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Author Response Form

Dear Reviewer,

Thank you for your comments concerning our manuscript entitled “Does the Digital Economy Improve Urban Tourism Development? An Examination of the Chinese Case” (Manuscript ID sustainability-2022027). Those comments are all valuable and very helpful for revising and improving our paper. Many of your comments have been very good, and I'd be happy to make detailed revisions to the article based on your comments. We have studied comments carefully and have made correction which we hope meet with approval. **Revised portion are marked highlight in the paper**. The main corrections in the paper and the responds to the reviewer's comments are as following:

Question:

1.In the second line of Page 1, Authors have used the term "high permeability". I would suggest authors to explain it with a few examples. They can extend the statement by saying "with the characteristics of high permeability and speedy dissemination" such as, %%%%%%%%, @@@@.

Response:

Your suggestions are very good and helpful for this study, and we make the following explanations and modifications.

(We revise the **1. Introduction** based on your comments)

The specific explanation is as follows:

High penetration means that the digital economy can be quickly integrated into various industries and promote the digital transformation of industries. **We explain it with the example of Non-Fungible Token (NFT) which is very popular recently.** According to Wikipedia's explanation, A non-fungible token (NFT) is a unique digital identifier that cannot be copied, substituted, or subdivided, that is recorded in a blockchain, and that is used to certify authenticity and ownership. It is evidence of the penetration of the digital economy into the cultural industry, which mainly includes digital souvenirs, digital music, digital pictures and electronic tickets.

Our modifications are as follows.

“The digital economy is a new economic form that integrates fast-growing information technology and the traditional economy, with the characteristics of high permeability and speedy dissemination. For example, Non-Fungible Token (NFT) is evidence of the penetration and dissemination of the digital economy into the cultural industry, which has the advantages of convenient collection and low price unlike physical cultural and creative products. It mainly includes digital souvenirs, digital music, digital pictures and electronic tickets.”

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Question:

2.Authors are advised to give proper citation for their claim that China's digital economy is second to that of the United States (line 35). Similarly, line 50, 11.05% of GDP and 10.31% of employment.

Response:

Your suggestions are very helpful for this study, and we make the following explanations and modifications.

(We revise the **1. Introduction** based on your comments)

The specific explanation is as follows:

We added references based on your suggestion.

1."As the world's second-largest economy, the scale of China's digital economy is already second only to that of the United States, reaching 45.5 trillion yuan in 2021 and accounting for 39.8% of GDP" **refers to the China Academy of White Paper on the Global Digital Economy (2022) published by China Academy of Information and Communications Technology (CAICT)** [1]**.** In addition, references **can also be found in the study "Spatial Correlation Network and Regional Differences for the Development of Digital Economy in China" by Tang, L. et al** [2]**.** The original text is: the scale of the digital economy in the United States far exceeded the global level and continued to rank first in the world. In addition, China ranked second in the world)

2.China's tourism has rapidly grown since the country's reform and opening up, contributing 11.05% of GDP and 10.31% of employment in 2019 according to "China Tourism Statistics Yearbook" **is based on China Tourism Statistics Yearbook (2019) published by Ministry of Culture and Tourism Statistics of the People's Republic of China (MCTPRC)** [3]**.** In addition, references can also be found **in the study "Can Tourism Development Help Improve Urban Liveability? An Examination of the Chinese Case." by Tang, J. et al** [4]**.**

Reference

1. CAICT. White Paper on the Global Digital Economy(2022); China Academy of Information and Communication s Technology: Beijing, China, 2022.
2. Tang, L.; Lu, B.; Tian, T. Spatial Correlation Network and Regional Differences for the Development of Digital Economy in China. Entropy 2021, 23, 1575. https://doi.org/10.3390/e23121575
3. MCTPRC. China Tourism Statistics Yearbook(2019); China Tourism Press: Beijing, China, 2020.
4. Tang, J.; Cai, C.; Liu, Y.; Sun, J. Can Tourism Development Help Improve Urban Liveability? An Examination o f the Chinese Case. Sustainability 2022, 14, 11427. https://doi.org/10.3390/su141811427

Question:

3.Authors are required to highlight the research gap. It is still not clear as to why there is a need to conduct this study? Simply having less number of theoretical studies in a particular area/domain doesn't warrant a need to carry out a research.

Response:

Your suggestions are very good and helpful for this study, and we make the following explanations and modifications.

(We revise the 2. Literature Review *2.2. The impact of the digital economy on tourism development* based on your comments)

The specific explanation is as follows:

Insufficient existing research is only part of the reason. After completing the literature review, we summarized the existing research gaps and proposed the reasons for conducting this study. specifically:

(1) First, existing studies have focused more on the impact of ICT on tourism development. **However, there is a lack of research on how the digital economy affects tourism development based on the measurement of the digital economy index, especially when using developing countries, such as China, as research cases.**

(2) Moreover, **the theoretical analytical framework of the impact of the digital economy on urban tourism development has not been fully developed.** Therefore, from the perspective of supply and demand and the perspective of stakeholders, this paper constructs a theoretical analysis framework for the impact of digital economy on urban tourism development according to China's reality, and designs a testing procedure based on theoretical analysis and research assumptions.

(3) Finally, **most scholars have only focused on the linear relationship between the digital economy and tourism development; whether the digital economy has a nonlinear and spatial spillover effect on tourism development is also worth studying.**

Question:

4.Research Questions need to be re-drafted. Specially the second research question which says that "Second, if question one is answered in the affirmative, is the positive effect of the digital economy on urban tourism development nonlinear?"

Response:

Your suggestions are very helpful for our study, and we make the following explanations and modifications.

(We revise the **1. Introduction** based on your comments)

The specific explanation is as follows:

We redrafted the research questions. The three research questions are closely related to the theoretical basis and hypotheses of this paper, and they represent the problems that this study wants to solve. They are:

First, is there a positive effect of the digital economy on urban tourism development from a linear perspective? **Second,** from a nonlinear perspective, is the positive marginal effect of the digital economy on urban tourism development increasing? **Finally,** from a spatial perspective, does the digital economy have positive spatial spillover effects on tourism in neighboring cities?

The answers to the above questions help to respond to the concerns of scholars and enrich tourism research.

Question:

5.We should discuss the full form of ICT initially before introducing the abbreviation.

Response:

Your suggestions are helpful for this study, and we make the following explanations and modifications.

(We revise the **6.2.2 Practical implications** based on your comments)

The specific explanation is as follows:

We discuss its full name in the abstract of the article (where ICT first appears). specifically：

Information and Communications Technology (ICT)

The connotations of ICT are consistent in the following articles

Question:

6.Methodology and Analysis is appropriate.

Response:

We are very honored to receive your praise of this study. Thanks！

Question:

7.Implication section need to be further strengthened.

Response:

Your suggestions are very good and helpful for this study, and we make the following explanations and modifications.

(We revise the **6.2. Discussion** based on your comments)

The specific explanation is as follows:

In the discussion, first, on the basis of theoretical analysis and empirical research, we take Hangzhou, a representative city of digital tourism in China, as an example to analyze the impact of digital economy on urban tourism development. Specifically, the Ten Scenes of Digital Economy Tourism in Hangzhou have brought tremendous changes to Hangzhou's tourism development, which is a strong evidence that the digital economy promotes the urban tourism development.

Second, **we also added a discussion of theoretical implications.** Specifically:

"This paper provides some theoretical innovations based on the shortcomings of existing studies. **First,** this study constructs a theoretical framework of the digital economy driving the urban tourism development from the supply and demand perspectives as well as a multi-subject perspective. On the basis, we use the econometric models to conduct empirical tests, and analyze the differences in the results of different types of cities, providing a complete paradigm for the further study of this issue in other case sites. **Second,** this study confirms the effectiveness of Metcalfe's law in the digital economy driving urban tourism development by using a panel threshold model. With the improvement of digital economy, its positive effect on the urban tourism development presents the characteristics of increasing marginal effects. This theoretical evidence provides a scientific reference for regional policy formulation. **Finally,** this paper also confirms that the digital economy has a positive spatial spillover effect on tourism development in neighboring cities from a spatial perspective, by using the spatial Durbin model. Compared with previous studies, we incorporates the spatial ideas of geography into tourism economics research, which not only improves the objectivity of the conclusions, but also promotes interdisciplinary communication."

Third, **we discuss the practical implications** of the article from both government and business perspectives. Specifically:

"Based on the above conclusions, recommendations for the two dimensions of government and enterprises are advanced. **From the government side**, tourism government departments should promote the deep integration of digital technologies, such as the internet, 5G, cloud technology, AI technology, and tourism, as an essential task in current tourism development to expand the application scenarios in tourism in the digital economy. Moreover, it is essential to establish a better policy system and legal environment that matches the digitalization of the tourism industry to ensure the effectiveness of the digital economy in promoting tourism, avoiding transaction risks and product infringements caused by the disorderly application of digital technology.

From the enterprise side, tourism enterprises should fully seize the development opportunities brought by the digital economy and transform traditional business strategies and models. Moreover, it is crucial to use digital production factors and build digital platforms to allow consumers to participate in tourism product production processes to realize the value cocreation of tourism products. Specifically, travel agencies and starred hotels should fully utilize the digital platform to broaden their sales channels, accurately grasping the changes in consumer demand and industry operation to realize the transformation of the business model from "supply-oriented" to "demand-oriented". Tourist attractions should also actively promote digital transformation to allow for digital reservations, paperless tickets, and intelligent travel experiences. Moreover, building a tourism big data platform is essential to realizing real-time traffic monitoring and resource deployment and warnings related to tourism.

In addition, tourists and media are important parts of stakeholders who can also contribute to the tourism digitalization. The former can participate in the creation of tourism digital products through the consumer co-creation platform built by enterprises, and the latter is an important disseminator of digital economy tourism information and a bridge for communication between various subjects."

Question:

8.What are the new recommendations to future researchers.

Response:

Your suggestions are very good and helpful for this study, and we make the following explanations and modifications.

(We revise the **6.2.3 Limitations and future research** based on your comments)

The specific explanation is as follows:

On the basis of summarizing the shortcomings of this paper, we provide recommendations for future researchers. Specifically:

"Although this study confirms that the digital economy has a positive effect on urban tourism development in China and makes some theoretical contributions and practical guidance, it still has some limitations, which also provide directions for future research. **First,** the empirical study does not consider the mediating effect, which may lead to the neglect of multiple paths of the digital economy driving urban tourism development. **Therefore, the question of how the digital economy improves urban tourism development through multiple paths requires further research**. **Second**, due to the limitation of the data, we only use a single variable to measure urban tourism development. Although this approach conforms to the paradigm of economic research, it is difficult to comprehensively evaluate the level of urban tourism development from multiple dimensions. Therefore, **in future studies, the compound evaluation indicators can be used to measure the urban tourism development index. Finally,** this study only conducts empirical research on prefecture-level cities in China, and does not expand the study object to the district, county or provincial level. **In the future, scholars can use Chinese provinces, counties, districts, or other countries as research subjects to obtain more convincing empirical results."**

Question:

9.At few places, grammar syntax requires authors' attention.

Response:

Thank you very much for your suggestion, we requested a retouching company to do retouching to fix local grammatical issues. The polishing certificate is as follows:

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Editing Certificate

This document certifies that the manuscript

Does the Digital Economy Improve Urban Tourism Development? An Examination of the Chinese Case

prepared by the authors

Hong Tang , Chaoyue Cai* , Chunxiao Xu*

was edited for proper English language, grammar, punctuation, spelling, and overall style by one or more of the highly qualified native English speaking editors at AJE.

This certificate was issued on **August 25, 2022** and may be verified on the AJE website using the verification code **3FF8-2797-78FC-A457-DD9C**.

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Finally, we would like to express our sincere thanks to you again.