

Nutritive Marketing with a Special Review on Honey

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Abstract: *Nowadays, many marketing strategies are applied as support for the big companies in researching consumers' behaviour when buying alimentary products. The working success of these companies depends much on having information about the consumers' buying decisions via discovering buyers patterns of best buyers and predicting their behavior. Research on how much do nutritive qualities affect the buying behavior of alimentary products, is showing an upward movement, and, therefore, there is a greater need to include a nutritional determinant. The research subject of this paper is the theoretical development of a new methodology in the area of marketing, aiming toward the significance of a nutritional determinant in alimentary products, the consumers' behavior in the part of the influence of the nutritive qualities, and toward using concepts for emphasizing the nutritive qualities and components which affect people's health and wellbeing. This methodology is causing a new concept of marketing called Nutritive marketing which includes a couple of principles (3N). The research is justified with implementing the principles of nutritive marketing of honey as a product with high nutritive value. One of the principals of nutritive marketing is the way of determining the degree of influence the nutritional determinant has on consumers' behavior. A partial implementation of the nutritional marketing on honey has been shown. For that purpose, a survey has been carried out on honey consumers in the Republic of Macedonia. Additionally, progressive analysis has been done to the data from the survey. The analysis has been justified with creating many statistical models, part of which are the model for correlational analysis and the model for patterns distribution. The new concept called Nutritive marketing will give information about how much is the consumer informed about the nutritive qualities of alimentary products, about their quality in the process of buying, about declaration of alimentary products, the product's quality and its importance in the diet. Also, the principles of nutritive marketing and the developed methodology will enable companies to create a successful marketing strategy for alimentary products. The benefit could be triple: benefit for companies by bigger profit, benefit for citizens by consuming healthy and safe alimentary products, and, finally, benefit for the country.*

Keywords: *Nutrition marketing, Nutritionism, nutritional properties, consumers' behavior, honey, 3N*

I. Introduction

Nowadays, great attention is paid on consumers' behavior as one of European perspectives, [1], and that can be researched through various marketing concepts, aiming to help companies get information as how to please the requests, wishes, and needs of the consumers, and how to directly influence on the company's success in all aspects. This is a complex task because there is no ready formula about people's behavior while buying, and often times buyers themselves don't know what influences their buying. People's behavior while buying, despite its variability, can be presented as a complex system, stipulated with the help of dynamic modeling and creating models. As a result, we can research the nature of people's behavior while buying with all parts of its complexity, and analyze all the dynamical behavior in a line of presumptions and conditions.

In the process of researching consumers' behavior and developing marketing strategies, it is important to include scientific methodologies and concepts by using modern technology, such as: database management system (DBMS); geographic information system (GIS), [2], [3], [4], which enables creating systematic models that can describe the current state and project the future; progressive analysis on data base by using methods from data mining, which will enable receiving good information about consumers' behavior, [5], [6], [7].

In the last few years diseases prevention has been an important part of living in a society, and it has led to the path of consuming healthy food. Ours and other research show that the number of consumers who pay attention to their food and think about the nutritive qualities of their food, is getting higher, [8], [9], [10]. This information is crucial for the big companies in the area of nutritional industry, because consumers' behavior, especially in the part of nutritive qualities of alimentary products, [11], identifies the different elements which stimulate buying and this can help in spreading the profile brand, its enhancement, and development. Creating the so called Nutritive marketing is important, because it will state the degree of influence the determinant has – nutritive qualities (vitamins, minerals, and other elements important for the human body) while buying alimentary products [12], and it will enable creating a successful marketing strategy.

II. Nutrition Marketing

Nutritionism as a science is rising, whereas Nutritive marketing as a novelty in the area of marketing, is an innovation received on the basis of our research, which needs to be applied and included in the process of planning and in marketing conceptions, with the aim of achieving improvement in the part of emphasizing the nutritive qualities of alimentary products, developing better alimentary products, better rank and place on the market, which will cause benefits for companies (and lower competition), consumers, and society. This marketing concept for consumers of nutritive food will mean greater knowledge, creative awareness, real availability, as well as all benefits given with consuming alimentary products.

Nutritive marketing represents a concept of creating bases that enable ways of emphasizing the nutritive qualities of products toward improvement of people's health. The main accent of nutritive marketing is in the part of influencing consumers and their little knowledge, clarity, and availability of the product with its nutritive qualities and components in the part of perceiving benefit from it as well. Consumers can be oriented toward products with internal health benefits which are actually well-designed, wished-for, good-quality, safe and tasty alimentary products on which you can read about their benefits.

One part of the Nutritive marketing principles is a social process which will affect companies by creating concrete and clear values, by investing and usage in nutritive marketing as a process of innovation where individuals and groups of consumers get what they need and want, via clearly-defined aims by companies.

Although encouraging people to eat more healthy food is in rise, you can only promote better health through nutritive marketing, with more efforts by companies which will emphasize introducing this type of marketing, which offers more opportunities for promotion and taking a higher place on the market. Nutritive marketing analyses consumers' behavior in the area of influencing the nutritive qualities of food, and analyses what can be done to improve their diet, uses concept for emphasizing nutritive qualities and components that affect people's health and well-being.

The real challenge in nutritive marketing is in spreading new tools for companies. If these were to be implemented, they could lead to positive and optimal solutions benefiting consumers and the company. With marketing communication, companies aim to inform, convince, and remind the current and potential consumers, but that communicational message needs to be clear, whole, and at the highest level, by taking measures of leading the consumer to think and bring the right decisions while buying. In order to wake the consumer's responsibility about taking action for balancing health and well-being, companies-producers must invest in nutritive marketing as a crucial tool in the chain of consumers' healthy living style as a part of the personal determinant. The promoting strategy needs to be worked-out in detail and to see its importance through creating optimal decisions and directions while choosing products, and to mark off products that have emphasized nutritive qualities as an innovative way for companies.

The aspect of industry about healthy food is not only financial and commercial. The industry itself is aiming to improve consumers' health, which is at the same time a **socially-responsible approach**. The awareness of a bigger level of health among people needs **to be encouraged and supported with government regulative, by various campaigns, laws, and regulative instruments of introducing nutritional marketing**.

With introducing nutritive marketing, the intake of financial resources of companies is instigated, and it represents a working concept of an economical process regulated with the current functions and aims that mean their optimal realization with clearly-put aims and principles. One of the issues that companies face nowadays is not deficit of products and utilities, but deficit of consumers. **And the incentive that could affect the interest of consumers toward a particular product is nutritive marketing.**

Companies need to invest in nutritive marketing because the politics of companies itself would be a unique story and a good incentive for business support via sending real messages to the real audience. If the product or the service have excellent qualities, but no one knows about it, success won't be a quality. Adding to that, companies need to communicate with the existing clients, with the aim to answer their needs, to support products/services or to find a way to keep the current consumers, by introducing this novelty. Everything adds up to the fact that a business must supply its story to potential clients in the right way, in order to inform them about its existing. But, the representation of the product itself needs to be complete and oriented toward nutritive marketing.

In comparison, modern marketing mix is based on a couple of principles. For instance 4P (1. Product, 2. Place, 3. Price, 4. Promotion, or 5P, 5. People etc.), [13], whereas our research on the influence of nutritive qualities over consumers' behavior has led to the realization that Nutritive marketing needs to be based on three principles, so called 3N:

- **1N-Nutritive qualities:** analyses, selection, definition, postulation;
- **2N-Nutritive quality:** emphasizing, informing, analysis, directions, and maintaining, and
- **3N-Nutritive benefits:** information, creating awareness, convenience and enticement, value.

1N – Nutritive qualities. An analysis including the type of nutritive qualities contained in the product, what are the nutritive qualities that are emphasized in the product, selecting the main nutritive qualities, their concrete definition and postulation.

2N – Nutritive quality. Emphasizing the health facts and informing consumers about the health benefits. Directions lead to the part of maintaining the current quality and/or finding new ways to enhance the quality by finding out creative solutions and optimal directions toward improving the current product and its emphasis.

3N – Nutritive benefits. Informing the consumer in order to acknowledge the benefits, before buying the product, working in the part of consumers' conscience, developing an awareness in the part of buying that they buy exactly what they want to buy, by creating opinions of getting good long-term health benefits. The proper packing is very important, but declaration is even more important, where nutritive benefit will be clearly stated, with the help of which the consumers will be lead to buying the product, but also to develop awareness about how much can this product offer. Also, creating opinions is important for a higher value of the product and the post-buying behavior which will make for buying the product once again, to say good things about it, to pay less attention to other brands and advertisements, and to buy other products by the same company.

It is important for nutritive food industry and companies related to it to understand the gravity of this issue and to invest in the nutritive marketing, which would lead to an optimal visual identity and uniqueness. This will make for affirmation of the consumers' care. They will get products in the example of the most modern ones. With that, the benefit of the nutritive marketing will be triple: bigger profit and success of the companies, benefit for consumers for a healthier and safer diet, as well as economical and social benefit of the country.

III. Honey in Nutritive Marketing

Stating the nutritive qualities for certain products means information about the presence of energetic value and certain nutritive substances in the product. The obligatory supply of nutritional information on the package would help in the food activities as a part of the public health policies, which could include scientific recommendations about nutritive education meant for the public to support choosing food based on information. Certain nutritive elements are important for the public health. Therefore, when stating the nutritive qualities, the quantity of nutritive substances in the product needs to be added. The aim of declaration of nutritional values is to supply a base for the last consumer to make decision based on information and to easily understand the information given in the declaration. Honey is a product or food that has a great nutritive value. In the following text, honey is shown in nutritive marketing.

3.1 Principle 1N: Analysis of nutritive qualities in honey.

Bee honey contains over 70 different substances that are needed for the development and functioning of the human body. The basic and most important components of honey are carbohydrates. They represent 95-98% of the dry substances. Carbohydrates in honey can be presented by 2 monosaccharides, 11 disaccharides and 12 oligosaccharides. A good part of these sugars cannot be found in plants or animals, but are synthesized only by the action of the enzyme invertase on nectar and secretion. Out of all sugars found in honey, the greatest part (over 68% in nectar honey and over 62% in secretion honey) go into monosaccharides – glucose and fructose, conjoined in the term invert sugar. Invert sugars give honey a greater biological and prophylactic value, because they go unchanged through blood, without significantly changing blood sugar levels.

Bee honey from various plants contains up to 5%, and some types (acacial, lavender, dew honey) or even up to 8 – 10% sucrose (cane-sugar). If bees are exclusively fed with floral pasture, the transformation of sucrose into invert sugar, is, almost always done fully, and therefore, that type of honey contains an insignificant amount of sucrose (less than 1%). If bees are purposely given sucrose, then they don't have time to invert it, so that type of honey has a greater amount of sucrose and a weaker quality. This occurrence can also be seen when the baskets are taken near a sugar factory or trading warehouses, because bees find huge amounts of sucrose in them.

Bee honey also contains organic acids in very little amount: formic acid, oxalic acid, lemon acid, wine acid, apple acid, pyroglutamic acid, glucose acid, valerian acid, benzoic acid, and some other upper oil acids. A great part of these acids are contained in honey in terms of esters, which give honey a specific flavor.

Honey also contains salts (phosphates, chlorides, and sulfates the most) and micro as well as macro elements (tin, sodium, calcium, phosphorus, sulfur, chlorine, magnesium, iron, aluminum, mercury, manganese, chromium, zinc, nickel, arsenic, cadmium, titanium, etc.). The quantity of proteins found in honey is insignificant. They vary from 0 to 1.67%, with secretion honey containing more proteins compared to nectar honey. Bee honey contains 18 types of amino acids: lysine, histidine, arginine, aspartic acid, threonine, serine, glutamic acid, proline, glycine, cysteine, valine, methionine, isoleucine, leucine, tyrosine, phenylalanine, and tryptophan. Out of all, proline's quantity is the highest with 80% of the whole content of amino acids.

Honey also contains various enzymes – invertase, diastase (amylase), catalase, acid phosphatase, glucose- octase, polyphenol oxidase, peroxidase, esterase, and proteolytic enzymes. Honey contains the following vitamins as well: A, B, B2, B3, B5, B6, B7, B9, C, E, K.

Bee honey contains insignificant amounts of lipids, which consist of triglycerides, sterols, phospholipids, free fatty acids (palmitic acid, oleic acid, lauric acid, stearic acid, etc.) and esters of the fatty acids. After the analysis of the nutritive qualities, their selection needs to be done in terms of which will be explained to consumers and stated in the declaration of the product. For that purpose, our research continued with a survey study, starting with a thesis that the product is meant for consumers and as such, it needs to meet and reach their needs and requests, but an analysis about the influence of the nutritive qualities of honey over consumers' behavior also needs to be done. The main purpose of this survey study is to detect factors that influence consumers in their choice of honey, opinions about the determinant of nutritive qualities in honey, tagging (declaration) of honey as a product, and questions connected to the politics of honey as food.

Survey study

The survey study was conducted in March 2017 in the city of Skopje. We surveyed citizens as a target group of the study, because of the fact that Skopje is the biggest city in Macedonia and the greatest number of the population lives in Skopje. Taking into consideration that the number of respondents is closely connected to the importance of the given answers, the preliminary study refers to 300 respondents aged 25 and over, and with the aim of getting determinative results, the respondents were chosen randomly. The survey was anonymous and direct (not electronically) in a hard-copy format. The survey that was carried out gave relevant data that will help for a further usage in another analysis that would result with final conclusions in understanding this research.

The survey questionnaire contains a total of thirteen questions. It is divided into two parts. The first part (general part) of the questionnaire contains demographic socio-economical questions. With these questions, we will get information referring to gender, age, education degree, and monthly income of the respondents, which will give a clear picture of the participants in the study. The second part of the questionnaire contains thematic questions that are related to the marketing research aiming to see how much do respondents pay attention to eating healthy food, whether they are familiar with the benefits of honey in their diet, whether they are familiar with the nutritive qualities of honey and that honey has a high energetic level due to the carbohydrates in it, including simple sugars, different from complex sugars such as the crystal white sugar, whether they are familiar with the fact that honey contains numerous vitamins and minerals, whether the nutritive qualities stated on the declaration can influence them when choosing the type of honey, and whether the logotypes for organic production, quality, and safety of the honey can affect when choosing the type of honey. In the following paragraph, you can read five questions from the survey where we stated part of the results from the survey study.

Question number 8. Are you familiar with the nutritive qualities of honey? (1.yes 2-no 3-partially).

Question number 10. Do you know that honey has a high energetic value, due to the carbohydrates contained in it, mostly in the form of simple sugars opposite of the complex sugars such as the crystal white sugar? ((1.yes 2-no 3-partially).

Question number 11. Do you know that honey contains a great number of vitamins and minerals (B complex, A, C, D, E and K, micro and macro elements: magnesium, sulfur, phosphor, iron, calcium, chlorine, potassium, iodine, sodium, copper, manganese, etc.)? (1.yes 2-no 3-partially)

Question number 12. Ca nutritive qualities stated on the honey declaration influence you in choosing honey? (1.yes 2-no 3-partially)

Question number 13. Can logotypes for organic production, quality, and safety of honey influence you in choosing honey? (1.yes 2-no 3-partially)

A great number of statistical analyses were made, and the most significant ones are the correlational analysis and the distribution of patterns. For the correlational analysis a model for a linear correlation has been made, with which we can measure the coefficient of correlation between two and three variables (answers of questions). For determining a distribution of patterns a famous method was used from data mining, the so called Frequent Pattern Mining / The Apriori Algorithm. In Figure1 you can see that we identified the highest number of patters answers 8yes-10yes-11yes, a total of 43, 8part-10part-11part, a total of 36, and 8part-10yes-11yes, a total of 15, which shows that consumers are interested with knowing the nutritive qualities of honey. In Figure 2 you can see that we identified the highest number of patterns with answers 8yes-12yes-13yes, a total of 41 and 8part-12part-13yes, a total of 41, which shows that consumers are fully or partially informed with the nutritive qualities of honey and they read the nutritive qualities as well as the logotypes for organic production, quality, and safety on the declaration when choosing honey.

The rate of correlation in the knowledge of the respondents about the benefits that honey has in their diet and the familiarity with the nutritive qualities of honey among the respondents is moderate ($r=0,48$), and the relation is also moderate between the knowledge of the benefits that honey has in people's diet and the familiarity of the respondents with the high energetic value of honey, due to the carbohydrates contained in it, mostly simple sugars opposite of complex sugars such as the crystal white sugar ($r=0,49$). A moderate correlation is also stated between the knowledge of the respondents about the benefits that honey has in people's diet and the familiarity of the respondent with the information that honey contains a great number of vitamins and minerals (B complex, A, C, D, E and K, micro and macro elements: magnesium, sulfur, phosphor, iron, calcium, chlorine, potassium, iodine, sodium, copper, manganese, etc.) ($r=0,44$).

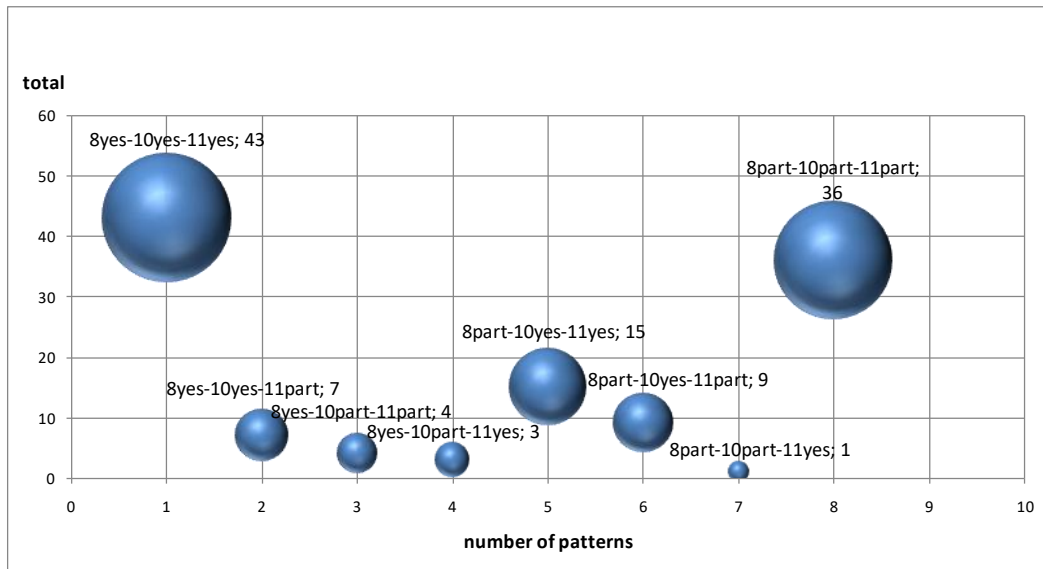


Figure 1. Graphic description of the distribution of questions 8, 10, and 11 for the answers yes and partially.

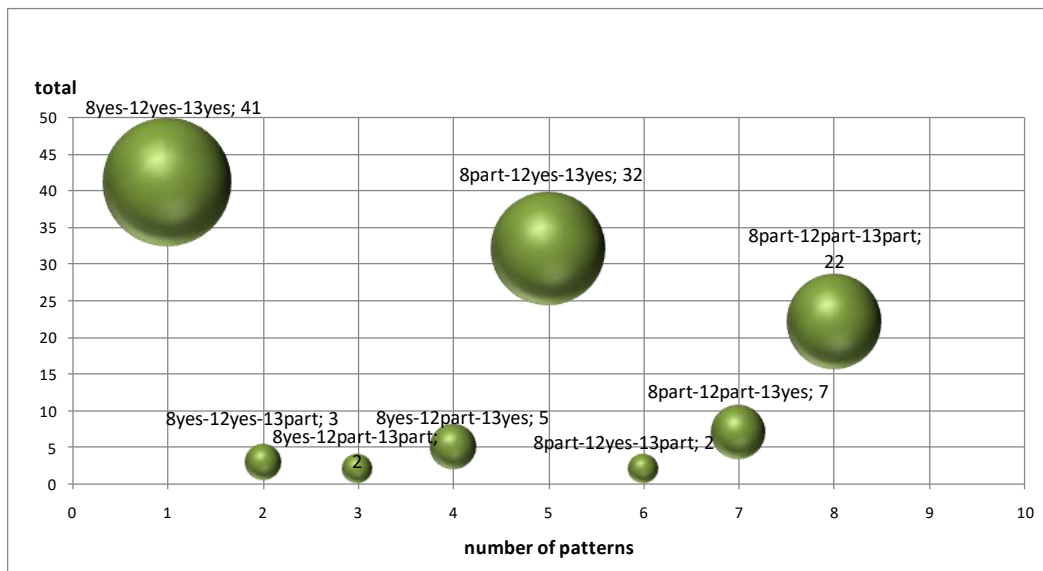


Figure 2, Graphic description of the distribution of questions 8, 12, and 13 for the answers yes and partially

3.2. Principle 2N: Nutritive quality of honey

Out of all life victuals that people use in their diet, honey, due to its harmonic relation between different ingredients and the complexity of the biological segregation among the most important ones. The nutritive and curing value of honey is well known since the dawn of times. The main ingredient of honey is sugar and sugars give it a high-caloric valuable food, especially because sugars in honey are monosaccharides (simple sugars), opposite of the complex sugars such as the crystal white sugar.

As a resource of mineral substances and a great number of vitamins which are necessary for every human body, honey has a great nutritive quality. Minerals and vitamins are necessary for a normal function of

the human body. It contains mineral substances such as: calcium, magnesium, natrium, sulfur, chlorine, and iron, and also contains mineral substances that the human body needs in smaller amounts, such as: copper, iodine, manganese, cobalt, zinc, and molybdenum. From the vitamins, it contains A, B, B2, B3, B5, B6, B7, B9, C, E, K. All of these non-organic substances have an important role in the process of forming the quality of honey. The emphasis of the nutritive quality is, of course, a key element which influences the decision-making process when people buy honey as a safe and good-quality food.

3.3 Principle 3N: Nutritive benefits of honey

Doctors and nutritionists have confirmed that the value of honey does not come only from sugars, but also from its mineral content, the vitamins, enzymes, and the antibacterial substances in honey, which give it a unique importance in the diet of people from different categories, especially children and older people. Many doctors recommend honey in the diet of children as a complementary product, to exclude the crystal white sugar as much as possible, and replace it with honey. Also, for older people it is recommended to consume honey because it strengthens and betters the function on almost all organs and that's why in many countries honey is called "milk for the old".

As a resource of mineral substances and vitamins, which are necessary for every organism, honey has a great nutritive quality. Mineral substances are necessary for a normal functioning of our body. Honey contains substances that our body needs in greater amount, such as calcium, magnesium, sulfur, chlorine, and iron. Also, it contains mineral substances that our body needs in smaller amounts, which are actually traces. Those include copper, iodine, manganese, cobalt, zinc, and molybdenum. All of these non-organic substances have an important role in building the skeleton, enter the structure of cells and act on the enzyme system. The mineral substances such as copper, iron, and manganese, are important for blood maintenance. Honey as food has a huge value in comparison to the crystal white sugar. The human organism is forced to dissolve these sugars into simple ingredients, whereas sucrose from the nectar is dissolved with the help of the ferment invertase by bees. With this, the human body is freed from the effort of dissolving, by which glucose goes directly from the digestive tract into the blood, and the same happens with fructose, but a bit more slowly. Honey is very important for people with weak digestion or if their organism does not produce the enzyme invertase and amylase. Lately, there has been many proves that the excessive usage of the sucrose in the form of crystal white sugar and the various syrups can be very harmful for the human body. A lot of research can be noted that confirms the connection of heart diseases with the excessive usage of white crystal cane sugar and sugar-beet. These negative aspects are not found for honey usage. Honey is a great source for calories that influence the rising of the strength levels in organism among sportsmen and people who work with effort a longer or a shorter period. Life tempo of the modern man is exhausting, so consuming honey will positively influence on the productivity of work. Every-day usage of honey in the diet would also affect for improving theactivelifestyle.

Honey is a product that can be used daily by people of all ages. Honey is recommended in the diet of children, sportsmen, or adults that work a difficult physical or mental job. Honey is used as food in a clean state or as a sweetener instead of sugar (in coffee, milk, tea, lemonades). It is also used in confectionery for making a great number of confectionery recipes, where honey gives not only a sweet taste and a characteristic flavor, but also a better taste, longer storage and structure in comparison to the sweets prepared with sugar.

IV. Conclusion

A novelty in this paper is the so called Nutritive marketing, which includes three principles (3N). The principles are aiming toward the consumers' behavior in terms of food, how to improve the diet, emphasizing the nutritive qualities and components that influence people's health and wellbeing. Nutritive marketing can be shown as a concept for creating basics that ensure directions for highlighting the nutritive qualities of products, aiming to a better choice of good-quality and healthier products, and with that, improving people's health. The main aim of the strategy of nutritive marketing is a better positioning of products on the market.

Research about nutritive marketing of honey is one example of using this concept. And the results that were obtained from the survey study and the progressive analysis that was carried out are important because they give a clear picture about how much does the consumer pay attention on eating healthy, how much are consumers familiar with the benefits of honey, about its nutritive qualities, about the fact that it contains a high energetic value due to the carbohydrates it contains, mostly simple sugars, and that honey contains a great number of vitamins and minerals. The fact that new regulations are brought about marking of the food in R. of Macedonia and because of the numerous regulative in the EU, it is obligatory for nutritive values to be put on the declaration, which means that companies and individuals who produce, fill, and pack honey, need to pay a lot of attention in terms of using nutritive marketing in creating a successful marketing strategy.

The research carried out in this paper will be significant for: big and small companies; companies that are in the production or are filling and packing; various associations (union of associations); organizations of consumers; and Agencies for food and veterinary. These will be able to find out and state how much are

consumers informed with the declaration of alimentary food, with its quality and its nutritive qualities, and how much does all that influence the decision-making process in buying. This information will enable to enforce successful marketing strategies such as Nutritive marketing.

Further development of this research can continue with including new determinants that can significantly influence consumers' behavior and postulating new principles in Nutritive marketing.

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