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THE INFLUENCE OF LIFESTYLE ON CONSUMER BEHAVIOR AND DECISION MAKING IN RESEARCH AIMED AT PROTEIN BARS

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ABSTRACT

We live in an era when all circumstances on the market are changing rapidly, which leads consumers (even, if they are not aware of it) to certain behaviour that affects their daily activities. Lifestyle can be described as someone's way of living or the things that a person or a particular group of people usually do. It is included among the modern elements of consumer behaviour and also affects an individual´s decision-making process. The concerns over obesity and dangerous food ingredients have prompted a "healthy lifestyle" to become the latest trend in marketing. Therefore, the regular exercising, the reduction of stress, drinking enough water, and eating nutritious food takes on its importance. The main objective of the paper is to assess the consumer behaviour on the market of a selected food commodity. For this purpose, protein bars, which are part of diet not only of athletes but also of ordinary consumers, have been chosen. To achieve this main goal, a questionnaire was designed and data were collected from the respondents of the different age groups in the Slovak Republic. Based on the primary results, the authors of the paper can claim that more than 60% of the respondents try intentionally to choose better options of food as they want to live healthy. For a deeper analysis, the assumptions were formulated and subsequently verified by the Pearson Chi-square test of independence and Kolmogorov-Smirnov test. The paper provides useful information on consumer behaviour that can help not only producers and retailers but also to consumers themselves.

Keywords: consumer; consumer behavior; lifestyle; food market; protein bar

INTRODUCTION

Recently, the psychosocial aspects of health have held interest. The constructs such as health perception and health-related quality of life are included in a broader domain because they pertain to positive health **(Grao-Cruces, Fernandez-Martinez and Nuviala, 2014)**. Individuals frequently face a "want-should" conflict between taking unhealthy food or activities and maintaining a healthy lifestyle. Such conflict is in nature a trade-off between a smaller immediate reward and a larger delayed reward **(Van Beek et al., 2013)**. An immediate oriented individual would choose an immediate reward over longterm benefits and thus make a less healthy decision **(Li and Hu, 2019)**. HA healthylifestyle includes taking physical exercise, keeping dietary eating and quitting smoking **(Adams and Nettle, 2009; Joireman et al., 2012)**. There are many benefits of the healthy lifestyle. It can increase a person's resilience and mental well-being **(Cairns et al., 2014)**. Understanding the factors that contribute to the healthy lifestyle behaviour is critical to the development of the interventions needed to promote the positive behaviour that can prevent the negative physical and mental health outcomes, which may have lifelong implications **(McGovern et al., 2018)**.

Lifestyle, but what is more a dietary pattern and has been changed rapidly by the development of urbanization, industrialization of societies and increased economic growth in the last decades **(Bolori et al., 2019)**. According to the World Health Organization, a healthy diet contains fruit, vegetables, legumes, nuts and whole grains, while also containing the limited amount of free sugars, salt and fat, and an amount of calories, which is in balance with energy expenditure **(World Health Organization, 2018a)**. By **Forshee et al. (2018)** the diets rich in fruits and vegetables and low in sugary foods and drinks were found to be associated with a lower-body mass index (BMI) **(Mytton et al., 2014; Ebbeling et al., 2012)**, but over 1.9 billion adults worldwide were overweight in 2016, resulting in higher prevalence of chronic diseases such as cardiovascular disease and diabetes **(World Health Organization, 2018b)**. In rodent models, changing the typical diet to one characterized by high-saturated fat, salt, and sugar consumption (often referred to as a"Western diet") reliably increases abdominal fat, insulin resistance,

atherosclerosis, and inflammation. Consuming this type of diet, has been linked to chronic, low-grade inflammation and associated diseases such as cancer, heart disease, and diabetes **(Christ et al., 2018; Huang et al., 2013; Thorburn et al., 2014)**.

High-protein foods are popular among the consumers seekingsatiety, increase muscle mass, or decreased risk of sarcopenia **(Sloan, 2012)**. Hence, protein bars have received growing attention in sports nutrition, musclebuilding, health supplement and weight reduction markets in recent years **(Kelly et al., 2019)**. The consumers are turning to the high-protein nutrition bars to add conveniently more protein to their diet. The high-protein nutrition bars have used new, trendy protein sources (e.g., insects), but have traditionally relied on dairy and soy ingredients such as concentrates, isolates, and hydrolysates **(McMahon et al., 2009; Imtiaz et al., 2012)**. These bars contain mainly protein (20 – 50%), carbohydrate (e.g. high-fructose corn syrup), fat (e.g. palm oil) and some humectants with a water activity of 0.5 – 0.8.

Scientific hypothesis

Assumption No. 1: We assume that there is no relationship between particular sex and the purchase of healthy food.

Assumption No. 2: We assume that there is no dependence between the respondent's sex and how often they engage in the sports activity.

Assumption No. 3: We assume that there is a relationship between particular sex and the consumption of protein bars.

Assumption No. 4: We assume that there is no correlation between the respondent's age and the preferred flavor of protein bars.

Assumption No. 5: We assume that there are differences between the influence of individual factors on the purchase of protein bars.

MATERIAL AND METHODOLOGY

The methodology of the paper was constructed through a questionnaire survey. The implementation was carried out both physically and using the Google Forms platform. The questionnaire survey was carried out in the Slovak Republic. The survey sample consisted of 627 respondents. The age structure was focused on the whole population. The survey was divided into three parts. The first part dealt with the demographic structure, the second one was generally focused on the respondents' lifestyle. The third part examined the consumer behavior of the selected food commodity. The main objective of the paper is to map a certain lifestyle of the respondents. The survey was used to find out consumers` behavior, preferences and decisions in everyday activities – buying of the selected food commodity.

The basic demographic data are given in Table 1. As far as the economic status is concerned, most surveyed are students (60.29%), followed by the respondents who are employed (30.94%). Almost half of the respondents (49.92%) completed the secondary education with the school-leaving examination as the highest achieved education, followed by students of grammar schools (18.98%) and then university graduates (15.95%).

Table 1 Characteristics of respondents.

Category of Respondents	%
Male	40.83
Female	59.17
Place of Residence	**%**
City	47.21
Village	52.79
Age Structure	**%**
Less than 20 years	47.21
21 – 30 years	34.45
31 – 40 years	4.94
41 – 50 years	9.09
51 years and more	4.31
Number of household members	**%**
1 – 2	16.75
3 – 4	62.68
5 and more	50.75

Statistical analysis

Before the questionnaire investigation, the scientific assumptions were established, whose testimony was verified by the means of a selected statistical method – Pearson Chi-square test of good conformity and Kolmogorov-Smirnov test. The authors of the paper have also used pivot tables whose application was realized on the obtained primary data. The authors determine the probability level - alpha ($\alpha = 0.05$), which will be compared with the level of significance (p-value). Based on alpha (α) it is possible to evaluate the hypothesis with a comparison of the p-value. If the p-value is less than alpha (α), we reject H_0. If the p-value is greater than alpha (α), we do not reject H_0.

RESULTS AND DISCUSSION

627 respondents participated in the questionnaire survey. The primary data were obtained to a greater extent from women (59.17%). In this survey 256 male respondents (40.83%) took part. The respondents were divided into five groups based on their age. The largest representation was the age structure under 20 years (47.21%). This was followed by an interval from 21 to 30 years (34.45%). These two age categories were the most important for the authors of the paper as we assume that the consumption of protein bars in the above age structures is the greatest. The age range from 41 to 50 years was 9.09%. Almost half of the respondents cited as the highest education a secondary school with a school-leaving certificate (49.92%). This was followed by grammar school leavers (18.98%) and university graduates (15.95%). The most frequently reported economic status was a student (60.29%). The second most frequently chosen option was the economic status - employed (30.94%). The authors of the paper also considered the family status, more than 2/3 of the respondents declared they were single. Only 14.51% of the participants stated that they were married. The last and also a very important question of the demographic survey was the net monthly income of the respondents (Figure 1).

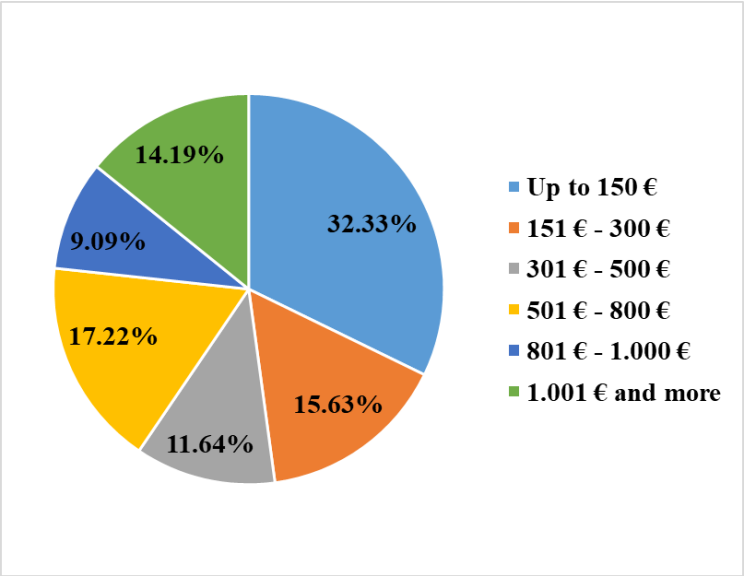

Figure 1 Monthly income of respondents.

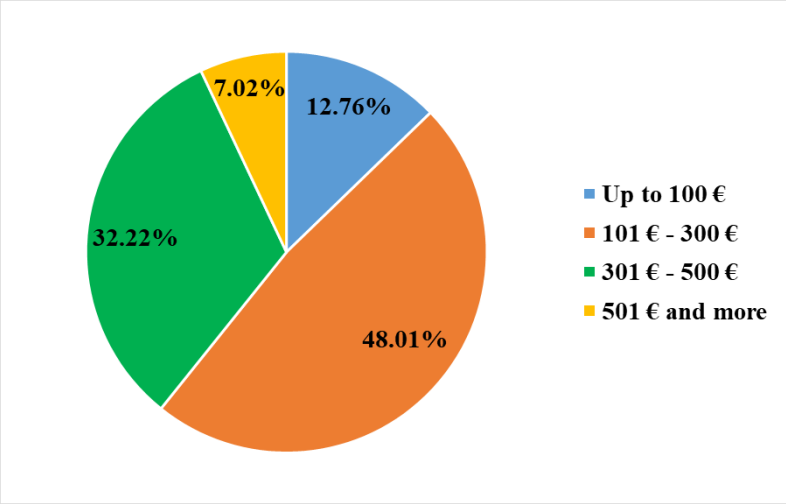

Figure 2 Monthly food expenses.

It follows from Figure 1 that the biggest interval up to 150 € constituted 32.33%. This was mainly because the maximum age limit was up to 20 years, and therefore, this age group does not have a big income opportunity. In the second place, there was an income from 501 € to 800 € with a percentage of 17.22%. An interesting feature of this survey, however, is the income interval above 1.001 €, which marked 14.19%. This was followed by a group of questions that dealt generally with consumer purchasing behavior. In this group of questions there were also formulated questions about the lifestyle of respondents. The authors of the paper have also considered the preferences and individual consumer impact factors. The first question focused on buying daily food consumer frequency. The observed values are given in Table 2.

The table shows that the respondents most often do shopping once or twice a week (42.11%). The second most frequent interval (three to four times a week) was 41.74%. Interestingly, up to 64 respondents buy daily groceries every day (10.21%).

Table 2 Frequency of shopping.

Frequency of shopping	Count	%
1 – 2x per week	264	42.11
3 – 4x per week	260	41.74
5 – 6x per week	39	6.22
Every day	64	10.21

Within this group of questions the authors of the paper have asked the respondents what was the decisive factor of their choice when buying food. In this case, the respondents identified quality as the most important factor (62.04%). Quality was also critical in surveys by **Grunert (2005)**. In the second place there was the price (25.68%), which is constantly placed in the leading position among the influencing factors on consumer purchasing decisions **(Gilbert, 2010; Ubreživá et al., 2019)**. This was followed by the origin of the particular foodstuff purchased (5.90%) and finally in the last place there was the package size (3.35%). The remaining 3.09% was divided among several factors that consumers had to choose (design, hunger, smell, composition, etc.).

This was followed by the related question, how much on average the whole family spends on food per month. The data are shown in Figure 2.

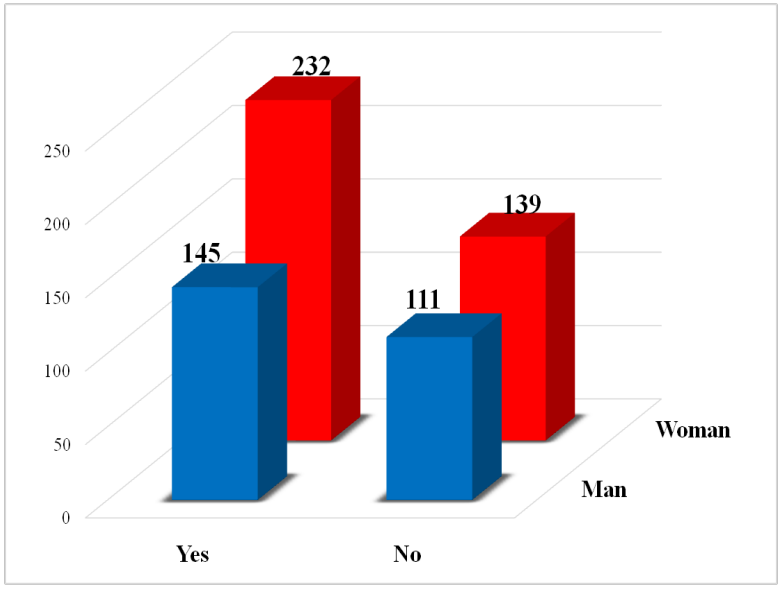

Figure 3 Confirmation of statistical assumption.

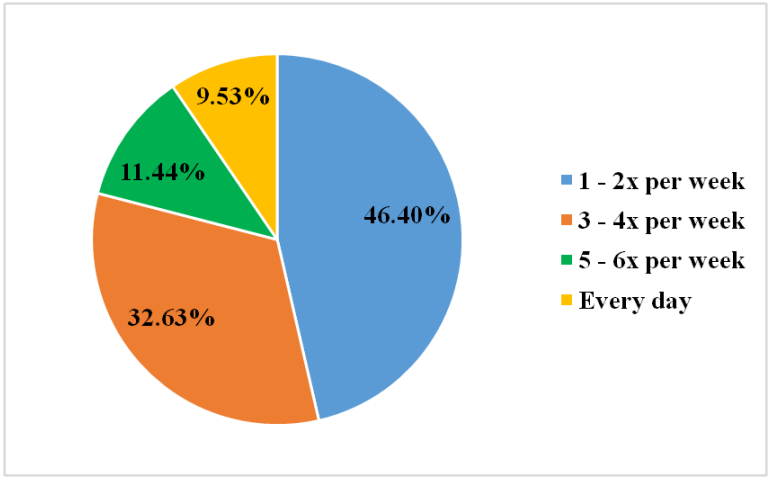

Figure 4 Sport activity.

From Figure 2, it is clear that the largest interval a family gives monthly to buy food is from 101 € to 300 €. Almost half of the respondents (48.01%) chose this option. Furthermore, the interval of 301 € to 500 € occurred. Spends only 7.02% spends on food more than 501 €.

Furthermore, the authors of the paper have concentrated their attention on respondents' lifestyles. They were asked if they were deliberately buying healthy food. Most of the respondents stated that they were deliberately buying healthy food (60.13%). 250 respondents (39.87%) answered negatively. If the respondents replied´yes´, they were asked what was the reason for such a purchase. More than half (51.89%) of the respondents stated that they want to live more healthy as a reason for purchasing **(Sjöberg et al., 2003; Kubicová and Habánová, 2012)**. The second most common answer was the possibility of self-belief (39.04%). Health reasons took last place (9.07%).

Based on the factors, the statistical observation was made on the presumption - whether there is a relationship between sex and the purchase of healthy food.

H_0: There is no relationship between sex and the purchase of healthy food.

H_1: There is a relationship between sex and the purchase of healthy food.

The *p*-value of Pearson's Chi-square good-fit test is used to verify the hypotheses. Testing will be carried out at the selected level of 5% significance, i.e. alpha will be 0.05. In this case, the *p*-value = 0.0941, which means that we reject the null hypothesis. We accept the alternative hypothesis and declare that 95% reliability is the relationship between sex and the purchase of healthy food. Based on the test results, the assumption is incorrect. Subsequently, the authors of the paper have also presented the results in Figure 3, which confirms the statistical testing.

Figure 3 shows that women buy healthy food more often. In general, women buy more often than men **(Beardsworth et al., 2002; Géci et al., 2017)**. Men in this case buy much less healthy food than women do.

Then, the respondents were asked whether they considered their lifestyle as healthy. Most respondents consider their lifestyle to be healthy, 74.80%. The remaining 158 respondents are not interested in a healthy lifestyle. For better clarity, we have made a comparison based on gender. The above question shows that both genders have the same values (positive and negative) when

compared. The female sex lives healthy at 74.66% and the male sex at 75.00%. This was followed by a related question, which dealt with the reason why a healthy lifestyle is a part of their lives. The vast majority responded that their own beliefs (84.58%) were a factor in a healthy lifestyle. **Moreno et al. (2008)**, achieved almost identical results. Then it was followed by family and friends (8.13%) and finally various health problems (7.29%).

A certain type of exercise (sports activity) is also closely related to a healthy lifestyle. Therefore, the authors of the paper have asked the respondents, if they were doing any sport (active or passive at least twice a week). 69.70% of the respondents gave a positive answer to the question. The authors have wondered how often they practice sport activities (Figure 4).

More than 46% of respondents claimed that they practice sport activities once or twice a week. More often, 32.63% carries out sporting activity. Interestingly, 45 respondents reported daily physical activity.

Based on the factors, the statistical observation was made on the presumption - whether there is a dependence between gender and frequency of sports activity.

H_0: There is no relationship between gender and frequency of spsportsctivity.

H_1: There is a relationship between gender and frequency of sports activity.

To verify the established hypotheses, the authors of the paper have used the *p*-value of the Kolmogorov-Smirnov test of good conformity. Testing was carried out at the selected level of 5% significance, i.e. alpha as 0.05. In this case, the *p*-value = 0.0154, which means that we reject the null hypothesis. We accept the alternative hypothesis and declare that 95% reliability is the relationship between the sex and frequency of sporting activity. Based on the test results, the authors of the paper have considered the assumption to be correct.

Finally, the authors came to the researched issue, which is a consumption and consumer behavior when buying a selected market commodity - protein bars. For this group of questions, the authors of the paper mainly deal with the reason and time of consumption, the preferred flavor, and the factors of choice for this food snack.

The first and main question of this section was concerning the consumption of protein bars (Table 3).

The authors of the paper have asked whether the respondents generally consume protein bars.

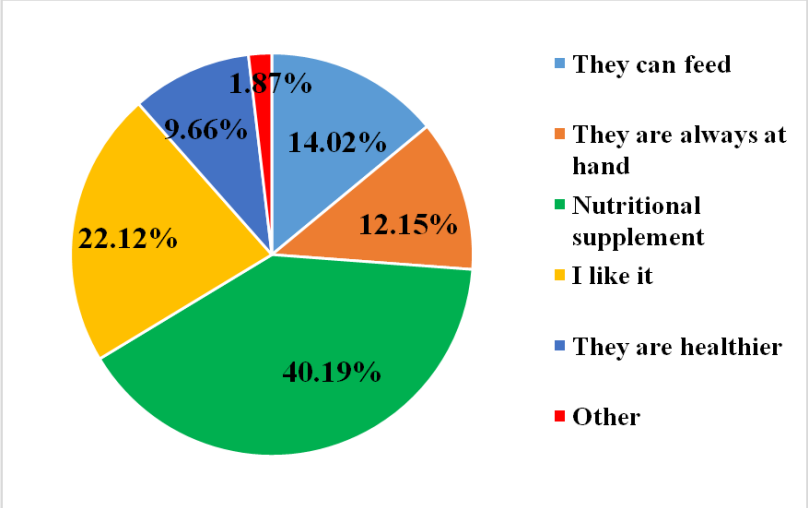

Figure 5 Reasons for consumption.

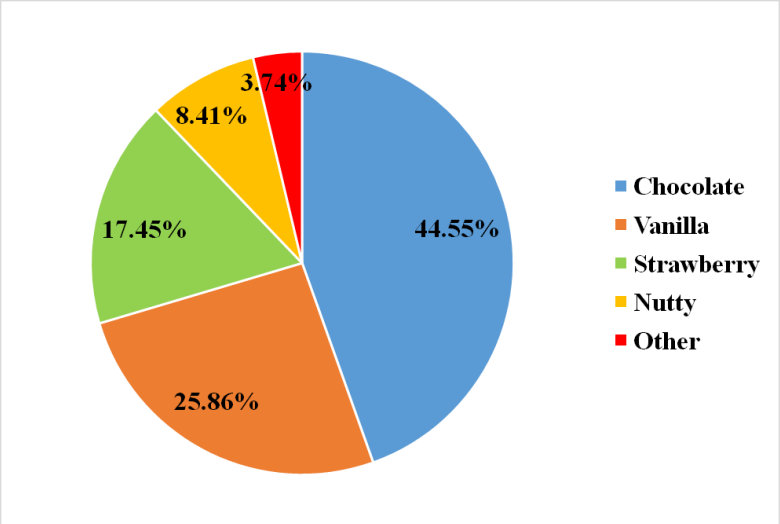

Figure 6 Preferred flavors.

Table 3 Consumption of protein bars.

Consumption	Count	%
Yes	321	51.20
No	306	48.80

The table clearly shows that the majority of the respondents do not consume the selected food commodity (51.20%). We have assumed such a result as protein bars are specialized food and not everyone knows and looks for this kind of food. Here the survey for some respondents is over. The authors of the paper have filtered out the respondents who do not consume protein bars so that testing can continue to evaluate the primary data obtained. From the original number of 627 respondents, only 321 respondents continue to be evaluated.

Based on the factors, the statistical observation was made on the presumption - whether there is a relationship between a sex and protein bar consumption.

H_0: There is no relationship between sex and protein bar consumption.

H_1: There is a relationship between sex and protein bar consumption.

The *p*-value of Pearson's Chi-square good-fit test is used to verify the hypotheses. Testing was carried out at the selected level of 5% significance, i.e. alpha as 0.05. In this case, the *p*-value = 0.0257, which means that the authors of the paper have rejected the null hypothesis. The authors accept the alternative hypothesis and declare that p 95% reliability is the relationship between sex and protein bar consumption. Based on the test results, the authors of the paper consider the assumption to be correct.

This was followed by a question about the frequency of protein bar consumption among the respondents. Most respondents (46.73%) declare they only consume protein bars occasionally. In this case, this means that eating this food does not have a regular place in the respondents' menus. The consumption was admitted once or twice a week (38.94%). In this case, the authors of the paper can assume that such consumers engage in some kind of sports activity. The last most frequently reported option was an interval of three to four times a week (11.21%). The authors of the paper have discussed the reason for buying this food commodity. This type of food belongs to specific and low-demand food for the majority of the population. The reasons for buying this specific type of food are shown in Figure 5. The chart shows that the respondents consume protein bars based on their nutritional value (40.19%). In this case, however, not all protein bars have the appropriate nutritional values **(Fernan et al., 2017)**. The research has evaluated and tested this type of food, sensory testing or, laboratory testing for these ingredients and nutritional values. It was concluded that not each protein bar should be called a protein bar. Some of them contain much more sugar than proteins and in this case they should not be categorized as protein bars **(Imtiaz et al., 2012; Zhou et al., 2013)**. The original protein bar should contain as little sugar as possible and the protein content should exceed the sugar value **(Li et al., 2008)**. The taste came in the second (22.12%) as the reason for the choice. As part of this response, the respondents declare they like protein bars and therefore buy them. In this case, they do not pay attention to the reasons for purchasing this specific commodity. 39 respondents said they buy protein bars mainly because they are always on hand when they get hungry. With this possibility, however, it should be kept in mind that protein bars are only a nutritional supplement **(Maughan et al., 2007)**. They do not replace a full-fledged and mainly nutritious meal in any way**(Singh et al., 2008)**. In the last place (1.87%) there were various other reasons for the consumption and purchase of protein bars, such as consumption is fashionable.

The authors of the paper have also asked the respondents when they consume protein bars most often. So whether they have a daily ritual of consuming these special kinds of food or do not solve it during the day. Most respondents stated that they do not need any special reason to consume sticks, and therefore they consume them at any time of the day when they feel like eating it (53.89%). Then followed the possibilities of consumption, which are already a daily ritual. The second most marked place was consumption after sports activity (31.46%). This was followed by consumption before sports activity (9.35%). According to **Corrado et al. (2003)**,sportst activity refers to any physical activity related to sport (training, exercis,e and various types of sport). In this case, the consumption before and after sports activity is due to the nutritional composition of various substances that have a positive effect on the stressed body **(Thiansilakul et al., 2007)**.

Another essential question of protein bar consumption was the question of preferred protein bar flavor. These flavor preferences are shown in Figure 6.

It follows from Figure 6 that the respondents prefer the consumption of chocolate protein bars (44.55%). Vanilla flavor (25.86%), strawberry flavor (17.45%), and hazelnut flavor (8.41%) followed. In the last place, there was the possibility of other flavors (3.74%). In this case, the respondents had in mind various other flavors such as lemon cake, coconut flavor, or various other fruit flavors in the limited editions.

Based on the factors, the statistical observations were made on the assumption - whether there is a relationship between age and the preferred flavor of protein sticks.

H_0: There is no relationship between age and preferred flavor of protein bars.

H_1: There is a relationship between age and preferred flavor of protein bars.

To verify the established hypotheses, the authors of the paper have used the *p*-value of the Pearson Chi-square test of good conformity. Testing was carried out at the selected level of 5% significance, i.e. alpha as 0.05. In this case, the *p*-value = 0.0358, which means that the authors have rejected the null hypothesis. The authors of the paper have accepted the alternative hypothesis and confirm that 95% confidence is the relationship between age and preferred flavor of protein bars. Based on the test results, the authors of the paper have considered the assumption to be correct. For better clarity, see figure 7.

It is clear from Figure 7 that the age structure influences the flavor decisions. This was followed by a question about the choice of protein selection factor. The respondents had a choice of five factors affecting their purchase. These factors were arranged from the most important to the least important factor. The numbers from 1 to 5 were assigned to each factor, with a score of 1 being the least important factor and the value of 5 being the most important factor. These values are shown in Figure 8 for clarity. The figure shows that the most important factor in the selection of protein bars is their particular flavor. Up to 45.18% of the respondents claimed the importance of the flavor. The flavor itself is a very important factor in the choice of any food **(Guichard, 2007)**. Interestingly, the selection factor nutritional supplement – 25.00% ended in the second place. This was followed by a brand, which is one of the basic factors for choosing a particular product. Subsequently, the price was placed (9.04%) and packaging was the least important factor. In very few cases the packaging itself is a decisive point in the choice of food **(Pollard et al., 2002; Pierański et al., 2017)**. This is due to the saturation of the market for this food commodity, as well as due to its specific location and respondents' attitude to its consumption **(Wells et al., 2007; Kozelová et al., 2014)**.

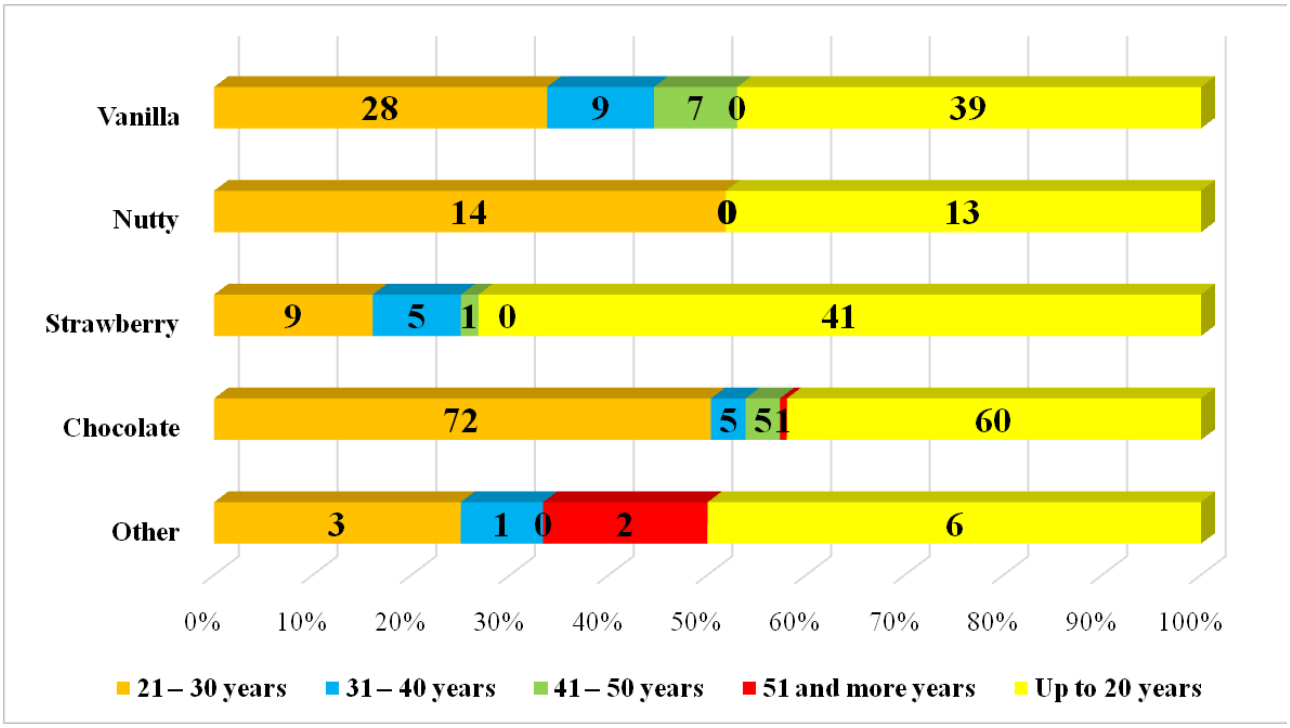

Figure 7 Preferred flavor by age.

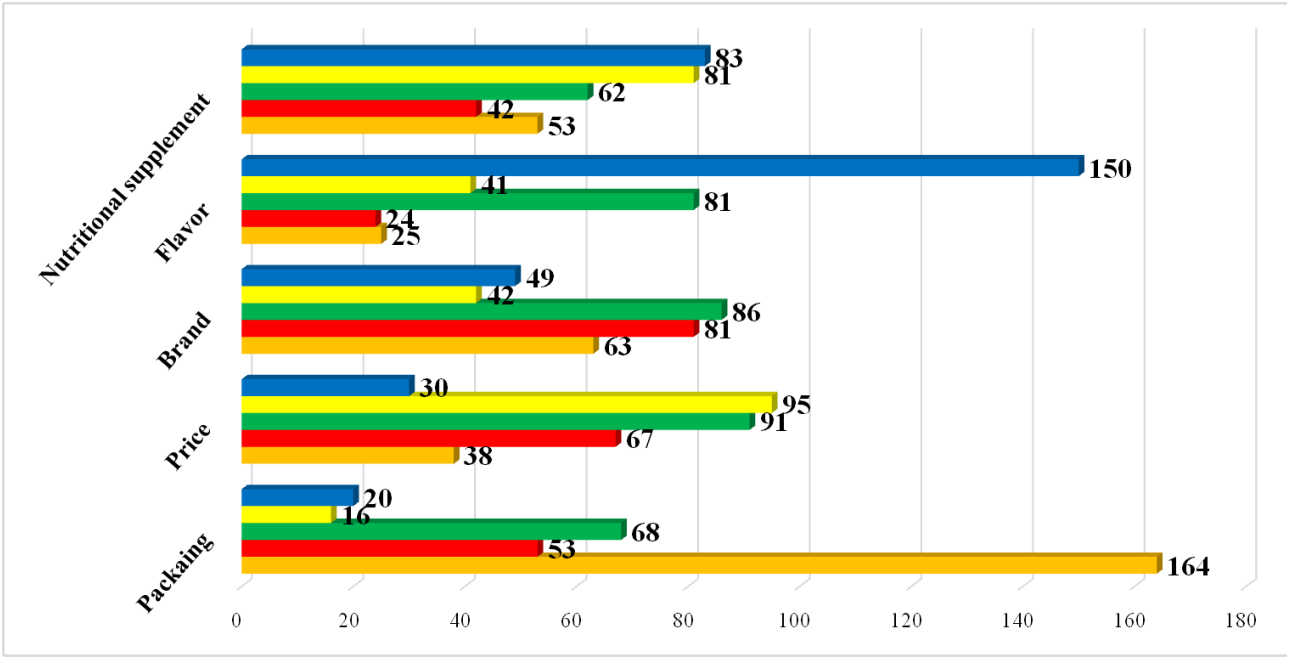

Figure 8 Protein flavor selection factor.

Based on the factors, the statistical observations were made on the assumption - whether there are differences between the influence of individual factors and the purchase of protein bars.

H_0: There are no differences between the influence of individual factors and the purchase of protein bars.

H_1: There are differences between the influence of individual factors and the purchase of protein bars.

The authors of the paper have used *p*-value from the Kolmogorov-Smirnov test of good conformity to verify the hypotheses. Alpha will be 0.05. In this case, the *p*-value = 0.0158, which means that the authors of the paper reject the null hypothesis. The authors accept the alternative hypothesis and declare that with 95% reliability, there are differences between the influence of individual factors and the purchase of protein bars. Based on the results, the authors of the paper consider the assumption to be correct.

The last question of the questionnaire survey focused on one of the most important factors, which plays an essential role in the purchase of food – and that is a price. The authors of the paper asked the respondents how much they are willing to spend on a protein bar. General weight of 100 grams was set for this question. Most respondents chose between 1.1 € and 2 € (73.52%). In the second place, there was a sum from 2.1 € to 3 € (17.76%). 6.85% of respondents indicated the price value up to 1€. In the last place, there was an interval of more than 3 €, which was chosen only by 6 of the surveyed consumers.

CONCLUSION

The paper analysed the consumer behaviour on the market of the selected food commodity – protein bars, which can be classified as healthy food. The survey was carried out on the selected sample of the respondents with the different gender, age, and lifestyle to be in accordance with the main sample of citizens of the Slovak Republic. The results showed that more and more consumers are becoming interested in the quality of products they purchase, as up to 62.04% of respondents stated the quality as a decisive factor when purchasing food and the price, which has always been at the forefront of the factors, reaching the second place (25.68%). The survey focused also on the healthy lifestyle of the respondents and buying healthy food. In this case, more than half of the respondents stated that they intentionally buy healthy food (60.13%), as they want to have healthy, full-featured, and longer life (51,69%). As far as the healthy lifestyle is concerned, up to 74.80% of the respondents were convinced that they can describe their lifestyle as healthy, and more than half of them reported practicing sport activities once or twice a week. Subsequently, the questions related to the purchase and consumption of protein bars followed. The most responses (51.20%) do not choose this food commodity, however, these results were expected as the protein bars are classified as specific food. The respondents, who purchase them, do it for their nutritional value (40.19%), but paradoxically they choose among them according to the flavor (45.18%) and not nutritional value (25.00%), and only 31.46% of the respondents consume this type of food after sports activity.

When buying the different food commodities, the consumers behave individually, and therefore, there is no general formula that can describe fully this daily shopping behaviour. Ultimately, the authors of the paper can conclude that consumer behaviour is unpredictable in all respects and the marketers can just work with their assumptions.

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