

# Technology and Tourism: Impacts to Local Tourism Attractions: A Case in Southern Cebu, Philippines

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***Abstract- Tourism is often regarded as one of the fastest growing industries worldwide. The impact of technology to tourism has created major developments and exciting opportunities for travellers. Information and communication services, bookings and reservations system give convenience to travel and tourism. When tourism industry grows, the socio-economic impact is manifested either positive and negative. Thus, this study adheres to the standards of a descriptive-quantitative research design and mixed-methods approach. The results showed that impact of technology to tourism is great. While the socio-economic impact of tourism is moderate. This indicates that there are more opportunities for travel and tourism leading to the manifestations of the positive and negative technological and socio-economic inclinations of tourism in host community in Southern Cebu. This will serve as basis for recommendations to better improve and strengthen tourism in host community in the area.***

***Indexed Terms- community, host inclinations, technology, tourism, socio-economic***

## I. INTRODUCTION

The tourism industry is often cited as the largest industry in the world, contributing 10% of the world's Gross Domestic Product (Skripak, S. et.al 2018). Technology has contributed to the massive economic growth of tourism in several ways. The overall societal economic growth achieved, in part, due to applications of technology has provided the time and economic means for people to travel. Stipanuk, D. M. (1993).

The importance of technology as a strategic tool to tourism has been long recognized (Poon, 1993). Vidal, Belen (2019) accentuated that technology and travel are the perfect combinations. On the business

side, it enables tourism business to boom and attract the targeted market. Entire (2018) highlighted that technology has helped reduce costs, enhance operational efficiency, and improve services and customer experience. Both customers and businesses can benefit from improved communication, reservations, and guest service systems.

Baines, (1998) stated that technology does give the industry a chance to improve the quality of the service it offers. The creation and delivery of tourism products is based on partnerships between a range of organizations, including: transportation, accommodation, catering, entertainment and cultural heritage.

Bethapudi, A. (2013) stated that tourism enterprises can also reach the targeted customers across the globe in a single click on the keypad after emergence of mobile computers, web technologies etc. He also contends that effective and high-speed ICT infrastructure and software applications in the tourism and hospitality industry are crucial for tourism development.

Buhalis, Dimitriou, et.al (2002) stated that Information Communications Technology evolve constantly, providing new tools for tourism marketing and management. They support the interactivity between tourism enterprises and consumers and as a result they re-engineer the entire process of developing, managing and marketing tourism products and destinations. Stipanuk, D. M. (1993), there is clearly a linkage between overall economic growth, the growth of scientific knowledge and the rise of technology. Economic growth results, in part, from 'the ability to shape productive technology to local needs.

Nayomi, G and Gnanapala W.K (2015) stressed that socio-economic impact evaluation has become a significant aspect of tourism, particularly in the promotion of tourism in rural and culturally delicate regions. Edgell (2006), tourism's financial effect involves new business opportunities, job creation, enhanced earnings, new products, improved infrastructure, local economy financial diversification, and unique services and possibilities to connect with other services and products. Mochechela, (2010) contends that tourism provides the host community with both financial and non-economic advantages and expenses. Ali (2013) also stated that tourism also has certain societal advantages in addition to those financial advantages. Pilapil-Añasco & Lizada (2014) also presented that as a major influence to the Philippine economy, tourism also has a wide and profound effect on social development because it is both labor-intensive and capital-intensive.

Thus, assessing the technological and socio-economic impact of tourism to the local tourism attractions will serve as basis for recommendations to strengthen the tourism development program in the local tourism attractions in Southern Cebu.

## II. MATERIALS AND METHODS

### • Research Design

The study adheres to the rigorous research design standards that are evaluative-descriptive-quantitative complemented with an approach that utilizes mixed-methods techniques. This methodology leads to a more precise study direction and elucidates the research problem (Creswell & Plano Clark, 2007). Quantitative research focuses on collecting and generalizing numerical data across groups of individuals or explaining a specific phenomenon. It utilized interviews, surveys, questionnaires, focused group discussions and records from the local tourism office in the municipality.

### • Research Environment

This study is conducted within the different barangays in the Municipality of Barili, Cebu, Philippines. The Municipality of Barili is situated in the southwestern part of Cebu, approximately sixty-one (61) kilometers away from Cebu, City. It is a second-class municipality which belongs to the 3rd district of the

province of Cebu with forty-two (42) barangays, eight (8) of which were officially recognized as tourism destinations in the community.

### • Research Respondents

The respondents of this study were classified into four (4), the tourism legislative officials, local entrepreneurs and businessmen, local residents and tourists both domestic and international. Clustered sampling is the method used in the study where cluster of participants are used to represent the population identified in the study. (Jackson, S.L. (2011) "Research Methods and Statistics: A Critical Approach" 4th edition, Cengage Learning). With a population of 17,177 using the sample size formula a confidence interval of 90% and degree of accuracy or margin of error at 0.5% with a computed sample size of two hundred sixty-seven (267) respondents were utilized in this study representing the eight (8) identified tourism destination barangays in the municipality.

### • Research Instruments

Modified-adopted survey instruments were utilized based on several references of the study. The technological variable to determine the impact of technology to local tourism attractions was based on the study of Liberatro, Pedro Manuel da Costa, et.al (2018) on the Digital Technology in a Smart Destination; The Case of Porto. The socio-economic impact variables was based on the study of Sawant, Madhuri (2017) Socio-Economic Impacts of Tourism Development at Aurangabad District, Marathwada Region, India and on the book of Cruz, Zenaida, 2010, Principles of Tourism 2. Survey questionnaires, interviews and focused group discussions on the respondents were conducted. The 4-point Likert scale was used for interpretation. Great Impact (4)- Agrees to the indicator all the time; Moderate Impact (3)- Agrees to the indicator most of the time; Less Impact (2)- Disagrees to the indicator most of the time; No Impact at All (1)-Disagrees to the indicator all the time.

### • Data Analysis

The data gathered from the responses of the questionnaires were tabulated, analyzed and subjected

to the statistical treatment. The following statistical treatments were used for the study:

1. The weighted mean of each item in the questionnaire were determined through the following formula.

$$\text{Formula: } X = \frac{\sum fiwi}{n}$$

Where:

$\bar{x}$  = weighted mean

f = frequency under each scale

w =rating of each indicator

n = number of respondents

2. For the purpose of interpreting the weighted mean of each item the following hypothetical mean range were interpreted using the following:

Mean Range	Interpretation
3.26 - 4.00	Great Impact (GI)
2.51 – 3.25	Moderate Impact (MI)
1.76 – 2.50	Less Impact (LI)
1.00 – 1.75	No Impact or Effect at all (NE)

### III. RESULTS AND DISCUSSIONS

- Distribution of Respondents

The distribution of the research respondents of the study. A total of two hundred sixty-seven (267) research respondents categorized into fifteen (15) tourism legislative officials, eighty-four (84) local entrepreneurs and businessmen in the locality, eighty-four (84) local residents and eighty-four (84) tourists were identified.

- Local Tourism Attractions

The official tourism attractions found in the Municipality of Barili were distributed among eight barangays in the municipality which were identified as natural, man-made, cultural, historical, festivals or events. Within the forty-two (42) barangays, eight (8) of which were officially recognized as tourism destinations in the community. These barangays are Barangay Bolocboloc, Campangga, Dakit, Luhod, Mantalongon, Mayana, Poblacion and Sayaw.

- Implications of Technology to Local Tourism

The use of technology in terms to travel and tourism is essential to the overall experience of tourists or travellers. Based on the results for tourist information/tour guides (POIs, maps, itineraries, walking tours, etc.) it has an averaged mean of 3.37 with a descriptive interpretation of Great Impact. Thus, Bieger and Laesser, 2004; Jeng and Fesenmaier, 2002; Gursoy and McCleary, 2004, contends that the availability of information has a noticeably positive influence on the tourists’ plans to visit the city. Previous studies (Bieger and Laesser, 2004; Jeng and Fesenmaier, 2002; Gursoy and McCleary, 2004) have also mentioned how the available information has a significant impact on the various levels of the decision-making process, especially with regards to the decision about which destination to visit. Other studies (Xian et al., 2015) suggest that most tourists look for information about a destination during their tourist’s stay rather than before their visit.

WIFI Access on local tourism attractions has an averaged mean of 3.27 or Great Impact. The access to wifi connection to local tourism attractions also has contributed WIFI to tourist’s experience. Vidyullata Shekhar Jadhav (2011) emphasized that the internet is already the primary source of tourist destination information.

Cultural offerings (museums, expositions, cinemas, concerts, shows, prices, and ticket reservations) has an averaged mean of 2.89 with a descriptive interpretation of Medium Impact. With technology the convenience of booking ticket reservations online is now made accessible to tourist.

Weather forecast has an averaged mean of 3.32 which means it has a Great Impact to local tourism attractions. In the same way that climate affects the destination choice of travellers it highly influences the timing of travel. Seasonal demand is one of the main defining characteristics of global tourism, and is comprised of two elements – natural and institutional seasonality Scott, D.et.all. (2010)

Lodging, restaurants, and the like (prices, availability, contact information, reservations, etc.) has an averaged mean of 3.33 which means Great Impact. Lodging firms continue to evaluate new technologies, including such items as robotics, for housekeeping and

room service applications. Computer-aided design, now commonly applied in lodging and food-service design, may well be enhanced in the future through the use of virtual reality techniques where the designer or operator maybe able to experience the facility before it is constructed. Stipanuk, D. M. (1993). On the other hand, with internet they can now access, make reservations and bookings, in major service providers for hotel, restaurants, airlines and other tourism providers. Milosevic & Maric (2018) stressed that computerized reservation systems (CRSs) meet the needs of consumers for practical, transparent access and easily comparable information. They cover the full spectrum of travel choices: accommodation and entertainment, destinations, vacation packages, as well as the actual price and availability of such services

Transportation (airlines, ground transportation, schedules, check-in, prices, reservations, etc.) has an averaged mean of 3.31 which means Great Impact. An impact of technological change in transportation on tourist flows is further illustrated by recent articles on such diverse topics as the Chunnel, advanced cruise ship designs,” and high-speed trains. Stipanuk, D. M. (1993)

Automobile rental (companies, prices, special offers, reservations, etc.) has an averaged mean of 3.29 which means Great Impact.

Travel agencies (programs, special offers, tour package reservations, etc.) has an averaged mean of 2.91 which means Moderate Impact. The Internet enables all types of organizations to distribute products directly to consumers and to link with emerging intermediaries (such as Lastminute.com, Expedia, eBookers and Hotels. com) expanding their value chain and promote their products through a combination of systems and partners (Buhalis and Licata 2002; O'Connor 2003; Karcher 1997).

Language translators has an averaged mean of 2.93 which means Moderate Impact, as well as the use of webcams (locations, traffic, beaches, and tourist spots), has an averaged mean of 2.78 which means Moderate Impact.

- Socio-Economic of Local Tourism Attractions

With the presence of technology, travel and tourism becomes easier and more convenient for tourists. Thus, when tourism is practiced in host community, the social and economic aspects of the industry are primarily affected.

- Economic Impact of Local Tourism Attraction.

The positive and negative economic impact of tourism was assessed using the computed weighted mean on the identified tourist’s destinations. Promotion or marketability or sales and or availability of local products and services have the highest weighted average of 2.96 perceived as Moderate Impact by the respondent groups. This can be assumed that the respondents felt that tourism boosts the local products and services which meant that the more tourists coming to visit the place, the more opportunities for sales and promotion, as well as creating more business opportunities for the locals.

Nevertheless, increase in profit, revenues, salaries or wages has the lowest weighted average of 2.58 still perceived as Moderate Impact. This could mean that, although, tourism is gaining its economic raise, the respondents especially the locals did not feel the change or increase on their economic status such as their salaries or wages, it still remained similar. This maybe for the fact that tourism still needs to grow more and the municipality still needs to develop tourism so the community could maximize its benefits to be felt by the people living in the community. On the other side, the negative economic impact of tourism, high labor employment competition or more contractual than regular employees and or fewer opportunities for job regularization has the highest weighted average perceived as Moderate Impact. This can be assumed that though tourism is growing, the job security for those employed in the tourism and hospitality sectors are still not stable, this could be due to the seasonality issues of the tourism industry. Tourism is not all time a booming industry. This is true according to the study of Morse, S., Smith, E., (2015), tourist destination employment rates follow the seasonal demand for tourism in most tourist locations and resorts. Most tourist destinations and resorts have a "high" season when employment and tourist visitation and expenditure are at a peak, and a "low" season when jobs and tourist visitation and expenditure are at its lowest. Consequently, increase

in local taxes such as value added tax, etc. on the products and service has the lowest weighted average perceived as Less Impact. This meant that, taxes of local products and services still remains similar. Changes on the tax contribution or levels in the Philippines still has to undergo through series of process in the national government before it could be applied in the local government.

- Social Impact of Tourism.

The positive and negative social impacts of tourism has a computed weighted mean of the positive and negative social impacts of tourism. As revealed, increase in host-visitor interactions that strengthens social relations development has the highest weighted average perceived as Moderate Impact. These revelations are in consonance to the study of Sandeep & Vinod (2014) that stated direct encounters between visitors and hosts could lead to greater cross-cultural knowledge for both sides and provide the host individuals with a means to broaden their horizons. Tourism brings people together across the globe, the more interactions they make, the more they share ideas and learn about their cultures. These cases make an interesting travel experience for tourists and create a meaning interaction between its hosts which leads to friendship and cross-cultural ties. Inkson Clark & Minnaert (2018) contends on their study that tourism can be seen as a type of encounter: people from distinct locations, cultures and lifestyles. In tourism, the nature and quality of private interaction between visitors and the host community is a significant component of a destination's tourist experience and many destinations encourage the friendliness of the society as an attraction. UNWTO calls the ' contribution of tourism to mutual comprehension and respect between populations and societies' the first article in its Global Code of Ethics (UNWTO, n.d.). Tourism can be seen as an opportunity to know individuals, locations and cultures that are unfamiliar. A greater understanding, tolerance and regard for various religious and moral and philosophical views can result from this. However, this is only feasible if the various tourism stakeholders accept and appreciate these distinctions and need to be supported by the sensitivity of visitors to the destination's cultural and social norms. Better understanding between cultures can possibly cause negative stereotypes to break down.

Oh, the other hand, improvement or availability of better health care services (health conditions and disease control) has the lowest weighted average perceived as Less Impact. On the study of Baker, David (2014), travel is a powerful force in the emergence of disease since the human migration has been a pathway throughout the history of infectious and will continue to shape the emergence, frequency, and spread of infections in geographic areas and populations.

Table 1  
Distribution of the Research Respondents

Respondents	Number of Respondents
Tourism legislative officials	15
Local entrepreneurs and businessmen	84
Local residents	84
Tourists	84
Total	267

Table 2  
List of Local Tourism Attractions

Name of Barangay	Name of Identified Tourist Attractions
Barangay Bolocboloc	Bolocboloc Sulfuric Springs
Barangay Campanga	AC Tilapia Fun Fishing Mantayupan Falls
Barangay Dakit	Molave Milk Station
Barangay Luhod	Green Valley Mountain Resort
Barangay Mantalongon	Living The Gospel Community
Barangay Mayana	Salay Church
Barangay Poblacion	Santa Ana Shrine Barili Tennis Club RVA Sports Complex Kaumahan Festival
Barangay Sayaw	Sayaw Beach

Table 3  
Impact of Technology Use to Local Attractions

Indicator	Tourists		Local Entrepreneur/ Businessmen		Local Residents		Local Tourism Officials		Average
	$\bar{x}$	Int.	$\bar{x}$	Int.	$\bar{x}$	Int.	$\bar{x}$	Int.	
1. Tourist information/tour guides (POIs, maps, itineraries, walking tours, etc.)	3.50	GI	3.33	GI	3.4	GI	3.25	GI	3.37
2. Wi-Fi access (free, paid)	3.27	GI	3.28	GI	3.25	GI	3.28	GI	3.27
3. Cultural offerings (museums, expositions, cinemas, concerts, shows, prices, and ticket reservations)	2.72	MI	2.98	MI	2.87	MI	2.98	MI	2.89
4. Weather forecast	3.45	GI	3.29	GI	3.27	GI	3.29	GI	3.32
5. Lodging, restaurants, and the like (prices, availability, contact information, reservations, etc.)	3.48	GI	3.31	GI	3.25	GI	3.30	GI	3.33
6. Transportation (airlines, ground transportation, schedules, check-in, prices, reservations, etc.)	3.39	GI	3.26	GI	3.33	GI	3.27	GI	3.31
7. Automobile rental (companies, prices, special offers, reservations, etc.)	3.25	GI	3.35	GI	3.27	GI	3.30	GI	3.29
8. Travel agencies (programs, special offers, tour package reservations, etc.)	3.25	GI	3.27	GI	3.01	MI	2.70	MI	3.06
9. Language translators	2.80	MI	3.06	MI	3.00	MI	2.89	MI	2.93
10. Webcams (locations, traffic, beaches, and tourist spots)	2.62	MI	2.66	MI	3.01	MI	2.83	MI	2.78
Grand Mean	3.7	MI	3.17	MI	3.16	MI	3.10	MI	3.25

Table 4  
Economic Impact of Local Tourism Attraction

Indicator	Tourists		Local Entrepreneur/ Businessmen		Local Residents		Local Tourism Officials		Average
	$\bar{x}$	Int.	$\bar{x}$	Int.	$\bar{x}$	Int.	$\bar{x}$	Int.	

I. Income  
Positive Impact

1) increase in profit/revenues or salaries/wages	2.33	LI	2.92	MI	2.33	LI	2.73	MI	2.58
2) increase in income of local products and services	2.24	LI	3.01	MI	2.75	MI	2.87	MI	2.72
Negative Impact									
1) increase in local taxes (VAT, etc.)	2.01	LI	2.25	LI	1.83	LI	2.04	LI	2.03
2) non-residents are getting benefits/additional expense/cost for labor or manpower services	2.51	MI	3.31	GI	2.07	LI	2.58	MI	2.62

**II. Employment**

**Positive Impact**

1) job creation/generation/demand for additional labor/manpower and or more employment opportunities available	2.73	MI	3.08	MI	2.56	MI	3.20	MI	2.89
2) increase in local employment opportunities/ more locally employed residents and or local residents are given job priorities	2.32	LI	2.77	MI	2.96	MI	3.07	MI	2.78

**Negative Impact**

1) seasonal employment opportunities	2.70	MI	2.96	MI	3.15	MI	2.86	MI	2.92
2) high labor employment competition/more contractual than regular employees and or fewer opportunities for job regularization	2.62	MI	2.96	MI	3.43	GI	2.93	MI	2.99

**III. Business or Investment**

**Positive Impact**

1) increase in investments and business opportunities/availability of more commercials establishments such as hotels, restaurants, banks, shopping centers and other commercial establishments in the area/expansion of business opportunities	2.45	LI	3.06	MI	1.67	NE	3.33	GI	2.63
2) increase in promotion/ marketability/ sales and or	2.46	LI	3.30	GI	2.76	MI	3.33	GI	2.96

availability of local products and services

Negative Impact

1) increase/high prices of local goods and services	2.46	LI	2.68	MI	2.86	MI	2.65	MI	2.66
2) economic drain or leakage	2.33	LI	2.67	MI	1.80	LI	2.22	MI	2.26

Grand Mean for Positive Impact	2.42	LI	3.02	MI	2.51	MI	3.09	MI	2.76
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Grand Mean for Economic Impact	2.44	LI	2.81	MI	2.52	MI	2.55	MI	2.58
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However, in the case of the tourism industry in the Municipality of Barili, the respondents perceived that health care services still hasn't improved especially on disease control and prevention. This is one aspect that the local government must take into consideration as it is for the safety and welfare of the tourists. On the other side, the negative social impact of tourism of local tourism attractions revealed that high vulnerability to crime such as drug abuse, gambling, human trafficking, prostitution, etc. has the highest weighted average but perceived as Less Impact. Inkson Clark & Minnaert (2018) revealed that the growth of tourism can lead to a rise in crime in the destination community. Tourist-related crimes include theft, robberies and tourist attacks, though these directly impact the tourist rather than the host, they may lead to an enhanced sense of absence of security within the host group. Host group members may also be victims of crime. Despite the fact that the tourism industry pose a threat to the community if not properly managed, however, tourism in the Municipality of Barili still hasn't has reach the level of creating crimes to the locality. While, loss of cultural values and cultural identity has the lowest weighted average still perceived as Less Impact. These findings are in contrast to the study of the International Labour Organization on Sustainable Tourism Alliance, 2015, that because tourism includes moving individuals to distinct geographical places and establishing social relationships between individuals who would otherwise not meet, cultural conflicts can occur as consequences of variations in cultures, ethnic and religious groups, values and lifestyles, languages, and levels of prosperity. The result may be over-exploitation of the social carrying capacity (limits of acceptable change in the social system within or

around the destination) and the cultural carrying capacity (limits of acceptable change in the culture of the host population) of the local community. Locals' attitudes towards tourism can unfold through euphoria, where tourists are very welcome, through apathy, irritation and possibly antagonism, as anti-tourist attitudes start to grow among locals.

### CONCLUSION

Based on the result of the study, the implications brought by technology and tourism was greatly manifested by the community. On the other hand, the socio-economic impact of tourism was moderately manifested. Thus, tourism in the community still has to be strengthened and improved to fully benefit from its potential as an income generating industry in the community. The results could prove interesting and beneficial to researchers, students, the industry and society in general.

#### Ethical Consideration:

The study was conducted in accordance with the principles of Helsinki Declaration and principles set forth by the Philippine Health Regulation Ethical Board (PHRB) and the Republic Act 103524 (Philippine National System Research Act of 2013) and CHED Memorandum Order No. 32 of 2007 has required the review of research endeavor's involving human subjects. Informed consent was obtained from the respondents.

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