



The Case for Mountain Biking in Responsible Tourism Narratives



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ABSTRACT: The global pandemic has accelerated an existing trend of growth in participation in outdoor recreational activities, of which mountain biking is one of the fastest growing segments. Concurrently, responsible tourism began receiving more attention from academics and practitioners began implementing the principles of responsible tourism within organizations. No research has been conducted on the intersection of mountain biking and responsible tourism. This study examines the potential role mountain biking may play as a responsible form of tourism and in the development of responsible tourism destinations. In particular, this study explores some of the principles of responsible tourism and applies them to the results from a tourism impact study for the Super8 Mountain Bike (MTB) Festival held in Taichung, Taiwan in 2020. Limitations to this study and areas of future research are highlighted, while implications for practitioners are also shared.

KEYWORDS: responsible tourism; mountain biking; outdoor recreation; tourism impacts; festivals and events

Introduction

Responsible tourism has emerged within the global tourism narrative surrounding the moral choices of visitors and the implementation of sustainable tourism policies by practitioners and government stakeholders (Eichelberger et al., 2021) or as Ting, Morrison & Leong (2021) more succinctly claim, potentially “...(e)verybody directly and indirectly involved with tourism...” (p. 3). While contributing to the tourism lexicon for decades (Krippendorf, 1987; Mihalič, 2013; Liu, 2003; Taylor, 2006), a renewed discussion around conscientious tourism development and activities has occurred during the COVID-19 pandemic (Cheer, Ting & Leong, 2021). A range of tourism destinations, associations and operators are implementing policies to procure a desired brand and/or destination image that aligns with responsible tourism (e.g., Intrepid Group; VisitScotland.com; ResponsibleBorneo.com). There is a growing trend in tourism to move from theoretical sustainability guidelines to the implementation of responsible tourism practices and operations for both tourists and industry.

The dialogue around responsible tourism was reignited when tourism growth came to an abrupt halt in 2020 with the arrival of the global pandemic (Eichelberger et al., 2021; OECD,

2020). Global and local stakeholders saw a chance to recalibrate towards a more responsible method of sourcing, experiencing and delivering travel (Cheer et al., 2021), which is of particular importance with the increasing popularity of some forms of tourism (Outdoor Industry Association, 2021). For responsible tourism to be realized, all sectors of the tourism industry (including participants) are considered for their potential contribution to the well-being of communities, stakeholders and environments (Chan, 2010; Dávid, 2011). Prior to the pandemic, outdoor recreational activities in natural settings were increasing (Balmford et al., 2009; Bell et al., 2007; Leung et al., 2018); a trend expected to continue into the future (Bell et al., 2007; Outdoor Industry Association, 2018; White et al., 2016). With more people getting outdoors than ever before, in part due to Covid-19 travel restrictions (Landry et al., 2021), outdoor recreation should draw notice from stakeholders' interested in sustainable and responsible tourism (Doubleday et al., 2021; Newcomb, 2020). Mountain biking, in particular, has seen a global renaissance in recent decades and is one of the fastest growing outdoor recreational activities (Chavez, Winter & Baas, 1993; Davies & Newsome, 2009; Hardiman & Burgin, 2013; Outdoor Industry Association, 2017) and is important to discuss in the context of responsible tourism. The increasing popularity of mountain biking and other outdoor recreational activities in recent years potentially gives rise to conflicts between differing user groups, land managers and local communities. As is such, this increasingly positions natural areas as conceivable settings as a contested tourism space (Jacob & Schreyer, 1980; Scott, Marcouiller & Prey, 2010; Schild, 2019).

This study examines the potential role mountain biking may play as a low impact recreational and responsible tourism activity, as well as in the development of sustainable tourism destinations. To understand the possible extent to which mountain biking may be framed as a responsible form of tourism, a closer assessment of the distribution of economic benefits and related tourism impacts will be undertaken. While limitations existed, this study suggests that tourism impact studies of mountain bike events may present an effective method for academics and destination managers to measure this phenomenon. In particular, the results from a tourism impact study for the Super8 Mountain Bike (MTB) Festival held in Taichung, Taiwan in 2020 are presented and observed against the principles of responsible tourism.

Literature Review

Responsible tourism

A conceptual understanding of responsible tourism emerged from the Cape Town Declaration: Responsible Tourism in Destinations, an industry event in the lead-up to the 2002 World Summit on Sustainable Development. From this conference, consensus was drawn on what responsible tourism is and how it could be implemented. According to the Cape Town Declaration, responsible tourism was prescribed by seven characteristics, which aim to reduce the negative economic, environmental and social impacts of tourism activities. These characteristics are complemented by the fact that responsible tourism activities should provide benefits for communities and the people who live there, the locals employed in the region and the tourists themselves (Declaration on Responsible Tourism, 2002; Spenceley et al., 2002).

Since then, segments of the tourism industry have embraced responsible tourism resulting in the development of initiatives such as online travel agencies (e.g. ResponsibleTravel.org), tour operations (e.g. intrepidgroup.travel), certification programs (e.g.

BiosphereTourism.com), industry awards (e.g. World Travel Market Responsible Travel Awards) and destination development campaigns (e.g. Thomson Okanagan); all focusing on delivering and celebrating responsible tourism. Since the Cape Town Declaration many tourism sectors have been researched for their contributions to responsible tourism including accommodation (Musavengane, 2019), culinary tourism (Opoku, Wang & Muñoz, 2021), event tourism (Hermann, Geldenhuys & Coetzee, 2011) and cultural tourism (Vu, 2015). Even outdoor recreation and nature-based tourism have been identified as "...important tools for conservation and the economy." (Responsible Travel, 2019). The perspectives on responsible tourism are certainly diverse (Bramwell et al., 2008), however, no specific research exists on the role mountain biking (or mountain bike events) may play in creating social, environmental and economic benefits that align with the principles of responsible tourism.

Tourism economic impact

Driven by the need for appropriate information for both private and public sector stakeholders, developing an understanding of tourism economic impacts associated with a specific tourism activity is fundamental to garnering stakeholder support, profiling tourist segments and developing sustainable tourism destinations (Creaco & Querini, 2003; Stynes, 1997). At a risk of oversimplification, tourism economic impacts are essentially a measurement of the contributions of tourism activity to a region's economy. Tourism has a range of economic impacts with the most direct effects occurring within the primary tourism sectors accommodation, restaurants, transportation, amusements, and retail trade (Stynes, 1997). While the scope of this current study prohibited the researchers from applying more complex economic impact models to the survey data (e.g., Input-Output Models, Multiplier Effects, etc), it is important to briefly examine some of the tourism and economic impacts of mountain biking and the alignment of this activity as a responsible form of tourism with equitable distribution of tourism and economic benefits.

With an estimated 800 billion visits to protected areas globally, outdoor recreation's contribution to economies is significant including job creation, increased tax revenue and tourism receipts (Balmford et al., 2015; Bergstrom et al., 1990; Eagles, McLean & Stabler, 2000; Hjerpe, 2018). One of the key characteristics of responsible tourism is that economic activities contribute to the improved well-being of hosts and yields economic benefits for local people (Spenceley et al., 2002). For communities around the world, mountain biking has been transformative in leveraging new tourism opportunities and contributing, positively, to both their economic and social compositions. These include drawing significant domestic and international visitation, increasing tourism receipts and generating new employment (Buning & Lamont, 2020; Business and Economic Research Limited, 2018; Western Mountain Bike Tourism Association, 2016; Kingdom Trails Association, 2018).

Beyond tourism revenues, and as a testament to the principles of responsible tourism, mountain biking can help spur regional economic revitalization (Jordan, 2015; Meltzer, 2014) generate employment opportunities (Maples & Bradley, 2017, 2018a, 2018b; Meltzer, 2014; Western Mountain Bike Tourism Association, 2016), support entrepreneurial initiatives (Aamot, 2017; Dirt Art, 2018; Tourism Recreation Conservation, 2013), improve quality of life for locals (Meyers Norris Penny LLP, 2011; National Parks Service, 2008), increase property values (ECO Northwest, 2019) and even attract new residents (Meltzer, 2014). Mountain biking can create substantial economic impact, including those beyond tourism

receipts, illustrating its contribution and presenting a potential responsible form of tourism for local communities and destinations to engage in.

Community: Impact, benefits and destination image

Outdoor recreational activities, including mountain biking, provide a variety of other positive social outcomes for both local residents and mountain bike visitors (Godbey, 2009). These outcomes align with a principle of responsible tourism where there is a need to assure that tourism advances health and educational opportunities for a local community (Spenceley et al., 2002). Individuals who spend time visiting natural areas improve their physical and mental well-being (Chen, Yu & Lee, 2018; Frances, 2006; Mutz & Müller, 2016). Outdoor recreational activities lower blood pressure, reduce stress and improve both physical fitness and cognitive functions (Eigenschenk et al., 2019; Frumkin et al., 2017; Lee, 2011; Weng & Chiang, 2014). They also provide a range of preventative health benefits for society, governments and the participants (Boyardjiev, Georgieva & Angelova, 2020). If the aim is to improve the health of our local communities, increasing opportunities for participation in mountain biking is a responsible approach and not simply as a driver for tourism visitation.

Mountain biking also contributes to building healthy communities from an interrelation perspective as well. Consider the characteristic outlined by the Cape Town Declaration, which states that responsible tourism should empower local stakeholders in the development and decision-making of tourism activities, while improving the capacity of communities to engage in tourism in the future (Declaration on Responsible Tourism, 2002). To realize responsible tourism for destinations, the local community should take responsibility and participate in, as well as benefit from the involvement of tourism activities in their region. The community of Northeast Kingdom in Vermont, USA, led by volunteers, began building trails in 1994 and as of 2018, 92 private landowners collaborate with a shared vision for accessible mountain biking, which has strengthened decision-making and conflict resolution for the community (Kingdom Trails Association, 2018). Local involvement in management, promotion and development is one of the foundational elements of mountain biking and destination development. This connection between product, place and people was also identified in the 2002 Cape Town Declaration as a fundamental factor to necessitate a responsible tourism product. This entails more satisfactory experiences for visitors through purposeful connections with local people and a deeper appreciation for local cultural, social and environmental context (Declaration on Responsible Tourism, 2002). Product, people and place are central to some of the most renowned mountain bike destinations on Earth where “early mountain biking pioneers” in the local community helped develop an image that eventually resonated with international visitors (Destination British Columbia, 2015; p. ii).

While community benefits of mountain biking have been briefly explored, it is important to consider potential adverse impacts mountain biking may have on other stakeholders such as local community members, other user groups or conservationists. With more demand for natural areas spurred by the rise in popularity of outdoor recreational activities, conflicts among various user groups and land managers can occur (Daspher & King, 2021; Hollenhorst, Schuett & Olson, 1995). The mitigation of user conflicts becomes central to the management of responsible outdoor recreational activities in these contested spaces (Koemle & Morawetz, 2016). The development of mountain biking activity across a region’s tourism landscape must consider the compatibility between other user groups, local stakeholders, land managers, as well as mountain bikers (Scott et al., 2010). Koemle & Morawetz (2016) emphasized that land managers should develop specific strategies, including designated infrastructure for

differing user groups to reduce conflicts between stakeholders. Significant to determining mountain biking as a responsible form of tourism; the very essence of sustainability can be jeopardized when user conflicts exist in outdoor recreational activities (Mann & Akbsher, 2008). By reducing conflicts between these groups, the prospect of satisfied stakeholders increases, presenting a more harmonious and responsible form of tourism. The challenge of developing mountain biking as a responsible form of tourism within a context of a contested space with other user groups and the local community is significant and should not be underappreciated. However, if addressed strategically there remains an opportunity to enhance and improve visitor experiences and thus establish a positive destination image for communities (Hung et al., 2021; Iordanova & Styliadis, 2019).

Establishing a positive image is critical to the success of a tourist destination (Dominique-Ferreira, 2011). The decision to travel to an area is, at least partially, based on a perceived image of the destination (Lopes, 2011; Son & Pearce, 2005). The concept of place branding and establishing a destinations image has many alignments with responsible tourism (Ali, Srivastava & Kaushal, 2015; Mendes et al., 2010). Park, Latkova & Nicholls's (2006) study of students in the United Kingdom illustrate the role outdoor recreation has on the development of a positive destination image. In Squamish, British Columbia, while tourism, social and economic benefits of outdoor recreation have transformed the region, the destination has retained community cohesion. Local and provincial government agencies and mountain bike stakeholders have driven strategic partnerships that fostered this community pride. The local community believes that it is the mountain bike trails that have helped establish a brand that has flourished and has become a competitive advantage for them (Western Mountain Bike Tourism Association, 2016; Stachiew, 2013). This has contributed to the recognition of Squamish as a superior mountain bike destination (Single Track, 2021). The role of satisfaction in tourism experiences is complex and subjective, yet a correlation exists between visitor satisfaction, destination image and sustainable tourism (Pinto, Guerreiro & Silva, 2010).

Environmental impacts

While the experience is important in delivering a responsible tourism product, the environment is central to any narrative regarding how tourism activities occur within an area in a responsible manner. While the current study did not inspect local environmental impacts and thus will not be address in this article; it is prudent to briefly consider mountain biking activity in the context of environmental impacts. Outdoor recreational activities innately have an impact on the environment, but there is a belief that it is the presence of humans that creates impact, not the type of activity. Non-motorized activities such as hiking, horseback riding and mountain biking have comparable ecological impact to soils, vegetation and trails (Evju et al., 2021; Meltzer, 2014; Marion & Olive, 2006; Pickering et al., 2010; Thurston & Reader, 2001), while their varying impacts on wildlife is negligible (Taylor & Knight, 2003). Much of the environmental impact of mountain biking can be managed, while ensuring the integrity of a local natural area. Scope and frequency of maintaining mountain bike trails can help diminish environmental degradation (Pickering et al., 2010), while trail building guidelines and standards help shepherd sustainable mountain bike trail development (Bike Melrose, 2019; New South Wales National Parks and Wildlife Service, 2011; Queensland Government, 2018; Tourism Northern Territory, 2016). With other forms of outdoor recreation and nature-based tourism gaining recognition in sustainable and responsible tourism (Spenceley, 2005), mountain biking's role should also be considered as a form of low-impact recreational activity that aligns with responsible tourism literature. To ensure that

mountain biking can be perceived as responsible form of tourism that can minimize environmental impacts, it is essential that strategic planning and support comes from collaborative relationships between policy-makers, destination management organizations, local mountain bikers and local residents.

Methods

The Super8 Mountain Bike (MTB) Festival occurred at the Dadu Trail Network on Sunday December 6, 2020 and all events were held at Hengde Memorial Park on Dadu Mountain, approximately 15 minutes from downtown Taichung in Central Taiwan. This was the 11th year this event has been hosted on this site. In 2020, the administration of the festival changed and saw the event transition to a committee overseen by the Taiwan Mountain Bike Association (TWMBA). The 2020 festival featured four different events and hosted an exhibition with 30 vendors that ran through the duration of the one-day event.

Study samplers

This study set out with the objectives to a) understand festival participants' satisfaction with the event and, b) to help establish a profile of mountain bikers in Taiwan. As one of the largest organized mountain bike events in Taiwan, the study population was identified as participating mountain bikers in the festival. Total registration for this event consisted of 558 registered riders. This study utilized non-probability sampling methods including convenience sampling to initially collect mountain bikers contact information and to introduce the study. On the day of the event, a lead researcher and three students from Ming Chuan University engaged participants and asked for contact information in one of two methods; by joining an online group created on the popular social media and instant messaging platform 'LINE' or asking for the participant to provide their email address on a print form. A total of 427 participants registered on the dedicated 'LINE' group, as well as an additional 52 email addresses were collected. The online survey was sent through LINE, shared on event organizers' social media accounts (primarily Facebook) and sent directly through email. Besides, the researchers also encouraged participants to share the survey weblink with others whom they knew participated in the Super8 MTB Festival; adopting a snowball sampling method to further expand the sample size. As a result of these efforts, a total of 319 complete surveys were collected. The sample was further refined after removing survey respondents who indicated they were either volunteers, vendors or spectators. A total of 222 valid surveys were collected resulting in a 70% of response rate.

Socio-economic profile of study participants

The results of socio-demographic and geographic distribution of mountain bikers are presented in Table 1. Of the 222 responses, 83% were Taiwanese citizens and preferred to take the Mandarin-language survey, while 17% were non-Taiwanese and opted for the English survey. Filipinos (4.3%) represented the single largest nationality outside of Taiwan; however, the event drew participants from 15 different nationalities. Demographically, participants were primarily male, highly educated and middle-aged, with an average age between 25 to 44; almost 80%); all traits consistent with research on the mountain bike market (Buning et al., 2019). The largest number of participants from a singular jurisdiction (32%) came from Taichung County. A total of 45% traveled from northern Taiwan, which included Taipei City, New Taipei City, Taoyuan County, Hsinchu County and Yilan County.

Majority of study participants came to the Super8 MTB Festival with a group of people. A total of 13% of Taiwanese riders came to the event alone, while no foreigners indicated traveling alone. Compared to Taiwanese, foreigners prefer to travel in larger groups of nearly 10 adults, while the average group size for Taiwanese participants ranged between five to six adults.

According to the Chi Square result, there is no significant difference between Taiwanese and foreigner Super 8 participants in terms of their socio-economic background. Regarding their riding abilities, the percentage of study samples who considered themselves as experienced rider are almost the same for both groups. The majority of Taiwanese considered themselves 'beginner' cyclists. Over half of respondents consider themselves 'active', non-mountain biking cyclists, riding non-mountain bikes several times per week. However, according to Chi-square analysis, a significant difference was found in non-mountain bike cycling interests between two groups. Over 75% of foreigner respondents considered themselves 'active' in non-mountain bike cycling activities. On the contrary, only 45% of Taiwanese considered themselves 'active'. The majority of respondents identified themselves as experienced (53%), while others described themselves as leisure and recreational cyclists (26%). Other categories included beginners (12%) and competitive racing cyclists (9%).

Table 1: Who participated in the 2020 Super8 MTB Festival

		Taiwanese	Foreigners	Chi-square
Nationality		83.0%	17.0%	
Gender (N=204)	Male	86.7%	94.7%	1.902
	Female	13.3%	5.3%	
Level of education (N=206)	Secondary School (High School)	11.1%	8.6%	1.120
	University / College Graduate	62.0%	71.4%	
	Post Graduate Degree / Diploma	26.9%	20.0%	
Age (N=206)	Under 18	1.8%	2.9%	7.174
	18-24	4.1%	0.0%	
	25-34	26.3%	45.7%	
	35-44	46.8%	37.1%	
	45-54	18.1%	14.3%	
Riding abilities (N=157)	55-64	2.9%	0.0%	1.999
	Beginner	12.4%	3.6%	
	Leisure/Recreational	27.1%	32.1%	
	Experienced	51.9%	53.6%	
Non-mtb cycling interests (N=157)	Racing/Competitive	8.5%	10.7%	9.666*
	Occasional	10.1%	3.6%	
	Recreational	23.3%	14.3%	
	Active	45.0%	75.0%	
	Commuter	9.3%	7.1%	
Party size	Other	12.4%	0.0%	2.961
	Single	13.0%	0.0%	
	2-15 people	78.3%	66.7%	
Types of travel accompany	16-30 people	8.7%	33.3%	2.689*
	Adult Riders	5.14	10.15	
	Child Riders (<19)	2.05	0.50	
	Adult non-riders	2.67	3.62	
	Child non riders (<19)	1.63	0.43	-0.593

*The significance level is 95%.

Study instrument

Due to the nature of the event and its participants, it was determined that an online survey questionnaire sent post-event would be most effective in garner thoughtful responses and to ensure that the complete visitor spending behavior was captured. Furthermore, recognizing the likelihood of both Mandarin and English-speaking study participants, the survey should be designed to solicit responses from a wide range of participants. To reduce the complexity for users, it was determined that a single survey with identical sections for both Mandarin and English languages would be developed. These sections were segmented by using a screening question regarding preferred language. The survey was designed with consultations from event organizers and resulted in a final 41-question survey with forced, dichotomous, Likert Scale and several opened-ended questions. The survey employed a self-administrated format and was designed with four key sections: 1) The participant as a mountain biker; 2) The participant's Super8 MTB Festival experience and willingness for future participation; 3) The tourism and economic impact and the destination image towards Taichung where the event was held; and 4) The socio-economic background information. The data was exported from Survey Monkey and an analysis was completed using the Statistical Package for the Social Sciences (SPSS 18.0). It should be noted that the responses from those participants who selected Mandarin as their preferred language was subsequently translated into English and merged with English responses. Univariate and frequency analysis was conducted in addition to cross-tabulation analysis on selected variables of the data set.

Results

The following sections present the results of data of the analysis including the participants, their previous experience with the Super8 event and their cycling behaviors.

Event participation and cycling behaviors

Table 2 provided the results regarding respondents' event participation and cycling behaviors. Respondents are an active and engaged mountain bike community participating in an average of 3.26 cycling events in 2020 and expected to participate in 4.42 mountain bike events in 2021. According to the mean analysis for both groups, Taiwanese showed greater interest in participating in mountain bike events for both 2020 and 2021. Only 18% of all respondents indicated that the Super8 MTB Festival was their first cycling event of the year. The majority (73%) of respondents had participated in Super8 MTB Festival in the past, of which 47% participated between 2-5 times. This implied that there is still a room for Super8 Event to attract more participants. Respondents overwhelmingly indicated a future intention to participate in organized mountain bike activities with 95% intending to ride in at least one event in 2021. A significant (30%) cohort expressed intention to participate in between 5-6 events in 2021. The respondents showed a tendency to travel for the purpose of cycling with 82% having taken an overnight bike trip in Taiwan and an average of 3.2 overnight bike trips in Taiwan between 2018-2020.

The study also collected data regarding participant spending habits on mountain bike equipment and clothing in the previous year. The majority of Taiwanese spent less than \$50,000 New Taiwan Dollars (NTD) on mountain bike-related expenses. While 64% of non-Taiwanese respondents spent less than NTD \$50,000, nearly 30% spent more than NTD \$50,000 with some spending more than NTD \$250,000 on mountain bike expenses in one year.

Responses to this question revealed that annual spending habits on mountain bike-related experiences for non-Taiwanese were markedly higher than those of Taiwanese respondents. Of all the information sources, the majority of Taiwanese learned about Super8 from Facebook, whereas most foreigners (nearly 80%) learned about Super8 from their family and friends. Overall, study participants considered the amount of information regarding the Super8 MTB shared by event organizers was sufficient. Significant difference was found between Taiwanese and Foreigners on how they learned about the Super8 MTB Festival, number of overnight bike trips in Taiwan and outside Taiwan and also the total estimated amount spent on mountain bike equipment and clothing in one year.

Table 2: Their experience with Super8 MTB Festival

		Taiwanese	Foreigners	T/ χ^2
Times of participating in MTB events	2020	3.50	2.75	-1.138
	2021	4.45	4.25	-0.309
Once taken an overnight bike trip	yes	28.3%	82.1%	1.269
	no	71.7%	17.9%	
Number of overnight bike trips in TW (2018-2020)	none	20.4%	7.1%	13.543*
	1	11.5%	32.1%	
	2	18.6%	10.7%	
	3	17.7%	3.6%	
	4	5.3%	7.1%	
	5+	26.5%	39.3%	
	Number of overnight bike trips outside TW (2018-2020)	none	67.3%	53.6%
	1	13.3%	10.7%	
	2	9.7%	3.6%	
	3	2.7%	3.6%	
	4	1.8%	10.7%	
	5+	5.3%	17.9%	
Spend on mountain bike equipment and clothing in one year (NTD)	\$0-50,000	85.3%	64.3%	11.071*
	\$50,001-100,000	11.0%	17.9%	
	\$100,001-150,000	1.8%	10.7%	
	\$150,001-249,999	0.9%	0.00%	
	\$250,000+	0.9%	7.1%	
Learned About Super8 MTB Festival	Facebook(N=229)	67.6%	48.6%	4.606*
	Family/friends(N=230)	58.5%	80.0%	5.719*
	Bike club(N=229)	26.5%	25.7%	0.009
	Web search(N=229)	29.4%	5.7%	8.610**
	Bike shop(N=228)	20.1%	25.7%	0.546
	Media story(N=230)	5.2%	8.5%	0.004
	Instagram(N=229)	5.3%	5.7%	0.010
The sufficiency of information	Yes	72.5%	80.0%	0.842
	No	27.5%	20.0%	

*The significance level is 95%.

**The significance level is 99%.

The results from Table 3 illustrate participant travel behaviors prior to and during their Super8 MTB Festival experience. Over 70% of study respondents came to the Super8 MTB Festival for the Sram Enduro activity, clearly the most popular activity of the entire festival. This is where travel behaviors began diverging between the two groups. A significant difference existed between Taiwanese and foreigners on length of the stay in Taichung for this event. Nearly 47% of Taiwanese choose only to attend the event and did not stay overnight in Taichung. This is possibly because they lived near Taichung. More than 50% of Taiwanese choose to stay one or two nights and spend the entire weekend at Taichung. For

foreigners, only 23% visited Taichung for the day, while almost 50% stayed between 2-4 nights in Taichung for the purpose of attending the Super8 MTB Festival. Further to these variations in length of stay, significant difference also existed in the types of accommodation between two groups. Of those Taiwanese that did stay overnight in Taichung, 42% preferred staying in bed and breakfast, whereas foreigners chose to camp (45%) or to stay in hotels and motels (40%).

More than half (57%) of respondents stayed overnight while attending the event with 59% using fixed roofed accommodation and 13% staying with friends or relatives. The majority of overnight visitors stayed for a single night, while 18% stayed for more than 2 nights. The festival generated significant pre-event visitation with 83% of survey respondents visiting the destination at least once to ride the trails for the purpose of preparing for the event. Of these visits, nearly one in three (32%) were overnight stays. The event also generated intention for future, non-cycling visitation to the destination, with 91% of the respondents stated they intended to return to Taichung in the next 2 years (Table 3).

Table 3: Their experience about Super8 MTB Festival

		Taiwanese	Foreigners	All sample	Chi square
Super 8 MTB Festival participate	Trek Kids Event	4.8%	5.7%	4.4%	0.048
	Sram Enduro	71.2%	74.3%	70.6%	0.129
	Fox XC	14.4%	11.4%	13.3%	0.204
	Day only	46.7%	23.1%	42.6%	
Length of Stay	1 night	43.0%	30.8%	39.2%	26.676***
	2 nights	9.30%	23.1%	13.5%	
	3 nights	0.00%	7.7%	1.40%	
	4 nights	0.90%	15.4%	3.40%	
Accommodation	Hotel/motel	22.8%	40.0%	28.2%	15.497**
	Bed& breakfast	42.1%	0.00%	30.6%	
	Airbnb	1.80%	5.00%	2.40%	
	Camping	17.5%	45.0%	25.9%	
Pre-Event Visitation	Friends or family	15.8%	10.0%	12.9%	2.501
	No pre-event visit	17.5%	14.3%	17.1%	
	1	19.9%	11.4%	18.0%	
	2	12.9%	20.0%	14.5%	
Pre-Event Overnight Stays	3	12.3%	14.3%	12.3%	16.730**
	4+	37.4%	40.0%	38.2%	
	Day-only	72.5%	48.6%	68.0%	
	1 night	9.90%	20.0%	11.7%	
Pre-Event Overnight Stays	2 nights	3.50%	20.0%	6.60%	16.730**
	3 nights	4.20%	5.40%	4.10%	
	4+ nights	9.90%	5.70%	9.60%	

*The significance level is 95%.

**The significance level is 99%.

Satisfaction about Super 8 MTB Event

Understanding the satisfaction of event participants towards the Super8 MTB Festival is important for event organizers especially for future event planning. The study collected event participants' satisfaction levels towards the pre-event experience, riding experience and event experience by using a 7-point Likert Scale. In this scale, '1' referred to 'not satisfied' and '7' referred to 'very satisfied'. There was no significant difference between Taiwanese and foreigners in how satisfied they were with the Super8 event experience, except for the "trail

markings”, where foreigners showed significantly higher level of satisfaction compared to Taiwanese.

Overall, study participants showed higher levels of satisfaction towards the riding experience than to both the pre-event and event experiences. For the pre-event experience, Taiwanese expressed lower level of satisfaction towards the online registration compared to foreigners. For the event experience, foreigners were less satisfied with the event’s medical support, food vendors and parking. The study also asked participants to evaluate their overall satisfaction of the festival. This was measured on a 10-point scale, where ‘1’ referred to ‘not satisfied’ and ‘10’ referred to ‘very satisfied’. The foreign respondents indicated that they were most satisfied with the “Volunteers” at the event, made up of local community and mountain bike stakeholders. This was also the second highest ranked category for Taiwanese respondents. Foreigner participants expressed higher levels of satisfaction towards the event overall. This may explain their greater willingness to return to the event the following year as well as to recommend this event to their friends and relatives, as seen in Table 4.

Table 4: Satisfaction about Super 8 MTB Event

		Taiwanese	Foreigners	T Value
Pre-Event Experience	Race & route details	5.73	5.60	-0.417
	Online registration	4.84	5.14	0.679
	Pre-event information	5.70	5.71	0.048
Riding Experience	Race start formats	5.67	5.91	0.731
	Race timing system	5.91	6.00	0.261
	Trail conditions	6.08	6.11	0.125
	Trail route layouts	6.28	6.20	-0.301
	Trail markings	5.58	6.17	2.211*
	Trail marshals	5.97	6.17	0.580
Event Experience	Volunteers	6.20	6.54	1.148
	Medical/emergency support	5.71	4.97	-1.393
	Food vendors	5.25	4.57	-1.409
	Food& drinks incl. in registration	5.39	5.23	-0.480
	Sponsors and exhibitors	6.37	6.03	-1.447
	Event festival	6.09	5.23	0.568
	Event parking	4.25	4.83	1.627
Overall evaluation		8.53	9.09	2.050*
Likelihood to Return		3.72	3.80	0.746
Likelihood to Recommend		3.77	3.85	1.008

*The significance level is 95%.

Economic tourism impacts

The total economic impact of tourism is the sum of direct, indirect, and induced effects within a region. Any of these impacts may be measured as gross output or sales, income, employment, or value added. The economic effects of tourism include improved tax revenue and personal income, increased standards of living, and more employment opportunities. Tourism’s economic benefits are touted by the industry for a variety of reasons, including illustrating the extent to which tourism activities contribute responsibly to a destination’s development. Claims of tourism’s economic significance give the industry greater respect among the business community, public officials, and the public in general. To

simply calculate the economic impact, data regarding tourism spending in an area and also during the event should be collected.

Survey respondents provided, to the best of their ability, an estimate of their spending across a variety of categories. Expenditures shown in Table 6 were based on average spending across 6 categories including; food & beverage (restaurants); groceries (non-restaurant); accommodation; festival-related expenses; retail; transportation and bicycle-related expenses. The tourism economic impact data was collected through the survey to understand how much spending occurred during the event. Average total spend for participants at 2020 Super 8 MTB Festival was \$17,902 (n=202). According to Table 6, there were two significant differences on expenditures between the two groups. These related to spending on retail and food and beverage at restaurants. Foreigners spent more than Taiwanese on all expenditure items except bicycle related expenditures. The top three ranked expenditures were the same for both groups and included bicycle-related expenditures, festival expenses and then transportation related expenditures (see Table 5).

Table 5: The Economic impact of Super 8 event

Participant Spending	All	Taiwanese	Foreigners	t value
Grocery related expenditures	502.07	457.91	748.44	1.222
Retail	885.40	767.27	1598.33	2.037*
Accommodation	781.14	706.65	1041.63	1.074
Festival expense	2106.34	2098.67	2172.73	0.089
Food& beverage(restaurants)	1139.90	1001.64	1848.12	2.106*
Bicycle related expenditures	10964.11	11447.89	9309.38	-0.153
transportation related expenditures	1418.37	1313.71	1967.35	1.065
All	17902.64	18086.12	17823.00	-0.017

*The significance level is 95%.

Destination Image

Utilizing a 7-point Likert Scale, where “1” referred to “strongly disagree” and “7” referred to “strongly agree” respondents were asked to reflect on Taichung as a tourist destination with statements relating to their satisfaction of the destination. Taichung’s safety and the region’s capacity for hosting large-scale festivals received the highest scores, while Taichung’s accommodation sector and the region’s perception as an ‘exciting’ tourist destination received the lowest scores. Little variation in the perception of Taichung as a tourist destination exists between Taiwanese and non-Taiwanese participants. Of all items, only “Taichung provides a safe travel environment” was rated higher than 6 from foreigners. The study also asked their likelihood to return to Taichung and also make recommendation for Taichung to their friends and relatives. The scale measuring the likelihood to return and recommend this event was measured on a scale between 1-4, where ‘1’ referred to “not likely at all” and ‘4’ referred to “very likely”. The results showed they are not only satisfied with Taichung but also show high and positive attitude to return and recommend Taichung to others (See Table 6).

Table 6: Destination Image towards Taichung from the study respondents

	Taiwanese	Foreigners	T Value
Taichung people are friendly and interesting	5.64	5.42	-0.502
Taichung offers comfortable accommodation options	5.64	5.12	-1.118
Taichung provides a safe travel environment	5.79	6.00	0.703
Taichung is quite suitable for hosting various large-scale festivals	5.96	5.65	-0.612
Taichung is a relaxing tourist place	5.84	5.31	-1.149
Taichung is a tourist destination that can make people feel happy	5.86	5.35	-1.137
Taichung is a tourist destination that can make people feel very excited	5.64	5.00	-1.316
Likelihood to Return	3.62	3.42	-1.205
Likelihood to Recommend	3.43	3.46	0.152

Discussions

Responsible tourism aims to reduce the negative economic, environmental and social impacts of tourism activities. The dynamics of responsible tourism also demand benefits for communities and the people who live there, the locals employed in the region and the tourists who visit these areas. This case study pursued an understanding of the potential role mountain biking may play as a responsible form of tourism with distribution of tourism and economic benefits to the local community. It also presented tourism economic impact studies of mountain bike events as a method for academics and destination managers to measure various tourism indicators.

While drawing a large local contingent of event participants, Super8 MTB Festival should be recognized for its positive economic and tourism impacts for the Taichung area. The event study illustrated the ability for this event to draw a high-yield, overnight visitor; successfully attracting a significant proportion of foreign event participants. With substantial event spending, event participants traveling from other regions of Taiwan, as well as noteworthy numbers of overnight visitors, it can be claimed that the Super8 MTB Festival is a tourism event.

This study sheds some light on the local economic benefits of event participant spending. Over half of all overnight stays occurred at B&B's and campsites; accommodation that is typically owned and operated by local entrepreneurs. This means that the associated expenditure is likely realized at a local level compared to accommodation that may be owned by stakeholders outside the local community (e.g., franchised hotel chains). In addition to this local economic activity, which translates into new jobs and business opportunities for the host community, responsible tourism encourages local stakeholders to take responsibility and participate in, as well as benefit from the involvement of tourism activities in their region. Local entrepreneurs are taking advantage of increased usage of this trail network by mountain bikers by creating services to cater to this market. Small businesses such as the Dadu Trail House Craft Beer Bar was named after the trail network, branded with mountain bike motifs and recently opened up in close proximity to this area. Additionally, event participants were most satisfied with the local trail building and event volunteers at Super8, illustrating positive contributions and involvement from the local community. This also builds the capacity of the local community in the realms of trail development and management, event management and volunteer coordination. While mountain biking remains a nascent and niche outdoor

recreational activity in Taiwan, this case study has begun to shed light on the opportunities for community engagement and positive economic contributions at a local level.

Implications of the Study

This study illustrates that mountain biking is a tourism activity in Taiwan with both a domestic and international appeal. To ensure the responsible development and distribution of benefits, greater involvement and subsequent support from government and tourism agencies should occur.

Other industry implications of this study include opportunities to extend the economic and tourism impacts of the event. The scale of overnight visitation associated with the Super8 MTB Festival suggests that event organizers, government stakeholders and the local accommodation sector should pursue product development and promotional campaigns to encourage greater numbers of event participants to stay overnight and spend money with local operators in future years of the event. Tour operators may also wish to develop complimentary experiences to extend stays or promote 'companion experiences' for non-riding visitors who come to the region for the event with their family or friends. Additionally, for mountain bike-specific stakeholders, such as TWMB, establishing initiatives focused on community and stakeholder engagement as well as fostering volunteers, perhaps more resources could be acquired to further maintain mountain bike trails that offer high quality and low impact riding experiences at the Dadu Trail Network and elsewhere in Taiwan.

Limitations and Future Research

The application of a tourism impact study for mountain bike events presents an effective method. To better understand a more complete economic impact of this event, a comprehensive economic impact analysis should be undertaken. Inadequate resources and time constraints limited the ability of the current study to thoroughly execute this level of study. Contributions to local jobs, tax generated for local and regional governments and indirect spending would help illustrate the extent of the tourism and economic impacts of the event. Additionally, future studies of mountain biking in Taiwan should closely investigate any direct spending linkages with the local economy and how these can be strengthened.

Minimizing negative environmental impacts is a core pillar of responsible tourism. Environmentally, mountain biking has been shown to have similar impacts as other non-motorized outdoor recreational sports, thus should be considered as a low impact and responsible form of tourism. While the scope of this study did not permit for a thorough environmental impact assessment, some anecdotal insights were garnered and present future considerations for mountain biking's role in the discussion of responsible tourism for destinations. During the process of collecting event participant contact details, event organizers shared with the research team that hundreds of volunteer hours were committed to improving and maintaining the trail conditions for this event. While much of this effort likely goes towards improving the mountain biking and enhancing the overall event experience, the literature review illustrated how responsibly built mountain bike trails improve environmental aspects such as soil erosion, trail braiding and water runoff.

While resources and time limitation constrained the scope of this study to further understand the role mountain biking can play as a low impact and responsible form of tourism, future research should examine local community perspectives and attitudes towards mountain biking. Additionally, perspectives from other outdoor recreational user groups (e.g., hikers) should be assembled. By critically reviewing these perspectives, researchers and destination managers may identify future conflict resolution outcomes between these stakeholder groups that can help mitigate potential contested use of this space. Finally, future research should examine mountain bikers' motivations and attitudes towards responsible tourist behavior and the principles of responsible tourism to help understand the role of mountain biking within a responsible tourism narrative.

Conclusion

Participation in outdoor recreational activities, including mountain biking, is increasing despite a global pandemic. At the same time, stakeholders have expressed introspective considerations on tourism development and the impacts of unbridled tourism growth was having pre-pandemic study. This study presents an emerging area of opportunity and a new frontier for academics and practitioners interested in the interface of outdoor recreation and responsible tourism. Despite the range of limitations outlined above, this case study illustrated that events may be an effective method for destination managers to measure mountain biking's contribution as a responsible form of tourism activity. While the narrative of mountain biking as a responsible tourism activity is promising, much work still needs to be done in the areas of contested use of tourism spaces, community engagement, capacity building, economic linkages at a local level as well as environmental impact assessments of the sport to truly understand the extent of mountain bike's role in delivering a responsible form of tourism to communities in Taiwan and beyond.

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