

Analysis of Low User Retention Rate of Fitness Technology Platforms

Mohan Liu^{1,a,*,\dagger}, Yan Wang^{2,\dagger} and Yutong Wang^{3,\dagger}

¹Beijing Jiaotong University, Beijing, 100000, China

²Liaoning Normal University, Dalian, 116029, China

³University of Electronic Science and Technology of China, Chengdu, 611731, China

a. 20711094@bjtu.edu.cn

*corresponding author

\daggerThese authors contributed equally.

Abstract: This study aims to investigate the reasons for low user retention on online fitness technology App platforms and to give recommendations. Through data collection and analysis, the study concludes that the main reasons for the low user retention rate of online fitness technology App platforms are the impact of video platforms, the lack of functional differences in the App itself, the single incentive approach of the App platform, the free content diversion of the App itself and the poor ecology of the platform. Given the limited target users and low user potential of such App platforms, this study makes the following recommendations: Development of Differential Functions to Promote Heterogeneous Competition, Extension of Equipment Chains to Improve Industry Ecology, Introduction of Fitness Celebrities to Incite User Emotions, and Integration of Fragmented Courses to Stimulate Cashback Psychology.

Keywords: online fitness App, user retention, video platform impact

1. Introduction

As people become more aware of fitness, healthy living has become a new pursuit, but most people need to meet traditional fitness models' time and space constraints. In the face of this challenge, fitness apps are cleverly designed to fragment fitness plans to bring users a more professional and convenient exercise experience. The industry has also seen the emergence of many sports and health apps with high portability and social interaction, leading the way to a new healthy lifestyle such as Keep and Yueting. Although the number of registered users of fitness and sports platforms such as Keep is increasing, and even the number of registered users of Keep has reached 300 million, the retention rate of users of various fitness and sports platforms is not optimistic. According to Questmobile, the 180-day user retention rate of fitness technology internet platforms in 2021 is less than 40% on average, the retention rate of users of Keep is less than 10%, and the per capita daily usage time of active users of fitness technology companies such as Keep is less than 20 minutes [1].

The above data suggests that most fitness technology app platforms do not have a positive user retention rate, which undoubtedly affects the continued profitability of the media. The study will analyze and explain the reasons for the low user retention rate of fitness and exercise online platforms

in five areas and make four sound recommendations to help such online fitness and exercise online platforms strengthen their user stickiness to improve such problems.

2. Literature Review

Since the rise of the “Internet+Sport” wave, research on the retention rate of users of fitness and sports technology platforms has received much attention, and many research results have been achieved.

From the perspective of platform design, Wang et al. used questionnaires and data analysis methods. They concluded that the functions of various platforms are seriously similar to each other, making it challenging to form user stickiness [2]. Che et al. used the literature, questionnaire survey, and mathematical statistics method to investigate and analyze college students’ use of sports APPs. They concluded that sports platforms should upgrade their functions according to users’ needs to improve user retention rate [3]. It is clear from the above that platform function design significantly impacts user retention in fitness platforms. Zhai conducted a study on the factors influencing the information posting behavior of users of the Keep platform UGC community by constructing a model method and data analysis and concluded that interpersonal interaction, users, environmental influence, and image management factors significantly and positively influenced users’ information posting behavior [4]. Chen et al. investigated users’ willingness to continue using fitness APPs. They proposed three strategies to promote the long-term retention of such APP users: improving community construction, optimizing the community atmosphere, and providing ways for users to achieve self-efficacy. The study proves the vital importance of community building for fitness exercise platforms [5].

In response to the development of the online fitness industry, Zhu et al. investigated the direction of change in the diversification and flexibility of the fitness industry’s business practices in the context of IoT-enabled innovative fitness through the literature method and logical analysis. They pointed out that the online fitness market has gradually formed a closed-loop business development path with three significant sections of online fitness membership and fitness content, intelligent fitness equipment, and supporting sports products complementing each other [6]. While the online fitness industry has excellent potential for development, it also faces a real dilemma. Using the PEST model, Tian analyzed that the online fitness industry in the post-epidemic period, despite the positive development trend of a surge in user volume, still faces problems such as more significant security risks of user data privacy, serious homogenization of course content and operation modes, lack of scientific fitness awareness among some members of the public, and low penetration of intelligent fitness equipment and devices [7].

To address the online fitness app construction issue, Liu et al. used users participating in online fitness communities as a research sample and constructed a path model of the influence of user interaction on value co-creation behavior. They pointed out that online fitness platforms should focus on four interaction behaviors that significantly impact value co-creation: "help, socialization, helping and feedback" [8]. Lu et al. analyze the characteristics of fitness users and the stages of fitness behavior, pointing out that applying gamification thinking and design to the fitness field can awaken and stimulate users’ motivation to work out, which in turn can change their fitness behavior and increase their participation in fitness [9].

Wang et al. took the MOOC platform as the research object and constructed a research model of factors influencing user stickiness behavior of online courses based on rooting theory. It points out that user stickiness psychological awareness, behavioral guarantee mechanism, behavioral incentive mechanism, and behavioral cost are the four main factors affecting user stickiness behavior. Among them, user stickiness and psychological awareness is the antecedent factor, while the other factors are external contextual factors [10]. Based on the empirical analysis of the questionnaire, Li et al. concluded that there is a robust positive causal relationship between consumption upgrading and user stickiness. Therefore, to seize the opportunity for consumer upgrading, companies should focus on

improving product quality and developing targeted marketing programs to enhance user stickiness [11].

As the above analysis shows, issues related to platform operations have been well researched, but more needs to be done on the user market, especially on user stickiness and retention.

3. Analysis of the Causes

3.1. Impact of Video Platforms

The impact of the various video platforms emerging in China on online fitness and sports platforms is enormous. This section will discuss the different effects of video platforms on fitness and sports online. According to data from the Hua Jing Industry Research Institute, in April 2021, 41.2% of heavy fitness users in China were using short video platforms to obtain sports and fitness-related information, while sports and fitness platforms accounted for 22.8% (Source: IFC). According to the data provided by SevenMarkets, in IOS, the total proportion of the bidding term "exercise punch card" appearing in Tik Tok, Xiaohongshu, and Bilibili video platforms reached 27%, while the online exercise and fitness platform Keep, which is dedicated to exercise punch card, only had 5%. These show that the fitness content carried by video platforms in recent years has significantly impacted and squeezed the traditional online exercise and fitness platforms.

As shown in Fig. 1, the average number of daily active users of various video platforms in China is significantly larger than the average number of daily active users of different online fitness platforms in China. According to Huachuang Securities, in 2022, the average number of daily active users on Chinese video platforms such as Jieyin and Crypto had reached over 20,000,000, while the most downloaded online fitness and exercise platform, Keep, only had 2.87 million.

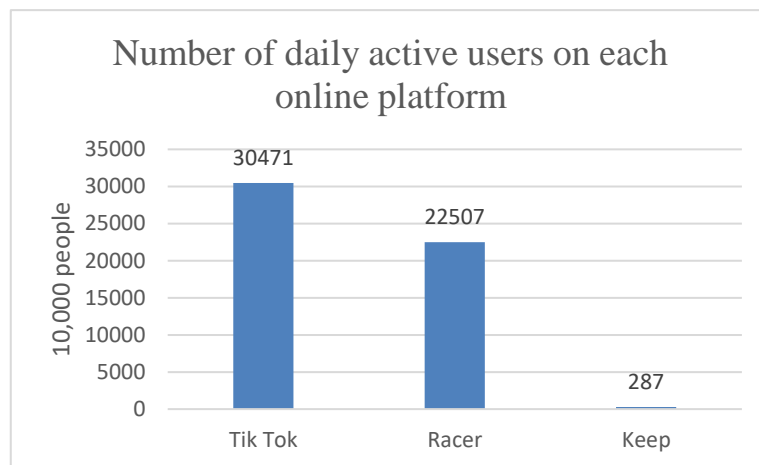


Figure 1: The average number of daily active users across online platforms in 2022 (Source: Quest mobile, Huachuang Securities).

With more potential users, free exercise and fitness content in video platforms such as Tik Tok and Crypto is more likely to be noticed. While online sports and fitness platforms take Keep as an example. However, Keep's fitness content is more purposeful and professional, Keep's paid courses exclude some potential intended users, and the quantity and quality of Keep's free content are low. According to data from Huaxi Securities Research Institute, the membership conversion rate of Keep in 2021 is only 9.55%, which means that only 9.55% of users may enjoy better quality in Keep than other short-form video platforms. The other part of the general users failed to meet their expectations of the professionalism and functionality of online exercise and fitness platforms after comparing the

free fitness content of short video platforms, which is an important reason for their severe user attrition.

In addition to the loss of users due to direct competition from similar content, various video platforms for online sports and fitness platforms also have their tendency to be addictive [12], which leads to people's spare time being squeezed out and thus reducing the time spent on online fitness and sports platforms or even giving up on online fitness and sports platforms for exercise. This can also significantly lose users of such online fitness and exercise platforms.

3.2. Lack of Functional Differences, Simple Community Functions

With the rise of the trend of national sports since 2016, China's online fitness platform market has been almost saturated. Moreover, the homogeneity of various platforms is serious, which is one of the direct reasons for the low retention rate of online fitness platform users. Operational experience is the main factor affecting the number and stickiness of users [2], and comparing the main functions of Keep with the same type of online fitness platforms - Yuedong Circle and Codoon. The results are shown in Table 1. The functional differences between the three platforms are not noticeable, and the substitution between the three is vital. Differentiation is a positioning strategy, and the platform can easily be replaced if competitive barriers cannot be established. Therefore, low functional differentiation will lead to low user retention in this market with many online fitness platforms. It may be just because of the lack of memory space on the mobile phone or the user's mood. Some users will uninstall this APP or switch to other similar alternative apps.

Table 1. Display of the main functions of Keep, Yuedong Circle, and Codoon

Keep	Yuedong Circle	Codoon
Exercise Instruction Courses	Fitness Videos	Exercise Classes
Exercise Data	Exercise Data	Exercise Data
Customised slimming programmes	Scientific Exercise Plan	Exercise Plan Follow-Up
Keep Mall	Yueding Mall	Store
Social section	Social Circles	Exercise Circles
Sports Challenges	Sports Challenges	Sports Events
Live Sports	Sports bonuses	Live Sports
Plan a Diet		Sports Equipment Reviews
Offline Gym		

Building communities is an effective way to improve long-term user retention. The platform community can drive user enthusiasm for engagement, which in turn can enhance user stickiness. Most of the online fitness platforms on the market have developed interactive communities allowing users to share their fitness achievements and experiences. However, under the premise that Keep already has many users, it must first consider the decline of interest in user information release [4]. The main content of the Keep community is the sharing of topics, graphics, or videos posted by users, which are essential functions and lack robust interactivity. Most of the recommended lists of friends are course designers or athletes who need to become more familiar with users and lack recommendations from users' life friends or people they may know. Only a few celebrities verified accounts, and the latest news of most stars is still a year or two ago. These phenomena show that the Keep community

still needs to achieve the role of driving user participation enthusiasm and enhancing user retention. There are such problems in communities of various online fitness platforms in the market, which do not play a role in increasing user stickiness.

3.3. Single Incentive Method, Weak User Motivation

Due to problems such as high course fees and weak demand interaction, the platform's single spiritual incentive cannot meet users' incentive needs at the material level, affecting users' long-term retention rate. Keep, as an Internet company, its product life cycle curve is similar to the traditional product life cycle curve as a whole [13]. Keep still needs to "recruit, retain, promote activation, and convert" users. The marketing operation expenses of Keep are incredibly high, mainly to build a large user base. Since its inception, Keep's number of registered users has exceeded 300 million, completing the platform and service model construction. The main task of Keep at present and in the future is to retain core users through platform operation and incentives.

As one of Keep's competitors, Yuedong Circle has launched the "Getting red envelopes from sports" activity as an incentive method; after 2 kilometers of exercise, you can get random red envelopes with an amount of 0.01-6.66 yuan. Faced with the problem of guiding user enthusiasm through the demand-side interaction mechanism, Yuedong Circle needs to adopt the traditional ladder demand response incentive mechanism [14]. It adopts the random red envelope method. This helps Yuedong Circle avoid the potentially high-cost risk under the ladder incentive mechanism and simultaneously mobilize user expectations through randomness, effectively achieving user incentive effects.

Currently, the incentive methods of Keep mainly focus on the spiritual field. Since 2016, Keep has successfully launched promotional videos such as Self-discipline Gives Me Freedom to establish a sense of brand belonging. It also provides users with visual data storage and sharing services to meet users' understanding of self-achievement. Furthermore, it sets up event medals with digital marketing to affirm user value. By contrast, Keep currently lacks direct material incentives, so it isn't easy to attract users with high elasticity of user stickiness and price-sensitive groups to continue using the software. Yuedong Circle can provide good inspiration for Keep in terms of material incentives.

3.4. Free Content Drainage, Poor Platform Ecology

The platform's free content can attract many light users to sign up; such users need more investment in fitness-supporting products. The sunk cost is low, resulting in more random user frequency and affecting user retention. Peloton is an American fitness technology company integrating media, technology, retail, and logistics. Indoor spinning bikes and home treadmills are its lap-breaking products. Each Peloton fitness equipment has a large display that monitors the user's exercise performance and provides real-time coaching from an online coach. Peloton uses cross-network externalities to bundle fitness equipment purchases with platform membership subscriptions, capturing consumer surplus and excluding potential competitors[15]. In a bundled subscription model, renewal stickiness is usually higher as long as the user agrees with the brand's quality of service. Peloton's hardware product drives its business model with a more than 90% user retention rate.

Compared with Peloton's hardware as the traffic method, Keep uses App content as the traffic entrance, which has a lower user threshold and poor user stickiness. Keep is a "free first, pay later" business model. In contrast, Peloton's online content is based on offline fitness equipment, which gives it an extremely high retention rate, with an average monthly net churn rate of only 0.79% and a 12-month user retention rate of 92%. Peloton uses hardware as the core incision, supplemented by online courses. Keep taking software as the core incision and gradually launches related hardware products based on traffic. The ecologic formed by the two is the same, but there is a big difference in

business focus and competitiveness, and the current conversion rate of Keep hardware products needs to be higher.

Keep's fitness equipment is outsourced, mainly using the OEM model and the core competitiveness of related products in general. The gross margin of Keep hardware is less than 40%, lower than the industry average. At the same time, Keep has limited control over third-party outsourcing partners, suppliers, and logistics service providers and may need more time to produce or obtain high-quality products in a timely and sufficient manner. Keep's critical task is improving the stability of the ecological products' supply chain and comprehensively improving the user retention rate by developing the fitness ecology and improving the cooperative relationship with outsourcing partners.

3.5. Limited Target Users, Small User Potential

Most of the users of online fitness platforms are light fitness users. Taking Keep as an example, most of the users of Keep are light fitness users. Due to the expensive offline gym or low willingness to consume, they use online platforms to provide free courses, fitness check-ins, and other exercise methods to meet their fitness needs cost-effectively. As shown in Fig.2, K1-K5 represents the system's difficulty, and the problem increases from 1 to 5. It can be seen that most Keep users only choose the lower level K1 and K2 courses, which also means that most of the Keep users are fitness novices. Most of these users have yet to develop a habit of online fitness. That is, they have yet to feel satisfied with the behavior of online fitness [16], and such users easily give up the fitness services provided by online fitness platforms. At the same time, most of these types of users download online fitness platforms due to freshness and have no long-term fitness plans, which is one of the main reasons for the low retention rate of online fitness users.

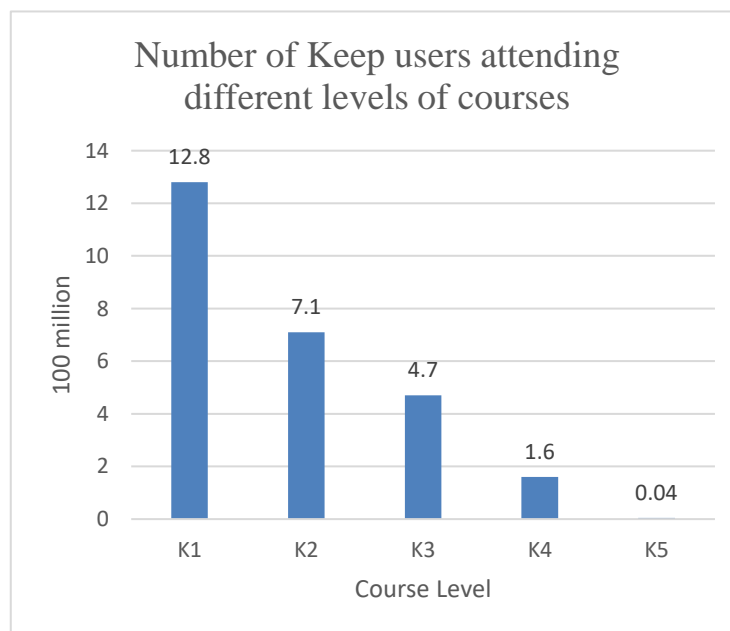


Figure 2: Number of participants in different levels of courses of Keep users. (Source: Guojin Securities Research Institute).

Second, most fitness novices are young. As shown in Fig.3, 74% of Keep's new registered users in 2021 are under 30. The daily habits of this group of people make it difficult to regularly use Keep for training and fitness, which also exacerbates the phenomenon of Keep's low retention rate.

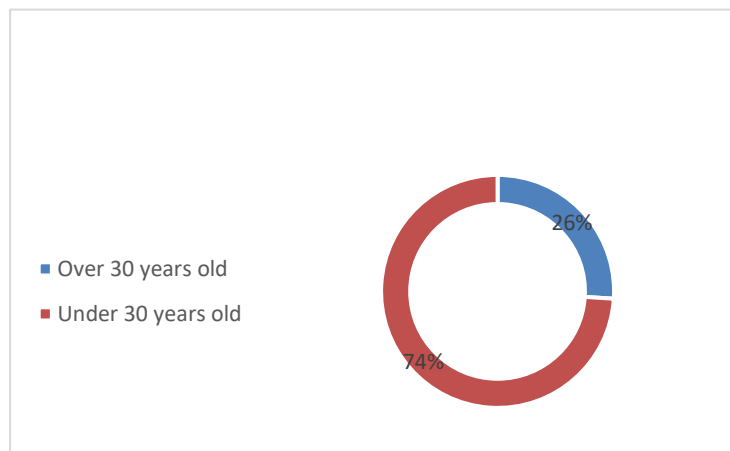


Figure 3: Age distribution of Keep's new registered users in 2021 (Source: Keep prospectus, GF Securities Development Research Center)

4. Suggestions

4.1. Development of Differential Functions to Promote Heterogeneous Competition

The first impression that a platform brings to users is crucial. Therefore, developers should position products precisely before developing a platform and avoid providing indistinctive functions with other similar platforms. Even for venues that have been put into use, e.g., Keep, they can continuously innovate and strengthen functional differentiation through the more profound perception of users' needs when faced with fierce competition, making themselves irreplaceable in the market and thus improving user retention rate. Each online fitness platform can also broaden its sports fields, no longer limited to the more common categories, e.g., running and cycling, to attract long-term retention of users in various areas.

4.2. Extension of Equipment Chains to Improve Industry Ecology

Quite several fitness users purchase related products before starting their fitness program, including large-scale fitness equipment, small-scale fitness equipment, and sportswear. Fitness equipment and online fitness platform are complementary products. The functions of fitness equipment, an external complementary product, are embedded in the platform's core, which can effectively enhance the stickiness of the platform [17]. Keep provides high-quality fitness ecological services, which is conducive to utilizing the complementary attributes of equipment and online courses to grow user stickiness.

Since 2017, Keep has launched intelligent hardware products and other fitness-related products, e.g., treadmills, spinning bikes, yoga mats, and smart bracelets. Keep has both yoga mats priced at tens of yuan and spinning bikes priced at 4999 yuan, which has low sales. It has yet to form an effective conversion of hundreds of millions of user traffic into purchases. Internet hardware enterprises, e.g., Huawei, Xiaomi, and Apple are all involved in online fitness equipment to create an intelligent fitness ecosystem. There still needs to be a considerable gap between Keep and such enterprises.

According to the feedback from some users of Keep Mall, Keep-related products have the problem of high prices and poor quality, which further damages its brand competitiveness and reputation. Keep's future focus on building a fitness ecosystem is to strengthen the construction of its brand, including intelligent fitness equipment, sportswear, and healthy stuff, continuously improve its brand competitiveness and product quality and create cost-effective products. After purchasing related

ecological products, consumers' demand for the Keep platform will be more significant, which can further enhance stickiness.

4.3. Introduction of Fitness Celebrities to Incite User Emotions

According to the data of Sinolink Securities, as shown in the fig 4, only 15.05% of users continue to use Keep because of their favorite KOL, which reflects that platform can reduce the loss of users by strengthening the introduction and cultivation of unique fitness celebrities. These fitness celebrities can drive consumers' pleasure and admiration and awaken emotions and trust, thus increasing users' willingness to recharge long-term members [18] and users' retention rate.

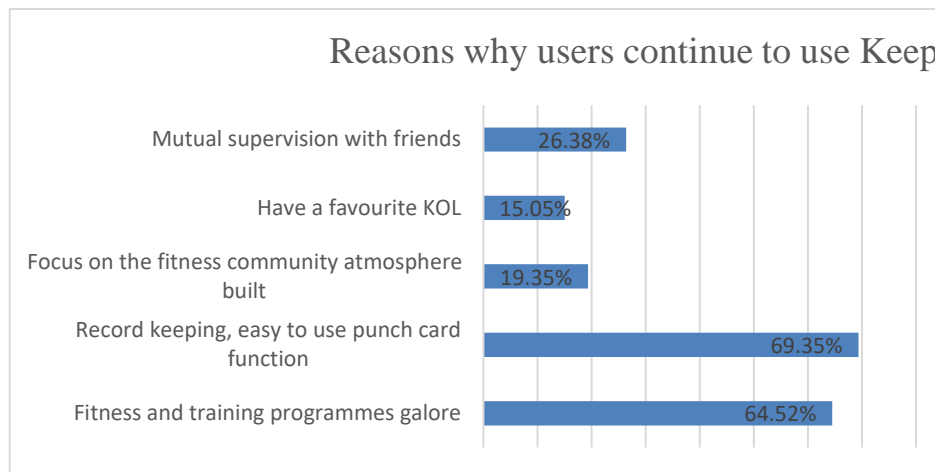


Figure 4: Top 5 reasons why users continue to use Keep as a percentage (Source: Grassroots Research, IFC Institute).

4.4. Integration of Fragmented Courses to Stimulate Cashback Psychology

The fitness industry has the particularity of “delayed gratification” and “initial enthusiasm”. The development experience of the online education industry with similar specificity can provide a reference for the online development of the fitness industry.

Taking an English online learning App as an example, some platforms consider that some learners are enthusiastic about learning and willing to pay in the early stage of course registration. However, they may still need to be more confident about high-priced courses. Platforms reduce users' price concerns using “full/partial cashback after clocking in during a certain period”. This is essentially similar to the “gambling psychology” of offline gymnasiums, i.e., gymnasiums “gamble” that consumers will less likely continue to Keep fit in the later period while consumers “gamble” that gymnasiums are large in scale or chain, which is less likely to collapse.

Keep can provide users with a sales incentive mode of “cashback after clocking in” by integrating rich curriculum resources and creating large-scale systematic courses. This model skillfully uses consumers' psychology to promote products and services by clocking in. Its uniqueness stabilizes the user group and enables the platform to obtain a large amount of liquidity to develop other business lines [19].

Under the integration of behavioral economics and psycho-economics, grasping the characteristic of “delayed gratification” is conducive to insight into consumers' psychological expectations and enhancing user stickiness [20]. Overall, Keep, as a platform combining traditional fitness with the Internet, can not only meet the spiritual incentive needs of users from the essential purpose of fitness but also meet the material incentive needs of users according to the particularity of fitness.

5. Conclusions

Using the mathematical statistics method, literature review method, and case analysis method as the primary research methods, this paper focuses on the problem of online fitness platforms' low user retention rate. It puts forward corresponding advice for the situation.

According to this paper, most online fitness platforms have seized the dividends of "Internet + Sports" and "Nationwide Fitness Program" in recent years, realizing the rapid development of enterprises and the extensive accumulation of users. However, its user base and retention rate have not been effectively converted, which has curbed the further growth of online fitness platforms.

Given such problems, this paper takes KEEP as an example to analyze the causes: Analysis of the reasons. Therefore, this paper puts forward corresponding suggestions: the development of differential functions to promote heterogeneous competition, an extension of equipment chains to improve industry ecology; the introduction of fitness celebrities to incite user emotions; integration of fragmented courses to stimulate cashback psychology. These suggestions are beneficial to KEEP's development and provide insights for other online fitness platforms to solve the problem of low user retention rates.

Low user stickiness is the pain point in the development of most online fitness platforms. By analyzing the reasons for the low retention rate of users on such platforms and putting forward corresponding suggestions, it is conducive to fully tapping the potential of fitness consumption, effectively realizing the growth of corporate profits, and vigorously promoting the development of the fitness industry.

This paper still has some limitations. The suggestions on improving the retention rate of users on the online fitness platform put forward in this paper are mainly proposed after analyzing the problems exposed during the bottleneck period of development. It takes time to test its rationality and effectiveness with the market for the effect and influence of its development. Future research should track the implementation and impact of the corresponding suggestions and verify them with user data.

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