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An assessment model of corporate social responsibility practice in the tourism industry

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ABSTRACT

Corporate social responsibility (CSR) has gradually become a concern of many companies in the tourism industry. A substantial number of companies have implemented CSR programmes to pursue economic and environmental win–win situations while acting in a socially responsible manner. This study constructs an assessment model of CSR practice in the tourism industry to provide for more effective implementation of CSR. First, the researchers reviewed CSR-related literature and conducted in-depth interviews with industry experts. Based on the literature and the interviews, five dimensions, including Economy, Environment, Society, Culture and Consequence, and 15 criteria were extracted to form the assessment model. Second, the study examined the model's validity and established a consensus among the perspectives of academia, government and industry using the Fuzzy Delphi Method (FDM). Finally, the study adopted the DEMATEL and DEMATEL-based Analytical Network Process (ANP) technique to understand the causal relations and weights among the factors. The results indicated that Environment is the most influential dimension, Consequence is the most important dimension in the assessment model and Sustainable Cultural Inheritance is the most important criterion among all of the CSR practice criteria. Implications for application are discussed at the end of the paper.

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Corporate social responsibility (CSR) practice; multiple attribute decision-making (MADM); influential network relations map (INRM); environment; culture; sustainable cultural inheritance

Introduction

Tourism represents a significant industry with substantial growth potential that produces profits that can be used for a country's development (Horng, Liu, Chou, Yin, & Tsai, 2014; World Travel & Tourism Council, 2015). One country that has benefitted from tourism is Taiwan, which has received 10 million inbound visitors as a global vacation destination since 2015 (*Taiwan Today*, 2015). The tourism industry has become a significant source of revenue in Taiwan and has increased opportunities related to business, investment and employment. Although tourism companies have gained substantial profits, they have also created many negative effects on the environment and society (Karlsson & Dolnicar, 2015; Roe, Hrymak, & Dimanche, 2013; Su, Wall, & Xu, 2015). Consumers consider a corporation's product as well as other aspects of the corporation before making a purchase decision. Lee, Park, Rapert, and Newman (2012) found that customers' identification and loyalty are positively related to the way a corporation implements effective corporate social responsibility (CSR), which is defined as "the obligations of businessmen to pursue those policies, to make those decisions or follow those

lines of action which are desirable in terms of the objective and values of society" (Bowen, 1953, p. 6). Consumers want to purchase products from a company that implements CSR activities (Lee & Shin, 2010). In addition to customers, other stakeholders' perceptions of companies' CSR actions are also important (Brunk & Blümelhuber, 2011). These perceptions originate from the manner in which CSR is reported, the company's website and other communicative tools (Golja & Nizic, 2010; Moravcikova, Stefanikova, & Rypakova, 2015). Moreover, the issue of whether a company's CSR actions fit the company's attributes is important for all stakeholders (Alhouti, Johnson, & Holloway, 2016). Therefore, CSR is a concept that involves the way a corporation implements relevant and meaningful social and environmental initiatives (de Grosbois, 2015). Tourism businesses should consider CSR with regard to the public and the industry's sustainability.

Over the past few decades, the elements of CSR have been discussed in tourism research (Jones, Hillier, Comfort, Okumus, & Okumus, 2016; Murphy & Schlegelmilch, 2013). CSR practices included in the Triple Bottom Line (TBL) represent the most popular framework for researchers in these studies (Cvelbar & Dwyer, 2013; de Grosbois, 2015). However, multiple types of properties are involved in the tourism industry, and these properties are more complicated than those in other industries, which represents a potential problem (Goeldner & Ritchie, 2011; Leiper, 1979). According to Wernerfelt (1984), the Resource-Based View (RBV) indicates that each property has its own characteristics. If a property operates appropriately, it can become a competitive advantage for a company. Therefore, influential relations and the appraisal of CSR in the tourism industry should differ from the traditional CSR framework, which was not constructed for this industry (Koutra, 2013). Moreover, there is currently no overall assessment model for CSR practice (Calabrese, Costa, & Rosati, 2015; Maignan, 2001) that can appraise CSR performance (Lee et al., 2012). In addition, many actions and resources in an organization interact such that a small change may affect every part of the system and company. Often, one resource cannot be used in multiple places; thus, decision-making regarding the utilization of resources is important. Therefore, this study adopts a Multiple Attribute Decision-Making (MADM) model that includes the Fuzzy Delphi Method (FDM), DEMATEL (Decision-Making Trial and Evaluation Laboratory), and DEMATEL-based ANP (DANP) to determine the causal relations and the weight of the attributes of CSR practice in tourism. This analysis can help tourism practitioners identify their companies' specific resources and adequately utilize these resources for optimal decision-making when implementing CSR practices for sustainable business (Tzeng & Huang, 2011). The research purpose of this study was to construct a CSR practice assessment model for the tourism industry that includes causal relations to develop an influential network relations map (INRM) that can help tourism companies integrate the resources they own and create optimal CSR performance. This study explores the weights of the attributes of effective CSR activity to assist practitioners in appraising CSR practice to achieve sustainability.

CSR and relevant attributes for the tourism industry

CSR was originally advocated by Howard Bowen in his seminal book *Social Responsibilities of the Businessman* in 1953. In the 1970s, CSR began to focus on responsibility, responsiveness and performance (Carroll & Shabana, 2010). CSR presents a socially responsible position for a company. Because CSR reflects a company's capacity to respond to society, questions have emerged, such as "How does a company respond?" and "What is the effect?" (Frederick, 1994). Thus, corporate social responsiveness emerged as the ideal of what a company's CSR practice should achieve for society and what the performance of a CSR activity entails. Subsequently, scholars began to examine the dimensions of company practice. The most well-known models are the CSR pyramid (Carroll, 1991) and the TBL (Elkington, 1999). The former includes four hierarchical levels: Economy, Legality, Ethics and Philanthropy, and the latter includes three elements: Profit, Planet and People, which separately represent Economy, Environment and Society, and form the basis of the Global Reporting Initiative (GRI) which has been adopted by many corporations to develop their CSR reports (Stenzel, 2010). The GRI model has been applied in many previous studies and has been applied in many industries. However, the original GRI is suitable for large-sized corporations and pays little attention to the other

characteristics of corporations, particularly tourism (Fassin, Van Rossem, & Buelens, 2011; Garay & Font, 2012; McWilliams & Siegel, 2001). However, the nature of the tourism industry has a broader scope and is different from other industries (Leiper, 1979). According to the RBV, a corporation has its own specific resources that can enhance its competitive advantage and contribute to its sustainability (Wernerfelt, 1984). Therefore, specific CSR practices for the tourism industry are necessary to help practitioners make the best possible use of their distinctive resources.

Most tourism-related studies have examined one or more CSR dimensions. Cvelbar and Dwyer (2013) adopted the TBL to develop seven sustainable factors for hotels, including general financial performance, hotel-specific performance, environmental activities related to the use of resources, environmental awareness, relationship with the local community, relations with customers and relations with employees, with several indicators for each factor. Font, Guix, and Bonilla-Priego (2016) applied the same model to the cruise industry. Their factors included economic (economic results and economic impact on destination), social (labour and employment rights as well as human rights), society, product responsibility, environmental (water, biodiversity, emissions, effluents and waste), and products and services. A number of studies have partially adopted TBL dimensions. For example, Levy and Park (2011) found four dimensions of CSR activity in the lodging industry, including community relations, employee relations, environmental issues and product quality. According to their discussion of CSR practice, three dimensions (the economy, the environment and society) were mentioned more frequently. Other variables have been used to examine CSR, including the CSR pyramid (economic, legal, ethical, philanthropic), destination social responsibility, CSR towards society, CSR towards stakeholders, self-related CSR, other-related CSR, state of affairs and novelty. Additionally, many studies discuss the consequences of implementing CSR activities, such as consumer–company identification, organizational performance, customer satisfaction, trust, loyalty, brand preference, overall CSR effectiveness, job satisfaction, organizational commitment, organizational trust, organizational identification, positive impacts, support for tourism and resident quality of life (Fatma, Rahman, & Khan, 2016; Kim, Song, & Lee, 2016; Lee, Song, Lee, Lee, & Bernhard, 2013; Martínez & Rodríguez del Bosque, 2013; Nikbin, Hyun, Iranmanesh, Maghsoudi, & Jeong, 2016; Qu, 2014; Shin, Hur, & Kang, 2016; Song, Lee, Lee, & Song, 2015; L. Su, Huang, & Huang, *in press*; Tingchi Liu, Anthony Wong, Rongwei, & Tseng, 2014; Tsai, Tsang, & Cheng, 2012). Tourism CSR-relevant dimensions are presented in Table 1. However, in recent years, Hughes and Scheyvens (2016) have identified culture as an important element of CSR, and several studies that discuss sustainability have noted cultural issues as a critical element for tourism sustainability (Canavan, 2016; Esparon, Gyuris, & Stoeckl, 2014; Wells, Manika, Gregory-Smith, Taheri, & McCowlen, 2015). In the following, the details of each dimension identified in previous studies are discussed.

First, previous studies of tourism and hospitality indicate that the economic dimension includes numerous other aspects, such as economic results, economic impact on the destination (Font et al., 2016), supply chain efforts (Dodds & Kuehnel, 2010), training courses for local residents, income increases, business opportunity creation (Polonsky et al., 2013), responsible marketing (Esparon et al., 2014), tourism with substantial benefits to the community, livelihood diversification through the development of products and services related to tourism and tourist needs (Su et al., 2015), contributions to local economic development (Cowper-Smith & de Grosbois, 2011), charitable donations, job creation and local hiring (de Grosbois, 2015). Similarly, the environment has been mentioned in connection with water; biodiversity; emissions, effluents and waste; products and services (Font et al., 2016); eco-certification (Karlsson & Dolnicar, 2015); environmental sustainability; contributions to conservation (Esparon et al., 2014); support for organizations that protect marine life and the environment; air pollution reduction; water pollution reduction; reduction of greenhouse gas (GHG) emissions; energy conservation (de Grosbois, 2015); contributions to local economic development (Cowper-Smith & de Grosbois, 2011); energy consumption and conservation (Hu, Horng, Teng, & Chou, 2013); and efficient resource use (Cvelbar & Dwyer, 2013). The third part of CSR practice is society, which includes labour and decent work (e.g. employment and benefits, occupational health and safety, and training and education), human rights (e.g. investment and procurement practices, non-

Table 1. CSR and outcome dimensions from previous tourism studies.

Subject	CSR dimension	Outcome dimension	Reference
Customer	Economic Social Environmental CSR CSR to society CSR to stakeholders	Consumer-company identification Consumer satisfaction Brand loyalty Organizational Performance Customer Satisfaction Trust Loyalty Brand preference Loyalty intention C-C identification Satisfaction Trust	(Fatma et al., 2016; Nikbin, Hyun, Iranmanesh, Maghsoudi, & Jeong, 2016; Qu, 2014; Tingchi Liu, Anthony Wong, Rongwei, & Tseng, 2014) (Tingchi Liu et al., 2014) (Martinez & Rodriguez del Bosque, 2013)
Employee	State of affairs Novelty Economic Legal Ethical Philanthropic Self-related CSR Other-related CSR	Overall CSR effectiveness Organizational commitment Job satisfaction Organizational commitment Organizational trust Organizational identification	((Lee et al., 2013); Shin et al., 2016) (Kim, Song, & Lee, 2016; Tsai et al., 2012) (Song et al., 2015) (Song et al., 2015; Zientara et al., 2015))
Residents	Destination social responsibility	Positive impacts Support for tourism Resident quality of life	(Su et al., in press)

discrimination, freedom of association and collective bargaining, child labour, forced and compulsory labour, and Indigenous rights), society (e.g. community), product responsibility (e.g. health and safety as well as product and service labelling, marketing communications, customer privacy, and compliance) (Font et al., 2016), consumer education (Dodds & Kuehnel, 2010), the improvement of local schools (Polonsky et al., 2013), working with local communities (Esparon et al., 2014), employee quality, providing a safe environment for customers and employees, increasing public and customer awareness of and involvement in sustainable development, student scholarships (de Grosbois, 2015), employee well-being and engagement (Cowper-Smith & de Grosbois, 2011), customer–employee relations (Cvelbar & Dwyer, 2013), and consumer management and education (Hornig, Hu, Teng, & Lin, 2012). An additional dimension, culture, has been noted as a crucial factor for tourists and the tourism industry (Lew, 1987). Culture should be incorporated very carefully to avoid negatively affecting the destination (Tosun, 2001). Therefore, culture cannot be included in any other dimension and should be discussed separately in the tourism field. Culture has been noted in several previous sustainable tourism studies with regard to the cultural component (Esparon et al., 2014), food as traditional culture for tourists (Reynolds, 1993), the number of cultural events (Cvelbar & Dwyer, 2013) and art performances (Lim & Bendle, 2012). Finally, the consequences of CSR noted by many previous studies include customer satisfaction (Esparon et al., 2014), the satisfaction of stakeholder demands (Cheung, Welford, & Hills, 2009), employee satisfaction and commitment (Zientara, Kujawski, & Bohdanowicz-Godfrey, 2015), and corporate image (Martínez & Rodríguez del Bosque, 2013).

Most previous studies listed the attributes of CSR without appraising their performance. Moreover, European Communities (2001) claimed “being socially responsible means not only fulfilling legal expectations, but also going beyond compliance and investing ‘more’ into human capital, the environment and the relations with stakeholders” (p. 8). Therefore, the legal and ethical responsibilities of the CSR pyramid are the fundamentals of company operations and the components of the TBL. However, the dimensions of CSR in the tourism industry include more than the TBL; they encompass the economy, environment and society, as well as the cultural dimension, which is not included in the

Table 2. Draft of the dimensions in the assessment model of CSR practice.

Dimension	Practice from previous studies	Reference
Economy	Economic benefit Supplier Local community Products/ service Charity	(Cowper-Smith & de Grosbois, 2011; de Grosbois, 2015; Dodds & Kuehnel, 2010; Esparon et al., 2014; Font et al., 2016; Polonsky et al., 2013; Su et al., 2015)
Environment	Energy conservation Reduction of greenhouse gas emissions Pollution reduction Biodiversity Energy consumption and conservation Environmental sustainability	(Cvelbar & Dwyer, 2013; de Grosbois, 2015; Esparon et al., 2014; Font et al., 2016; Hu et al., 2013; Karlsson & Dolnicar, 2015)
Society	Labour/employee management Customer management and education Product responsibility Scholarships for students	(Cowper-Smith & de Grosbois, 2011; Cvelbar & Dwyer, 2013; de Grosbois, 2015; Dodds & Kuehnel, 2010; Esparon et al., 2014; Font et al., 2016; Horng et al., 2012; Polonsky et al., 2013)
Culture	Cultural sustainability Support cultural activity Support art industry	(Cvelbar & Dwyer, 2013; Esparon et al., 2014; Lim & Bendle, 2012)
Consequence	Image Satisfaction of stakeholders Increasing revenue/ competitive advantage Reducing cost	(Cheung et al., 2009; Esparon et al., 2014; Martínez & Rodríguez del Bosque, 2013; Zientara et al., 2015)

pyramid but is a crucial element for the tourism industry. Therefore, this study adopts a list (Table 2) based on the TBL that integrates the concept of the CSR pyramid and adds culture as a CSR practice based on previous sustainability or CSR-related literature. In addition, this study incorporates an output dimension to create a draft assessment model of CSR practice in the tourism industry. This model includes five dimensions (i.e. Economy, Environment, Society, Culture and Consequence).

Method

According to the RBV perspective, optimal decision-making is a popular research issue. In addition to in-depth interviews and FDM, we construct a fundamental assessment model. Previous literature has constructed models using the MADM method in studies of various industries to develop optimal decision-making (Kuo, Hsu, & Li, 2015; Shen, Yan, & Tzeng, 2014; Su, Tseng, Furuzuki, & Tzeng, 2012). Moreover, many tourism and hospitality studies have successfully adopted and constructed assessment models (Horng et al., 2014; Horng, Chou, Liu, & Tsai, 2013; Liou & Tzeng, 2007). The characteristics of the CSR attributes discussed above are similar to the features of the MADM, which can solve real-world problems for specific organizations or industries. Therefore, this study adopted this method to develop and explore a CSR assessment model to assist practitioners in the tourism industry in implementing and achieving sustainable operation.

In-depth interviews

A qualitative approach can help researchers obtain detailed, in-depth and rich information (Creswell, 2012; Miles & Huberman, 1994). In addition, the data collection reflects the research aims of a study (Legard, Keegan, & Ward, 2003). Therefore, this study adopted a literature review and in-depth interviews to extract the attributes of CSR implementation and its consequences. First, the researchers comprehensively reviewed the literature and created a draft of the dimensions to be included in the assessment model of CSR practice using the TBL as the theoretical background. Next, we interviewed industry top managers or founders of various companies in the Taiwanese tourism industry. Each interviewee had rich experience, had been employed in the industry for longer than 18 years and had major duties relevant to CSR. Because the data reached a saturation point, the research purpose

was clear. The information comes from high-quality experts, most of whom are presidents of a cooperative or heads of CSR-relevant departments (Morse, 2000). The data are from 13 experts. This sample size is similar to previous studies (Hornig & Lee, 2009; Hornig et al., 2013; Hornig, Hsu, Liu, Lin, & Tsai, 2011). The data were acquired in this final step.

The interviews were conducted individually using a semi-structured and open-ended questionnaire. Typically, the interviews lasted approximately one hour. Each interview included questions on the implementation and expected or actual consequences of CSR practices. After the interviews, all of the contents, which were recorded using a high-quality recorder, were transcribed and analysed using the content analysis technique. During the analysis, member-check and triangulation techniques were adopted to improve reliability. After the interview, data were analysed through analytic induction, certain criteria were revised, added or deleted from the draft. For instance, the criteria, the economic benefit and the local community were combined into a new criterion, local benefit. The reason for this change was that the experts noted important benefits for local communities, which are always in the operational areas of companies and not only improve the economic condition but also increase employment opportunities. Furthermore, several criteria were renamed. For instance, support for cultural activity and the art industry were combined and renamed "support for the cultural and creative industry" because the experts frequently noted the term "cultural and creative industry" and then discussed activities or products regarding culture or art. Therefore, a CSR practice assessment model in the tourism industry that included five dimensions (Economy, Environment, Society, Culture and Consequence) and 15 criteria was constructed.

Fuzzy Delphi method

This study applied a quantitative approach to validate the dimensions and criteria, to collect additional elements and to establish an expert consensus regarding the assessment model of CSR practice. The Delphi method is a technique used to collect expert opinions and judgements that can provide a professional evaluation based on expert knowledge, deliver more effective information than other group evaluations and establish a consensus among experts (Yousuf, 2007). However, the traditional Delphi method has many research limitations, such as time, cost and opinion loss. Thus, this study adopted a technique known as the FDM (Ishikawa et al., 1993), which has combined the traditional Delphi method and fuzzy set theory to reduce the limitations of the traditional Delphi method (Kuo & Chen, 2008).

The researchers invited 17 CSR experts in the tourism field, including academic scholars, government officials and tourism-related practitioners, to validate the results and to establish consensus. The experts were mailed the FDM questionnaire, which used a 10-level scale (from least important to most important) to determine the importance of each criterion. In addition, an open-ended question was used to elicit more criteria or information. The questionnaire was reviewed by two experts to determine its appropriateness. After the expert opinions were collected in the form of questionnaire response data, the researchers established triangular fuzzy numbers (\tilde{A}) as follows:

$$\begin{aligned}\tilde{A} &= (L_A, M_A, U_A) \\ L_A &= \min(X_{Ai}) \\ M_A &= \sqrt[n]{\prod_{i=1}^n X_{Ai}} \\ U_A &= \max(A_{Ai}),\end{aligned}$$

where X_{Ai} represents the i th expert's evaluation value for criterion A of CSR practice, L_A denotes the lowest appraisal values of criterion A, M_A indicates the geometric mean of all the expert evaluation values for criterion A, and U_A indicates the highest expert evaluation values for criterion A. The threshold of the FDM

Table 3. Fuzzy Delphi Method Result.

Dimension	Criteria	Triangular fuzzy number			Defuzzification	
		Min	Geometric mean	Max	μ_T	Acceptable conditions
Economy	Supplier assessment	0.5	0.9	1.0	0.9	Accepted
	Philanthropy	0.5	0.9	1.0	0.9	Accepted
	Local benefit	0.5	0.9	1.0	0.8	Accepted
	Sustainable tourism product	0.6	0.8	1.0	0.8	Accepted
Environment	Energy conservation and carbon reduction	0.5	0.9	1.0	0.9	Accepted
	Environmental protection and ecological conservation	0.5	0.9	1.0	0.9	Accepted
	Sustainable resource management	0.5	0.7	1.0	0.7	Accepted
Society	Employee management	0.4	0.7	1.0	0.7	Accepted
	Customer education and customer protection	0.4	0.8	1.0	0.8	Accepted
Culture	Industry-academia collaboration	0.3	0.8	1.0	0.8	Accepted
	Sustainable cultural inheritance	0.6	0.8	1.0	0.8	Accepted
	Supporting cultural and creative industry	0.5	0.8	1.0	0.8	Accepted
Consequence	Corporate image	0.7	0.9	1.0	0.8	Accepted
	Internal and external customer satisfaction	0.7	0.9	1.0	0.8	Accepted
	Sustainable operation	0.6	0.8	1.0	0.7	Accepted

for all of the factors that represent the expert opinions appeared to be consistent with the value of the criterion M_A , which was acceptable, and representations of the FDM using fuzzy integration were validated as a geometric mean > 0.7 (Chang, Huang, & Lin, 2000; Horng et al., 2011; Horng, Liu, Chou, & Tsai, 2013). The FDM results are shown in Table 3. According to the results, all the criteria were higher than the threshold, the content of the model was saturated and no new criterion was added. The original dimensions and criteria were retained for the next step to examine the causal relations, weights and priorities among the dimensions and criteria. Therefore, based on the preceding discussion, this study adopted the dimensions, Economy, Environment, Society, Culture and Consequence, to construct a framework (Figure 1) for an assessment model of CSR practice in the tourism industry.

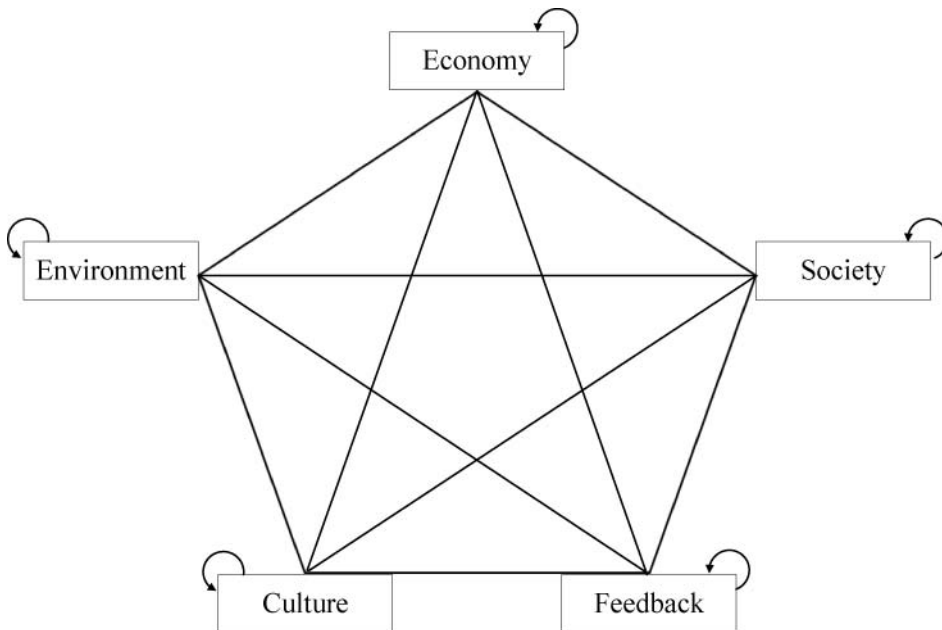


Figure 1. Research framework.

DEMATEL- and DEMATEL-based ANP

After the elements of the assessment model of CSR practice in the tourism industry were confirmed, the next step was to identify the relations, weights and priorities among the dimensions and criteria using DEMATEL and DANP. Previous studies with the same method and similar purpose recruited approximately 10–18 experts in at least three fields, including academia, government, industry or non-profit organizations, to collect censuses from different perspectives to reach a consensus and create a reliable assessment model (Liu, Tzeng, & Lee, 2012; Peng & Tzeng, 2017). Therefore, the researchers invited 17 experts from academia, government and industry who had rich experience in CSR-related work or research. The period of investigation was approximately one month (early January to early February 2016). The researchers provided the DEMATEL and DANP questionnaires to the experts through the mail or in person.

The DEMATEL was developed in 1971 at the Battelle Association research centre in Geneva. It was originally generated to solve globally complex and difficult problems in manufacturing planning, to control multi-criteria decision-making and to analyse highly challenging problems (Falatoonitoosi, Leman, Sorooshian, & Salimi, 2013; Fontela & Gabus, 1976; Gabus & Fontela, 1972). It is the most important application used in the MADM field to visualize a causal diagram and to uncover the intra-relations and inter-relations among elements for optimal resource arrangement, and it has been applied in many sustainability-related studies (Chiou, Hsu, & Chen, 2011; Lin & Yun, 2013). The DEMATEL result can provide not only the interrelated structure of the components but also the core components of the problem (Tzeng, Chiang, & Li, 2007) to help tourism practitioners understand and effectively implement core CSR actions. Therefore, based on previous studies, the four steps of the DEMATEL analysis process are as follows.

Step 1: Calculate the initial average matrix. The experts were requested to appraise the direct influence of any two of the criteria using an integer scale that ranged from 0 to 4 (i.e. no influence, low influence, medium influence or high influence, respectively). The matrices of the values are the average measure score from the opinions of the experts. Step 2: Calculate the initial direct influence matrix and the indirect influence matrix. Step 3: Derive the full relation matrix. The sum of the column scores or the sum of the row scores equals 1. The row sum of matrix T is calculated as R , which summarizes the direct and indirect impacts of certain criteria on the other criteria. Similarly, the column sum of matrix T can be represented as C , which indicates the direct and indirect effects received from the other criteria based on the expert perspectives. Specifically, $(R + C)$ refers to prominence, which indicates the total effects of the criteria and the level of importance for the entire evaluation system. In contrast, the difference of $(R - C)$ refers to the relation, which depicts the net effect between a pair of criteria. If the value is positive, the criterion is a net cause. The criteria are net receivers or occur when the values of $(R - C)$ are negative. Step 4: Based on the total influence of matrix T , a threshold value is determined by computing the average of the elements in matrix T . The purpose of this calculation is to obtain a digraph and provide matrix information in the creation of a network-relation map. The network-relation map helps decision-makers determine which criterion is the most important and how to identify the original criterion and the results of all the factors. After the threshold value has been determined, the final influence on the network-relation map based on the distribution of $(R + C, R - C)$ is obtained.

The ANP that has been widely used in the tourism and hospitality field (Hornig et al., 2013; Hornig et al., 2014; Hu et al., 2013) and that was developed by Thomas L. Saaty was generated from the analytic hierarchy process. The ANP integrates the network framework and assesses the interrelations as a means of inputting judgements and measurements to derive the ratio-scale priorities to distribute influence among the dimensions and criteria in decision-making (Hu et al., 2013; Saaty, 1996). This study adopts the ANP to discuss the complicated issue of social science. The ANP facilitates pairwise comparisons of framework elements and the calculation of the dimensions' criteria and weights. Based on previous studies, the authors attempted to use the DEMATEL technique to discover the causal and influential relations among the dimensions and the criteria of the CSR practice assessment

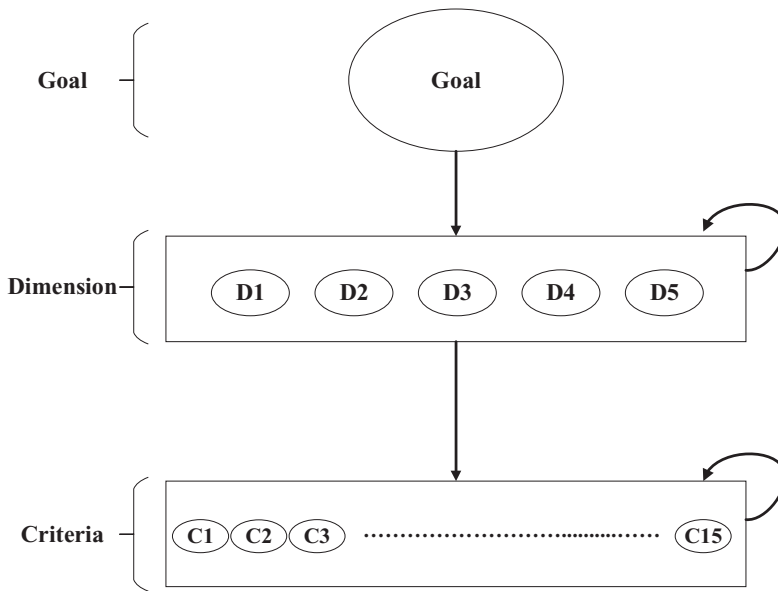


Figure 2. Influence work of the assessment model of CSR practice.

model in the tourism industry. However, the levels of influence among the dimensions and the criteria should not be identical. Therefore, we use the matrix from the DEMATEL result to calculate the ANP to obtain a more accurate outcome (Yang, Shieh, Leu, & Tzeng, 2008). The study adopted the DANP to obtain the weights and then compared criteria in the entire model for a clear practical guide to implement the CSR practices. The four-step process is as follows.

First, the structure of the influence network is developed (Figure 2). Based on the DEMATEL result, we create pairwise comparisons of the criteria and calculate the relative influence weights of each criterion. Second, the results of these computations are placed within the supermatrix (unweighted supermatrix). Third, pairwise comparisons of the clusters are conducted, and the blocks of the unweighted supermatrix are weighted using the corresponding priorities of the clusters so that it can be column stochastic (weighted supermatrix). Finally, the weighted supermatrix is increased to limiting powers until the weights converge and remain stable (limit supermatrix). The ANP weights of each criterion can be obtained using the formula $\lim_{z \rightarrow \infty} (w^\alpha)^z$.

Results

DEMATEL results

The DEMATEL method was used to calculate the initial average matrix, and a pair of degrees of interaction for any two criteria was used to calculate the initial direct effect of the matrix on the examined dimensions T (Table 4). According to the influential relation, $R + C$ and $R - C$, the results for the examined dimensions (Table 5) and the results for the criteria (Table 6) were obtained. An INRM that includes results for the examined dimensions and criteria was drawn (Figures 3).

According to the influential interrelation of the dimensions, it can be concluded that Environment had the largest direct impact on the other dimensions. In contrast, Consequence was the most vulnerable dimension that received the influence of the other dimensions. According to this result, practitioners can be recommended to implement Environment-related activities that can significantly influence all of the other dimensions. Furthermore, the most vulnerable dimension, Consequence, was rationally explained and proved that all the CSR practices explored by this study are efficient and have an influential relation on CSR performance. Next, the intra-relation within each dimension was

Table 4. The total-influence matrix of dimensions *T*.

Criteria	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15
c1	0.117	0.152	0.156	0.175	0.165	0.167	0.171	0.140	0.143	0.114	0.153	0.151	0.227	0.203	0.220
c2	0.157	0.131	0.193	0.177	0.174	0.182	0.172	0.147	0.159	0.124	0.175	0.162	0.249	0.216	0.224
c3	0.155	0.190	0.121	0.158	0.146	0.163	0.160	0.140	0.142	0.124	0.169	0.153	0.238	0.199	0.217
c4	0.184	0.187	0.189	0.139	0.186	0.194	0.194	0.155	0.171	0.135	0.191	0.178	0.254	0.216	0.246
c5	0.195	0.196	0.186	0.201	0.137	0.215	0.210	0.165	0.174	0.128	0.185	0.166	0.259	0.217	0.252
c6	0.191	0.194	0.188	0.201	0.203	0.142	0.212	0.163	0.173	0.131	0.187	0.163	0.257	0.216	0.252
c7	0.179	0.181	0.182	0.189	0.193	0.212	0.138	0.162	0.166	0.128	0.183	0.160	0.253	0.209	0.246
c8	0.148	0.161	0.154	0.157	0.160	0.160	0.162	0.109	0.157	0.132	0.153	0.145	0.240	0.207	0.232
c9	0.164	0.163	0.160	0.172	0.160	0.166	0.168	0.149	0.113	0.116	0.172	0.149	0.233	0.215	0.228
c10	0.111	0.129	0.122	0.119	0.107	0.114	0.116	0.126	0.104	0.067	0.125	0.112	0.177	0.148	0.175
c11	0.153	0.168	0.168	0.171	0.150	0.162	0.171	0.144	0.146	0.128	0.121	0.172	0.235	0.194	0.224
c12	0.145	0.156	0.159	0.164	0.132	0.138	0.146	0.131	0.135	0.117	0.177	0.103	0.217	0.180	0.203
c13	0.219	0.235	0.229	0.223	0.221	0.222	0.221	0.211	0.208	0.166	0.214	0.201	0.227	0.274	0.299
c14	0.190	0.180	0.178	0.185	0.176	0.178	0.179	0.178	0.183	0.137	0.177	0.165	0.267	0.164	0.264
c15	0.225	0.230	0.226	0.226	0.219	0.224	0.231	0.221	0.210	0.173	0.221	0.206	0.310	0.279	0.222

Table 5. The influential relation of dimensions.

Dimension	A	B	C	D	E	Row sum (R)	Column sum (C)	R + C	R - C
A. Economy	0.161	0.173	0.141	0.167	0.226	0.868	0.871	1.739	-0.003
B. Environment	0.190	0.185	0.155	0.174	0.240	0.944	0.861	1.805	0.083
C. Society	0.147	0.146	0.119	0.143	0.206	0.761	0.736	1.496	0.025
D. Culture	0.161	0.150	0.134	0.144	0.209	0.796	0.824	1.621	-0.028
E. Consequence	0.212	0.208	0.187	0.197	0.256	1.061	1.137	2.198	-0.076

Table 6. The results of criteria of the DEAMETEL.

Criteria	R	C	R + C	R - C
Economy				
°c1. Supplier assessment	2.454	2.533	4.987	-0.080
°c2. Philanthropy	2.642	2.651	5.293	-0.010
°c3. Local benefit	2.474	2.613	5.088	-0.139
°c4. Sustainable tourism products	2.820	2.657	5.477	0.162
Environment				
°c5. Energy conservation and carbon reduction	2.887	2.528	5.415	0.358
°c6. Environmental protection and ecological conservation	2.874	2.639	5.513	0.236
°c7. Sustainable resource management	2.782	2.653	5.435	0.129
Society				
°c8. Employee management	2.476	2.343	4.819	0.132
°c9. Customer education and customer protection	2.527	2.383	4.910	0.144
°c10. Industry-academia collaboration	1.854	1.920	3.775	-0.066
Culture				
°c11. Sustainable cultural inheritance	2.508	2.604	5.111	-0.096
°c12. Supporting cultural and creative industry	2.305	2.388	4.692	-0.083
Consequence				
°c13. Corporate image	3.370	3.643	7.013	-0.273
°c14. Internal and external customer satisfaction	2.802	3.138	5.941	-0.336
°c15. Sustainable operation	3.423	3.504	6.927	-0.081

analysed. Several criteria, including Sustainable Tourism Products, Energy Conservation and Carbon Reduction, Customer Education and Customer Protection, Supporting Cultural and Creative Industry, and Sustainable Operation, played a strong influential role in their own respective dimensions.

DANP results

Based on the DEMATEL analysis, this study determined the network relations among the elements of the assessment model of CSR practice. The next step in this study examined the weights and priorities of the use of DANP. The first step was to compare the criteria in the entire system to form an

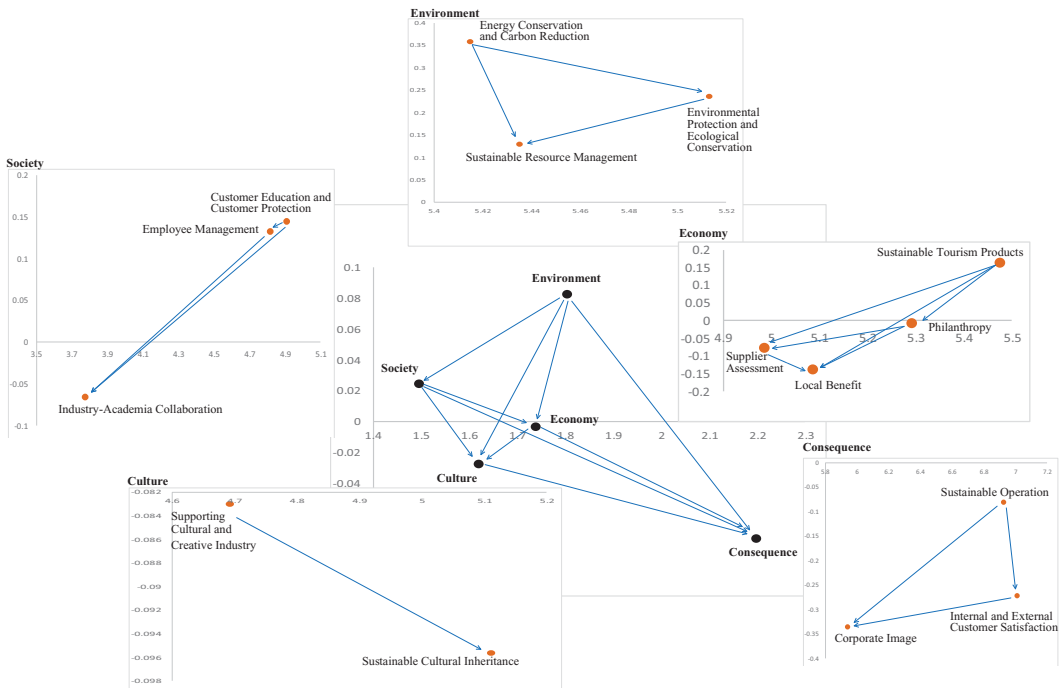


Figure 3. The influential network relations map of the assessment model of CSR practice.

original supermatrix. This study used the DEMATEL method result for total relation matrix T (Table 4) to obtain the weight of each criterion. Then, an unweighted supermatrix and a weighted supermatrix were formed using pairwise comparisons. Finally, the limiting power of the weighted supermatrix was calculated until a steady-state condition was reached. For details, see Table 7. The Consequence dimension was rated by experts as the most important dimension and received the weight value 0.256, followed by Economy (0.197), Environment (0.194), Culture (0.186) and Society (0.166). The experts considered Consequence the most critical element for an assessment model of CSR practice.

Table 7. The result of DANP.

Criteria	Global weight	Local weights
Economy		0.197
c1. Supplier assessment	0.048	0.242
c2. Philanthropy	0.050	0.254
c3. Local benefit	0.049	0.250
c4. Sustainable tourism products	0.050	0.255
Environment		0.194
c5. Energy conservation and carbon reduction	0.063	0.323
c6. Environmental protection and ecological conservation	0.065	0.337
c7. Sustainable resource management	0.066	0.340
Society		0.166
c8. Employee management	0.059	0.353
c9. Customer education and customer protection	0.059	0.357
c10. Industry-academia collaboration	0.048	0.290
Culture		0.186
c11. Sustainable cultural inheritance	0.097	0.521
c12. Supporting cultural and creative industry	0.089	0.479
Consequence		0.256
c13. Corporate image	0.091	0.354
c14. Internal and external customer satisfaction	0.078	0.305
c15. Sustainable operation	0.088	0.341

The most important criteria in each dimension were Sustainable Tourism, Sustainable Resource Management, Customer Education and Customer Protection, Sustainable Cultural Inheritance, and Corporate Image. Finally, in a comparison of the criteria of cross-dimensions, the results showed that the most important criterion was Sustainable Cultural Inheritance (Culture), followed by Corporate Image (Consequence) and Supporting Cultural and Creative Industry (Culture).

Discussion and implications

The findings from the DEMATEL are presented as the INRM, which includes the inter-relation and intra-relation of dimensions. The inter-relation of the dimensions shows that the environment is the most influential dimension. Previous studies indicate that nature, scenery and environment are major attractions for tourists (Aas, Ladkin, & Fletcher, 2005; Hu et al., 2013; Lew, 1987). Therefore, the environment should be utilized adequately as a resource as a first step in implementing tourism companies' CSR practice, and companies should exert the greatest practical effort on its behalf. For example, an ecotourism tour that encourages tourists (e.g. approaches nature) to understand ecological processes or to learn to protect species could be highly meaningful for many countries with regard to tourism development, business success and sustainability (Hall & Lew, 1998; Hipwell, 2007; Karlsson & Dolnicar, 2015). Furthermore, the most vulnerable dimension, Consequence, showed a rational explanation and proof that all the CSR practices explored by this study are efficient and have an influential relation to CSR performance. Next, the intra-relation within each dimension was analysed. It was found that Sustainable Tourism Products, Energy Conservation and Carbon Reduction, Customer Education and Customer Protection, Supporting Cultural and Creative Industry, and Sustainable Operation played strong influential roles in their own respective dimensions. For example, the most influential criterion in the Economy dimension was Sustainable Tourism, which affects Philanthropy, Supplier Assessment and Local Benefit. According to this result, practitioners should seek to create a tourism product that reflects awareness of sustainability, such as a product that benefits society and the environment and that enables tourists to feel satisfied and to learn at the same time. Such a product could include philanthropic activity, such as a 5% charity donation from the tour fee to support this product. The suppliers should be chosen according to sustainability standards, or local suppliers should be recruited and local residents employed to provide beneficial consequences for the local area. This recommendation is supported by previous CSR research in the tourism industry (de Grosbois, 2015) and is considered a competitive advantage for a tourism corporation (Golja & Krstinic Nizic, 2010). Enhancing the sustainable tourism product criterion can increase the effectiveness of economic-based CSR practice. Reflecting the RBV perspective, the INRM can be utilized for companies as a reference to allot their maximum resources to CSR implementation to create their greatest and most sustainable competitive advantage.

This study also calculated the weight values among the dimensions and criteria. The experts from academia, government and industry considered Consequence the most important dimension in the assessment model, followed by Economy, Environment, Culture and Society. The results showed the rational explanation that is the most important factor for this assessment model. This finding indicated that CSR actions are a marketing tool that tourism companies use to predict or understand positive consequences before implementing CSR actions. This result agrees with a previous study that found that corporations first consider consequences before implementing CSR activity (Ellen, Webb, & Mohr, 2006). That is, the consequences of CSR activity determine the level to which a company implements a CSR activity or CSR involvement. Additionally, the criteria within each dimension have their own weights, which provide abundant practical information for practitioners in determining which criteria are more important for implementation or consideration. For example, corporate image was considered by the experts to be the most important criterion of the Consequence dimension. That is, the most important consequence for a company is to acquire a positive identity. Many studies indicate that corporate image can be improved through CSR-related activity (Esparon et al., 2014; Karlsson & Dolnicar, 2015; Martínez Caro & Martínez García, 2009). Thus, determining which

practice can improve corporate image represents a highly important criterion when planning a CSR programme. Moreover, the analytical results revealed the global weights among the criteria. In the Culture dimension, sustainable cultural inheritance (rank 1) and supporting cultural and creative industry (rank 3) were the two most important activities among all of the CSR practice criteria. Previous studies showed that many countries have similarly assessed their cultural tourism-related actions, such as heritage tourism, and concluded that culture has a crucial relationship to sustainability (Budeanu, Miller, Moscardo, & Ooi, 2016; Canavan, 2016; Hughes & Scheyvens, 2016; Wells et al., 2015; Wells, Smith, Taheri, Manika, & McCowlen, 2016). Previous studies also note the crucial importance of culture in tourism (Aas et al., 2005; Lew, 1987; Reynolds, 1993). For instance, the preservation of heritage and tradition is a benefit of tourism (Goeldner & Ritchie, 2011) and enhances the cultural and historical experiences of tourists while representing a positive consequence for local communities (Polonsky et al., 2013). In addition, support for local artists can improve the image of global cultural brands in local cultures while supporting a sustainable tourism market (Lim & Bendle, 2012), and culture-based activities can enhance environmental awareness (Honey, 2008). Therefore, sustainable cultural inheritance is a critical criterion with respect to the implementation of CSR activity.

The result of the most critical criterion in each dimension was similar to the most influential criterion. However, sustainable cultural inheritance in the Culture dimension and corporate image in the Consequence dimension are different. This difference shows that the most important goal to achieve these dimensions differs from the DEMATEL results. For example, although sustainable cultural inheritance was most important and had a higher weight score in the Culture dimension, support for the cultural and creative industry was the primary criterion for effectiveness in the Culture dimension. The same condition occurred in the Consequence dimension.

Practical implications

This study makes several practical contributions. First, according to the concept of RBV theory, this research has developed an assessment model of CSR practice that is more precise and more specific in an attempt to help tourism companies identify the most useful resource for optimal performance and competitive advantage in comparison with previous mainstream models for the tourism industry. Industrial practitioners can develop their own CSR programmes utilizing their companies' most beneficial resources for the most optimal CSR practice. Moreover, this study appraised CSR performance through a weighting system and can assist practitioners in implementing CSR actions in a more controllable and effective manner. Second, this research reveals the causal relations among all the factors, which can assist practitioners in determining the initial steps to take and the other elements that can be influenced by an activity. The results can support decision-makers' processes in a more appropriate direction from the beginning and thus avoid wasting resources. Finally, the results for weight and priority provide information about what experienced experts view as the most important attributes of the assessment model. Therefore, tourism practitioners can utilize their company's resources as a base to choose the influential factors that have diffusion effects depending on the causal diagram. Alternatively, practitioners can determine their CSR actions based on the weight in each dimension in this study to evaluate their companies' CSR performance.

According to the RBV, companies must explore their specific valuable resources to develop competitive advantages (Barney, 1991). The findings of this study represent helpful advice regarding the most influential and important action that practitioners can take to obtain optimal CSR performance. Creating a win-win situation is the most important concept when implementing CSR. When a corporation undertakes a CSR activity, it achieves a positive consequence for the corporation and the relevant stakeholders, culture and environment. Many practitioners in the tourism industry have noted that one constraint on CSR activity is the cost. However, CSR remains the best way to create sustainable business and the best opportunity to create a competitive advantage. Our assessment model provides a scheme for planning CSR activity that identifies which initiative can be implemented to influence other dimensions with the best consequences. Based on well-defined criteria, the model

reveals the most important activity to implement with respect to obtaining the best consequence. Therefore, this model can help practitioners spend money wisely and obtain a consequence that is worth more than its cost. Previous studies indicate that after a CSR activity is implemented, announcing the activity on the company's official website or through another channel (Golja & Nizic, 2010) ensures that the stakeholders will receive the information. Only few Taiwanese tourism companies announce their CSR activity. However, this practice represents an important means to raise the CSR awareness of customers and thus increase a company's trustworthiness and project a positive corporate image.

In Taiwan, in recent years, the government has initiated and administered environment-related regulations. Therefore, many tourism companies have implemented numerous activities to benefit the environment and avoid being penalized. However, if a company wishes to achieve effective CSR performance, the use of only one dimension is insufficient. Two examples are provided for practitioners. The first is a strategic philanthropy programme presented in Polonsky et al. (2013) that was established at heritage tourist sites in Turkey. The programme implemented philanthropic activity and helped make this culture sustainable while generating positive benefits for the company that operated the tours and the local community. The second example is from Hipwell (2007), who discussed an ecotourism tour in Tanayiku Natural Ecology Park, Taiwan, that provided in-depth cultural and ecological courses to tourists through intensive meetings and interpretive walks with local residents. The tour represented a commercial tourism product and an educational course. Because most tourism products involve many different resources, they can positively influence many aspects of the environment and society simultaneously and help establish a generally positive interaction between society and the environment with the goal of sustainable business (Cvelbar & Dwyer, 2013). Colombo and Gazzola (2013) claim that aesthetics and ethics are inseparable and are important elements of sustainability. Aesthetics and ethics can encourage a corporation to produce a product or a practice that combines inner and outer beauty and thus further attract the customer's eye. Esparon et al. (2014) indicated that customers care about the aesthetic experience of a journey, such as a journey to a natural area. Therefore, if tourism companies aim to attract stakeholders and operate sustainably over the long term, they have a responsibility to maintain the environment and conserve the culture that tourists visit while maintaining a beneficial relationship with society.

Implications for theory

This study constructed an assessment model of CSR practice in the tourism industry that can be applied to appraise the performance of serial CSR practices in tourism companies. The academic contributions are that the model combined the benefit of previous mainstream models, the CSR pyramid and the TBL, and displayed an influential relation and weight level among the factors in the model for the tourism industry. Both contributions are rarely discussed in the previous tourism and hospitality studies, and both displayed these industrial characteristics.

The CSR activities of a company influence the decisions and appraisals of its customers (Lee et al., 2012; Zientara et al., 2015) and the commitment and engagement of employees (Zientara et al., 2015). Previous studies have rarely adopted the perspectives of academia, government and industry. This study provided a different and richly experienced perspective to construct a model that explored different results in comparison to previous customers' and employees' perspectives. These results included the importance of the culture dimension for CSR implementation and a higher relevance of culture to sustainability issues than previously indicated in tourism-related studies. According to the characteristics of the tourism industry, tourists should explore new attractions through the culture. Therefore, the critical status of culture is obvious. This finding demonstrates that the greatest discrepancy exists between the model in this study and the mainstream models, which include the TBL and CSR pyramid. The culture dimension has been rarely noted in previous CSR studies that were based on the mainstream model, or it has been noted as a sociocultural dimension and combined into the social dimension (Jamali & Mirshak, 2007). However, this study demonstrated the importance of

culture. Culture cannot be hidden in other dimensions in the tourism industry because it is an important element for tourism (Leiper, 1979). The culture dimension was explored and received considerable focus by the experts who demonstrated the difference between the TBL and CSR pyramid models. The results indicated that the tourism industry has its own important attributes that are excluded from the previous mainstream CSR model. This finding supports the declaration that each industry needs its own CSR model (Wells et al., 2015) and provides an important contribution to the CSR field in the tourism industry. Moreover, this study identifies the relation and weight among the attributes of CSR practice and evaluation. It presents the antecedent and diffused natures of each action and consequence and identifies those that contribute most significantly to each dimension. This contribution can help future CSR studies focus on developing strategy based on the most influential or important attributes that are most effective for tourism practitioners.

Conclusion

Tourism is currently one of the world's largest industries. A tourism product combines many different aspects (Getz & Carlsen, 2000; Lynch, 1998) and possesses a larger scope of influence than other products (Leiper, 1979). Therefore, this study constructed an assessment CSR model with INRM and weights in the tourism industry to assist practitioners in applying CSR practice in an industry-specific way and in evaluating the performance of the outcomes for sustainable competitive advantage. We adopted both qualitative and quantitative approaches, including in-depth interviews, Fuzzy Delphi, DEMATEL and DANP, to explore suitable attributes, which include Economy (supplier assessment, philanthropy, local benefit, and sustainable tourism product), Environment (energy conservation and carbon reduction, environmental protection and ecological conservation, and sustainable resource management), Society (employee management, customer education and customer protection, and industry-academia collaboration), Culture (sustainable cultural inheritance and supporting cultural and creative industry), and Consequence (corporate image, internal and external customer satisfaction, and sustainable operation). We then examined the casual relations and weights. This study found that the Environment is the most influential dimension and that all other dimensions influence Consequence. Furthermore, Consequence received the highest importance score in this assessment model, and the criteria of each dimension were ranked to provide a reference for practitioners. Notably, according to the global weight, both sustainable cultural inheritance (rank 1) and supporting cultural and creative industry (rank 3) are in the Culture dimension. This result suggests the crucial characteristics of culture in the tourism field and indicates the industry-specific traits of the tourism industry.

Limitations and future research

Several limitations exist in this study. This study adopted an expert system survey that investigated industrial, academic, and governmental perspectives and experiences to explore consensus on the most effective CSR actions and appraisal items in an attempt to construct an assessment model for the tourism industry. However, many other stakeholders participate in the operations of a company. Therefore, future research can transform the model into a questionnaire to understand the perspectives of individuals in different roles to compare and enhance the generalization of the assessment model. Moreover, this study explored only two criteria in the culture dimension, which resulted in the low weight of the culture dimension. However, as per the global weight, the scores of the two criteria demonstrate the importance of culture. Therefore, a future study could explore additional culture-related criteria to identify the appropriate CSR actions for tourism practitioners to apply. Although tourism is one of the most popular economic activities in Taiwan, the results of this study conducted in Taiwan may only apply to samples with similar characteristics. Therefore, additional research is required to extend the study's results to other cultures, ethnicities or countries to add universality to CSR activity for the tourism industry worldwide. Finally, Collier and Esteban (2007)

observed that a company that operates transnationally, such as a tourism-related company, is responsible for the ethical conduct of its operations and the effects on all stakeholders, currently and for future generations. Therefore, the implementation of effective CSR activity to create the greatest benefit for the external environment and the corporation is a critical task for every company in the tourism industry. Future studies could discuss the influence of external and the internal organizations to develop a more comprehensive model. The applicability of the model could be further tested with the findings and generalized for use in the tourism industries of different countries and cultures.

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