

# THE RELATIONSHIP BETWEEN PERSONALITY TRAITS AND CONSUMERS' INTENTION TO PURCHASE BEEKEEPING PRODUCTS DURING COVID-19<sup>1 2</sup>



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**ABSTRACT** | The purpose of this research is to evaluate the relationship between consumers' personality traits and their intention to purchase beekeeping products, especially propolis, during the pandemic, consumers' awareness, use and expectations about the packaging of propolis and other bee products, certificates, prices, promotions, sales channels and attitudes towards new products containing propolis. In parallel with the purpose of this study, the data obtained from 350 consumers by convenience sampling method were analyzed by Frequency, independent - "t test" -, Anova and Correlation analysis. As a result of our research, consumers use this product most in winter, make the purchase decision by comparing price and quality, have high expectations for glass packaging, new products, awards, certificates. Consumers who are open to innovations have a more positive propolis purchase intention.

**Keywords:** Consumer personality traits, purchase intention, propolis, pandemic  
**JEL Codes:** M30, M31, M39

**Scope:** Business administration  
**Type:** Research

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<sup>1</sup> Compliance with the ethical rules of the relevant study has been declared.

<sup>2</sup> This article has been derived from the Master's Thesis named "The Relationship Between Consumer Personality Traits and Purchase Intent During the Covid-19 Pandemic: A research on Beekeeping Products." which was written by Elçin Şen Saday under consultancy of Associate Prof. Habibe Yelda Şener in 2021 at the Kutahya Dumlupınar University Institute of Graduate Education. It is hereby declared that this study is in line with the Code of Ethics.

# COVID-19 DÖNEMİNDE TÜKETİCİLERİN KİŞİLİK ÖZELLİKLERİYLE ARICILIK ÜRÜNLERİNİ SATIN ALMA NİYETLERİ İLİŞKİSİ<sup>1</sup>



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**ÖZ** | Bu araştırmanın amacı, pandemi sürecinde tüketicilerin kişilik özellikleri ile propolis başta olmak üzere arıcılık ürünlerini satın alma niyetleri arasındaki ilişkiyi, tüketicilerin propolis ve diğer arı ürünlerinin ambalajlanması konusundaki farkındalıklarını, kullanımlarını ve beklentilerini, sertifikalar, fiyatlar, promosyonlar, satış kanalları ve propolis içerikli yeni ürünlere yönelik tutumlarını değerlendirmektir. Bu çalışmanın amacına paralel olarak, 350 tüketiciden kolayda örnekleme yöntemiyle elde edilen veriler Frekans, bağımsız - “t testi” -, Anova ve Korelasyon analizi ile incelenmiştir. Araştırmamız sonucunda tüketiciler bu ürünü en çok kış aylarında kullanmakta, satın alma kararını fiyat ve kaliteyi karşılaştırarak vermekte olup, cam ambalaj, yeni ürünler, ödüller, sertifikalar konusunda yüksek beklentilere sahiptir. Yeniliklere açık olan tüketicilerin propolis satın alma niyeti daha olumludur.

**Anahtar Kelimeler:** Tüketici kişilik özellikleri, satın alma niyeti, propolis, pandemi

**JEL Kodları:** M30, M31, M39

**Alan:** İşletme

**Türü:** Araştırma

## **1. INTRODUCTION**

Purchase intention refers to the consumer's tendency to purchase a particular product in a particular situation. Consumer purchase intention is a complex process that generally relates to consumers' behaviors, perceptions and attitudes (Mirabi, Akbariyeh & Tahmasebifard, 2015, p. 268). Consumers are affected by many factors during the purchasing process. The feeling of fear experienced during the pandemic period is also a factor that affects the purchasing decisions of consumers. When consumers are under stress, they try to take actions to reduce or eliminate their tension and anxiety. In these periods, sustainable consumption and green economies gain importance (Odabaşı, 2010, pp. 67-84).

Consumer personality traits are among the factors affecting purchase intention (Bitlisli, Dinç, Çetinceli & Kaygısız, 2013, p. 461; Riberio, Veiga & Higuchi, 2016, p. 297; Solomon, 2020, p. 263). Personality consists of internal psychological characteristics that determine the way we think and act. These internal characteristics are attitudes, actions, factors that distinguish an individual from others. Personality affects people's product choices. It also determines where, how and when consumers consume the products and services they consume (Garvey, Emmanuel & Onu, 2014, p. 235). Personality also reflects individual differences. Because the internal traits that make up the personality of the individual are a unique combination of factors. No two people are exactly alike. Personality is consistent, but it can change under some conditions (Schiffman & Wisenblit, 2015, pp. 95-96).

Therefore, it is possible to say that the Covid-19 pandemic is an important factor affecting consumer behavior. While consumers' sensitivities on concepts such as hygiene, immunity, healthy life and organic products have increased, changes have occurred in their purchasing decisions. In this process, the interest in food supplements has also increased (Propolis Market, 2020).

In our research, after the Covid-19 pandemic, the relationship between consumer personality traits and the intention to purchase bee products, especially propolis product, was tried to be revealed within the scope of the trait theory. For the purpose of the research, quantitative research method was used. A research model was established for the relationship between consumers' personality traits and their intention to purchase propolis product, convenience sampling method was used due to the large population size, and convenience sampling method, which is one of the non-random sampling methods, was used. 350 surveys were collected and data were analyzed in the SPSS program.

In our study, it is examined whether there is a relationship between the personality traits including extraversion, conscientiousness, agreeableness, openness, neuroticism. of consumers and the purchase intention for propolis, an

organic immune booster, and other bee products. In addition, the pre-pandemic and post-pandemic use and awareness of these products have been researched. Our research sets forth where consumers buy propolis product, consumers' role in purchasing action, their preferences and expectations for product packaging, brand preferences and attitudes towards new products. In addition, whether the demographic conditions of consumers such as education, income and gender change their purchasing intentions has been examined. In the light of the data obtained, we believe that our research will contribute to the literature, as it offers suggestions on which personality traits can be determined by the consumers as the target audience and how these companies can engage in a marketing communication effort according to the target audience. We think that our research will contribute to the literature in terms of examining the purchasing tendencies of propolis products, which is a natural food supplement, and thus revealing the effects of factors such as fear and anxiety on consumers' purchasing intentions.

## **2. THEORETICAL BACKGROUND**

### **2.1. Propolis Market**

Propolis is a substance that bees collect from plants which cover cracks in tree trunks, buds or leaves with a liquid-proof and heat-insulating resin in order to protect their leaves, flowers and fruits against rotting (Dündar & Yıldırım, 2018, p. 62; Türkiye Arı Yetiştiriciliği Merkezi, n.d.).

Propolis has a wide spectrum of use, as it exhibits antioxidant, antimicrobial, antiviral, anti-parasitic, anti-neoplastic, immunomodulatory, anti-inflammatory and hepatoprotective pharmacological properties (Braakhuis, 2019, pp. 3-4). Although the studies examining the effect of propolis on coronavirus are very few, it has been proven that propolis extracts have potent and broad-spectrum antiviral activity against a diverse panel of viruses such as HSV-1, HSV-2, Influenza virus types A and B, Parainfluenza virus (Bachevski, Damevska, Simeonovski & Dimova, 2020, p. 2). Propolis has a direct effect, affecting the entry of the virus into host cells and the viral cycle. It improves not only antibody production but also cell immunity; It has an anti-inflammatory effect and also controls the cytokine storm. When propolis is used in combination with vaccines and antivirals, its synergistic effect is great (Ripari et al., 2021, pp. 290-292). Symptom improvement, early discharge, and low mortality have been observed in Covid-19 patients consuming green Brazilian propolis. Caffeic acid phenethyl ester (CAPE) in its content has a wide variety of pharmacological properties such as anticancer, anti-inflammatory and antioxidant. Artepillin C, on the other hand, provides antioxidant, antimicrobial and anticancer effects, and shows a strong anti-inflammatory property in acute inflammation. Efforts to

design COVID-19 drugs have focused on preventing viral entry into host cells by disrupting viral replication (Ali & Kunugi, 2021, p. 3).

Many countries produce propolis. China, Argentina, Uruguay, Chile, Brazil, Canada and Eastern European countries take the lead. Brazil has the most advanced production techniques in terms of production and is the most popular producer of propolis in the world (Doğan & Hayoğlu, 2012, p. 42). The global propolis market was recorded as approximately 607.10 million USD in 2020, and it is predicted that the market will increase by 5.48% between 2021-2026. The global propolis market is shaped by product type, distribution channel and geography. Market has been separated into products such as capsules, tablets, solutions and creams by type of product. It is distributed through online outlets and offline retail outlets. When considered in terms of geography, North America, Europe, Asia-Pacific, South America, the Middle East and Africa are the regions that have a share in the global market. The fastest growing market in 2020 is the Middle East and Africa market, while the largest market share belongs to Europe. This is because increasing health awareness in Europe encourages the use of propolis. The fact that propolis has Immune-boosting effects against infectious diseases such as Covid-19 and that it has chemopreventive properties against diseases such as cancer increase the interest in propolis (Propolis Market, 2020). Therefore, propolis-containing products in the markets, especially in England, are in demand by consumers. In North America and Europe, it is included in many products as herbal medicine. Chewing gums, throat lozenges/troches and chewable tablets containing propolis are popular products. In our country, products containing propolis have recently started to be put on the market (Doğan & Hayoğlu, 2012, p. 42). When data for 2020 is reviewed, demand increased due to the impact of Covid-19 pandemic, and there was a decrease in world propolis import and export volumes due to the problems experienced in the quarantine process and logistics. While Poland, India, Singapore, Brazil, China lost volume in propolis exports, Australia, Hungary, the United Kingdom, New Zealand and the Netherlands gained momentum. In imports, Venezuela, Hungary, Indonesia, Morocco and the Netherlands gained volume, while China, Taiwan, France, Hong Kong and Canada recorded a decrease. It is noteworthy that Turkey does not have significant export or import figures in world trade for propolis product (Tridge, 2021).

With the hearing of some studies indicating the positive effects of propolis on Covid-19 and studies reporting the need for oxygen therapy in patients using propolis has decreased, consumers have approached propolis positively during the pandemic period and a great demand has arisen in the world. Thus, it has been observed that this product, which was hardly sold for 300-400 TL per kilogram

before the pandemic, was even seen as worthless and was thrown away, has turned into a high added value sold for 6-7 thousand TL per kilogram with the start of the pandemic (İHA, 2021; Türkel, 2020; Yeşilyurt, 2021).

## **2.2. Factors Affecting Consumers' Preferences in the Purchasing Process of Beekeeping Products**

The criteria affecting the purchasing process of the consumer depend on the characteristics of the bee product, the producer/beekeeper and the consumer, and this process includes stages such as determining the need, searching for information about bee products, evaluating alternatives, making the purchase by making a decision, and post-purchase feelings. Among these stages, the most important stage is the information research stage. The awareness of bee products is low in our country, and consumers do not have enough accurate information about bee products. It is possible to say that while returning honey sold abroad and being sent back to our country, concerns about chemical and pesticide residues, consumers are worried about bee products and have cognitive conflicts in the purchasing decision process, it is also possible to say that incomplete and erroneous information reduces the purchase frequency of bee products (Bölüktepe & Yılmaz, 2008, p. 54).

While evaluating the alternatives after the information research phase, criteria such as the appearance, color, taste, smell, and herbal origin of the relevant product, as well as price and quality of the product, are also considered. All these criteria create an image of the relevant bee product in the eyes of consumers, which includes the meaning that the consumer attributes to that product. This image is formed by the interpretation of the information and past experiences obtained by the consumer directly or indirectly in the consumer's brain. The experiences that shape the perception of the consumers consist of factors such as whether the bee product is fake, knowing the plant from which it is obtained, tasting and liking the taste of the product, its packaging, the reliability of the producer or marketer of the bee product in the eyes of the consumer, the content of the advertisement to promote the bee product, and the channel in which it is broadcast (Sıralı, 2015, p. 44). On the other hand, consumers' purchasing process for bee products varies depending on factors such as perception, attitude, belief, value judgments, income, age (Merdan, 2018, p. 45; Sıralı, 2015, p. 49), where it comes from (Tunca, Taşkın & Karadavut, 2015, p. 557). Factors such as the quality, type, brand, price, place of sale, packaging, advertisement and customer satisfaction of the bee product can affect the purchasing decision of the consumer regarding bee products (Sıralı, 2015, pp. 44-49). Consumers generally believe that honey with higher price is of higher quality (Saner, Baki, Adanacioğlu & Güler, 2017, p. 56). In our country, it is observed that brand is an

important factor in the selection of bee products and the commitment to branded bee products is high (Bölüktepe & Yılmaz, 2006, p. 138; Karadavut et al., 2014; Marangoz & Dolu, 2019, p. 118; Merdan, 2018, p. 60; Sıralı, 2015, p. 45). Consumers emphasize that they buy honey by focusing on the criteria such as honey's taste, color, smell, fluid structure (Şahinler, Gül & Şahinler, 2017, p. 2), reliability, expiration date, origin, color (Saner et al., 2017, pp. 54-56), naturalness, and crystallization (Paydaş & Semerci, 2001), habits, price, brand, packaging (Sıralı & Çelik, 2007), place of production, nectar, name of the producer company (Sayılı et al., 2013) and trust (Sıralı, 2015, p. 48).

Consumers prefer bee products with glass packaging (Bölüktepe & Yılmaz, 2006, p. 140; Marangoz & Dolu, 2019, p. 118; Niyaz & Demirbaş, 2017; Saner et al., 2017, pp. 54-56; Şahinler et al., 2003, p. 2). It is clear that there is a high correlation between consumers' recognition of bee products and the type and frequency of bee products they buy (Bölüktepe & Yılmaz, 2008, p. 57). In our country, consumers generally buy bee products from supermarkets, but in provinces where beekeeping is actively carried out, it is seen that the consumers prefer to buy from either producer himself or a reliable intermediary instead of markets (Sıralı, 2015, p. 46). The fact that consumers are satisfied with the bee products put on the market by producers and companies brings along the loyalty of the consumer. Any advertisement containing the message about the qualities of the bee product, the relationship between price and quality, and easy access should be delivered to the consumer through the right channels to create a good impression on the consumers. In addition, it is important in the marketing process of bee products to produce the products preferred by consumers, to present them to the consumer in the appropriate medium, to reflect the elements such as the benefits and features of the bee product to the consumer correctly, to manage the advertising and brand management (Sıralı, 2015, p. 46). When purchasing bee products, participants were mostly affected by friends/relatives/neighbours, secondly by promotional sales, thirdly by discount days, and they were less affected by internet brochures, TV and radio advertisements compared to others. The source they are least affected by is newspaper and magazine advertisements (Marangoz & Dolu, 2019, p. 116).

The fact that the consumer has knowledge about bee products is associated with education status. The awareness of honey, pollen, royal jelly and beeswax differs according to the level of education, while the awareness of bee venom and propolis does not differ according to the level of education. Because, regardless of the education level, the awareness of these two products is low in any case. (Bölüktepe & Yılmaz, 2008, p. 59). Şahinler et al.'s (2003, p. 3) research reveals that as the education level increases, the consumption of bee products also

increases. Kumova and Korkmaz (1999) emphasize that as the education level of consumers increases, the rate of consuming honey for therapeutic purposes increases. According to Bölüktepe and Yılmaz (2008), awareness of honey, pollen, royal jelly, beeswax and propolis differs according to income distribution. However, the awareness of bee venom does not differ according to income distribution (Bölüktepe & Yılmaz, 2008, p. 59). In the study conducted by Şahinler et al. (2003, p. 4), when the relationship between the income levels of the participants and the product they consume is examined, it is observed that the product variety consumed increases as the income increases. Honey is the only product consumed at all income levels. In addition, it is determined that honey is consumed more in winter months (Arı et al., 2020, p. 2318; Bölüktepe & Yılmaz, 2006, p. 140). Some consumers use bee products for nutritional and therapeutic purposes (Aytop, Akbay & Meral, 2019, pp. 449-455; Kumova, Avcı, Ceyran & Korkmaz, 2002; Saner et al., 2017, p. 54; Saral & Yavuz, 2020, p. 176), while some consumers use honey for cosmetic purposes (Saner et al., 2017, p. 52).

Factors related to the producer/beekeeper/marketer are also prioritized in the purchase of beekeeping products. In order to reach international standards, it is important to have laboratories where residue analysis can be performed, quality production is supported and controlled. In order to promote honey products, it is necessary to carry out researches for domestic and foreign markets in cooperation with producers, unions and public institutions, to target a market for each bee product, to implement segmentation strategies, to position products and to determine optimum pricing. Producers and unions participate in fairs, turn to sales channels such as the internet, carry out activities such as advertising and public relations, use word of mouth advertising including consumer feedbacks, and in this context, introducing bee products to consumers with correct information. It is necessary to include persuasive public relations activities to eliminate the negative ideas that occur in consumers (Bölüktepe & Yılmaz, 2008, p. 59). The brand concept can eliminate the negative image problem that arises in terms of bee products, and a strong price policy and a strong position in the market should be achieved by consolidating the brand image. Brands that provide accurate information about the product and offer quality guarantees and legal assurances can reinforce the positive attitudes of the consumer, as well as play a role in ensuring customer satisfaction and brand loyalty (Bölüktepe & Yılmaz, 2006, p. 137). It is important to promote bee products through the public, and to raise awareness of consumers about counterfeit products by institutions such as the Ministry of Agriculture and Forestry and the Beekeepers Association (Aytop et al., 2019, pp. 449-455).



### **2.3. Consumer Personality**

Personality is the qualities and specific characteristics of each individual. It is the product of the interaction of the individual's psychological and physiological characteristics and results in continuous behaviors. Personality is embodied in some features such as confidence sociability, autonomy, charisma, ambition, openness to others, shyness, curiosity, and adaptability (Rani, 2014, pp. 56-61). Personality traits explain a person's tendency to exhibit impulsive buying behaviors (Shahjehan & Qureshi, 2019, p. 1060). Personality traits are a part of the psychology world, therefore, psychological aspects of traits are also important to examine the relationship between them and the consumption tendency (Riberio, Veiga & Higuchi, 2016, p. 297). Personality theories are examined under three main headings as Freudian, Neo-Freudian and Trait. Based on his theory of psychoanalysis, Sigmund Freud divides personality into three parts as id, ego and superego and focuses on the relations and conflicts between each element. In the theory, biological impulses that focus on sexual connotations generally play an important role (Garvey, Emmanuel & Onu, 2014, p. 235). The Neo-Freudian theory is a theory that follows Freud's theory in personality theory, but focuses on the relationship with others rather than on the concept of gender (Solomon, 2020, p. 263). This theory believes that social relations are fundamental for the formation and development of personality (Garvey et al., 2014, p. 235). Trait theory, on the other hand, refers to a quantitative approach in personality research, which argues that personality consists of certain levels of predispositions called traits. A trait defines, more specifically, a distinguishable, relatively permanent way in which one individual differs from another. In this theory, people can have more than one feature. With the trait theory, it has been found that it is more realistic to expect personality to be related to how customers make their choices and to purchase a wide product category rather than a single brand (Garvey et al., 2014, p. 235).

The Big Five Personality Traits Model, which explains personality as a theory of characteristics, is formed by grouping personality clusters (Bitlisli et al., 2013, p. 461). It focuses on the words that people express in describing themselves and others, and accepts that the behaviors exhibited by people in the face of situations are consistent and continuous (Caspi et al., 2005, pp. 453-484; McCrae, 2001, pp. 819-846).

“Openness” is the opposite of conservatism, describing one's high level of imagination, open-mindedness, and flexible behavior. This group of people is eager to try new products and brands and is a factor that has an impact on impulsive buying. "Conscientiousness" represents the side of the person that provides self-control, responsibilities, reliability, impulse control. These people

are planned, dynamic and goal-oriented. Therefore, people with this characteristic have a low tendency to buy impulsive. “Extraversion” mainly focuses on traits such as sociability, confidence, assertiveness, anticipation and pleasure. Because extroverts are talkative, fun and friendly people who like to interact and socialize with others. In this case, socialization includes not only family and friends, but also interactions with sales personnel and retailers. People with this trait are more likely to make impulsive purchases because they have low self-control and like to experience new things. “Agreeableness”; It describes self-sacrificing, charitable, caring and compassionate people. These people try to maintain positive relationships with other people. They are always ready to sincerely help others. Individuals who score high in this trait tend to be logical and think before acting. They are less likely to buy impulsively. “Neuroticism”: People tend to be pessimistic and stressed. It has destructive and damaging sides such as anxiety, humiliation, shame, guilt, hatred. People, who can produce irrational and unstable ideas, are depressed and vulnerable, buy as a result of their distress and then feel relieved (Shakaib & Ali, 2018, pp. 33-36).

### **3. RESEARCH METHODOLOGY**

The purpose of this research is to evaluate consumers’ intention to purchase beekeeping products, especially propolis, and personality traits, consumers’ awareness, usage and expectations about packaging of propolis and other bee products, their impressions regarding certificates, prices, promotions and sales channels, their attitudes toward new products with propolis content during the pandemic. For the purpose of the research, quantitative research method was used. In the application process of the research; due to the large population, convenience sampling method, which is a non-probability sampling method, was used. Survey method was used to collect the necessary data. Some of the surveys were delivered face-to-face and some via e-mail, and 350 questionnaires were obtained at the end of a 2-month period.

The survey form consists of three parts. In the first part, questions include whether the participants had a chronic health problem before and after the Covid-19 pandemic, the methods participants used for therapeutic purposes or to increase immunity, honey and honey products they became aware of after the Covid-19 pandemic, and which products they started to use after Covid-19, how and how often consumers buy and use the products mentioned in the survey, purchasing role of participants, their thoughts on packaging, their evaluations on new propolis-containing products and their brand preferences. In the second part, there are questions about the variables in the research model. The third part consists of questions about the demographic characteristics of the participants.

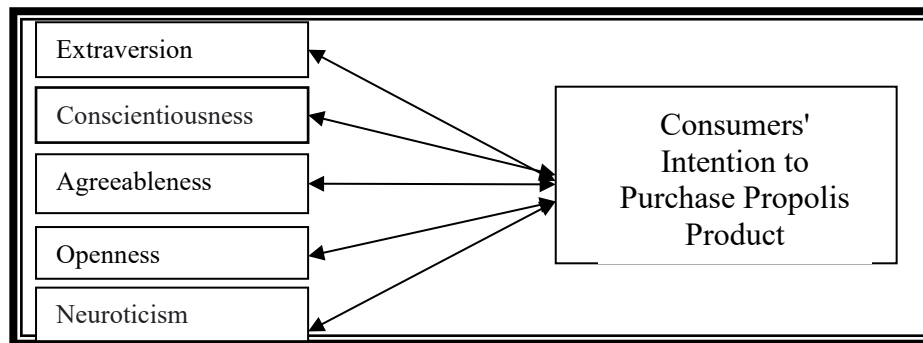
Questions about the personality traits of customers in the model were adapted from the following studies: (Azoulay & Kapferer, 2003, p. 148; Caspi et al., 2005, pp. 453-484; Goldberg, 1990, p. 1219; John & Srivastava, 1981, p. 105; McCrae, 2001, pp. 819-846; McCrae & Costa, 1989, pp. 17-19; Norman, 1963, pp. 574 - 583). The questions regarding the purchase intention of the customers were designed and inspired from the following studies: (Atik & Gümüş, 2017, pp. 60-65; Bölüktepe & Yılmaz, 2006, pp. 52-63; Doğan & Hayoğlu, 2012, pp. 39-48; Marangoz & Dolu, 2019, pp. 110-125; Niyaz & Demirbaş, 2017, pp. 255-262; Özdemir, Güzeloğlu & Topsümer, 2018, pp. 354-372; Saner, et al., 2017, pp. 50-57; Selvi & Işık, 2015, pp. 29-39; Seven et al., 2007, pp. 79-84; Sıralı, 2015, pp. 44-49; Şahinler et al., 2017, pp. 1-5; Yılmazel & Gökteş, 2021, pp. 39-56; Yonar, 2017, pp. 1015-1023). Statements related to innovative products are based on the following studies (Albayrak & Albayrak, 2008, pp. 202-205; Atik & Gümüş, 2017, pp. 60-63; Aydın & Tekeoğlu, 2018, p. 65; Bankova et al., 2014, pp. 1-8; Braakhuis, 2019, p. 15; Doğan & Hayoğlu, 2012, p. 43; Kumova et al., 2002, p. 19; Seven et al., 2007, pp. 80-81; Silva et al., 2020, p. 137; Yonar, 2017, p. 1020; Yücel et al., 2014, p. 41; Yüksel & Akyol, 2016, pp. 308-309).

Gender, income and educational status are among the factors that affect purchase intention. Gender identity changes from culture to culture by reflecting on people's behaviors, clothing and speech and affects the purchasing decision of consumers. Therefore, a product may be marketed differently for both sexes. (Solomon, 2020: 406). Education has a strong influence on purchase intention as it improves one's ability to identify, find and absorb relevant information (Kumar, 2014, p. 3). The perception of different luxury values such as functional value, financial value, individual value and social value may be different for people at different education levels (Srinivasan et al., 2014, p. 64). Income level is an influential factor on purchase intention, and it can be said that low-income consumers generally allocate their income to housing, public transportation and basic needs, while high-income consumers have a high tendency to make choices about instant purchase, brand and fashion (Hawkins & Mothersbaugh, 2008, p. 30; Turna & Babuş, 2020, p. 96).

There are many approaches to explain personality, and the most frequently used approach in studies on personality today is the theory of traits (Yaprak & Dursun, 2018, pp. 622-623). Since personality differs from individual to individual, certain personality traits are grouped and used in product development and promotion activities suitable for the target markets of the enterprises. It is thought that people with certain characteristics buy certain products or brands, and marketing efforts are continued for certain types of grouped consumers (Azoulay & Kapferer, 2003, p. 148; Caspi et al., 2005, pp. 453-484; Goldberg,

1990, p. 1219; John & Srivastava, 1981, p. 105; McCrae & Costa, 1989, pp. 17-19; 2001, pp. 819-846; Mucuk, 2014, pp. 43-44; Norman, 1963, pp. 574-583). 5-point Likert scale was used to determine the variables that will reveal the relationship between consumers' personality traits and their intention to purchase propolis products. The answers given by the participants to the questions in the survey were analyzed using the SPSS (Statistical Package for Social Science) 15.0 for Windows package version. The statements in the first part of the survey for obtaining general information were analyzed by frequency analysis; t-test, Anova and Welch tests were used to evaluate whether there were statistically significant differences between participants' intention to purchase propolis according to their gender, educational status and income; The relationships between the personality traits of the participants and their intention to purchase propolis product were analyzed by correlation analysis.

In this context, the model to be used in the research is shown in Figure 1, and the main hypotheses are listed as follows:



**Figure 1:** Research Model Concerning the Relationship Between Consumers' Personality Traits and their Intention to Purchase Propolis Product

H<sub>1</sub>: There is a significant relationship between the extraversion as a personality trait and the intention to purchase propolis product.

H<sub>2</sub>: There is a significant relationship between the conscientiousness as a personality trait and the intention to purchase propolis product.

H<sub>3</sub>: There is a significant relationship between the agreeableness as a personality trait and the intention to purchase propolis product.

H<sub>4</sub>: There is a significant relationship between the openness as a personality trait and the intention to purchase propolis product.

H<sub>5</sub>: There is a significant relationship between the neuroticism as a personality trait and the intention to purchase propolis product.

H<sub>6</sub>: The intention to purchase propolis product differs according to the gender of the participants.

H<sub>7</sub>: The intention to purchase propolis product differs according to the educational status of the participants.

H<sub>8</sub>: The intention to purchase propolis product differs according to the income of the participants.

#### 4. RESEARCH FINDINGS

When Table 1 is reviewed, it is seen that in the evaluation of the health status of the participants before Covid-19, 101 people corresponding to 28.9% stated that they did not have a chronic disease before, and 60 people corresponding to 17.1% complained of gastrointestinal problems, and 50 people corresponding to 14,3% stated that they had eye disease, and 43 people corresponding to 12.3% stated that they had disorders such as anxiety disorder or depression.

**Table 1:** Health Status of Participants

	Pre-Existing Chronic Problem		Health Problem After Covid-19	
Psychological disorders such as anxiety disorder, depression	43	%12,3	122	%34,9
Cardiovascular disorders such as heart, blood pressure, diabetes	26	%7,4	28	%8
Muscle-joint pains	15	%4,3	30	%8,6
Obesity	29	%8,3	31	%8,8
Gastrointestinal ailments	60	%17,1	65	%18,6
Eye diseases	50	%14,3	57	%16,3
Covid-19	-	-	8	%2,3
Other diseases	26	%7,4	4	%1,1
I did not experience illness	101	%28,9	5	%1,4
<b>Total</b>	<b>350</b>	<b>%100</b>	<b>350</b>	<b>%100</b>

In the evaluation of the health status of the participants after Covid-19, 122 people, which make up 34.9% experienced disorders such as anxiety disorder or depression. 65 people corresponding to 18.6% complained of gastrointestinal problems, and 57 people corresponding to 16,3% stated that they had eye diseases. It was observed that after Covid-19, anxiety disorders, muscle and joint pains due to sedentary life, obesity and stomach problems increased to a large extent, The number of people who stated that they did not experience any disease decreased substantially.

**Table 2: Immune-Boosting Products and Foods Used**

<b>Therapeutic or Immune Enhancing Products Used</b>		
I bought vitamin D supplement to boost immunity or in addition to the treatment of my current illness.	33	%9,5
I bought complex vitamin supplements to boost immunity or in addition to the treatment of my current illness.	53	%15,1
I used bee products such as honey, pollen and propolis to increase immunity or in addition to the treatment of my current disease.	92	%26,3
I consumed pickles to increase immunity.	25	%7,1
I have benefited from food supplements containing medicinal plants such as ginger and turmeric to increase immunity.	13	%3,7
I consumed soups such as offal soups and traditional tarhana-soup to increase immunity.	22	%6,3
I consumed fresh vegetables and fruits.	42	%12
I consumed kephir to increase immunity.	28	%8
There was no change in my diet.	42	%12
<b>Total</b>	<b>350</b>	<b>%100</b>

When Table 2 is reviewed, it is seen that in the evaluation made by consumers regarding the prioritized products they consume in order to increase immunity due to the Covid-19 pandemic, 92 participants corresponding to 26.3% stated that they consume "bee products", and 53 participants corresponding to 15.1% stated that they consume "complex vitamin supplements", and 42 consumers corresponding to 12% stated that they consume "fresh vegetables and fruits". In the light of this evaluation, it is understood that the participants mostly tended to consume bee products such as honey, pollen and propolis in order to increase their immunity.

**Table 3: Use and Awareness of Bee Products**

<b>Bee Product</b>	<b>I heard after the Covid-19</b>		<b>I started using it after the Covid-19</b>	
Honey	-	-	118	%33,7
Pollen	8	%2,3	58	%16,6
Royal Jelly	12	%3,4	62	%17,7
Propolis	120	%34,3	110	%31,4
Bee Bread	193	%55,1	2	%0,6
Bee Venom	9	%2,6	-	-
Beeswax	3	%0,9	-	-
None	5	%1,4	-	-
<b>Total</b>	<b>350</b>	<b>%100</b>	<b>350</b>	<b>%100</b>

When Table 3 is reviewed, all of the following participants stated they heard of the below mentioned bee products after the Covid-19 pandemic started. 193 participants corresponding to 55.1% heard of "bee bread", and 120 participants corresponding to 34,3% heard of "propolis", and 12 participants corresponding to 34.3% heard of "royal jelly", and 9 participants corresponding to 2,6% heard of "bee venom", and 8 participants corresponding to 2,3% heard of "pollen", and 3 participants corresponding to 0,9% heard of "beeswax" after the Covid-19 outbreak. In the evaluation of the prioritized bee products which started to be used after the Covid-19 outbreak, 118 participants corresponding to 33.7% regarding "honey products", and 110 participants corresponding to 31.4% regarding "propolis", and 62 participants corresponding to 17.7% regarding "royal jelly", and 58 participants corresponding to 16,6% regarding "pollen", and 2 participants corresponding to 0.6% regarding "bee bread" stated that they started to consume the abovementioned products as a priority. When the consumption rates of honey and propolis after Covid-19 are compared, it turns out that propolis is highly preferred.

**Table 4:** Where the Participants Purchase Propolis

Where Consumers Buy Propolis	F	%
Supermarket	73	20,8
Drugstore	71	20,3
Local familiar beekeepers	87	24,9
Beekeepers Association	3	,9
Places by roadsides and market stalls	33	9,4
Brands' websites or online sales platforms	83	23,7
<b>Total</b>	<b>350</b>	<b>100</b>

When Table 4 is reviewed, 24.9% of the participants stated that they "buy propolis from local, familiar beekeepers" while 23.7% preferred "brands' websites or online sales platforms" to buy propolis. 20.8% stated that they "purchase from supermarkets". In this ranking, the rate of consumers who prefer "pharmacies" to buy propolis is 20.3%, and 9,4% stated that they buy from "places by roadsides and market stalls". Consumers who buy propolis from "Beekeepers' Associations" correspond to 0,9%.

**Table 5:** Usage Frequency

Usage Frequency	F	%
I use it regularly every day.	77	22,0
I use it several times a week.	68	19,4
I use it several times a month.	35	10,0
I use it when I am in crowded and risky environments.	25	7,1
I use it during the winter cold season.	93	26,6
I only use it when I'm feeling sick.	52	14,9
<b>Total</b>	<b>350</b>	<b>100</b>

When Table 5 is reviewed, it is seen that 93 consumers corresponding to 26,6% stated that they " use it during the winter cold season ". 77 consumers corresponding to 22% stated that they "use propolis regularly everyday" while 68 people corresponding to 19.4% stated that they "use it several times a week". And 52 people corresponding to 14.9% stated that they "use it only when they feel sick". While 35 people corresponding to 10% stated that they "use it several times a month", 25 people corresponding to 7.1% stated that they use it "when they are in crowded and risky environments".

**Table 6:** The Role of the Consumer in the Purchasing Process

Purchasing Role	F	%
I get information about the product and the brand I make the purchasing decision by comparing the price and quality.	157	44,9
I'm not the one who decides to buy, I just make the payment.	31	8,8
I only buy it for my own use.	30	8,6
I only buy it for my child/grandchild(ren) to use.	6	1,7
I buy it for family use.	126	36
<b>Total</b>	<b>350</b>	<b>100</b>

When Table 6 is reviewed, it is seen that in the valuation of consumers' role while purchasing a propolis product, 157 consumers corresponding to 44.9%, who constitute the majority, stated that they obtain information about the product and brand, and make the purchase decision themselves by comparing the price and quality. On the other hand, 36% of consumers stated that they buy propolis with the intention of using it as a family.

When Table 7 is reviewed, most of the consumers stated that packaging made of glass, glass packaging wrapped with an extra protective box that prevents it from breaking, label including information such as the side effects of a product, statements as to how it should be used, where the product is obtained from, the presence of emblems on the certificates, awards and documents on the product affect purchase decision. They also stated that it is important to include the storage conditions on the label, to use a recyclable or biodegradable packaging,



to have Halal and Kosher certificates, to have access to a data matrix application that includes the geographical location of the product, product contents and laboratory results for tracking purposes from the moment the bee collects it. It is also stated that they expect the package to contain a prospectus containing general information about the product introductory and against which diseases it can be beneficial.

**Table 7:** Frequency and Percentages Related to Evaluations Regarding the Packaging of Propolis Product

Criteria for Packaging Choice	1	2	3	4	5	%
	%	%	%	%	%	
Glass packaging affects my purchase decision.	2,0	3,2	21,4	24,0	49,4	100
It is important for me that the glass packaging is wrapped with an extra protective box that prevents it from breaking.	2,0	,8	10,6	22,9	63,7	100
It is important to include information such as product side effects, how it should be used, and where the product is obtained from on the label.	4,8	6,6	16,9	26,0	45,7	100
It is important to have the emblems of the certificates, awards and documents on the product.	5,7	10,0	21,2	20,0	43,1	100
I would like the product to have access to a data matrix application, including the geographical location, product ingredients and laboratory results, for tracking purposes from the moment the bee collects it.	7,4	13,7	30,9	12,3	35,7	100
It is important that the storage conditions are stated on the label.	2,6	4,0	14,9	36,0	42,5	100
It is important to use recyclable or biodegradable packaging.	3,2	7,1	17,1	22,0	50,6	100
I expect the package to contain a prospectus with general information about the product and against which diseases it can be used.	3,7	5,2	16,0	29,7	45,4	100
It is important that it has Halal and Kosher certification.	20,3	12,3	18,0	14,9	34,5	100

When Table 8 is reviewed, in the valuation regarding the participants' intention to purchase the brand, 170 people corresponding to 48.6% stated that they prefer "more than one" brand, 84 consumers corresponding to 24% prefer "other" brands that are not included in the survey form, and 75 people corresponding to 21.4% prefer "Bee'o" brand, 12 consumers corresponding to 3.4% prefer "Balparmak" brand, 6 consumers corresponding to 1.7% prefer "Arifoğlu" brand, 2 people corresponding to 0.6% prefer "Prof. Saraçoğlu" brand, and 1 person corresponding to 0.3% prefers "Aksuvital" brand.

**Table 8: Brand Preference**

Brands	F	%
Balparmak	12	3,4
Bee'ö	75	21,4
Arifođlu	6	1,7
Aksuvital	1	,3
Prof. Saraçođlu	2	,6
Other	84	24,0
Several brands	170	48,6
<b>Total</b>	<b>350</b>	<b>100</b>

**Table 9: Attitude towards Innovative Products**

Innovative Products	Yes	No	%
If propolis is added as a preservative to foodstuffs such as yoghurt, milk, and instant soup, it is beneficial for our health to purchase those products as it will be a natural preservative.	77,4	22,6	<b>100</b>
If materials such as environmentally friendly gloves, masks and patient bedspreads are produced by adding propolis to microfiber fabric, it is wise to purchase them.	58,3	41,7	<b>100</b>
I would consider giving propolis supplements to my pet in case of illness.	60,0	40,0	<b>100</b>
In the fight against harmful insects, it makes sense to put on the market and buy propolis-based drugs that do not harm nature, plants and aquatic organisms instead of harmful drugs.	65,4	34,6	<b>100</b>
If propolis chewing gum, throat lozenge/troches, chewable tablet is available, it is a good idea to buy it for daily use.	76,9	23,1	<b>100</b>
I am open to the idea of purchasing propolis anti-wrinkle, scar, acne cream and hand creams.	64,3	35,7	<b>100</b>
It is a good idea to buy propolis cologne, disinfectant, wet wipes and cleaning materials.	65,4	34,6	<b>100</b>
Buying propolis toothpaste, mouthwash and nasal spray makes me think that I buy more reliable products.	69,4	30,6	<b>100</b>
Buying propolis-containing products such as aftershave lotion, deodorant for men, and deodorants and creams for women gives confidence.	64,0	36,0	<b>100</b>
The idea of buying small-packaged ice creams, preferably cocoa or fruit combined with propolis, royal jelly, honey is pleasant.	81,1	18,9	<b>100</b>

When Table 9 is reviewed, it is understood that the majority of the participants show the intention to purchase propolis-containing innovative products if they are put on the market.

The KMO test was conducted to measure the suitability of the factor analysis on consumer personality traits and purchase intention. The suitability of the data set for factor analysis was measured with the Kaiser-Meyer-Olkin (KMO) Sampling Adequacy Criterion Test and Barlett's Sphericity Test. Factor analysis, KMO and Barlett's Test of Sphericity were applied separately for the variables of consumer personality and purchase intention in the survey and are presented as a footnote in Table 10-11. Barlett's Test of Sphericity shows whether there is sufficient relationship between the variables. If the significance value (p) of the Barlett Test is less than 0.05, there is sufficient correlation between the variables for factor analysis (Sipahi et al., 2006, p. 79). Since the overall significance value (p) in Table 10-11. is 0.000, the group of variables is suitable for factor analysis. Considering the KMO values, the scales of consumer personality and purchase intention variables can be evaluated as "excellent" for factor analysis. In the factor analysis, "Principal Components Model" was used as the factor derivation model. One of the factor axes rotation methods, "Varimax Rotation Method" was used. In the first factor analysis, since the factor load of the statement "I am a talented person" regarding the dimension of being open to innovations remained below 0.50, this statement was removed, and the factor analysis was performed again.

The factor loads of the factor analysis for consumer personality are shown in Table 10. Consumer personality consists of five sub-factors including extraversion, conscientiousness, agreeableness, openness, neuroticism.

**Table 10:** Expressions and Factor Loads for Consumer Personality

CONSUMER PERSONALITY TRAITS	FACTOR LOAD
<b>Extraversion</b>	
I chat with lots of different people at friend meetings.	0,863
I feel very comfortable in society.	0,849
I always start conversations.	0,827
I don't mind getting attention.	0,814
I like to chat.	0,809
I am generally a cheerful person.	0,802
I like friend meetings.	0,772
I have an energetic, restless nature.	0,764
<b>Conscientiousness</b>	
I am always cautious.	0,868
I pay attention to details.	0,829
I'm a punctual person.	0,829
I am predictive.	0,802
I have a perfectionist nature.	0,796
I like formality.	0,759
I like to take responsibility.	0,755
I have a mature build.	0,669
<b>Agreeableness</b>	
I understand other people's feelings and troubles.	0,749
I try to be tolerant of people.	0,744
I like to help people.	0,736
I share other people's burden.	0,720
I spend time with the people around me.	0,683
I try to be objective and free from prejudice in the face of events.	0,649
People feel comfortable with me.	0,625
I am an emotional person.	0,617
<b>Neuroticism</b>	
I am a cool-blooded person in the face of events.	0,847
I resist so as not to be easily upset.	0,774
I am resistant to difficulties.	0,764
I have a balanced mood.	0,709
I am not an angry person.	0,676
<b>Openness</b>	
There is a free production.	0,760
I have creative ideas.	0,728
I am a cultured person.	0,726
I am a person full of new and original ideas.	0,723
I am quick to understand and grasp things.	0,704
I have a rich vocabulary.	0,621

Consumer Personality KMO=0,950 Barlett's Test of Sphericity=12112,217 p=0,000

The factor loads related to the factor analysis performed on the consumer purchase intention scale are shown in Table 11. Consumer purchase intention consists of a single sub-factor.

**Table 11:** Expressions and Factor Loads for Consumer Purchase Intent

CONSUMER PURCHASE INTENT	FACTOR LOAD
<b>Consumer Purchase Intent</b>	
During the pandemic, I prefer branded products when purchasing propolis.	0,910
During the pandemic, the possibility of online shopping increases my purchase.	0,891
I would like to easily access and buy propolis during the pandemic.	0,888
While purchasing propolis during the pandemic, discount coupons and the discounted prices allow me to buy more products.	0,883
During the pandemic, I buy more than 1 propolis product to stock them up.	0,873
I will continue to buy propolis products after the pandemic.	0,871
During the pandemic, the fact that propolis is in the aisle of honey in the supermarkets increases my purchase as it provides easy access.	0,869
During the pandemic, I would like to purchase multiple propolis product packs consisting of different products that give me the opportunity to try new products.	0,863

*Consumer Purchase Intention KMO=0,926 Barlett's Test of Sphericity=2985,728 p=0,000*

Reliability values of extraversion, conscientiousness, agreeableness, openness, neuroticism which were obtained as a result of factor analysis are presented in Table 12.

**Table 12:** Reliability Values of the Scales Used in the Study

	Cronbach Alpha Coefficient
<b>Extraversion</b>	0,960
<b>Conscientiousness</b>	0,940
<b>Agreeableness</b>	0,935
<b>Openness</b>	0,918
<b>Neuroticism</b>	0,884
<b>Purchase Intent</b>	0,959

When the Cronbach Alpha coefficients that were obtained as a result of the reliability analysis were evaluated, it was determined that the scales of extraversion, conscientiousness, agreeableness, openness, neuroticism, purchase intent were highly reliable.

Whether the purchasing intentions differ according to the genders of the participants was examined using the "t" Test. According to Table 13. values, it was determined that the purchasing intention did not differ according to the gender of the participants ( $t=-7,134$ ;  $p>0,05$ ).

**Table 13:** Gender-related “t” Test Findings of Purchase Intent

Levene Test						
Purchase Intent	Group Variance	F	P	t	Df	A.O.F.
	Equal	24,930	0,000	-7,125	347	-0,558
	Not Equal			-7,134	340,634	-0,558
	Arithmetic Mean (A.M.) and Standard Deviation Value	Groups		A.M.		S. Deviation
	Male		2,9311		0,785	
	Female		3,4892		0,672	

Whether the purchasing intentions of the participants differ according to their educational status was examined through the "Welch Test". When Table 14 findings were reviewed, it was determined that the purchase intention (F=18,169; p<0,05) differed according to the education level of the customers. The differences between the groups are shown in the Tukey HSD Table in Table 15. It can be said that the participants who are primary school graduates (A.M.=2,6250) have a lower purchasing intention than the participants with undergraduate (A.M.=3.3966) and graduate (A.M.=3.6316) education. On the other hand, it is seen that the high school graduates (A.M.=2.8878) have less purchase intention than undergraduate (A.M.=3.3966) and graduate (A.M.=3.6316) graduates. Associate degree graduates (A.M.=2.9344) exhibit a lower purchasing intention than undergraduate (A.M.=3,3966) and graduate (A.M.=3,6316) degree holders. This table shows that with the increase in education level, purchasing intention can also develop, positively.

**Table 14:** “WELCH” Test Findings Regarding the Educational Status of Purchasing Intention

Levene Test		Groups	A.M.	S. Deviation
F	P	Primary education	3,500	0,707
		High school	3,209	1,118
6,897	0,000	Associate degree	3,593	0,975
		Undergraduate degree	2,923	1,397
		Graduate degree	3,795	0,864
WELCH				
Statistics	df1	df2	P	
18,169	4	102,344	0,000	

**Table 15:** Tukey HSD Table Regarding the Educational Status of Purchasing Intention

Purchasing Intention	Groups	Education	A.M.F	S. Deviation	P
	Primary Education		High school	-0,262	0,171
Associate degree			-0,309	0,165	0,334
Undergraduate degree			-0,771	0,147	<b>0,000</b>
Graduate degree			-1,006	0,180	<b>0,000</b>
High School		Primary education	0,262	0,171	0,542
		Associate degree	-0,046	0,138	0,997
		Undergraduate degree	-0,508	0,117	<b>0,000</b>
		Graduate degree	-0,743	0,156	<b>0,000</b>
Associate Degree		Primary education	0,309	0,165	0,334
		High school	0,046	0,138	0,997
		Undergraduate degree	-0,462	0,107	<b>0,000</b>
		Graduate degree	-0,697	0,149	<b>0,000</b>
Undergraduate Degree		Primary education	0,771	0,147	<b>0,000</b>
		High school	0,508	0,117	<b>0,000</b>
		Associate degree	0,462	0,107	<b>0,000</b>
		Graduate degree	-0,235	0,129	0,368
Graduate Degree		Primary education	1,006	0,180	<b>0,000</b>
		High school	0,743	0,156	<b>0,000</b>
		Associate degree	0,697	0,149	<b>0,000</b>
		Undergraduate degree	0,235	0,129	0,368
	<b>Groups</b>	<b>A.M.</b>	<b>S. Deviation</b>		
	Primary education	2,6250	0,640		
	High school	2,8878	0,798		
	Associate degree	2,9344	0,766		
	Undergraduate degree	3,3966	0,736		
	Graduate degree	3,6316	0,524		

Whether the purchase intent differs according to the income status of the participants was examined through the "ANOVA Test" and is shown in Table 16. In the ANOVA test, it is observed that the purchase intent ( $F=19,158$ ;  $p<0,05$ ) differs according to the income groups of the participants. In order to determine which difference between the groups caused this difference, the "Scheffe Test" was conducted. The results of this test are shown in Table 17.

**Table 16: “ANOVA” Test Findings Regarding the Income Groups of Purchasing Intention**

Levene Test		Groups	A.M.	S. Deviation	
F	P	500 TL and below	2,5491	0,7073	
		1501-2500 TL	2,6250	0,6959	
0,116	0,977	2501-3500 TL	2,6888	0,6789	
		3501-4500 TL	3,2994	0,7155	
		4500 TL and above	3,4372	0,7179	
ANOVA					
	Sum of Squares	df	Mean Squares	F	P
<b>Between groups</b>	38,711	4	9,678	19,158	0,000
<b>In-group</b>	174,282	345	0,505		

**Table 17: Scheffe Test Table**

Group	Groups	A.M.F	S.Error	P
500 TL and below	1501-2500 TL	-0,0758	0,2723	0,999
	2501-3500TL	-0,1396	0,1683	0,953
	3501-4500TL	-0,7502	0,1558	<b>0,000</b>
	4500 TL and above	-0,8880	0,1442	<b>0,000</b>
1501-2500 TL	500 TL and below	0,0758	0,2723	0,999
	2501-3500TL	-0,0637	0,2577	1,000
	3501-4500TL	-0,674	0,2497	0,124
	4500 TL and above	-0,8121	0,2426	<b>0,026</b>
2501-3500TL	500 TL and below	0,1396	0,1683	0,953
	1501-2500 TL	0,0637	0,2577	1,000
	3501-4500TL	-0,6106	0,1286	<b>0,000</b>
	4500 TL and above	-0,7483	0,1143	<b>0,000</b>
3501-4500TL	500 TL and below	0,7502	0,1558	<b>0,000</b>
	1501-2500 TL	0,6743	0,2497	0,124
	2501-3500TL	0,6106	0,1286	<b>0,000</b>
	4500 TL and above	-0,1377	0,0948	0,716
4500 TL and above	500 TL and below	0,8880	0,1442	<b>0,000</b>
	1501-2500 TL	0,8121	0,2426	<b>0,026</b>
	2501-3500TL	0,7483	0,1143	<b>0,000</b>
	3501-4500TL	0,1377	0,0948	0,716
Groups		A.M.	S.Deviation	
500 TL and below		2,5491	0,7073	
1501-2500 TL		2,6250	0,6959	
2501-3500TL		2,6888	0,6789	
3501-4500TL		3,2994	0,7155	
4500 TL and above		3,4372	0,7179	



It can be said that participants with an income of 500 TL or less (A.M.=2,5491) have lower purchasing intention than participants with 3501-4500TL (A.M.=3,2994) and 4501 TL and above (A.M.=3,4372) incomes. On the other hand, it is seen that the participants with an income of 1501-2500 TL (A.M.=2,6250) have less purchasing intention than the participants with an income level of 4501 TL and above (A.M.=3,4372). It was observed that the participants with income of 2501-3500 TL (A.M.=2,6888) have less purchasing intention than the participants with an income level of 3501-4500 TL (A.M.=3,2994) and participants with an income level of 4501 TL and above (A.M.=3.4372). In addition, it was determined that participants with an income of 3501-4500TL (A.M.=3.2994) showed a higher purchasing intention than participants with an income of 500 TL and below (A.M.=2.6888) and those with an income of 2501-3500TL (A.M.=2.6888). On the other hand, it is seen that participants with an income of 4501 TL and above (A.M.=3,4372) have a higher purchasing intention than the participants with an income of 500 TL and below (A.M.=2,5491), 1501-2500 TL (A.M.=2.6250) and 2501-3500 TL (A.M.=2.6888). In this context, it is seen that the intention to purchase propolis products will increase with the increase in income.

The findings of the correlation analysis conducted to reveal the relationships between extraversion, conscientiousness, agreeableness, openness, neuroticism and purchase intention of the participants are shown in Table 18.

**Table 18:** Relationships Between Consumer Personality Traits and Purchasing Intention

N=252	Extraversion	Conscientiousness	Agreeableness	Openness	Neuroticism	Purchase Intent
<b>Extraversion</b>	1	322**	749**	484**	497**	372**
<b>Conscientiousness</b>	322**	1	434**	657**	458**	491**
<b>Agreeableness</b>	749**	434**	1	499**	536**	386**
<b>Openness</b>	484**	657**	499**	1	405**	504**
<b>Neuroticism</b>	497**	458**	536**	405**	1	386**
<b>Purchase Intent</b>	372**	491**	386**	504**	386**	1

\*\* (p<0,01)

The absolute magnitude of the correlation coefficient ( $r$ ), which takes a value between (-1) and (+1), indicates the level of the relationship between the two variables; the sign of the numbers (positive or negative) determines the direction of the relationship. Interpretation of the correlation coefficient is as follows (Kalaycı, 2006, p. 116): If it is between 0.00 and 0.25 there is a “very weak” relationship, if it is between 0.26 and 0.49 there is a “weak” relationship, if it is between 0.50 – 0 .69 there is a “moderate” level of relationship, if it is between 0.70 – 0.89 there is a “high” level of relationship, if it is between 0.90 – 1.00 there is a “very high” level of relationship (Kalaycı, 2006). When the correlation table is reviewed and the relationships between consumer personality traits and purchase intent are evaluated, it is seen that there is a moderately significant positive relationship ( $r=0,504$ ;  $p<0,01$ ) between the "openness" and "purchase intent" variables. On the other hand:  $r=0,491$  between “Conscientiousness” and “purchase intent,  $r=0,386$  between “Agreeableness and Neuroticism” and “purchase intent”,  $r=0,372$  between “extraversion” and “purchase intent” were determined. It was determined that there was a weak positive ( $p<0,01$ ) significant relationship represented by the coefficient. Based on these results,  $H_1$ ,  $H_2$ ,  $H_3$ ,  $H_4$ ,  $H_5$ ,  $H_7$ ,  $H_8$  were accepted.  $H_6$  was rejected.

## 5. RESULT

While most of the consumers stated that they did not have a health problem before covid-19, the number of those who said that they did not have a health problem after covid-19 decreased. Anxiety disorders and depression complaints increased after the pandemic. Since the propolis product is an immune-enhancing product, it seems to be an effective strategy to reach consumers through a message in which the benefits of the product are promoted by a famous doctor and to present it as a kind of comforting element for the anxiety related to the disease. It has been observed that consumers mostly prefer beekeeping products in order to increase immunity due to the Covid-19 pandemic. This also highlights the need to consider more effective marketing strategies for these products.

The majority of consumers stated that they heard bee bread and propolis product for the first time after Covid-19, and it is possible to associate this situation with the high level of interest in concepts such as health and disease caused by the Covid-19 pandemic. At this point, the product should be promoted in advertisements, social media, written and printed media, pharmacists should be informed and presented to the customers who come to the pharmacy, and the consumer should be curious and try it.

The majority of consumers stated that their use of honey products, and propolis, which was less known before the pandemic, increased after Covid-19.

When the usage rates of honey and propolis, which is the most known bee product, are compared after Covid-19; It turns out how much propolis is preferred. Considering this situation, it will be possible to reach all of the consumers who buy honey through campaigns such as the trial size of propolis product attached to the honey jars.

The majority of consumers declared they buy propolis from local familiar beekeepers, and the number of consumers who also prefer brands' websites and online platforms is substantial. The number of consumers who prefer supermarkets and pharmacies to buy these products are also close to each other. Therefore, it is seen that there are consumers who prefer retail and online channels as well as consumers who buy from reliable beekeepers recommending these products. It is important that propolis is on sale in a way that appeals to all kinds of consumers. As the online shopping opportunity increased due to the pandemic, the websites for online sales should be diversified, at the same time, the number of pharmacies selling propolis products should be increased, and be positioned so that they can be found even in small markets.

Most of the consumers stated that they use the product during the cold season of winter, and the said product should be presented to the consumer as an immune booster that can be used in all seasons. With product diversification, it should be ensured that the product is always used and habit-forming.

It has been understood that most of the consumers search for information and buy the propolis product after evaluation, and effective promotion and information strategies to the right consumer are of great importance.

Most of the consumers stated that they attach importance to have glass packaging, the glass packaging is wrapped with an extra protective box that prevents it from breaking, the packaging is recyclable, the packaging has the awards and certificates of the product, and that the expiration date, the content information of the product, the presence of QR code regarding traceability, the presence of Halal and Kosher certificates are all available on the packaging. So, packaging and labelling is important and a transparent policy should be followed in these matters.

As it was understood that consumers who are extroverted, responsible, not difficult to establish emotional balance and open to innovations, have a high intention to purchase propolis products, and efforts should be made towards these consumers. Word of mouth marketing is thought to be the most appropriate effort for friendly consumers who interact with each other, do not hesitate to engage in conversations, and should be used as an effective tool in the marketing of these products. Customer feedbacks such as recommendations and complaints are important in the internet environment. Customers' complaints should be

minimized, for this purpose, consumer expectations should be analyzed well, appropriate product presentation should be carried out, and complaints should be immediately replied and turned into thanks. It should not be forgotten that today's consumers are socializing in the internet environment. In channels such as Instagram and Twitter, consumers do not hesitate to interact with each other and with brand ambassadors. Therefore, expert opinions should be included, interactive interaction should be ensured through celebrities, and consumers should be chatted and they should be made to feel like a part of the brand. For this purpose, tools such as Influencer marketing can also be used.

It is thought that message selection is important in efforts aimed at prudent, detail-oriented, perfectionist, responsible consumers and consumers who are resistant to difficulties, cool-blooded, and have a balanced mood as personality traits. By introducing bee products to these consumers, the benefits they buy with the bee product should be conveyed in detail, and the messages to be used for communication should be shaped in this way. Products should be promoted by experts such as doctors, dieticians and pharmacists, both in social media and in the written and oral media, and scientific researches should be shared with the public. Messages should be given to the consumer that the product they buy is not only a bee product in a jar, but a product that can be associated with their health, immunity and increased quality of life.

Some strategies should be adopted for innovative consumers who are cultured, easily adaptable to new and original ideas, and have a quick understanding. These consumers do not hesitate to be the first to try different products and take risks, and they make positive or negative comments about the products they try. Therefore, new products should be produced with R&D studies and these should be offered to consumers. In our study, consumers prefer propolis-containing ice cream and foods such as yogurt, milk, and instant soup with propolis preservatives, propolis-containing cologne deodorant, roll-on, diaper rash creams, acne creams, fly repellents, band-aids, medical masks, etc. They reported that they are inclined to propolis-containing drugs for their animals and propolis-containing products as pesticides and that they may buy these products if they are offered for sale. Products for these consumers should be developed and put on the market.

Most of the consumers stated they wanted to reach propolis easily and buy the product during the pandemic, that they stocked it, that they would buy the product after the pandemic, that the opportunity to try multiple product packages with online sales and sales in the markets increased their purchases. While internet sales platforms such as Hepsiburada, Trendyol, N11 and brands' own websites are suitable online channels for sales, and importance should also be

attached to the retail channels such as pharmacies, shelves in front of the cashdesks of markets and honey aisles. Products offered to the market at an optimum price with an appropriate message, as consumers are price sensitive, trial sizes, discount coupons, advantageous packages containing various products such as honey-propolis-pollen or campaigns such as buy 3 pay 2 should be offered to consumers.

In the study, consumers stated they are inclined to products such as propolis-containing ice cream and foods such as yoghurt, milk, and instant soup with propolis preservatives, propolis-containing cologne deodorant, roll-on, diaper rash creams, acne creams, insect repellents, band-aids, medical masks, etc. They reported they are inclined to propolis-containing drugs for their animals and propolis-containing products as pesticides and that they may buy these products if they are offered for sale. Products for these consumers should be developed and presented to the market by positioning them as products specific to children, women and men, seasonal products and products that can be used routinely every day.

Considering the brand preference of consumers, the number of consumers who prefer more than one brand is high. Most of the consumers who chose a single brand chose the Bee'o brand. When consumers' purchase intention is measured, it is obvious that they prefer branded products. Branding should be given importance. However, it is thought that brand loyalty among consumers is not complete. The propolis product should be offered for sale in channels easily accessible by the consumer, accompanied by efforts to encourage sales including promotions and price reductions. Offering discount coupons to consumers for their next shopping can also be an effective solution.

Fear, one of the psychological factors, has prevailed amongst people during the pandemic. This fear and anxiety have an effect on the purchasing behavior of consumers. Consumers have shown interest in the natural immune-enhancing propolis product in order to protect themselves from the risk of disease. In our study, the relationship between consumer personality traits and purchase intention has been evaluated and it is understood that consumers with openness trait are more willing to buy propolis and related products than others. These results support the literature. In addition, suggestions are presented regarding the strategies that businesses can follow in order to raise awareness among consumers and increase the amount of purchases regarding the propolis product and new products containing propolis.

## 6. CONFLICT OF INTEREST STATEMENT

There is no conflict of interest between the authors.

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## 8. AUTHOR CONTRIBUTIONS

H.Y.Ş, E.Ş.S.: Concept; Equal contribution

H.Y.Ş, E.Ş.S: Design; Idea; Equal contribution

H.Y.Ş, E.Ş.S: Auditing; Equal contribution

H.Y.Ş, E.Ş.S: Collection and/or processing of resources; Equal contribution

H.Y.Ş, E.Ş.S: Analysis and/or interpretation; Idea; Equal contribution

E.Ş.S: Literature review; Whole

H.Y.Ş, E.Ş.S: The person who wrote the article; Idea; Equal contribution

H.Y.Ş: Critical review; Whole

## 9. ETHICS COMMITTEE STATEMENT AND INTELLECTUAL PROPERTY COPYRIGHTS

Ethics committee principles were complied with in the study and necessary permissions were obtained in accordance with the intellectual property and copyright principles.

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