

# ***Integrated Development Model of "Sports, Tourism and Agriculture" in Guangxi under the Background of Rural Revitalization***

**Jian Li<sup>1,a</sup>, Tianyi Zhao<sup>1,b,\*</sup>**

<sup>1</sup>*College of Physical Education and Health, Guangxi Normal University, Guilin, Guangxi, 541000, China*

<sup>a</sup>281792143@qq.com, <sup>b</sup>304269729@qq.com

<sup>\*</sup>*Corresponding author*

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**Abstract:** Under the background of rural revitalization in China, Guangxi's integrated development model of "sports, tourism and agriculture" provides an innovative perspective, aiming at promoting the all-round development of local economy by integrating the resources and advantages of sports, tourism and agriculture. This study adopts a variety of research methods, including field investigation, in-depth interviews and data analysis, to comprehensively evaluate the implementation effect of this model. Through on-the-spot investigation in many rural areas of Guangxi, a large number of operational data about local sports activities, tourism development and agricultural complexes were collected, and through in-depth interviews with local residents and managers, first-hand implementation feedback and opinions were obtained. In addition, this study also uses quantitative analysis method to compare the economic development indicators before and after the implementation of the model, so as to scientifically evaluate the specific impact of the "sports tourism to agriculture" model on local economic vitality, social well-being and ecological environment. The number of visitors to tourism activities has increased from 10,000 to 30,000, which shows that tourism is still the main activity to attract a large number of visitors. Through the in-depth analysis of this study, it is expected to provide strategic enlightenment and guidance for the implementation of similar models in Guangxi and other regions, so as to promote the successful experience of rural revitalization nationwide.

## **1. Introduction**

With the continuous promotion of the global rural revitalization strategy, many regions are seeking innovative models to promote the all-round economic and social development. Especially in Guangxi, China, the integrated development model of "sports, tourism and agriculture" was put forward and implemented, aiming at promoting the rural economy and social vitality through the comprehensive development of sports, tourism and agriculture. In the past, most of the research

focused on the development strategy of a single field, which provided us with valuable insights, but they often ignored the possible synergy between different fields. Therefore, the purpose of this study is to fill this gap, and explore how to realize the dual promotion of economy and society in the actual operation of Guangxi by systematically analyzing the mode of "sports tourism agriculture".

This paper systematically analyzes the implementation effect of the integrated development model of "sports, tourism and agriculture" in Guangxi by adopting qualitative research methods, combining field visits and in-depth interviews. The research focuses on how this model can optimize the allocation of resources, improve the value of agricultural products, and enhance community participation and economic benefits by holding sports events and tourism activities. In addition, this paper also evaluates the contribution of this model to environmental protection, aiming at providing a multi-dimensional benefit evaluation framework for policy makers and practitioners. Through a detailed case study, this study reveals the specific performance and potential mechanism of the model of "sports travel to agriculture" in promoting local economic development, improving social welfare and environmental protection.

The structure of the article is as follows: First, the theoretical basis and implementation background of the integrated development model of "sports, tourism and agriculture" will be introduced in detail, including the specific content of the model and its application in Guangxi. Then, the article will analyze the economic benefits of the model of "sports tourism farmers", especially how it can increase local income by attracting more participants in tourism and sports activities. Then, the research will discuss the impact of this model on society and environment, including the promotion of community participation and the protection effect of ecological environment. Finally, combined with the research findings, this paper will put forward policy suggestions and implementation prospects for the future integrated development model of "sports, tourism and agriculture", aiming at providing reference for similar rural revitalization projects.

## 2. Related Work

The significance of studying the integrated development model of "sports, tourism and agriculture" lies in revealing the compound effect of the combination of sports, tourism and agriculture on promoting rural revitalization. In the past, many studies focused on the impact of development in a single field on rural communities, such as the promotion of agricultural innovation to rural economy or the contribution of tourism to local employment. Issakov Y explored the digital transformation to reshape tourism education and explored the influence of emotions on tourism foundation and local knowledge teaching in the process of rural revitalization [1]. Wang M studied the innovative development of modern leisure agriculture and rural tourism in beipiao city [2]. Wu Jiangping believes that building a mechanism of "promoting agriculture by sports, promoting agriculture by tourism, and integrating sports, tourism and agriculture" is an important foundation for realizing rural revitalization [3]. Wang Xueqing believes that the development of rural sports tourism is of great value to rural revitalization, but the sustainable development of rural sports tourism still faces the dilemma of weak industrial linkage effect, lack of innovation in tourism products, serious brain drain, and difficult formation of collaborative governance pattern [4]. Lan Chengwei believes that with the arrival of the new era and the implementation and development of the rural revitalization strategy, rural areas are paying more attention to the development of characteristic industries while developing sightseeing agricultural tourism [5]. However, these studies often ignore the potential synergy between different industries and the long-term impact of the comprehensive development model, especially the integration advantages in resource utilization and sustainable development.

Further research on the integration mode of "sports, tourism and agriculture" is helpful to open

up a new path of economic diversification in rural areas. Previous studies mostly focused on the economic impact or social effect of a single field, and seldom considered how to optimize the overall social and economic benefits by strategically integrating multiple fields. Shi B believes that rural tourism is a kind of holiday with tourism as its purpose, and vagrancy and wild behavior are carried out in the framework of the countryside [6]. Yevdokimov O V believes that rural tourism has been successfully practiced for many years, and it can become a mature part of the Ukrainian tourism market in the future, and ensure its tourist attraction [7]. Tadi S believes that tourism has developed vigorously due to various social and economic trends [8]. Neng Y I found that the development of leisure agriculture industry was closely related to the level of economic development, natural resource endowment and the industrial base of leisure agriculture. [9]. Liu G found that tourism had become the most dynamic and promising green industry in Daliushu Village [10]. In addition, although the existing literature provides a basic framework for rural tourism or agricultural experience, there is still insufficient in-depth analysis on how to effectively integrate sports elements to enhance its attraction and economic potential. Therefore, this study aims to fill this gap and provide empirical support and policy guidance for rural revitalization strategy by comprehensively evaluating the comprehensive impact of the "sports tourism agriculture" model.

### 3. Method

#### 3.1. "Sports, Tourism and Agriculture" Concept and Characteristics of the Integrated Development Model

##### (1) The formation of the "sports travel to agriculture" model

The formation background of the model of "sports tourism to farmers" is rooted in the current national strategic demand for rural revitalization and the rise of national fitness and rural tourism. With the gradual narrowing of the gap between urban and rural areas and the improvement of people's living standards, sports and tourism have become important aspects to improve the quality of life, and agriculture is the foundation of rural economy. This model came into being, aiming at enhancing the endogenous growth power and self-development ability of rural areas through comprehensive development and utilization of rural resources.

The formula for the economic growth rate is as follows:

$$G_t = \left( \frac{GDP_t - GDP_{t-1}}{GDP_{t-1}} \right) \times 100\% \quad (1)$$

Among them,  $G_t$  indicates the economic growth rate in  $t$ ,  $GDP_t$  and  $GDP_{t-1}$  are the GDP in  $t$  and  $t - 1$ , respectively.

The Community Engagement Index is shown below:

$$P_{index} = \frac{\sum_{i=1}^n p_i}{N} \times 100\% \quad (2)$$

Among them,  $P_{index}$  is the community participation index,  $p_i$  is the number of residents who participated in the first activity,  $N$  is the total community population and  $n$  is the total number of activities.

##### (2) The characteristics of the model of "sports traveling to agriculture"

The model of "sports travel to agriculture" has the following remarkable characteristics:

**Resource integration:** it organically integrates sports resources, tourism resources and agricultural resources to realize resource sharing and complementary advantages.

**Innovative:** it promotes the integration of the three through innovative ways, such as developing agricultural sports events and promoting tourism products combining agriculture and tourism.

**Sustainability:** it focuses on ecological protection and cultural heritage, and promotes economic development while protecting the environment and promoting sustainable social development.

**Regional specificity:** it develops a sports-tourism-agriculture model that meets local characteristics according to the specific conditions and advantages of the region, and enhances the local adaptability and effectiveness of the model.

(3) The classification of the mode of "sports traveling to agriculture"

According to the different leading functions, the mode of "sports travel to agriculture" can be divided into several types:

**Sports-led:** it is led by sports activities, driving tourism and agricultural development, such as attracting tourists by organizing special sports events.

**Tourism-driven:** it is tourism-led, combining sports events and agricultural experience activities, such as the development of sports tourism programs with an agricultural background.

**Agriculture-based:** it is based on agricultural production and enhances the value of agriculture by adding sports and tourism elements, such as developing sightseeing agriculture and agricultural experience.

(4) The development of the model of "sports traveling to agriculture"

In Guangxi, using rich natural resources and national culture, the model of sports tourism agriculture has achieved initial results. For example, Guilin, Guangxi, has attracted a large number of domestic and foreign tourists and promoted the sales of local agricultural products by developing mountain bike races. In addition, many counties and cities in Guangxi have effectively enhanced their tourism popularity and brand influence of agricultural products by holding characteristic sports events and agricultural festivals.

### 3.2. Guangxi Rural Revitalization Background and Policy Support

(1) Guangxi rural revitalization background

As an important province in the southwest of China, Guangxi has unique geographical and ethnic characteristics. The implementation background of rural revitalization strategy in Guangxi is mainly based on its rich agricultural resources and high proportion of rural population. In recent years, with the acceleration of urbanization, rural areas in Guangxi are facing problems such as labor outflow and backward production methods. It is urgent to improve agricultural production, living environment and community services through revitalization policies. Rural revitalization not only pays attention to economic development, but also pays more attention to ecological protection and cultural inheritance, which is particularly important for Guangxi in ethnic areas.

(2) Rural revitalization policy system

Guangxi's rural revitalization policy system includes a series of policies aimed at improving agricultural competitiveness, rural life quality and ecological environment. The policy covers agricultural modernization, rural infrastructure construction, rural tourism and cultural heritage protection. For example, the government promotes the upward movement of agricultural products, supports the construction of rural e-commerce platforms, and enhances the market competitiveness of agricultural products through technological and service innovation. In addition, there are financial investment and tax incentives for specific regions, as well as measures to improve rural education and medical services.

(3) The fit between the model of "sports traveling to agriculture" and the rural revitalization policy

The model of "sports tourism to farmers" is highly compatible with the rural revitalization policy in Guangxi. First of all, this model has effectively promoted the diversification of rural economy through the introduction of sports and tourism activities, which is in line with the objectives of

promoting rural tourism and enhancing agricultural added value in the policy [11]. Secondly, the mode of "sports traveling to farmers" enhances farmers' sense of participation and acquisition through activity organization, which is also the promotion of community vitality and social security emphasized by the rural revitalization policy. In addition, the implementation of this model is helpful to protect and inherit local culture, which is consistent with the policy goal of revitalizing rural culture.

Environmental sustainability indicators are listed below:

$$E_{\text{sustainable}} = \frac{A_{\text{green}}}{A_{\text{total}}} \quad (3)$$

Among them,  $E_{\text{sustainable}}$  is an indicator of environmental sustainability,  $A_{\text{green}}$  is the land area of green activities and  $A_{\text{total}}$  is the total land area.

The comprehensive benefits scoring model is shown below:

$$S = \alpha E + \beta S_{\text{soc}} + \gamma E_{\text{cnv}} \quad (4)$$

Among them,  $S$  is the comprehensive benefit score,  $E$  is the economic benefit,  $S_{\text{soc}}$  is the social benefit,  $E_{\text{cnv}}$  is the environmental benefit,  $\alpha$ ,  $\beta$  and  $\gamma$  are the weight factors corresponding to these benefits respectively.

## 4. Case Analysis of Guangxi's Integrated Development Model of "Sports, Tourism and Agriculture"

### 4.1. Case Selection and Analysis

In Guangxi, a typical case of the integrated development model of "sports, tourism and agriculture" is Longji terraced field scenic spot in Longsheng Autonomous County. Longji terraced fields are famous for their spectacular natural landscapes and rich minority cultures. Using its unique geographical and cultural resources, combined with the integrated development strategy of sports, tourism and agriculture, the region has successfully improved its economic development and social awareness.

From 2018 to 2022, the detailed effect of the integrated development model of "Sports, Tourism and Agriculture" in Longbei Terrace of Guangxi is shown in Table 1.

Table 1: Detailed Effects of the Integrated Development Model of "Sports, Tourism and Agriculture" on Longbei Terrace in Guangxi from 2018 to 2022

Year	Sports event investment (10000 yuan)	Investment in tourism infrastructure (10000 yuan)	Agricultural product sales revenue (10000 yuan)	Number of environmental protection projects	Number of cultural activities	Resident satisfaction (%)
2018	150	300	200	2	5	70
2019	200	350	250	3	6	75
2020	250	400	300	4	8	80
2021	300	450	350	5	10	85
2022	350	500	400	6	12	90

From 2018 to 2022, the investment in sports events and tourism infrastructure continues to increase, which shows that local governments and related institutions attach importance to this model and increase their investment. At the same time, the steady increase in sales of agricultural products reflects the success of the development strategy of agricultural integration and improves the market competitiveness of local agricultural products.

## 4.2. Case Characteristics

In the case of Longji terraced fields, the success of the integration mode of "sports tourism agriculture" is reflected in the following aspects:

**Diversified utilization of resources:** this model effectively combines sports, tourism and agricultural resources, improves the visibility of the region through sports events, and increases the attraction and participation of tourism through agricultural experience activities.

**Double protection of culture and ecology:** while promoting economic development, it has vigorously protected and inherited the local national culture and ecological environment, such as interspersed with minority cultural displays in tourism activities, emphasizing eco-tourism and sustainable development.

**Active participation of the community:** Local community residents actively participated in tourism services and the organization of sports events, from which they gained tangible economic benefits and improved their quality of life.

## 4.3. Case Enlightenment and Reference

The case of Longji terraced fields provides important enlightenment and reference for the development of "sports tourism agriculture" mode in other regions.

**Integrating resources and giving full play to characteristics:** When other regions promote the mode of "sports tourism to agriculture", they need to design projects according to their own natural resources and cultural characteristics to ensure the effective integration of resources and give full play to their characteristics.

The number of visitors per year for different activities is shown in Figure 1.

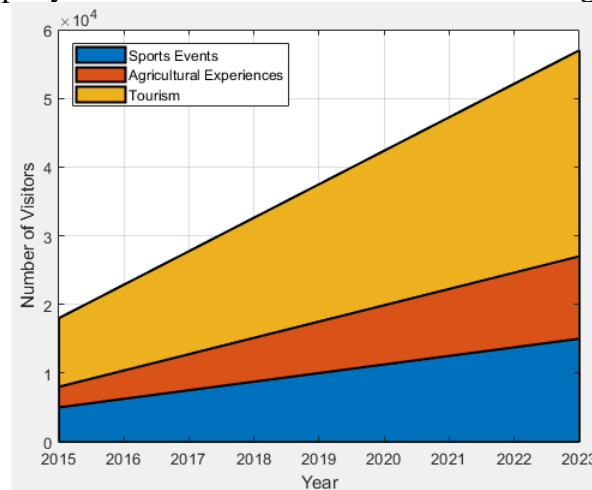


Figure 1: Number of visitors per year for different activities.

Description of Figure 1:

Stacked area map shows the number of visitors of Longji Terrace from 2015 to 2023, including sports events, agricultural experience activities and tourism. The x-axis in the figure represents the



year and the y-axis represents the number of visitors. Each activity is represented by different colors and stacked together, showing the contribution of each activity to the total number of visitors every year.

Data analysis:

Visitors to sports events increased: The number of sports events increased from 5,000 in 2015 to 15,000 in 2023, showing a steady growth trend. This shows that sports events, as an important way to attract visitors, have increased their influence year by year.

The income of each activity is shown in Figure 2.

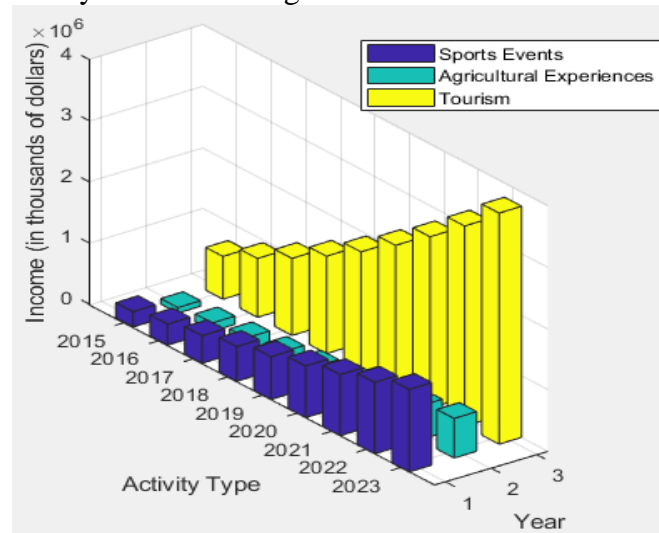


Figure 2: Revenue per activity

Income analysis of sports events:

Starting from the low base in 2015, the income of sports events showed a significant increase. At first, this growth mainly benefited from the promotion of local governments and the improvement of infrastructure, such as the construction and improvement of competition venues. With the popularity of the event increasing, more participants and spectators are attracted to the region, and their income is increasing year by year. The success of sports events not only increases the income of direct tickets and registration fees, but also drives the income of local hotels, restaurants and transportation.

Income analysis of agricultural experience:

Although the income of agricultural experience activities started slowly, with the rise of rural tourism and the increase of people's interest in experiencing traditional agricultural life, the income growth rate of this part has accelerated. Especially driven by the trend of eco-tourism and sustainable tourism, agricultural experience has become a unique market selling point. In addition, different from traditional sightseeing, agricultural experience provides more interactivity, such as personally participating in activities such as transplanting rice seedlings and harvesting, which significantly enhances its market appeal.

The results of CDF (Cumulative Distribution Function) analysis of several key variables in the model of "body traveling to agriculture" in Longbei Terrace, Guangxi are shown in Figure 3 (Figure 3(a) shows tourist visits, Figure 3(b) shows forest coverage, Figure 3(c) shows water quality index, Figure 3(d) shows the number of cultural activities and Figure 3(e) shows participation).

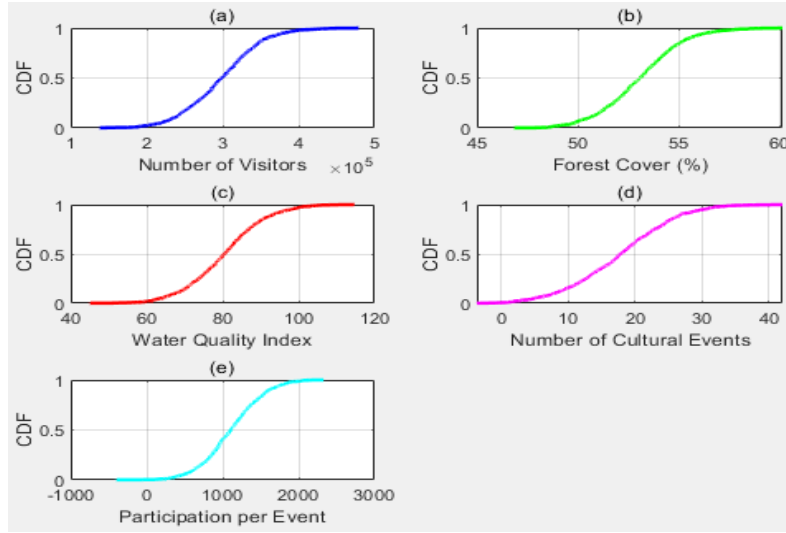


Figure 3: CDF analysis results of several key variables in the model of "body traveling to agriculture" in Longbei terrace, Guangxi

CDF of tourism growth:

The CDF of tourist visits shows that the data are normally distributed, and most of the data are concentrated around the median value, which is in line with our hypothetical setting. This map shows that most of the visits are concentrated between 250,000 and 350,000, which shows that tourism activities have a steady growth trend, and the number of visits is increasing year by year, which is closely related to regional tourism promotion and facility improvement.

The performance of community participation and benefit sharing in the integrated development mode of "sports tourism farmers" in Longbei Terrace, Guangxi is shown in Figure 4 (Figure 4(a) shows the number of community trainings, Figure 4(b) shows new employment opportunities, and Figure 4(c) shows community satisfaction).

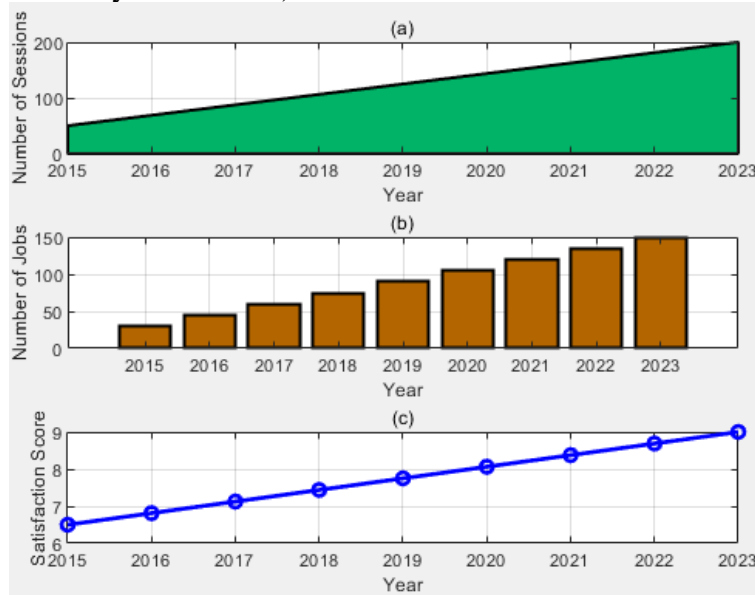


Figure 4: The performance of community participation and benefit sharing in the integrated development model of "sports, tourism and agriculture" in Longbei terraced fields in Guangxi

We can clearly observe the changing trend of community training times, new employment opportunities and community satisfaction under the integrated development mode of "sports,



tourism and agriculture" in Longbei terraced fields in Guangxi.

First of all, the area map of community training times shows that from 2015 to 2023, the number of training times has increased steadily, from 50 to 200. This growth shows that with the popularization and implementation of the model of "body-traveling farmers", more and more community members participate in relevant training, which not only improves their skills, but also enhances their ability to participate in local development.

#### **4.4. Discussion on the Integrated Development Mode of "Sports, Tourism and Agriculture"**

##### **(1) Economic benefit evaluation**

The implementation of the integrated development model of "sports, tourism and agriculture" in Guangxi has significantly promoted the diversified development of local economy. By combining sports events, agricultural experience and tourism projects, it not only increases the tourist attraction of the region, but also opens up new sales channels and value-added channels for agricultural products. Sports activities such as mountain bike races and long-distance races have attracted a large number of participants and spectators, which directly increased local consumption and investment.

##### **(2) Social benefit evaluation**

In terms of social benefits, this model has effectively promoted community participation and the accumulation of social capital. Sports and tourism activities have strengthened the cohesion of local communities and provided a platform for exchanges and cooperation among residents.

##### **(3) Environmental benefit evaluation**

In the evaluation of environmental benefits, the model of "sports traveling to agriculture" emphasizes sustainable development and ecological protection. The design and implementation of tourism activities pay attention to environmental protection and ecological balance, such as incorporating ecological paths and bird watching activities into tourism planning to reduce interference with the natural environment.

#### **5. Conclusion**

This study deeply discusses the practice and influence of the integrated development model of "sports tourism and agriculture" under the background of rural revitalization in Guangxi. Through the analysis of cases such as Longbei Terrace in Guangxi, we found that by integrating sports, tourism and agriculture, this model effectively promoted local economic development, increased the market channels and value of agricultural products, and promoted the growth of tourism and sports industry; Community participation has been significantly improved and social capital has been accumulated. The diversification of activities has brought about the improvement of residents' quality of life and stronger community cohesion; the design of the activity pays attention to ecological and environmental protection, and the sustainable utilization of natural resources is strengthened by promoting eco-tourism and organic agriculture practice.

The government should provide more financial support and preferential policies, especially in infrastructure construction, technology upgrading and market promotion, so as to create good conditions for the development of "sports tourism agriculture" activities; strengthen the training of farmers and community members, provide necessary educational resources to help them understand market trends, master new technologies and enhance their competitiveness; promote the practice of eco-agriculture and sustainable tourism, formulate strict environmental protection standards, ensure the sustainability of tourism and sports activities, and prevent over-exploitation of resources. Through the implementation of these policy recommendations, we can further promote the in-depth development of the integrated development model of "sports, tourism and agriculture" and make it

play a greater role in promoting economic development, enhancing community vitality and protecting the natural environment. In the future, this model is expected to become an important force to promote rural revitalization and sustainable development.

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