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The effect of early-life outdoor experiences on residents' attitudes towards sustainable tourism within an urban context

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ABSTRACT

The rapid development of tourism in recent years has brought benefits but also detrimental impacts for tourism destinations. Sustainable tourism has become an important choice for tourism development. This study attempted to explore residents' attitudes toward sustainable tourism from the viewpoint of their early-life outdoor experiences based on the study site of Kaohsiung, Taiwan. A survey was conducted using quota sampling from the 11 districts in Kaohsiung, Taiwan, using structured questionnaires. The data were collected from 800 local residents in Kaohsiung city aged between 20 and 60 years with 462 valid questionnaires completed and returned. The findings demonstrated that the more outdoor experiences residents have in early life, the stronger are their positive attitudes towards sustainable tourism. Specifically, witnessing negative environmental events was found to be a particularly strong influential factor on sustainable tourism among residents. Based on the research result, it is suggested that the public and private tourism sectors need to provide good outdoor recreation opportunities for children, adolescents, and families to enhance their connection to outdoor environments. Other managerial applications and recommendations for future research are suggested based on the research results.

Management implications: Residents' attitudes towards sustainable tourism could be developed from the linkage between the residents themselves and nature. For both the public and private tourism sectors, providing good outdoor recreation opportunities for children, adolescents, and family is necessary. Second, although witnessing the degradation of the environment can arouse residents' awareness of and concerns about sustainable tourism, they are not willing to see those negative events happen. Good interpretations or guidance may help to transfer the shock caused by witnessing negative environmental events into powerful change. Related associations could therefore play an important role in integrating the power and advocacy required for sustainable development in tourism.

1. Introduction

Tourism is one of the largest and fastest growing industries in many countries due to the increasing economic importance of the tourism industry in many countries or areas (Hasani, Moghavvemi, & Hamzah, 2016). However, the rapid growth of the tourism industry and its continued development has led to various problems, ranging from environmental to social issues; from pollution to conflicts between tourists and local residents. A common conclusion in previous studies concerning sustainable development of tourism has revealed that the growth of tourism occurs primarily at the expense of the environment and can actually be detrimental to communities and destinations (Aall, Dodds, Sælensminde, & Brendehaug, 2015; Sirakaya-Turk, Jamal, & Choi, 2001). Negative ecological impacts from tourism activities and facilities (Haukeland, Veisten, Grue, & Vistad, 2013) and impacts on adjacent communities and local households (Strickland-Munro, Moore, & Freitag-Ronaldson, 2010) have also been found over the last few decades.

Fortunately, the negative impacts derived from tourism have made both the public and private sectors rethink the development of tourism. The concept of sustainable tourism then arose from the realization of the detrimental impacts of the increase in mass tourism in recent decades. Based on a holistic perspective of tourism development, sustainable tourism has been advocated for its benefits to local communities, tourists and the environment (Briones, Yusay, & Valdez, 2017; Karatzoglou & Spilanis, 2010). In the triangular relationship between residents, visitors and environment, the role of residents is so crucial that better community-tourism linkages and residents' involvement are required (Gunn, 2002). It therefore seems necessary to understand their attitudes toward sustainable tourism. We have found that sustainable

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development of tourism issues regarding residents in host communities has gained increasing consideration in recent years, both in the theoretical and practical fields. Issues about residents and sustainable tourism have been discussed in previous studies, for example, residents' attitudes towards sustainable tourism (Choi & Murray, 2010; Cottrell, Vaske, Shen, & Ritter, 2007; Sheldon & Abenoja, 2001), inhibitors to host community participation in sustainable tourism development (Saufi, O'Brien, & Wilkins, 2014), and community-based tourism (Matarrita-Cascante, Brennan, & Luloff, 2010).

Understanding residents' attitudes is not an easy task, because their attitudes could be formed by various factors, such as personality (Steele-Johnson, Narayan, & Steinke, 2013), personal experience (Lee & Jan, 2015), and education (Lee, 2012; Naizer, Hawthorne, & Henley, 2014). It is believed that specific attitudes towards certain issues might be influenced by particular experiences or certain characteristics of personality. Early in 1994, Getz (1994) suggested that people's attitudes are strengthened by their experience and have strong associations with their values and personality. More recently, Lee and Jan (2015) revealed that environmental attitudes are related to experiences of recreation, ecotourism, and interpretations of environmental issues. Furthermore, Geng, Xu, Ye, Zhou, and Zhou (2015) emphasized the connections between nature and its influence on an individual's attitude towards the environment.

Given that specific experiences play an important role in influencing an individual's attitudes towards certain topics, connections with nature in the early years of an individual's life might be correlated with environmental attitudes, which support sustainable development further amongst residents in tourist destinations. Several studies have revealed that frequent contacts with nature in one's early years have an influence on the development of interaction with, and attitudes towards, the environment (Tapps & Fink, 2009; Thompson, Aspinall, & Montarzino, 2008). Once the awareness and knowledge of a new environmental paradigm have been strengthened, better cohesion of community awareness and more positive residents' attitudes toward sustainable tourism development could further be expected (Su, Chang, & Yeh, 2017). On the other hand, although sustainable tourism has been highlighted primarily with regard to nature reserves and rural areas in most of the research conducted previously, an increasing number of researchers have asserted that sustainable tourism in the city should also be taken into consideration since urban areas are recognized as one of the most important types of tourist destination (Hinch, 1998; Lee, Lee, Choi, Yoon, & Hart, 2014; Pugh, 1996; Savage, Huang, & Chang, 2004).

The current study makes a theoretical contribution by applying the continuity theory in the tourism and recreation field. Based on this theory, the influence of early-life experiences is discussed and examined in terms of whether it contributes to residents' lifelong attitudes towards tourism. From a practical perspective, while sustainable develop of the growing tourism industry has become a contemporary challenge for tourism development, it is necessary to discuss the attitudes of local residents of tourism destinations. Therefore, it would be interesting to understand whether early-life experiences in natural settings or environmental incidents could affect an individual's attitudes toward sustainable tourism. This study therefore attempted to explore residents' attitudes toward sustainable tourism from the viewpoint of their early-life outdoor experiences. Specifically, the objectives of the current study are as follows:

(1) Understand residents' early-life outdoor experiences and attitudes toward sustainable tourism.
(2) Examine the influence of early-life outdoor experiences on attitudes toward sustainable tourism.

2. Literature review

2.1. Early-life outdoor experience and its connection to attitudes towards the natural environment

The influence of early-life experiences could be drawn from the continuity theory which identifies general mental constructs, patterns in activity, and relationships across one's life as a method of creating continuity or bridges between an individual's past, present, and future (Atchley, 1999). According to the continuity theory, individuals' present and future decisions and behaviours are derived from their past experiences. That is to say, past experience in early life will form a foundation for adulthood. Adults then attempt to preserve and maintain existing psychological and social patterns (Onega & Tripp-Reimer, 1997).

The continuity theory has been widely applied in the field of social psychology, to study issues including age and employment (Kim & Feldman, 2000), a longitudinal study of older people (Frazier, Hooker, Johnson, & Kaus, 2000), and leisure research (Nimrod, Janke, & Kleiber, 2009). Based on this theory, experiences of the outdoors and natural environments in an individual's early life may continue to incite the development of the individual's attitude toward the environment. From the perspective of social psychology, Aronson, Wilson, Akert, and Fehr (2001) suggested that the ability to relate to experiences and personal recollections could determine the strength of an attitude.

Previous studies have proved the importance of recreational outdoor experiences in an individual's early years for the formation of environmental beliefs (Bixler, Floyd, & Hammitt, 2002; Gifford & Nilsson, 2014; Tanner, 1980). Early in 1980, Tanner suggested that youthful outdoor experiences could be a prominent factor in the development of a "conservationist" attitude. After the 1980s, researchers took even more consideration of environmental issues, and made efforts to study the influences of outdoor activities in childhood and youth on attitudes towards the environment. According to a series of studies, it was revealed that the more individuals are exposed to the natural environment, the more they learn from the exploration of nature, and thus develop links to the natural environment. Hence, positive environmental awareness and environmental responsibility could be formed based on those outdoor experiences (Bixler et al., 2002; Bixler, 1997; Palmberg & Kuru, 2000). Moreover, frequent contacts with nature in the early years have an influence on the development of interaction with, and attitudes towards, the environment (Tapps & Fink, 2009; Thompson et al., 2008).

These outdoor experiences in early life may include outdoor activities with family or friends, individual outdoor linger, outdoor education programs, camps, school field trips, or even the witnessing of negative environmental events. In 2005, Ewert, Place, and Sibthorp synthesized the results of some related studies and took seven types of early-life outdoor experiences as independent variables to examine their effects on environmental attitudes. Ewert, Place, and Sibthorp (2005) found that most of the variables were influential, such as participation in outdoor experiences, formal education, the media, witnessing negative environmental events, and involvement in organizations that provide outdoor experiences. More recently, Farmer, Knapp, and Benton (2007) conducted a follow-up study of students who had an educational field trip based on the environment in the previous year, and found long-term effects of ecological and environmental knowledge on attitude development. The positive influences of early-life outdoor experiences on environmental and recreational research have also been found in Taiwan (Wang & Wu, 2009).

For environmental professionals or environmentalists, relevant experiences in one's early years seem to be even more critical. Sward

(1999) argued that the key factor that influences the development of environmental attitudes is outdoor experiences in early life. Furthermore, Corcoran (1999) found the positive effects of outdoor experiences, whether on an individual or a family, as well as media exposure in environmentalists' early years. Hsu (2008) and Arnold, Cohen, and Warner (2009) examined young environmental leaders and their formative influences, and found that the key determining factors that influenced them to become seriously involved in environmental issues or to take environmental actions were people and experiences they met during their early years. The connection from oneself to nature may come from the various activities an individual takes part in the natural setting and its derived emotional value, hence making one more concerned and thus more inclined to learn more about the settings in which they are involved (Vadala, Bixler, & James, 2007).

2.2. Sustainable tourism and attitudes towards sustainable tourism

In many countries, the development of sustainable tourism is widely accepted as an alternative and necessary approach for successful development of tourism, by minimizing negative impacts while maximizing positive benefits for tourist destinations (Aall et al., 2015; Lu & Nepal, 2009). However, sustainable tourism has a way to go before it is completely successful, and for this to happen, the requirements are the cooperation of not only the public and private sectors, but also tourists and residents. Research indicates that the involvement of host communities plays an important role in determining the success of sustainable tourism (Cole, 2006; Tosun, 2006); however, according to Dabphet, Scott, and Ruhanen (2012), many local residents are slow to diffuse their knowledge of sustainable tourism development compared with local governments and local opinion leaders. Without an overall awareness, the practice of sustainable tourism could be even more difficult.

According to social exchange theory, community residents engaged in exchange interactions tend to seek mutual benefits between perceived positive and negative impacts, which then shape their perceptions and attitudes toward the future development of tourism. Interactions between tourists and residents and support provided by the host community have been noted as being important factors of successful and sustainable tourism development. Residents' support for tourism development occurs whenever they perceive a positive balance in their relationship with tourists (Allen, Hafer, Long, & Perdue, 1993; Choi & Murray, 2010; Dyer, Gursoy, Sharma, & Carter, 2007).

Although sustainable tourism has been widely regarded as a better solution than mass tourism, it is still crucial to document the attitudes of the local residents in order to understand their support for tourism (Akis, Peristianis, & Warner, 1996; Shakeela & Weaver, 2012). Choi and Murray's (2010) study found that long-term planning, full community participation, and environmental sustainability within tourism are critically related to the notion of support for tourism and to the positive and negative impacts of tourism. Meanwhile, Saufi et al. (2014) revealed that (apart from tourism agencies, private sector providers, and tourism infrastructure) perceptions of the negative impacts of tourism could be one of the main institutional factors inhibiting host community participation in tourism. To a great extent, the development of tourism depends on the support it receives from the host community (Garau-Vadell, Diaz-Armas, & Gutierrez-Tano, 2014).

2.3. The connection between outdoor experience and sustainable tourism

Although no direct impacts have been found between residents' early-life outdoor experiences and their support for sustainable tourism, previous studies (Bixler et al., 2002; Ewert et al., 2005; Gifford & Nilsson, 2014; Tapps & Fink, 2009; Thompson et al., 2008) have proved that natural or outdoor experiences in one's early years are a key determinant of one's attitudes toward the environment, as mentioned in the previous section. The formation of attitude is a result of a learning process and the influence of an external factor (i.e., family or friends). Psychologists and sociologists also believe that attitude persists and is structured in the sense in which internal consistency is based on evaluation criteria (Uţă & Popescu, 2013). Therefore, experiences in an individual's early years of life could be critical to form his or her attitudes. Congruent with the continuity theory, attitudes usually persist so that experiences of the outdoors and natural environment in an individual's early life may continue to incite the development of the individual's attitudes toward the environment. Once the awareness and knowledge of a new environmental paradigm have been strengthened, better cohesion of community awareness and more positive residents' attitudes toward sustainable tourism development could further be expected (Su et al., 2017).

Moreover, when serious problems occur on a global environmental scale and start to influence the development of tourism at a destination (such as climate change), local residents are considered critical for mitigating and adapting to the changing conditions (Van Riper, Kyle, Sutton, Yoon, & Tobin, 2013). According to UNESCO (2016), sustainable tourism indicates a form of tourism that respects local people and the traveller, and cultural heritage and the environment. Based on this definition, it is believed that the connection between local people and the environment should not be neglected when promoting sustainable tourism. For local people, tourist destinations may be extremely meaningful places for them as they grew up and spent their lives there, and hence developed a sense of attachment to the area.

3. Methodology

3.1. Measures

The questionnaire is divided into three parts. The first is concerned with early-life outdoor experiences, the second investigates attitudes toward sustainable tourism, and the third part examines the characteristics of the respondents. In terms of the questionnaire's design, the demographic data are recorded on a nominal scale, while outdoor experiences in early life and attitudes toward sustainable tourism are recorded on a 5-point Likert scale, with scores ranging from 1 (never/strongly disagree) to 5 (all the time/strongly agree).

Early-life outdoor experiences were measured using a 16-item scale adapted from Ewert et al. (2005) and Wang and Wu (2009). Attitudes toward sustainable tourism were measured using a 27-item "attitudes toward sustainable tourism scale (SUS-TAS)" adapted from Yu, Chancellor, and Cole (2011). First designed by Choi and Sirakaya (2005), the items and dimensions in SUS-TAS were constructed based on earlier projects and sustainability principles. SUS-TAS was then taken for re-examination within different cultural contexts by Sirakaya-Turk, Ekinci, and Kaya (2008) and Yu et al. (2011). Both scales were found to maintain construct validity and internal consistency.

3.2. The study site

Kaohsiung, the largest city in southern Taiwan, was previously divided into Kaohsiung City and Kaohsiung County. The original Kaohsiung City was known as an industrial city, while Kaohsiung County was famous for its wide variety of agricultural resources. On December 25, 2010, the two regions merged to become Kaohsiung, a metropolis occupying an area of 2946 km^2 extending from the Central Mountains to the Taiwan Strait. Nowadays, Kaohsiung is an important international hub for Taiwan, complete with an air and marine transportation network port, which attracts thousands of tourists. Owing to Kaohsiung's development from an industrial city/agricultural area into an attractive tourist destination, the Kaohsiung City Government has learned a lot from the past and is endeavouring to ensure sustainable development both now and in the years to come. Sustainable development in tourism and the involvement of local residents are two key aspects that will assist overall in the city's plan toward sustainable

Table 1
Quotas of questionnaires distributed for each district.

District	Percentage (%)	Number of questionnaire distributed
1	4.99	40
2	5.43	44
3	8.49	68
4	13.38	107
5	7.18	57
6	6.83	55
7	12.56	100
8	9.36	75
9	12.64	101
10	12.65	101
11	6.49	52

development (Kaohsiung Sustainable Development Committee, 2016). The population of Kaohsiung is about 2 million. Therefore, the opinions of residents of the 11 administration districts were collected according to a certain quota for each district to evaluate their attitudes toward sustainable tourism and the relevant variables.

3.3. Data collection

A survey was conducted using quota sampling from the 11 districts in Kaohsiung, Taiwan, via questionnaires. The quotas of the distributed questionnaires are reported in Table 1. According to Hair, Anderson, Tatham, and Black (1998), to conduct multiple regression analysis and to make the results generalizable, 15–20 observations for each independent variable are needed. Therefore, 800 questionnaires were planned to be distributed among samples aged between 20 and 60 years old, taking into consideration the likely response rate.

Regarding the data collection procedure, some details were considered to minimize self-selection bias. Previous research has suggested that special attention should be paid to social environmental influences, attributes of the sample persons, and training of interviewers (Braver & Bay, 1992; Dillman, Eltinge, Groves, & Little, 2002; Rönkä, Sevõn, Malinen, & Salonen, 2014). Thus, in the current study, the interviewers were trained before the survey. A brief introduction was given to the respondents, and a small gift was provided when they completed the questionnaire to encourage their participation. It took only 5–10 min for each respondent to complete the questionnaire, so they did not feel it was a burden to complete. Questionnaires were distributed on-site in front of the household registration offices in each district for residents in Kaohsiung to ensure the survey-taking environment was suitable for the respondents. The data were collected during Feb 1–May 30, 2015. Of the total 800 questionnaires distributed, 462 valid samples were completed and returned (giving a response rate of 57.8%).

3.4. Data analysis

The 462 valid questionnaires were included in the analysis for this study, which involved an exploratory factor analysis (EFA), reliability analysis, descriptive statistics analysis, and multiple regression analysis (enter), employing the statistical software, SPSS 12.0 for Windows.

4. Results

4.1. Sample profile

Of the 462 respondents, 271 were female (58.7%) and 191 were male (41.3%). The respondents were mainly aged 30 and under (59.3%), and 20.3% were aged between 31 and 50. Concerning educational level, 39 (8.4%) were educated up to high school level, 395 (85.5%) were undergraduates, and 28 (6.1%) were graduates or above.

4.2. Results of the factor analysis and internal consistency reliability test

According to Gorsuch (1983), to conduct factor analysis, the sample size needs to be more than 10 times the variable. In the current study, 462 samples were taken for the analysis, which meets this requirement. Exploratory factor analysis using a principal component analysis approach with a varimax rotation was then conducted to simplify the factor structure and increase the interpretability of the identified factors. Extracted factors with an eigenvalue of greater than 1.0 were named. The derived factor score was then used in testing the conceptual framework using multiple regression analysis. A Cronbach's alpha was calculated to evaluate internal consistency.

In the early-life outdoor experience scale, the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were conducted. The KMO measure of sampling adequacy was 0.812 and the significance of Bartlett's test of sphericity was less than 0.001 (chi square = 4382.34), indicating that EFA can be applied to the obtained dataset. The validity and factor structure of the early-life outdoor experience scale is as follows. Items 1–4 of the scale belong to factor 1, items 6–9 belong to factor 2, items 10–12 belong to factor 3, and items 13–16 belong to factor 4. These four dimensions were named “Individual outdoor experiences,” “Organizational outdoor experiences,” “Formal environmental education and the media,” and “Witnessing negative environmental events.” The factor loadings for the four dimensions are in the ranges 0.63–0.85, 0.52–0.84, 0.83–0.76, and 0.83–0.86, respectively. The corresponding eigenvalues are 5.67, 2.50, 1.75, and 1.06, respectively. The total explained variation is 73.24%. Cronbach's alpha coefficients indicate that the alphas for each factor ranged from 0.78 to 0.89, suggesting that the internal consistency was acceptable (see Table 2).

In the SUS-TAS scale, the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were conducted. The KMO measure of sampling adequacy was 0.911 and the significance of Bartlett's test of sphericity was less than 0.001 (chi square = 9239.44), indicating that EFA can be applied to the obtained dataset. The validity and factor structure of SUS-TAS is as follows. Items 1–4 of the scale belong to factor 1, items 5–13 belong to factor 2, items 14–17 belong to factor 3, and items 18–27 belong to factor 4. These four dimensions were titled “Perceived social costs,” “Environmental sustainability and Long-term planning,” “Perceived economic benefit,” and “Maximizing community participation and ensuring visitors satisfaction.” The factor loadings for the four dimensions are in the ranges of 0.81–0.87, 0.76–0.86, 0.64–0.77, and 0.65–0.82, respectively. The corresponding eigenvalues are 11.06, 3.18, 2.64, and 1.39, respectively. The total explained variation is 67.67%. The Cronbach's alpha coefficients indicate that the alphas for each factor ranged from 0.77 to 0.95, suggesting that the internal consistency was acceptable (see Table 3).

4.3. Relationships between early-life outdoor experiences and attitudes toward sustainable tourism

Regarding the independent variables “early-life outdoor experiences,” each item was added and divided by the number of items to obtain the overall early-life outdoor experiences (Mean = 2.92; SD = 0.59). Mean and standard deviation were also reported for the four individual dimensions in this variable as 3.21 (0.75), 2.53 (0.86), 2.43(0.85) and 3.38 (0.80), respectively. For the dependent variable “attitudes toward sustainable tourism,” each item was added and divided by the number of items to obtain the overall attitudes toward sustainable tourism (Mean = 3.92; SD = 0.44). The same procedures were conducted with the four dimensions in this variable for 3.13 (0.70), 4.32 (0.59), 3.71 (5.67), and 3.98 (0.55), respectively.

Regression analysis with the enter method was performed to examine the scores for the factors of early-life outdoor experiences as predictors of attitudes to sustainable tourism (Table 4). Three factors were found to be significant contributors: individual outdoor

Table 2
EFA summary of early-life outdoor experience scale.

No	Items	Mean	SD	Communalities	Factor loading			
					F1	F2	F3	F4
1	Having trips in natural environments with family	3.22	0.94	0.75	0.85	− 0.00	0.23	0.09
2	Having trips in natural environments with friends	3.48	0.94	0.70	0.70	0.27	− 0.20	0.28
3	Participating in outdoor recreational activities with family	2.90	0.96	0.68	0.74	0.06	0.39	0.03
4	Participating in outdoor recreational activities with friends	3.26	1.01	0.61	0.63	0.38	− 0.16	0.11
6	Participating in outdoor activities held by school	3.24	1.06	0.53	0.49	0.52	0.15	− 0.12
7	Getting involved with organizations that provide outdoor experiences	2.45	1.07	0.78	0.25	0.84	0.11	0.09
8	Getting involved with outdoor scouts	2.10	1.02	0.74	0.09	0.78	0.32	0.07
9	Participating in summer or winter camps	2.32	1.06	0.75	0.10	0.82	0.24	0.10
10	Attending lectures about environmental issues	2.27	0.91	0.80	0.07	0.39	0.76	0.25
11	Getting involved with formal education about environmental issues	2.32	0.93	0.78	0.06	0.39	0.75	0.23
12	Reading books or magazines about environmental issues	2.70	1.03	0.67	0.13	0.14	0.73	0.30
13	Witnessing negative environmental events	3.48	0.87	0.80	− 0.01	0.00	0.32	0.83
14	Witnessing environmental pollution	3.49	0.84	0.79	0.03	− 0.02	0.23	0.86
15	Witnessing environmental degradation	3.27	0.98	0.78	0.15	0.14	0.16	0.84
16	Discovering the replacement of nature by artificial constructions	3.29	0.99	0.73	0.16	0.13	0.01	0.83
	Eigenvalue				5.67	2.50	1.75	1.06
	Explained variance (%)				21.26	19.25	16.94	15.79
	Cumulative explained variance (%)				17.02	40.51	57.45	73.24
	Cronbach's alpha				0.78	0.84	0.87	0.89

experiences ($\beta = 0.16$, $t = 3.14$, $p < .05$), formal environmental education and the media ($\beta = 0.19$, $t = 3.54$, $p < .001$), and witnessing negative environmental events ($\beta = 0.42$, $t = 8.56$, $p < .001$). Among the four independent variables, witnessing negative environmental events was the strongest predictor. The predictors explained about 18% of the variance in attitudes toward sustainable tourism ($R^2 = 0.186$, Adjusted $R^2 = 0.179$, $F = 26.11$, $p < .001$). Although the R-square value is not high, the test results support our hypothesis, which suggests that the more early-life outdoor experiences residents have, the stronger their attitudes toward sustainable tourism will be.(Tables 5–8).

In addition to using overall attitudes toward sustainable tourism as the dependent variable, four multiple regression models using all the four factors of early-life outdoor experiences as independent variables to predict the four dimensions of dependent variables were also tested.

Table 3
EFA summary of SUS-TAS.

No	Items	Mean	SD	Communalities				
					F1	F2	F3	F4
1	Tourists in my community disrupt my quality of life	3.06	0.82	0.70	0.81	0.08	− 0.05	0.25
2	Our community is overcrowded because of tourism	3.26	0.80	0.78	0.83	− 0.01	0.06	0.05
3	Our community's recreational resources are overused by tourists	3.13	0.83	0.79	0.87	− 0.01	0.05	0.09
4	Tourism is growing too fast in our community	3.07	0.81	0.47	0.87	0.29	0.04	− 0.03
5	Our community's diversity of nature is valued and protected	4.38	0.70	0.60	0.14	0.83	− 0.08	0.21
6	Tourism development in our community always protects wildlife and natural habitats	4.37	0.69	0.73	0.10	0.85	0.01	0.13
7	Our community's natural environment is being protected now and for the future	4.23	0.76	0.76	0.09	0.79	0.04	0.17
8	Tourism development in our community promotes positive environmental ethics	4.26	0.67	0.69	0.13	0.84	0.24	0.15
9	Tourism in our community is developed in harmony with the natural environment	4.32	0.72	0.72	0.09	0.86	0.16	0.23
10	Tourism development needs well-coordinated planning	4.26	0.67	0.74	0.02	0.76	0.20	0.34
11	When planning for tourism, we can't be shortsighted	4.37	0.66	0.73	− 0.05	0.77	0.11	0.32
12	Successful management of tourism requires advanced planning	4.29	0.67	0.73	− 0.03	0.77	0.20	0.32
13	We need to take a long-term view when planning for tourism development	4.37	0.65	0.73	0.01	0.79	0.22	0.30
14	Tourism makes a strong economic contribution to our community	3.47	0.80	0.60	0.02	0.23	0.77	0.24
15	Tourism benefits things other than just tourism industries in our community	3.92	0.65	0.73	0.09	0.20	0.71	0.29
16	Tourism brings new income into our communities	3.78	0.70	0.61	0.01	0.06	0.64	0.31
17	Tourism generates substantial tax revenues for our local government	3.68	0.80	0.62	0.01	0.02	0.70	0.24
18	Tourism businesses should try to hire most of their employees from within our community	3.88	0.75	0.37	0.09	0.14	0.24	0.65
19	Tourism industries should try to purchase their goods and services from within the local community	3.93	0.65	0.60	0.04	0.27	0.46	0.66
20	Tourism industries should contribute economically to their community's improvement	3.90	0.70	0.61	0.11	0.32	0.29	0.67
21	Tourism businesses must monitor visitor satisfaction	4.13	0.68	0.71	0.02	0.25	0.16	0.82
22	Tourism industries should ensure high-quality tourism experiences for visitors	4.13	0.64	0.69	0.02	0.30	0.17	0.79
23	It's the responsibility of tourism businesses to meet visitor's needs	3.93	0.74	0.62	0.13	0.14	0.22	0.74
24	Community attractiveness is a core element of the ecological "appeal" for visitors	3.95	0.76	0.60	0.10	0.22	0.28	0.69
25	Decisions about tourism must be made by all members in these communities, regardless of the member's background	3.94	0.73	0.52	− 0.01	0.23	0.22	0.66
26	Full participation by everyone in the community regarding decisions in the tourism industry is a must for the successful development of tourism	3.97	0.72	0.59	0.088	0.15	0.10	0.70
27	Sometimes it's acceptable to exclude a community's residents from the decisions dictating the development of tourism	4.03	0.66	0.67	0.07	0.32	0.12	0.73
	Eigen value				10.99	2.91	2.54	1.38
	Explained variance (%)				23.59	21.07	11.31	10.07
	Cumulative explained variance (%)				23.59	44.65	55.96	66.03
	Cronbach's alpha				0.88	0.95	0.77	0.93

Table 4
Results of regression analysis for overall attitudes towards sustainable tourism.

	Unstandardized coefficients		Standardized coefficients			VIF
	B	Std. Error	β	t	*p*	
(Constant)	3.05	0.10		30.36	.000	
Individual outdoor experiences	0.09	0.03	0.16	3.14	.002	1.37
Organizational outdoor experiences	0.02	0.03	0.04	0.81	.419	1.66
Formal environmental education and the media	− 0.09	0.03	− 0.19	− 3.54	.000	1.70
Negative environmental events	0.22	0.03	0.42	8.56	.000	1.35

$R^2 = 0.186$; adjusted $R^2 = 0.179$; $F = 26.11$; $p < .001$.

Table 5
Results of regression analysis for perceived social costs.

	Unstandardized coefficients		Standardized coefficients			VIF
	B	Std. Error	β	t	*p*	
(Constant)	2.28	0.17		13.34	.000	
Individual outdoor experiences	− 0.01	0.05	− 0.01	− 0.16	.872	1.37
Organizational outdoor experiences	0.04	0.05	0.05	0.83	.410	1.66
Formal environmental education and the media	0.08	0.05	0.09	1.66	.098	1.70
Negative environmental events	0.17	0.05	0.20	3.83	.000	1.35

$R^2 = 0.077$; adjusted $R^2 = 0.069$; $F = 9.56$; $p < .001$.

Table 6
Results of regression analysis for environmental sustainability and long-term planning.

	Unstandardized coefficients		Standardized coefficients			VIF
	B	Std. Error	β	t	*p*	
(Constant)	3.61	0.14		25.92	.000	
Individual outdoor experiences	0.07	0.04	0.08	1.62	.106	1.37
Organizational outdoor experiences	0.00	0.04	0.00	0.04	.972	1.66
Formal environmental education and the media	− 0.18	0.04	− 0.27	− 4.70	.000	1.70
Negative environmental events	0.28	0.04	0.38	7.48	.000	1.35

$R^2 = 0.130$; adjusted $R^2 = 0.122$; $F = 17.02$; $p < .001$.

Table 7
Results of regression analysis for perceived economic benefit.

	Unstandardized coefficients		Standardized coefficients			VIF
	B	Std. Error	β	t	*p*	
(Constant)	2.94	0.14		21.38	.000	
Individual outdoor experiences	0.21	0.04	0.27	5.23	.000	1.37
Organizational outdoor experiences	− 0.03	0.04	− 0.04	− 0.69	.488	1.66
Formal environmental education and the media	− 0.09	0.04	− 0.13	− 2.30	.022	1.70
Negative environmental events	0.12	0.04	0.16	3.16	.002	1.35

$R^2 = 0.095$; adjusted $R^2 = 0.087$; $F = 11.97$; $p < .001$.

Table 8
Results of regression analysis for maximizing community participation and ensuring visitors satisfaction.

	Unstandardized coefficients		Standardized coefficients			VIF
	B	Std. Error	β	t	*p*	
(Constant)	2.89	0.13		22.54	.000	
Individual outdoor experiences	0.11	0.04	0.15	2.89	.004	1.37
Organizational outdoor experiences	0.05	0.04	0.09	1.53	.126	1.66
Formal environmental education and the media	− 0.10	0.04	− 0.16	− 2.77	.006	1.70
Negative environmental events	0.25	0.03	0.37	7.37	.000	1.35

$R^2 = 0.161$; adjusted $R^2 = 0.153$; $F = 21.88$; $p < .001$.

For the perceived social costs dimension, the predictor explained about 7% of the variance in attitudes toward sustainable tourism ($R^2 = 0.077$, Adjusted $R^2 = 0.069$, $F = 9.56$, $p < .001$). Witnessing negative environmental events was the only effective predictor ($\beta = 0.20$, $t = 3.83$, $p < .001$). For the Environmental Sustainability and Long-term Planning dimension, the predictors explained about 12% of the

variance in attitudes toward sustainable tourism (R^2 = 0.130, Adjusted R^2 = 0.122, F = 17.02, p < .001). Formal environmental education and the media (β = -0.27, t = 4.7, p < .001) as well as witnessing negative environmental events (β = 0.38, t = 7.48, p < .001) were significant contributors. For the perceived Economic Benefit dimension, the predictors explained about 9% of the variance in attitudes towards sustainable tourism (R^2 = 0.095, Adjusted R^2 = 0.087, F = 11.97, p < .001). Three factors were significant contributors, namely individual outdoor experiences (β = 0.27, t = 5.23, p < .001), formal environmental education and the media (β = 0.13, t = -2.3, p < .05), and witnessing negative environmental events (β = 0.16, t = 3.16, p < .01). For the maximizing community participation and ensuring visitors' satisfaction dimension, the predictors explained about 15% of the variance in attitudes toward sustainable tourism (R^2 = 0.161, Adjusted R^2 = 0.153, F = 21.88, p < .001). Three factors were significant contributors, namely individual outdoor experiences (β = 0.15, t = 21.89, p < .01), formal environmental education and the media (β = -0.16, t = -2.77, p < .05), and witnessing negative environmental events (β = 0.37, t = 7.37, p < .001).

5. Discussion, conclusion and implications

This study was designed to elucidate residents' early-life outdoor experiences and their attitudes towards sustainable tourism, and to identify the influences of four factors of early-life outdoor experiences on four dimensions of attitudes towards sustainable tourism.

For overall attitudes towards sustainable tourism, the results of this empirical study indicate that witnessing negative environmental events, formal environmental education and the media as well as individual outdoor experiences have positive effects on individuals' attitudes toward sustainable tourism. This finding demonstrates that the more outdoor experiences residents have in early life, the stronger their positive attitudes towards sustainable tourism. The continuity theory indicates that an individual's mental constructs, activity patterns, and relationships across his/her life will last and will bridge the individual's past, present, and future (Atchley, 1999). Based on the research results, we can reveal the connection to nature in an individual's past and present. The outdoor experiences in childhood or adolescence could be an important factor of influence that shapes an individual's level of support for the development of sustainable tourism, which is consistent with previous findings (Geng et al., 2015; Tapps & Fink, 2009; Thompson et al., 2008); the linkage of nature and experiences helps us to formulate pro-nature attitudes and further extend our support for sustainable tourism.

Specifically, witnessing negative environmental events was found to be a particularly strong influential factor on sustainable tourism among residents. For local residents, changes in their hometown due to tourist developments might be the most impressive. Witnessing negative environmental events and pollution, or witnessing the substitution of nature by artificial construction in the area where they live might arouse their concerns for the local environment and how it may be affected in the future. Residents are usually perceived to have higher attachment to the place they live in with higher identity and dependence (Casakin, Hernández, & Ruiz, 2015; Huber & Arnberger, 2016). This attachment may lead them to think more deeply about the place and hence form a more positive and supportive attitude toward sustainable tourism. Conversely, although weaker, individual outdoor experiences are another significant predictor; that is, having trips to natural environments or participating in recreational outdoor activities with family and friends in a resident's early life might also help him/her to develop support for sustainable tourism development.

However, it is somewhat surprising that formal environmental education and the media generated a negative influence on the dependent variable, which indicated that the more experiences of formal environmental education and the media an individual possessed, the more he or she would tend not to hold positive attitudes towards sustainable tourism. This is particularly significant for environmental sustainability and long-term planning. The more experiences of formal environmental education an individual has, the less he/she will tend to support the environmental part of sustainable tourism. A possible reason might be related to the multi-dimensional nature of sustainable tourism, which needs to balance the economic, social and environmental concerns. As Burghelea, Uzlau, and Ene (2016) argued, sustainable tourism imposes the need to protect natural resources, social and cultural rights and to meet the needs and requirements of tourists and of the local population. Individuals who have more experiences of formal environmental education might focus more and only on the environmental aspects and hence it might be harder for them to accept compromise on the environmental aspect.

Regarding the four dimensions of attitudes towards sustainable tourism, it was found that early-life outdoor experiences have a greater influence on the "maximizing community participation and ensuring visitors' satisfaction" dimension. That is, respondents with a higher level of early-life outdoor experiences tend to pay attention to and consider community participation and tourism experiences for visitors, such as: hiring most of their employees and purchasing their goods and services from within the local community, full participation by everyone in the community regarding decisions, monitoring visitor satisfaction, and ensuring high-quality tourism experiences for visitors. Actually, tourists as consumers are becoming more aware and more involved in practicing environmentally friendly behaviour when travelling. Tourists' attitudes and behaviour towards the destination and the tourism environment are related to habits, convenience and personal preferences. Conflicts between motivations for tourist and environmental choices have the potential to hinder sustainable tourist behaviour (Budeanu, 2007; Gupta & Chopra, 2014). In accordance with the continuity theory, the pro-environmental outdoor experience could last from an individual's early life and shape the habits and personal preferences represented in the tourism context.

Nevertheless, the R-square value in multiple regressions of the current study is relatively low, indicating that independent variables can only explain 18% of the variance in attitudes towards sustainable tourism. According to Abelson (1985), one should not necessarily be discouraged by the miniscule values for percentage variance explanation; sometimes the proportion of variance can be surprisingly small, but it provides statistical assurance that these values are significantly above zero. Consistent with this, Moksony (1990) pointed out that a low value R-square simply implies that the dependent variable is affected by a host of other factors aside from the ones considered in the analysis, and this is immaterial because the purpose of the study is not to list out all of the influential factors. Therefore, although they tend to be weak as reflected in the R-square values, the results of the regression models are all significant, indicating that in the current study there may exist some other factors which influence residents' attitudes towards sustainable tourism. The perspectives and opinions of other people could produce a change in one's attitudes. As Wood (2000) suggested, persuasion and social influence may result in attitudinal change, while Doran and Larsen (2016) reported that people are more likely to plan on choosing an option when they also believe that others act in similar ways when facing eco-friendly travel options. On the other hand, although residents' abundant outdoor experiences in early life contribute to the development of attitudes and support for sustainable development in tourism, lack of enduring involvement, continuous concerns about the natural environment and local public issues might also be necessary for residents to become more involved in the sustainable tourism of their hometown.

This study makes significant contributions to the understanding of how early-life outdoor experiences can be used to predict attitudes towards sustainable tourism. Hence, these findings have some implications for the field of tourism. First, given the negative impacts derived from the rapid growth of mass tourism, sustainable tourism seems to be receiving much consideration as a public issue. However, the

perspectives of residents might be the most crucial. Based on the results of the current study, residents' attitudes towards sustainable tourism could be developed from the linkage between the residents themselves and nature. For both the public and private tourism sectors, providing good outdoor recreation opportunities for children, adolescents, and families is necessary. Second, although witnessing the degradation of the environment can arouse residents' awareness and concerns about sustainable tourism, we are not willing to see those negative events happen. Good interpretations or guidance may help to transfer the shock caused by witnessing negative environmental events into powerful change. Related associations (such as environmental associations and community associations) could therefore play an important role in integrating the power and advocacy required for sustainable development in tourism. Finally, future research needs to find the mechanism or the missing factors that link early-life outdoor experiences with an individual's attitudes toward sustainable tourism. With this connection established, we could gain a deeper understanding of how residents' attitudes towards sustainable tourism are formed. Additional research is also needed to investigate the different attitudes towards sustainable tourism within urban and rural contexts.

The results of this research could shed some light on sustainable tourism from the viewpoint of early-life influences. This study was, however, limited in some ways. First, although the survey was conducted using quota sampling from the 11 districts in Kaohsiung, the age of our respondents is relatively young (59.3% are 30 and under), meaning that it cannot accurately represent the true distribution of the population. As these younger residents are perceived to be more willing to complete the questionnaires and are more concerned about public issues, we received more valid questionnaires from them. Furthermore, we conducted the survey with the residents in Kaohsiung rather than in a nature reserve area. This is relatively different from the studies that have been conducted in the field of sustainable tourism in the past. Although an increasing number of researchers have asserted that sustainable tourism in the city should also be taken into consideration since urban areas are recognized as the most important types of tourist destinations (mentioned in the study site), it is quite challenging to conduct a general survey in a city with a large population.

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Appendix A. Supplementary material

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.jort.2018.10.002.

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