Choice Analysis of Tourist Spots: The Case of Guimaras, Philippines

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Abstract

This study determines the factors, especially the transport-related factors, affecting the choice of destination of tourists in Guimaras, a small island located in the Western Visay as region of the Philippines. The tourism industry in such islands has a significant role for they do not usually have adequate resources for industrial advancement. The problem that this research paper is trying to address is that although Guimaras has a tourism potential as indicated by its 27.27% growth rate of travelers from 2009 to 2010, the arrivals in the province is only 15.7% that of Iloilo Province which is just 15 minutes away from the island. Multinomial and binomial logit models were developed to determine the utility of the agritourism tourist spots, and the variables affecting the preference of tourists. The inclusion of agritourism sites in the current tour package of Guimaras tourists was assessed using show cards through a stated preference survey. From the analysis of 1,589 survey forms, the socio-demographic and travel characteristics of the tourists and attributes of a destination are related to the choice made by the decision-makers in picking an agritourism site they would want to explore in Guimaras Province.

Keywords: Tourism planning, Choice modeling, Stated preference survey

1. INTRODUCTION

Tourism is considered as one of the biggest industries in any country for it does not only cater to locals but more often to foreigners. Tourism brings in a lot of money to a certain country; some of which go to the national government as tax, while most of it benefits businesses which cater to tourists in the country. A thriving business can open opportunities for employment. Looking at it in a global scale, the impact of the tourism industry in 2011 is 9% of the global GDP which had a value of US$6 trillion and created 255 million jobs.

The contributions of the tourism industry in a country's economy can be categorized into two: direct and indirect. The direct contributions include accommodation, transportation, entertainment, and attraction services, as well as retail trade and individual spending on tours. The indirect contributions are from travel and tourism investment spending, government collective spending, and domestic purchases from suppliers. In the Philippines, the tourism industry had a direct and total contribution of 2.0% and 8.5% to the total GDP, amounting to PHP194.7 billion and PHP830.8 billion, respectively. In terms of employment, the direct and total contributions of the industry are 2.1% and 9.6% of the total employment, which are equal to 778,000 and 3,547,500 jobs in the country, respectively, in the year 2011. (World Travel & Tourism Council)

With increased income and employment, the Philippines has made efforts to promote tourism in the country. The most popular tourist destinations in the country are Puerto Princesa City, Camarines Sur, and Boracay Island as indicated by their foreign and domestic tourist volume growth rates from 2009 to 2010. Being an archipelago, the Philippines has more to offer than the mentioned destinations. The challenge now to the Philippines is to attract the tourists to the less popular destinations in the country, such as Guimaras Island, the study area of this research.

Guimaras Island is located in the Western Visayas region, in between Panay and Negros Occidental (see Fig. 1). It is known for its export-quality mangoes. It has a total land area of 604.57 square kilometers with a population of 151,238 as of 2009. The modes of transportation available in the island are multicabs, jeepneys, tricycles, motorcycles, and vans. Tourists commonly reach Guimaras via Ilo-ilo city where they can board a boat for a fee of PHP14.00 during the day and PHP20.00 during the night. On average, the travel time from Ilo-ilo to Guimaras is 15 minutes. It has five municipalities, namely, Jordan, Buenavista, Nueva Valencia, Sibunag, and San Lorenzo. Table 1 illustrates the number of tourist spots found in each municipality. In total, there are 68 tourist spots which can be found all over Guimaras as of 2009.

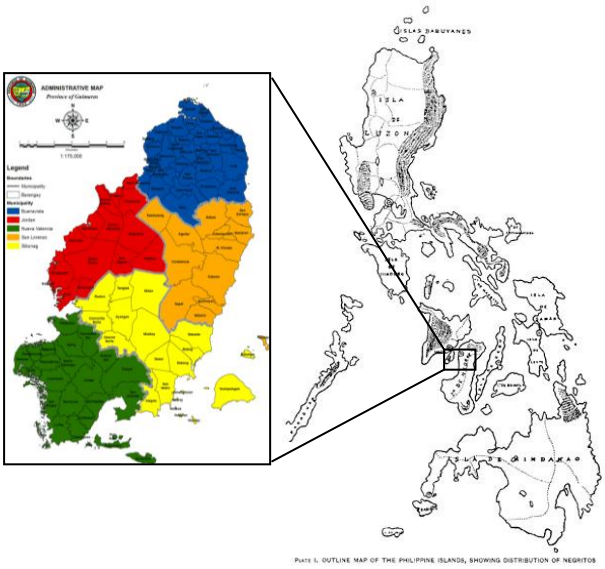

Fig. 1 Location Map of Guimaras Island

Table 1. Tourist Sites in Guimaras Province

	Total
Historical Attractions	6
Resorts	25
Natural and other Attractions	14
Religious Attractions	5
Agri-Tourism Attractions	8
Number of Caves	10
TOTAL	**68**

As part of the efforts of the local government to promote tourism in Guimaras, they have developed the *agritourism circuit* which connects eight out of the ten agritourism sites in the province (see Fig. 2 and Table 2). As of today, three of the eight sites which are Eli Sustituido Farm, Guimaras Bee Center, and Oro Verde Mango Plantation are non-operational. The local government has moved on to promoting *agri-eco tourism*, adding the eco park, Southeast Asian Fisheries Development Center (SEAFDEC), and National Mango Research Development Center (NMRDC) to the list of destinations.

Fig. 2 Agritourism Circuit

Table 2. Agritourism site locations

LEGEND		
	Site	Location
A	Oro Verde Mango Plantation	Buenavista
B	An-An's Farm	San Lorenzo
C	Sebario Salt Farm	San Lorenzo
D	Christelle's Farm Products & Plant Nursery	Sibunag
E	Guimaras Bee Center	Sibunag
F	Eli Sustituido Farm	Nueva Valencia
G	Southern Orchard	Sibunag
H	Guimaras Wonders Farm	Jordan

In 2010, there were 21,645,048 accounted travelers in the Philippines wherein 4,462,810

(20.62%) were foreign, 225,988 (1.04%) were overseas Filipinos, and 16,956,251 (78.34%) were domestic. Of the total number of travelers, 1,935,041 or 8.94% chose to explore Region VI, comprised of the provinces of Aklan, Antique, Capiz, Guimaras, Iloilo, and Negros Occidental. The further distribution of the number of travellers among the six provinces is highlighted in Figure 3. It can be observed that Guimaras, alongside with Capiz province, ranks second to Antique in the lowest number of travelers visiting the area. Comparing it to its neighbors, Guimaras visitors are only 7.68% that of Aklan where Boracay Island is, and only 13.13% of Iloilo which is just 15 minutes away from Guimaras.

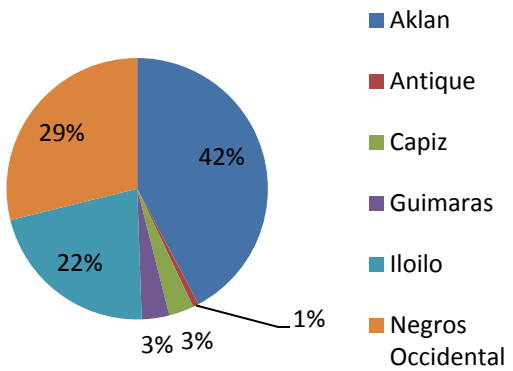

Fig. 3. Distribution of travelers in Region VI

Despite the low number of tourist arrivals in Guimaras, Table 3 underlines the potential of the province as a tourist spot. In 2009, there were a total of 51,786 visitors in the province and 65,906 in the following year, thereby giving a growth rate of 27.27%, highest of the six provinces in Region VI. Although Guimaras may have a tourism potential, it is important to consider if they can actually accommodate an increase in the number of arrivals in the province. Table 4 presents the annual report on supply and demand data from accommodation establishments in 2012. From the table, it can be identified that the highest occupancy rate is only 25.71% observed during the month of April; hence Guimaras can still accommodate more tourists.

The focus of this study is to maximize the tourism potential of Guimaras by understanding the travel behavior of the tourists visiting the province. The important factors, especially the transport-related factors affecting the choice of destination of Guimaras tourists shall be determined.

Table 3. Growth rates of travelers in Region VI provinces

	Total number of travelers in 2009	Total number of travelers in 2010	Growth Rate
Region VI	**2,035,905**	**1,935,041**	**-4.95%**
Aklan	674,447	816,987	21.13%
Antique	34,982	14,120	-59.64%
Capiz	59,100	59,740	1.08%
Guimaras	51,786	65,906	27.27%
Iloilo	394,277	419,661	6.44%
Negros Occidental	821,313	558,627	-31.98%

Source: Department of Tourism, 2010

Table 4. Supply and demand data from Accommodation establishment

Month	Average occupancy rate	Average guest nights
January	16.77	1.25
February	14.85	1.25
March	13.01	1.09
April	25.71	1.54
May	20.15	0.98
June	10.76	1.16
July	11.01	1.14
August	13.88	1.13
September	12.84	1.14

Source: Accommodation Establishment 2012, Department of Tourism-Guimaras Personnel

2. LITERATURE REVIEW

2.1 TOURISM AND TRANSPORTATION

This study recognizes that the tourism industry has a specifically important role in small islands for they do not usually have adequate resources for industrial advancement (Sato et.al, 2010) hence the choice of study area, Guimaras Province. The Guimaras Governor in 2010 "admitted that Guimaras has limited resources thus local government should maximize its business potentials."

Tourism is very much linked to travel. The role of transportation in its planning and advancement is vital in such a way that it provides link to a variety of destinations, enabling transfer of people, goods, and services, from one place to another.

Another view would be that transportation has an impact on the travel experience of the tourists in a certain destination, causing people to choose different destinations and mode of transport. (Page and Lumsdon, 2004) In that case, the attractiveness of an area can be improved by developing its transportation system, or in other words, its accessibility.

There are two categories of transportation studies related to tourism which both aim to improve the accessibility of an area: studies focusing on the estimation of tourist demands and studies dwelling on the behavior of tourists in the destination. (Sato et.al, 2010) This study is leaning towards the second branch. Similar studies were conducted by Lyons et.al (2009) who quantified the factors which affect the choice of holiday destination of Irish tourists; Hsu et.al (2009) who aimed to understand the reasons of tourists for traveling to Taiwan and the factors which affect their choice; and Sato et.al (2010) who studied the behavior and preference of the tourists in Sado Island to recommend tourism promotion measures, among others.

Improvements on transportation systems in a destination can stimulate the expansion of tourism for it has made traveling easier or the destination accessible. But it is important to note that accessibility can also affect the destination negatively if the carrying capacity is exceeded. (Sorupia, 2005)

2.2 DISCRETE CHOICE ANALYSIS

Discrete choice occurs when individuals select an option from alimited set of alternatives. Discrete choice models postulate that, "the probability of individuals choosing a given option is a function of their socioeconomic characteristics and the relative attractiveness of the option."(Ortuzar et.al, 2011)

According to Ortuzar et.al (2011) the most common framework of discrete choice models is the *Random Utility Theory* which postulates that:

(1) Individuals, belonging to a homogenous population, Q, choose the option which maximizes their net personal utility for they act rationally and has the perfect information
(2) There is a certain set of available alternatives and a set of X vectors of measured attributes of the individuals and their alternatives, assuming that the choice set of the individual is predetermined
(3) Each option, A_j, in the choice set has a net utility, U_{jq} for individual q. The modeler does not have the complete information on all the elements considered by the individual in making his choice hence it is assumed that U_{jq} can be represented by two components: (a) a measurable, systematic or representative part V_{jq} which is a function of the measured X; and (b) a random part ε_{jq} which reflects peculiarity and particular tastes of individuals, including measurement or observational errors made by the modeler
(4) The individual, q, selects the maximum-utility alternative.

3. METHODOLOGY

3.1 DATA GATHERING

Data was gathered using revealed and stated preference surveys. The purpose of the survey is to be able to: (1) characterize Guimaras tourists in terms of their personal and travel characteristics; (2) determine their choice of destination; (3) evaluate the factors affecting their choice of destination; and (4) assess the possibility of including the agritourism destinations in the current tour of Guimaras tourists using a stated preference survey. The questionnaire had two pages with three parts:

(a) *Travel Attributes:*travel party, type of companion, length of stay,accommodation, purpose of visit, travel budget as agroup, breakdown of budget, information on Guimaras, frequency of visit, intention to revisit Guimaras, and transportation modes used
(b) *Personal Attributes:*gender, age, civil status, employment, personal income, household income, vehicle ownership and frequency of vacation (as determinants of income), and nationality
(c) *Showcard for Agritourism:*there are four choices from which the tourists can consider, with added travel time and cost (see Table 5)

The survey was conducted in attractions in Guimaras with high volume of tourists such as in the Alubihod area, Trappist monastery, Bala-an Bukid, and souvenir stores. The survey was conducted face-to-face. The data collection ran from February to April 2013, collecting a total number of 1,589 survey forms. Of the total, 1,441

have chosen to avail an agritourism tour package alongside with their current tour.

Table 5. Showcard information on agritourism

OPTIONS	ADDED TRAVEL TIME	ADDED TRAVEL COST
A: Current tour + Educational farms	2 hours, 30 minutes	PHP1,200
B: Current tour + Farms and mango plantations	2 hours	PHP950
C: Current tour + Aquaculture	3 hours	PHP1,475
D: Current tour only	0 hours	PHP0

3.2 CHARACTERISTICS OF SURVEY RESPONDENTS

To ensure the capability of the respondents in choosing their destination, the questionnaires were administered to respondents with ages 18 years old and above. The purpose of their visit, may it be solely for vacation or business or personal reasons should not matter so long as they are going around the island, visiting the tourist spots of Guimaras. To ensure the variability of answers, only one per travel group, preferably the head of the household wasasked.

3.3 MODEL ESTIMATION

There were two kinds of logit models used in the estimation of the results. One was using the binomial logit model with choices of availing an agritourism tour package alongside with the tourist's current tour and staying with their current tour only. The second model was a multinomial logit model with three choices wherein options A, B, and C, of the showcards were considered. In the resulting models, the variables were assessed with 95% level of confidence. Models were estimated using NLOGIT 4.0.

There were a total of 31 variables considered in the model estimation. Presented in Table 6 is the definition of such variables.

Table 6. Definition of variables

Variable	Description
THOURS	Travel hours
TPURP	Travel purpose
TBUD	Travel budget
TRANSPO	Transportation budget
FOOD	Food budget
ACCOM	Accommodation budget
SHOP	Shopping budget
OTHERS	Budget for other activities
INFO	Source of information regarding Guimaras
TFREQ	Travel frequency
IREVISIT	Intention to revisit
MODES	Transport modes used
PGEDNER	Gender
PAGE	Age
PCSTAT	Civil status
PEMP	Employment status
PINC	Personal income
PHINC	Household income
PVEH	Vehicle ownership as a household
PVAC	Vacation frequency in a year
PNAT	Nationality
BUD_INC	Travel budget divided by income
BUD_HINC	Travel budget divided by household income
BUD_PAR	Travel budget divided by travel party
BUD_HR	Travel budget divided by travel hours
TRA_BUD	Transportation budgetdivided by travel budget
FOO_BUD	Food budget divided by travel budget
ACC_BUD	Accommodation budget divided by travel budget
TRAFOO	Transportation budget plus food budget
SHOOTH	Shopping budget plus budget for other activities
TRFOAC	Transportation budget plus food plus accommodation budget

4. RESULTS

4.1 DESCRIPTIVE STATISTICS OF RESPONDENTS

The summary of the travel and personal attributes of the 1,589 respondents are summarized in Table 7. Majority of the respondents are *Ilonggo*, spent one night in the province, and were with

friends. Vacation was the main purpose of visit of 70.86% of the respondents. Nearly 40% were first timers and 98.99% had the intention to revisit Guimaras.

Table 7. Summary of characteristics of respondents

Personal Attributes	Percentage	Travel Attributes	Percentage
Gender		*Frequency of visit*	
Male	53.68%	1st time	37.32%
Female	46.32%	2nd time	25.68%
		3rd time	13.59%
		≥ 4 times	23.41%
Civil Status		*Length of stay*	
Married	38.39%	Half day	19.89%
Single	61.61%	Whole day	32.22%
		Overnight	43.49%
		> 1 night	4.41%
Employment		*Intention to revisit*	
Employed	81.31%	Yes	98.99%
Unemploy -ed	18.69%	No	1.01%
Nationality		*Type of companion*	
Ilonggo	50.25%	Family	25.42%
Filipino (excl. Ilonggo)	32.84%	Friends	52.80%
Asian (excl. Filipino)	10.45%	Work colleagues	9.00%
American	0.10%	Family and friends	10.45%
European	5.47%	Alone	2.33%
Age		*Purpose of visit*	
≤ 40 y/o	76.78%	Vacation	70.86%
41–60 y/o	21.27%	Business	3.78%
>60 y/o	1.95%	Personal	25.36%

4.2 BINOMIAL LOGIT ANALYSIS

A binomial logit analysis was executed using NLOGIT 4.0. A base model was estimated wherein only the alternative specific constant was included. The log likelihood function is equal to -492.1830. Additional variables were derived from the original set of data gathered from the survey forms, such as the ratios of budget and income, budget and household income, budget and travel hour, budget and travel party, transportation budget and travel party, food budget and travel party, accommodation budget and travel party, transportation budget and travel budget, food budget and travel budget, and accommodation budget and travel budget. The sums of travel budget and food budget, shopping budget and budget for other activities, as well as that of travel, food, and accommodation budgets, were included.

Various binomial logit models were estimated. Out of the 31 variables included, only 6variables were found significant: the trip purpose, source of information on Guimaras province, gender, frequency of vacation in a year, and the ratios of budget and household income, and food budget and travel budget. The best model developed is shown in Table 8 below.It yielded a log likelihood function of -445.5649 which significantly improved the model as indicated by the log likelihood ratio test. Option A is for adding an additional agritourism tour package and option B is for retaining their current tour only.

Table 8. Binomial logit model estimation results

	Coeff.	Std.Err.	t-ratio	P-value
BUD_HIN	0.16154	0.001669	96.784	2.89E-15
FOO_BUD	-5.1572	1.6078	-3.20762	0.001338
AxTPU1	-0.38006	0.097545	-3.89628	9.77E-05
AxINF1	1.11595	0.21999	5.07275	3.92E-07
AxPGE1	0.467562	0.186025	2.51344	0.011956
AxPVA1	0.312364	0.117555	2.65716	0.00788
A_A	1.24008	0.258985	4.78822	1.68E-06

Note: Refer to Table 6 for the definition of variables

Utility equations:

Option A:

$$U=0.16154(BUD_{HIN})-5.1572(FOO_{BUD})-0.38006(TPURP)+1.11595(INFO)+0.467562(PGENDER)+0.312364(PVAC)+1.24008$$

Option B:

$$U=0.16154(BUD_HIN)-5.1572(FOO_BUD)$$

From the 6 variables modeled, only food budget over travel budget and trip purpose were disutilities, and the rest contribute positively to the utility of the choices. The respondents would less likely pick the option which would require a large portion of their travel budget allocated for food. If the tourist perceives the additional cost for food incurred in the agritourism packages as beyond his travel budget, then he would less likely add any of the agritourism tour packages in his current tour.

There are three classifications of trip purposes: vacation indicated by a 0, business indicated by a 1, and personal purposes (such as attending a wedding, visiting relatives, etc.) indicated by a 2. With such designation, it can be said that those tourists traveling with personal purposes are the least interested in touring agritourism sites, followed by those with business purposes. Tourists going to Guimaras for personal purposes may not want to prolong their visit for they have already accomplished their purpose successfully or they may not want to extend because agritourism sites are just not appealing to them or are not their first choice given the chance to lengthen their stay. The same reasoning may be followed for tourists going to Guimaras for business purposes; they may not want to retain their current tour package for they were just there for business and not for leisure nor avail an agritourism tour package for they may have wanted to explore other popular sites instead, such as the beaches. Tourists who are on vacation may not have wanted to extend their tour further for they have already been satisfied with their stay or they may want to extend but not for visiting agritourism sites.

The ratios of budget and household income, as well as the source of information on Guimaras province, gender, and frequency of vacation in a year were all contributing positively to the utilities of the choices. The tourists would likely choose the option which they allot more travel budget with respect to their household income. In this case, we can infer that the tourists may be price insensitive in touring. The sources of information on Guimaras province are categorized into three: from word of mouth indicated with 0, internet websites (such as lonely planet and trip advisor) indicated by 1, and television advertisements (such as in the Philippines' tourism video) indicated by 2. With such designations, tourists who are more likely to extend their stay in the province to visit agritourism sites are those who have seen television advertisements on Guimaras, followed by those who discovered Guimaras via the internet, and the least likely to see agritourism sites are those who knew Guimaras through word of mouth. People who were advised by their friends to go to Guimaras may have already been satisfied with what they have visited as their peers, who have already been in the province, have told them where to go and what to do. On the other hand, those who saw Guimaras only in a television advertisement may prefer exploring the province more for the advertisement may not have shown much. For the gender, men were designated as 0 and women as 1. In such case, women are more interested in exploring agritourism sites as compared to men. This may be that the activities which the farms offer, such as mango picking and tasting and a tour in farming or growing plants, are more appealing to women. The frequency of vacation is interpreted as an income indicator. Tourists with more income or those with financial capability to go on vacation multiple times a year are the ones more likely to extend their visit in Guimaras to go to agritourism sites.

4.3 MULTINOMIAL LOGIT ANALYSIS

A total of 1,441 survey forms were considered in this model. The base model, which only considered the alternative specific constants, yielded a log likelihood function of -1323.334. From the 1,589 respondents, 1,441 tourists chose to avail an additional agritourism tour package; the number of respondents who chose option A, B, and C, were 118, 698, and 625. All of the variables were considered in modeling using a multinomial logit model. In the end, only three variables were significant in the multinomial logit model: travel budget over household income, trip purpose, and number of public modes used in the island. Table 9 summarizes the result.The estimated model has a log likelihood function of -1302.715. According to the log likelihood ratio test, the estimated model is better than the base model.

Table 9. Multinomial logit model estimation Results

	Coeff.	Std.Err.	t-ratio	P-value
BUD_HIN	0.560311	0.004666	120.093	2.89E-15
AxTPU1	0.543607	0.110378	4.92494	8.44E-07
AxMOD1	-0.73287	0.258402	-2.83617	0.004566
A_A	-1.27793	0.279802	-4.56725	4.94E-06
BxTPU2	0.271801	0.067733	4.01283	6.00E-05
BxMOD2	-0.32406	0.154354	-2.09942	0.03578
A_B	0.312248	0.166855	1.87137	0.061294

Note: Refer to Table 6 for the definition of variables

Utility equations:
Option A:
U=0.560311(BUD_HIN)+0.543607(TPURP)
-0.73287(MODES)-1.27793

Option B:
U=0.560311(BUD_HIN)+0.271801(TPURP)
-0.32406(MODES)+0.3112248

Option C:
U=0.560311(BUD_HIN)

The values show that the larger the ratio of the budget and household income is, the more appealing are the choices. The larger the fraction of their income they allocate for their trip, the more they see extending their trip for an additional agritourism tour package attractive. Tourists with more travel budget would not mind spending additional money for an additional tour package. The trip purpose in the multinomial logit model is positive as opposed to the results in the binomial logit model. If the tourists have proceeded to add an agritourism tour package, option A is the most appealing option to them if we are to base their choice on their trip purpose. In general, they are attracted to the agritourism tour options regardless of their trip purpose. Lastly, the number of modes used is a disutility. This may mean that an increased number of modes they have used, which may also imply multiple transfers and therefore inconvenience to them, affect the addition of agritourism package on their current tour negatively.

5. CONCLUSIONS

From the binomial logit model, the factors which had effects on the decision of whether or not the tourist will choose to avail an agritourism tour package with his current tour are the trip purpose, food budget over travel budget, source of information on Guimaras province, gender, frequency of vacation in a year, and the ratio of budget and household income. The first two were disutilities while the others contributed positively to the utilities of the choices.

From the multinomial logit analysis, the travel budget over household income, trip purpose, and number of public modes used in the island are the factors which affected the choice of the kind of agritourism package they will avail. The last factor was the only disutility.

Based on the binomial logit model analysis, Guimaras tourists may be more attracted to the agritourism sites by the following actions: (1) making the sites more popular by advertising them, telling the public utility vehicle drivers to recommend them to tourists, putting up posters, posting good reviews about it online, among others.This is due to the analysis that tourists, regardless of their purpose, would not want to extend their stay in the province if the agritourism sites were their only choice. They would have rather visited other attractions such as the beaches, caves, churches, etc. if they would have chosen to stay longer;(2) investing on television advertisements as it is the one contributing greatly in choosing to add agritourism packages; (3) adding more activities which are flexible and can be enjoyed by any group of people for as it is now, agritourism sites may not be interesting to both genders.

Based on the multinomial logit model analysis, tourists in Guimaras may find agritourism sites more interesting by making the sites accessible. Multiple public mode transfers affect the utilities of the agritourism sites negatively.

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