

Research on Market Demand and Development of High-End Customized Desert Adventure Tourism Products

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Abstract: Taking the Taklamakan Desert as the research object, this paper aims to explore the market demand and development strategies of high-end customized desert adventure tourism products. Based on the current trend of desert tourism upgrading from traditional sightseeing to in-depth experience consumption, the study focuses on core issues in the Taklamakan region, such as insufficient supply of high-end products, significant homogenization, and imperfect safety and ecological protection systems. By constructing an analytical framework of “market demand- product service- sustainable development,” it deeply analyzes the demand characteristics of high-consumption groups for personalized and high-quality adventure experiences, and then proposes targeted paths for product innovation and development. The research results are intended to provide references with both academic value and practical significance for promoting the sustainable development of tourism in the Taklamakan Desert.

Keywords: Taklamakan desert; High-end customization; Desert adventure tourism products

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1. Introduction

Tourism has long been recognized internationally as the world’s largest industry and a veritable “green industry”^[1]. Desert tourism is defined as a type of tourism activity that takes deserts as carriers, with natural scenery, cultural relics, and project activities as attractions, meeting tourists’ needs for entertainment, adventure, scientific research, etc.^[2-4] It has become one of the five fashionable tourism trends in the 21st century^[5]. In places such as Dubai, Kuwait, and Israel, deserts have become key venues for residents’ daily life and tourists’ entertainment^[6]. Research on desert tourism emerged in the 1980s^[7], and subsequent scholars have mostly focused on the necessity and feasibility of desert tourism development^[8,9], qualitatively evaluating the social value^[10], economic value^[11], competitiveness of tourism development in desert areas^[12], and development models^[13].

As China’s largest mobile desert and the core area of the Silk Road cultural heritage, the high-quality development of the tourism industry in the Taklamakan Desert plays a key role in the economic transformation of southern Xinjiang^[14]. Despite being a world-class tourism resource, the development level and product hierarchy of the Taklamakan Desert lag behind market demand. Therefore, research on high-end customized adventure tourism products in the Taklamakan Desert is particularly necessary.

2. Analysis of market demand for desert adventure tourism

As the world's largest closed-basin mobile desert, the Taklamakan Desert boasts the most typical mobile sand dunes in temperate deserts globally and Silk Road historical sites, which are the cultural connotation and core elements of its tourism resources^[15], providing unique conditions for adventure tourism. Therefore, analyzing the market demand for adventure tourism in this region is a key prerequisite for identifying the characteristics of real customer groups and transforming tourism resource advantages into product advantages.

2.1. Analysis of target customer characteristics

2.1.1. Demographic attributes of core customer groups

The customer composition of the Taklamakan Desert adventure tourism market presents diverse characteristics, with middle-aged and young groups as the core. In terms of age structure, participants are mainly concentrated in the 30–50 age group, among which the 30–40 and 40–50 age groups account for a prominent proportion. This group usually has a stable occupation and income foundation, thus having a relatively strong willingness and conditions to participate in outdoor adventure and cultural experience activities. At the same time, the number of young tourists under 30 is growing significantly, showing higher exploration enthusiasm, especially for highly interactive projects such as desert off-roading and hiking. Economically and educationally, most customers are from urban areas, mainly with middle-to-high income and high education levels. They generally pay attention to ecological protection and cultural heritage issues, which is also reflected in their travel decisions, they pay more attention to the uniqueness, cultural connotation, and educational significance of experiences, while price factors are relatively secondary. Geographically, source markets are mainly concentrated in first-tier and second-tier cities in economically developed regions such as East China, North China, and South China. Residents in these areas often face high work intensity and a fast-paced lifestyle, thus regarding desert travel as an important way to regulate their physical and mental state. In addition, with the advancement of regional cooperation mechanisms such as “Attracting Tourists to Aksu,” the long-distance source market continues to expand, and the geographical origin of customers tends to be more extensive.

2.1.2. Behavioral characteristics and preferences of customer groups

Tourists engaging in adventure tourism in the Taklamakan Desert show significant behavioral characteristics. In terms of time distribution, tourism activities present a certain seasonality; summer becomes a peak period for tourists due to relatively suitable climatic conditions, and tourist flow is also prominent during statutory holidays, winter, and summer vacations. In recent years, with the development of characteristic products such as stargazing and winter desert landscapes, the boundary between traditional peak and off-peak seasons has become blurred. In terms of organizational form, there is a trend of shifting from traditional large-scale group tours to self-guided tours and small-group customized tours. Especially among the core 30–50 age group, family self-driving and small-group tours are more favored for their flexibility and privacy. At the same time, special tourism groups themed around photography, off-roading, and study tours are gradually increasing, reflecting tourists' emphasis on professional and themed experiences. In terms of consumption, tourists show a high willingness to pay, and the per capita consumption of characteristic projects such as desert off-roading and low-altitude flights is usually higher than that of conventional tourism products. Accommodation choices show differentiated tendencies: some tourists prefer high-end characteristic hotels around the desert, while a considerable number of tourists tend to camp in the primitive areas of the desert hinterland to pursue a more nature-close experience.

2.2. Demand trends and preference evolution

The demand of contemporary high-end tourists for desert adventure tourism is undergoing a profound transformation from single sightseeing to diversified experiences, presenting three significant trends: in terms of experience dimension, it has achieved a paradigm shift from superficial perception to cultural immersion, with tourists pursuing knowledge gain and spiritual satisfaction through travel experiences; at the product level, it shows the development characteristic of thematic

specialization, developing professional products for different interest circles based on market segmentation theory; in terms of service model, personalized service has become a basic industry requirement, driving the industrial value chain to shift from resource-centric to experience-centric.

3. Development strategies for tourism products in the Taklamakan Desert

Based on in-depth analysis of market demand, the development of high-end customized tourism products in the Taklamakan Desert should focus on thematic feature shaping, experience module innovation, and cultural connotation excavation, and enhance market competitiveness through differentiated strategies.

3.1. Construction of thematic product system

3.1.1. Adventure-themed products

Relying on the historical adventure context of the Taklamakan N39° Line and the extreme desert environment, develop multi-level adventure products. The N39° Desert Tourism Scenic Area in Makit County has successfully built a “Special Adventure Zone,” and developed an off-road experience area and a desert sports area relying on the brand influence of the classic stage of the China Ring Tashkurgan (International) Rally. It can further design the “Sven Hedin Adventure Route” restoration tour, following the historical adventure route and combining modern safety guarantees to provide high-end customers with a 7-15-day in-depth adventure experience. The product can include desert crossing, site visits, scientific recording and other links to meet tourists’ pursuit of historical culture and adventure spirit.

3.1.2. Culture-themed products

In-depth excavation of the diverse cultural resources around the Taklamakan Desert, including Dolan culture, Uyghur folk customs, and ancient Western Regions city-state sites. Design a series of “Desert Civilization Dialogue” products, connecting cultural attractions such as the “Gate of Time,” “Time Tunnel,” “N39 World Central Axis,” and “Hourglass of Time” in the N39° Desert Tourism Scenic Area into an organic narrative route. Cooperate with local communities to develop intangible cultural heritage inheritance experience workshops, invite folk artists to display traditional songs and dances and handicrafts, and arrange interactions between tourists and local residents to realize the living inheritance and immersive experience of culture.

3.1.3. Scientific research-themed products

For high-end customers, especially family markets and professional student groups, develop scientific research products themed around desert ecology, geological structures, and astronomical meteorology. Drawing on the planning concept of the sand therapy and health care area in the N39° Desert Tourism Area of Makit County, combined with the unique climatic conditions of the desert, develop desert recuperation and health management products. At the same time, design desert ecosystem investigation projects, allowing tourists to observe the adaptive characteristics of desert flora and fauna under the guidance of experts, understand the desert formation mechanism and the impact of climate change, and meet their curiosity and educational needs.

3.2. Construction of characteristic accommodation system

A hierarchical and multi-form desert accommodation system should be established, covering differentiated product forms such as ecological boutique hotels, luxury camping tents, and stargazing observation rooms. These facilities should adopt eco-friendly technical solutions, including solar photovoltaic systems, rainwater collection and reuse devices, and high-performance building insulation materials, to minimize environmental load while ensuring indoor comfort.

3.3. Design of diversified transportation system

A multi-modal transportation network should be constructed to meet different adventure intensities and experience needs. On the basis of retaining traditional characteristic transportation methods such as camel riding, introduce high-end desert sightseeing fleets with professional off-road performance. In addition to meeting basic safety standards, these vehicles should also support personalized customization solutions, including special coatings, exclusive interiors, and functional module configurations. For long-distance cross-region needs, low-altitude sightseeing products using helicopters and light aircraft can be developed to build a panoramic desert experience from an “air corridor” perspective. Of particular note is the planning and design of the “Luntai-Minfeng 550 km Sand Sea Crossing Route.” This route selects the climate window period in October-November, making full use of the cool climatic conditions and *Populus euphratica* landscape resources to create an internationally influential desert road trip brand.

3.4. Innovation of scenario-based catering experiences

Break through the traditional catering service model and realize the scenario-based upgrading of dining experiences through environmental empowerment. Specifically, create in-depth interactions between food culture and spatial environments through diverse scenarios such as “starry sky-themed dinners” at sand dune summits, “oasis ecological picnics” in *Populus euphratica* ecological areas, and restored “folk family banquets” in traditional Uyghur settlements. In terms of catering content, focus on excavating local food culture genes, give priority to the use of regional characteristic organic ingredients, and combine modern nutritional concepts and cooking techniques to meet the dual demands of high-end tourists for cultural experience and healthy diet.

3.5. Cultural inheritance and community participation

In the process of desert tourism development, attention should be paid to the coordinated development of cultural protection and community participation. It is recommended to establish a fair and reasonable cultural resource cooperation mechanism with local communities, encourage intangible cultural heritage inheritors to participate in the design and display of tourism products, and promote the systematic presentation of national arts such as Dolan culture. By setting up a special fund for cultural protection, part of the tourism income can be used to support traditional handicrafts, folk arts, and cultural research, promoting the living inheritance of local culture. At the community participation level, the driving effect of tourism development on the local economy can be enhanced through localized material procurement, targeted employment of residents, and professional training.

3.6. Risk prevention and safety guarantee

Desert tourism activities face various natural and man-made risks such as high temperatures, sandstorms, and navigation failures, so a systematic risk management mechanism needs to be established. It is recommended to formulate graded emergency plans for different types of risks and build an emergency rescue network covering the entire region. By setting up professional rescue stations in key areas and equipping them with the necessary equipment and personnel, the response efficiency to emergencies can be significantly improved. At the same time, a meteorological monitoring system can be established to collect real-time environmental data such as temperature and wind speed, and share information with the tourism management system to provide a basis for itinerary adjustments and risk early warnings. Conducting pre-trip safety training and emergency drills for tourists helps enhance their independent response capabilities. In addition, the equipment configuration standards for adventure activities should be standardized to ensure the completeness of communication, navigation, and first-aid supplies, and improve the efficiency of equipment use through guidance, thereby comprehensively strengthening the safety guarantee level of desert tourism.

4. Conclusion

With its unique natural landscapes, profound historical and cultural heritage, and adventure environment, the Taklamakan Desert provides an important foundation for the development of high-end customized adventure tourism products. The launch of such products not only responds to the trends of tourism consumption upgrading and market segmentation but also helps meet the growing demand for high-end tourism. In terms of comprehensive benefits, the development of high-end customized desert tourism can not only drive regional economic transformation but also promote ecological protection and cultural inheritance, promising to achieve the coordinated improvement of multiple values. With the deepening of relevant models, the Taklamakan Desert may gradually become an internationally influential desert tourism destination, showing the unique connotation of Chinese desert tourism to the world.

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