


## Article

# Does Buddhist Tourism Successfully Result in Local Sustainable Development?

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**Abstract:** At nine of China's most well-known Buddhist attractions, the role of Buddhist tourism is examined in terms of two major pillars of local sustainable development, which include local economic growth and local environmental quality. Using the year and city-fixed effect models, and by employing the panel data over the period 2010–2019, we performed an empirical analysis in this investigation. The empirical results suggest that Buddhist tourism positively affects local economic growth. Specifically, a 1% increase in Buddhist tourism results in a 0.053% increase in local economic growth. On the contrary, the empirical results suggest that Buddhist tourism negatively affects local environmental quality. Concretely, a 1% increase in Buddhist tourism leads to a 0.089% decline in local environmental quality. Furthermore, using the number of Buddhist tourists that arrived to replace the total Buddhist tourism revenue to re-estimate the effects of Buddhist tourism on local sustainable development as a robustness test, the new results support the previous results. Meanwhile, other factor with significant impacts on local sustainable development have been found. To conclude, because local economic growth and local environmental conservation are mutually exclusive, which limits local sustainable development, this paper provides evidence for local policymakers to realize local sustainable development from the perspective of Buddhist tourism.



**Citation:** He, Y.; Wang, C. Does Buddhist Tourism Successfully Result in Local Sustainable Development? *Sustainability* **2022**, *14*, 3584. <https://doi.org/10.3390/su14063584>

Academic Editors: Sergio Moreno-Gil and Arminda Almeida Santana

Received: 13 February 2022

Accepted: 17 March 2022

Published: 18 March 2022

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**Keywords:** Buddhist tourism; local sustainable development; local economic growth; local environmental quality; year and city-fixed effect models

## 1. Introduction

The World Commission on Environment and Development issued the report “Our Common Future” in 1987, which defined sustainable development as ‘development that can fulfil the requirements of present people without jeopardizing future generations’ ability to meet their own needs’ [1]. It thoroughly elucidates the concept of sustainable development. The United Nations’ Conference on Environment and Development in Rio de Janeiro in June 1992 established the ‘Rio Declaration on Environment and Development’ and ‘Agenda 21 with Sustainable Development’ at its center. Following that, on 25 March 1994, the State Council’s executive meeting approved China’s Agenda 21—a white paper on China’s population, environment, and development in the twenty-first century that specified the general strategic framework of China’s sustainable development and primary goals in various fields. The Chinese government recently incorporated rural tourism, rural economic growth, and rural environmental preservation into the Rural Revitalization Strategy. In addition, the Rural Revitalization Strategy views rural tourism as a possible driver of sustainable development. The pursuit of sustainable development has grown in importance. The ultimate objective is to incorporate all rural areas in China, including the samples studied in this paper.

Religious tourism is a distinct tourism product with significant cultural implications. The excavation and transmission of cultural meanings lie at the heart of its growth. The sustainable development of religious tourism is fundamental in the sustainable development of its culture [2]. The synchronization and joint growth of the natural environment,

social development, and human intellect underpins this development. The key strategy to achieve sustainable development is the creation and control of tourist commodities by the government. Religion is the product of human development up to a certain historical stage. As a cultural precipitation of human evolution, it condenses human wisdom and aesthetic creativity, deeply affects all aspects of human life, and is closely related to human politics, economy, culture, philosophy, and history. Religion's social and cognitive underpinnings will not be substantially eradicated in the near future in today's quickly changing environment. This demonstrates that religion will continue to exist for a long time in all nations throughout the globe. The preservation and development of religious tourist resources has become a long-term task for all nations and regions. Meanwhile, China is a country with multiple religions and freedom of religious belief. It is also a large country with religious tourism resources. Ways in which to coordinate the influence of religious tourism on local sustainable development has emerged as an essential problem that must be addressed promptly in China's tourist business. This issue has piqued the curiosity of many scholars, such as the authors of this work.

In fact, Buddhist tourism is thriving in Asia, particularly in India, Nepal, South Korea, and Thailand, as a form of religious tourism. Social, political, and cultural life in these countries has been profoundly affected [3]. With the continued ascent of the Asian economy, most worldwide attention is focused on China and India's rapid growth and industrialization, while less attention is devoted to India's large religious tourism business. Geary [4] postulates that the religious tourism business will continue to play a vital role in India's economic growth. Meanwhile, Kundu [5] examined the instance of Tarapith, a religious tourist destination in the Birbhum District of West Bengal, India, and discovered that Buddhist tourism had increased the region's economic power. Moreover, according to Gambhir et al. [6], religious tourism and sustainable development in India's hill states have been explored in terms of perspectives from the hill states. They observed that religious tourism had the potential to impact socio-economic development. With the example of Nepal, Pandey [7] also discovered that religious tourism was one of the most significant economic drivers in Nepal. At the same time, its significance in economic development has become clearer. Taking the case of South Korea into consideration, Wang [8] investigated the topic of visitors staying at Buddhist temples in South Korea. He found that Buddhist tourism might be used to develop a national identity, conserve traditions and legacy, and impact the region economically. In addition, Baedcharoen [9] found that Thai Buddhist tourism was the country's primary source of income and played a significant part in its economic development. Similarly, in China, evidence of the influence of Buddhist tourism on economic development has also been identified. Yang et al. [10] believe that Buddhist tourism had a positive impact on economic growth, which is a component of sustainable development. They described how these phenomena occurred in China. Specifically, the association between China's tourism and religion is growing, indicating a mutual promotion trend as China's attention to religious concerns deepens and the tourism demand rises as a result of people's improved living circumstances following reform and opening up. Furthermore, as global economic integration has intensified, people's quest for spiritual culture has grown stronger, and an increasing number of people are seeking to fit their living situations with their spiritual demands. Buddhist attractions only serve people's immediate needs and foster the growth of Buddhist tourism to a limited extent. Due to the rapid development of Buddhist tourism, the economy has experienced unprecedented development. Gao [11] investigated ways to further expand the connotations of Buddhist tourism culture in Datong, using Yungang Grottoes as an example. Improving the quality of Buddhist tourism as well as the business model and product structure of Buddhist tourism goods could lead to local economic growth.

Meanwhile, the advent and development of rural Buddhist tourism provides a reasonably calm and relaxing setting for those who have lived in urban areas for a long time and have become bored of urban life. Rural Buddhist tourism significantly contributes to the building of rural infrastructure, and it plays a critical role in local economic development.

However, there are several environmental issues that should be noted in the process of rural Buddhist tourism development. In practice, in order to increase rural Buddhist tourism, the construction of a large number of new temples and the creation of new Buddhist sites have disrupted the original ecological environmental balance and lowered local environmental quality. This phenomenon was confirmed by Nakthong et al. [12]. Specifically, they carried out a qualitative analysis to analyze the difficulties and circumstances of space and environmental management in nineteen temples in northern Thailand. Their findings indicated that the present management issue in this region related to environmental damage caused by inappropriate internal space partition of new temple buildings. Furthermore, Alves and Garavelli [13] assessed and investigated the ambient noise caused by religious temples in Goiânia, Brazil. In addition, Dhanapala [14] found that Buddhist temples in Sri Lanka were a significant factor in environmental deterioration. Moreover, a huge number of visitors flocked to the rural areas for Buddhist-related events such as firework shows, thereby exacerbating local environmental degradation. Da-yong [15] holds the idea that Buddhist tourism has had a negative impact on environmental quality, which is another component of sustainable development. He found that the environmental issues produced by Buddhist tourism constituted a danger to local sustainable development. Zhu and Pan [16] also found, using a questionnaire survey, that Buddhist tourism had degraded environmental quality. In addition, this inclusion was also supported by Zhang and Li [17], and Wen [18].

This paper provides three specific contributions to the present literature. Firstly, this work explored the economic and environmental consequences of Buddhist tourism from the position of sustainable development, building on the research foundations of Lim et al. [19] and Gilli and Ferrari [20]. Secondly, the conclusion of this paper provides significant evidence for local governments to achieve coordinated economic growth and ensure environmental quality development. Thirdly, this paper separated Buddhist tourism from general tourism, which opened up a new research path in the existing literature.

To this end, the rest of this paper is organized as follows. Section 2 analyzes previous literature. Section 3 describes variables and specifies the model used in the study. Section 4 provides discussions and findings. Section 5 presents the conclusion and suggestions.

## 2. Literature Review

The empirical research connecting Buddhist tourism and the two pillars of focus (economic growth and environmental quality) was investigated in this section. In this field of research, many determinants, analysis approaches, time spans, and subject selections have been employed. Previous research findings aid in providing deeper insights into the possible impact of Buddhist tourism on economic growth and environmental quality.

### 2.1. Effect of Buddhist Tourism on Economic Growth

Religious tourism is regarded as one of the earliest and oldest forms of tourism, contributing to the development of a tourism sector that is one of the world's most significant economic contributors. Furthermore, religious tourism is one of the most significant segments of the business, and it is rapidly increasing as more visitors travel overseas. The United Nations World Tourism Organization reports that between 300 and 330 million travelers visit the world's largest religious sites each year. As a result, religious tourism contributes significantly to socioeconomic development and long-term sustainability.

As a significant component of religious tourism, the economic effect of Buddhist tourism cannot be disregarded. Ruttanavisanon and Agmapisarn [21] performed a meta-analysis to explore the effect of religious tourism on economic development during the period 2012–2021. They concluded that Buddhist tourism was a kind of tourism that could generate revenue and contributed to economic prosperity on a local level. Zhang et al. [22] found that Tibet, China's Buddhist resort, has drawn a considerable number of outside visitors each year due to the Himalayas and its religious importance. This not only benefited the local tourist business, but it also served as a new driving force for the region's economic progress. Similarly, Buddhism originated in India. Buddhist pilgrimage

is a potential gold mine in India as a tourist initiative. Kumar [23] found that Buddhist tourism had undoubtedly been a source of economic prosperity. These findings mentioned above were supported by Álvarez-García et al. [24], and Asawachai [25].

Egresi et al. [26] found that the number of religious tourists visiting the region of Martin in Southeastern Turkey had steadily climbed over the previous decade. Therefore, they used a combination of approaches to study the effect of religious tourism on local economic growth. Their findings suggested that religious tourism positively affected local economic growth due to the fact that religious tourism created a high level of job opportunities. Bokhari [27] also used the Kingdom of Saudi Arabia as an example to study the effect of religious tourism on economic growth. He found that religious tourism contributed greatly to economic growth because it was an important source of foreign exchange, a job generator, and a tool for changing the balance of payments. In Mashhad, Foruzan [28] looked at the following three aspects of development: environmental, economic, and social-cultural problems induced by religious tourism. The perspectives of 288 residents of the Imam Reza heavenly shrine were investigated using a quantitative technique. His findings demonstrated that, from the perspective of locals, religious tourism contributed to Mashhad's economic growth. However, using the Kingdom of Saudi Arabia as a sample to study the effect of religious tourism on economic growth over the period 1970–2011, Alodadi and Benhin [29] found that religious tourism had little effect on economic growth, however, after isolating the non-oil sectors, this effect increased. In addition, Terzidou et al. [30] used data collected from a questionnaire survey of local individuals. According to their results, the majority of inhabitants welcomed religious visitors to the land and saw them as advantageous to economic growth. Ozcan et al. [31] performed a survey to learn how Konya residents considered religious tourism. Their findings revealed that Konya residents thought religious tourism had the potential to boost the local economy, restore investments, and create jobs. Zaheer et al. [32] used Pakistan as a case study for the effect of religious tourism on local economic growth. They found that religious tourism that thrived could help to boost the local economy. Moreover, Okon [33], Momeni and Parno [34], Daly [35], and Haq and Medhekar [36] supported these findings.

## 2.2. Effect of Buddhist Tourism on Environmental Quality

Each place has its own religious beliefs and culture. While they may attract people's interest in observing or participating in religious events, they may also cause local environmental issues. However, Kinddon and Stano [37], Ap and Crompton [38], and Johnson et al. [39] proposed that regardless of the fact that religious tourism development was the primary contributor to social development, there was always irresponsibility in management decision making, which could have both positive and negative effects on environmental development, and it could also affect the sustainable development of local residents. The influence of religious tourism on environment quality is at the heart of our investigation here.

According to Lin et al. [40], the development of religious tourism could unite society, provide spiritual support, and improve the community environment, but it could also lead to an increase in local social activities, create waste, and cause air and environmental pollution. As a result, Lin [41], Jorge and Pinto [42], and Lin et al. [43] believe that in order to accomplish the consensus of sustainable development, we should make sure that locals and visitors have a fundamental awareness of environmental protection knowledge. Furthermore, Ferronato and Torretta [44], and Wu et al. [45] believe that as the issue of carbon emissions and waste pollution generated by religious tourist activities became more significant, local governments started to pay more attention to solving this issue. The most effective strategy to address the issue of religious tourist development is to enhance the direction of developmental decision making, raise people's environmental literacy, and empower decision makers and the public to move toward sustainable development.

Alipour et al. [46] employed geo-statistics to map the spatial changes in environmental effect, revealing that while religious tourism had led to environmental improvement, it was

restricted to the region around the shrine and did not spread to the rest of city. However, according to statistics, inhabitants usually had negative attitudes towards the environmental impact of religious tourism. Using Mashhad, Iran as an example, Foruzan [28] discovered that religious tourism played such a detrimental role in urban growth that it had a severe influence on the environment. Shinde and Olsen [47] also found that religious tourism degraded environmental quality. However, Yan and Jia [48] assessed religious tourism to be environmental friendly. Zhou [49] provided insight into the current condition of religious tourism in Zimbabwe. He discovered that religious tourism boosted economic growth but degraded environmental quality by using interpretative qualitative data gathered via observation and in-depth interviews with 30 representative informants purposefully selected among religious tourism stakeholders. Furthermore, the results analyzed above are also supported by Holden [50] and Ehigiamusoe [51].

To summarize, despite the fact that many previous scholars have studied the social and economic effects of religious tourism, few have focused on the effect of Buddhist tourism on sustainable development. As a result, the primary goal of this research is to determine the influence of religious (Buddhist) tourism on local sustainable development. From the standpoint of local economic growth and environmental quality, the goal of this study is to demonstrate the impact of development on local economic growth and environmental quality after promoting religious tourism activities in the region, as well as to identify development flaws, and propose improvements to achieve the goal of sustainable development. Furthermore, this paper may not only contribute to the previous literature, but it can also provide positive proof for the success of local Buddhist tourism and local sustainable development.

### 3. Sample, Variable Description and Model Specification

#### 3.1. Sample Description

The Buddhist Association of China states that Buddhism, being one of China's largest religious schools, has had a significant influence on China's social development. Following Wong et al. [52] and Wang et al. [53], this paper adopts a Buddhist perspective, namely of Buddhist tourism, to explore its impact on local sustainable development. The sample of this paper contains nine of the most well-known Buddhist attractions which belong to different prefecture level cities. The reason for using the nine most well-known Buddhist attractions in this paper is that these Buddhist tourist attractions have a long history, and a large number of tourists pour into these Buddhist tourist attractions every year. Meanwhile, the majority of Chinese people are aware of these Buddhist tourist attractions. As a result, the investigated samples in this paper are representative. Due to the availability of data, the time span covers the period from 2010 to 2019. The Buddhist attractions and prefecture level cities are presented in Table 1.

**Table 1.** Sample description.

No.	Attraction	No.	Attraction
1	Mount Wutai Scenic Area	6	Mount Lushan Scenic Area
2	Mount Putuo Scenic Area	7	Mount Tiantai Scenic Area
3	Mount Jiuhua Scenic Area	8	Mount Zhongnan Scenic Area
4	Mount Langshan Scenic Area	9	Xiangshan Scenic Area
5	Mount Heng Scenic Area		
No.	City	No.	City
1	Xinzhou	6	Jiujiang
2	Ningbo	7	Taizhou
3	Chizhou	8	Xian
4	Nantong	9	Guilin
5	Hengyang		

Note: No. 1 in Attraction and No. in City mean that Attraction belongs to City. For example, Mount Wutai Scenic Area belongs to Xinzhou. The rest is the same.

### 3.2. Variable Description

The purpose of this paper is to examine the effect of Buddhist tourism on local sustainable development. Therefore, Buddhist tourism is treated as an independent variable. Following He et al. [54], the total Buddhist tourism revenue is a proxy for Buddhist tourism. Equally, local sustainable development is treated as a dependent variable. Following Ridzuan et al. [55], two dimensions, including local economic growth and local environmental quality, are used as proxies for local sustainable development. In addition, according to the previous literature, some crucial control variables are also introduced in this paper. For the economic growth dimension (it is measured by local real GDP per capital constant to 2010), following Zhao et al. [56], and Soava et al. [57], local labor force is introduced in this paper., Local gross fixed capital formation to 2010, as used by Yasmeen et al. [58], and Aslan and Altinoz [59], is introduced in this paper. Following Maneejuk and Yamaka [60], and Agasisti et al. [61], local higher education is also introduced. In line with Cheng et al. [62] and Wang et al. [63], local financial development is considered. For the local environmental quality dimension (it is measured by local green areas [64,65], following Ullah et al. [66] and Hassan et al. [67], local real GDP per capital constant to 2010 is and as demonstrated by Omri et al. [68], and Tamazian and Rao [69], local financial development is a valuable indicator, and is therefore also used. Following Dimnwobi et al. [70] and Khan et al. [71], the local population is considered. Following Umar et al. [72], local fossil energy consumption is introduced in this paper. Basic information of the variables highlighted in this paper is presented in Table 2.

**Table 2.** Variable description.

Variable	Form	Definition
		Independent variable
Buddhist tourism	bud1	Total Buddhist tourism revenue (unit: hundred million yuan) in log
	bud2	Number of Buddhist tourists that arrived (unit: ten thousand) in log
		Local economic growth dimension
Local economic growth	eco	Local real GDP per capital constant to 2010 (unit: yuan) in log
Local labor force	lab	Local employment (unit: ten thousand) in log
Local gross fixed capital formation	gro	Local gross fixed capital formation constant to 2010 (unit: million yuan) in log
Local higher education	high	Local number of secondary school enrollment (unit: ten thousand) in log
Local financial development	fin	Local RMB deposit balance of financial institutions (unit: million yuan) in log
		Local environmental quality dimension
Local environmental quality	eni	Local green areas per capital (unit: hectare) in log
Local economic growth	eco	Local real GDP per capital constant to 2010 (unit: yuan) in log
Local financial development	fin	Local RMB deposit balance of financial institutions (unit: million yuan) in log
Local population	pop	Local population (unit: ten thousand) in log
Local fossil energy consumption	con	Local fossil energy consumption (unit: ton) per capital in log

Note: All the data used in this paper is sourced from Local Yearbook of Statistics and attractions' officials.

### 3.3. Model Specification

This subsection introduces the two highlighted models. One model is used to explore the effect of Buddhist tourism on local economic growth. The other is used to explore the effect of Buddhist tourism on local environmental quality. Both models are fully explained in the following sections, respectively.

#### 3.3.1. Model of the Effect of Buddhist Tourism on Local Economic Growth

Following Wang and Lin [73], a modified augmented Cobb-Douglas production function framework was developed, including Buddhist tourism as an extra variable alongside labor and capital. The basic function is as follows:

$$eco_{i,t} = f(lab_{i,t}, gro_{i,t}, bud1_{i,t}), \quad (1)$$

where  $i$  denotes prefecture level city;  $t$  denotes year. Based on the idea of Grossman and Helpman [74], this production has been expanded in accordance with the new growth theory, commonly known as the endogenous growth model which was developed by Romer [75] and Rebelo [76]. Endogenous growth theories demonstrate that a country's long-term growth is influenced not just by the level of physical input, but also by informal institutions such as religion. Therefore, Equation (1) can be expanded by including additional key variables as follows:

$$\text{eco}_{i,t} = a_0 + a_1\text{bud1}_{i,t} + a_2\text{lab}_{i,t} + a_3\text{gro}_{i,t} + a_4\text{hig}_{i,t} + a_5\text{fin}_{i,t} + n_t + w_i + u_{i,t}, \quad (2)$$

where  $a_0$  denotes constant;  $[a_2, a_5]$  denote coefficients to be estimated;  $n_t$  denotes year-fixed effect;  $w_i$  denotes city-fixed effect;  $u_{i,t}$  denotes white noise. In Equation (2), most of the attention will be paid to  $a_1$ . If the sign of  $a_1$  is positive and significant, this means that Buddhist tourism positively affects local economic growth. On the contrary, if the sign of  $a_1$  is negative and significant, this means that Buddhist tourism negatively affects local economic growth. Otherwise, Buddhist tourism has no effect on local economic growth.

### 3.3.2. Model of the Effect of Buddhist Tourism on Local Environmental Quality

Following the idea of Alipour et al. [46], and Shinde and Olsen [47], the basic empirical model of the effect of Buddhist tourism on local environmental quality is shown as follows:

$$\text{eni}_{i,t} = f(\text{eco}_{i,t}, \text{fin}_{i,t}, \text{pop}_{i,t}, \text{bud1}_{i,t}), \quad (3)$$

by adding other key variables into the effect of Buddhist tourism on local environmental quality, Equation (3) can be rewritten as follows:

$$\text{eni}_{i,t} = b_0 + b_1\text{bud1}_{i,t} + b_2\text{eco}_{i,t} + b_3\text{fin}_{i,t} + b_4\text{pop}_{i,t} + b_5\text{con}_{i,t} + n_t + w_i + u_{i,t}, \quad (4)$$

where  $b_0$  denotes constant;  $[b_2, b_5]$  denote coefficients to be estimated. On Equation (3), most attention will be paid to  $b_2$ . If the sign of  $b_2$  is positive and significant, this means that Buddhist tourism positively affects the local environmental quality. On the contrary, if the sign of  $b_2$  is negative and significant, this means that Buddhist tourism negatively affects the local environmental quality. Otherwise, Buddhist tourism has no effect on local environmental quality.

## 4. Results and Discussion

### 4.1. Basic Statistical Analyses

A basic statistical analysis, such as a variable characteristic description and correlation test, will be covered in this subsection. The results are shown in Table 3.

The results of the variable characteristic description are presented in Panel A. The mean of total Buddhist tourism revenue ( $\text{bud1}$ ) is 1.490, with a standard deviation of 0.823. This indicates that the total Buddhist tourism revenue is growing, despite substantial fluctuations. The mean number of Buddhist tourists that arrived is 2.886, with a standard deviation of 1.085. This indicates that the number of tourists that arrived is rising as well, but it fluctuates more obviously. These highlighted characteristics of the two proxies for Buddhist tourism are consistent with the reality of China. The mean local economic growth is 4.806, with a standard deviation of 0.261. This indicates that the local economy is on its way to becoming more prosperous. The mean local labor force is 3.221, with a standard deviation of 2.069. The mean local gross fixed capital formation is 4.708, with a standard deviation of 0.507. The mean local higher education is 1.309, with a standard deviation of 1.313. The mean local financial development is 5.274, with a standard deviation of 0.541. The mean local environmental quality is 1.611, with a standard deviation of 0.122. This indicates that local environmental quality is deteriorating. The mean local population is 1.601, with a standard deviation of 1.988. Lastly, the mean local fossil energy consumption is 1.293, with a standard deviation of 2.274.

Meanwhile, the results of the correlation test are shown in Panel B. For local economic growth equation, the correction between Buddhist tourism (bud1 and bud2) and local economic growth are significantly positive. In other words, it may be preliminarily judged that Buddhist tourism plays a positive role in promoting local economic growth. Moreover, we also find that there is positive correction between Buddhist tourism and local labor force; Buddhist tourism and local gross fixed capital formation; Buddhist tourism and local higher education; and Buddhist tourism and local financial development. For the local environmental quality equation, the correction between Buddhist tourism (bud1 and bud2) and local environmental quality is significantly negative. It may be preliminarily concluded that Buddhist tourism has harmed the local environmental quality. Furthermore, the correction between Buddhist tourism and local economic growth and Buddhist tourism and local financial development is positive. However, the correction between Buddhist tourism and local population and Buddhist tourism and local fossil energy consumption is negative. In this sense, following Drukker [77] and Ng [78], it is possible to conclude that there is no significant col-linearity in this paper.

Table 3. Results of basic statistical analysis.

Panel A: Variable Characteristic Description											
Variable and Statistics	bud1	bud2	eco	lab	gro	hig	fin	eni	pop	con	
Mean	1.490	2.886	4.806	3.221	4.708	1.309	5.274	1.611	1.601	1.293	
Maximum	2.940	5.550	5.324	6.002	5.697	4.947	6.312	1.795	2.860	2.997	
Minimum	0.050	1.140	4.093	0.815	3.652	0.225	4.352	1.028	0.179	0.488	
Standard deviation	0.823	1.085	0.261	2.069	0.507	1.313	0.541	0.122	1.988	2.274	
Observations	90	90	90	90	90	90	90	90	90	90	

Panel B: Analysis of Correlation Test														
Variable	Local economic growth equation							Local environmental quality equation						
	eco	bud1	bud2	lab	gro	hig	fin	eni	bud1	bud2	eco	fin	pop	con
eco	1.000 (—)							eni	1.000 (—)					
bud1	0.825 (0.000)	1.000 (—)						bud1	−0.210 (0.047)	1.000 (—)				
bud2	0.691 (0.000)		1.000 (—)					bud2	−0.379 (0.067)	0.107 (0.313)	1.000 (—)			
lab	0.435 (0.000)	0.269 (0.010)	0.000 (0.998)	1.000 (—)				eco	0.449 (0.000)	0.082 (0.433)	−0.069 (0.517)	1.000 (—)		
gro	0.738 (0.000)	−0.011 (0.921)	0.113 (0.285)	0.339 (0.001)	1.000 (—)			fin	0.231 (0.027)	0.031 (0.772)	0.091 (0.391)	0.172 (0.000)	1.000 (—)	
hig	0.306 (0.003)	−0.050 (0.638)	−0.185 (0.081)	0.421 (0.000)	0.452 (0.000)	1.000 (—)		pop	−0.977 (0.000)	−0.220 (0.037)	0.208 (0.048)	−0.292 (0.005)	−0.042 (0.692)	1.000 (—)
fin	0.672 (0.000)	0.031 (0.772)	0.091 (0.391)	0.338 (0.001)	0.199 (0.000)	0.411 (0.000)	1.000 (—)	con	−0.770 (0.000)	0.216 (0.040)	−0.220 (0.037)	0.410 (0.000)	0.173 (0.102)	−0.966 (0.000)

Note: *p*-value shown in the parentheses. 1% significant level (*p*-value < 0.01); 5% significant level (0.01 < *p*-value < 0.05); 10% significant level (0.05 < *p*-value < 0.1); otherwise, not significant (*p*-value > 0.1).

#### 4.2. Effect of Buddhist Tourism on Local Sustainable Development

Due to the fact that local economic growth and local environmental quality are proxies for local sustainable development, the empirical analyses will be separated into two components. One component is to explore the effect of Buddhist Tourism on local economic growth. Equally, another component is to examine the effect of Buddhist Tourism on local environmental quality. Following Ahn and Low [79], and Baltagi et al. [80], the pooled regression cannot consider the unobservable factors that do not change over year and city. Therefore, we conduct a Hausman test to confirm which model is more accurate. As the results of the Hausman test in Table 4 suggest, using year and city-fixed effect models to estimate the effect of Buddhist tourism on local sustainable development is more accurate than that of pooled model. The results of the effect of Buddhist tourism on local sustainable development are presented in Table 4.



**Table 4.** Results of effect of Buddhist tourism on local sustainable development.

Dependent Variable	Local Economic Growth		Dependent Variable	Local Environmental Quality	
	Variable/Model	Variable/Model		Variable/Model	Variable/Model
	Pooled	Two-way		Pooled	Two-way
bud1	0.065 ** (2.176)	0.053 *** (2.067)	bud1	−0.024 * (−1.661)	−0.089 ** (2.014)
lab	0.299 *** (2.877)	0.425 *** (4.190)	eco	0.542 *** (6.099)	0.445 ** (2.095)
gro	0.370 *** (4.352)	0.494 *** (4.764)	fin	0.497 ** (2.106)	0.507 *** (6.195)
hig	0.023 (1.369)	0.099 * (1.859)	pop	−0.886 *** (−4.702)	−0.964 *** (4.954)
fin	0.045 (1.476)	0.039 *** (3.281)	con	−0.072 ** (−2.015)	−0.042 ** (−2.197)
c	3.011 *** (5.512)	3.045 *** (4.397)	c	−5.503 *** (−5.792)	−4.229 *** (−3.486)
R <sup>2</sup>	0.595	0.673	R <sup>2</sup>	0.502	0.599
F-test	24.676 ***	90.091 ***	F-test	33.157 ***	34.035 ***
Hausman test		19.161 ***	Hausman test		8.263 ***
Year-fixed	no	yes	Year	no	yes
City-fixed	no	yes	City	no	yes
Obs	90	90	Obs	90	90

Note: T-statistics shown in the parentheses; \* 10% significant level; \*\* 5% significant level; \*\*\* 1% significant level; Obs observations; Pooled regression; Two-way year and city fixed effects regression.

The results of Table 4 present the effect of Buddhist tourism on local sustainable development. With the local economic growth equation, the positive effect of Buddhist tourism on local economic growth is found. Specifically, a 1% increase in Buddhist tourism (total Buddhist tourism revenue) results in a 0.053% increase in local economic growth. This finding is consistent with the achievements of Notarstefano and Gristina [81], and Cerutti and Piva [82]. Moreover, this outcome is also in line with China's current scenario in China. As for this phenomenon, there are three possible reasons. The first possible reason is that the central government pushes local governments to boost local economic growth through developing local tourism. The second possible reason is that Buddhism is more popular among Chinese citizens than other religions. The third possible reason is that with a considerable amount of advertising expenditure, these Buddhist Scenic Areas used in this paper have drawn a large number of tourists. Meanwhile, the labor force positively affects economic growth. A 1% increase in labor force leads to a 0.425% increase in local economic growth. This finding is consistent with Apinran et al. [83], and Wijaya et al. [84]. Moreover, this outcome suggests that labor force is a major driver in promoting economic growth in the investigated samples. That is, local government should issue some policies that benefit local residents to prevent labor outflow. Local gross fixed capital formation positively affects local economic growth. When local gross fixed capital formation grows by 1%, the local economic growth increases by 0.494%. This outcome is consistent with Amjed and Shah [85], and Meyer and Sanusi [86]. Furthermore, this result shows that fixed capital formation is the most significant factor in the growth of the economy. To phrase this differently, local government should introduce some policies to attract external funds. Local higher education has a positive effect on local economic growth. A 1% increase in local higher education results in a 0.099% rise in local economic growth. This outcome is consistent with Zhu et al. [87] and Chang et al. [88]. In addition, this outcome shows that higher education serves as an engine by which to grow the economy. Implicitly, the government should make greater investments in education. Local financial development positively affects local economic growth. A 1% increase in local financial development causes a 0.039% increase in local economic growth. This finding is consistent with Bibi and Li [89], and Omoke et al. [90]. As indicated, the coefficient of financial development is significant and positive. Even though this coefficient is small in magnitude, it has a

tendency to increase the economic growth. In other words, the role of financial development in economic growth will become more and more significant.

For local environmental quality, the negative effect of Buddhist tourism on local environmental quality is detected. In other words, a 1% rise in Buddhist tourism (total Buddhist tourism revenue) causes a 0.089% fall in local environmental quality. This outcome is consistent with the findings of Alipour et al. [46], and Shinde and Olsen [47]. There are two possible explanations for this result in the investigated samples. One possible explanation is that the fast expansion of local tourism including Buddhist tourism, the creation of new scenic spots, and the construction of a significant number of infrastructure projects in recent years have resulted in the rapid reduction of local green areas, leading to a decline in local environmental quality. Another possible explanation is that the entrance of a huge number of visitors has damaged the local natural ecosystem, lowering the local environmental quality. Simultaneously, local environmental quality is positively affected by local economic growth. One possible explanation is that the local economy has grown tremendously as a result of the rapid rise of local tourism. To accommodate this trend, a large number of service facilities, such as hotels, commercial streets, and farmhouses have been constructed, which occupy a lot of local green areas, thereby worsening the local environmental quality. This outcome is consistent with Shokoohi et al. [91] and Kahia et al. [92]. Local financial development positively affects local environmental quality. This result is consistent with Baloch et al. [93] and Tahir et al. [94]. Stated differently, local government should pay more attention to financial development so as to ensure a better environmental quality. Local population has a negative effect on local environmental quality. This result is consistent with Commoner [95] and Dietz and Rosa [96]. As for this phenomenon, a possible explanation is that a greater number of people leads to the need for more housing and recreational facilities, resulting in a huge number of green spaces being occupied. As a result, local government should develop local housing and activity areas in a reasonable manner to decrease the environmental impact of population growth. Local fossil energy consumption negatively affects local environmental quality too. This result is consistent with Ali et al. [97] and Dingbang et al. [98]. Therefore, to enhance environmental quality, local government should explore alternate sources of energy.

Based on the empirical results presented above, it is possible to infer that Buddhist tourism has a significant influence on local sustainable development in the investigated samples. Therefore, according to the empirical facts presented in this paper, local governments may implement the most effective policies to promote the growth of Buddhist tourism and achieve local sustainable development.

#### 4.3. Robustness Test

The results of Table 4 suggest that local sustainable development is significantly affected by Buddhist tourism. To ensure that these results are more accurate and reliable, we used the number of Buddhist tourists that arrived (another proxy for Buddhist tourism) to investigate the effect of Buddhist tourism on local sustainable development again. The results are presented in Table 5.

As the results of Table 5 indicate, it is still possible to identify that Buddhist tourism, which is represented by the number of Buddhist tourists that arrived, has an effect on local sustainable development. For the local economic growth equation, Buddhist tourism significantly and positively affects local economic growth. Compared with the result of Table 4, this coefficient only changes in magnitude. Equally, for local environmental quality, Buddhist tourism significantly and negatively affects local environmental quality. This coefficient only changes in magnitude when compared with this result of Table 4. As a result, it can be concluded that the results of Table 4 are accurate and reliable.

**Table 5.** Results of robustness test.

Dependent Variable	Local Economic Growth	Dependent Variable	Local Environmental Quality
Variable/Model	Two-way	Variable/Model	Two-way
bud2	0.078 ** (2.121)	bud2	−0.054 *** (−3.638)
lab	0.617 * (1.168)	eco	−0.398 * (−2.256)
gro	0.246 ** (4.062)	fin	0.262 * (1.744)
hig	0.112 * (1.766)	pop	−0.696 *** (−2.963)
fin	0.379 *** (3.131)	con	−0.065 * (−1.719)
c	3.056 *** (4.325)	c	−3.582 *** (−3.929)
R <sup>2</sup>	0.664	R <sup>2</sup>	0.709
F-test	87.767 ***	F-test	33.755 ***
Hausman test	21.336 ***	Hausman test	12.513 ***
Year-fixed	yes	Year-fixed	yes
City-fixed	yes	City-fixed	yes
Obs	90	Obs	90

Note: T-statistics shown in the parentheses; \* 10% significant level; \*\* 5% significant level, \*\*\* 1% significant level; Obs observations; Two-way year and city fixed effects regression.

## 5. Conclusions

This paper used China's most well-known Buddhist attractions to explore the influence of Buddhist tourism on local sustainable development in conjunction with these two social mainstreams. Specifically, one of the purposes of this paper was to discuss the effect of Buddhist tourism on local economic growth. Another purpose was to examine the effect of Buddhist tourism on local environmental quality. After employing panel data over the period 2010–2019 and utilizing the year and city-fixed effect models to conduct empirical analysis, we conclude that Buddhist tourism (total Buddhist tourism revenue is regarded as a proxy for Buddhist tourism) has a favorable impact on local economic growth while having a detrimental impact on local environmental quality. Furthermore, the number of Buddhist tourists that arrived was regarded as another proxy for Buddhist tourism. It was used to examine its effect on local economic growth and local environmental quality as a robustness test to verify our findings. The results of the robustness test support the previous conclusions. Moreover, the empirical results suggest that local labor force, gross fixed capital formation, high education, and financial development positively affect local economic growth. Meanwhile, the empirical results reveal that local economic growth and financial development positively affect local environmental quality while local population, and fossil energy consumption negatively affect local environmental quality.

Based on the empirical facts this paper provided, some corresponding recommendations for local sustainable development in the investigated samples are made. Firstly, from the perspective of Buddhist tourism, while encouraging outsiders to travel locally, local government should plan tourist-related service facilities in a way that does not encroach on green area as a result of its support of economic growth and its degradation of environmental quality. Local government, as an informal system, should promote environmental preservation. That is, while increasing Buddhist tourism, it should simultaneously encourage visitors to be environmentally conscious. Secondly, local financial development not only encourages local economic growth, but it also enhances local environmental quality. As a result, the local government should aggressively promote local financial development in order to achieve local sustainable development. Thirdly, labor force significantly aids local economic growth. Local governments should implement initiatives to discourage labor emigration and recruit a foreign labor force so as to boost local economic growth. Fourthly, the use of fossil fuels degrades local environmental quality. The local govern-

ments should promote the use of clean energy, such as solar and wind energy to replace the usage of fossil fuels. The use of these clear or renewable sources of energy can improve local environmental quality. Fourthly, local governments should invest in local higher education because of its positive effect on economic growth.

However, this paper has some limitations. (1) This paper only discusses the effect of Buddhist tourism on local sustainable development, and future studies might expand this paper by using other kinds of local tourism to replace Buddhist tourism. (2) Other variables, such as infrastructure, industrialization level, and new technology have not been explored in this paper. Future scholars might take these aspects into account and rethink the influence of Buddhist tourism on local sustainable development. (3) The panel two-way fixed effect model is the only one used in this paper. Future scholars can return to this issue using alternative models such as the auto-regressive distributed lag model, panel vector auto-regressive model, or panel vector error correction model. (4) Because sustainable development is a multidimensional concept, it emphasizes the integrated development of society, economics, culture, resources, the environment, life, and other factors. This article does not contain the contents of sustainable development, such as society, culture, resources, and life. This content may be added to future research to achieve better and more accurate results. (5) Only nine samples from 2010 to 2019 are included in this article. Future studies might increase the number of samples or the time span of the samples to derive more precise outcomes.

**Author Contributions:** Conceptualization, Y.H.; Data curation, C.W.; Formal analysis, C.W.; Investigation, C.W.; Methodology, Y.H.; Software, Y.H.; Supervision, Y.H.; Writing—original draft, Y.H.; Writing—review and editing, C.W. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research belongs to the general project (No.: 20220308) of Sejong University for new faculty.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** The data presented in this study are available from the authors upon request.

**Conflicts of Interest:** The authors declare no conflict of interest.

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