

# Analyzing the Research Progress of Campsites in China and Internationally: A CiteSpace-Based Approach

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**Abstract:** This study leverages CiteSpace to create a keyword co-occurrence network for camping site research, aiming to outline the current state and development trends in this field, both globally and in China. The analysis highlights that international research focuses on camper behaviors, experiences, and the ecological and managerial aspects of camping sites. In contrast, Chinese research centers on industry status, market positioning, and development strategies, with a greater emphasis on specific site planning and management. The study reveals a notable gap between Chinese and international research in terms of breadth and depth. Chinese studies are predominantly qualitative and lack a focus on ecological and humanistic considerations, leading to limited generalizability of findings. This comparison underscores the need for a more integrated and quantitative approach in Chinese camping site research, aligning with global standards and incorporating a stronger emphasis on ecological preservation and humanistic values.

**Keywords:** Campground; Camping tourism; CiteSpace; Knowledge graph.

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## 1. Introduction

As a pivotal sector within the global economy, tourism exerts a profound influence on the economic progression of nations. Within this context, camping tourism, renowned as a dynamic segment of international tourism, has burgeoned into a vital contributor to national economies, gaining prominence for its expanding role. Despite its growth, scholarly inquiries in international camping tourism exhibit a tendency towards a monolithic perspective, often lacking a holistic and nuanced portrayal of the knowledge architecture inherent within this domain.

In response to this gap, the present study utilizes the visualization capabilities of CiteSpace to construct a knowledge map that focuses specifically on campgrounds. This research methodically examines and analyzes the corpus of international literature from the Web of Science's core database, alongside Chinese scholarly works from the China Knowledge Network (CKN). This dual approach facilitates a comprehensive assessment of the current state, emerging hotspots, developmental trajectories, and trends in both domestic and global camping tourism research. The primary objective of this paper is to furnish novel perspectives and insights, thereby enriching the existing body of knowledge and guiding future scholarly endeavors in campground research.

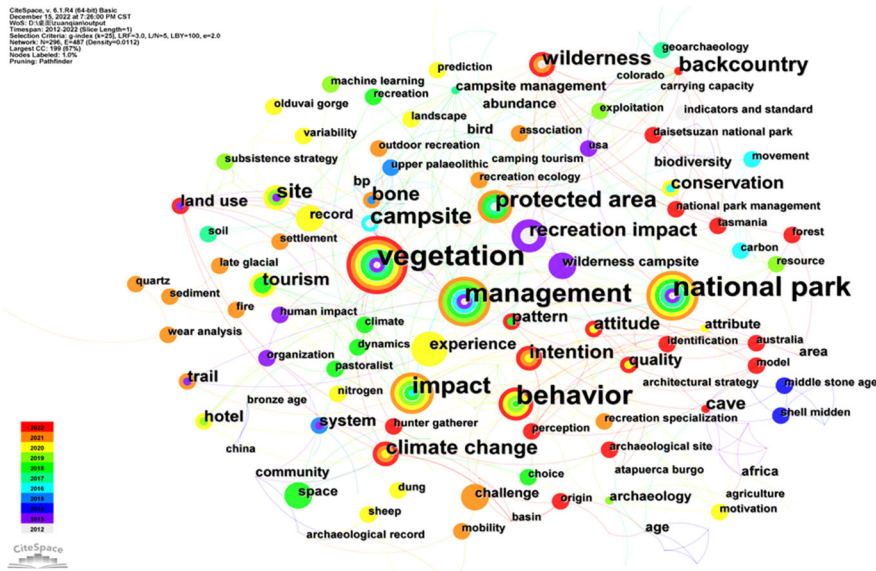
## 2. Current Situation of Foreign Research

The camping industry in Europe and the United States has reached a state of maturity, characterized by a flourishing body of research encompassing both theoretical and practical

aspects. As of December 3, 2022, the Science Direct database boasts a considerable repository of 2,373 review and research papers, along with 346 book chapters, all centered around the theme of "campsite". Prominently, the journals most prolific in camping-related tourism research include 'Tourism Management', 'Annals of Tourism Research', and 'Journal of Outdoor Recreation'.

Leveraging the analytical capabilities of CiteSpace software, this study has meticulously generated a knowledge map highlighting the high-frequency keywords prevalent in the international campsite research domain (refer to Figure 1). The underlying data corpus for this map was extracted from the English literature cataloged in the Web of Science core database, spanning the timeframe from January 1, 2012, to December 15, 2022. A theme-based advanced search was conducted using the search string: TS=("campsite"), with a subsequent elimination of any irrelevant data from the dataset.

In the resultant knowledge graph, circular nodes represent keywords, with their size corresponding to the frequency of occurrence. Analysis of the high-frequency keyword co-occurrence map reveals that the research focus on campgrounds varies among scholars from different international institutions. However, it predominantly converges on two main aspects: the subject of campers and the object of campgrounds. In the context of campers, the research predominantly explores their behaviors, experiences, motivations, and attitudes. Regarding campgrounds, the predominant focus is on site selection, development and design, operational management, as well as ecological impact and protective measures. This bifocal approach offers a comprehensive understanding of the camping industry from both the consumer and managerial perspectives.



**Figure 1.** Co-occurrence map of high-frequency keywords for foreign campgrounds

Some international scholars have summarized and predicted the development trend of camping tourism. For example, Rogerson C M and Rogerson J M published in *Geo Journal of Tourism and Geosites* in 2020 "Camping tourism: a review of recent international scholarship", review the international research process on the definition of camping tourism, international diffusion, and destination impacts, evaluate camping tourism as being on the periphery of tourism research, and argue that today's camping tourism research is centered on the demand side, the supply side, vacation camping and low-budget tourism, and the innovative management challenges of sustainability [1]. Other scholars have contextualized the 2019 new coronavirus outbreak to predict trends in camping tourism, Craig C A published in *Annals of Tourism Research* in 2021 "Camping, glamping, and coronavirus in the United States" ref [2]. The "planning-behavior" theory, through online surveys and quantitative research, suggests that campers after the outbreak preferred to avoid crowds and camp for short periods of time. Also in 2021, Craig C A published "Glamping after the coronavirus pandemic" in *Tourism and Hospitality Research* in collaboration with Karabas I [3]. Through online interviews with active leisure travelers in North America and quantitative analysis of the results, the study illustrated that luxury camping became the preferred option for new coronavirus travelers after the pandemic. luxury glamping after the pandemic became a more popular alternative to traditional hotel and resort travel. This conclusion is in line with research by European scholars such as Milohnić I, who, through interviews and questionnaires with three groups of campground managers, camping equipment manufacturers and camping customers in six European countries, concluded that traditional camping needs to be transformed into luxury camping by improving and innovating accommodations in order to increase the competitiveness of campgrounds [4].

Other researchers have delved into the intricacies of campground planning and construction, as well as the nuances of their operation and management, focusing particularly on the supply aspect of camping. Among the representative ones are Poon-Ead J and other scholars 2022 published in *The Proceeding of Surat Thani Rajabhat University Conference*, "Evaluation on the Camping Tourism Destination: a New Normal Tourism Product" studied the

7A's elements of camping destinations and related customer types around the three dimensions of site, management and community, and constructed a model for transforming campgrounds into a normal tourism accommodation business [5]. Rice W L et al. scholars published "Forecasting campground demand in US national parks" in *Annals of Tourism Research* in 2019, which researched and tested six demand forecasting models for campgrounds in national parks, and verified the ETS, SARIMA, NNAR, and KNN combination methods' The effectiveness of the combination of ETS, SARIMA, NNAR and KNN methods is verified, which helps campground managers to better deal with the relationship between natural resource conservation and camping tourism development [6]. Caldicott R W and other scholars published in *Tourism Management Perspectives* in 2022, "The RV camping framework for understanding modern camping practices" centers on the mobility paradigm, embeds theories of panoramic gazing, recreational specialization, and online socialization, and incorporates a broad context of stakeholders and policies to build a framework for RV camping based on temporal, spatial, and social dimensions that promotes semantic transparency in the field [7].

International scholars extend their focus beyond the supply dynamics of campgrounds, dedicating substantial research to exploring the facets of camper motivation, decision-making processes, and behavioral patterns. For instance, Kristensen M S and other scholars published in the *Journal of Outdoor Recreation and Tourism* in 2021, "Motives for shelter camping. a survey-study on motivational differences across group composition and experience level" combined with an experiential approach (REP), the study concluded that the primary motivations for shelter camping are experiencing nature and socializing within the group, and the least important motivation is meeting new people [8]. The study concluded that the primary motivation for shelter camping is to experience nature and socialize within the group, and the least important motivation is to meet new people, which inspires shelter campground planners to emphasize the sense of nature experience and the privacy of the camping units. Van Heerden C H was published in 2020 in the *African Journal of Hospitality, Tourism and Leisure's* "Motivation and Involvement in Camping-A Gender Perspective", published

in the African Journal of Hospitality, Tourism and Leisure in 2020, used a questionnaire survey in South African campgrounds and concluded that gender had a weak effect on camping motivation and a significant effect on camping involvement, and that men were more likely than women to "learn" and "socialize" [9]. Rice W L et al. 2021 in Journal of Environmental Management, "Big data spatial analysis of campers' landscape preferences: examining demand" [10]. landscape preferences: examining demand for amenities' draws on reservation data from a US campground chain in the Recreation Information Database (RIDB) to conclude that price, electricity supply, convenience, and riverside environment have a significant impact on demand forecasts, and the authors call for research on campground allocative justice. Mikulić J et al. scholars' 2017 publication in Tourism Management, "Campsite choice and the camping tourism experience: investigating decisive campsite attributes using relevance- determinance analysis", using relevance-determinance analysis (RDA) through an online questionnaire survey of a campsite operator in the Croatian coastal region, concluded that campsite infrastructure, safety, and ecology influenced both campsite choice and the actual experience, whereas sports and recreational activities only

influenced the actual experience but had little effect on the pre-campsite choice, which confirms the existence of asymmetry in the attributes affecting choice and actual experience [11].

### 3. Research status in China

As of December 3, 2022, a search conducted on the China Knowledge Network (CKN) using "campsite" as the keyword yielded a total of 992 entries. The journals featuring the most significant number of these entries were 'Tourism Overview' and 'China Tourism News'. An analysis of the temporal distribution of these studies reveals a consistent upward trajectory over the past three decades, marked by substantial surges in 2010, 2015, and 2022 (as illustrated in Figure 2). Notably, there was a decline in the number of studies in 2019, likely attributable to the impact of the COVID-19 pandemic. However, the author anticipates a continued upward trend in China's research on campgrounds. This prediction is underpinned by the growing popularity of camping tourism in the post-pandemic era, characterized by its short distances, brief durations, and profound connection with nature, making it an ideal leisure mode for urban populations.

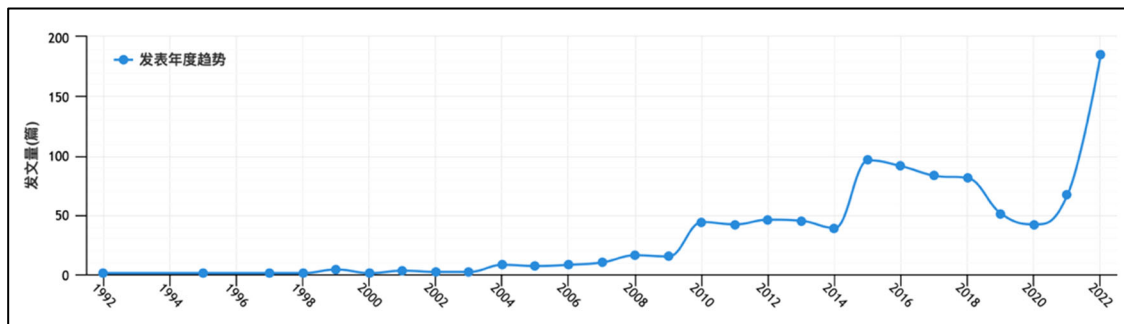


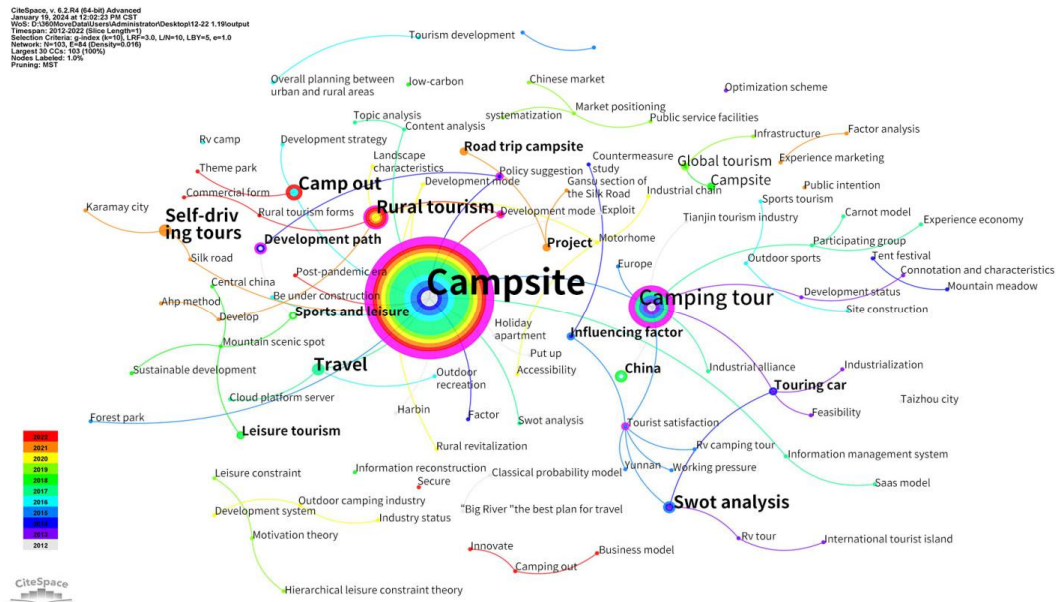
Figure 2. Overall trend analysis of campground research in China

During 2021-2022, the volume of campground research in China witnessed a significant upsurge, with an increase of nearly 200 articles. This expanding body of work encompasses a variety of themes, including camping tourism, RV campgrounds, rural tourism, tents, self-driving tours, and tourism resorts. From a disciplinary perspective, the research is diverse: 127 documents focus on the tourism sector, analyzing the emergence, development trends, market demand, and product planning of camping tourism; 102 documents explore sports-related aspects, particularly the variety of activities in outdoor camping and standards for camping parks; 22 documents delve into economic reforms, discussing the scale, characteristics, and management of the camping market; and 11 papers examine the cultural dimensions, treating camping as a pivotal element of "micro-vacations" and analyzing its social impact and policy implications. This surge in research activity highlights the growing academic and practical interest in the multifaceted aspects of camping, reflecting its importance in China's leisure and tourism landscape.

Utilizing CiteSpace software, this study has generated a high-frequency keyword co-occurrence map specifically for Chinese campground research (depicted in Figure 3). The data for this analysis was sourced from the core database of the China Knowledge Network (CKN), employing an

advanced keyword search strategy with the search formula TS=("campground") and spanning the period from 2012 to 2022. After careful elimination of irrelevant data, the map was constructed to visually represent the keyword landscape in this field.

In the knowledge graph, circular nodes symbolize keywords, with the size of each node indicating the relative frequency of occurrence of that keyword. A discernible pattern emerges from this high-frequency keyword graph: Chinese campground research predominantly focuses on the macro-level aspects of the industry and the meso-level facets of enterprises, with comparatively fewer studies addressing the micro-level experiences of campers. More specifically, macro-level research generally revolves around the developmental status, trends, modes, and pathways of campground tourism. In contrast, meso-level research tends to concentrate on the planning, design, operational strategies, and management of campgrounds in specific geographic areas or of particular types, such as those along the Gansu Silk Road segment, or specific categories like caravan and automobile campgrounds. This delineation underscores a pronounced inclination in the current research landscape toward industry and enterprise perspectives, with room for further exploration into the experiences and behaviors of individual campers.



**Figure 3.** Co-occurrence mapping of high-frequency keywords for campgrounds in China

In the field of camping site development models and paths, Chinese scholars have primarily focused their research on hot topics such as global tourism, rural tourism, and self-driving tours. Among them, representative are Fang Yan and Wu Bihu (2016) analyzed the development trend of Chinese campsites to create a composite mode, improve soft services, and integrate with the whole region tourism and "Internet+" [12]. Lv Ning and Wu Xinfang (2017) put forward the development mode of automobile and RV campgrounds with the help of the resources of the source, scenic spots and destinations, as well as the operation modes of single unit, joint and brand chain, and the profit mode of "1+X" [13]. Dai Hong and four other scholars (2018), by comparing the development differences and characteristics of Chinese and foreign auto campgrounds, similarly summarize the development mode of China's auto campgrounds as scenic area-dependent, single-unit operation, "campground+" and "+campground", and suggest the promotion of campground educational products and the application of the Internet [14]. Wang Lin (2020) introduced the concept of sharing and the perspective of globalization, and proposed three innovative camping modes for RV campsites: the cluster sharing strategy in the countryside, the concession sharing strategy in the urban recreation center, and the adaptation sharing strategy in the ecologically sensitive area [15]. Zhang Hai (2020) explored the development mode and path of rural campgrounds from the perspective of rural revitalization, and put forward three modes: "campground + ecological park", "campground + rural area + farmers" and "campground + research and study". "Three models are proposed [16]. Yu Quantao and three other scholars (2022), on the other hand, start from the perspective of rural tourism destination, on the basis of protecting the ecological environment, through building various types of campgrounds with different cultural characteristics, in order to improve the attractiveness and revisit rate of rural tourism [17].

In terms of development countermeasures for camping tourism, Chinese scholars often use case studies for specific regions. For example, using qualitative research and SWOT analysis, Chen Cong (2013) analyzed the development status and future potential of caravanning tourism in Hainan Province, and developed a caravanning tourism product system based on Philip Kotler's product hierarchy theory [18].

Wang Rui (2018) focused on the development of car camping industry in the South Anhui International Cultural Tourism Demonstration Zone, and established an evaluation index system for car camping sites through expert surveys, brainstorming, and multilevel fuzzy comparisons based on the hierarchical analysis method (AHP), containing a total of 15 indicators at the strategic level and tactical level [19]. Taking Longtan Auto Campground in Guiping, Guangxi as an example, Qin Qiongyu (2018), combined with a large number of field visits, concluded that the standardization of campsite services, diversification of product themes, the creation of "all-inclusive" vacation mode, the exploration of intelligent tourism and sustainable development, and so on [20].

In terms of the planning and design and optimization scheme of campgrounds, Chinese scholars usually combine architecture-related methods and theories. For instance, Dai Yan (2016) compares the development status quo and typical design works of RV campgrounds at home and abroad, and illustrates the design of Chengdu RV campground by using a large number of design concepts of environmental art and landscape science, such as color psychology and geometric element collocation, with the aim of creating a RV campground-style vacation tourism mode [21]. Wang Zexin (2017) focuses on the adaptability of RV campgrounds in China, explaining that in addition to the monolithic planning and design of campgrounds, it should also promote networked and standardized construction, solve the problems of water supply, power supply, and sewage disposal, popularize the concept of RVing, and develop characteristic campgrounds [22]. Zhang Hongrui (2017) demonstrated in detail the planning and design methods of campgrounds in scenic areas, covering 24 aspects of planning positioning, planning principles, campsite selection, scale control, master planning, and detailed design [23]. Sun Qijie (2019) summarized a campsite design framework by studying the development and architectural characteristics of various types of campsites in Hong Kong, reflecting a coherent process from positioning, site selection, and planning to architectural design, site and landscape design, activity facility design, and support system design, and applied the framework to Lei Li's Guizhou campsite project in the Mainland [24]. Ge Minglan (2019) focuses on the planning and design of self-drive campgrounds

in five provinces and regions along the internal section of the land "Silk Road", and explains the concepts of ecological and sustainable development, localization as the positioning, safety as the primary goal, and diversified development as the design characters, but due to the large horizontal span of this section and the relatively complex natural geography, the planning and construction plan of the campgrounds is very complicated and the design of the campgrounds is very complicated. , the landedness of the campground planning and construction program still needs to be explored [25].

Chinese scholars have conducted relatively few studies on the consumption demand of campers. For example, based on the Kano model, Wang Dan (2017) investigated and studied the demand of youth groups in Shanghai for the educational functions of campgrounds, and the results showed that the five items with the highest educational demand were "learning teamwork", "learning to respect others", "improving wilderness survival ability" and "improving the ability to survive in the wilderness". "Improvement of wilderness survival ability", "Interaction with others" and "Independence" [26]. Using empirical research methods, Su Xiaonan (2018) quantitatively analyzed the consumption needs of tent campers in the Yangtze River Delta, and concluded that tent camping groups are mainly young and middle-aged highly educated people with a certain degree of economic strength, who usually go to the suburbs of the city for camping on weekends in groups, and that the needs for nature and recreation are higher than those for interest, emotion, and exploration [27].

In addition to research on the current situation of campground development, supply and demand in China, some Chinese scholars have studied the relevant theories and practices of campgrounds abroad. Five scholars, including Wang Sihai (2016), systematically analyzed the development history and reasons for the popularity of camping activities in the United States, and concluded that camping activities are supported by a variety of conditions, including hardware support, software facilities, public awareness, and management systems [28]. Yang Yushang and Jiang Fugao (2021) drew knowledge mapping with the help of Cite space software, and concluded that the research trend of camping tourism in foreign countries in the past two decades has been growing in waves, the authors co-occur with low network density and interoperability, lack of collaborative research, and the hotspots of the research are mostly in the aspects of classification, preference and behavior of campers, as well as in the aspects of campsite organization, siting, construction, and operation and management [29].

#### 4. Comparison and Summary

Upon analyzing the current state of campground research both in China and globally, it becomes evident that Chinese research in this domain exhibits potential for enhanced depth and breadth. Firstly, regarding the volume and caliber of scholarly work, international studies on campgrounds outnumber their Chinese counterparts by approximately threefold. Moreover, these studies are typically published in more prestigious journals. Secondly, the scope of international research is notably more comprehensive, encompassing not only the development, planning, construction, operation, and management of campgrounds but also delving into the ecological impacts and protective measures. Crucially, it extends further to include campers as a focal point of study, exploring their behaviors, experiences,

motivations, and attitudes. In contrast, Chinese research tends to concentrate predominantly on the planning, design, and development of campgrounds. While it does address the impacts on campers, consumers, and ecology, these studies often lack a holistic approach, missing out on crucial aspects of humanistic consideration and ecological conservation awareness. Lastly, concerning research methodologies, international studies predominantly employ quantitative approaches to develop and validate universal campground models and principles. Conversely, Chinese research frequently relies on case studies of specific examples, which hampers the applicability of findings across broader contexts. This difference in approach underscores a critical gap in methodology, limiting the transferability of insights gained from Chinese studies to wider applications.

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