eco -> eco7, ) (Eco -> eco8, ) (Eco -> eco10, ) (Eco -> RSTD, ) (Env -> env4, ) (En
> v -> env5, ) (Env -> env8, ) (Env -> env10, ) (Env -> env11, ) (Env -> RSTD, ) (Soc -> soc1, ) (Soc -> soc2,
> ) (Soc -> soc3, ) (Soc -> soc4, ) (Soc -> RSTD, ) (Soc -> soc5, ) (Cul -> cull1, ) (Cul -> cul2, ) (Cul -> c
> ul4, ) (Cul -> cul5, ) (Cul -> cul6, ) (Cul -> RSTD, ) (RSTD -> rst1, ) (RSTD -> rst2, ) (RSTD -> rst3, )
> (RSTD -> rst4, ), covstruct(_lexogenous, diagonal) iterate(100) latent(ACA PBT Eco Env Soc Cul RSTD ) cov(
> ACA*PBT) nocapslatent
note: The following latent variable names are also present in the data: Soc, Cul, Eco, Env, PBT, ACA.

```

Endogenous variables

```

Measurement:  aca1 aca2 aca3 aca4 aca5 pbt1 pbt2 pbt3 pbt4 eco1 eco3 eco4 eco7 eco8 eco10 env4 env5 env8
               env10 env11 soc1 soc2 soc3 soc4 soc5 cull1 cul2 cul4 cul5 cul6 rst1 rst2 rst3 rst4
Latent:       Eco Env Soc Cul RSTD

```

Exogenous variables

```

Latent:       ACA PBT

```

Fitting target model:

```

Iteration 0:  log likelihood = -11786.679
Iteration 1:  log likelihood = -11756.726
Iteration 2:  log likelihood = -11755.388
Iteration 3:  log likelihood = -11755.384
Iteration 4:  log likelihood = -11755.384

```

```

Structural equation model          Number of obs    =          433
Estimation method = ml
Log likelihood = -11755.384

```

- ( 1) [eco1]Eco = 1
- ( 2) [env4]Env = 1
- ( 3) [soc1]Soc = 1
- ( 4) [cull1]Cul = 1
- ( 5) [rst1]RSTD = 1
- ( 6) [aca1]ACA = 1
- ( 7) [pbt1]PBT = 1

		OIM						
		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]		
Structural								
Eco								
ACA		.3001919	.0769238	3.90	0.000	.149424	.4509599	
PBT		.2980073	.0723404	4.12	0.000	.1562227	.439792	
Env								
ACA		-.0117536	.0783649	-0.15	0.881	-.1653459	.1418388	
PBT		.2417538	.0749268	3.23	0.001	.0948999	.3886077	
Soc								
ACA		.0743	.071428	1.04	0.298	-.0656962	.2142962	
PBT		.2185518	.0678791	3.22	0.001	.0855112	.3515924	
Cul								
ACA		.1755782	.0678	2.59	0.010	.0426926	.3084638	
PBT		.6926436	.0719211	9.63	0.000	.5516808	.8336064	
RSTD								
Eco		.1017567	.0395515	2.57	0.010	.0242372	.1792762	
Env		-.040373	.0389186	-1.04	0.300	-.116652	.0359061	
Soc		.019257	.0412118	0.47	0.640	-.0615167	.1000306	
Cul		.1207547	.0479869	2.52	0.012	.026702	.2148074	
ACA		.0486088	.0539372	0.90	0.367	-.0571063	.1543238	
PBT		.1760876	.065958	2.67	0.008	.0468123	.3053629	
Measurement								
aca1								
ACA		1	(constrained)					
_cons		3.877598	.0327027	118.57	0.000	3.813502	3.941694	
aca2								
ACA		1.146694	.0767707	14.94	0.000	.9962262	1.297162	
_cons		3.794457	.0322257	117.75	0.000	3.731296	3.857619	
aca3								
ACA		1.072494	.074132	14.47	0.000	.927198	1.21779	
_cons		3.849885	.0310915	123.82	0.000	3.788946	3.910823	
aca4								
ACA		1.132958	.0780777	14.51	0.000	.9799281	1.285987	
_cons		3.822171	.0329298	116.07	0.000	3.75763	3.886712	
aca5								
ACA		1.039253	.0736967	14.10	0.000	.8948098	1.183696	
_cons		3.810624	.0313672	121.48	0.000	3.749145	3.872102	
pbt1								
PBT		1	(constrained)					
_cons		3.692841	.0308249	119.80	0.000	3.632425	3.753256	
pbt2								
PBT		1.070081	.068965	15.52	0.000	.9349119	1.20525	
_cons		3.736721	.035327	105.78	0.000	3.667481	3.80596	
pbt3								
PBT		1.073333	.0691435	15.52	0.000	.9378141	1.208852	
_cons		3.699769	.0354012	104.51	0.000	3.630384	3.769154	
pbt4								
PBT		.9541603	.070882	13.46	0.000	.8152341	1.093087	
_cons		3.720554	.0351151	105.95	0.000	3.65173	3.789379	

eco1							
	Eco	1 (constrained)					
	_cons	3.762125	.0358153	105.04	0.000	3.691928	3.832321
eco3							
	Eco	.9382765	.0464708	20.19	0.000	.8471954	1.029358
	_cons	3.787529	.0350593	108.03	0.000	3.718814	3.856244
eco4							
	Eco	.908807	.0471747	19.26	0.000	.8163463	1.001268
	_cons	3.854503	.0351642	109.61	0.000	3.785583	3.923424
eco7							
	Eco	.8564996	.0496314	17.26	0.000	.7592239	.9537753
	_cons	3.859122	.0355093	108.68	0.000	3.789526	3.928719
eco8							
	Eco	.8572744	.040961	20.93	0.000	.7769923	.9375565
	_cons	3.787529	.0311952	121.41	0.000	3.726387	3.84867
eco10							
	Eco	.7797775	.0430802	18.10	0.000	.6953418	.8642132
	_cons	3.819861	.0314927	121.29	0.000	3.758137	3.881586
env4							
	Env	1 (constrained)					
	_cons	2.990762	.0382259	78.24	0.000	2.915841	3.065684
env5							
	Env	1.059263	.0656919	16.12	0.000	.9305091	1.188016
	_cons	2.953811	.038719	76.29	0.000	2.877923	3.029698
env8							
	Env	.8197771	.0591859	13.85	0.000	.7037749	.9357792
	_cons	2.942263	.0348383	84.45	0.000	2.873981	3.010545
env10							
	Env	.9662306	.0625997	15.44	0.000	.8435376	1.088924
	_cons	2.974596	.0375756	79.16	0.000	2.900949	3.048243
env11							
	Env	.9198229	.0647745	14.20	0.000	.7928673	1.046779
	_cons	2.995381	.0383671	78.07	0.000	2.920183	3.070579
soc1							
	Soc	1 (constrained)					
	_cons	3.775982	.0334092	113.02	0.000	3.710501	3.841462
soc2							
	Soc	1.016902	.0538256	18.89	0.000	.9114053	1.122398
	_cons	3.718245	.0339127	109.64	0.000	3.651777	3.784712
soc3							
	Soc	.9817743	.0545251	18.01	0.000	.8749069	1.088642
	_cons	3.757506	.0335897	111.86	0.000	3.691671	3.82334
soc4							
	Soc	.7711639	.0497933	15.49	0.000	.6735708	.8687569
	_cons	3.831409	.0301731	126.98	0.000	3.772271	3.890547
soc5							
	Soc	.8460363	.0509957	16.59	0.000	.7460865	.9459861
	_cons	3.766744	.0311086	121.08	0.000	3.705772	3.827715

cull1							
Cul	1	(constrained)					
_cons	3.475751	.0366613	94.81	0.000	3.403896	3.547605	
cull2							
Cul	1.234868	.046902	26.33	0.000	1.142941	1.326794	
_cons	3.360277	.0407801	82.40	0.000	3.28035	3.440205	
cull4							
Cul	1.150094	.0488679	23.53	0.000	1.054315	1.245874	
_cons	3.397229	.0405097	83.86	0.000	3.317831	3.476626	
cull5							
Cul	1.176232	.0494345	23.79	0.000	1.079342	1.273122	
_cons	3.401848	.0411888	82.59	0.000	3.321119	3.482576	
cull6							
Cul	1.096531	.050221	21.83	0.000	.9980999	1.194963	
_cons	3.351039	.0403095	83.13	0.000	3.272034	3.430044	
rstd1							
RSTD	1	(constrained)					
_cons	3.893764	.0274086	142.06	0.000	3.840045	3.947484	
rstd2							
RSTD	.9992847	.0774052	12.91	0.000	.8475733	1.150996	
_cons	3.86836	.0285882	135.31	0.000	3.812329	3.924392	
rstd3							
RSTD	.836958	.075171	11.13	0.000	.6896255	.9842905	
_cons	3.979215	.0273871	145.30	0.000	3.925537	4.032893	
rstd4							
RSTD	.9605338	.0731943	13.12	0.000	.8170756	1.103992	
_cons	3.87067	.0257703	150.20	0.000	3.820161	3.921179	
var(e.aca1)	.2401753	.0186944			.2061929	.2797584	
var(e.aca2)	.156573	.0143438			.1308391	.1873683	
var(e.aca3)	.1621818	.0141191			.136741	.1923558	
var(e.aca4)	.1834155	.0158676			.1548093	.2173077	
var(e.aca5)	.1852853	.0153588			.1575007	.2179714	
var(e.pbt1)	.1490601	.0147497			.1227818	.1809626	
var(e.pbt2)	.2399546	.0210171			.2021036	.2848946	
var(e.pbt3)	.240398	.0211004			.2024038	.2855243	
var(e.pbt4)	.2950549	.0234423			.2525075	.3447716	
var(e.eco1)	.1578618	.0140996			.1325107	.1880629	
var(e.eco3)	.1822238	.0151121			.1548865	.2143861	
var(e.eco4)	.2070537	.016554			.1770228	.2421791	
var(e.eco7)	.2543247	.0193665			.2190638	.2952612	
var(e.eco8)	.1291922	.0111947			.109013	.1531066	
var(e.eco10)	.1877046	.0145097			.1613157	.2184104	
var(e.env4)	.2601214	.0229745			.2187741	.3092831	
var(e.env5)	.2310793	.0223544			.1911685	.2793223	
var(e.env8)	.275143	.0218863			.2354233	.3215641	
var(e.env10)	.2635153	.0228999			.2222466	.3124472	
var(e.env11)	.3221552	.0259408			.2751211	.37723	

var(e.soc1)	.1593727	.0146997			.1330159	.190952
var(e.soc2)	.1630085	.0150377			.136046	.1953145
var(e.soc3)	.1763105	.0155397			.1483388	.2095566
var(e.soc4)	.2015705	.0156349			.1731423	.2346663
var(e.soc5)	.1871706	.0150927			.1598086	.2192173
var(e.cul1)	.1712743	.0134369			.1468634	.1997427
var(e.cul2)	.0938076	.0103457			.0755721	.1164433
var(e.cul4)	.1673282	.0139775			.1420578	.1970938
var(e.cul5)	.1663782	.0142417			.1406808	.1967696
var(e.cul6)	.2097421	.0164579			.1798432	.2446116
var(e.rstd1)	.1484745	.0142613			.1229964	.1792303
var(e.rstd2)	.1773272	.0158243			.1488731	.2112198
var(e.rstd3)	.2009192	.0160707			.1717661	.2350204
var(e.rstd4)	.1244296	.0124416			.1022853	.1513681
var(e.Eco)	.3376811	.0323854			.2798156	.4075132
var(e.Env)	.3577469	.040366			.2867684	.4462933
var(e.Soc)	.3071739	.0311163			.2518598	.3746362
var(e.Cul)	.255535	.0257122			.2097982	.3112426
var(e.RSTD)	.1399583	.0180712			.1086657	.1802621
var(ACA)	.2229025	.0284094			.1736311	.2861556
var(PBT)	.2623667	.0281807			.2125599	.3238441
<hr/>						
cov(ACA,PBT)	.0921892	.0152576	6.04	0.000	.0622848	.1220935

LR test of model vs. saturated:  $\chi^2(512) = 833.99$ , Prob >  $\chi^2 = 0.0000$

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## Equation-level goodness of fit

depvars	Variance			R-squared	mc	mc2
	fitted	predicted	residual			
observed						
aca1	.4630778	.2229025	.2401753	.48135	.6937939	.48135
aca2	.449669	.2930961	.156573	.651804	.8073438	.651804
aca3	.4185739	.2563921	.1621818	.6125373	.7826476	.6125373
aca4	.4695315	.286116	.1834155	.6093649	.7806183	.6093649
aca5	.4260303	.240745	.1852853	.5650889	.751724	.5650889
pbt1	.4114268	.2623667	.1490601	.6376996	.7985609	.6376996
pbt2	.5403837	.3004291	.2399546	.5559551	.745624	.5559551
pbt3	.5426558	.3022578	.240398	.5569972	.7463225	.5569972
pbt4	.5339193	.2388644	.2950549	.4473792	.6688641	.4473792
eco1	.5554246	.3975628	.1578618	.7157817	.8460388	.7157817
eco3	.5322232	.3499994	.1822238	.6576177	.8109363	.6576177
eco4	.5354127	.3283591	.2070537	.6132821	.7831233	.6132821
eco7	.5459734	.2916487	.2543247	.5341812	.730877	.5341812
eco8	.4213687	.2921766	.1291922	.6933988	.8327057	.6933988
eco10	.4294439	.2417392	.1877046	.5629123	.7502748	.5629123
env4	.6327091	.3725878	.2601214	.5888769	.7673831	.5888769
env5	.6491367	.4180575	.2310793	.6440207	.802509	.6440207
env8	.5255348	.2503918	.275143	.4764514	.6902546	.4764514
env10	.6113639	.3478485	.2635153	.5689714	.7543019	.5689714
env11	.6373921	.3152369	.3221552	.494573	.7032588	.494573
soc1	.483303	.3239303	.1593727	.6702427	.8186835	.6702427
soc2	.4979812	.3349728	.1630085	.6726614	.8201594	.6726614
soc3	.4885407	.3122302	.1763105	.6391079	.7994422	.6391079
soc4	.3942098	.1926393	.2015705	.4886721	.6990509	.4886721
soc5	.4190326	.231862	.1871706	.5533269	.7438595	.5533269
cul1	.5819755	.4107012	.1712743	.7057018	.8400606	.7057018
cul2	.7200849	.6262773	.0938076	.8697271	.9325916	.8697271
cul4	.7105697	.5432415	.1673282	.7645154	.8743657	.7645154
cul5	.7345924	.5682142	.1663782	.7735095	.8794939	.7735095
cul6	.7035613	.4938192	.2097421	.7018851	.8377858	.7018851
rstd1	.3252837	.1768092	.1484745	.5435539	.7372611	.5435539
rstd2	.3538836	.1765564	.1773272	.4989109	.7063362	.4989109
rstd3	.3247739	.1238546	.2009192	.3813565	.6175407	.3813565
rstd4	.2875583	.1631287	.1244296	.5672891	.753186	.5672891
latent						
Eco	.3975628	.0598816	.3376811	.1506218	.3881003	.1506218
Env	.3725878	.0148409	.3577469	.0398319	.1995794	.0398319
Soc	.3239303	.0167565	.3071739	.0517286	.2274392	.0517286
Cul	.4107012	.1551662	.255535	.3778079	.6146608	.3778079
RSTD	.1768092	.036851	.1399583	.2084222	.4565329	.2084222
overall				.9801919		

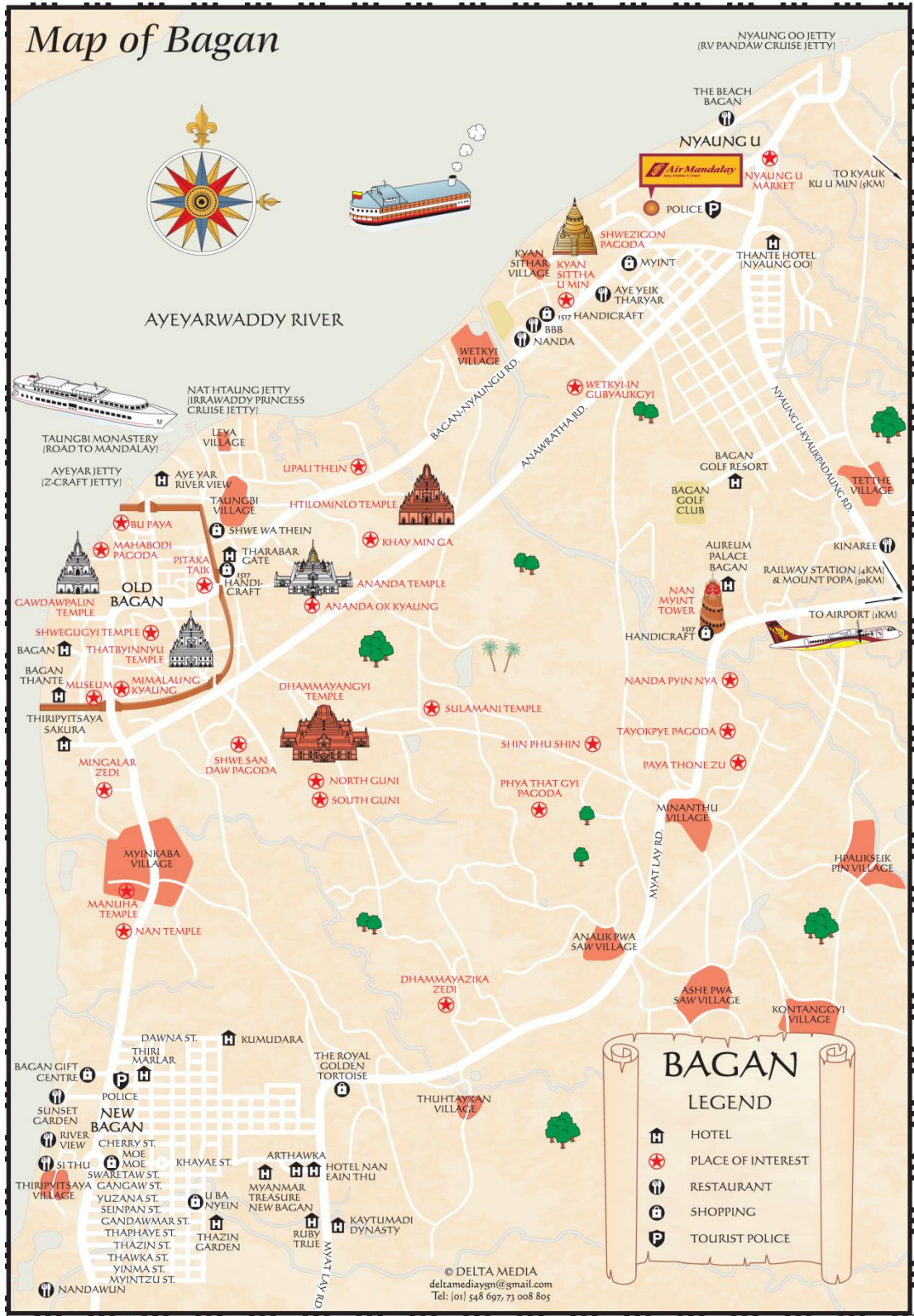
mc = correlation between depvar and its prediction

mc2 = mc^2 is the Bentler-Raykov squared multiple correlation coefficient

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Fit statistic	Value	Description
Likelihood ratio		
chi2_ms(512)	833.992	model vs. saturated
p > chi2	0.000	
chi2_bs(561)	8812.603	baseline vs. saturated
p > chi2	0.000	
Population error		
RMSEA	0.038	Root mean squared error of approximation
90% CI, lower bound	0.033	
upper bound	0.043	
pclose	1.000	Probability RMSEA <= 0.05
Information criteria		
AIC	23744.768	Akaike's information criterion
BIC	24221.044	Bayesian information criterion
Baseline comparison		
CFI	0.961	Comparative fit index
TLI	0.957	Tucker-Lewis index
Size of residuals		
SRMR	0.064	Standardized root mean squared residual
CD	0.980	Coefficient of determination

# Map of Bagan



Map courtesy of Delta Media