

FINDING SPORTS DEMANDS OF THE HAPPY ELDERLY GROUPS IN TAIWAN AND IN CHINA SO AS TO EXPLORE BUSINESS OPPORTUNITIES

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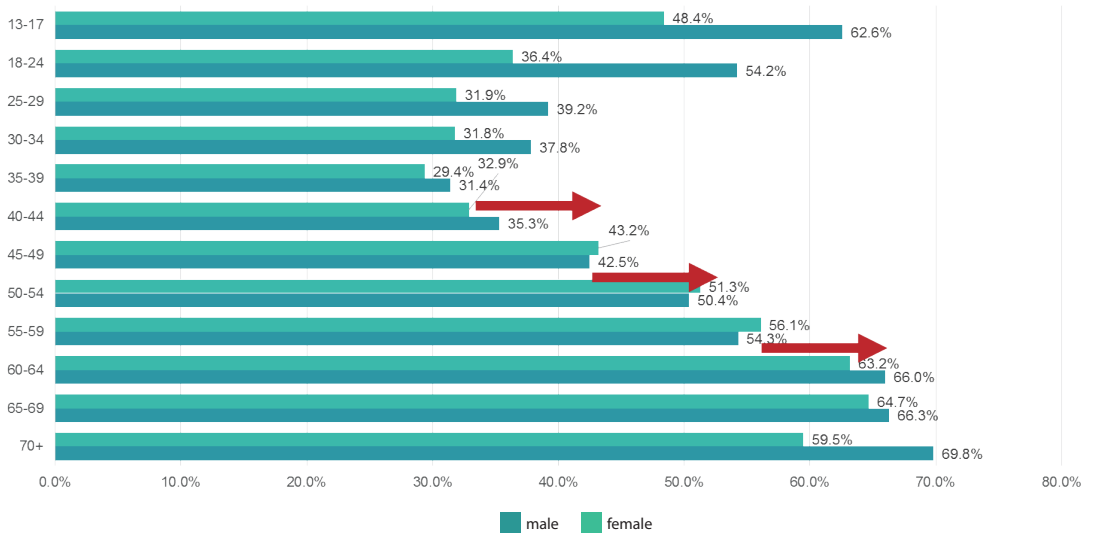
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If the birth rate cannot increase speedily in a short period of time, aging seems unavoidable in the society of Taiwan. According to the Population Projection for R.O.C. (Taiwan), Taiwan, since 1993, has already become an aging society, that is, more than 7% of Taiwan total population above 65 years old. As estimated, its aging population will double in 2018. In other words, more than 14% of the population is above 65 years old. Then, Taiwan will be officially an aged society. Compared the developed countries, the aging population grows much faster in Taiwan.

Industrial Economics and Knowledge Center under

Industrial Technology Research Institute, briefed as IEK, has conducted a wide-ranged survey biannual from 2010 onwards about the lifestyle and trends of the seniors in Taiwan and in China. The surveys are conducted in 6 cities in China including Beijing, Shanghai, Guangzhou, Wuhan, Chongqing and Chengdu as well as 3 cities in Taiwan containing Greater Taipei City, Taichung and Kaohsiung. There are more 600 effective samples each every above-mentioned city. The interviewee is between 50 to 75 years old, the middle aged and the elderly who have a middle or high monthly family income.

Nowadays, the healthy elderly with a middle-or-high income lead a lifestyle unlike the stereotype which the



Source from Sports Administration, Ministry of Education, 2014.
Summery graph by IEK ITRI

elderly had in the past. Their life does not rely on medical or nursing institute. In contrary, they demonstrate to be active. Thus, IEK call the new elderly with unique lifestyles as the “Happy Aging”. Doing sports is the most distinct lifestyle of the Happy Aging from the other elderly people in stereotype.

1. More people in the Happy Aging doing sports than the other age groups

Most of the sporting goods are focus on the younger group. It seems that there is not enough confidence

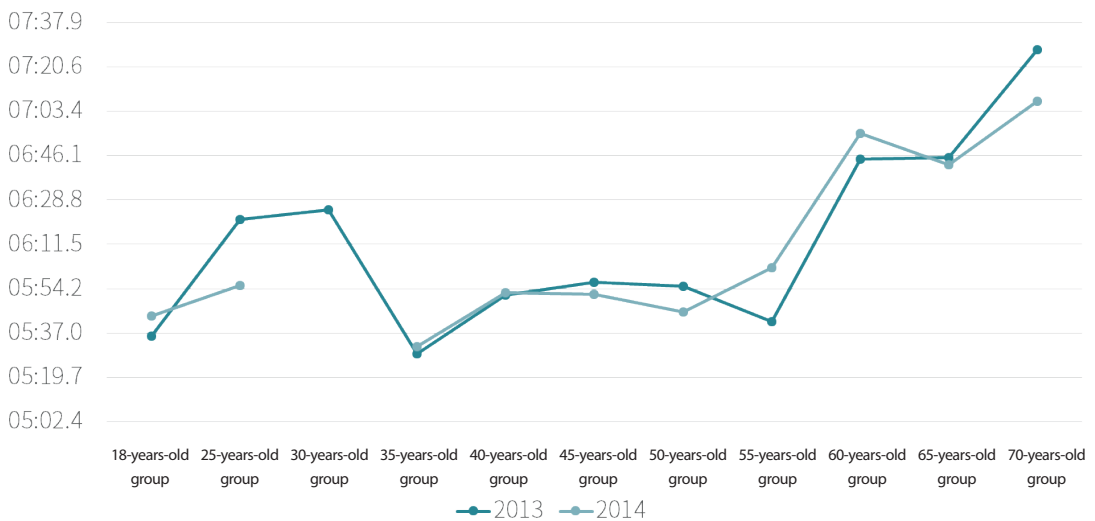
on the consumption power of the Happy Aging. Even so, according to the statistics provided by Sports Administration of the Ministry of Education, calculating the number of people at different age groups who do sports 3 times a week at least and 30 minutes each time, an interesting fact indicates that the sports population increases 10% once the age group increase 10 years. In the age group of 40 to 50 years old, the sports population is 30-40%; in the age group of 50 to 60 years old, the sports population is 55 %; in the age group of 60 to 70 years old, the sports population is 70%. What is more interesting, among those younger than 60 years old, the statistic indicates that more females than males like

to do sports. After 60 years old, this male-and-female sport population changes. Female sports population declines dramatically, particularly after 70 years old. There is 10% difference. Based on the sports habit, there is a higher ratio of sports population with growing ages.

From the sports capability of the middle-aged and the elderly sports group, it seems that there is no credible evidence. Also from the open source of domestic sports population divided by the different age groups, the most complete information is the records of national swimming

competitions. In Taiwan, swimming is the single sports category open to all people without qualification. It is an island-wide race and regular activity. From the records of 400-meter freestyle over the years performed by the amateur athletes who receive trainings of swimming competitions, not excluding the retired athletes from the national teams, it shows that there is no much difference among the age groups from 35 years old to 55 years old. In 2013 and 2014, there are similar results.

Taiwan National Age Group Swimming 400-meter Freestyle Competitions Records

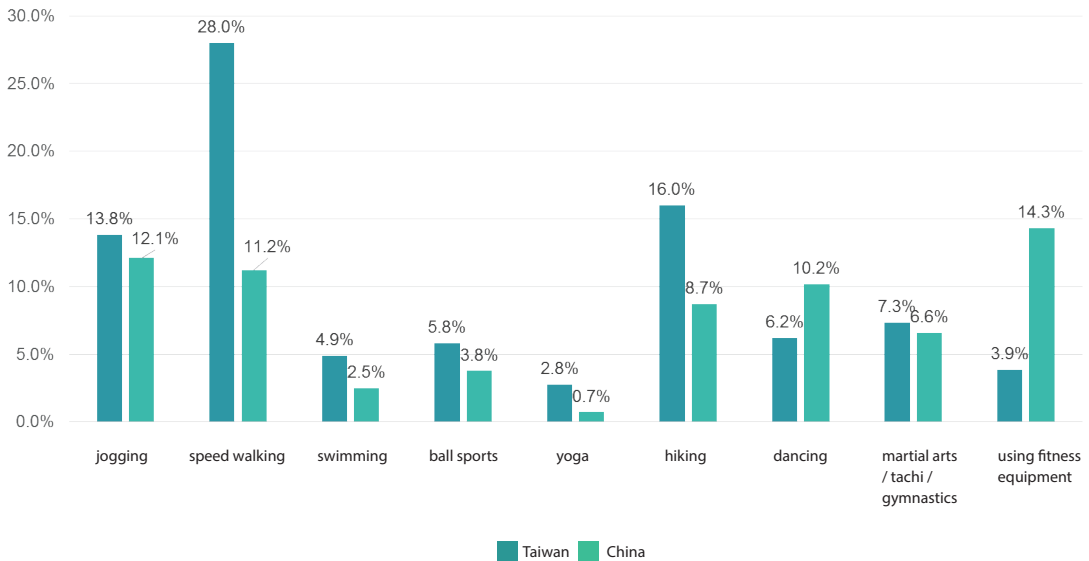


Source from Chinese Taipei Swimming Association
Summary graph by ITRI IEK

2. Preferred sports categories between the elderly groups of China and that of Taiwan

1. Sports categories

According to the investigation of 2014 by IEK, Taiwanese Happy Aging sports population is 50% of the total samples; Chinese, 62.7%. Across Taiwan Strait, we can see that the Happy Aging prefer doing different kinds of sports. Among the Happy Aging who take part in leisure activities excluding taking walks, at least 3 times a week, more Taiwanese elderly people like jogging, speed walking, swimming, playing different kinds of ball sports, yoga and hiking. And more Chinese elderly people like dancing and fitness sports. In the categories of speed walking and hiking, there are more Taiwanese elderly people than Chinese ones. This is quite interesting. As to speed walking, it is an enhanced activity of walking. Those who participate in speed walking have more professional attitude. They need more equipment, accessories and garment. Though the ratio of Chinese elderly sports population is higher than that of Taiwanese, most of them choose the category of walking. However, in Taiwan, the elderly people love speed walking, a more sportive category.



Source from ITRI IEK (2015)

2. Gender difference

From the perspective of gender distribution, in China and Taiwan there are more male elderly people than females who like jogging, hiking, swimming, and ball sports. And more females like dancing and yoga. Evidently this has something to do with the genders.

3. Income difference

Doing sports requires equipment, facilities and professional knowledge. Thus, sport population can keep doing sports on a regular basis and avoid improper sports injuries. It can only make possible that when people have economic independence or basic educational background. While doing sports needs the basic economic base. Does it mean that the sports population have more economic power than the non-sports population?

In the studies of IEK, there are criteria of family incomes. Every city in China and Taiwan, certain discrepancies are setup. The samples represent the middle and high income groups. In the surveys, the average family income in Taiwan is TWD 90,885 and that in China is TWD 45,672. If only calculating the family monthly income of the sports population, the family income of the Happy Aging in Taiwan would drop to TWD 90,816 and Chinese family income drops to TWD 45,622.

This is different from the general judgement. Is it true that the "Happy Aging" has worse economic conditions than the non-sports population? If we exclude the walking population from the major sports categories, we find that the family income of the Happy Aging

sports population in Taiwan increases up to TWD 92,236 and the family income of Chinese elderly sports population also goes up to TWD 46,712.

- If we only calculate the Happy Aging doing jogging, Taiwanese family income increases up to TWD 95,902 and Chinese family income will increase up to TWD 50,075.
- If we only calculate the Happy Aging doing yoga, Taiwanese family income increases up to TWD 99,054 and Chinese family income will increase up to TWD 47,467.
- If we only calculate the Happy Aging who swim, Taiwanese family income increases up to TWD 101,077 and Chinese family income will increase up to TWD 51,266.

This is not a question that sports category has no connection with family income but excessive walking population is counted into the sports population. It dilutes the income of sports population. In fact, the elderly sports population doing a specific kind of sports, the preferred sport categories do have a close relationship with their family income.

3. Demands and preferences of sports information technology products

In the recent years, wearable devices have become a buzz word. Not only did original producers increase the production lines drastically but also investors

jump into this stream and join the competitions. There are frequent new product. The supply goes up and the price goes down. Wearable products become more popular. Quantified life is new way of living. In IEK 2014 annual investigation also targets the happy elderly group, their interest on wearable products and the prices they are willing to pay so as to have a picture how the elderly accept the quantified life nowadays.

Although there are numerous kinds of wearable devices, their functions and purposes are not quite the same. Slowly they have diverse marketing positions. However, for the Happy Aging, wearable devices are still new products. In Taiwan, 35% of the Happy Aging are interested in the wearable devices; in China, 23%.

Nevertheless, based on the different sports groups, in Taiwan, in addition to yoga and walking, those doing sports show higher interest of using wearable devices than the Happy Aging in average. The most interested sports group is jogging. 47% of the Happy Aging jogging group are interested. Most likely, sports categories are influential upon the sports technology. What's worth mentioning is the ball sports group, also interested in wearable devices. In Taiwan most Happy Aging walking group show the least interest towards wearable devices. It indicates that sports technology and product demands build on sports professionalization. Walking requires barely no qualification and sports knowledge might not be necessary. People can walk with most kinds of shoes. Even if walking frequency is high, there is no enhanced demands.

	Taiwan	China
Jogging	47%	33%
Speed Walking	41%	34%
Swimming	40%	31%
Ball sports	47%	32%
Yoga	35%	41%
Hiking	37%	27%
Dancing	46%	22%
Marial arts, Taichi, Gymnastics	45%	26%
Walking	34%	23%
Using fitness equipment	45%	30%
Total	35%	23%

Source from ITRI IEK (2015)

The wearable-device interest of the Chinese happy elderly group falls behind Taiwanese for about 10%. In term of sports categories, Happy Aging yoga group has the highest interest towards the wearable devices, high up to 47%. However, in the Chinese samples, there are not enough yoga elderly samples; therefore, the statistics might be biased. Compared with the interested sports categories of the Chinese happy elderly sports group, more Taiwanese are interested in jogging, speed walking, swimming and ball sports. Besides, what is behind all the sports is sports knowledge, professionalization, competition and sports social groups so as to quantify personal demands.

4. Sports social groups and the personal experiences of professionalization

In addition to the large-scale survey and investigations, the research indicates that the increasing sports trend or sports atmosphere in the Happy Aging of China and of Taiwan is a new phenomenon. After realizing the sports behaviours of Happy Aging, we may promote the prospective demands for their sports activities. Thinking of prospectiveness, the purpose in this research will not focus on the existing technology and services reasonably but on disadvantages of the current technology. Based on the concept to meet the strong demands of business-potential products or services, ITRI IEK uses the qualitative research method to focus on 8 respondents of Happy Aging with long-term jogging habits to carry out focus group discussions. In these discussions, the Happy Aging describe themselves how they jog and all the sports features were detailed and recorded.

IEK discovers that almost all the Happy Aging interviewees start to do sports based on the reason for health and good figure. Because the health-check results indicate they are not in good health conditions or because they find they cannot fit into the clothes of their youth and they need to control their weight. In the beginning, many of them start to jog alone and that needs long-term physical strength with strong willpower and persistence so as to overcome boringness and solitude. This is a frustration which most people cannot surpass. However, if they find partners to do sports together, the situation will be completely different.

On the second stage, gradually there are more opportunities to practice with partners. Some of them come from a specific jogging club. New beginners in the Happy Aging will learn about the knowledge and receive suggestions. Their record is improving and practice activities also become more diverse. With peer support, they can train themselves in the complex environment. For instance, the mountainous slopes are good to train leg muscles or small-scaled and unofficial competitions or mixed travel-and-sports tour, etc. The activities of the

Happy Aging in social sports groups are more and more developed and different. The role of doing sports turn out to be more complex. The fun is not limited to weight loss and smaller waist. Speed, records, knowledge and role-playing mean more on this stage. Usually when the Happy Aging sports group enter the second stage, they are not easily frustrated by persistence and solitude. The frequency of doing sports become stable and high.

On the third stage, the Happy Aging joggers are the senior members in the sports club. No matter their sports capability or physical condition actually reach the level of amateur athletes. On this stage, the Happy Aging sports group do not aim at health and weight loss. It is not the reason that they cannot do it but they have reached the targets. For them on the stage is to act as a senior role to instruct new members to do sports and share their experiences and knowledge to choose sports products. These roles become more important and meaningful. At this moment, it is more difficult to ask them to quit doing sport than to ask them to continue it. Thus, many club members would ask themselves to act as an index or a model. They are doing sports not only for themselves. On this stage, for the Happy Aging, they want to pursue a leading position to be followed by others, they would need more challenging activities. If they simply want to keep fit and healthy, these will not keep them to

maintain such a social position. They want to participate in the large-scale sports events to gain experiences and records which will keep them to maintain their social confidence and reliance. They usually start to take part in the competitions and arrange their daily schedules accordingly no matter they are domestic activities or foreign sports events which might be more important in their annual tours.

IEK conducts this research to know the personal progress and experiences of the Happy Aging sports group in Taiwan. Though from the start of investigating the users, the motive of doing sports is to improve health conditions and lose weight. However, in fact, what supports the Happy Aging sports group to continue it and they become professionals is not health and weight loss. Therefore, to promote the sports products which feature health and weight loss do not really satisfy the vital demands of the Happy Aging sports group. Though in the interviews, they usually deny that they do not care for their sports records or competitions. In the contrary, they do confirm their request for a healthy life. In fact, from the social process of the Happy Aging sports group and their changing social roles, sports do bring a sense of social achievement to make them feel confident and respected. Furthermore, they get the momentum to continue doing sports.

5. Gamification brings fun

Another senior Happy Aging sports group characterizes their continuous use of sports cloud data in their sports behaviors. This seems to indicate their attention to health management. In the interviews, IEK finds that the services to provide sports records applies the design theory of gamification. This design makes users to have more fun after obtaining their sports records and stimulate them to continue a specific behavior. The sports-service interface based on the gamification design theory shows certain scores or miles calculation which aims not only at records and analysis but also a complete set of badges and sports events. The user devices upload the data so as to become player of the game; thus, sports records bring pleasure, rather than a scientific statistics for analyzing health conditions. Users can clearly see his or her own progress, accumulation and advanced process. In the past, electronical computer games rely on moving mouse and clicking or shaking the bar or pushing the button in the game. However, sports records platform relies on the accumulated behavior records and miles to interact with the users.

Gamification is rather unfamiliar concept to Taiwanese. Nevertheless, it is already a familiar design concept to the Silicon Valley and the innovative circle in China. The design purpose of gamification is to apply the game elements into the non-game situations so as to motivate the user to take part in a specific behavior more frequently, that is, the designer wishes the user to increase the behavior frequency. In 2010, the American innovative software, Foresquare, released an intelligence application service which allows users to check in and evaluate restaurants, cafés etc. Foresquare can obtain information which contains more accurate, updated, and massive objective evaluations. But the question is why users want to help Foresquare?

Foresquare designs so-called PBLs, a mechanism starting with the letter of points, badge and leaderboard. Users can check in to obtain points. If the leader who wins the most points at a specific restaurants, he or she might be the Mayor of this restaurant. And certainly, the leader might be surpassed by anyone at any time. There are different playing methods. For example, users accumulate check-in points at the same type of Japanese restaurants to get a special badge of Japanese cuisine. It can be designed with different levels of difficulties, levels and badges.

The points of Foresquare is useless in the real world; however, once users like it, a great number of registration and usage quickly enhance the correctness of the data on Foresquare. Currently, there are 4.5 million users and more companies would like to pay for the application program interface (API) of Foresquare.

Foresquare itself is not a game. It uses the game elements to give bonus to the users. In fact, it only provides pleasure to strengthen the motifs of users. This has become a classical example. Business, education and strategy leaders start to discuss how to apply the design concept of gamification for crowdsourcing, e.g. the sports data of wearable devices, stimulating internalized behaviors or changing social misbehaviors, etc. An interesting case is that Swedish plan 'The Fun Theory' which change the over-speeding behavior. In most countries, in order to reduce over speed, the governments usually relies on punishment. However, in The Fun Theory, it adopts the method of bonus. In the experimental routs, two camera are installed. The first camera is equipped with speedometer; it takes photos of every car passing by and gives the driver the information of car speed and prepare the driver to take part in the game. The second camera is to take photos of the last driving speed. If it is lower than the speed limit, the driver will obtain a lottery ticket, instead of the punishment due to over speed. To meet the speed

limit will be given bonus. Cameras used to be something which drivers fear for but now they become part of the game. This plan succeeds to reduce the average driving speed, 32 kilometer per hour to 25 kilometer per hour. Actually drivers are willing to drive under the speed limit so as to get a lottery ticket and do a good thing at the same time. However once it's admitted, lotteries is a proof of such a behavior change. It is similar to badge or point in exchange of a delicate-designed postcard, stamp, coupon of public museums which will be also effective.

6. Obtain sports innovative business opportunities from exploring the happy elderly sports groups

In the happy elderly sports group research IEK organized a workshop to recruit the experts interested in the wearable devices targeting on the Happy Aging sports group together with the physical or environmental sensor trends to raise feasible plans. Moreover, through the target group interviews, the Happy Aging sports group



after fully explanation give scores from the user's point of view. At last, three directions of technology research and development are recommended, also confirmed by the Happy Aging sports group. From the user demands point of view, there are potential markets for the future sports-tech products and services.

1. Gamification in the real-time situation

Although nowadays the sports-info services of wearable devices is designed with the gamification concept, we cannot see the interface which provides within social groups, points, badges, and leaderboard after users upload the sports data from their sports watch. What else can gamification do?

For the Happy Aging sports population, the online world is always static. After users finish sports, they upload the sports data and only then, the interactions among social groups can start the game. However, the essence of sports is dynamic and real-time. Simply, the current information is limited to the technology development and it can only provide static gamification and socialization.

In the discussions of the targeted Happy Aging sports group, there is an interesting reaction from sports interactions. No matter in the sports trainings or competitions, every sports person would consciously or unconsciously setup a referencial person so as to judge his or her sports performance based on this person. For instance, a sports person will catch a familiar social group member who usually has the similar sports records with himself or herself; thus, this might be the limit that he or she will not get lazy or might be the motif that he or she can make progress. To take part in this reference method requires a lot of visual contacts. In practice, to see the jogger who has the same level take over in person and to view 10-minute difference on the sports clouds management platform are two different things to stimulate one's sports performance. No matter in trainings or competitions, the scope is too vast for users to see and stimulate himself or herself based on the reference method.



Jogger's real-time position on the schematic diagram
Source from ITRI IEK (2015)

The research raise two concepts, virtual jogger and jogger real-time position. These two items receives the highest scores from the happy elderly sports group.

The concept of virtual jogger is supposed in personal sports training, the reference method still works no matter using image projection or index points shown on the competition tracks marking the real-time distance between referencial person and the player. Also it is designed to instantly show the accelerating, decelerating speed or any other actions of the player. The real-time position can be setup with multiple referencial persons in a visual way so as to make athletes to have more fun. Certainly the technology is still not efficient enough. Every sports person is equipped with such a device and knows the real-time positions of opponents. These devices must provide online services and in the open field, the online method is mainly subject to the long communication technology, such as LTE. However once the wearable devices together with online function, the prices would be high and battery consumption would be another test. Then, the mature technology of lower power WLAN will be the key to observe the above-mentioned concept development.

2. Sports injury sensor

The current wearable devices can sensor heart rate and moving position. All these are related to sports quality and sports records. But for the Happy Aging sports group, when one is getting older, there is a larger chance to encounter sports injuries. Even they care for scores but they won't risk life for better sports performance, particularly knee joints, ankle joints, waist spines or feet pressure all the vulnerable body parts. Therefore, how to sense improper pressure point and give them instant warning is the most needed function for the Happy Aging sports group.

To sense physical moves is to prevent users from sport injuries. So there is no need of highly accurate quantitative data. It only requires to visually indicate the real-time sports pressure state on the important body parts and to warn users in time. Intelligent apparel, intelligent leg cap, intelligent tach and so on equipped with partial pressure sensor and sport physiological data, they can provide the visual warning function.

3. Crowdsourcing of sport product and service

The third difficulty for the Happy Aging sports group is the choice of sport product and service. It does not mean that they cannot find them online. What is questionable is that the comments by sport experts or amateurs raise two doubts: one doubt is if their comment is credible? Are they advertisements for sport companies or replacement

marketing? Comments or opinions are representative? There are often new sport products released and the diverse and obvious designs and styles on different ideas. When users find new products, how to make sure quality and credibility?

The best way to judge product quality is the long-term and massive usage and test. Accordingly, crowdsourcing concept rises such as online travel agent or check-in service of restaurants at tourist sites. The concept of crowdsourcing answers the doubts of traditional tours which consumers used to have. Massive comments given by users solves the problems which personal opinions cannot be representative. At the present, personal sports management platform offers the similar function that users can comment on sport products they are using. However, this function does not fully work. In fact, it is a pity!

7. An aged society needs to embrace a sport lifestyle; the sports industry also needs to welcome an aged society.

The finding in the survey of IEK shows that sports is the priority activity for the Happy Aging to prevent from aging symptoms. Particularly for those above 50 years old, they are comparatively younger and highly educated future seniors; based on the data of the Happy Aging in Taiwan and China, the percentage is high to 38%. They have prepared themselves to change their lifestyle. However, the sports industry and sport service industry are ready to serve these people?

While mentioning the aging trend in Taiwan, it seems to treat this trend as the responsibility of the government. It means business opportunities to hospitals, nursing organizations, health service centers and medical equipment companies. As to the dynamic sports industry, they do not seriously treat this middle-aged and aged groups as target consumers. This might be the misconceptions caused by the stereotypes. From the investigative figures, the Happy Aging people are getting close to sports. The sports industry do need to change concepts and put more focus and attention on the products and services designed for the happy elderly sports groups as main target consumers. Please do not wait until the Happy Aging thinks that the sports industry in Taiwan is not so close and familiar to them!