

**THESIS OF DOCTORAL (PhD)  
DISSERTATION**

**Mezőné Oravecz Titanilla Éva**

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**SZENT ISTVÁN UNIVERSITY**

**Doctoral School of Economic and Regional Sciences**



**THESIS OF DOCTORAL (PhD)  
DISSERTATION**

**MARKETING CONTEXT OF CONSUMER  
AND ORGANIZATIONAL  
CHARACTERISTICS OF THE HUNGARIAN  
HONEY MARKET**

**Mezőné Oravecz Titanilla Éva**

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**NAME OF DOCTORAL SCHOOL:**

Doctoral School of Economic and Regional Sciences

**DISCIPLINE:** Management and Business Administration

**HEAD OF**

**DOCTORAL SCHOOL: Prof. Dr. József Popp, PhD**

Corresponding Member of the Hungarian  
Academy of Sciences

Head of Doctoral School, university  
professor

Szent Istvan University

Faculty of Economics and Social Sciences

Institute of Agrobusiness

**SUPERVISOR:**

**Prof. Dr. József Lehota, PhD**

professor emeritus

Szent Istvan University

Faculty of Economics and Social Sciences

Institute of Supply Chain Management,

Marketing and Tourism

.....

Approval of Head of Doctoral School

.....

Approval of Supervisor

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# 1. INTRODUCTION

## 1.1. Research background and problem statement

The current economic situation poses serious challenges to beekeepers, export markets are uncertain, and the impact of the economic damage caused by the coronavirus on the future is still unpredictable. The beekeeping sector is facing a crisis across Europe due to the serious bee health situation, the spread of bee diseases and mass uterine deaths that has developed in recent years (JACQUES et al. 2016, National Hungarian Beekeeping Association, hereinafter: OMME 2019). Climate change, the decline of natural bee pastures and the increasing use of pesticides are fundamental problems (TÓTH 2019). Beekeeping sector is highly vulnerable to both market and external environmental factors (OMME 2018).

Available information about the situation in the beekeeping sector is marginal both in terms of economic and production factors and sales data. This fact is detrimental to the players in the sector, also in terms of identifying sectoral problems and opportunities for development. Regarding the situation of the domestic sector, a complex analysis was prepared by NYÁRS (2001) and VARGA et al. (2009). For the purpose of the economic analysis of the Hungarian beekeeping sector, BARTOS (2008) examined the producer side and performed surveys among the beekeepers in South Transdanubia ( $n = 1\ 242$ ), while NAGY (2007) analysed the situation of apiary in the Western Transdanubia region by county level ( $n = 12\ 000$ ). KECSKÉS - KULCSÁR (2000) presented and summarized the results of the General Agricultural Census of the Central Statistical Office (KSH 2001). ÁRVÁNÉ (2011) studied the Hungarian honey market and honey consumer behavior, while KUJÁNI - VARGA (2013) examined the sustainability of beekeeping enterprises. To the best of my knowledge, in recent years, no significant research has been conducted on the Hungarian honey market and honey consumption habits.

The analysis of the economic situation of each group of countries has a great importance for its smooth operation (FENYVES et al. 2019). One of the most important Central and Eastern European collaborations is Visegrad cooperation (KÁPOSZTA – NAGY 2015), which accounts for a significant part (almost 25%) of the EU beekeeping sector, both in terms of honey production and the number of apiaries. Therefore, Hungary's honey market will be presented primarily together with the Visegrad countries.

Domestic honey consumption shows a rapidly increasing trend (OMME 2020), however, it is still far behind the previous EU average (BOGDANOV et al. 2008). Increasing demand for healthy nutrition (SZAKÁLY 2017), increasing discretionary incomes and product diversification (GAO - ZHAO 2016, ZHANG 2018) played a significant role regarding the growth of honey consumption. Experts and researchers predict a further increase in the demand for domestic honey beyond the expansion of supply, explaining that consumer awareness is increasing, and more and more people know and appreciate the values of real honey (FELDMAN 2018).

## **1.2. Research objectives**

The main objectives of the dissertation are the followings: to examine the habits of Hungarian honey consumers, to understand the main characteristics of Hungarian honey consumption, to map consumer preferences, attitudes and the most important factors influencing purchase decisions. Furthermore, the dissertation is intended to segment the consumers based on the factors determining their honey purchase, to identify the attitude components related to domestic and imported honey, to examine their image-creating effect, and to explore the factors explaining the intention to buy honey, both in terms of domestic producers, domestic stores and imported honey.

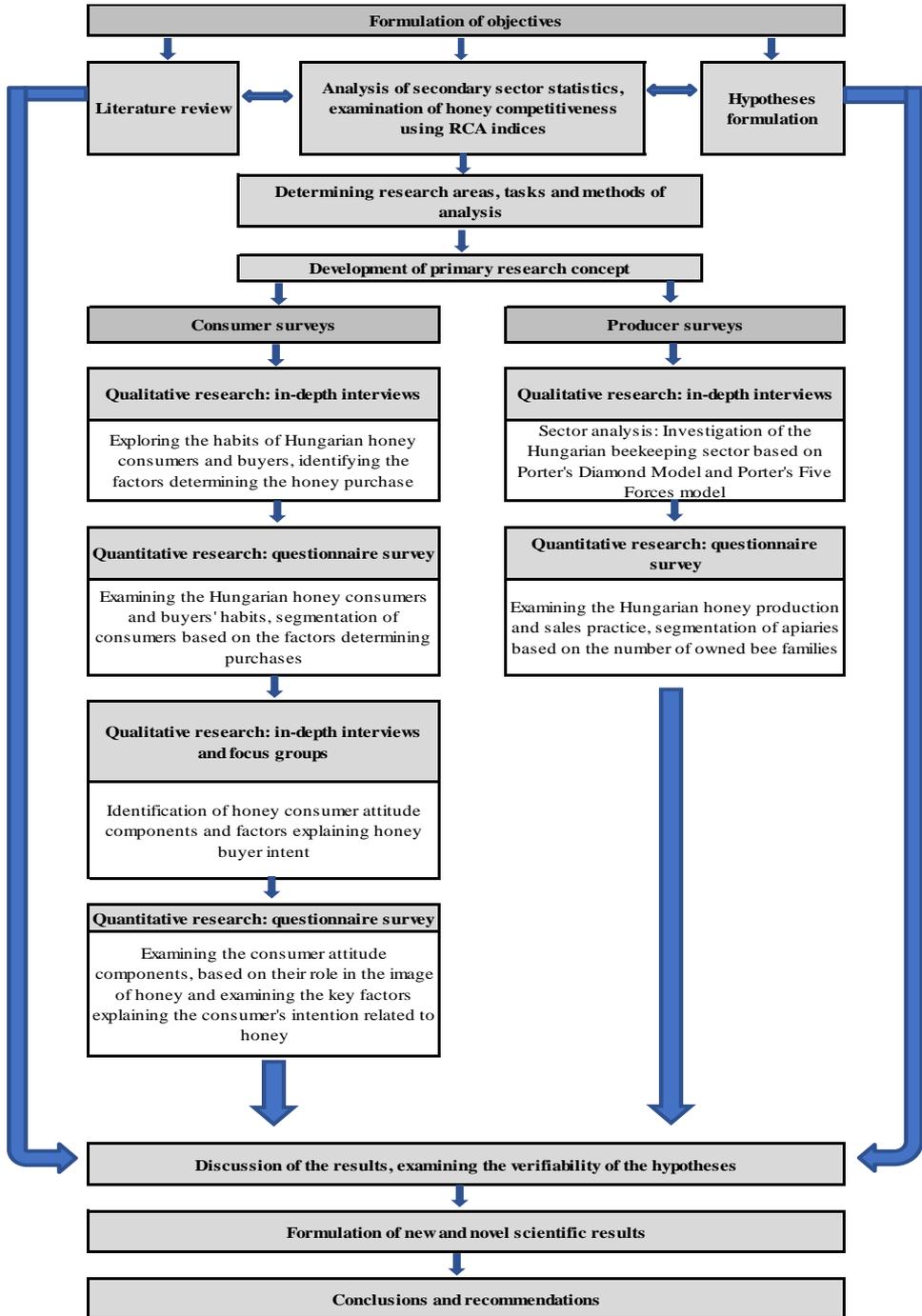
The aim of the study is to present the Hungarian honey market, to assess the current situation and competitiveness of the sector, and to explore the future development opportunities of apiaries. The results can help Hungarian beekeepers to develop their marketing strategy, and the findings of the research can contribute to strengthening the consumer-oriented behavior of honey producers and increasing the competitiveness of honey.

In order to achieve the primary research aim, following research objectives were defined:

- Presenting the international honey market, determinate the market position of Hungary and analyse the most important economic indicators of Hungarian beekeeping sector, by evaluating the available secondary data (C1).
- Investigating the comparative advantage of natural honey using RCA indices (C2).

- Analysing the situation of the Hungarian beekeeping sector and examine its development possibilities based on Porter's Diamond model and Porter's Five Forces model. Further objective is to map the domestic and international literature, evaluate the available secondary data, and perform in-depth interviews with main actors of the sector. **(C3)**.
- Examining the honey production and sales practices of Hungarian beekeepers, approached mainly from a marketing aspect, using questionnaire survey **(C4)**.
- Segmentation of Hungarian apiaries based on the number of bee families they take care of **(C5)**.
- Exploring the factors influencing honey consumer behavior based on the related national and international literature **(C6)**.
- Exploring consumer behavior for honey and other hive products, purchase determinants and consumer preferences through primary qualitative **(C7)** and quantitative **(C8)** research by using in depth consumer interviews and consumer questionnaires. Exploring correlations through statistical analysis that can be used to form typical consumer groups with different honey consumption habits and attitudes. **(C9)**.
- As part of the main research aim, examining the components of consumer attitude, based on their role in the image of honey, and identifying key factors explaining honey-related consumer intentions through primary qualitative **(C10)** and quantitative **(C11)** research.
- Drawing reasonable conclusions from the results of the research and formulating recommendations for the Hungarian beekeeping sector, primarily in relation to the efficient reaching of consumers and the increase of domestic honey consumption **(C12)**.

In order to achieve the above-detailed objective, to perform related tasks and to help the verification of the formulated hypotheses, the following process model was designed, which also illustrates the content division of the dissertation. Figure 1 demonstrates the research framework which contains all steps of preparing the dissertation and the relations between the different stages.



**Figure 1: Research framework**

Source: Author's own work

### 1.3. Hypotheses

Based on the research objectives, the relevant national and international literature sources, the following research hypotheses were formulated:

- H1** Hungarian honey is also competitive on international markets.
- H2** The sectoral size of apiaries determines their sales strategy, including channel policy and communication with customers.
- H3** There is a close correlation between the quality assurance system used by enterprises and the amount of honey produced.
- H4** Honey buying and consuming habits are significantly influenced by demographic factors.
- H5** Abstract product characteristics (brand, trademark, packaging and advertising) are crucial in honey purchase.
- H6** Consumers do not have homogeneous honey consumption habits, they can be separated into different customer groups.
- H7** Preferences for honey purchase differ significantly in terms of the origin and supply source of honey, and domestic honey purchased from producers is significantly more popular among consumers.
- H8** Image of honey imported, purchased from domestic producer or in-store differs significantly - domestic producer honey has the most favorable image.
- H9** The groups of factors influencing the purchase of honey can be arranged in a unified logical model or framework.

## 2. MATERIALS AND METHODS

In order to map the situation and competitiveness of the Hungarian beekeeping sector, both qualitative and quantitative research were performed. Qualitative data collection took place in the framework of in-depth expert interviews (n = 26). The presented information was critically synthesized with the relevant literature and secondary sectoral data based on Porter's extended Diamond Model. Honey production and sales practices of Hungarian beekeepers were also analysed through a questionnaire survey with 445 apiaries, using the traditional (PAPI) method.

The habits of honey consumers and buyers were also studied through both qualitative and quantitative research. During the first qualitative research, I conducted in-depth interviews (n = 126). Based on the qualitative research results, I examined the consumer behavior patterns related to honey through the quantitative research using consumer questionnaires (n = 1584). After the consumer preferences and the factors determining the purchase were surveyed, customer groups with significantly different consumer habits were distinguished by using factor and cluster analysis.

In order to compare honey consumption behavior in different time period, the questionnaire survey was repeated in 2020 (after five years from first study). During the second qualitative research, both in-depth interviews (n = 45) and focus group surveys (n = 7) were conducted. The aim of the second quantitative survey was not only to explore general honey purchasing habits, but also to examine the consumer attitude components based on their role in the image of honey and to identify key factors explaining honey-related consumer intentions (n = 1032). The research compares the image of domestic producer honey, domestic in-store honey and imported honey by using Fishbein's multifactor attitude indicator and image profile. The research focused on the image-creating role of the cognitive, affective and conative attitude components of honey. A conjoint analysis was also performed to examine the order of preference between the three product groups. To further examine honey consumption and buying habits, the theory of planned behavior (TPB) was adapted and expanded with several new groups of factors. The objectives formulated in the dissertation, the materials and methods required for their implementation are summarized in Table 1.

**Table 1: Summary of materials and methods to achieve the objectives set out in the dissertation**

Objectives		Materials	Methods
C1	Presentation of the international honey market, determining Hungary 's market position.	National and international literature Secondary sectoral data	Literature review Secondary data evaluation
C2	Examination of the competitiveness of Hungarian honey	TRADEMAP, UN COMTRADE databases	Examining the comparative advantage using RCA indices
C3	Sector analysis: Examination of the Hungarian beekeeping sector	National and international literature In depth interviews with experts (n=26)	Basic qualitative research (2019) Porter Diamond Model and Porter Five Forces Model
C4 C5	Examination of Hungarian honey production and sales practices, segmentation of apiaries based on their sectoral size	Questionnaire survey among Hungarian honey producers (n=445)	Producer quantitative research (2020) Statistical analysis
C6	Exploring the factors influencing honey consumption and consumer behavior, summarizing the trends of honey consumption	National and international literature	Literature review Comparative analysis
C7	Preliminary qualitative analysis of the habits of Hungarian honey consumers and buyers, identification of the factors determining honey purchase	In-depth interviews among Hungarian honey consumers (n=126)	Exploratory qualitative research (2015) In depth interviews
C8 C9	Quantitative analysis of Hungarian honey consumer and buyer habits, segmentation of consumers based on the factors determining honey purchase	Questionnaire survey among Hungarian honey consumers (n=1584)	Consumer quantitative research (2016) Factor Analysis, Cluster analysis
C10	Qualitative analysis of Hungarian honey consumers and buyers' habits, examination of honey consumers' attitude components and factors determining honey buyers' intentions	In depth interviews among consumers (n=45) and focus groups (n=7)	Exploratory qualitative research (2019) In depth interviews Focus groups
C11	Examining the consumer attitude components, based on their role in the image of honey and examining the key factors explaining the consumer's intention related to honey	Questionnaire survey among Hungarian honey consumers (n=1032)	Consumer quantitative research (2020) Fishbein's attitude indicator, Image profile analysis, Conjoint analysis, TPB model adaptation, SEM

Source: Author's own work

## 3. RESULTS

### 3.1. Marketing relations of the organizational characteristics of the Hungarian honey market

By using national and international databases, both the honey production of the European Union and the structure of the beekeeping sector were analysed in the Visegrad countries. In the period under review, the average value of the Trade Balance Index (TBI) was 0.92, which shows the continuously high export share of the domestic honey trade. Based on the results, it can be stated that Hungary had a strong comparative advantage between 2001 and 2018.

V4 countries – except for Hungary – are all net honey importers, in addition, the Polish, Slovak and Czech values lag far behind the Hungarian indicators. While Poland had a comparative disadvantage throughout the examined time period ( $-0.92 < KEI < -0.07$ ), Slovakia had a comparative advantage between 2001 and 2009, but lost its advantage after 2009. The Czech Republic had a comparative advantage at the beginning of the studied period and then a comparative disadvantage between 2008 - 2010 and 2014 - 2019. The disadvantages of Poland, Slovakia and the Czech Republic can be explained by the growing trend of imported honey imports (TRADEMAP 2020), which can be attributed to increasing domestic honey consumption and problems of honey production (climatic conditions, bee health). The annual per capita honey consumption in the Visegrad countries almost doubled between 2001 and 2019 (FAOSTAT 2020). The Visegrad Four provide about a quarter of the EU's beekeeping sector, thus, their cooperation in the field of apiary can contribute to the stability of the sector.

#### **H1 Hungarian honey is also competitive on international markets.**

Based on the export and import data (TRADEMAP 2020, UN COMTRADE 2020), Hungary had a strong comparative advantage in relation to natural honey, based on three indices of the comparative advantage (Balassa index, RCA and KEI index), in the period between 2001 and 2018. Hypothesis H1 is supported.

### **3.1.1. Analysis of the Hungarian beekeeping sector based on Porter's Diamond Model**

In terms of honey production, Hungary has excellent natural and climatic conditions, especially in Baranya, Bács-Kiskun, Somogy, Tolna and Zala counties. In other counties, beekeepers are forced to migrate their bee families in order to achieve better yields.

Honey production is being adversely affected by increasing or unprofessional use of pesticides, biodiversity and loss of bee habitat, as well as quality and quantity problems of bee pastures. The productivity of beekeeping enterprises is significantly threatened and worsened by the generally deteriorating bee health situation, the spread of bee diseases (mites, viruses, nosema, etc.), the drastic decline of the bee population and the mass collapse of families.

Based on qualitative research exploring the situation of the Hungarian beekeeping sector, it can be stated that the social and economic factors impairing competitiveness are primarily the followings: the issues of migration, inadequate professional training, and thus the lack of well-trained professionals, tax rates, corruption and unfavorable financing opportunities. The sector's own resources are scarce, the situation is currently unfavorable in terms of financing opportunities, in addition, the cooperation of the actors in the sector is also unsatisfactory. The competitiveness of the beekeeping sector could be increased by implementing of the various forms of potential and effective cooperation; however, this would be impossible without building trust between the players in the sector. The domestic honey processing capacity is significantly higher than the current production, therefore fundraising is needed for the financing of companies and new investments, which can contribute to the improvement of the international competitiveness of domestic beekeepers.

The beekeeping year 2020 was characterized by a poor honey yield. Due this and to the coronavirus pandemic, the price of honey has significantly increased. The current purchase price of acacia honey is around HUF 2 200, however, the price of mixed flower honey is still unsatisfactory.

### **3.1.2. Quantitative study of honey production and sales practices among Hungarian beekeepers**

Based on the results of the questionnaire survey, it can be seen that different groups of honey producers using diverse sales practices and marketing strategies were identified [small apiaries (1 to 49 beehives), medium-sized apiaries (50 to 99 beehives), large apiaries (above 100 beehives)].

Beekeepers owning more bee families can be characterized by the followings: several years of professional experience, professional qualifications, other beekeeping activities in addition to honey production. They usually sell their products through several channels, have an authentic quality assurance system and are characterized by strong promotional activity. Medium and large apiaries consciously use the appropriate promotional tools, the use of their own brand and trademarks are typical. They sacrifice significantly more to make their products unique, whether through packaging, labels or logos.

#### **H2 The sectoral size of apiaries determines their sales strategy, including channel policy and communication with customers.**

Producers follow different (not homogenous) market strategy based on the sectoral size of their apiary. According to the number of bee colonies they take care of, well-separable groups can be formed, which show significant differences in their honey sales practices and communication with their customers. Thus, Hypothesis H2 is supported.

For larger apiaries regular media coverage (television, radio, print media), increased online presence (internet, website, Facebook) and ongoing advertising are more important. In contrast, for smaller apiaries, personal communication, personalized service, the provision of individual use and consumption proposals, and the rewarding of customers in the form of gifts and discounts are more important. In their case, the cornerstone of consumer confidence is a personal relationship.

**H3 There is a close correlation between the quality assurance system used by enterprises and the amount of honey produced.**

Examining the Hungarian honey production and sales practice by using cross-tabulation analysis, it can be stated that producers producing smaller quantities of honey typically do not have an authentic quality assurance system. For them, quality assurance is more a matter of trust, guaranteed by adequate professional knowledge and integrity. The use of modern, safe equipment and the willingness to use an authentic quality assurance system increase in direct proportion to the increase in honey production. Thus, the quality assurance system applied by enterprises is closely related to the amount of honey produced. Hypothesis H3 is supported.

## **3.2. Consumer characteristics of the Hungarian honey market**

### **3.2.1. Analysis of the habits of Hungarian honey consumers and buyers (2016)**

Based on the results of qualitative and quantitative research, the intention to buy honey is strongly influenced by the sensory properties of the given types of honey, the external product characteristics, the origin, place of source, producer and price of the honey. Acacia and mixed flower honey are the best-known and most popular types of honey. The respondents consume an average of less than 30 dkg of honey per month, typically as part of breakfast, in the form of tea or coffee, or in cakes. Honey is mostly purchased by the consumer directly from the producer in a 1 kg package every month. In addition to the high enjoyment value of honey, respondents consume it primarily to preserve their health or treat disease. From other beekeeping products, the consumption of propolis and pollen is the most common.

The importance of the variables influencing the honey purchase (measurement level: five-point Likert scale) can be seen in Table 2. Based on the results, the flavor, the price, the given type of honey and the Hungarian origin were the most important.

Other organoleptic characteristics (texture, fragrance, color) are among the very important and important characteristics, while the region of origin, brand, producer name, packaging, availability and trademarks are less important to the respondents. Wrapping and advertising are among the least important features.

**Table 2: Variables influencing the honey purchase**

	Not important at all	Not important	Indifferent	Important	Very important	Mean	St.dev.	Skewness
Advertising	40,7%	24,4%	22,0%	9,4%	3,4%	2,10	1,14	0,73
Wrapping	13,1%	22,0%	34,7%	19,3%	10,9%	2,93	1,17	0,05
Packaging	8,1%	11,6%	31,6%	31,0%	17,7%	3,39	1,15	-0,41
Trademark	13,9%	13,8%	28,0%	25,6%	18,8%	3,22	1,29	-0,27
Availability	10,8%	12,0%	28,9%	27,4%	20,9%	3,36	1,24	-0,38
Brand	13,4%	10,2%	27,5%	24,3%	24,6%	3,36	1,32	-0,39
Source	11,4%	11,0%	23,1%	26,6%	27,9%	3,49	1,31	-0,51
Fragrance	4,3%	8,8%	23,0%	35,4%	28,6%	3,75	1,09	-0,69
Color	4,7%	8,0%	24,2%	33,8%	29,4%	3,75	1,10	-0,67
Texture	2,6%	7,4%	22,7%	35,5%	31,7%	3,86	1,03	-0,71
Type of honey	2,5%	3,1%	16,3%	30,8%	47,3%	4,17	0,98	-1,19
Price	2,8%	3,3%	15,3%	30,6%	47,9%	4,17	0,99	-1,250
Origin	4,4%	5,1%	13,3%	24,6%	52,6%	4,16	1,11	-1,31
Flavor	1,2%	2,8%	10,4%	24,1%	61,6%	4,42	0,87	-1,61

Source: own research, 2016, n=1584

**H7 Preferences for honey purchase differ significantly in terms of the origin and supply source of honey, and domestic honey purchased from producers is significantly more popular among consumers.**

Based on the results of the questionnaire survey (n = 1584), most of the respondents consider the quality of Hungarian honey (85.8%) to be significantly higher than the quality of honey with foreign origin (14.2%). The assessment of producer honey is also significantly more favorable compared to store honey, 81.7% of the respondents prefer producer honey over store honey (18.3%), therefore, Hypothesis H7 is supported.

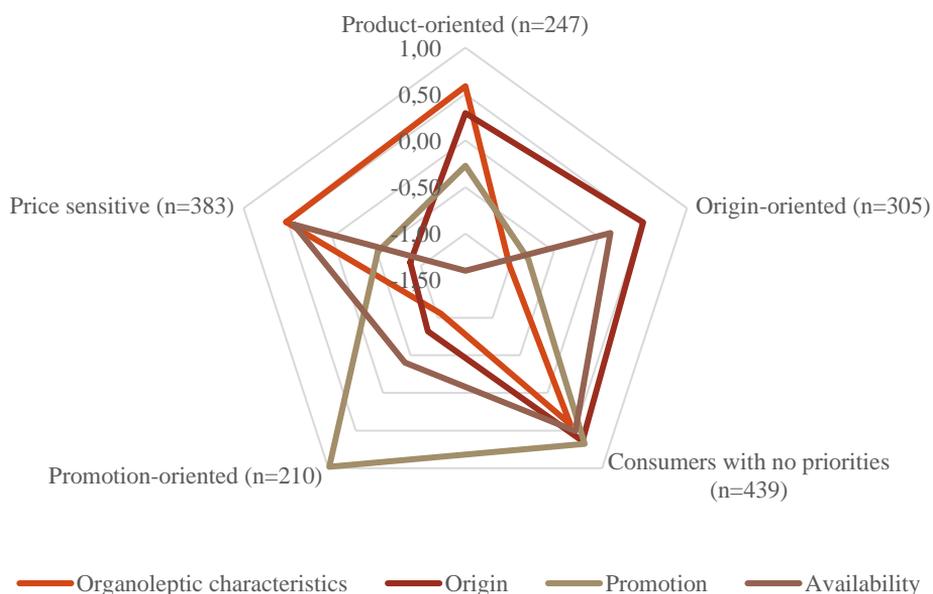
Based on the results it can be stated that respondents prefer beekeeping products from their own homeland. Consumers who prefer producer honey typically consume honey regularly, in larger quantities (more than 30 dkg per month) and more often (daily or weekly) than respondents who prefer in-store honey. These consumers typically buy honey on a monthly basis in packs of 1 kg or more than 2 kg.

Consumers preferring in-store honey consume significantly less honey (less than 30 dkg per month), rather occasionally, much less frequently

(monthly, once or twice a year, or in case of illness) than consumers who prefer honey. The number of their purchases is around 1-2 times a year, during which they mostly choose honey in smaller packages (0.5 kg or less).

The issue of food safety often arises in connection with honey, and consumers have been informed about the news of honey counterfeiting in recent years. Regarding the research sample, it can be stated that food scandals related to honey counterfeiting did not affect the consuming habits of almost half of the respondents (47.7%), however, more than 41.1% of the respondents only buy from a safe place, 14.0% of them look for signs of quality assurance and 4.3% of them consumed less honey compared to previous years.

Based on the consumer questionnaire survey results (starting from the large relative standard deviations), it can be stated that Hungarian consumers do not have homogeneous consumer habits, they form significantly different customer groups (Figure 2).



**Figure 2: Characteristics of consumer groups based on the importance of variables determining the honey purchase**

Source: own research, 2016, n=1584

**H6 Consumers do not have homogeneous honey consumption habits, they can be separated into different customer groups.**

Consumer groups, separated according to the characteristics of honey consumption and purchase, can be clearly distinguished from each other based on the following dimensions: “Sensory properties”, “Origin”, “Promotion” and “Accessibility”. There is a significant correlation between clusters and the importance of product characteristics determining honey purchase. The formed consumer segments are significantly different from each other. During the cluster analysis five significantly different consumer groups were created: the Product-oriented consumer group (15.6% of the total sample), the Origin-oriented consumer group (19.2%), with the Consumer group with no priorities (27.7%), the Promotion-oriented consumer group (13.3%) and the Price sensitive consumer group (24.2%). Based on the results of the factor and cluster analysis, hypothesis H6 is supported.

**3.2.2. Analysis of the habits of Hungarian honey consumers and buyers (2020)**

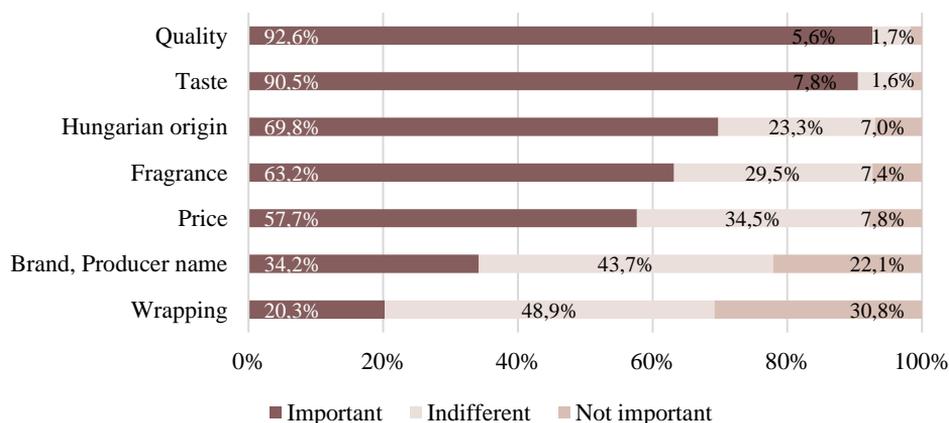
Comparing the results of the second consumer questionnaire survey to the previous research, it can be clearly seen that the amount of honey consumed at the same time increased, the respondents consume honey more and more widely, the proportion of consumers for healing and health maintenance reason has increased. Among the demographic factors, there were significant correlations between gender, age, marital status, and the place of residence of the respondents. Rural respondents consume significantly more honey than Budapest residents. Women regularly consume honey as a natural sugar substitute and beautifier. Families with children typically consume honey as part of breakfast, as well as in case of illness and to maintain health. Similarly, honey consumption is common among consumers over 65 years old for this reason, while this is less common among young people (18-24 years). Furthermore, honey is a popular beautification among young people (18-34 years), however, this mode of use is less common in the older generation.

#### **H4 Honey buying and consuming habits are significantly influenced by demographic factors.**

Examining the correlations between demographic variables and consumer groups formed in 2016, it can be concluded that there is no significant correlation between demographic characteristics (respondents' gender, highest level of education, occupation, income, type of residence, marital status, the number of people living in a household) and the clusters.

At the same time, based on the results of the 2020 research, there is a significant, weak relationship between honey consumption and consumer habits and demographic factors. Therefore, hypothesis H4 is partially supported.

Based on consumer opinions, quality has become the most important factor in the honey purchase, followed by flavor, Hungarian origin, fragrance, price, brand, producer name and wrapping (Figure 3). Based on 2016 research, flavor, fragrance and Hungarian origin were also very important characteristics, but the importance of price and producer name was higher in the previous study, wrapping was one of the least important product characteristics in both cases.



**Figure 3: Ranking of product characteristics determining the honey purchase**

Source: own research, 2020, n=1032

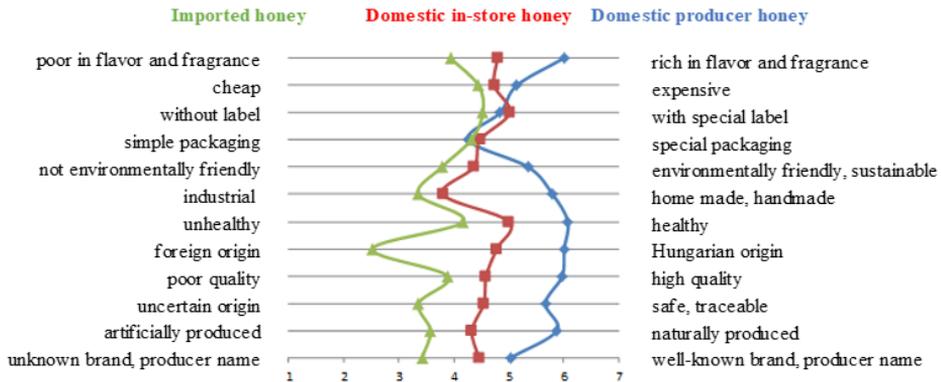
**H5 Abstract product characteristics (brand, trademark, packaging and advertising) are crucial in honey purchase.**

Based on the results of the 2016 and 2020 qualitative consumer surveys, it can be concluded that honey purchase and consumption behavior is basically determined by direct product characteristics (organoleptic characteristics, price and origin), however, the role of abstract product characteristics (brand, trademark, packaging and advertising) is significantly smaller. Therefore, hypothesis H5 is only partially supported.

Honey purchase decision is also influenced by trademarks. According to the respondents, OMME label means authentic, controlled quality and traceability. According to them, these labeled products are natural honeys of Hungarian origin, which are of better quality and taste compared to other honeys. OMME-branded products are identified by many respondents as organic honey. The average awareness of OMME Honey Label and Producer Honey Bottle was almost 90%, while in the 2016 research, the average awareness of OMME Label was 37.4% and its Honey Bottle was 38.1%.

To measure the consumer attitude related to honey, the Fishbein's Attitude Model was used. Examining the image profiles, domestic in-store honey and imported honey were ranked higher than domestic producer honey only in terms of labels and special packaging (Figure 4). This confirmed the result of the Fishbein indicator, which shows that domestic producers are lagging in the field of packaging. Respondents clearly considered domestic honey as the most expensive, but also associated the highest quality with this product. The assessment of domestic producer honey is significantly more favorable than domestic in-store and imported honey.

Based on the study of the affective component of the attitude, the respondents are most emotionally connected to the domestic producer honey, followed by the domestic store honey and then the imported honey. The order was similar in the case of behavioral claims, with only a small difference between the products examined in the case of gift shopping. Respondents buy less honey as a gift than for their own consumption, but the order of preference remained unchanged here as well.



**Figure 4: Image profile of honey from domestic producers, domestic stores and imports, based on the cognitive attitude component**

Source: own research, 2020, n=1032

**H8 Image of honey imported, purchased from domestic producer or in-store differs significantly - domestic producer honey has the most favorable image.**

Examining the image-forming effect of consumer attitude components, using Fishbein's multifactor attitude indicator and image profile, it can be stated that the image of domestic producer honey, domestic in-store honey and imported honey differ significantly at several points (impact on health, enjoyment value, quality, origin, traceability).

The preference order between the three product groups was also confirmed by conjoint analysis. Based on the results, the Hungarian producer honey has the most favorable image, thus, hypothesis H8 is supported.

**3.2.3. Theoretical research model**

As theoretical research model, TPB model was adapted in order to further investigate honey consumption and purchasing habits. Based on the results, it can be stated that domestic producer honey has a more positive image compared to the other two product groups. In its case purchase intention was mostly determined by the consumers' emotions. In case of retail and imported honey, the accurate knowledge and confidence in the information content of the packaging are decisive.

In addition to attitude components, subjective norms, and perceived behavioral control, the intention to purchase honey is also influenced by

the effort to support domestic beekeepers. I found that honey consumption is also influenced by dimensions related to trust, involvement, food safety concerns, various ecological motives, and health awareness.

The model fit indices of the route analysis are presented in Table 3, and Figure 5 illustrates the extended model of domestic producer honey.

**Table 3: Route analysis model fit indicators for domestic producers, domestic in-store and imported honey**

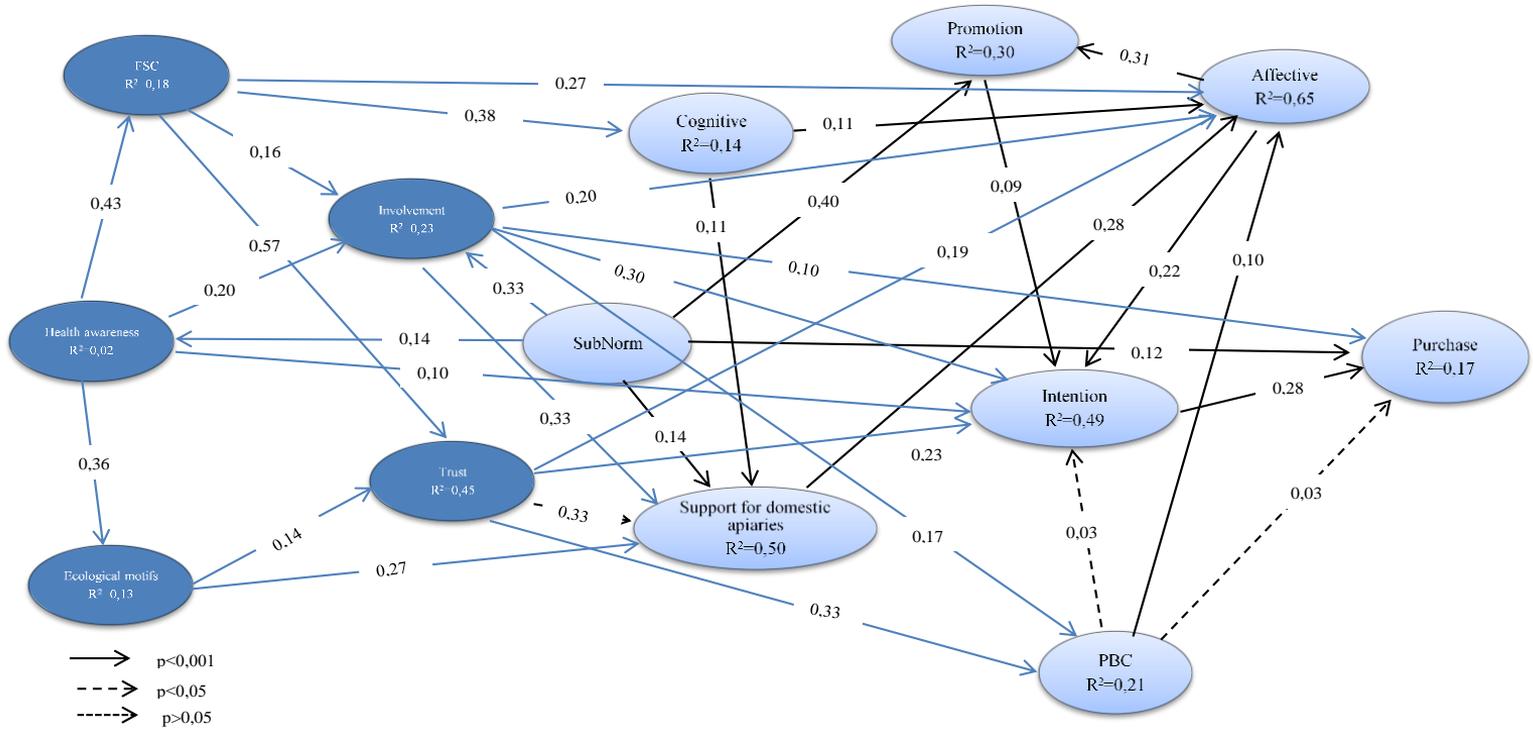
<b>TPB model</b>	
Domestic producer honey	p<0,000; CMIN/df=3,839; GFI=0,924; TLI=0,938; CFI=0,948; NFI=0,931; RMSEA=0,052
Domestic in-store honey	p<0,000; CMIN/df=4,000; GFI=0,918; TLI=0,930; CFI=0,941; NFI=0,924; RMSEA=0,056
Imported honey	p<0,000; CMIN/df=4,790; GFI=0,908; TLI=0,923; CFI=0,935; NFI=0,919; RMSEA=0,060
<b>Extended TPB model</b>	
Domestic producer honey	p<0,000; CMIN/df=3,132; GFI=0,820; TLI=0,926; CFI=0,936; NFI=0,909; RMSEA=0,045
Domestic in-store honey	p<0,000; CMIN/df=3,105; GFI=0,893; TLI=0,927; CFI=0,937; NFI=0,910; RMSEA=0,045
Imported honey	p<0,000; CMIN/df=3,038; GFI=0,895; TLI=0,932; CFI=0,941; NFI=0,916; RMSEA=0,044

Source: own research, 2020, n=1032

**H9 The groups of factors influencing the purchase of honey can be arranged in a unified logical model or framework.**

Using Structural Equations Modelling (SEM), it can be stated that the intention to purchase honey is influenced not only by attitude components, subjective norms and perceived behavioral control, but also by the intention to support domestic beekeepers. Honey consumption is also influenced by dimensions related to trust, involvement, food safety concerns, various ecological motives, and health awareness.

Basic TPB model was adapted to further examine the intention to purchase honey. The groups of factors influencing the honey purchase could be arranged into a unified logical model. Based on the results, hypothesis H9 is supported.



**Figure 5: An extended model of domestic producer honey purchases**

Source: own research, 2020, n=1032

## 4. CONCLUSIONS AND RECOMMENDATIONS

The primary aim of the dissertation was to draw conclusions and make recommendations for the Hungarian beekeeping sector through the research results, mainly in order to reach consumers efficiently and thus increase domestic honey consumption. The findings of the research may help producers achieve a competitive advantage by exploring the opportunities offered by the strengthening trend of consumer behavior in favor of local foods, by integrating either environmental-conscious or sustainable consumption into their brand value. In order to improve their profitability, honey producers need to be aware of consumer behavior trends and the main contexts of the honey market. Furthermore, it would be worthwhile for smaller producers also to take advantage of the opportunities offered by online sales.

Examining the relationship between domestic market participants it can be clearly seen that it is not characterized by trust and extensive cooperation. Joint sectoral marketing activities and collaboration between beekeepers are less important for producers. The use of OMME Producers' Honey Bottle and Labelling is also considered less important by beekeepers, although it would be advisable for producers to use it based on consumer surveys. It is therefore recommended to promote OMME Producer Honey Bottle and Sealing Tape to both producers and consumers, because these brands are considered reliable and authentic by domestic buyers, and they have great confidence in them. It is recommended continuing the current campaign among consumers in order to improve their awareness and understanding.

The attitude to domestic producer honey was more positive compared to the other two product groups. Examining the cognitive component of consumer attitudes in detail, it can be concluded that in-store and foreign honey has more unfavorable image compared to producer honey, primarily due to consumer distrust and uncertainty, as well as knowledge gaps and misunderstandings. In order to improve the situation of honey in the Hungarian store and to increase the competitiveness of market participants, a comprehensive marketing strategy is suggested.

Honeys with different origins were given different weights in the quality image of consumer groups. Therefore, also emotional (domestic product), rational (natural, sustainable, environmentally friendly, healthy food) and moral (supporting domestic industry) arguments must be defined in communication strategy in case of producer honey. Applying the adequate marketing strategy and customizing the various marketing elements can increase consumer satisfaction, strengthen consumer confidence and loyalty, which can increase also the demand for honey. Authenticity is extremely important in case of honey, as it is basically a trust food category.

In case of domestic in-store honey and imported honey, the purchase intention is primarily determined by trust and involvement in the product. Consequently, the expansion of knowledge about honey can have a positive effect on the sale of in-store products. In case of producer honey, less emphasis is placed on the involvement and precise knowledge of the product, instead the emotions of consumers determine the intention to purchase honey.

Based on the results of the research, domestic producers have a competitive advantage in terms of domestic sales, however, it would be advisable for producers selling in commercial units to rethink and strengthen their marketing activities. Among the consumer values, it would be worthwhile to focus on the Hungarian origin and quality in communication. In case of in-store honey, it would be important to place more emphasis on the following characteristics: domestic, natural, healthy, reliable and quality.

When defining the main communication message, it is recommended to highlight the natural and chemical-free production method, the high enjoyment value, the valuable ingredients, the absence of artificial additives, as these arguments can strengthen the healthy position of the product group. It is suggested making consumers aware of the unique production technology, the traditional processing method and the place of origin.

Domestic honey should live in the minds of consumers as a healthy, high-quality, reliable natural food from a reliable source, thus strengthening its position against imported honey. Furthermore, the appearance, packaging and labeling of products are also extremely important because the external product characteristics and the information on the label can also influence the consumer decision. However, the most important thing is to indicate the place of origin, which can increase consumer confidence and the possibility of identifying with the product or region.

As future research direction, extension of the TPB model variables is recommended, primarily in terms of the factors influencing the intention to purchase honey and inducing emotions. Based on the results, consumers prefer Hungarian beekeeping products over foreign goods, and the respondents have the most positive attitude towards domestic producer honey and local beekeepers. In addition, several studies support (SZAKÁLY 2017) that Hungarian consumers prefer domestic, local products in relation to food, therefore it would be worthwhile to include consumer ethnocentrism in the TPB model.

## **5. NEW AND NOVEL SCIENTIFIC RESULTS**

- E1 Examining the export and import data, it can be stated that Hungary had a strong comparative advantage in terms of natural honey, based on three indices of the comparative advantage (Balassa index, RCA and KEI index) in the time period between 2001 and 2018.
- E2 Honey production and sales practices of Hungarian beekeepers were analysed through a questionnaire survey with 445 apiaries. Examining the database by using cross-tabulation analysis, it can be concluded that apiaries have significantly different quality assurance systems and sales strategies based on their sectoral size, including the sales channels and marketing communication solutions.
- E3 In order to compare the honey consumption behavior over time, I examined the main characteristics of consumer behavior on two samples, first in 2016 (n = 1584) and then in 2020 (n = 1032). Examining the results with univariate statistical analysis, as well as factor and cluster analysis, it can be stated that the factors of

Hungarian honey consumer behavior changed slowly in the examined period. The amount and variety of consumption show an increase, while the preference order of the product characteristics that fundamentally determine the honey purchase has not changed significantly. The purchasing behavior of buying and consuming honey is basically determined by the direct product characteristics (organoleptic characteristics, price and origin). The role of abstract product characteristics (brand, trademark, packaging and advertising) is significantly smaller.

- E4 Based on the exploratory qualitative studies (in 2015: in-depth interviews  $n = 126$ ; in 2020: in-depth interviews  $n = 45$  and focus groups  $n = 7$ ), significant differences were observed among honey consumers' preferences regarding place of origin. Therefore, the sample derived from 2020 ( $n = 1032$ ) was examined also by using image profile analysis. Based on the results, it can be stated that the image of honey differs depending on the place of purchase. Consumers prefer direct purchase (from the producer or market) over in-store purchase. Domestic producer honey has a more positive image compared to domestic in-store and imported honey.
- E5 During the further analysis of honey consumption and purchasing habits, I adapted the TPB (Theory of Planned Behavior) model. Examining the factors influencing the honey purchase by using structural equations modelling ( $n = 1032$ ), it can be stated that the consumers' emotions determine the purchase intention in case of domestic honey, while the exact knowledge and trust in packaging information content is decisive in case of retail and imported honey. Furthermore, it can be concluded that the intention to purchase honey is influenced not only by attitude components, subjective norms, and perceived behavioral control, but also by the intention to support domestic beekeepers. Also, as a result of the extension of the basic TPB model, it can be concluded that honey consumption is also influenced by dimensions related to trust, involvement, food safety concerns, various ecological motives, and health awareness.

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