

Analysis of Factors Affecting the Development of Competitive Level of Mountain Outdoor Sports

—Taking the Abu Dhabi International expedition in 2010 as an example

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Abstract- Objective: based on the analysis to the elements affecting the results of China's national team in the 2010 mountain outdoor sports adventure challenge race in Abu Dhabi, some theoretical and practical basis on which suggestions are provided on further promoting China's mountain outdoor sports results and the competitive level are given. Subjects: athletic performance of the top six teams and China's national team in 2010 mountain outdoor sports and athletic performance; Methods: using expert interviews, reference and data, mathematical statistics, analyze the athletic performance of the top six teams and China's national team in 2010 mountain outdoor sports and athletic performance on foot and bicycle projects on class projects with the world's top mountain outdoor big gap between sports teams; Result: there are big gaps between China's mountain outdoor sports teams and foreign teams on projects like footing and bicycling; Conclusion: Although in recent years, our mountain outdoor sports performance has been greatly improved, but the large gap do exist on foot and bicycle projects. so these projects need strengthening .

Keywords- mountain outdoor sports; results; multi-element analysis

1. Introduction

Outdoor sports originated from the Alps Mountaineering in the 18th century and introduced to China In the 1980s by the United States and Europe[1]. With the continuous improvement of living standards, it is increasingly popular in China, attracting more and more participants. Mountain outdoor sports venue is a sports group with adventure characteristics and adventure-experiencing characteristics, taking place in natural environment. As a branch of outdoor sports, mountain outdoor sports develop with a high speed [2]. At present, in China, the main events include China Baise International Mountain Outdoor Sports Challenge, Ninghai China Open mountain outdoor sports in, Wulong China International Open Mountain outdoor sports, Zunyi China International Invitational Mountain Outdoor Sports.

The Abu Dhabi International Adventure Challenge, sponsored by the Abu Dhabi Tourism Authority, occurs in Abu Dhabi the capital of UAE. This most influential event of this field is held in every December and its race group Committee is in France. This event includes variety of activities, including the desert orientation, mountain biking, cross-country hiking, and sea kayaking and adventure triathlon. In 2010, there are a total of 49 teams, 200 athletes. China sent Yang Jiayin, LiJun, Han Meng and QiRanran to participate in the competition. These teams represent the world's top levels of mountain outdoor sports. Therefore,

the analysis and study on the results of them is of great importance, by which we may improve our training methods and performances.

2. Study objects and methods

A. Study objects

In this paper, the results of the Chinese national team and other foreign teams in the 2010 Abu Dhabi Adventure Challenge sports are the study objects.

B. Research Methods

1). Interview method

surveys are conducted to the 15 members in China's two international mountain outdoor sports teams (team 1 and team 2) of the 2010 Abu Dhabi Adventure Challenge (5 national athlete-class athletes, 4 first class athletes, 6 two class athletes), and interviewees include the five coaches (three senior , 1 middle, 1 junior). These activities provide first-hand information for writing the paper.

2). The documentation method

Through access to National Library of China, Beijing Sport University Library, the Chinese How Net and the related books, papers, periodical, a variety of electronic documents and other relevant literatures, we read the results of the past games and have a systematic inspection .

3). *Mathematical statistics method*

The statistical software spss13.0 is used to analyze the results of Chinese national team in 2010 Abu Dhabi International Mountain Outdoor Adventure Challenge, and which is compared with the top six foreign teams. This provides reliable data for the paper.

3. Results and Analysis

2010 Abu Dhabi Adventure Challenge International is divided into four days schedule, nine sections, with a total distance of 429.1 kilometers [3]. first day, three sections, including adventure triathlon 20 kilometers (kayak adventure triathlon, running and swimming), mountain bike 30 kilometers and running 6.3kms. In the second, mountain biking 20 kilometers, climbing and rope skills 9.8 kilometers. In the third day, mountain bike 94 kilometers and desert orientation 121 kilometers. In the fourth day, sea kayaking competition 128 kilometers.

According to the characteristics of events, this paper will divide this competition into four categories for statistical analysis, 1 on foot categories (including running, desert orientation, etc.), 2 Bicycle categories, 3 water sports (including boating, swimming, sea canoeing, etc.) and 4 climbing categories.

A. Analysis of the proportion of each project

The game is based on the length of time to complete all the activities. Shorter time means better result. Therefore, the length of time represents the proportion of the activity in the whole game.

Chinese team finished the tournament with 56 hours and 55 minutes (that is 3415 minutes). After classification statistics: 1 (foot categories) 2240 minutes, 2 (Bicycle categories) 451 minutes, 3 (water sports) 409 minutes, 4 (climbing categories) 315 minutes.

It can be seen from the figure, in the Abu Dhabi International adventure challenge race, climbing takes a smaller proportion, bike and water sports have almost equal proportion, the largest proportion is occupied by foot categories (66%). Therefore, strengthening the foot categories is the breakthrough to improve the performance of Chinese national team.

B. Analysis of comparison of Chinese and foreign athletic performance

After classifying and calculating the achievement of the competition, we get the average time used by the six top teams in the competition shown in Figure 2:

Figure 2: Result of the 6 top teams (minute)

teams	foot	bike	water	climb
Thule Adv team	1796	363	332	254
Thule Adv team (EU)	1853	369	342	263

Wenger	1858	390	368	256
Adidas Terex	1815	432	379	278
Team net competence	1953	390	344	270
Orion adventure	1928	415	358	294
Average time	1867	393	354	269

The following is the comparison between the time used by Chinese team 1 and the average time of the 6 top teams

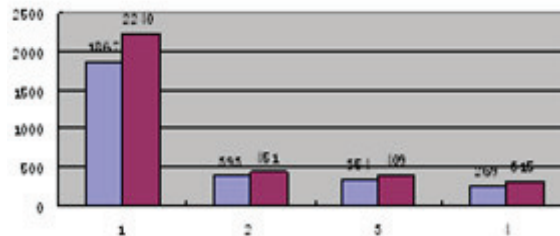


Figure 3

As can be seen from Figure 3, the time Chinese team complete all types of sports spent is longer than the average time of the six top teams, which shows the general levels of China mountain outdoor sports is lower than the average level of the top six teams.

In addition, the Chinese team have the largest gap with the top six teams in 1 (foot activities), 373 minutes longer; 2 (Bicycle Project) 58 minutes longer and 3 (water sports) 55 minutes longer. The difference in 4 (class sport climbing) is smallest, 46 minutes longer.

C. Rate analysis on the ratio of athletic performance Gap between china and foreign countries

In this paper, the differential ratio is the one between the absolute result difference and the result of the team.

The greater the differential ratio is, the bigger the athletic difference is. Meanwhile, the poorer the performance is, the larger the potential is. Thus, more training is needed. The differential ratio between Chinese team and the top 6:

Figure 4 The differential ratio between Chinese team and the top 6

activities	china	average of top 6	difference	ratio
foot	2240	1867	373	16.65%
bike	451	393	58	12.86%
water	409	354	55	13.45%
climb	315	269	46	14.60%

It can be seen from the figure; the Chinese team has the greatest ratio in foot activities, 16.65%; in descending order, climbing sports, 14.60%; water sports, 13.45%; bicycle sports, 12.86%. This shows that Chinese foot mountain outdoor sports teams have the biggest improvement room in foot and climbing activities.

D. index analysis on Potential contribution of each sport

In analyzing this mountain outdoor sports formed by a number of mixed-type sports, the involving consideration elements include the proportion of different activity to the whole game, result difference, differential ratio. The result difference and the proportion deserves systemically and synthetic consideration and research. Therefore, the term index of potential contribution of each sport is used. It is the product of multiplication between the absolute result difference and the proportion of this activity.

The greater the contribution index is, the greater the potential to improve it is ; vice the verse. The following is the contribution index of the Chinese team:

Table 5 Contribution index

activity	result difference	proportion	index
foot	373	66%	246.18
bike	58	13%	7.54
water	55	12%	6.60
climb	46	9%	4.14

It can be seen from Figure 5, to improve athletic performance in the entire game, the most potential project is foot activities, and bicycle follows. Therefore, in order to make a breakthrough in Abu Dhabi Mountain outdoor adventure challenge, focus should be on strengthening the training in foot and bicycle activities.

E. Multivariate analysis of China's mountain outdoor sports scores

In 2010 Abu Dhabi Adventure Challenge International, the Chinese team 1 got thirteenth place which is a historic breakthrough. But, compared with the top six teams, the Chinese team has a huge gap, no matter in foot, bicycle, water sports or mountaineering activities. Based on the data analysis in this paper , the survey on the members in Chinese national team, such as YangJiayin, LiJun, Han-Meng, and the interviews with the coaches, it is not so hard to find out the factors affecting China's mountains outdoor athletic performance.

5. Factors factor influencing the achievement of mountain outdoor sports

A. Physical factors influencing the achievement of mountain outdoor sports

Mountain outdoor games are physically dominant, which requires athletes' good physical function as a basis. Look at this game, the top six teams respectively come from New Zealand, France, Switzerland, United Kingdom, Sweden and New Zealand. New Zealand are Oceania, other European countries are all European countries. From the physical point of view the athletes from the Europe are absolutely stronger than those from Asia. In the world's top

mountain outdoor game like Abu Dhabi International Adventure Challenge, athletes need higher requirements on physical fitness. Therefore, Asian athletes have a very long way to go in such kind of international competitions.

B. Experience factor influencing the achievement of mountain outdoor sports

2010 is the second participating year for china in the Abu Dhabi International Adventure Challenge. Among the Players in team 1, QiRanran (female) is the only experienced member; the other 3 were all first participants. They suffer from time difference, diet change, setting change, the lack of experiences about energy distribution and so on.

C. Equipment factor influencing the achievement of mountain outdoor sports

In any Mountain outdoor sports games, athletes compete not only about the physical function, techniques and tactics, it also require fine equipment and other guarantee. Compared with the foreign athletes' high-tech and advanced equipment, our team is poor. Therefore, the equipment and packing are also factors influencing Chinese outdoor athletic results.

D. Organizational factors influencing the achievement of mountain outdoor sports

Chinese outdoor team is new, receiving training just more than a month, which caused the lack of effective technical teamwork. For example, in water sports, team members did receive swimming and rowing (canoe) training, but they did not have enough time for sea kayaking (Sea kayaking) training, rowing and kayaking. Though they all belong to the water sports, but in the technical points they are different.

E. Other factors influencing the achievement of mountain outdoor sports

In addition to the 4 factors above, some other factors may also work, such as weather, setting arrangement, and structure of a team. In 2010 Abu Dhabi International Adventure Challenge, Chinese team was punished to stop for 6 hours due to one miss of a destination caused by our careless calculating, which is a significant reason for the failure this year.

6. Conclusions and recommendations

Through the survey it indicates that the level of China's mountain outdoor adventure sports teams is obviously lower than the top 6 teams in Abu Dhabi International Challenge race. How to increase Chinese athletes 'physical fitness in a not long time is the major problem.

From the result comparison between China and the top six teams, we find that: among all the games, China is obviously weaker in activities of foot and bicycle categories,

so our daily competition or training should focus on these fields.

mountain outdoor sports require high-standard physical fitness and equipment. so China should increase investment. At the same time, our mountain outdoor teams should also actively raise funds from market, drawing social capital, providing and updating equipment and other packing guarantee. Only in this way can we set up a scientific and efficient supporting system for our mountain outdoor sports.

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