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Sustainability Assessment of Cultural Heritage Tourism: Case Study of Pingyao Ancient City in China

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Abstract: Cultural heritage tourism (CHT) has become an important part of the tourism industry. Therefore, it is essential to evaluate the sustainability of CHT destinations for tourism development. The majority of existing studies have examined the destination sustainability of ecotourism with the considerations of three stakeholder groups, namely, resource administration, tourist, and local community. However, the impact of tourism enterprises on destination sustainability has been constantly ignored in CHT-related studies. To fill these gaps, this study aims at developing an indicator system for comprehensively assessing the sustainability of CHT destinations. Specifically, this study identified an evaluation indicator system based on the Delphi technique and applied it to the context of Pingyao Ancient City in China. Results demonstrated that scores obtained by all four stakeholder groups ranged between 3.0 and 4.0 and the overall sustainability score was only 63.94, indicating that Pingyao was in the “somewhat sustainable” state according to the criteria (0–25, unsustainable; 25–50, somewhat unsustainable; 50–75, somewhat sustainable; 75–100, sustainable) specified in previous studies. A more balanced outcome should be achieved where each stakeholder’s interests are fully considered, but not at the expense of the others. The findings are of great significance for heritage tourism literature and sustainable destination management.

Keywords: cultural heritage tourism; sustainability assessment; indicator; tourism enterprise; Pingyao ancient city

1. Introduction

At present, cultural heritage tourism (CHT) has become an important part of the tourism industry because of its great value in cultural, historic, and environmental dimensions [1,2]. Apart from being an approach to inheriting and disseminating traditions, customs, and knowledge, CHT, for the local community, is widely regarded as an opportunity to revitalize the local economy and increase the employment rate [3]. Nevertheless, unreasonable and overexploited patterns toward these cultural heritages have challenged relic protection and tourism management significantly. For instance, the arrival of an excessive number of tourists exerts great pressure on the local environment and causes damage to relics [3]. It becomes urgent to prioritize cultural heritage and highlight the sustainability of CHT destinations, although CHT can temporarily be a promising source of profitable interests.

Therefore, assessing the sustainability of CHT destinations becomes a significant topic in the field of tourism management. A handful of studies have focused on assessing the sustainability of CHT destinations, for which a series of indicator systems for assessment have been also developed [4–9]. In North Sulawesi, for instance, Ross and Wall employed site-level assessment to evaluate the status of ecotourism sustainability of three protected areas [8]. Based on the subjective measures, Tsaur et al. identified 47 indicators involving economic, social, and environmental dimensions for the assessment of ecotourism sustainability [9]. It has been shown that existing studies were mainly conducted in the context of ecotourism development [7–9], which is not necessarily to inform the sustainability assessment of CHT destinations when determining the differences between ecotourism and CHT.

Development of either ecological or cultural tourism is dependent on management approaches regarding resource administration, participation of local community, and behavior of tourists [7–10]. As a result, resource administration, local community, and tourist are regarded as three key stakeholders that are frequently considered in order to assess the sustainability of tourism destinations [7,9]. To meet the requirements of tourists, tourism sites are equipped with an increasing number of infrastructures such as accommodation firms, restaurants, and souvenir shops. On the one hand, the tourism enterprises for these functions become the interface between tourists and local culture [11,12]. On the other hand, tourism enterprises can exert incredible influences by creating job opportunities, revitalizing the local economy, and developing new markets for goods and services. This enhances the development of the tourism enterprise, thereby becoming another key stakeholder group affecting tourism destination sustainability. Undoubtedly, tourism enterprise has to be included in sustainability assessment.

Therefore, this paper aims to conduct a comprehensive sustainability assessment of CHT destinations. The objectives of this paper are as follows: (1) developing an evaluation indicator system for the sustainability assessment of CHT destinations and (2) exploring interrelationships among resource administration, local community, tourist, and tourism enterprise through assessing the sustainability of CHT destinations. The country of China is famous for its long history and cultural heritage. In recent years, with economic development, people's demands for CHT have increased rapidly. To ensure the sustainable development of CHT, reasonable and scientific guidance and instructions are required. Therefore, this study will be carried out in the context of the Ancient City of Pingyao, one of the most well-known world cultural heritage sites in China owing to its profound historical culture, attracting large numbers of domestic and international visitors annually.

The remainder of this paper is structured as follows. Section 2 presents a literature review on the topic of sustainable development of CHT, sustainability assessment from the perspective of multi-stakeholders, and an evaluation framework for CHT. Afterwards, Section 3 describes the primary methods adopted to develop the indicator system and assess the sustainability of Pingyao city. Section 4 presents the results of this study, based on which Section 5 puts forwards the theoretical and practical implications of this study. Finally, Section 6 concludes this paper.

2. Literature Review

2.1. Sustainable Development of CHT

Literally, “cultural heritage” is the main attraction of CHT. To support the development of ancient culture-related tourism activity [13], various studies have been carried out. To clarify the essence of CHT, there have been studies aimed at defining CHT [14,15], identifying its relationships with tourism [16], as well as marking out the authenticity of CHT [17–19]. Many scholars have also focused on tourism management under the aspects of heritage protection [20,21], image dissemination [22], and examination of the determinants influencing tourists' preference [23,24].

Nevertheless, CHT is threatening and damaging cultural heritage as it has been commercialized to meet market demands for economic profits [25]. Accordingly, the sustainability assessment of CHT becomes essential. Drawing on geographical situations, Li et al. deliberated the controversy

between tourism development and cultural relic protection, advocating that tourism development could be an economic strategy for heritage protection through earning revenue [26]. This pattern is particularly important as many local governments cannot afford the maintenance and repair of heritage sites [26]. Through examining relationships among community dependence, environmental attitude, participation level, and residents' understanding toward the Piton Management Area, Nicholas et al. pointed out that sustainable tourism would largely determine the future of the study area, for which local community and residents should strengthen their participation in administrative activities [21]. Haukeland concluded that a lasting and stable cooperation between managers and stakeholders is the only way to truly enhance tourism sustainability [27].

However, relationships between tourism and destination sustainability are still contradictory and complex [13]. More studies are required for guiding and enhancing CHT sustainability.

2.2. Evaluating Sustainability from a Multi-Stakeholders' Perspective

Existing studies on sustainability assessment involve the evaluation of nature reserves, such as islands and mountain resorts [5,28–30]. Jitpakdee and Thapa assessed the ecotourism sustainability of Yao Noi Island and found that most of the local communities benefited from ecotourism in terms of employment opportunity [5]. Targeting an ecologically and economically fragile mountain area in northeast Scotland, Crabtree and Bayfield developed an economic and environmental indicator system for sustainability assessment [28]. Focusing on the sustainability of three water tourism sites in Nanjing, Ding et al. developed an evaluation index system and determined the index weight coefficient using an analytic hierarchy process [29]. However, there is limited research specifically on the sustainability assessment of CHT sites.

As tourism is closely related to the interests of different participants, most studies assessed tourism sustainability from the perspective of stakeholders. However, many studies only assessed the role of a specific category of stakeholders such as resource administration [31], local community [32,33], and tourist [4]. Some evaluated the combining roles of resource administration, local community, and tourist in promoting destination sustainability. Ng et al. examined the sustainability degree of Tioman Island by exploring the mutual relationships among these three stakeholders [7]. To assess the ecotourism sustainability of an indigenous site in Taiwan, Tsaur et al. identified 47 indicators concerning resource administration, community, and tourism [9].

Nevertheless, studies have also shown that tourism enterprises can affect tourism sustainability [11,12]. Stakeholders are defined as the individuals and groups that can influence the achievement of an organization's goals or the process of achieving them [34]. This means that local community, government, industry, and other groups should be included in stakeholder research [34]. Forsyth argued that tourism enterprises in the context of environmental protection could not only enhance their competitive advantages but also increase their enterprise performance. Therefore, enterprises should take the initiative to adapt to the requirements of tourism development [35]. Meanwhile, enterprises, especially industry leaders, should enhance their leadership to promote sustainable tourism implementation [36]. Moreover, the enterprise means the representatives of traditions, customs, and culture of the tourism sites [11], so that the enterprise is beneficial to CHT protection and inheritance [37]. Enterprises can also provide employment opportunities, improve residents' quality of life, attract investment, and thereby promote economic development [38–40].

Overall, enterprise has become an important part of tourism destinations, so that it is essential to integrate enterprise into the sustainability assessment of CHT sites.

2.3. Evaluation Framework for CHT

Tourism sustainability is the result of the interplay of various factors [41], so that the multiple interests of different stakeholders should be considered comprehensively. In particular, the multi-relationships among resource administration, tourist, local community, and enterprise should be considered as the key for CHT destinations [42]. For the linkage between resource administration

and local community, the former can educate the latter with awareness of and responsibility for cultural heritage protection and the ways to achieve it. Resource administration and tourist are interdependent, as the administration provides tourists with valuable cultural resources and at the same time receives economic gains. The interaction between local community and tourist lies in the friendliness of residents toward tourists and tourists' favorable comments and their preferences to disseminate. Enterprise creates employment opportunities for the local community. Tourists can also have a deep understanding of local culture when interacting with tourism enterprises.

Based on this, this study proposes an evaluation framework to examine the mutual relationships among resource administration, tourist, local community, and enterprise in association with the sustainability assessment of CHT destinations (Figure 1).

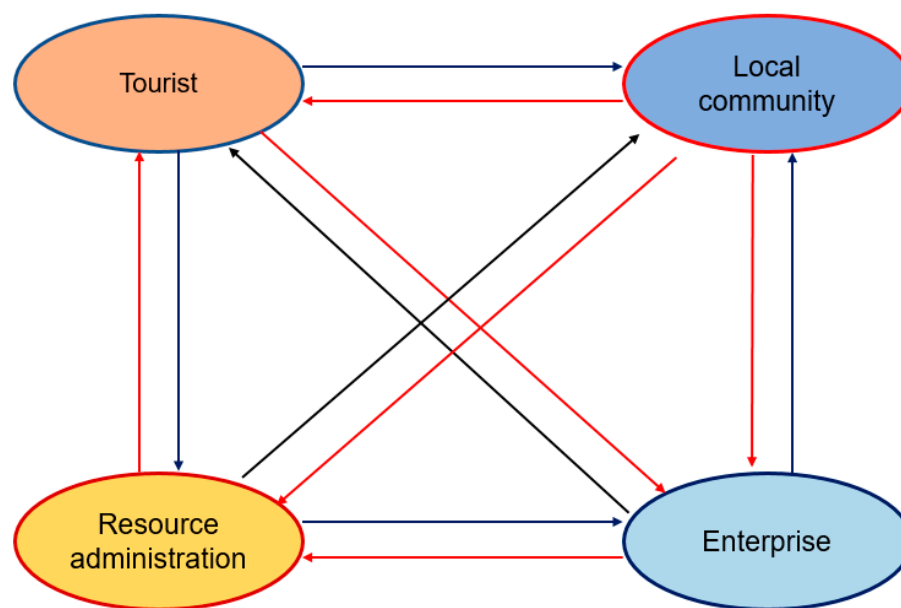


Figure 1. Evaluation framework for CHT destinations.

3. Methodology

3.1. Study Area

Pingyao, located in central Shanxi Province, China, is a cultural ancient city with a long history of more than 2700 years (Figure 2). Pingyao is currently one of the most important CHT destinations in China. It was listed as a World Cultural Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1997 and was rated as a national AAAAA tourist attraction in 2015. Over the past twenty years, Pingyao has undergone a rapid development in tourism. The number of tourists visiting Pingyao reached 12.97 million in 2017, more than 100 times the number of about 120,000 in 1997. Tourism has also brought considerable economic profits, increasing from 12.5 million RMB in 1997 to more than 15 billion RMB in 2017. Meanwhile, with the participation of multi-stakeholders, Pingyao has developed its own diversified tourism system. Therefore, the authors of this study selected Pingyao as the study area to investigate a comprehensive sustainability assessment of CHT destinations.

3.2. Indicator Development Procedure

3.2.1. Indicator Selection

For the sustainability assessment of CHT destinations, it is essential to develop a robust indicator system that satisfies the criteria of soundness, measurability, and policy suitability [43]. The sustainability of a tourism destination is frequently defined as “a tourism destination that makes

optimal use of environmental resources; respects the socio-cultural authenticity of host communities; ensures viable, long-term economic operations, providing socio-economic benefits to all stakeholders; requires the informed participation of all relevant stakeholders, as well as strong political leadership; and also maintains a high level of tourist satisfaction" ([44], p. 316). According to this definition and previous studies [7,9,45], this study should first select indicators that can exhibit the interrelationships, in economic, social, and environmental dimensions, among four stakeholder groups, namely, resource administration, tourist, local community, and enterprise. As existing sustainability assessment studies have not considered the role enterprise can play, this study has adjusted the enterprise-related indicators and its relationships with the other three stakeholder groups [45]. On this basis, we finally determined 78 indicators for the CHT sustainability assessment in the context of Pingyao.

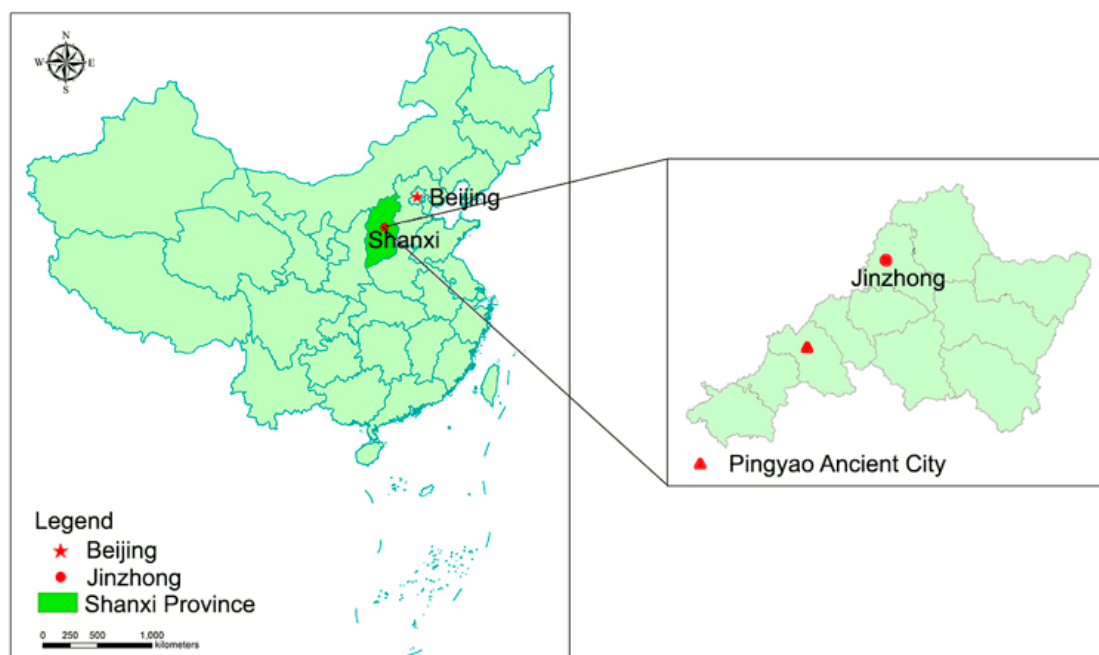


Figure 2. Location of Pingyao in Shanxi Province, China.

3.2.2. Delphi Survey

Afterwards, we applied Delphi to determine the indicators and their corresponding weights. For this, we invited ten CHT experts consisting of four scholars, two government officers, and four enterprise owners to present their feedback on the “importance”, “comprehensibility”, and suitability” of the 78 selected indicators [9,46]. In particular, “importance” referred to the question whether such indicators were important for CHT sustainability; “comprehensibility”, the understandability of the indicators; and “suitability”, the adaption to the local context. The experts’ assessments were based on the five-point scale, where one meant “strongly disagree” and five meant “strongly agree”.

In order to reach a consensus among the different experts, a questionnaire survey was conducted over three rounds. In each round, anonymous feedback was presented to the panel. To adapt this study well to the Pingyao context, we prioritized “suitability” for the indicator selection. Only when more than half of the panel members selected “agree” or above could the indicator remain. Otherwise, the unsuitable and incomprehensible indicators were removed, and new indicators were added based on the advice of experts. Meanwhile, to determine if the experts’ feedback for the current and the previous one was similar, a *t*-test was performed. When the panel no longer put forward a new indicator, and the *t*-test was significant at the level of 0.05, we did not conduct a new round of questionnaires. After three rounds of questionnaire survey, there remained 70 indicators for further study, as shown in Table 1.

Table 1. Sustainable CHT indicators and weights.

Item	Dimension	Label	Indicator	Weight
Resource community (RC, 8.59)	Society	RC1	Daily life is disturbed and affected by tourism development	1.06
		RC2	Pingyao provides residents with environmental education	1.22
		RC3	Pingyao improves environmental awareness of residents	1.39
		RC4	Government has good interaction with the residents	1.29
		RC5	Government provides economic benefits to local community	1.22
	Environment	RC6	Government protects historical and cultural resources of Pingyao	1.22
		RC7	Government helps improve quality of life of residents	1.19
Tourism community (TC, 7.57)	Economy	TC1	Residents can share the tourism revenue	0.86
		TC2	Tourism promotes the development of Pingyao	0.62
		TC3	Tourism creates considerable economic income for local community	0.74
		TC4	Tourism creates employment opportunities for the residents	0.86
		TC5	The occupation of most residents is tourism-related	0.55
	Society	TC6	Tourism promotes local social welfare	0.55
		TC7	Tourism affects daily activities of residents during peak periods	0.78
		TC8	Tourism development has increased public safety risks	0.76
		TC9	Tourism development has destroyed traditional culture	0.62
		TC10	I am satisfied with tourism development of Pingyao	0.66
	Environment	TC11	The arrival of tourists pollutes the environment	0.57
Enterprise community (EC, 8.47)	Society	EC1	Enterprises have good interaction with residents	1.81
		EC2	Enterprises provide employment opportunities for residents	2.20
		EC3	Enterprises improve the living environment of residents	2.37
	Economy	EC4	Tourism enterprises provide economic benefits to local community	2.09
Community tourism (CT, 8.97)	Society	CT1	Local community provides me with a rich cultural experience	3.32
		CT2	Residents have good interaction with me	2.79
		CT3	Enterprise owners introduce me to the tour of Pingyao	2.86
Resource tourism (RT, 7.87)	Society	RT1	Pingyao can provide me with an historical and cultural experience	1.02
		RT2	Government increases the environmental awareness of tourists	1.02
		RT3	Government provides good experiences to me	0.90
		RT4	Government promotes environmental protection to me	0.99
		RT5	My visit in Pingyao is very enjoyable	1.02
		RT6	I really like the attractions of Pingyao	1.02
		RT7	The shortage of staff in Pingyao leads to the work not going well	1.02
	Environment	RT8	The attractions of Pingyao can attract my attention	0.88
Enterprise tourism (ET, 8.23)	Society	ET1	I really like the tourism industry in Pingyao	2.14
		ET2	Tourism enterprises in Pingyao provide me with a rich experience	2.14
		ET3	I have a good interaction with enterprise owners	2.14
		ET4	Tourism enterprises in Pingyao provide help for my travels	1.81
Community resource (CR, 8.52)	Society	CR1	Residents pay attention to protecting tourism resources	1.39
		CR2	Residents can participate in the planning and protection	1.13
		CR3	Daily activities of residents affect resource development	1.26
	Environment	CR4	Residents' pressure on government due to tourism activity	1.16
		CR5	Residents' activities pollute the environment	1.06
		CR6	Tourism resources are protected by limiting the number of tourists	1.26
		CR7	Managers of Pingyao pay attention to protecting tourism resources	1.26
Tourism resource (TR, 8.04)	Economy	TR1	Tourists make economic contribution to environmental protection	1.42
	Environment	TR2	Tourists protect the environment of Pingyao	1.19
		TR3	Oversupply of tourists during peak periods destroys environment	1.03
		TR4	The development of tourism reduces the environmental quality	0.97
		TR5	Tourists' weak environmental awareness destroys the environment	1.07
	Society	TR6	Excessive tourists make infrastructure supply insufficient	0.97
		TR7	Pingyao has perfect tourism infrastructure and supporting facilities	1.39
Enterprise resource (ER, 8.04)	Environment	ER1	Tourism enterprises put the protection of resources first	1.23
		ER2	Enterprises' pressure on government in developing tourism	0.97
		ER3	Local tourism enterprises pollute the environment	0.90
	Society	ER4	Enterprises can participate in the planning and protection	1.13
		ER5	Enterprises support the decisions of the government	1.23
		ER6	Enterprises offer business information to the government	1.29
	Economy	ER7	Tourism enterprises make economic contributions to Pingyao	1.29
Resource enterprise (RE, 9.27)	Society	RE1	Government provides policy for tourism enterprise development	2.37
		RE2	Government has good interaction with enterprises	2.26
		RE3	Government can actively help enterprises solve problems	2.32
		RE4	Government can trust local enterprises	2.32
Tourism enterprise (TE, 8.47)	Society	TE1	Tourism promotes the development of Pingyao's enterprises	2.37
		TE2	Tourists interact well with local enterprises	2.37
		TE3	Tourists can provide advice on tourism enterprise development	1.81
	Economy	TE4	Tourism makes considerable economic contributions to enterprises	1.92
Community enterprise (CE, 7.96)	Society	CE1	Residents interact well with enterprises	1.92
		CE2	Residents are willing to participate in enterprise development	2.03
		CE3	Residents can provide advice on enterprise development	1.98
		CE4	Residents trust tourism enterprises	2.03

3.2.3. Indicator Weight

To assess CHT sustainability, it is essential to further calculate the weight of each indicator. The method to obtain the importance of each indicator is expressed as Equation (1) [7,9]:

$$w_{ij} = \frac{p_i}{\sum_{i=1}^{12} p_i} \frac{q_{ij}}{\sum_{j=1}^k q_{ij}}, \quad (1)$$

where w_{ij} shows the importance of the j th indicator in the i th relationship dimension;

p_i represents the mean score in the i th relationship dimension;

q_{ij} represents the mean score of the j th indicator in the i th relationship dimension;

k represents the number of indicators.

Table 1 presents the weight of each indicator (100 in total). Among the twelve aspects, the influence of resource administration on enterprise weighted the highest (9.27), followed by community on tourist (8.97), resource administration on community (8.59), community on resource administration (8.52), enterprise on community (8.47), tourist on enterprise (8.47), enterprise on tourist (8.23), tourist on resource administration (8.04), enterprise on resource administration (8.04), community on enterprise (7.96), resource administration on tourist (7.87), and tourist on community (7.57).

3.3. Questionnaire Design and Data Collection

Based on the indicator system, we conducted four versions of questionnaire surveys among the different stakeholders, allowing a category of stakeholders to assess its relationship with the three other groups. Accordingly, the questionnaire for resource administration, local community, tourist, and enterprise focused on 21, 22, 15, and 12 questions, respectively (Table 1), apart from the respondents' basic demographic information.

Prior to the formal survey, we carried out a pilot study among a group of 40 respondents (ten for each stakeholder) to examine if the content was understandable, clear, and comprehensive. Based on the respondents' feedback, a few items were slightly adjusted to make the questions clear and improve the comprehension of the respondents. The process of measurement development involved procedures of translation and back-translation between Chinese and English. The authors' bilingual background and familiarities with the tourism literature in Chinese and English facilitated the process well [47].

The formal survey was conducted from May to June in 2018. Moreover, we trained several research assistants to help interviewees to finalize the questionnaire, avoiding the situation where illiterate interviewees could not understand the questions. Finally, we received 436 questionnaires, but only 402 were effective as 34 questionnaires had incomplete data.

3.4. Data Analysis

The data were analyzed using SPSS 20. The respondents' demographic information was first summarized. Sustainability degrees among tourist, local community, resource administration, and enterprise in Pingyao were calculated based on the above-mentioned weights. Afterwards, the scores of all twelve aspects were normalized to calculate the overall sustainability of Pingyao [9]. In addition, the influences among the four stakeholders and the overall evaluation of CHT sustainability of Pingyao were analyzed.

4. Results

4.1. Demographic Information

The basic information of respondents is outlined in Table 2. In all, 51 questionnaires were completed by government officers, 121 were from local communities, 149 were from tourists, and 81

were from enterprise owners. Within the 402 valid samples, 54.48% (n = 219) were male and 45.52% (n = 183) were female. More than half (51.74%) of the respondents were between 31 and 50 years old. As for education, most of the participants (66.17%) received an associate degree or higher. Government officers tended to have higher education, whereas the local communities were at a lower level.

Table 2. Demographic information about the stakeholder groups.

	Administration	Local Community	Tourist	Enterprise	Total	Percentage (%)
Gender						
Male	38	58	60	63	219	54.48
Female	13	63	89	18	183	45.52
Age						
18–30	9	26	32	12	79	19.65
31–40	16	32	27	35	110	27.36
41–50	15	41	22	20	98	24.38
51–60	8	16	53	14	91	22.64
Above 60	3	6	15	2	26	6.47
Education						
High school or below	0	65	59	12	136	33.83
Associate degree	4	38	40	39	121	30.1
Bachelor's degree	39	16	38	27	120	29.85
Master's degree or above	8	2	12	3	35	8.71
Total	51	121	149	81	402	

4.2. Score of Pingyao's Sustainable Tourism Development

We obtained the mean score of each indicator. To better interpret the sustainability, we divided the sustainability into four levels according to the mean score: sustainability (4.0–5.0), somewhat sustainability (3.0–4.0), somewhat unsustainability (2.0–3.0), and unsustainability (1.0–2.0) [9,48]. Figure 3 presents the sustainability among the different stakeholder groups. All indicator scores were between 3.0 and 4.0, indicating that Pingyao was in a state of somewhat sustainability. Among all twelve relationships, the influence of local community on enterprise performed the best with the value of 3.74, whereas the influence of enterprise on local community performed the worst with the score of 3.23.

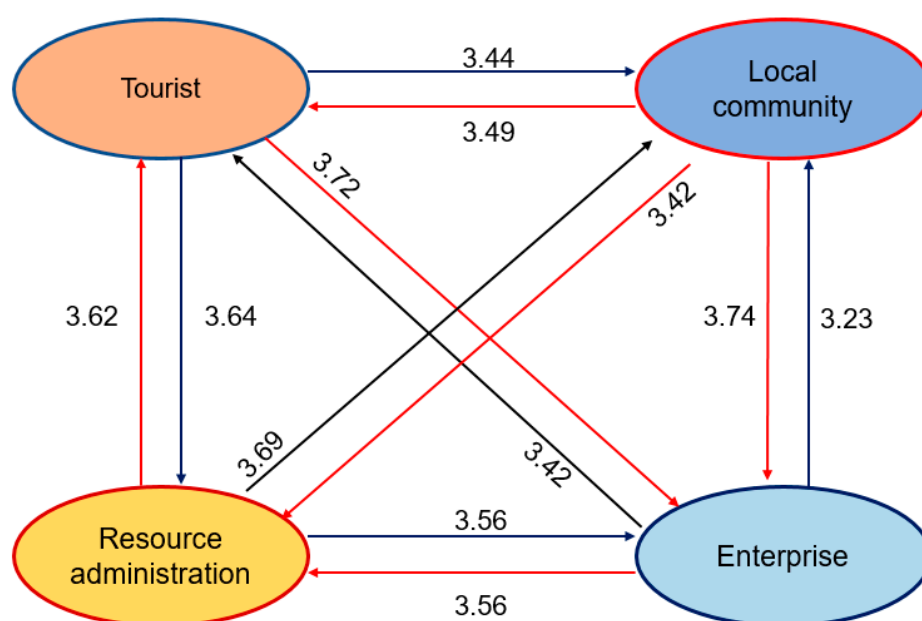


Figure 3. Score of Pingyao's sustainable tourism development.

4.3. Influences among Multi-stakeholders

4.3.1. Influence of Resource Administration, Tourist, and Enterprise on Local Community

As shown in Figure 3 and Table 3, the resource administration which supervises heritage resources could promote community development with the score of 3.69. Basically, the administration provides environmental education to local community and improves their environmental awareness. Moreover, the administration is responsible for cultural resource protection, which further results in a higher CHT sustainability and means a more comfortable living environment for local community.

There was a good relationship between tourist and local community with the sustainability score of 3.44. As presented in Table 3, the economic dimension scored 3.91, indicating that tourism was successful in creating employment opportunities and brought economic benefits to local community. However, its negative impacts could not be ignored as the environmental dimension only scored 2.97, ranking at the “somewhat unsustainability” level. This is mostly related to the excessive number of tourists and their inappropriate behavior, leading to the damage of heritage and a decrease in residents’ quality of life. Moreover, improper behavior from the tourists may increase the possibility of public risks.

For the enterprise, its influence on local community scored 3.23, indicating that the enterprise had positive effects on local community. Specifically, the enterprise could have a good interaction with local community. The enterprise could also improve their living environment through promoting local economic development.

4.3.2. Influence of Local Community, Resource Administration, and Enterprise on Tourist

The local community played a positive role in tourism promotion with the score of 3.49, as the residents could be the conveyor of traditions, customs, and culture. For all indicators in this section (Table 3), their values ranged from 3.15 to 3.85. This implies that the community could interact with tourists in all aspects.

For resource administration which directly supervises the CHT industry, its influence on tourism scored 3.62, exhibiting a good sustainability level. For the social dimension, the score was 3.56, showing that cultural resources could provide tourists with a rich tourism experience. However, the score of indicator RT7 was relatively low, suggesting that the administrations had not reasonably addressed the problem of insufficient staff during peak seasons, thereby reducing the tourists’ service experience.

The value about the influence of enterprise on tourist scored 3.42, meaning that enterprise had brought positive influences on tourists. The tourism enterprise may offer advice and an outstanding cultural experience for the tourists’ vacation in Pingyao. Moreover, the enterprise owners’ interactions with tourists could also increase their personal sentiments toward Pingyao, enhancing CHT sustainability.

4.3.3. Influence of Local Community, Tourist, and Enterprise on Resource Administration

For local community, its influences on resource administration scored 3.42. Although its social dimension scored 3.50 and the environmental dimension scored 3.37, respectively, residents’ behavior still had a negative influence on resource preservation. The daily activities of the local community may affect resource development and pollute local environment. Therefore, environmental education is required for residents for the maintenance and promotion of tourism sustainability [9].

Tourism exerted an influence on administration with the score of 3.64, ranking at somewhat sustainability. A continuous increase in the tourist population would contribute to the local economy. However, if a rapid increase in the tourist numbers occurred, the infrastructures would be under great pressure. The administration thus needs to properly increase investments for infrastructure construction.

The influence of enterprise on resource administration scored 3.56, with a state of somewhat sustainability. According to Table 3, enterprise and administration demonstrated a good relationship, as tourism enterprise prioritized heritage protection. Moreover, enterprise could participate in Pingyao planning and provide the administrations with required information.

Table 3. Weighted score of Pingyao's sustainable tourism development.

Item	Dimension	Label	Indicator	Score	Weighted Score
RC	Society (3.53)	RC1	Daily life is disturbed and affected by tourism development	2.89	0.50
		RC2	Pingyao provides residents with environmental education	3.88	0.88
		RC3	Pingyao improves environmental awareness of residents	4.03	1.05
		RC4	Government has good interaction with the residents	3.41	0.78
		RC5	Government provides economic benefits to local community	3.45	0.75
	Environment (4.09)	RC6	Government protects historical and cultural resources of Pingyao	4.25	0.99
		RC7	Government helps improve quality of life of residents	3.92	0.87
TC	Economy (3.91)	TC1	Residents can share the tourism revenue	3.27	0.49
		TC2	Tourism promotes the development of Pingyao	4.15	0.49
		TC3	Tourism creates considerable economic income for local community	3.98	0.55
		TC4	Tourism creates employment opportunities for the residents	4.26	0.70
		TC5	The occupation of most residents is tourism-related	3.88	0.40
	Society (3.07)	TC6	Tourism promotes local social welfare	3.36	0.32
		TC7	Tourism affects daily activities of residents during peak periods	3.43	0.47
		TC8	Tourism development has increased public safety risks	2.42	0.27
		TC9	Tourism development has destroyed traditional culture	2.46	0.23
		TC10	I am satisfied with tourism development of Pingyao	3.68	0.44
	Environment	TC11	The arrival of tourists pollutes the environment	2.97	0.28
EC	Society	EC1	Enterprises have good interaction with residents	3.22	1.01
		EC2	Enterprises provide employment opportunities for residents	3.35	1.39
		EC3	Enterprises improve the living environment of residents	3.17	1.14
	Economy	EC4	Tourism enterprises provide economic benefits to local community	3.18	1.20
CT	Society (3.49)	CT1	Local community provides me with a rich cultural experience	3.85	2.37
		CT2	Residents have good interaction with me	3.15	1.50
		CT3	Enterprise owners introduce me to the tour of Pingyao	3.46	1.76
RT	Society (3.56)	RT1	Pingyao can provide me with an historical and cultural experience	3.97	0.76
		RT2	Government increases the environmental awareness of tourists	3.46	0.63
		RT3	Government provides good experiences to me	3.74	0.62
		RT4	Government promotes environmental protection to me	3.17	0.54
		RT5	My visit in Pingyao is very enjoyable	4.04	0.78
		RT6	I really like the attractions of Pingyao	4.07	0.78
		RT7	The shortage of staff in Pingyao leads to the work not going well	2.47	0.32
	Environment	RT8	The attractions of Pingyao can attract my attention	4.03	0.77
ET	Society (3.42)	ET1	I really like the tourism industry in Pingyao	3.40	1.28
		ET2	Tourism enterprises in Pingyao provide me with a rich experience	3.41	1.29
		ET3	I have a good interaction with enterprise owners	3.42	1.29
		ET4	Tourism enterprises in Pingyao provide help for my travels	3.45	1.11
CR	Society (3.50)	CR1	Residents pay attention to protecting tourism resources	3.98	1.04
		CR2	Residents can participate in the planning and protection	3.75	0.78
		CR3	Daily activities of residents affect resource development	2.76	0.56
	Environment (3.37)	CR4	Residents' pressure on government due to tourism activity	2.90	0.55
		CR5	Residents' activities pollute the environment	2.80	0.48
		CR6	Tourism resources are protected by limiting the number of tourists	3.69	0.85
		CR7	Managers of Pingyao pay attention to protecting tourism resources	4.08	0.97
TR	Economy	TR1	Tourists make economic contribution to environmental protection	3.80	1.00
	Environment (3.66)	TR2	Tourists protect the environment of Pingyao	4.10	0.92
		TR3	Oversupply of tourists during peak periods destroys environment	3.55	0.66
		TR4	The development of tourism reduces the environmental quality	3.29	0.56
		TR5	Tourists' weak environmental awareness destroys the environment	3.71	0.72
	Society (3.52)	TR6	Excessive tourists make infrastructure supply insufficient	2.96	0.48
		TR7	Pingyao has perfect tourism infrastructure and supporting facilities	4.08	1.07
ER	Environment (3.59)	ER1	Tourism enterprises put the protection of resources first	3.86	0.88
		ER2	Enterprises' pressure on government in developing tourism	3.33	0.57
		ER3	Local tourism enterprises pollute the environment	3.57	0.58
	Society (3.58)	ER4	Enterprises can participate in the planning and protection	3.45	0.69
		ER5	Enterprises support the decisions of the government	3.65	0.81
		ER6	Enterprises offer business information to the government	3.65	0.85
	Economy	ER7	Tourism enterprises make economic contributions to Pingyao	3.41	0.78
RE	Society (3.56)	RE1	Government provides policy for tourism enterprise development	3.78	1.65
		RE2	Government has good interaction with enterprises	3.69	1.52
		RE3	Government can actively help enterprises solve problems	3.44	1.42
		RE4	Government can trust local enterprises	3.32	1.35
TE	Society (3.70)	TE1	Tourism promotes the development of Pingyao's enterprises	3.44	1.45
		TE2	Tourists interact well with local enterprises	3.85	1.29
		TE3	Tourists can provide advice on tourism enterprise development	3.80	1.35
	Economy	TE4	Tourism makes considerable economic contributions to enterprises	3.78	1.65
CE	Society (3.74)	CE1	Residents interact well with enterprises	3.91	1.40
		CE2	Residents are willing to participate in enterprise development	3.74	1.39
		CE3	Residents can provide advice on enterprise development	3.62	1.30
		CE4	Residents trust tourism enterprises	3.70	1.37
Total				63.94	

4.3.4. Influence of Resource Administration, Local Community, and Tourist on Enterprise

According to Figure 3, scores of “influence of resource administration on enterprise”, “influence of tourist on enterprise”, and “influence of community on enterprise” were 3.56, 3.72, 3.74, respectively. This suggested that resource administration, tourist, and local community had positive influences on the enterprises. As presented in Table 3, enterprise could interact well with administration, local community, and tourist. For instance, residents and governments tended to trust these enterprises and were willing to help enterprises address problems they encountered. In addition, tourism led to the development of these enterprises and at the same time earned considerable revenue for them.

4.4. Overall Evaluation of Tourism Sustainability

Based on the sustainability score of each indicator, the overall sustainability score of Pingyao was obtained. With the value of 63.94, Pingyao tourism fell into the “somewhat sustainability” range according to the criteria (0–25, unsustainability; 25–50, somewhat unsustainability; 50–75, somewhat sustainability; 75–100, sustainability) put forward by Prescott-Allen [48]. The value of 63.94 was far less than the upper threshold of somewhat sustainability, meaning that Pingyao has to make great efforts to achieve better sustainability.

We further calculated the achievement percentage of each aspect, as shown in Table 4. It shows that the sustainability relationships ranged between 55.96% and 68.59%. The most sustainable relationship was “influence of community on enterprise” (68.59%), followed by “influence of tourist on enterprise” (67.77%). The enterprise showed a poor performance on community with the value of 55.96%. The overall achievement percentage showed the four stakeholders should be encouraged to make more efforts to achieve the state of sustainability.

Table 4. Sustainability achievement of Pingyao under relationship aspects.

Relationship Aspect	Weight (w_i)	Weighted Score (a_i)	Achievement Percentage ($a_i/w_i \times 100\%$)
Resource community (RC)	8.59	5.82	67.75
Tourism community (TC)	7.57	4.64	61.29
Enterprise community (EC)	8.47	4.74	55.96
Community tourism (CT)	8.97	5.63	62.76
Resource tourism (RT)	7.87	5.20	66.07
Enterprise tourism (ET)	8.23	4.97	60.39
Community resource (CR)	8.52	5.23	61.38
Tourism resource (TR)	8.04	5.41	67.29
Enterprise resource (ER)	8.04	5.16	64.18
Resource enterprise (RE)	9.27	5.94	64.08
Tourism enterprise (TE)	8.47	5.74	67.77
Community enterprise (CE)	7.96	5.46	68.59
Total	100	63.94	

5. Discussion

5.1. Theoretical Implications

The study on the comprehensive assessment of CHT sustainability has filled up several research gaps of tourism-related studies. First, it is among the first attempt to empirically assess the sustainability of CHT destinations under the aspects of local community, tourist, resource administration, and enterprise. Previous studies have assessed the sustainability of other types of destinations, such as wetland [49,50], small island [51], urban area [52,53], among others. Ecotourism was most frequently examined in the existing literature [4,7,49]. Other studies usually explore the relationships among resource administration, community, and tourist for tourism sustainability [7,9,54], while the role of tourism enterprise has been constantly ignored. In fact, enterprises have become an important force affecting destination sustainability [12,55,56]. Recognizing this, the present study thus adds the tourism enterprise as a new stakeholder to assess destination sustainability from a

comprehensive perspective. Results indicated that tourism enterprises could interact well with other stakeholders and lead to economic development, but their inappropriate behavior could lead to environmental pollution. Tourism enterprise has become an essential part affecting the sustainability of CHT destinations. Therefore, integrating tourism enterprise into the three existing stakeholders has important implications. This contribution thus significantly enriches the tourism literature.

The present study contributes to tourism studies by developing an indicator system to assess CHT destination sustainability. Existing studies have discussed assessment indicators of ecotourism. However, there have been limited studies on the indicators for CHT sustainability assessment. This study addresses this issue and identifies indicators by applying the Delphi method [57–60]. A total of 70 indicators were determined after three rounds of expert surveys. The indicator system provides a quantitative measurement for CHT sustainability assessment, so that stakeholders can be informed about the significance of each indicator.

5.2. Practical Implications

In practice, this study has generated multiple implications for resource administration in terms of management strategy and monitoring of the sustainability of tourism destinations. The present study indicates that the inappropriate behavior of tourists and the daily activities of local communities may result in environmental pollution. Resource administrations are necessary to provide environmental education to improve environmental awareness of tourists and residents [61]. Only environmentally responsible behavior can lead to the protection of heritage resources. In addition, the excessive number of tourists during vacation periods tend to put pressure on facilities [62]. The administration needs to increase infrastructure investment to increase carrying capacity. Meanwhile, a sufficient number of members should be arranged during peak seasons to provide tourists with a better service experience and improve their travel satisfaction. Moreover, there should be better collaboration efforts among the administration, local community, tourist, and enterprise, so as to reduce the possibilities of improper decisions being made that could cause an imbalance among the four stakeholders [63,64].

Moreover, this study may provide insights for resource administration to monitor the sustainable development of tourism destinations. The multi-relationships among resource administration, tourist, local community, and enterprise are the key for the sustainability assessment of CHT destinations. The sustainable development of tourism destinations will be achieved only when each stakeholder's interests are fully considered, but not at the expense of the others. The indicator system makes the quantification of each group's performance available, based on which decision makers can speculate upon emerging problems, evaluate management actions, and set reasonable targets for further sustainability promotion.

5.3. A Comparison between the Present Study and Previous Studies

An abundant number of studies has assessed ecotourism sustainability [49–53]. Many studies include only one specific category of stakeholder such as resource administration, local community, and tourist in their sustainability measurement. For instance, Baral et al. developed a scale containing seven items to assess tourists' perceptions of the socio-economic and environmental outcomes of ecotourism in Nepal. Some evaluated the combined roles of resource administration, local community, and tourists in promoting destination sustainability. Tsaur et al. identified 47 indicators involving resource administration, community, and tourism relationships to assess the ecotourism sustainability of Saviki in Taiwan and they concluded that the tourism development sustainability of Saviki scored 60.52, indicating a state of "somewhat sustainability" [9]. In addition, Ng et al. identified 50 indicators to examine the sustainability degree of Tioman Island in Malaysia by exploring the relationships among the three stakeholders. They found that this island is classified as "potentially sustainable" with the score of 58.89 [7].

The present study highlights the role of tourism enterprise and identifies 70 indicators concerning the interrelationships among resource administration, local community, tourist, and enterprise to

assess CHT sustainability in Pingyao, China. The results demonstrated that the overall sustainability score was 63.94, indicating that Pingyao was in a state of “somewhat sustainability”. Although the destinations of Pingyao, Saviki, and Tioman Island are all classified as “potentially sustainable” states, the overall sustainability score of Pingyao was higher than the other two. This is probably because the stakeholder of tourism enterprise was included in the sustainability assessment, which could reflect a more comprehensive status of the destination. The authors encourage users to apply the indicator system developed in this study to different CHT sites for sustainability assessment.

6. Conclusions

CHT has become a primary industry of many countries, and its sustainability determines the issue of heritage protection. Existing studies on sustainability assessment usually explore the relationships among resource administration, community, and tourist, whereas the role of tourism enterprise has been constantly ignored. On this basis, this study comprehensively assessed the CHT sustainability in the context of Pingyao, China, through the development of an indicator system including multi-stakeholders, namely, resource administration, local community, tourist, and enterprise. Overall, the sustainability scores among the four stakeholder groups ranged from 3.0 to 4.0, indicating that Pingyao tourism was in a state of somewhat sustainability, while the influence of enterprise on local community performed the worst. Specifically, all three other stakeholder groups had positive effects on a specific one, but there were still some problems requiring further attention, such as environmental damage, insufficient administration, and insufficient infrastructure supply. It should be noted that the resource administration, tourist, and local community formed a good atmosphere for enterprise development. Nevertheless, the overall sustainability score (63.94) of Pingyao exceeded the threshold of somewhat sustainability, but it will require more efforts to achieve the state of sustainability. This can be obtained when interrelationship sustainability is maintained, where each stakeholder contributes positively to one another, takes care of each other's well-being, and reaps the benefits for itself without having a negative impact on others. The present study has laid a solid foundation for future research and the indicator system developed in this study could be further utilized as a research tool to assess and monitor the sustainability of other destinations, especially CHT sites.

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