

Fitness food– literature review and short international study case

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ABSTRACT: The fitness market is became one of the most important social transformations of the 21st century. The number of people interested in sport has not stopped to increase, so we can speak about a field with dual demographic and economic issues. Our aim to know the youth's opinion about the fitness food. To reach our goal, we made an online questionnaire, and analysed the answers. The fitness food became extremely popular and thanks to social media people are more opened to this type of food.73.9% of the sample prefers the home-made fitness food and the rest prefer the industrial fitness food. We would like to continuous this research – by netnographic survey.

KEY WORD: literature review, online survey, international questionnaire home-made fitness food, motivation,

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I. INTRODUCTION TO FITNESS FOODS

1.1. Fitness food definition and its market

Fitness foods continue to attract the attention of people interested in sports and also researchers. It is a continuous evolving field. Hundreds of articles are published each year under the key word. 'sport nutrition'.Because it is trendy so its consumption and advertising can be explained and treated from several angles.

The definition of the term physical fitness has evolved across the time. In the literature, a lot of previous attempts can be found.

- « The individual's functional capacity for a task » (Darling et al. 1948)
- « The degree of the ability to execute a specific physical task under specific ambient conditions » (Karpovich, 1965)
- « The ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies » (Clarke, 1967)
- « Functional capacity of individuals to perform certain kinds of tasks requiring muscular activity » (Fleishman, 1964)
- « A set of attributes that people have or achieve that relates to the ability to perform physical activity » (Casperson et al. 1985)

- Fitness foods are also called Sport nutrients are foods that are rich in proteins, minerals and vitamins and which allows to improves the performance of athletes and bodybuilders. It reduces the fatigue and the risk of disease and injury. It also helps to optimize the workout and the fast recovery (Purcell,2013).

These are basically the different definitions of physical fitness, it seems to go from an ability to exercise daily physical activities with vigour, to a demonstration of capacities that are associated with health preservation and a low risk of premature development of some diseases.

In recent years, the practice of bodybuilding has become widely democratized and today it brings together different types of practitioners, classified from the sedentary person who is back to the physical activities to high-level athletes that practice the bodybuilding.

The fitness market is rapidly changing and booming with the emergence of new concepts and economic models. This Growth is driven by a collective awareness of health.

Lately, the physical activities have become more diversified. The most common gym exercises were aerobics, step aerobics, jogging, conditioning and bodybuilding, funky, zumba, fit box, cycling activities, calisthenics based training, cross fit, suspension training, kettlebell training, total body conditioning, core training, boot camp, functional training, pilates, yoga, stretching. The main function of these activities is to enable people to be fit and healthy (Paoli et al,2015).

Nowadays, the concerns about the Body image and body confidence are highly increasing. People are more and more interested in having a toned and strong body and also a healthy lifestyle and they are more influenced by people images on social media. In the recent years many carried studies have proved that adolescents'

physical image issues are not only related to the physical exercises but it is also directly associated with the adopted eating attitudes and behaviours (Jankauskiene et al, 2019).

Good nutritional habits are essential for athletes and normal people who usually practice sports in order to achieve optimal athletic performance and having the wanted body shape. So, these people have to learn what foods to get for energy, when to eat certain foods, how to eat during an event, and when and what to eat to recover after an activity.

Daily nutritional trends, of people who are interested in physical fitness, are influenced by the behaviours and communication of high-level sportspeople and food influencers.

The sport nutrients are segmented into 3 main categories: sports food, sports drinks, and sports supplements.

Sports foods:

Protein bars (Małecki et al, 2020): The protein bars are bars that most likely contain different ranges of proteins that maybe from plant origin (eg : soy protein concentrates and isolates) or from animal origin (especially whey protein concentrates and isolates). In the recent years the plant based protein and especially the cereal based protein bars are booming. Examples:

- Rice protein
 - Pumpkin proteins
 - Soy protein isolates (SPIs)
 - Pea protein
- Sport confectionary: it englobes candies, cookies, chocolate bars and gels that are products rich in carbohydrates and proteins .

Sports drinks

- Sports energetic drinks: they are flavoured drinks that usually contain a mixture of sugars and electrolytes, such as sodium, potassium and magnesium. They may also contain vitamin supplements, usually vitamin C or B vitamins. Usually, they contain carbohydrates obtained from sugars such as glucose-fructose (high fructose corn syrup), sucrose, or maltodextrin. Their carbohydrate content is in the range of 5 g to 14 g per 240 mL serving. Sports drinks may also contain low-calorie sweeteners, citric acid, and natural and artificial fruit flavours.

They are used throughout the day or around exercise depending on their carbohydrate content. Mainly used by athletes, these drinks are being adopted en masse by urban “lifestyle users”. The sports drink market segment showed growth of over 6.9% in 2016 (www.nutraceuticalsworld.com).

Sports supplements :

Sports supplements represent a wide categories of dietary supplements consumed by bodybuilders and high-performance athletes, and they can show an indirect or direct effect on sports performance (Knapik et al., 2016). The most consumed sports supplements in the fitness world are protein, keratin, and dieting supplements (fat burners and appetite suppressants)

- Whey protein powders : Whey is a by-product that results from cheese processing. It consists of the liquid separated once the milk has been curdled. The Liquid whey is then dried in order to make whey powders (Bansal et al, 2016)

- Keratin (methyl-guanidine-acetic acid) is like amino acid compound that can endogenous generates within the human body and also may be exogenously provided by different food sources such as red meat and seafood. In the sport industry the Keratin exists as a powder and it is consumed like protein shakes . It offers to the consumers an energised effect. (Jagim et al, 2021)

- Branched-chain amino acids (BCAA) Powders : the BCAA is an example of fat burners. They are branched chain amino acids containing mainly the leucine, isoleucine and valine amino acids. They are very essential because they cannot be synthesized by the body alone so they have to be present in food and food supplements.

BCAAs are known in the sports world because they naturally improve sports performance and promote muscle mass gain. (Herman et al, 2010).

2.1. Thesis and the main factors of sport nutrition market

The sport nutrition market is growing worldwide but with different intensity. As it is shown in the Map bellow, the market is more important in North America, Europe and in Asia-Pacific region. It is quite medium or low in South America, the middle-East and in Africa.

The commercialization of sports nutrition products has increased not only among athletes and bodybuilders but also among a large range of lifestyle users too. This massive use or consumption can be explained by many factors.

For many reasons the consumers can contribute to the widening of the sport nutrition market.

Since the 1960s the interest in the practice of physical activities and sports as a factor in preserving and improving health have been developed. This concept of physical practice in the field of health fits into a larger context (Favier et al, 2018).

Figure 1: Sport nutrition market size globally (2020) (source: Mordor intelligence)



In 2020, the sports nutrition market was valued at USD 19.96 billion. This was explained by the encouragements of the WHO (World Health Organization) and other international health organizations, to strengthen the immune systems in order to prevent against the COVID-19. In fact due to the pandemic, during the quarantine many people showed interest to the sport and to the consumption of sport nutrients in the reason of boosting their immunity systems (Mordor intelligence).

Many researchers argue that the growth of sports nutrition products market and the increase in consumption of these products may have a sub-cultural perspective:

For example in the Norway the food culture has changed. The food culture has thus become a moral responsibility, and now people link the body with eating habits and fitness practices. Norwegian follows healthy lifestyles and join the consumption of sports foods to their food culture (Skuland et al,2012).

Many people especially teenagers suffer from body dissatisfaction. On 2021 a study research have been done in order to see if there is a relationship Between food choices motivators and physical activity in body image dissatisfaction or satisfaction among Portuguese adolescents. The results proved that the attention about body image and weight directly impact the food choice for different populations (Dias et al,2021).

Many initiatives and marketing strategies are established by the sport nutrition industries for the reason of advertising and enlarging the market of their fitness food products. Many of them associate their brand to sport teams and collaborate with famous athletes .As an example, In January 2021, Healthspan Elite, a company which produces a large range of vitamins and supplements, announced its partnership with British Cycling.

Some fitness food brands work in with global marketing and advertising companies. For instance, the Iovate Health Sciences International Inc In January 2021, announced its collaboration with 72andSunny. After this collaboration the food brand created a campaign under the slogan « do what makes you feel good ».

(Market analysis report,2020)

Because of its accessibility by many e-commerce shops (Bodybuilding.com, Walmart, and Amazon) and in the supermarkets, sports supplements with different flavours and ingredients are in the last years dominating the segment growth. The segment is driving the market of fitness food and represents a revenue share around 82.2% in 2020. The segment of sport foods represents the fastest-growing segment in all the sport nutrition segments. This is because athletes, gym-goers, and even ordinary people are more and more adopting the protein and energy bars as an easy to take and healthy snack (Market analysis report,2020)

1.4 Findings and Interpretation

The paper has identified the factors that lead to increasing flow of FDI in Malaysia. They are increasing trend of GDP, rising inflation, increasing time spend on governing by the government and reducing tax rate.

By applying a GLS technique of regression it has been found that an increasing trend in GDP actually helps to capture more FDI inflow in the country. Inflation is also positively related with FDI inflow. That is with inflation price level increases which again increases the volumes of inflow of FDI in Malaysia. Similarly, time spend on governing is also positive and significantly related with inflow of FDI of the country. More time spend is an indicator of good governance power. On the contrary, tax rate is expected to be negatively related with the level of inflow of FDI because less foreign firms will be attracted to invest in a country with high burden of tax.

The paper also conclude that the inflow of FDI has led to fall in diversification of export and increases the export concentration ratio between the service, agriculture and manufacturing sector of Malaysia. This has been shown by the GLS technique of regression where the FDI and GDP has been identified as statistically significant with rising FDI leading to high export concentration ratio and rising GDP leading to high export diversification.

The rising FDI leading to high export concentration ratio can be interpreted from the explanation given by Varela (2013) that a resource-rich country will have more concentrated export structure and the flow of FDI will be tilted more in the resource-rich sectors than the other sectors. As Malaysia is a resource-rich country in terms of minerals so the concentration of export is more in those sectors. However, the positive relation between rising GDP and export diversification can be further studied through an empirical work and thus pave the way for another research.

II. MEANS AND METHODS

According to Vilatte (2007), the survey by questionnaire contribute ,in an ordinal way, to the collect and the understanding of the personal information, representations, behaviours of individuals and even the information about the environment.

In our research we used closed questions on one side to facilitate the data processing and on the other hand to ensure accurate answers.The questionnaire was articulated in a well-defined way. First, we initiated the respondents to the research framework so we posed a questions to see if the consumers have a positive attitude toward the fitness food and secondly to find out their main motivations on consuming this type of food.

We made the survey in February of this year.

The general questions asked in the questionnaire will allow us to know the structure or the distribution of our sample.

We used MS Excel to evaluate the answers.

III. RESULTS OF THE SURVEY

The distributions (223 individuals) are represented in the following types (table 1).

Table 1. Distribution of the sample by gender (N=223, %)

gender	
male	48.4
female	51.6
age	
18-30	65.0
31-45	30.1
45-	4.9
professional status	
student	41.7
employee	46.6
jobless	11.7
location	
Europe	42.3
Africa	33.9
Asia	8.8
USA	15.0

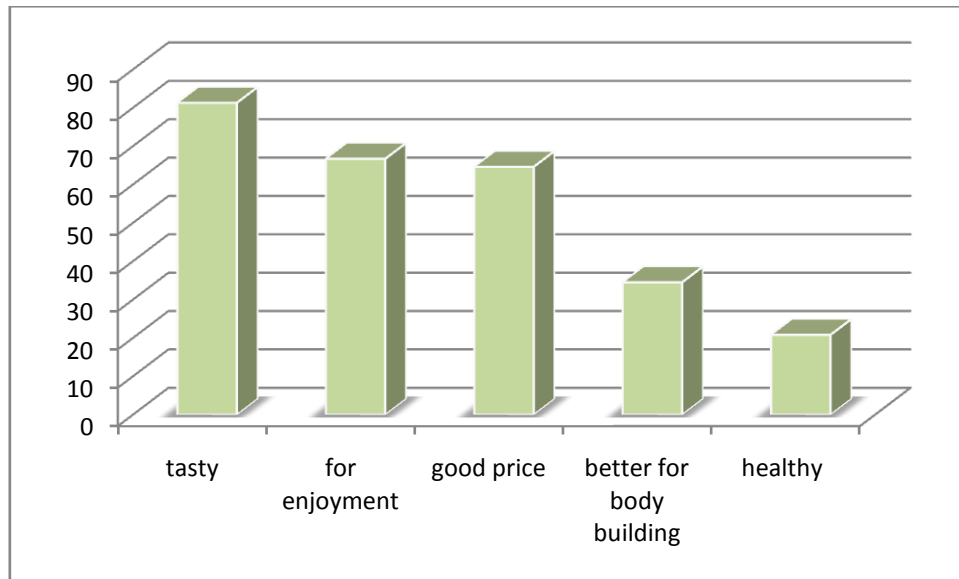
We can see that our sample represents 51.6% of female and 48.4% of male. This value proves that we have an almost balanced sample.The age distribution of ours ample shows that the biggest number of the participants (65.0%) is in the age between 18 and 30 years old. Then we have also an interesting percentage of 30% of people who have 31-45 years old. So our survey results are mainly based on young adult answers. For the professional status the most of our participants (46.6%) are employees or students (41.7%). Only 11.7% of the sample is jobless.As we can see, they are from a different continents and different countries too: Spain, Italy, France, Tunisia, Egypt, Algeria, Japan, Vietnam, and the USA.

Now we're showing the analysis of the answers.

The first question was: *Are you interested in practicing sport?* Most of the participants said yes (98,44%), and the biggest part of them consume fitness food (94.4%, it means 220 people). these questionnaire respondents were asked about which type of fitness food do they prefer (the home-made fitness food or the industrial fitness food).

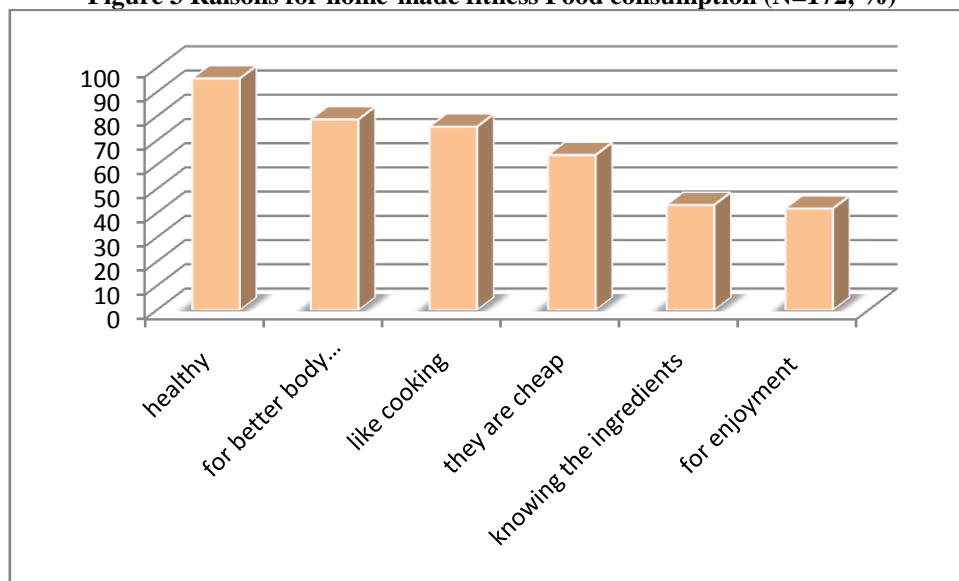
We found in the answers, about 73.9% prefer to consume the home-made fitness food. We wanted to know the reason. We collected them in the figure 2 and 3.

Figure 2. Motivations for industrial fitness food consumption (N=48, %)



The result in Figure 2 shows that the main reasons that motivate consumers to consume industrial fitness foods are that they are delicious (81.3%), have a high enjoyment value, and they have good price (64.6%).

Figure 3 Reasons for home-made fitness Food consumption (N=172, %)



Different from the industrial fitness food consumption, the home-made fitness food reasons are based mainly on health motivations, actually as the diagram presents people consume the home-made fitness food because it is healthy (95.6%) and because they want a good body transformation (78.7%) like for example having muscles, losing or gaining weight. They also prefer this kind of food because they like cooking (75.7%) and they are more conscious about the ingredients that they will eat (43.4%).

IV. SUMMARY

Our short questionnaire had only one aim: to motivate us and persuade us to continue our research and to map the topics of blogs and posts about different homemade fitness foods. We decided to make a netnographic survey based on this topic.

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