

Research on the Brand Construction of Ice and Snow Tourism Destinations Supported by Information Technology

Shuang Gu¹, Hongyan Li^{1,*}

¹*School of Economic and Management, Jilin Agricultural Science and Technology University, Jilin, China*

**Corresponding author*

Abstract: *With the rapid development of tourism, people's awareness of tourism is constantly improving. After the successful bid for the 2015 Beijing Winter Olympic Games, more and more people began to contact ice and snow sports, and ice and snow tourism in China ushered in development opportunities, and the significance of brand construction became more and more important. This study analyzes the status quo of brand construction of ice and snow tourism destinations in China, and finds that there are some common problems in the brand construction of ice and snow tourism destinations in various regions, such as inadequate brand image publicity, imperfect facilities and low efficiency of brand management. At the same time, based on the existing problems, this study proposes that the advanced information technology can provide effective support and guarantee for the subsequent brand construction, accelerate the realization of the distinctive brand image publicity of ice and snow tourism destinations, the construction of complete tourism facilities and the improvement of brand management efficiency. Regional snow and ice tourism will gradually step into the modernization and intelligent development process under the support of information technology.*

Keywords: *Information technology, Snow and ice tourism destinations, Brand construction*

1. Introduction

Under the background of the rapid development of information technology such as Internet, cloud computing and big data, the access to information has become more extensive and efficient, providing opportunities for the development and integration of various industries^[1]. With the expansion of snow and ice movement and the increase of demand, regions with rich snow and ice tourism resources actively develop tourism to achieve effective supply. In the process of the rapid development of ice and snow tourism, people's tourism awareness is gradually enhanced, and the brand also begins to occupy an important position in the tourism industry. Local governments with snow and ice resources attach great importance to the brand construction and development of snow and ice tourism destinations in the region, and provide corresponding suggestions and support in brand image and brand marketing, and have made certain achievements. Just so, more and more ice and snow towns appear in the public vision, forming the ice and snow tourism brand marked by the region. The successful bid of the Beijing Winter Olympics once again provides significant opportunities for the future development of China's ice and snow industry. Ice and snow sports have received more attention and recognition from more groups, and they are regarded as the first choice of winter travel, and ice and snow tourism is no longer limited to sightseeing tourism. However, with the gradual increase of the number of ice and snow tourism destinations, how to have a unique core competitiveness in the homogenized and competitive market, to achieve brand construction and maintain the vitality of the brand is an urgent problem to be solved. In view of this problem, this study will study the status quo of China's ice and snow tourism destination brand construction, explore how to use information technology to enhance the core competitiveness and achieve the construction of ice and snow tourism destination brand.

2. Status of Brand Building

Regions with snow and ice resources promoted limited snow and ice sports in the early stage depending on their unique geographical advantages. Consumers are mainly residents in the region, and ice and snow sports are mainly family entertainment activities during the Spring Festival. With the

development of information technology and the improvement of people's living standards, some people living in areas with non-snow and ice resources begin to be interested in snow and ice landscape and snow and ice sports, and the snow and ice tourism industry gradually rises, but the overall brand construction and development of snow and ice tourism is relatively late. It was not until the industry gradually formed a scale and under the background of information technology support that snow and ice tourism in various regions was widely publicized that each region began to hold a series of snow and ice tourism activities with characteristics and influence, focusing on brand building. On January 5, 2022, the "China Snow and Ice Tourism Development Forum" was successfully held. At the forum, the "Top 10 Cities for Snow and Ice Tourism" and "Hot Snow and Ice Tourism Spots" were released in 2022. These cities and scenic spots are mainly distributed in northeast China, North China and Northwest China, with unique advantages in natural resources and geography. In the collaborative development of the Internet and ice and snow tourism, they have created geographical brands.

Table 1: Hot cities and innovative projects

Top 10 cities for ice and snow tourism	Popular ice and snow tourist attraction (resort)	Ice and snow classic innovation project	Ice and snow fashion innovation project
Harbin City	Harbin Ice and Snow World (Harbin, Heilongjiang)	Collecting head ice during Heavy Snow (Harbin, Heilongjiang)	North of Mohe (Mohe, Heilongjiang)
Zhangjiakou City	Sun Island International Snow Sculpture Art Fair (Harbin, Heilongjiang)	Skating at Shichahai (Beijing)	Snow Jumping in Snow Town (Mudanjiang, Heilongjiang)
Changchun City	Yabuli Ski Resort (Harbin, Heilongjiang)	Enjoy Rime in Songjiang, Jilin Province	Rock in Snow (Chongli, Hebei)
Shenyang City	Seven Mountains Ski Resort (Baoding, Hebei)	Ice Rolling around the fire in Yuanxiao	Midui Glacier Adventure (Nyingchi, Xizang)
Urumqi City	Chongli Ice and Snow Tourism Resort (Zhangjiakou, Hebei)	Snow on Broken Bridge (Hangzhou, Zhejiang)	Winter Heroes Meeting (Hulun Buir, Inner Mongolia)
Altay Area	Jingpo Lake Scenic Spot (Mudan River, Heilongjiang)	Ice Lantern Garden Party (Harbin, Heilongjiang)	Hemu Ice and Snow Photography (Kanas, Xinjiang)
Jilin City	Beijing Yuyang International Ski Resort (Beijing Pinggu)	Fur board skiing (Altay, Xinjiang)	Snow and Ice Light Show (Altay, Xinjiang)
Mudanjiang City	Changchun Ice & Snow Xintiandi (Changchun, Jilin)	Ice Naadam (Inner Mongolia)	Shougang Snow & Ice Collection (Shijingshan, Beijing)
Yichun City	Changbai Mountain Tourism Resort (Changbai Mountain, Jilin Province)	Soaking in Hot spring of Tibetan Medicine on Snowy Plateau (Yangbajing, Xizang)	Snow Hot pot (Chongqing)
Hulunbuir City	Vanke Shijinglong Ski Resort (Yanqing, Beijing)	Soaking in hot springs in the Snow Mountains (Hailuogou, Sichuan)	Songhua River Ice and Snow Carnival (Harbin, Heilongjiang)
Yanqing District			
Changbai Mountain Protection Development Zone			

^a. Data source: China Tourism Academy (Data Center of the Ministry of Culture and Tourism)

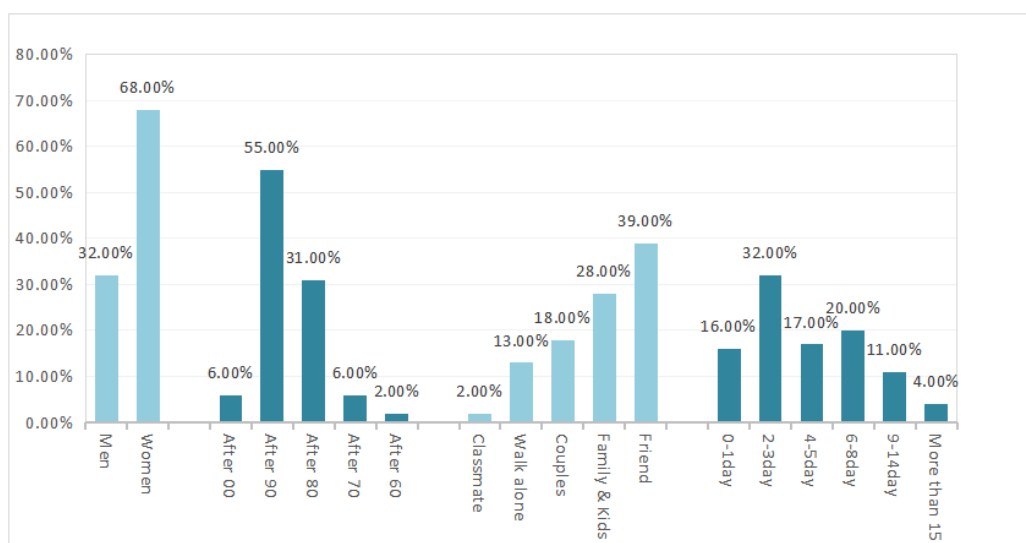
After a long period of development, ice and snow tourism is no longer limited to early sightseeing tourism, but following the preferences of ice and snow sports enthusiasts and youth groups, actively carry out sports ice and snow tourism and competition ice and snow tourism. The establishment of many ski resorts has become an ideal destination for skiing enthusiasts and youth groups. At the same time, the peak season of snow and ice tourism is during the winter vacation and Spring Festival of students. The ski stadium sets sports items especially for children and groups without skiing skills to increase the audience scope of sports snow and ice tourism. Events such as ice marathon and ski festival have also successfully attracted a large number of ice sports fans and spectators^[2]. The Rime Ice Festival is a very dreamlike journey of sightseeing ice and snow tourism, and ice and snow sculptures will bring the shock of vision and mind for tourists. In the sightseeing ice and snow tourism, folk ice and snow tourism is

indispensable. Ice and snow sports activities with national characteristics, such as ice cart and dog pulling plow, bring joy to tourists. The China Ice and Snow Tourism Development Forum also announced the list of "Ice and snow classic innovation projects" and "Ice and snow fashion innovation projects" for 2022. Classic innovation projects mainly focus on ice and snow sports and snow tourism, while fashion innovation projects pay more attention to the preferences of young people as the main consumer groups in the present and future, covering sports, photography and food, etc. In this stage, the construction of snow and ice tourism destination brand mainly depends on advertising and the supply of multiple features. After the diversification of supply, brand construction needs to start from the qualitative level. At this time, it is imperative to realize smart brand construction with the help of the new generation of information technology.

The "Hot cities and innovative Projects of Snow and Ice Tourism in 2022" published by China Snow and Ice Tourism Development Forum are shown in Table 1 below.

3. Problems in Brand Building

3.1. Brand Image Promotion is not in Place



^a Data source: China Tourism Academy (Data Center of the Ministry of Culture and Tourism)

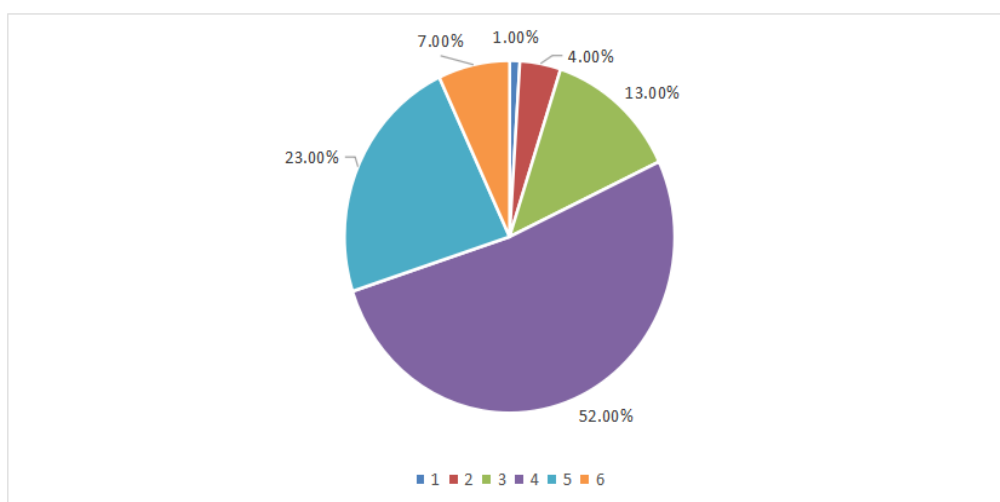
Figure 1: Tourist group characteristics in ice and snow season

At present, when promoting snow and ice tourism destinations, many regions focus on introducing their own snow and ice entertainment facilities, without clearly showing their own uniqueness or highlighting the combination of local culture and snow and ice tourism. In the context of the rapid development of information technology, the channel of publicity is mainly through the network, but the form of communication is relatively simple, most of the promotion in the form of propaganda films or short videos, consumers can not experience and contact scenic spots in the visual and auditory dimensions^[3]. The promotion content is mainly aimed at the snow and ice tourism publicity of a specific region, without combining the characteristics of other regions in the tourism route^[4]. The amount of information given to tourists is less, and most of it coincides with the propaganda content of other regions, which cannot attract tourists well^[5]. Is the main reason of the problem is under the information technology support, although the "Internet +" ice and snow tourism market got rapid development, online platform and ice and snow sports APP quantity increases, but the "wisdom tourism" based on information technology has not been widely used. The diversified individual needs and feedback of tourists cannot be quickly collected and matched with tourism products. According to the Big Data Report on China's Ice and Snow Tourism Consumption (2022), jointly released by China Tourism Academy and Hornet's Nest Tourism, women account for 68% of ice and snow tourism users during the 2021-2022 ice and snow season, but the TGI index of men is 120, much higher than that of women, indicating that men prefer high-quality ice and snow tourism. Based on the demographic characteristics of age, it was found that the post-80s and post-90s accounted for 86 percent of ice and snow tourism users. Young women pay more attention to romance and enjoyment, while men pay more attention to stimulation and quality. Traditional scenic propaganda films cannot attract major consumer groups quickly and successfully. At

the same time, the report is also published in terms of travel companions and travel days. In the 2021-2022 ice and snow season, the companions are mainly friends, families and couples, and the travel days are mainly two to three days in the short term or six to eight days in the long term. The specific data can be seen in Figure 1. It can be found from the data that people take travel as a kind of relaxation in the new environment, and the relaxation is integrated with interaction. In the promotional videos of ice and snow tourism destinations with limited time, more emphasis is placed on regional brands and the completeness of facilities, while ignoring the real motivation of tourists to travel. Inappropriate content and form of publicity make brand publicity unable to be deeply rooted in the hearts of the people. More importantly, it relies on large investment to increase the memory of the brand in the brain of potential tourists, and the publicity efficiency is low.

3.2. Facility Conditions are not yet Perfect

From 2018 to 2021, China completed 157 large-scale ice and snow projects in the field of major projects. Northeast China, North China and Northwest China, as regions with mature ice and snow tourism brands, accounted for 47.9% of the investment, while Southwest, South China, Central China and East China accounted for 52.1% of the investment. Convenient transportation is an important factor affecting tourists' choice of travel destination and satisfaction. Since 2016, China has completed 128 snow and ice tourism and transportation projects, including railways, highways and transportation hubs. In order to develop snow and ice tourism and create mature snow and ice brands, the state has invested a lot in the infrastructure of snow and ice projects. However, at the micro level, the transportation environment of some skiing venues is not perfect. In the Report on the Development of the Tourism Market during the 2022 New Year Holiday released by China Tourism Academy, it is pointed out that self-drive travel is the main choice for tourists at the present stage, but nearly 50% of them still choose high-speed rail, long-distance bus and plane, as shown in Figure 2. For out-of-town and local tourists who are not driving by themselves, there is a longer waiting time to take the tour bus. The facilities in the car are relatively old, the sanitation is not ideal, and the distance between the end of the vehicle and the destination is long, the tourists have to walk to the destination^[6]. There is no online inquiry and prompt for the route before tourists arrive at the scenic spot, which often leads to the unsatisfactory experience of tourists at the beginning of the journey. When entering the ski field, the guidance sign is not clear enough, and the layout scope is not reasonable. Some signs have not been replaced all the year round, the font is not obvious, and some signs are far away, leading to tourists with weak sense of direction in the search and anxiety stage^[7]. At the same time, the cultural and shopping environment will also affect the result of tourists' choice of tourist destination. In some areas, the lack of wireless network coverage and relatively slow Internet speed make it impossible for tourists to use mobile phones to purchase tourism products and services online. In cultural and folk museums, traditional visitors are mainly visited without VR virtual experience equipment, which makes it impossible for tourists to experience cultural life.



^b. Data source: China Tourism Academy (Data Center of the Ministry of Culture and Tourism)

Figure 2: New Year's Day 2022 residents travel mode

3.3. Brand Management Efficiency is not High

At present, some regions have formed brand construction in ice and snow tourism. Dream rime, winter fishing, passionate skiing and hot spring resort have become the feature brands of snow and ice tourism in specific areas. With the improvement of material living standards, people's expectations and quality requirements for ice and snow tourism destinations have gradually increased. If they cannot innovate in product development and management and actively integrate with information technology, it will be difficult to meet the needs of existing and potential tourists. Since the establishment of the ice and snow tourism brand, Changbai Mountain has been seeking to maintain the brand through innovative ice and snow projects. Through the information collection and analysis of big data, it is found that some young male consumers tend to stimulate the ice and snow activities accompanied by competitions, and the unique terrain of Changbai Mountain is suitable for the development of such projects. At the same time, the hot springs of Changbai Mountain are also attractive to young female consumers. With the magnificent landscape, it is a suitable place for viewing and relaxing. After the launch of the world-class professional slideway, snowmobile driving and other snow and ice activities, they are widely favored by "cool youth", but there are still some differences between the projects in terms of the number of participants and types of consumers, as shown in Table 2. This means that even the same type of ice and snow sports, the formation of brand benefits are different, if not with the help of information technology management and information tracking function, often will show a flash in the pan. At present, the ice and snow tourism industry in some provinces is managed by multiple organizations, and there are problems such as delayed communication and communication barriers among various departments. The phenomenon of inconsistent or repeated decision-making often occurs, and the function of information transmission and sharing of information technology is not well applied, which will have a negative impact on the construction and maintenance of the brand.

Table 2: "Cool Fashion" in Changbai Mountain

Cool cool gameplay	Proportion of experience volume (%)	Major consumer groups
Compete for world-class professional slideway	36	Male + Professional + Exciting
Driving a snowmobile	25	Friends + Lovers + Parents
Soaking in volcanic hot springs	19	Women's group + Family
The magical drift of winter	11	Team building + Family
Immersive hunting	7	Flexible + Hunting culture
Ice and snow hiking	2	Physical Strength + Adventure

^c Data source: China Tourism Academy (Data Center of the Ministry of Culture and Tourism)

4. Specific Strategies for Brand Building

4.1. Promoting a Distinctive Brand Image of Tourist Destinations

At present, there are many snow and ice tourism destinations. Each region should combine its regional advantages to build snow and ice projects with its own characteristics, and integrate local culture to increase the cultural and human factors in the snow and ice projects^[8]. Information technology should be appropriately integrated into the publicity. For example, VR virtual experience functions can be introduced in propaganda films and folk museums, so that tourists can experience the snow and ice landscape and sports personally. For ethnic costumes and activities, "one-click try on or participate" can be used for pre-tourism experience. At the same time, in the process of publicity, each region needs to highlight the differences between itself and many ice and snow tourism destinations. The ice and snow tourism destinations in the same province can make joint publicity and plan personalized routes for

tourists. The promotion of the distinct brand image is not to promote competition among different regions in the province, but to attract potential visitors to the ice and snow world in the province, and then experience the ice and snow projects in different regions, different styles and characteristics in the province. In terms of publicity channels, various forms of publicity should be actively adopted. For example, live publicity can be carried out by means of short video platforms frequently used by people.

4.2. Strengthening the Overall Construction of Tourist Facilities

With the construction of characteristic projects in tourist destinations, the construction of related supporting facilities should also be paid attention to. The development of the Internet has accelerated the transmission of information. The establishment of public facilities, placement of signs, dining environment, transportation environment and shopping environment will all affect the experience of tourists. Under the background of the Internet, the experience of tourists will be quickly transmitted to potential tourists through the network. Therefore, tourism destinations should focus on the establishment of relevant tourism facilities to meet the various needs of tourists. In the construction of facilities, special designs can be made for different groups, using details to reflect humanistic care. For specific ideas, questionnaires can be sent through the network to understand the needs of potential tourists based on the questionnaire and make timely adjustments^[9]. In addition, information technology such as aerial photography can be fully used to monitor and track the tourism sites in real time, so as to timely understand the problems existing in the experience of tourists in the region.

4.3. Improving the Efficiency of Brand Management

After the construction of snow and ice tourism destination brand is completed, continuous management is needed in the later stage. The development and management of tourism products is particularly important^[10]. Actively promoting the association between tourism and real estate, shopping, health and fitness can not only improve the development of tourism products, but also promote the development of local economy. In this process, it is very important to create and improve the intelligent service system with the help of information technology. The comprehensive service platform can push relevant sightseeing spots, ice and snow sports, accommodation and shopping according to the needs of tourists, and timely understand the feedback of tourists. As for the projects that can link tourism with the countryside, we should focus on promoting them to achieve rural revitalization while developing tourism. At the same time, in the later development of tourism projects, we should actively introduce classic historical stories to increase the spiritual significance of ice and snow tourism. The corresponding QR code can be attached to the display board of the scenic spot to facilitate tourists to further understand the classic historical stories through videos or articles. In the context of Internet development, accelerating the timely sharing of information can also effectively avoid inefficient decision-making caused by communication barriers, which is conducive to the construction of ice and snow tourism destination brands.

The specific strategy of brand building is shown in Figure 3.

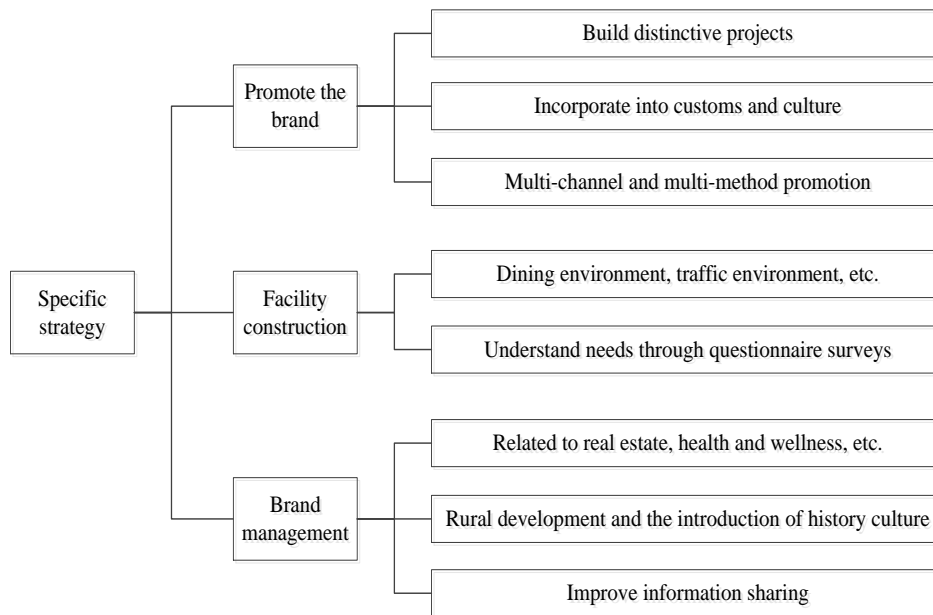


Figure 3: Chart of the specific strategy

5. Conclusion

Based on the current situation of ice and snow tourism in various provinces, it is found that tourism is no longer ornamental tourism in the traditional sense, but accompanied by tourism with the nature of sports, competitions and folk culture. In the process of development, under the progress also implies the brand image publicity form is single, the content is lack of characteristics, the effect is not ideal phenomenon. In terms of the relevant facilities of tourist destinations, there are problems such as inconvenient transportation, obsolete facilities and lack of humanistic feelings. In the late brand management, there is a lack of innovation, consumption of the original brand phenomenon. In the aspect of management, there are overlapping functions and confusion of authority. The existence of these problems is not conducive to the construction of tourism destination brand, and even to the original brand construction damage. The development of the Internet and other information technologies will become an effective driving force to promote the development of the brand. It is necessary to actively explore the positive role of various information technologies, highlight the characteristics of The Times, and follow The Times. Based on the existing problems, it is particularly important to develop publicity channels, innovate publicity content and strengthen publicity design, which are the key points to attract potential tourists. At the same time, the overall construction of tourism facilities is an essential element to ensure high-quality tourism. On the basis of meeting the basic needs, the effective way to build a brand is to reflect the humanistic feelings as much as possible. The late brand management needs the support of continuous innovation projects, and the integration of tourism with the existing agriculture, pharmaceutical and other related industries is conducive to the common and stable development of all industries. At the same time, the collaborative leadership of the management organization is an opportunity for brand management. Brand focuses on construction and management.

Acknowledgment

This work was supported by National College Student Innovation and Entrepreneurship Training Program Project "Research on the Brand Construction and Promotion Strategy of Jilin Ice and Snow Tourism Destination under the Background of 'Internet+' (202111439011).

References

- [1] Jan Körner, Klemens Grube. *Internet banking brand strategies amongst German commercial banks since the 1990s*[J]. *Journal of Historical Research in Marketing*,2021,13(2), 65-84.
- [2] Davras Gonca Manap. *Classification of Winter Tourism Destination Attributes According to Three Factor Theory of Customer Satisfaction*[J]. *Journal of Quality Assurance in Hospitality &*

Tourism,2021,22(4),496-516.

[3] Corrêa Stela Cristina Hott, Gosling Marlusa de Sevilha. *Travelers' Perception of Smart Tourism Experiences in Smart Tourism Destinations*[J]. *Tourism Planning & Development*,2021,18(4), 415-434.

[4] Femenia Serra Francisco, Ivars Baidal Josep A.. *Do smart tourism destinations really work? The case of Benidorm*[J]. *Asia Pacific Journal of Tourism Research*,2021,26(4), 365-384.

[5] Yuanle Cheng, Hai Hu. *Analysis of the Problems, Causes and Countermeasures in the Brand Construction of the Postgraduate Entrance Examination Institutions*[J]. *Open Journal of Business and Management*, 2020, 08(02), 396-413.

[6] Moreno Gené Jordi, Daries Natalia, Cristóbal Fransi Eduard, Sánchez Pulido Laura. *Snow tourism and economic sustainability: the financial situation of ski resorts in Spain*[J]. *Applied Economics*, 2020,52(52), 5726-5744.

[7] Ming Luo. *Current Situation, Problems and Countermeasures of Brand Construction of Agricultural Products in Hubei Province* [J]. *Open Journal of Business and Management*,2019,7(3), 1162-1172.

[8] Kirsten Noome, Jennifer M. Fitchett. *An assessment of the climatic suitability of Afriski Mountain Resort for outdoor tourism using the Tourism Climate Index (TCI)*[J]. *Journal of Mountain Science*, 2019, 16(11), 2543-2469.

[9] Dayong Xu. *Research on Brand Construction and Development of Agricultural Products in Guizhou* [J]. *Engineering Heritage Journal*, 2018, 2(2), 19-24.

[10] Dong Jianyi. *A Study of Product Placement and Audience's Brand Image Construction* [J]. *Journal of the Korea Entertainment Industry Association*,2017,11(8),.41-48.