Analysis of Developing Status and Recommendations of Internet Sports-Apps in the context of National Fitness

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Abstract: *After a period of rapid economic development, China has become the world's second-largest economy after the 21st century. Meanwhile, the proportion of the Internet industry in China has taken the lead. In the context of National Fitness, the internet Sports-Apps in mobile phones has become an important role for the National Fitness Program. Sports-Apps can be used as fitness exercise assistance and guide the public to exercise rationally, and the convenience of fitness recording has gradually made them popular among the markets. The amount of Sports-Apps on the internet is large and their function, user characteristics, as well as exercise experience are various. Based on the background of National Fitness, a social survey has been used to collect the user characteristics and practical exercise experience of Sports-Apps in this article, then the users of Sports-Apps were analyzed through SPSS and Excel. Exploring the users' stratification characteristics and their psychological state is beneficial for the targeted optimization of Sports-Apps. Combining social survey with data analysis, this article aims to realize the users participating and the using status of Sports-Apps, organize and provide recommendations for Sports-Apps developers and optimize their service quality so that the sustainable development of the whole market can be reached.*

Keywords: *National Fitness, Sports-Apps, developing status, recommendations*

1. Introduction

Due to improved civic life standard and national emphasis on the National Fitness Program, the public in China has paid more attention to sports and health. With the development of internet technology, Sports-Apps have appeared. From original simple picture or video guidance to targeted guidance based on user data collection and analysis today, Sports-Apps in China place a high value on user data analysis. Targeted, personalized and customized services by collecting user data have become the future development trend of Sports-Apps.

2. Analysis of status and usage state of Sports-Apps

2.1 Common types and features of Sports-Apps

According to Chinanews' Sports-Apps download ranking list (2018-2019), the five most popular Sports-Apps are Mi Fit, Joyrun, Keep, Codoon and Ledongli. The following is the analysis of features and basic usage state among these five Sports-Apps.

Mi Fit was launched by Xiaomi Company and can monitor user's health data by hardware equipment such as Mi Band and Electronic balance. The users can synchronize their steps, weight, sleep status, and other aspects to mobile phones according to the connection with Mi Fit. After the analysis and monitoring of user-health data, the fitness guidance will be provided, which includes sleep planning, healthy diet, and so on.

Joyrun is a Sports-App with the market positioning of "social running". Its highlight is the online marathon, which possesses superior user experiences during the whole process and has an excellent anti-cheating system. The well-designed online marathon medal is the reason why fans of Joyrun have been loyal to their products all the time. In the meantime, the sports services and sports experience provided by the products in offline events received a lot of high remarks from running fans.

As for Keep, the most suitable courses for the users can be pushed according to their basic

information, thus, it's very easy for novice users to learn with this App. Moreover, there will be new courses every week and DIY content for advanced fitness users. Another key content is various online community platforms within the App, in which users can see a lot of fitness experts, coaches and follow their fitness status, which may also effectively motivate users to exercise; there are also many articles about fitness in Keep, which can help to popularize all kinds of knowledge about fitness.

By understanding the features of different Sports-Apps, sports and fitness services provided by the Internet can be classified: Sports-Apps for fitness guidance, sports monitoring as well as fitness and life services. The fitness guidance Sports-Apps mainly provide services by delivering fitness methods, knowledge or plans to users through videos, pictures and texts via the Internet. Their targets are fitness groups of different physique and age, there are even exercise and fitness programs for chronic patients; Sports monitoring Sports-Apps mostly work on statistical collection and analysis of the whole exercise process of users in different fitness periods, including the detection of physical fitness, heart rate and other indexes; Fitness and life servicing Sports-Apps provide users with various online information such as the opening time, projects, charges of fitness centers and personal qualifications of fitness coaches through the Internet, which can help users get in touch with the local fitness information in time, and offer promotion channels for offline fitness service providers as well.

2.2 Analysis of Sports-Apps usage status

According to figure 1, the average frequency of using Sports-Apps of users per month is 15 to 25 times, which takes a proportion of 65%. The frequency of 5 to 15 times accounts for 27%. Only 8% of the users use Sports-Apps to exercise no more than five times per month. According to these numbers, the user's usage status of Sports-Apps is in an optimistic situation, and most users can do relatively better exercise with the assistance of Sports-Apps.
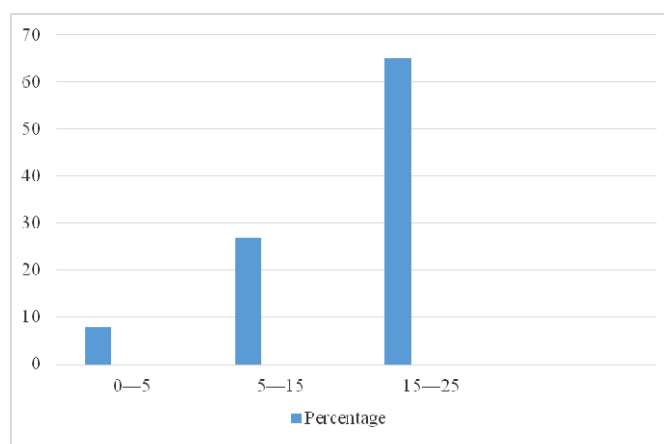

Figure. 1 Percentage of using frequencies of Sports-Apps of the users

Table 1 The usage purpose and corresponding frequency percentage of users using Sports-Apps

Purpose	Frequency	Percentage
Physical fitness	181	90.5%
Leisure life	124	62%
Get together with friends	56	28%
Others	2	1%

In the face of increasing pressure from life and work, more and more people start to focus on body and fitness regulation. This survey has selected the using purposes and frequencies of three common Sports-Apps. It can be seen from table 1 that users begin to pay attention to their physical quality and emotional adjustment, for this reason, the two categories "Physical fitness" and "Leisure life" account for the two largest proportions for the users, which are 90.5% and 62%. By contrast, only a small proportion of users use Sports-Apps for jogging or having a walk with friends.

2.3 Analysis of user characteristics and usage status of Sports-Apps

2.3.1 Download amount of Sports-Apps

Comprehensive statistics of the downloads of common Sports-Apps: Download amount can be an

indirect indicator of App usage situation. Mi Fit, which has been downloaded 2 million times, has taken the first place. Following by Keep with 1.6 million times of downloading and Codoon with 1.5 million downloads. In fourth place on the list was Ledongli, which had a download amount of 1 million.

2.3.2 Various user characteristics and usage status by users of different genders

The object of this social survey was the users of different Sports-Apps. Among the 200 questionnaires which have been effectively received, 11 respondents filled in the option of "no experience of using Sports-Apps", accounting for 5.5% of the total. 194 respondents had experience using Sports-Apps with a proportion of 94.5%.

Table 2 Situation of whether the user has experience of using Sports-Apps

	Frequency	Percentage
Experience in use	189	94.5%
No experience	11	5.5%
Total	200	100%

Table 3 Contingency table of Sports-Apps usage state by users of different genders

	Sports-Apps using experience		
	Yes	No	Total
Female	132	4	136
Male	57	7	64
Total	189	11	200

As shown in Table 3, 57 male respondents in this investigation have used Sports-Apps, which accounts for 28.5% of the total users with Sports-Apps experience, the rest are 132 women with a proportion of 66%. Seven male respondents had no experience using sports apps. Through this social survey, it can be found that the proportion of female users using Sports-Apps is higher than that of male users. In addition, it was found in the survey that the Sports-Apps which are targeted on female health and body shaping, as well as weight reduction, are far more than male. Moreover, fitness teaching, weight loss exercises and other applications for women are flooded with Sports-Apps download list.

2.3.3 Various user characteristics and usage status by users of different ages

Table 4 Sports-Apps usage state by users of different ages

Ages	10-20	20-30	30-40	40-50	50 and above
Percentage	10.5%	29%	13%	32.5%	15%

According to the table above, the users with ages from 40 to 50 have used Sports-Apps more often among 200 respondents in total, which takes a proportion of 36%. The second place is taken by 20- to 30-year-olds at 29 percent. Compared with these two categories, the percentage of users aged 10-20 using Sports-Apps is the lowest, which is 10.5 percent. As shown in this investigation, 40- to 50-year-old users are used to exercising more frequently as they had more free time and can arrange more exercise or fitness activities, at the same time have relatively higher frequency of using Sports-Apps; whereas for young people between 30 and 40 years old, in spite of being more willing to experience and explore new things, due to the high pressure of working, they have rarely used Sports-Apps or done sports. For this reason, the proportion of this category was only 13%. Their age characteristics have reduced the demand for Sports-Apps.

Table 5 Contingency table of Sports-Apps usage state by users of different ages

		Sports-Apps using frequency per month				
		0	5 times and below	10 to 15 times	15 times and above	Total
	10-20	5	6	5	5	21
	20-30	1	10	25	22	58
Age group	30-40	1	6	13	6	26
	40-50	1	11	23	30	65
	50 and above	3	5	12	10	30
	Total	11	38	78	73	200

As can be seen from table 5, the frequency distribution results have been calculated through cross-over analysis of age groups and monthly frequency of using Sports-Apps. The test result shows

that the P-value of age groups of 20-30 and 30-40 is clearly larger than significance level 0.05, which means there's no difference in distribution of these two groups' monthly frequencies. Moreover, it can also be found that the age groups of 10-20, 50 and above do not use Sports-Apps very often.

2.3.4 Various user characteristics and usage status by users of different income levels

Table 6 Percentage of different income levels

Living expenses（Yuan）	Frequency	Percentage
Below 2,000	10	5%
2,000-4,000	47	23.5%
4,000-6,000	76	38%
6,000-8,000	59	29.5%
10,000 and above	8	4%

Table 6 illustrates that 76 of the total 200 respondents have a living expense level from 4,000-6,000 yuan with a proportion of 38%; there are 59 respondents whose living expenses are between 6,000-8,000 yuan, which is 29.5%. Users with living expenses below 2,000 yuan and above 10,000 yuan are a minority, accounting for 5% and 4% respectively. It is clear that the largest part of living expenses levels of the investigators is from 2,000 to 8,000 yuan.

Table 7 Corresponding table of income range, user characteristics and usage state of Sports-Apps

Life expenses range (Yuan)	User's monthly average usage frequency of Sports-Apps				
	0	5 times and below	10-15 times	15 times and above	Total
Below 2,000	2	4	1	1	8
2,000-4,000	4	10	14	19	47
4,000-6,000	1	17	38	17	73
6,000-8,000	2	7	23	32	64
10,000 and above	2	0	2	4	8
Total	11	38	78	73	200

After the correspondence analysis of income levels and monthly average usage frequency, it can be found that unlike the income group above 10,000 yuan, people whose income level is below 2,000 yuan have barely used Sports-Apps as a result of the low income, not to mention that they generally have more stresses in work and daily life, their demands are mainly on recreation and the higher salary, therefore, they are not willing to pay more attention to exercise nor using Sports-Apps. According to this survey, the respondents who use Sports-Apps more frequently are mostly concentrated in the large income group of 2,000-8,000 yuan. With relatively high income level and more free time for recreation as well as their focus on Sports-Apps' abundant functions and characteristics of close to daily life, they usually pay more attention to Sports-Apps on mobile phones and combine the functions with their lives.

2.4 Psychological characteristics of users using Sports-Apps in the context of the Internet era

2.4.1 Advocating personality and following the trend impulsively

Most Sports-Apps potential users prefer to present their personalities and wish to be out of the ordinary. Compared to traditional sports modes in the past, scientific customization according to sports data and personal physical fitness can be achieved thanks to the convenience of the internet and scientific analyzing methods. As long as personal data such as height and weight has been entered into Sports-Apps' platforms, plenty of fitness information and suggestions can be provided and freely chosen. In the meantime, internet data analysis nowadays is a focus of Sports-Apps, with that the users' personalities can be clearly expressed. Therefore, Sports-Apps greatly meet the psychological needs of users in the Internet + era.

According to the survey, more than 50% of the total respondents will follow their friends or the current trend to download Sports-Apps impulsively on account of seeing others using the Apps to analyze sports data under the background of the internet era. Thus, it can be seen that quite a lot of exercisers can not resist the temptation of new things and download Sports-Apps blindly which may not meet their actual exercise needs.

2.4.2 Comparing mentality about fitness statistics

After using the Apps for everyday exercise, the sports amount of the others and ranking lists will be shown for the investigated users of Sports-Apps, which may lead to a comparing mentality and encourage users to appear on the list. Even though using the Apps is personal behavior, however, it can be very easy to be affected by others. Exercisers nowadays live in social groups, everyone's data will be analyzed in the Internet era and the actions will influence each other. Virtually, there will be envy or even jealousy psychology. In this case, the users are keen on comparing with others but ignore their actual exercise needs, even blindly take overload exercise for psychological satisfaction.

2.4.3 Psychology of chasing convenience and efficiency

On the basis of former information, convenience and efficiency are the main reasons for users using Sports-Apps. Once the users bring the mobile phones or other wearable devices with them, Sports-Apps are capable of recording exercise and fitness data at any time, then convert the data to specific distance traveled and calorie consumption, which offer the users the most intuitive sense. According to the survey, more than 90% of Sports-Apps with functions of pictures, audio and videos have greatly optimized the interaction between humans and machines, and provided huge convenience for the users to exercise through these Apps. Nowadays, the sports areas are generally located in every corner of the city.

3. Conclusions and recommendations of the development of Sports-Apps

3.1 Conclusions

In the context of National Fitness, using Sports-Apps for exercisers is an indispensable and brand new way of exercise. Based on users data analysis results of the social survey, it can be concluded that:

Firstly, the monthly average frequencies of exercisers using Sports-Apps are in the range of 15-20 times, and most of exercising purposes are to get physical fitness and leisure life. Among the investigators, the most common reason for using Sports-Apps is they own complete functions and features such as close to everyday life as well as accurate measurements, which can meet their fitness needs. Besides, they can provide personal customization.

Secondly, according to the investigation of Sports-Apps using behavior's diversity from the perspective of different genders, ages and income levels, it can be summarized that different genders have obvious disparate using frequency of Sports-Apps, among them, the number of female respondents who use Sports-Apps accounts for a large proportion. Furthermore, different age groups also have a relatively large effect on the frequency of using the Apps, the age groups below 20 and above 50 barely use them. In addition, it can be seen that exercisers with higher income use Sports-Apps more often.

Thirdly, from the survey data, it is found that most exercisers tend to download the Apps emotionally and use them unreasonably. Part of the users accomplish exercise tasks perfunctorily only because of the red packets offered by Sports-Apps.

3.2 Recommendations

In summary, there are still several shortcomings of Sports-Apps such as serious content homogenization, female-oriented design, inaccurate data collection and so on. It is recommended that the entire platform of Sports-Apps should be improved and the supervision should be strengthened. With combined efforts by the government, operators and users, some of the Apps whose scores are too low or who break rules to get high scores need to be punished. In regard to the development of Sports-Apps, production design requires advice from professional sports teams. After rational designing, the apps could offer exercise modes to users in a reasonable and professional way. In the meantime, Sports-Apps should improve service level and extend functions, so that users can use them more conveniently and smoothly. The operators need to constantly accept the views of exercisers, continually innovate and update functions to build a healthy business cycle. They could also integrate Sports-Apps with other games and music apps through the utilization of fitness exercise characteristics, so as to meet the needs of users of different ages or exercise methods. Sports-Apps are gradually becoming something that most exercisers cannot live without, therefore considering the impacts of environments, it is necessary for the apps platforms to actively lead the exercisers to establish the

awareness of healthy exercise and find out the most suitable as well as the best exercise way. In addition, the ability of Internet operating and confidence of online sports of private or group users should be enhanced.

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