

ASSESSMENT OF CONSUMER HABITS, ATTITUDES AND OPINIONS TOWARDS HONEY

Monika Glasnović, Ksenija Marković*, Saša Drakula, Nada Vahčić

University of Zagreb, Faculty of Food Technology and Biotechnology, Department of Food Quality Control,
Pierottijeva 6, 10000 Zagreb, Croatia

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Summary

The aim of this research was, through an online questionnaire, to collect data on the habits, attitudes and opinions of consumers towards honey in Croatia, during the spring 2020. The study included 175 respondents, and the results showed that the respondents most often consume honey on a weekly basis (37.1%). Also, 72.0% of sample purchase honey directly from producers, and 73.7% of respondents never purchase honey in a specialised store. Considering the attitudes, the results of the research show that a high share of respondents agrees that they consume honey due to the beneficial effect on health, general quality, and nutritional value (84.0%, 83.4% and 70.3%, respectively). The results of consumer opinions evaluation show that 66.9%, 66.3% and 64.0% of sample agree that the quality of honey is indicated by taste, aroma and texture, respectively, where the highest share (91.4%) of sample agree that honey has a beneficial effect on the immune system, and slightly lower shares agree that honey contains bioactive compounds, has a beneficial effect on the skin, anticancer effect, and a beneficial effect on neurodegenerative changes (80.0%, 69.1%, 56.0% and 49.0%, respectively).

Keywords: honey, consumer opinions, consumer habits, consumer attitudes

Introduction

The properties and chemical composition of honey differ depending on the type of plants from which the bees collect nectar. Honey contains about 200 different ingredients and each has unique nutritional and bioactive properties, but they can also act synergistically (Visweswara Rao et al., 2016). Many consumers are interested in food which bring added value to their health. Increasing trend in healthy lifestyle influences increasing popularity of honey worldwide for its various nutritional benefits (Cosmina et al., 2016; Šedík et al., 2018). Honey makers have to search for new approaches to follow those trends and to learn to understand the numerous factors which influence consumer needs (Ho Chiang Yeow et al., 2013). In performed consumer preferences studies for honey, the data is analysed using qualitative and quantitative methods as well as appropriate econometric models.

There are several factors that affect purchase of honey and they differ among countries. The quality of honey was the main dimension for purchase in many countries: Romania, Hungary, Malaysia, Kingdom of Saudi Arabia, Kenya, Slovakia, Greece (Arvanitoyannis and Krystallis, 2006; Árváné Ványi et al., 2009; Ho Chiang Yeow et al., 2013; Ismaiel et al., 2014; Nabwire Juma et al., 2016; Šedík et al., 2018; Lymperi and Fragkaki, 2020). Further on, price and packaging were one of the most important factors affecting honey purchase for Irish, Hungarian, Czech,

Slovenian, Polish and Malaysian consumers (Murphy et al., 2000; Árváné Ványi et al., 2009; Roman et al., 2013; Ho Chiang Yeow et al., 2013; Šánová et al., 2016; Kos Skubic et al., 2017; Kopała et al., 2019). Most of the studies performed indicated the texture, followed by taste and colour, and finally the aroma as the most important honey attributes for consumers in Ireland, Romania, Western Australia, Kingdom of Saudi Arabia, Italy, Czech Republic, Slovakia, Croatia, Poland and Greece (Murphy et al., 2000; Arvanitoyannis and Krystallis, 2006; Batt and Liu, 2010; Ismaiel et al., 2014; Cosmina et al., 2016; Šánová et al., 2016; Brščić et al., 2017; Šedík et al., 2018; Kopała et al., 2019; Lymperi and Fragkaki, 2020). Labels play a less important role in purchase decision, but significant positive preferences for labelling were recorded for consumers in Kenya (Nabwire Juma et al., 2016). Consumers in Western Australia, Democratic Republic of Congo, Italy, Czech Republic, Kenya, Poland, Greece and Hungary showed strong positive preference for local origin of honey (Batt and Liu, 2010; Gyau et al., 2014; Cosmina et al., 2016; Šánová et al., 2016; Nabwire Juma et al., 2016; Kopała et al., 2019; Lymperi and Fragkaki, 2020; Oravec et al. 2020). Results of purchasing behavior studies showed that consumers in Hungary, Croatia, Poland and Greece mostly purchase honey directly from the beekeepers (Árváné Ványi et al., 2009; Oravec et al. 2020; Brščić et al., 2017; Kopała et al., 2019; Lymperi and Fragkaki, 2020). According to the honey type, most of the consumers in Hungary

prefer acacia and flower (Árváné Ványi et al., 2009), consumers in Croatia also acacia (Brščić et al., 2017), young generation in Slovakia besides acacia chose linden as well (Šedík et al., 2018), while in Poland multi-flower, lime, acacia, buckwheat, honeydew and rapeseed honey were mainly consumed (Kopała et al., 2019). Medical benefits stand out as the most common reasons for purchasing and consuming honey only for consumers in Romania (Arvanitoyannis and Krystallis, 2006), Kingdom of Saudi Arabia (Ismail et al., 2014) and Croatia (Brščić et al., 2017).

The results of consumer preference studies for honey can help beekeepers in their work as well as establish the right tools for their communication with consumers (Oravec et al., 2020; Šedík et al., 2018). The study about consumer preferences for honey on the Croatian market was conducted by Brščić and coauthors in 2017. Since further increase in the level of consumer awareness increases the importance of information that helps them make decisions, the aim of this research was to investigate the habits, attitudes and opinions of consumers about honey on the Croatian market during spring 2020.

Materials and methods

During this research, an online questionnaire was used to collect data on the habits, attitudes and opinions of consumers towards honey, based on a studies by Arvanitoyannis and Krystallis (2006) on an empirical examination of the determinants of honey consumption in Romania, and Brščić et al. (2017) on an empirical examination of consumer preferences for honey in Croatia. The questionnaire was conducted on a sample of 175 respondents over the age of 18, from the territory of the Republic of Croatia. It was available for anonymous online completion in May

2020. All completed questionnaires were valid. The research included the demographic characteristics of the respondents, and was focused on consumers from younger age groups, educated and from urban living environment. The questionnaire was divided into sections, and contained groups of questions regarding consumer habits, consumer attitudes, and consumer opinions towards honey. The questions were closed-ended types with the possibility of choosing only one of the offered answers, except for the assessment of preferred type of honey.

The collected data were analysed by factor analysis followed by the determination of Cronbach's alpha reliability coefficient (Rajh, 2009). Statistical analysis of the data was performed with the software package Statistica 10 (StatSoft Inc., 2011).

Results and discussion

Socio-demographic characteristics of the sample

The socio-demographic characteristics of the consumers are presented in Table 1. The results of the research showed that a total of 154 respondents were female (88.0%) and male 21 respondents (12.0%). The largest number of the sample members were those aged from 18 to 30 years (80.0%), followed by 19 respondents aged from 30 to 40 years (10.9%), 13 respondents aged from 40 to 60 years (7.4%), while 3 respondents were in the age group over 60 years (1.7%). Also, the largest number of respondents has education at the university level, 137 of them (78.3%), while the rest of the sample members have secondary education (21.1%) and primary education (0.6%). The urban area of residence was chosen by 81.1% of respondents and rural by 18.9% of them (Table 1).

Table 1. Socio-demographic profile of consumers (n = 175)

		Share (%)	n
Gender	Female	88.0	154
	Male	12.0	21
Age (years)	18-30	80.0	140
	31-40	10.9	19
	41-60	7.4	13
	>60	1.7	3
Education level	Primary school	0.6	1
	Secondary school	21.1	37
	University	78.3	137
Area of residence	Urban	81.1	142
	Rural	18.9	33

Consumer habits related to honey

Honey is a frequently consumed product, as indicated by the results of this study according to which a one-fifth of sample members (19.43%) consume honey on

a daily basis, and the majority of sample (36.57%) consume honey at least once a week. Almost a one-third of sample members (28.00%) consume honey at least once a month, and only 1.71% never consume honey (Table 2).

Table 2. Consumer (n = 175) habits regarding frequency of honey consumption

<i>I usually consume honey:</i>	n	%
Daily	34	19.43
At least once a week	64	36.57
At least once a month	49	28.00
Less than once a month	25	14.28
Never	3	1.71

Consumer habits regarding the frequency of choosing a particular way of honey purchase were also investigated. The majority of respondents (67.43%) often purchase honey directly from producers,

sometimes on the market (36.00%), while the purchase of honey in a specialised store, supermarket or local store is never chosen by 73.71%, 62.28%, and 61.14% of respondents, respectively (Table 3).

Table 3. Consumer (n = 175) habits regarding the way of honey purchase

<i>I buy honey:</i>	often ^a		sometimes		never	
	n	%	n	%	n	%
In local store	16	9.14	52	29.71	107	61.14
In supermarket	15	8.57	51	29.14	109	62.28
In specialised store	9	5.14	37	21.14	129	73.71
On the market	21	12.00	63	36.00	91	52.00
Directly from the producer	118	67.43	33	18.86	24	13.71

^aLevels of the frequency of honey purchase

Thereby, as the favorite type of honey during purchasing, the largest number of respondents (55) points out floral honey (31.4%), while the second, third and fourth place were taken by acacia honey

(26.3%), meadow honey (20.6%) and chestnut honey (8.6%), respectively. The answers were in general very divided and the respondents chose different types of honey as their favorites (Table 4).

Table 4. Consumer (n = 175) habits regarding type of honey which prefers

<i>My favourite type of honey:</i>	n	%
Acacia	46	26.3
Chestnut	15	8.6
Linden	6	3.4
Floral	55	31.4
Meadow	36	20.6
Sage	7	4.0
Honeydew	4	2.3
Lavender	2	1.1
Other types	4	2.3

Further, as can be seen from the Table 3, the traditional way of purchasing honey on the market is somewhat more desirable for the respondents compared to other

ways, especially the one directly from the producer. The obtained data indicate the fact that the respondents show traditional behavior, and that the way of honey

purchasing is based on experience criteria. The data indicate that a large share of sample does not prefer purchasing a honey in a specialised store, supermarket or local store (Table 3), what additionally shows the dominance of traditional distribution channels. The results are in accordance with the research of Brščić et al. (2017), which showed that the most common way of honey purchase on the Croatian market is directly from the producers or beekeepers.

Table 5. Reasons of honey consumption

<i>I consume honey because of its:</i>	agree ^a		neither agree nor disagree		disagree		Mean (out of 3)
	n	%	n	%	n	%	
Taste	119	68.00	39	22.28	17	9.71	2.58
Nutritive value	123	70.28	33	18.86	19	10.86	2.59
Overall quality	146	83.42	18	10.28	11	6.28	2.77
Method of production	50	28.57	77	44.00	48	27.42	2.01
Safety	64	36.57	82	46.86	29	16.57	2.20
Market availability	45	25.71	70	40.00	60	34.28	1.91
Beneficial effects on health	147	84.00	21	12.00	7	4.00	2.80

^aPoints of a Likert agreement scale

As can be seen in Table 5, the majority of sample members (84.00%) agree with the statement that honey has a beneficial effect on health, what is not surprising because data on the positive effect of honey on health due to the variety of compounds it consists of have existed for more than four thousand years (Bogdanov et al., 2008). It can be seen that respondents have confidence in honey given that 83.42% of sample agree with the statement that honey is consumed because of the overall quality (Table 5). Honey has also a significant nutritive value, is a source of various natural macronutrients and micronutrients which, in addition to meeting energy needs and other biological functions, can participate in the prevention of various health problems or diseases (Alvarez-Suarez et al., 2013). High share (70.28%) of respondents agrees with the statement that honey is consumed due to its nutritive value (Table 5). Furthermore, a large share of respondents (68.00%) agrees with the statement that honey is

Consumer attitudes towards honey

The next group of questions concerned consumer attitudes towards honey with an attempt to establishing main reasons of honey consumption. Statements regarding consumption of honey were offered to the respondents (n = 175) and assessed by a three-point Likert agreement scale (Table 5).

consumed because of its taste. Honey characterises a sweet taste as a result of a high content of various carbohydrates which can contribute to its sweetness. In comparison with other products used as a sweetener, honey is unique due to the variety of compounds (Alvarez-Suarez et al., 2013). Also, because of its taste, honey is a favorite addition to many dishes (Arvanitoyannis and Krystallis, 2006). A small proportion of respondents (36.57%, 28.57% and 25.71%, respectively) agree with the statements that safety, method of production, and market availability are their reasons for honey consumption (Table 5). Thanks to the ingredients that create conditions in which the growth of microorganisms is mostly not possible, honey is a product which also has a long shelf life (Bogdanov et al., 2008), is produced everywhere in the world and its prevalence is very high, which makes it easily accessible and available to all consumers (Arvanitoyannis and Krystallis, 2006).

Table 6. Factor analysis (FA) results of reasons of honey consumption

Factor Loadings (Varimax raw)			
Extraction: Principal components			
Reasons for consuming honey are		Factor 1	Factor 2
	Nutritive value	0.774	
	Overall quality	0.839	
	Method of production		0.715
	Safety		0.762
	Market availability		0.842
	Beneficial effects on health	0.770	
Statistics			
	Eigenvalue	3.024	1.030
	Variance %	50.396	17.162
	Cumulative variance %	50.396	67.558
	Cronbach alpha	0.750	0.737
	Mean	2.72	2.04

In order to explore the dimensions of consumers' reasons for consuming the honey, FA was conducted with 6 variables related to attitudes important for consumers eating decisions (taste was excluded from the analysis). First two factors emerged with eigenvalues greater than 1 explained 67.56% of total variance. The results shown in Table 6 reveal that factor one involves reasons for consuming such as nutritive value, overall quality and beneficial effects on health and majority of these attributes were highly rated on the consumer importance scale (Table 5). On the second factor the remaining three reasons are listed – method of production, safety and market availability. It can be seen from Table 5 that values of importance

for variables market availability, method of production and safety are very low from 1.91 to 2.20. That implies that those reasons for consuming the honey are not highly important. Cronbach alpha implies that selected variables explain very well first (0.750) and second factor (0.737).

Consumer opinions towards honey

The last group of questions concerned consumer opinions towards honey. The first part of the questions from this group referred to selected indicators of honey quality, and the second part to beneficial effects of honey on health (Table 7).

Table 7. Consumer (n = 175) opinions towards quality and beneficial effects of honey

<i>Statement towards honey:</i>	agree ^a		neither agree nor disagree		disagree		Mean (out of 3)
	n	%	n	%	n	%	
The quality of honey is indicated by colour	49	28.00	67	38.28	59	33.71	1.94
The quality of honey is indicated by the texture	112	64.00	41	23.42	22	12.57	2.51
The quality of honey is indicated by aroma	116	66.28	47	26.86	12	6.86	2.59
The quality of honey is indicated by the taste	117	66.86	47	26.86	11	6.28	2.61
The quality of honey is indicated by the data on the declaration or food information	89	50.86	61	34.86	25	14.28	2.37
The quality of honey is indicated by the brand name	18	10.28	63	36.00	94	53.71	1.57
Honey contains bioactive compounds	140	80.00	32	18.28	3	1.71	2.78
Honey contains phenolic compounds	90	51.42	72	41.14	13	7.42	2.44
Honey has a beneficial effect on the immune system	160	91.42	14	8.00	1	0.57	2.91
Honey has a beneficial effect on the skin	121	69.14	51	29.14	3	1.71	2.67
Honey has a beneficial effect on neurodegenerative changes	86	49.14	83	47.42	6	3.42	2.46
Honey has anticancer effect	98	56.00	63	36.00	14	8.00	2.48

^aPoints of a Likert agreement scale

Colour of honey is a sensory attribute and thus quality attribute that consumers will notice first. Determination of colour is useful in classification of honey types, and can vary from transparent colourless, yellow, amber, to dark and black, and depends on the age of the honey, its origin and storage conditions (Pavlova et al., 2019). Numerous studies have confirmed the connection between the colour of honey and the content of phenolic compounds, which are also attributed to a beneficial effect on health. A higher content of phenolic compounds results in a darker colour of honey, and in the presence of a lower content of phenolic compounds, honey will be lighter in colour (Alvarez-Suarez et al., 2013). Furthermore, colour is also associated with the mineral content of honey. The mineral content in honey depends on the botanical origin of pollen, climatic conditions and extraction techniques. In the literature, there are research results

on the association of higher proportions of minerals and dark honey (Pavlova et al., 2019). Respondents in 28.00% of cases agree that the colour indicates the quality of honey, 38.28% chose the answer "neither agree nor disagree", and 33.71% disagree with the statement (Table 7). The results show a division of respondents' opinions about colour as a parameter of honey quality, which can be related to the previously described numerous physico-chemical factors that can affect the final colour of honey. The texture of honey is another significant sensory property, and primarily depends on the method of production (Official Gazette, 2015). Freshly produced honey is liquid, but crystallises sooner or later during storage. Crystallised honey is repulsive to consumers, and mild heating (32-40 °C) is generally used to return crystallised honey to a liquid state. To avoid unwanted changes in heat-sensitive compounds, it is recommended not to use

temperatures above 40 to 50 °C. In addition to high temperatures, the chemical composition of honey can be affected by long-term storage, with the formation of hydroxymethylfurfural and deactivation of the major enzymes present in honey like diastase (amylase), invertase (α -glucosidase), glucose oxidase, along with catalase, acid phosphatase, protease, esterase, β -glucosidase which can also be present (Al-Ghamdi et al., 2019). Considering the texture, the majority of sample members agree that the texture indicates the quality of honey (64.00%), some respondents choose the answer "neither agree nor disagree" (23.42%), and a smaller share of sample (12.57%) disagree with the statement (Table 7). It can be assumed that the results indicate that most consumers consider the texture to be one of the most important parameters of honey quality as they associate it with the crystallisation process due to which crystallised honey has a different, granular texture than the initial viscous one. The next two questions concerned the indication of aroma and taste on the quality of honey. The aroma of honey depends on the composition of the volatile compounds present, and the characteristic sweet taste comes from the most numerous constituents of honey, fructose and glucose. In addition to the sweet taste, honey is also characterised by a sour taste derived from organic acids, however honey is only seemingly sour because a high sugar content masks the acidity of organic acids. Some research results have shown that darker types of honey are often more acidic compared to lighter honey. Storage of honey also increases its acidity and therefore the taste may indicate a reduced quality of honey. Depending on the botanical origin, honey may contain small amounts of bitter substances such as alkaloids, polyphenols, glycosides and terpenoids (Pavlova et al., 2019). Changes in aroma and taste can make honey less attractive to consumers (Castro-Vázquez et al., 2012). The results of this research show that the opinion of the respondents on the indication of aroma and taste on the quality of honey is the same (Table 7). Considering all the statements about the selected indicators of honey quality, the majority of sample members generally agree with the statement that aroma (66.28%) and taste (66.86%) indicate the quality of honey (Table 7). The Official Gazette (2015), document valid in Croatia, prescribes the conditions that honey must meet. Accordingly, the declaration on honey must be in accordance with the Official Gazette (2015), and the data on the declaration may indicate the quality of honey. Half of the sample members (50.86%) agree with the statement that the data on the declaration indicate the quality of honey (Table 7). Furthermore, only a small share of respondents (10.28%) agrees

with the statement that the brand name indicates the quality of honey, while a large share (53.71%) disagrees with that statement (Table 7). Compared to the survey conducted in Romania, the respondents included in this research consider brand name much less important (10.28%) as a parameter of honey quality compared to the respondents in Romania (58.0%) (Arvanitoyannis and Krystallis, 2006). Considering all the statements referred to selected indicators of honey quality, it is noticeable that the smallest share of respondents agree that the brand name indicates the quality of honey, a certain share of respondents agree that colour indicates the quality of honey, and a slightly higher share agree that data on the declaration or food information indicate quality of honey. Most of the respondents agree that the texture, aroma and taste of honey indicate the quality of honey. In contrast to this study, the results of a study by Richardson et al. (1994) suggest that consumer assessment regarding to product quality is more oriented to extrinsic characteristics rather than intrinsic ones. Since honey is most often purchased directly from the producer as a non-branded product of non-standard quality, intrinsic visual or sensory characteristics such as colour, texture, taste and aroma can be easily assessed and used as a quality criterion. The obtained results of this research are in line with the results of the research conducted in Romania, with the colour of honey as an exception for which 92.4 % of respondents in Romania agreed to indicate the quality (Arvanitoyannis and Krystallis, 2006). In the last part of the research, an attempt was made to evaluate consumer opinions towards beneficial effects of honey on health (Table 7). A large share of sample (80.00%) agrees with the statement that honey contains bioactive compounds (Table 7). A slightly lower share (51.42%) agree with the statement that honey contains phenolic compounds, but 41.14% of respondents are not sure and choose the answer "neither agree nor disagree", and 7.42% of respondents disagree with the statement that honey contains phenolic compounds (Table 7). The presence of phenolic compounds in honey has been established in numerous studies (Alvarez-Suarez et al.; 2013; Bogdanov et al., 2008; Cianciosi et al., 2018). Honey exhibits number of physiological effects, which are highly dependent on content of phenolic compounds (Visweswara Rao et al., 2016). The majority of respondents in a high share of 91.42 % agree with the statement that honey has a beneficial effect on the immune system. The answer "neither agree nor disagree" in the case of this statement is chosen by 8.00% of respondents, and only 1 respondent disagrees with that statement (Table 7). The antibacterial, anti-inflammatory and antioxidant properties of honey and its beneficial effect on the immune system are known (Oryan et al., 2016). Honey has a

positive effect on the immune system because it increases the amount of important structures in the immune system such as B and T lymphocytes, antibodies, leukocytes and natural killer cells which consequently strengthens an individual's immunity (Timm et al., 2008). Throughout long human history, honey has been used in many cultures to treat burns and heal wounds. It is the oldest biomaterial for wound bending and its effectiveness in wound treatment has been confirmed through numerous studies (Alvarez-Suarez et al., 2013; Henatsch et al., 2018). The botanical and geographical origin, and the chemical composition of honey can contribute to the antibacterial potential of honey, but also be a source of variation in antimicrobial activity between different types of honey (Ghramh et al., 2019). The results of this study show that 69.14% of respondents agree with the statement that honey has a beneficial effect on the skin, 29.14% of respondents in the case of this statement chooses the answer "neither agree nor disagree", and with statement disagree only 1.71% of respondents (Table 7). Recent studies have shown that phenolic compounds present in honey enhance the defense mechanism against oxidative

stress and molecular degradation caused by free radicals and therefore have a positive effect in protection against neurodegenerative diseases such as Alzheimer's, Parkinson's or Huntington's disease (Rahmann et al., 2014). 49.14% of respondents, according to the results of this study, agree with the statement that honey has a beneficial effect on neurodegenerative changes, 47.42% of respondents "neither agree nor disagree" with the statement, and 3.42% of respondents disagree with that statement (Table 7). Also, the results of this study show that 56.00% of respondents agree with the statement that honey has an anticancer effect, 36.00% of respondents "neither agree nor disagree", while only 8.00% of respondents disagree with the statement that honey has an anticancer effect. The scientific literature states that phenolic acids and flavonoids in honey represent promising pharmacological agents for the treatment of various types of cancer (Jaganathan and Mandal, 2009). Numerous studies indicate the therapeutic potential of honey, and the positive effects are mostly attributed to the antioxidant, anti-inflammatory and anti-apoptotic effects of the honey compounds (Talebi et al., 2020).

Table 8. Factor analysis (FA) results of consumer opinions towards quality and beneficial effects of honey

Factor Loadings (Varimax raw)					
Extraction: Principal components					
The quality of honey is indicated by		Factor 1	Factor 2	Factor 3	Factor 4
	Colour		0.558		
	Texture		0.654		
	Aroma		0.827		
	Taste		0.714		
	Data on declaration				0.802
	Brand name				0.639
	Content of bioactive compounds	0.675			
	Content of phenolic compounds	0.782			
Honey has beneficial effect on					
	Immune system			0.703	
	Skin			0.755	
	Neurodegenerative changes	0.669			
	Anticancer effects	0.603			
Statistics					
	Eigenvalue	2.640	1.901	1.294	1.093
	Variance %	22.004	15.842	10.785	9.111
	Cumulative variance %	22.004	37.846	48.631	57.742
	Cronbach alpha	0.683	0.657	0.407	0.331
	Mean	2.54	2.41	2.79	1.97

In order to explore the dimensions of consumers' opinions towards quality and beneficial effects of honey FA was conducted with 12 variables related to opinions important for consumers. First four factors emerged with eigenvalues greater than 1 explained 57.74% of total variance. The results shown in Table 8 reveal that factor one involves opinions about beneficial effects of honey and content of bioactive compounds in it due to which the honey actually has

positive effects on human health (Table 7). On the second factor four reasons are listed too, and speak of the sensory properties of honey important for consumers when assessing quality, however, the aroma and taste are more correlated to factor two than the colour and texture. The third factor also corresponding to positive effects of honey to immune system and skin while fourth factor is related to quality of honey given by declaration on the product and

brand name (Table 8). Cronbach alpha values for all observed factors were below 0.7. Low Cronbach alpha values could be explained by low number of variables explaining each factor, poor interrelatedness between them and/or their heterogeneity (Tavakol and Dennick, 2011).

Conclusions

The results of this study provide useful information for local beekeepers to create marketing strategies. It was found that honey is most commonly consumed on a weekly basis, mostly purchased directly from the producer and almost never in a specialised store. Floral, acacia and meadow were the most preferred honey types. Taste, aroma and texture emerged as the key indicators of honey quality. Most respondents consume honey for its health benefits, general quality and nutritional value and believe that it has a beneficial effect on the immune system and contains bioactive compounds.

The applied measurement scale for measuring consumer reasons for honey consumption was confirmed as a valid instrument. The scale for measuring honey quality and its positive effects on human health should be further improved, indicating a need for additional research in this area in the future.

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