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Economic Benefit Evaluation of the Host City of the Race: A Study on the Driving Mechanism of the Tour de France on Local Tourism and Consumption

Zhiyuan Ning[1],

Xinyi Song[2],

Hainuo Yu[3, *]

[1]Guanghua Academy, Shanghai, 201318, China
[2]Zhengzhou University, Zhengzhou, 450000, China
[3]Beijing Bayi School, Beijing, 100000, China
*Corresponding author:xinyi68888@outlook.com

Abstract:

The Tour de France, as one of the most influential events in the world, plays a crucial role in the economic and social development of its host cities. The purpose of this study is to analyze the driving mechanism of the Tour de France on local tourism and consumption, and thereby draw conclusions and put forward relevant suggestions. This paper conducts research from three dimensions: direct economic effects, indirect spillover effects and regional heterogeneity by selecting typical stage cases and combining input-output analysis, consumption structure decomposition and multi-level regression models. The results show that during the event, it can bring direct economic benefits of 20 to 50 million euros to the host city in the short term, among which accommodation, catering and retail account for more than 75%. In the long term, the brand value and tourism appeal of the destination will be significantly enhanced through global media exposure (with an annual audience of over 3.5 billion people) and infrastructure upgrades. Major tourism towns rely on "events + cultural heritage" to achieve continuous traffic diversion, while rural areas activate characteristic business forms and make up for the shortcomings during the off-season through exposure. This study constructed a linkage mechanism model of "events - tourism - consumption", providing theoretical basis and practical reference for the economic assessment of mobile events and local event hosting strategies.

Keywords: The Tour de France Tourism, consumption Regional heterogeneity, Linkage mechanism, Event economic effect.

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1. Introduction

In recent years, the role of major sports events in promoting the economic and social development of the host regions has received increasing attention. As one of the world's oldest and most influential top cycling events, the Tour de France not only enjoys a high reputation in the competitive field but also plays a significant role in the economic, cultural and tourism sectors. Every summer, the multi-stage races of the Tour de France traverse multiple countries and regions in France and its surrounding areas, attracting millions of on-site spectators and billions of television viewers, bringing significant tourist flow and consumption growth to the local cities and towns.

In 2023, France's international tourism revenue reached 63.5 billion euros, and sports tourism was regarded as an important component in promoting consumption growth. Especially under the impetus of major events such as the Paris Olympics, the integration of sports events and the tourism industry has been continuously improving. However, the economic benefits of the Tour de France are not evenly distributed - the host cities need to pay high organizing fees, while industries such as tourism, hotels, restaurants and retail are the direct beneficiaries. In this context, how to scientifically assess the pull mechanism of the Tour de France on local tourism and consumption has become a practical problem that event organizers and local governments must face.

Although existing studies have explored the direct economic effects and spillover effects of sports tourism, the analysis of the economic driving mechanism of the Tour de France, which is a unique event with mobility, multi-stages and coverage of urban and rural areas, is still insufficient. This study mainly analyzes how the event forms immediate and long-term promotion for the local economy through tourist mobility, infrastructure improvement, media exposure and cultural symbol re-creation, and also analyzes whether there are differences in effects among different types of regions (big cities, tourism hubs, rural nodes) in this promotion process; these issues not only concern the objective assessment of the economic benefits of the event, but also have an important impact on local decision-making optimization and resource allocation efficiency during event preparation, and are the key contents that this study needs to focus on.

The academic analysis of the economic effects of sports events mainly consists of the following three core research paths.

The first way is direct economic effect research. This type of research mainly assesses the short-term stimulating effect by analyzing data such as the number of tourists, hotel occupancy rates, dining and transportation consumption during the event period. For example, by comparing the changes in accommodation and retail income in the areas where the Tour de France passes and those that do not during the same period of the event, it reveals the immediate stimulating effect of the event on the local service industry. However, although the data is intuitive, it is often limited to the short-term consumption level and lacks tracking of long-term economic changes.

The second one is indirect and spillover effect research. Some studies focus on the chain linkage and long-term impact brought by the event, including the improvement of local reputation due to media coverage and brand exposure of the event, and the promotion of subsequent tourism carrying capacity by event infrastructure construction. For instance, investment in road upgrades and landscape renovations can not only enhance the event experience but also improve the living conditions of local residents, thereby indirectly promoting long-term tourism and consumption growth. However, when quantifying the long-term effects, this type of research faces challenges in causal identification and data acquisition.

The third method is differentiated impact mechanism research. A few studies attempt to compare the economic driving paths of different types of events or analyze the regulatory role of local tourism resources endowment, location conditions, and event popularity on economic benefits. However, for the Tour de France, which has a wide coverage, crosses both urban and rural areas, and has historical and cultural significance, the mechanism differences in different regional types still lack in-depth exploration [1].

At the same time, the shortcomings of the existing research mainly lie in three aspects. First, data acquisition is difficult, especially the consumption data of short-term non-overnight tourists is difficult to be accurately counted. Second, causal identification is challenging, and it is necessary to eliminate interfering variables such as seasonal factors and policy changes to accurately determine the actual economic effect of the event. Third, the theoretical applicability is insufficient. Traditional event economic assessment models have obvious limitations when explaining decentralized, linear race-type events.

In view of this, this study will combine input-output analysis, consumption structure decomposition, and multi-level regression models. On the one hand, it will systematically reveal the direct and indirect driving mechanisms of the Tour de France on local tourism and consumption. On the other hand, it will deeply analyze its heterogeneous effects in different regional types, in order to make up for the shortcomings of existing research and provide more targeted theoretical support for the assessment of event economic effects and local event planning decisions [2].

2. Introduction to the Tour de France

2.1 Overall Overview of the Event

The Tour de France was founded in 1903 by Henri Desgrange, the editor-in-chief of L'Auto. It was initially launched to boost the newspaper's sales. Today, it has become one of the top international cycling events and the first professional cycling race in Europe. It is held every July and attracts more than twenty teams from around the world, with approximately 200 athletes participating. The race is a multi-day event, usually lasting 23 days, with 21 stages, covering a total distance of approximately 3,200 kilometers. The stage types include individual time trials and mass-start races, and the routes cover flat and mountainous terrains, with the highest altitude reaching 2,200 meters.

In terms of the competition format, the champion is divided into stage champions and overall champions, as well as individual and team champions. The overall ranking is calculated based on the race time, and there are also points rankings and young rider rankings. Different honors correspond to different color jerseys. The overall leader wears the yellow jersey, the overall points leader wears the green jersey, the rider with the best climbing performance wears the red and white striped jersey, and the best 25-year-old rider wears the white jersey.

In terms of commercial operations, the organizing company ASO took over the Tour de France operation from L'Auto in 1965. Its income is diverse, and the hosting cities need to pay hosting fees, such as 3 million euros paid by Florence for the Tour de France start ceremony in 2024; sponsors are divided into different levels based on the sponsorship amount and method, with sponsorship fees ranging from 1 million to 5 million euros; the sale of television broadcasting rights is also an important income, with an annual broadcasting revenue exceeding 100 million euros. In addition, there is also licensing merchandise income.

The annual race route is planned differently each year, circling France and surrounding countries. The stage distribution takes into account different terrains and urban characteristics, including flat stage tests for sprinting ability and mountain stage challenges for climbing strength.

2.2 Case Study of Stage Selection and Reasons

The selected case study stages are the French Alpine mountain town of Moriony, the tourist city of Nice, and the rural node of Montopain. Moriony is located in the Alps, with mountain stage races being highly challenging, which can be used to examine the impact of the event on tourism and consumption in mountainous towns; Nice, as a well-known tourist city, has a large tourist base, allowing for the analysis of the additive effect of the event in a mature tourist destination; Montopain represents rural areas, which is helpful for exploring the activation effect of the event on rural economies.

The data coverage time range is the past five years (2020 - 2024), and the data types include tourist numbers, consumption amounts in areas such as accommodation, dining, retail, and transportation, as well as social media popularity, tourism booking data to comprehensively analyze the impact of the event on tourism and consumption in the host area.

2.3 Preparations and Investments for Host Cities

In terms of infrastructure improvement, the host city will upgrade road conditions, widen and level the roads to meet the needs of the event, such as widening some narrow roads in Yorkshire, UK in 2014; create landscape facilities, add special landscapes and decorations; and improve transportation facilities, optimize public transportation routes and station settings to ensure smooth traffic during the event.

The promotion of the city's image is carried out through advertising, social media promotion, tourism brochures. For example, a theme promotional video for the event is broadcast globally. The event has a rich variety of activities, including opening ceremony performances, cycling culture exhibitions, and family cycling activities, to enhance the event's appeal and participation [3].

2.4 Tourism and Consumption Performance during the Event

During the event, the total number of tourists in the host city increases significantly. For example, in 2014, Yorkshire welcomed 472,000 overseas tourists. The proportion of overnight tourists and day tourists varies by region, with tourist cities having a higher proportion of overnight tourists, and towns and rural areas having more day tourists.

In terms of accommodation, the occupancy rates of hotels and guesthouses have significantly increased, and room prices have also moderately risen; dining consumption is booming, with the business of local restaurants and food stalls increasing significantly; in the retail sector, the sales of event souvenirs and specialty products are considerable; In terms of transportation, the passenger flow of public transportation has increased, and the car rental business has also become busier.

2.5 Post-Event Effects and Continuation

The event has significantly enhanced the destination's popularity and the influence of the tourism brand. Through global media coverage and event promotion, more people

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have learned about the host location. For example, the port of Vechio in Corsica has gained widespread fame due to the Tour de France. Subsequent tourist visits have continued to increase, and related industries have maintained a good development trend. The income of industries such as hotels, restaurants, and tourism services has steadily increased, promoting long-term economic growth in the region [4].

3. Literature References

3.1 Direct Economic Pull Effect: Short-Term Consumption Boom

Select typical stages of the Tour de France, such as the mountain stage in Alpudiere and the finish line in Paris, and compare the data during the event with that of the same period in previous years. For instance, a report by the French Audit Institute indicates that a single stage can bring direct economic benefits of 20 to 50 million euros to the local area. The accommodation industry is the most notable. During the event, the booking rate generally reaches over 90%, and prices increase by 80% to 150%. Consumption in the catering and retail sectors has soared by 30% to 60%, and the leasing and sales of sports goods have also risen significantly.

In terms of industrial contribution rate, the distribution of the core beneficiary industries' reception tiers. Firstly, the first tier consists of direct service industries, which include accommodation accounting for approximately 35% to 45%, catering for 25% to 35%, and retail for 15% to 25% [5]. Secondly, support supporting industries as the second echelon, such as transportation, temporary security construction and logistics services, which together account for 15% to 20% of the industry's contribution rate. Finally, the third tier consists of derivative industries, including the sale of local specialty products such as wine and cheese, as well as bicycle repair and related industries. The proportion is approximately 5% to 10%

3.2 Indirect and Long-Term Effects

The first aspect is media exposure and cultural symbol effects. It was broadcast in 190 countries around the world, with a cumulative audience of over 3.5 billion people. The camera focuses on the castles, vineyards and snow-capped mountain scenery along the way, such as the Pyrenees and Provence, which are famous landscapes, implanting the "beauty of French countryside" in the minds of global audiences. Secondly, the host city uses the event to shape its image as a "cycling paradise" or "outdoor paradise", significantly enhancing its brand value and continuously benefiting from subsequent tourism promotion [6].

The second aspect is the upgrading of infrastructure and public services. To meet the demands of the event, the Tour de France often upgrades its roads in advance, expands the coverage of communication networks, and improves the services of public transportation and tourist centers. For instance, the Auvergne-Rhone-Alpes region in France took the opportunity of the Tour de France to systematically improve the mountain road network and tourism signs, significantly enhancing the subsequent self-driving and cycling tourism experience and promoting the year-round development of regional tourism.

3.3 Regional Heterogeneity Analysis

In terms of differences in city types, large cities such as Lyon and Bordeaux, due to their large economic volumes, have a high absolute value of economic pull but a relatively small proportion. Therefore, large cities benefit more from the presence of international tourists, high-end consumption, and media exposure to enhance their image as "dynamic cities". In contrast, for major tourist destinations such as Arles and Carcassonne, the event brings about a sudden peak in foot traffic. Media cameras deeply showcase their cultural heritage, including ancient Roman ruins and medieval castles, which greatly enhances their popularity and has an excellent long-term effect in attracting visitors.

In terms of rural nodes, the absolute value of economic pull is limited but crucial, especially during the off-season. The greatest value of this lies in global exposure, presenting the "hidden beauty" such as canyons, pastures and a series of natural landscapes to the world, significantly enhancing the tourism appeal and driving the development of homestays and agricultural tourism.

In terms of resource regulation, the unique natural and cultural resources of the towns along the Tour de France can generate an "amplifier" effect through event exposure, resulting in a higher tourism conversion rate. Conversely, for ordinary rural areas lacking distinctiveness, the effect diminishes more rapidly [7].

3.4 Input and Return Comparison: Actuarial Balance

The cost structure of the organizer mainly consists of two aspects: direct hosting fees and local investment. In terms of direct hosting fees, the amount that the organizer pays to ASO (Event Company) is usually several million euros. Among them, security accounts for the majority, approximately 40% of the total. According to statistics, the total investment in a medium-sized city often reaches 5 to 15 million euros.

The calculation is made by taking into account direct consumption, tax increase and the increment of long-term tourism revenue. Cases from the French region show that direct economic benefits usually cover 60% to

100% of the total investment. Long-term media value and brand promotion are difficult to quantify but crucial (for instance, the Domes Province estimates its global media exposure value to exceed 20 million euros). The overall return on investment (ROI) is between 0.8 and 1.2 in the short term. In the long term, it is generally positive and has great potential, especially in regions rich in tourism resources [8].

4. Construction of the "Event Tourism Consumption" Linkage Mechanism Model

In the construction of the "event tourism consumption" linkage mechanism model, the Tour de France formed a closed-loop linkage through three core paths. Among them, the first path is the direct consumption driving path. The gathering of people during the event directly stimulates terminal consumption such as accommodation, catering, and retail. Data shows that the accommodation booking rate during the event can reach over 90%, and a single stage can generate direct income of 20-50 million euros. In this direct income, the total output value of accommodation, catering, and retail accounts for 75% -85%.The second path is the industrial chain linkage path, which takes itself as the core. On the one hand, it drives the development of supporting industries such as transportation leasing, security, and logistics, which account for 15% -20% of the relevant economic contributions. On the other hand, it also activates derivative industries such as bicycle maintenance and sales of characteristic agricultural products, which account for 5% -10% of the total. This forms a complete industrial chain hierarchy of "core services supporting services derivative value-added". The third path is the brand effect path, and the Tour de France has gained widespread media exposure with a global broadcast coverage of 3.5 billion people. As with other major events, broadcast television has taken over as the primary medium for reporting and monitoring the Tour de France since the 1980s [9]. Because it is a potent tool that can authenticate sports venues and merchandise, new media has a great deal of potential to impact the demand for sports tourism and act as a stimulus for travel to these destinations [10]. Widely exposed by the media, the natural and cultural resources of the host city of the event (such as Alps and castles) are transformed into influential tourism brand symbols, thereby promoting the transformation of long-term tourism consumption after the event, and ultimately achieving effective communication of "event exposure brand awareness tourism action". Sport is typically regarded as an alluring instrument for communities to enhance their reputation as travel destinations and to promote their tourism-related goods [11,12].

4.1 Explanation of Regional Differences Mechanism

The regional differences in the economic effects of the Tour de France can be explained by the differences in resource endowment, location advantages, and industrial structure, which together constitute a significant regulatory mechanism for the event's effects. From the perspective of resource endowment regulation, regions with unique natural or cultural resources (such as Burgundy vineyards) can use event exposure to generate an "amplification" effect, resulting in higher efficiency in converting local tourism resources into actual tourism consumption. However, ordinary rural areas lacking unique recognition are limited by insufficient resource attractiveness, and the economic effects brought by the competition decay relatively quickly.

In terms of location and industrial structure adjustment, different types of regions exhibit differentiated effect characteristics. Large cities represented by Lyon and Bordeaux, relying on their huge economic scale and mature high-end consumption scenes, place more emphasis on accommodating international tourists and high-end consumption demand during the event period. Therefore, their absolute value of economic pull is relatively high. However, due to the large overall economic scale of the city, the relative proportion of event pull effect in the total urban economy is relatively low. Tourist hubs such as Arles and Carcassonne, with their well-established tourism infrastructure and market foundation, can form a synergistic effect of "events + cultural heritage" with the events, which is most prominent in attracting tourists and enhancing tourism consumption in the long run. However, rural nodes represented by mountain villages in Loz è re Province mainly break through the "secrecy" limitations brought by their geographical location through event exposure, activate characteristic formats such as homestay operation and agricultural tourism, effectively make up for the economic shortcomings of the local tourism off-season, and their event effects mainly focus on the development and value enhancement of characteristic industries.

4.2 Economic Strategy of Sports Events from the Perspective of Sustainable Development

The key to constructing an economic strategy for sports events from a sustainable development perspective is to form a core strategic system that balances short-term benefits of sports events with long-term local tourism development goals. Firstly, the long-term utilization strategy of infrastructure is to transform the road upgrades and traffic optimization carried out during the event period to meet demand into infrastructure that serves daily tourism activities. With the continuous use of these facilities, regional tourism is promoted from short-term centralized

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development during the event period to year-round stable development. Secondly, there is a continuous activation strategy for brand symbols, which requires deeply integrating recognizable regional tourism images such as "cycling holy land" and "outdoor paradise" shaped during the event into the local long-term tourism promotion system. At the same time, by planning follow-up cycling activities and holding relevant cultural exhibitions after the event, the exposure effect brought by the event can be continued. For example, the cycling IP operation carried out by Alpine Town after the event is a typical practice of this strategy. Innovation in technology enhances the tourism sector's intelligence, fostering efficiency gains and sustainable growth [13]. Finally, there is a cost-benefit dynamic balance strategy. In the short term, relying on direct consumption in areas such as accommodation and catering during the event period, it can cover 60% -100% of the event hosting costs, with event investment in medium-sized cities typically ranging from 5 to 15 million euros. In the long run, it is necessary to rely on the regional tourism brand value added and tourist traffic growth brought by the event, gradually achieve positive investment returns from the event investment, and prioritize selecting regions with abundant tourism resources in the event layout to enhance the potential for return on investment (ROI).

5. Conclusion

This study points out that the Tour de France has a dual effect of "short-term direct driving + long-term indirect empowerment" on local tourism and consumption. In the short term, the direct income of a single race segment is 20-50 million euros, with over 75% coming from the accommodation and other service industries. In the long term, the brand value is enhanced through exposure to 3.5 billion people and infrastructure upgrades. At the same time, there are regional differences in the effects. The absolute value of economic growth in big cities is high but the proportion is low. Tourism hubs have prominent "event + cultural heritage" drainage, and rural areas use exposure to activate characteristic business models to make up for the shortcomings of the off-season. This study also expands the research paradigm of mobile events, with the core breaking through the single cognition of "single point short-term effect", deeply revealing the unique "point line surface" linkage mechanism of the Tour de France as a multi stage mobile event, constructing a "event tourism consumption" composite driving framework, clarifying the three core paths of direct consumption driving, industry chain linkage, and brand effect transmission, and clearly explaining how large-scale mobile events transform from one-time "event activities" to "sustainable economic momentum" that promotes local economic development, providing a systematic perspective and analytical model for similar event research. This study has limitations in analyzing the economic effects of the Tour de France, as the data only covers the past 15 years of events and typical stages, which may overlook potential differences in the economic effects of events under different economic cycles, making it difficult to fully reflect their dynamic characteristics with changes in the macroeconomic environment. It is also difficult to completely eliminate external factors such as macroeconomic fluctuations and local tourism policy adjustments, which limits the accurate identification of the causal relationship between events and local economic growth and affects the rigor of research conclusions.

Based on current research limitations, future exploration can be deepened from three aspects. Firstly, extend the data observation period to more than 20 years to identify the attenuation pattern of the economic effects of sports events. Secondly, comparative research should be conducted with other international events such as the Tour of Italy to enrich the relevant research system. Thirdly, combining big data technology with new data resources to enhance research accuracy, more accurately quantifying the exposure of event brands, and clarifying the transmission mechanism and transformation path of event economic effects.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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