

Social Media Technologies and Its Role in Sustainable Tourism Development of Asik-Asik Falls

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Abstract

Asik-Asik Falls remained hidden from the public until it was introduced through social media. Since then, it has become a tourist attraction in Alamada, North Cotabato. This research envisions contributing to the sustainable development of Asik-Asik Falls. Specifically, it aims to assess the respondents' perception of the potential impact of tourism in Alamada using sustainable tourism development literature. The research was conducted by examining online posts of previous travelers, key informant interviews (KII), and online surveys among 150 previous travelers. The findings provide a greater understanding of tourist perceptions, which can be used as guidelines for future sustainable developments. Asik-Asik Falls as a tourist attraction has an apparent impact on the local economy, and the quality of life of the residents has generally improved. The findings also revealed that consumers and tourism suppliers shared a common interest to maintain the natural beauty of the Asik-Asik Falls. The study recommends that the local government support the development of ecotourism by allocating a budget for maintenance and promotion. The residents should also participate in the implementation of the tourism development plan.

Keywords: Social media • information technology • sustainable tourism development • ecotourism • economic sustainability • environmental sustainability

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Introduction

Tourism is a rapidly growing industry and serves as an important driver of economic advancement in the global setting (World Tourism Organization 2004; Charag et al. 2019; Porter et al. 2015). In 2017, tourism created 313 million job opportunities and contributed 10.4% to the gross domestic product, making this sector one of the key activities fostering economic progress (Novandi and Adi 2019; Zhuang et al. 2019). Because of the range of benefits it can provide including direct revenue, foreign exchange earnings, employment in the food industry, travel operations, transportation, and improvement of establishments around the tourist spot (Peters et al. 2018; Andereck and Nyaupane 2011; Charag et al. 2019), tourism is considered as a contributing factor to the sustainable development of an area. The Department of Environment and Natural Resources (DENR)'s Administrative Order No. 2013-19 supports the preservation of protected areas and the sustainable use of natural resources that has a potential for the development of ecotourism. Other studies cite the great significance of sustainable ecotourism development such as educational roles for ecotourists, protection against pollution, and the preservation of natural sites within ecotourism destinations (Zhang 2010). Acott et al. (1998) define ecotourism as a range from shallow to deep ecotourism based on the principles of sustainability and environmentalism. Ecotourism as a sustainable development tool is

a set of principles and a specific market segment (Wood 2002).

Literature has established that the tourism industry is a conduit for positive impacts on the economy, the environment, as well as in socio-cultural aspects as evidenced by the creation of business and job opportunities, increased income levels, preserved historic locations, sustained cultural identity and pride of a community, and improved physical appearance of sites and awareness on environmental conservation, to name a few (Diedrich and Garcia-Buades 2009; Andereck et al. 2005; Hammad et al. 2017; Latip et al. 2018; Saqib et al. 2019; Charag et al. 2019). Tourism is a convergence locus for economic, environmental, and socio-cultural principles. Sustainable tourism development is largely based on the integration of economic sustainability and environmental sustainability—the ability to generate economic growth and ensure consumer satisfaction without causing negative impacts on the environment (Cruz 2003; McKercher 2003). Sustainable development in tourism lies in preserving the balance between environment and economic development to ensure continuing support from the host community and the corresponding long-term benefits.

The Philippines is the commercial, cultural, and intellectual hub of Asia since the dawn of history (Cruz 2003). It is an island paradise with diverse geography, a fascinating history, and is one of the best tourist destinations in Asia and across the world (Peralta 2019). Tourism-related revenue grew by 20.81% in 2019 compared to 2018, which is equivalent to PhP 482.15 billion in visitor receipts in 2019 (Department of Tourism 2020). According to the DOT, more than 2.204 million foreign tourists visited the country in 2019's first quarter. Thus, in 2020, the DOT is focusing on sustainable tourism in a bid to promote a "premier" sustainable destination as well as environmental compliance in tourist sites. In Region 12, 1.7 million travelers were recorded in 2018, with 330,762 tourists recorded in North Cotabato (DOT 2020).

Asik-Asik waterfalls remained hidden from the public eye until a photo went viral on the Internet sometime between 2008 and 2012. Water flows out from a cliff of a 200-meter high hill and

expands like a curtain. Tourists travel about 20 kilometers from the town proper to reach the waterfalls. They then descend a kilometer of stairs, which excites the visitors as they can hear the gushing of water from the waterfalls.

Alamada's local government unit (LGU) provided an account of how Asik-Asik Falls became popular. The hidden treasure made its first appearance in the media after a fire razed a portion of the vegetation surrounding the waterfalls. This mishap was followed by a landslide that pared a fraction of the hill and uprooted trees and bamboo. This series of unfortunate events made Asik-Asik Falls a popular subject for the press. Soon, the splendor of the waterfalls spread and through various social media platforms (Facebook, blogs, and national TV reports), Asik-Asik became famous. Photos featuring the Asik-Asik Falls captured and shared by tourists went viral online. To keep pace with the advancement in information technology, the LGU created an official website dedicated to tourism purposes in 2018.

Personal accounts from the local communities and former visitors play an imperative role in the image creation and promotion of a site (Palmer et al. 2013). With the advent of information technology, knowledge on tourist destinations reach a larger mass through other means. The role of social media has been a highly discussed topic within tourism studies and extant research pointed out the growing dependence of people on promoting and disseminating tourism-related information through social media platforms (Sabanaeva 2017; Gosling 2017; Ali and Frew 2014; Buted et al. 2014). However, there is still a limited understanding of how social media may be useful and effective in tourism, especially in the Philippines. The use of information technology tools may help in promoting tourism development, especially for advertising relatively less popular and secluded sites.

The study primarily aims to explore the impact of the tourism industry in the area based on the perceptions of travelers and tourism services suppliers. It contributes information on how social media can support sustainable tourism in Asik-Asik Falls. The study also aims

to address the following specific objectives:

1. Describe the role of information technology in promoting Asik-Asik Falls as a tourist destination; and
2. Evaluate the impacts of Asik-Asik discovery on the current stakeholders, in terms of tourism, information technology, environment, and economy.

The paper promotes the significance of the Asik-Asik falls as a tourist destination; assists the locals in handling tourists; and helps preserve, protect, and sustain the impressive beauty of its natural resources. This study benefits the community in terms of livelihood and development. The Alamada LGU will receive a copy of the study upon its completion for transparency, which will help the municipality's economic development and tourism industry, specifically in generating income for the maintenance of the Asik-Asik falls.

Review of Related Literature

The involvement of the local community and the presence of tourists in tourism development is vital in achieving significant economic benefits as well as ecological advantages. With the expansion of tourism-related activities worldwide, a growing body of study has centered on its impacts on the host communities and the tourists. Existing literature has demonstrated that the tourism industry brings a significant avenue for economic growth. This is manifested through an increase in income levels, generation of revenue, employment opportunities, and reduction of poverty (Andreck and Nyaupane 2011; Mensah 2012; Charag et al. 2019; Jalani 2012; Latip et al. 2018). Apart from the clear-cut economic benefits, tourism brings a positive influence on socio-cultural and environmental facets. Tourism activities provide a conduit for the improvement of a site's appearance and preservation of cultural and historic attractions. The activities also strengthen the cultural identity of the host community, social interaction between tourists and residents, public acknowledgment, and the reduction of social inequalities (Stylidis et al. 2014; Charag

et al. 2019; Nunkoo and Ramkissoon 2011; Hammad et al. 2017). Expansion of tourism also leads to the enhancement of facilities and public infrastructures and improvement in the aesthetic quality of sites, which ultimately fosters appreciation and awareness of environmental conservation (Andereck et al. 2005; Diedrich and Garcia-Buades 2009).

As tourism is an assembly point for various sectors (economic, environmental, and socio-cultural), the concept of sustainable development has to be incorporated into its operation. Some researchers presented elements of tourism development and these included economic sustainability and environmental sustainability (Cruz 2003; McKercher 2003). Economic sustainability pertains to promoting tourism to generate economic growth that is profitable in both the immediate and long term while keeping an eye on handling greater demand to guarantee consumers' satisfaction (Cruz 2003; McKercher 2003). Environmental sustainability, on the other hand, is defined as the ability of the natural and built environment to effectively administer tourism activities without incurring impairment (Cruz 2003). A parallel concept suggested that the idea of sustainable development should carefully maintain the balance between environment and economic development (Khuntia and Mishra 2014). Sustainability can only be achieved for long-term benefits if it can gather the support of present-day beneficiaries. Well-sustained and properly managed tourism project creates various positive impacts, which include direct revenue and income for the host communities, improvement of the standard of living for the locals, poverty reduction, economic diversification, enhancement of the spot's physical appearance, rehabilitation and restoration of old facilities and landmarks, conservation of nature and its resources, improvement of environmental cognizance, and formulation of management schemes (Muhanna 2006; Khuntia and Mishra 2014). Tosun (2001) concluded that the implementation of principles of sustainable tourism development is a difficult task to achieve and that the tourism industry should not strive for its perpetuity at the disadvantage of other sectors. Kilipiris and Zardava (2012) stated

that it is possible to have balanced development that favors welfare maximization for the host community, environmental protection, and visitor satisfaction.

In the Philippines, ecotourism is acknowledged as a tool for sustainable development as presented in the National Ecotourism Strategy (NES) Action Plan 2013–2022 (NES 2014). Policies must be put in place to provide guidance for the local community and the visitors (Eagles et al. 2014). D' Antonio et al. (2016) stated that to achieve sustainable development, policymakers should understand the current conditions of natural and social resources.

The expansion of tourism in recent times can be largely attributed to extensive promotions and information dissemination, either through word of mouth or through information technology. A handful of works have explored the usefulness of information technology tools such as social media in the realms of tourism (Barcelos et al. 2019; Dolan et al. 2019). Relative to conventional mass media, social media has an advantage due to its better accessibility and superior ability to reach more people. Tourism stakeholders are now in their prime advantage of using social media as a significant basis of evidence on a varied array of subjects, including nature-based tourism (Gohil 2015; da Mota and Pickering 2020). Information and communication technologies influence the tourism sector since the tourism sector is now reinforced by progress and the formation of new online technologies, and the emergent information transmission rapidity (Zelenka 2009). Several influences enabled social media applications to grow immensely popular among many stakeholders. One of which is the evolution of the Internet, which turned into a very vital cradle for information quest (Arsal et al. 2008). Communication is progressing, and social media serves a noticeable role in the publicizing and public associations' equation (Mangold and Faulds 2009). Several studies also acknowledged the value and impact of social media to promote tourism (Sabanaeva 2017; Gosling, 2017; Ali and Frew, 2014; Buted et al. 2014).

Conceptual Framework

The study follows a three-step paradigm to attain the set objectives. Each phase of the framework is associated with specific activities. The leadoff involves securing feedback from principal individuals that had familiarity or access to the tourism site. The feedback includes sentiments from key government officials, residents, suppliers of tourism services (drivers and vendors); social media interaction among travelers; and responses from previous sightseers. Various strategies are applied to gather information from each target group consisting of key informant interviews for the local government officials, residents, and tourism services providers; in situ interviews for the tourists and locals; and virtual surveys and assessments of online posts of travelers who have visited the place. The second step involves transcription of the gathered responses to yield two sets of perceptions: the consumers' impression (tourists and residents) and the supplier's viewpoint (government and tourism services providers). The insights from both groups are translated into output in the final phase. Matters raised by the two groups are taken into account in developing management guidelines for the area. Published literature relevant to sustainable tourism development is also used to form the pillar of the output.

Sustainable tourism pursuit incorporates elements of sustainable development such as environmental, social, and economic interests. Multi-stakeholders' collaboration is an effective way to support the initiative of sustainable tourism (Graci 2013), and any form of tourism undertaking must be based on this (Harris et al. 2012). The environmental dimension encompasses the quality of the natural ecosystem and its inherent attractiveness. The economic dimension takes into account the social and environmental costs and financial drawbacks that can be incurred when tourism mandates are not carried out accordingly. Another consideration is the level of satisfaction among the local community or the impact of tourism activity on the quality of life of the locals. Also included are the promotion of cultural wealth and the preservation of biodiversity.

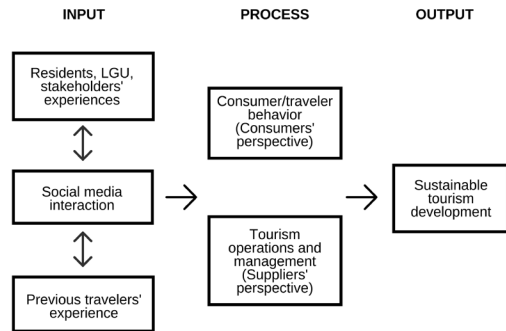


FIGURE 1 The three-step paradigm of the study

Methodology

The study primarily seeks to describe tourism impacts on both tourism suppliers and consumers as well as contribute information about the essential role of social media in promoting sustainable tourism development in Asik-Asik Falls. Primary and secondary data were sought from various respondents from January 2019 through March 2020. The research was conducted by examining online posts of previous travelers, key informant interviews (KII) with respective local government units (LGUs), onsite interviews with tourists and residents, and an online survey of 150 previous travelers through Google forms survey. The qualitative data gathering method of the KII included questions on the community (*habal-habal* drivers, vendors, LGU, and tourists). Secondary data used also consisted of online reviews from social media sites and websites.

Data gathered were analyzed using frequency, percentage, average mean, and ranking and presented in a tabular form. Weighted mean was used to compute the average value of a given response to the statement asked particularly on motivation approaches. The verbal interpretation of the weighted mean is reflected in Table 1. Pimentel's (2019) five-point Likert scale was used as a tool for the mean range and verbal interpretation.

The research team explained the study's objectives to the participants and sought their permission to be part of the research. The online survey started with a comprehensive letter to

ensure the participant's informed consent. The gathered data were analyzed objectively to avoid biases that could potentially modify the results.

TABLE 1 Verbal interpretation of the weighted mean (Pimentel 2019)

Mean range	Verbal interpretation
1.00–1.79	Strongly disagree
1.80–2.59	Disagree
2.60–3.39	Neutral
3.40–4.19	Agree
4.20–5.00	Strongly agree

Results and Discussion

Profile of Respondents

Table 2 shows the profile of the sample population who took part in the online survey, which consisted of 150 previous travelers. The majority were female, accounting for 60% of the total count whereas 40% were male. Respondents from the 31–40 age bracket were the most numerous (52%), followed by 21–30 years old (20%). Fifty-six percent (56%) of the travelers were from Midsayap (a nearby municipality), 5% were residents of Alamada, while the remaining 39% were tourists from municipalities in Region 12 and provinces (Cotabato City, Davao City, Luzon, and Visayas). When asked about their frequency of visit, the majority (47%) indicated that they have been to Asik-Asik Falls once, 46% have visited between two and five times, and 7% have repeatedly visited more than five times.

Survey Results

The online survey results are presented in Table 3 and Figures 2–3. Table 3 depicts the respondents' perception of Asik-Asik Falls as a tourist destination. The majority strongly agreed that Asik-Asik is a popular tourist destination and that they prefer the current nature of Asik-Asik. They agreed that the water is cold and clean and that they would bring their family on their next visit. Meanwhile, they were neutral about the safety of the roads going to the falls. They

disagreed that it is safe to have overnight camping and also disagreed that the local government should change the look of the falls.

The researchers explored the aspects that need to be improved in Asik-Asik Falls. Twenty-seven percent (27%) of the surveyed tourists expressed that the availability of comfort rooms needed to be considered. Twenty-four percent (24%) were concerned about their safety. They were neutral as to the safety of the roads. They also disagreed that overnight camping is safe. Results show that 23% and 11% indicated the need to improve the availability of transportation and *sari-sari* stores, respectively. A minor proportion of the respondents (7%) expressed that online information and cleanliness are the least of their interest.

Information Technology (Social Media)

A greater proportion (78%) of tourists coming from Alamada and Midsayap indicated that they haven't visited the official website of the Asik-Asik Falls. Similarly, only 21% of visitors from other localities stated they had come across the website (Annex 1).

Respondents were also asked about their basis of information about Asik-Asik Falls, and they have identified nine sources (Annex 2): verbal information from family and friends who have previously visited the area, conventional mass media, and social media platforms (Facebook, blogs, Instagram, and YouTube). Previous travelers indicated that Facebook was their topmost source of knowledge about Asik-Asik (28.67%), followed by the word of mouth (WoM), and promotion by friends and family (26.00% and 19.33%, respectively). Over 19.33% of the respondents derived information from other social media platforms such as Instagram, YouTube, blogs, and online travel guides, while the remaining 6.67% were from conventional mass media such as national and local news.

TABLE 2 Demographic profile of 150 respondents

Demographic	Categories	Frequency (f)	Percentage (%)
Gender	Female	90	0.60
	Male	60	0.40
Age	below 20	28	0.19
	21–30	30	0.20
	31–40	78	0.52
	41–50	10	0.07
	above 50	4	0.03
Current residence	Alamada	8	0.05
	Midsayap	84	0.56
	Cotabato City	10	0.07
	Davao City	14	0.09
	Region 12 (not Midsayap, Alamada, Cotabato)	18	0.12
	Luzon	8	0.05
	Visayas	8	0.05
How many times have you been to Asik-Asik Falls	1	70	0.47
	2	28	0.19
	3	26	0.17
	4	10	0.07
	5	6	0.04
	more than 5	10	0.07

TABLE 3 Tourist perception toward Asik-Asik Falls

Tourist Perception	Mean	Interpretation
Asik-Asik Falls is a popular tourist destination	4.56	Strongly agree
The water raining down from Asik-Asik Falls is so clean and cold that visitors can drink from it	4.12	Agree
I will bring my whole family in my next visit	4.07	Agree
Asik-Asik Falls is safe for overnight camping	2.23	Disagree
The roads going to Asik Asik Falls are safe	3.32	Neutral
I prefer the current natural beauty of Asik-Asik Falls	4.63	Strongly agree
I prefer that the local government change the look of Asik-Asik Falls	1.92	Disagree

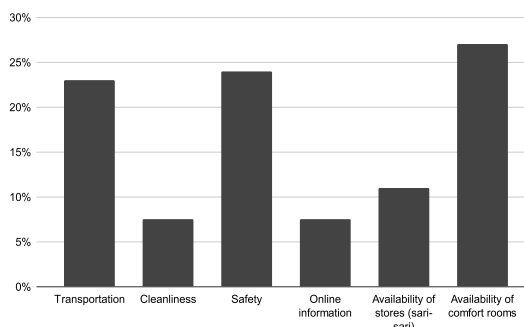


FIGURE 2 Tourist perception of what needs to be improved in Asik Asik Falls

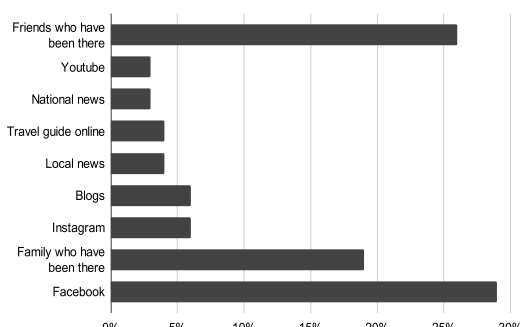


FIGURE 3 Sources of Information about Asik-Asik Falls

Perception of Tourism Impacts

The survey questionnaires included items relating to economic aspects of Asik-Asik Falls such as travel fares and entrance fees. Respondents from Alamada, Midsayap, and other areas generally agreed that the fare for motorcycles (locally known as *habal-habal*), the main mode of transportation to Asik-Asik Falls, is expensive. Meanwhile, all respondents expressed disagreement with the statement “*Mahal ang entrance fee*” (Entrance fee is expensive). This implied the tourists' willingness to pay the entrance fee as it is a reasonable amount. The LGU of Alamada intends to use the collected entrance fee for the upgrading/modification/improvement of the area.

Tourism impacts of Asik-Asik Falls in terms of economic and environmental aspects were delved into through key informant interviews with local government officials and onsite interviews with tourists and residents. Most respondents (82.2%) strongly agreed that Asik-Asik Falls has positively influenced the municipality of Alamada in general. A larger fraction (52.7%) had a strong positive disposition that the waterfall has a desirable impact on the environment. Respondents also strongly agreed (73%) that Asik-Asik created a beneficial impact on the economy of the local community. The study was carried out to contribute information on the impact of tourism in Asik-Asik Falls on both the local community (tourism services suppliers) through KII and onsite interviews, and on the consumers (tourists) through in-situ

interviews and an online survey. It also supports the role of social media as a powerful tool in promoting a tourist destination and a source of tourism-related information.

Consumer/Traveler Behavior (Consumers' Perspective)

Consumers' perspective encompassed the responses of visitors gathered through onsite interviews and online surveys. It was found that tourists are generally positively disposed towards the tourism value of Asik-Asik Falls, evidenced by their high mean scores for items relating to the popularity and aesthetic quality of the site. Their preference to maintain the natural look of the falls is also a manifestation of their appreciation of the inherent beauty of the falls. The high percentage of visitors coming from other localities (other areas in Mindanao, Luzon, and Visayas) is an attestation that the knowledge on Asik-Asik Falls as a renowned tourist destination in North Cotabato has reached a larger mass. To stir interest in other sightseers, former visitors signified that they take pride in their social media posts about the place. The majority of the respondents expressed their intent to share their pleasant experiences with other people. Others have even affirmed that they will bring their families along with them on their next visit. Tourists' satisfaction is fairly evident, as some of them tagged their stay at Asik-Asik Falls as exceptional. One even remarked, “I felt that I was on another planet when I was there.”

Pristine and cool water cascading from the falls stands as the focal feature of Asik-Asik. Locals mentioned that visitors could drink directly from it due to its purity. Clean water further typifies the merits and beneficial impacts brought by Asik-Asik Falls to the community. Simmons (2013) denoted that environmental safety (i.e. provision of clean water) is one of the most salient contributions of tourism services to humans. The natural beauty of Asik-Asik Falls is sufficient to incite interest among people who want to be closer to the environment. Hence, the respondents favor its existing form.

A trivial portion of the respondents implied that inconvenience (i.e. strenuous walks going to the falls and peril in riding motorcycles) hinders them from revisiting the spot. Tourists generally corresponded that roads going to the falls are passable. However, those that came from metropolitan areas encountered difficulty traversing the road on a motorcycle. They found the trip leading to the site tiresome since they were not accustomed to this type of transportation. The local government denoted that the paved roads from Alamada town proper to Asik-Asik Falls are in functional condition. Except for the ongoing repairs of two bridges along the road, further structural development going to the falls is deemed unnecessary at the moment.

Sustainable tourism emphasizes three key domains, namely: natural environment, social aspect, and economic feasibility. The three areas are acclaimed as being interrelated, but each has a distinct array of attributes. Tourism sustainability means balancing an industry's impact on the ecosystem with creating job opportunities for the local population, along with awareness of and respect for native culture (Kozak et al. 2011; Khuntia and Mishra 2014).

Tourism Operations and Management (Suppliers' Perspective)

Tourism development in Asik-Asik has an apparent impact on the local economy of Alamada, as exemplified during the onsite interview with residents, who also serve as tourism services suppliers such as motorcycle or *habal-habal* drivers, store owners within the vicinity of Asik-

Asik, and tour guides. The quality of life among the residents generally improved alongside the distinction of the falls as a new convivial spot. Providers of tourism services testified that the recent tourism growth opened better livelihood opportunities for them. Individuals engaged in tourism services are largely appreciative because they have greater capacities to sustain their necessities now. *Habal-habal* drivers expressed that their income was augmented by 200–500%. Before, drivers barely earned PhP 100.00 daily, but with the upsurge of travelers, their income increased to PhP 300.00–PhP 550.00 per day. Store owners also gained higher earnings. This enabled them to support their families better. Tour guides offering horseback rides stated that tourists assent to the fee of PhP 300.00. The fee for horseback rides was decided by the horse owners as most of them agreed to offer the same rate to avoid competition. Parking fees are also imposed in the area. The rate depends on the size of the vehicle and may range from PhP 10.00 for motorcycles, PhP 15.00 for tricycles, PhP 25.00 for SUVs/four-wheel service transports, and PhP 50.00 for trucks. The local government indicated that the parking rates considerably increased when Asik-Asik Falls became more popular. However, motorists are not entailed to pay toll fees because the bridges and the roads leading to Asik-Asik Falls are public property. For the same reason as the entrance fee, the LGU of Alamada intends to use the collected parking fee for the upgrading/modification/improvement of the area.

Sustainable Development of Tourism

The findings reveals that both consumers and tourism suppliers have a common interest in preserving the natural beauty of Asik-Asik Falls. A small percentage of tourists seek to have structural development, particularly road improvement, but the majority agreed that more alteration is not necessary. This is a manifestation of their awareness of the pillars of sustainable tourism, which considers economic development without compromising environmental protection and socio-cultural integrity.

To reciprocate the benefits, the Alamada LGU formed a technical working group whose sole

responsibility is to guarantee the implementation of a sustainable eco-tourism project in the area. The team works in coordination with the village residents and local officials and seeks to promote social responsibility to maintain the site. Everyone in the community takes part in the improvement, protection, and preservation of the area and its resources. Upholding the natural splendor of Asik-Asik Falls is at the forefront of the locals' concern. They expressed their intent to safeguard and maintain the authenticity of the spot. However, preliminary alterations have been done to keep up with the growing number of tourists. Trails leading to the waterfalls are being developed to provide convenience and better accessibility for travelers.

By and large, the tourism industry falls under the canopy of the economic sector, but it is an essential meeting point of economic, environmental, and socio-cultural principles (Khuntia and Mishra 2014). At present, tourism has become one of the fastest progressing economic activities, helping generate livelihood for local people. Theorists of sustainable development recognize that economic growth is critical for mitigating poverty, improving the quality of life, and directing progress towards environmental security. Cruz (2003) and McKercher (2003) identified one of the elements of sustainability tourism, which is economic sustainability, or keeping growth rates at manageable levels and promoting tourism while keeping an eye on capacities to handle greater demand to ensure consumer satisfaction. A levelheaded strategy needs to be employed to guarantee that economic development does not compromise the quality of natural resources. Sustainable tourism industry brings forth valuable impacts such as improvement in the standard of living for locals, creation of venues to utilize and market local products, diversification of the economy, provision of employment, and reduction of poverty, among others (Khuntia and Mishra 2014).

Cruz (2003) coined environmental sustainability as the capability of the natural and built environment to efficiently handle tourism industries without causing impairment. Khuntia and Mishra (2014) stated that tourism,

which is largely considered an economic activity, significantly influences the environment. The environment, in turn, acts as a major attracting factor for tourists. Having close contact with the inherent beauty of the environment and its resources is sufficient to promote an excellent experience for visitors. Properly managed and sustained tourism projects bring a vast array of positive impacts such as improvement of the locality's aesthetic appearance, rehabilitation and transformation of old facilities and sites, conservation of nature and wildlife, promotion of environmental awareness, and introduction of planning and management strategies (Muhanna 2006; Khuntia and Mishra 2014). As far as tourist demand is concerned, environmental quality is a vital aspect of natural attractions. With this in mind, protection and preservation become indispensable assets for the tourism industry. Intrinsic attributes such as landscape, flora, hydrological structures, pristine water, clean air, and wildlife have to be protected from pollution threats to maintain their natural charm.

Information Technology's Role in Sustainable Tourism

One of the most salient findings of the present study is ascertaining the role of information technology in promoting sustainable tourism in the area. Visitors identified nine sources of information about Asik-Asik Falls consisting of both word of mouth (WoM) promotion and information technology tools as shown in Figure 3. The emergence of Facebook as the top source of knowledge about the place is indicative of the increasing dependence of tourists on social media as a repository of travel information. The conventional mass media such as national and local news, and other online platforms such as Instagram, Youtube, blogs, and online travel guides were identified as important information sources. This finding largely adheres to mainstream studies, which suggest that information technology, particularly social media, is an influential tool in promoting and disseminating tourism-relevant communications.

Substantial attention is laid on the fundamental development in global tourism

with the advent of information technology, and particularly the expansion of social media. Several studies stressed the apparent importance of social media in promoting tourism (Sabanaeva 2017; Gossling 2017; Ali and Frew 2014; Buted et al. 2014). In comparison to conventional mass media, social media is more prevalent and compelling because of its greater ability to reach a larger number of people and disseminate rich information. Moreover, it entails minimal effort and less cost for its users to make a larger influence. Sabanaeva (2017) depicted the potent influence of social media in promoting the tourism industry in Austria. Her work highlighted the importance of social media as a crucial source of travel information for both existing and potential travelers in their country. A parallel result was obtained by Ali and Frew (2014), which demonstrates the usefulness of social media in tourism such as information management, decision-making, monitoring of destination, assessing and forecasting trends, and establishing partnerships and relationships among various stakeholders. Gossling (2017) further validated social media's expediency by allowing prospective visitors to reserve and book a trip, evaluate and judge, and receive travel advisory. Social media platforms such as Facebook, Twitter, Youtube, blogs, and websites serves as a major pull factor in promoting tourism in Batangas, Philippines (Buted et al. 2014). These networking sites provide an avenue where people mostly communicate and exchange travel experiences and insights.

Conclusion and Recommendations

The study examines the role of social media in promoting the sustainable development of Asik-Asik Falls. Speaking from the consumers' viewpoint, it offers an incomparable experience with nature. The study establishes the growing reliance of tourists on social media as the basis of travel information. Asik-Asik visitors denotes that Facebook is their topmost source of knowledge about the place. It can be implied that social media is not an optional add-on in the tourism industry, but rather an influential tool

to succeed in today's vastly competitive setting. The convenience and reliability of social media further encourage users to depend on it when planning and preparing for future excursions. The study also shows that the official website for tourism does not live up to its intended role as exhibited by the low percentage of respondents that have come across the website. Asik-Asik Falls may become a more popular tourist destination if it transcends other social media platforms. Alamada's official website needs to create a good rapport to advertise the spot. This will assist the LGU in earning more attention from technology-savvy travelers and to further elevate its position in the tourism industry. The findings of the study also reveals that consumers and tourism suppliers share a common interest in maintaining the natural beauty of Asik-Asik Falls. Although a minor fraction of tourists seeks to have structural development, specifically road improvement, the majority thrust aside any alteration to the place. This manifests their awareness of the pillars of sustainable tourism. Both consumers and tourism suppliers want economic development to meet halfway with environmental and socio-cultural protection.

The local government of Alamada and the Province of North Cotabato may support the development of ecotourism in Asik-Asik Falls by allocating enough budget that can be used in the maintenance and promotion of this tourist destination. Thus, this study will provide information to the LGU to make guidelines for future sustainable developments of Asik-Asik Falls. Residents should participate in the implementation of the tourism development plan. Future research on the above topic may be explored using other variables not included in the study such as using a larger scale of population and quantitative matrix analysis of tourist experience, and it will also be good to analyze the impact on the wellbeing of Asik-Asik residents.

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Annex

ANNEX 1 Respondents who viewed the official website of Local Government Unit of Alamada

Visited the official website of Alamada LGU	Frequency (f)	Percentage (%)
Alamada and Midsayap residents	-	-
Yes	20	22
No	72	78
Visitors from other locations	-	-
Yes	12	21
No	46	79

ANNEX 2 Respondents' sources of information

Sources of information	Percentage (%)	Frequency (f)	Rank
Facebook	28.67	43	1
Friends who have been there	26.00	39	2
Family who have been there	19.33	29	3
Blogs	6.67	10	4
Instagram	5.33	8	5
Local news	4.67	7	6
Travel guide online	4.00	6	7
Youtube	3.33	5	8
National news	2.00	3	9

ANNEX 3 Respondents' insight into their social media posts

I am proud of my social media post that I have been to Asik-Asik Falls	Mean	Interpretation
Male	4.62	Strongly agree
Female	4.44	Strongly agree

ANNEX 4 Tourists' economic perception

Economic perception/ Type of tourist	Alamada and Midsayap Resi-dents	Visitors from other locations
<i>Mahal Pamasaha sa habal-habal (Habal-habal fare is expensive)</i>	4.17 (Agree)	3.50 (Agree)
<i>Mahal ang entrance fee (Entrance fee is expensive)</i>	2.30 (Disagree)	2.11 (Disagree)

ANNEX 5 Impact of Asik-Asik Falls

Impact of Asik-Asik Falls	Percentage (%)				
	5 (Strongly agree)	4 (Agree)	3 (Neutral)	2 (Disagree)	1 (Strongly disagree)
Asik-Asik Falls has a positive impact on the Municipality of Al-amada	82.2	13.7	4.1	0	0
Asik-Asik Falls has a desirable impact on the environment.	52.7	37.8	9.5	0	0
Asik-Asik Falls has a beneficial impact on the local community in terms of economy	73.00	20.3	6.8	0	0