sciendo

South East European Journal of Economics and Business
Volume 18 (2) 2023, 87-96
**DOI:** 10.2478/jeb-2023-0020

# UNDERSTANDING CONSUMERS' INTENTION TO PURCHASE GI CHEESES BASED ON THE SEM-LOGIT MODEL

Dubravka Užar, Jelena Filipović

***Abstract***

*This study aimed to investigate determinants of purchase cheeses with GIs in developing country and to analyze to what extent these factors affected individuals' purchasing intention, because there is a growing interest in geographical indications of origin (GIs) as a tool for product differentiation. An extension of the theory of planned behavior (TPB) is used as the framework of the study. To get a deeper insight into the influence of unobserved exogenous latent variables on consumers' intentions to purchase GI cheeses, SEM and Logit models were combined and the SEM-Logit integration model was constructed. The study supports extended model of TPB, which includes trust and loyalty, as a useful framework to understand the consumers' intentions to buy the investigated product category. The results from SEM-Logit show that attitude, subjective norms, perceived behavioral control, trust, loyalty, education and monthly income have significant impacts on intention to purchase cheeses with GIs. The findings of this research provide important contribution for understanding GI cheeses' consumption intention and behavior.*

**Key words:** *Geographical indication, Theory of planned behavior (TPB), Cheese purchasing*

**JEL classification:** *M31, Q13, C30*

## 1. Introduction

Food markets today are highly diversified, with increasing levels of product diversity and differentiation (Sampalean et al. 2021). Globally, there has been a steady increase in demand for traditional and GI food among consumers in recent years. Consumers' increased concerns about food safety and healthiness, along with environmental considerations throughout production processes, have resulted in the implementation of new demands on the food sector (Palmieri et al. 2021). In this new environment, GI food has become an effective marketing tool for agricultural producers.

From the consumers' perspective, the increased interest in local and regional foods may be viewed as a countertrend to the globalization of the food industry with international brands and converging demand patterns (Parrott et al. 2002). Product origin is becoming

**Dubravka Užar**, PhD student
(corresponding author)
Faculty of Economics and Business
University of Belgrade
Republic of Serbia
Postal address: Kopernikova 51/7, 21000 Novi Sad, Serbia
E-mail: dubravkauzar@gmail.com
ORCID: 0000-0002-0593-7383

**Jelena Filipović**, PhD
Full Professor
Faculty of Economics and Business
University of Belgrade
Republic of Serbia
E-mail: jelena.filipovic@ekof.bg.ac.rs
ORCID: 0000-0003-4232-1948

increasingly important in consumer purchasing decisions. The information offered by labelling allows the customer to make better-informed decisions and consider more complicated elements of consumption, which are not immediately verified by the consumer either before or after purchase (Palmieri et al. 2021). The labels indicate that these are high-quality products that are closely related to local traditions and strictly defined specifications for production processes (Lora et al. 2020). In countries that produce quality-certified food, GI labels are considered crucial and play a role in the consumer's decision-making process and willingness to pay, as these foods have a favourable image (Sampalean et al. 2021). Therefore, consumers' preferences for established origin labels are the substantive component in determining the success of GI food in the market (Lambarraa-Lehnhardt et al. 2021). In addition to the above, the growing demand for agri-food products with OGP is generated by several factors: a positive consumer attitude towards high-quality, high-status products, cultural identification and strong ties to the geographical region (Dias and Mendes 2018), increased interest in healthier and safer food, concerns about environmental issues environment (Palmieri et al. 2017) and greater demand for better guarantees and protection (Lambarraa-Lehnhardt et al. 2021).

Furthermore, it could be noted that there is a vast number of studies that tackled GI food market in developed countries, while consumer behavior on this matter remained understudied in emerging markets. As a result, in order to get a more comprehensive understanding of customer behavior, the following research question will be clarified: What determinants influence intentions to purchase GI cheeses in the Serbia? In order to respond to this question, the Theory of planned behaviour (TPB) was applied (Ajzen 1991). The TPB has been confirmed as a relevant model for describing consumer behavior related to traditional food (Shin and Hancer 2016; Haryanto et al. 2019; Menozzi et al. 2021). According to Shin and Hancer (2016) the original model, however, was criticized since it was unable to explain individual behavior to sufficient extent in many circumstances. As a result, this paper goes beyond it and adds constructs of trust in the labeling system and of consumers' loyalty to the TPB, in order to offer and test more potent framework.

Products with a GIs constitute an important element of culture and heritage in the Central and Eastern European countries, contributing to the development and sustainability of rural areas, protecting them from depopulation, entailing significant product differentiation, and potential for agricultural producers. Developing countries as Serbia have a wide range of traditional and indigenous products, although only a few are registered and protected at the national level. Despite significant barriers caused by the economic and political transition, the promotion of traditional foods may be a tool for coping with modernization trends in such transition economies (Barjolle et al. 2015).

This study contributes to the current literature in several ways. First, the scant efforts have been devoted towards the implications of the TPB in relation to buying GI food. The main contribution of this paper is the expansion of TPB with additional variables important for GI products consumption. Contributing to the findings of previous studies on TPB in traditional food, which have already incorporated consumers' trust and loyalty, we test TPB's validity in novel context. Second, we apply the statistical analysis that seems to lack from the subject field, by using the SEM-logit model in the domain of GI food. Third, this paper helps practice by providing insights to marketers and producers who could apply different strategies related to determining stimuli to influence consumers' purchasing decisions.

## 2. Literature review and hypotheses development

Protected designations of origin and protected geographical indications are being developed in the European Union (Arfini et al. 2019) as a result of the gradual shift in consumer preferences toward locally produced food (Bryla et al. 2017; Fernández-Zarza et al. 2021). The European Union has put in place special legislation on EU quality schemes, which are intended to distinguish between products that have unique qualities, particularly those related to geographical origin, from other similar products (Albuquerque et al. 2018). One of the widely accepted definitions describes GI as "is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin. In order to function as a GI, a sign must identify a product as originating in a given place" (WIPO 2021). The European Union's agricultural product quality policy aims to highlight the quality of individual products resulting from a specific origin and/or production method. The major purposes of this policy are to protect brand names from mislabeling and copying, to assist customers in understanding the unique characteristics of products, to stimulate diversified agricultural output, and to increase farmer income (Rodrigo et al. 2015). Moreover, these certifications help producers to be more competitive in the worldwide market (Carbone

2018) and could provide a significant contribution to sustainable rural development (Palmieri et al. 2021).

The European Union (EU) cheese market is the largest in the world (57 per cent of total production; FAO, 2020). Furthermore, the annual growth rate of cheese consumption in the EU is predicted to continue increasing, allowing producers to expand their supply with authentic products (Maceín et al. 2019). Despite the fact that the dominant cheese market model of the second half of the 20th century was focused primarily on mass and homogeneous production, the regional origin of food products and traditional production methods have become an increasingly appealing alternative (Bryla 2015). The increase in consumer interest in traditional products, the discovery of the sociocultural status associated with authentic food and historical heritage increases the demand for quality food. In addition to exceptional nutritional values, autochthonous cheeses are characterized by a traditional method of production, which is attributed to a certain geographical region (Goudis and Skuras 2020). Additionally, Palmieri et al. (2021) indicate that traditional food, together with gastronomic and cultural heritage, as well as the geographical origin of the product, are all sought after by consumers and could occupy a significant role in the market. This trend has triggered a great deal of interest in the definition of cheese safety, quality, and typical characteristics, and the implementation of strategies to protect public health and consumers.

The TPB states that behaviour can be predicted by a person's intention to engage in this behaviour. According to the TPB, three components: attitude toward the behavior, subjective norms, and perceived behavioral control, contribute to the creation of a behavioral intention (Ajzen 1985). GI labels provide consumers with reliable information about the origin and quality of products, allowing them to trust and identify higher-quality food products from conventional ones (Menozzi et al. 2021). Consumer brand loyalty influences the demand for cheese products as well as the profitability of food marketing companies (Gabay et al. 2009). Therefore, trust and loyalty can be postulated to significantly and positively affect purchase intentions for traditional food.

Honkanen et al. (2005) claimed that TPB is an important model for food-related research. The variable attitude, subjective norm, and perceived behavioral control, according to Thomson et al. (1994) meta-analysis approach, may explain 40–50% of the variation in an individual's intention, which further explains 19–38% of the variance in conduct. As a result, it is possible to assume that customer's attitudes, subjective norms, PCB, trust, and loyalty have a significant influence on purchasing GI cheese. Based on this assumption and related literature the following hypotheses were proposed:

$H_1$: Consumers' attitude is a significant predictor of their intention to purchase GI cheeses.

$H_2$: Subjective norms enhances person's intention to purchase GI cheeses.

$H_3$: PCB enhances person's intention to purchase GI cheeses

$H_4$: Consumers' trust is a significant predictor of their intention to purchase GI cheeses.

$H_5$: Consumers' loyalty is a significant predictor of their intention to purchase GI cheeses.

Factors that influence food choice regarding GI food, concerning the consumers, aside from the aforementioned, usually are their socio-demographic characteristics (Stojanović et al. 2013). Previous research confirms that socio-demographic variables (gender, age, income, education level, etc.) have an impact on purchase decisions (de-Magistris and Gracia 2016; Goudis and Skuras 2020). Similarly, in the case of GI food products, Skuras and Vakrou (2002) discovered that the socio-demographic features of Greek customers impact their inclination to purchase origin-marked wine. Therefore, research consistently points out that socio-demographic features have a certain power to explain the intention to consume GI food, thus it can be assumed that:

$H_6$: Personal attributes (education level, income level and number of household members) significantly influence the intention to purchase GI cheeses.

## 3. Methodology

Data were collected by using the online questionnaire. The sample was constructed of 806 consumers across Serbia, typical country of CEE. In order to optimize the sample plan and reduce sampling error, the stratification was carried out according to the respondent's region and socio-demographic characteristics. To determine the sample size, the formula was applied (Bartlett et al. 2001):

$$\mathrm{n} = N * \frac{\frac{Z^2 * p(1-p)}{\mathrm{e}^2}}{\mathrm{N} - 1 + \frac{\mathrm{Z}^2 * \mathrm{p}(1-\mathrm{p})}{\mathrm{e}^2}}$$

Where: n = sample size; N = population size; Z = value of the standard normal distribution for the chosen confidence interval of 95% (Z = 1.96); p

– estimated population proportion (0.5); and e - margin of error (3.5%).

The size of the population is defined based on the number of adult residents in Serbia. A confidence level of 95% is defined and is the maximum allowed error in mean proportions of 3.5%, which is considered acceptable for study in the literature given characteristics in social research (Taherdoost 2018). Based on this data and by applying the aforementioned formula, the required sample size of at least 784 was obtained. The basic set had been divided into subgroups based on precisely defined criteria to guarantee that the sample was representative of the population. The selected characteristics of respondents for defining subgroups are gender, age and geographical structure. Four clusters were defined based on the statistical division of Serbia into four regions, and based on data from the Republic Institute of Statistics on the number of adult residents in each region, the number of required respondents in each region was defined. The questionnaire format was pretested on a group of 20 individuals, with the purpose of testing the appropriateness of the selected variables and the clarity of the questions.

The descriptive data show that in the sample 60.3% were female and 39.1% were male. Approximately 72% of respondents are coming from the age group 25–64 years old. Most of the respondents completed high school education (44.7%) and belong to the households of 3-4 members. The monthly income of the majority ranges between 600 and 1000 of euros. Respondents' personal characteristics are provided in Table 1.

According to the literature and based on the given hypotheses, five types of latent variables were created: Attitude, Subjective norm, PCB, Trust in Label, and Loyalty. Each latent variable was constructed from several observed variables (table 2) based on previous similar research (Shin and Hancer 2016; Giampierti et al. 2017; Kumar and Smith 2018). Attitudes towards purchasing cheeses with GIs are developed regarding contributions to the local economy, local community, and local farmers' income. The subjective norms items represent the assessment of the effect of other individuals or groups of people relevant to the consumer ("friend and family", "people whose opinion I value", etc.,) on the execution of the behavior. The PCB, according to Ajzen (2002) was measured by consumers' perception of knowledge and abilities to perform purchasing cheeses, as well as external factors such as time and money constraints. Trust in labels provided by GIs was measured with four items. Two of the items referring to trust in the labeling system and two additional items referring to the uniqueness and reliability of GI cheeses. The loyalty was measured using three items, examining loyalty in terms of frequency of purchase cheeses with GIs rather than other cheeses. The behavioral intentions were the dependent variables and were measured by the items "*I intent to purchase cheeses with GIs in next 6 months*". All the variables in the model were measured with a five-point Likert scale (varying from 1 – "not agree" to 5 – "totally agree"). The complete list of the variables included in the model is presented in the Table 1.

**Table 1. Descriptive Statistical Analysis**

| Variables | Levels | % | Variables | Levels | % |
|---|---|---|---|---|---|
| *Gender* | Females | 60.3 | *Household size* | 1 - 2 | 28.5 |
| | Males | 39.1 | | 3 - 4 | 49.3 |
| | I cannot identify myself | 0.6 | | 5 or more | 22.2 |
| *Age* | 18-24 years | 10.3 | *Income (EUR)* | < 250 | 8.2 |
| | 25-44 years | 36.8 | | 251-600 | 33.5 |
| | 45-64 years | 35.2 | | 601-1000 | 38.8 |
| | Over > 65 years | 17.6 | | > 1001 | 19.5 |
| *Level of education* | Unfinished primary school | 1.1 | | | |
| | Primary school | 4.2 | | | |
| | High-school diploma | 44.7 | | | |
| | Bachelor's degree | 33.5 | | | |
| | Master, Postgraduate, or doctoral degree | 16.5 | | | |

Note: n=806

Source: Survey conducted by authors

Furthermore, in table 1 are presented the results of the confirmatory factor analysis performed for the TPB variables and constructs. It can be observed that factor loadings for the latent constructs ranged from 0.658 to 0.964, which is identified as excellent and indicating strong support for construct validity (Hair et al. 2006). Internal reliability of these variables has previously been established with Cronbach Alpha (α). As all Cronbach Alpha's passed the threshold of 0.7 (Hair et al. 2006), all variables are included for the latent construct in the structural equation analysis. The average variance extracted was used to calculate convergent validity (CV) (AVE). The convergent validity AVE should be greater than 0.50 in order to achieve a good convergent validity score (Fornell and Larcker 1981). The AVE varies from 0.547 to 0.825, which is above than the acceptable threshold of 0.50.

SEM is a combination of two different statistical techniques: factor analysis and simultaneous equation models, which can manage a large number of exogenous and endogenous variables as well as latent variables defined as linear combinations (weighted averages) of the observed variables (Roorda et al. 2008). The causal relationship between latent variables and their measured variables is first depicted by SEM based on the factors influencing customers' intentions, and the fitness value of latent variables is obtained. The model was divided into two parts: the structural equation modeling (SEM model), which was primarily used to describe the causal relationship between the latent variables of GI cheeses intention and the corresponding observation variables (Han et al. 2018). The second part is the Logit model, which was utilized in the second section to explain the nonlinear function connection between the likelihood of selected GI cheeses and the latent and socio-demographic variables influencing the choice. Therefore, SEM is a statistical technique that uses linear equations to represent the relationship between observed variables and latent variables (Hair et al. 2006).

To get a deeper insight into the influence of unobserved exogenous latent variables on consumers' intentions to purchase GI cheeses, SEM and Logit models were combined and the SEM-Logit integration model was constructed. Before establishing the SEM-Logit model, the adaption coefficient of the latent variables had to be calculated. To calculate the adaptation coefficient of the latent variables, a SEM

**Table 2. Results of reliability and factor analysis**

| Construct | Items | Factor loading | α Coefficient | Convergent validity AVE (>0.50) |
|---|---|---|---|---|
| Attitude | ATT1 | 0.906 | 0.933 | 0.825 |
| | ATT2 | 0.942 | | |
| | ATT3 | 0.874 | | |
| Subjective norms | SN1 | 0.946 | 0.917 | 0.801 |
| | SN2 | 0.964 | | |
| | SN3 | 0.761 | | |
| Perceived behavioral control | PCB1 | 0.722 | 0.841 | 0.547 |
| | PCB2 | 0.734 | | |
| | PCB3 | 0.658 | | |
| | PCB4 | 0.749 | | |
| | PCB5 | 0.827 | | |
| Trust in Label | T1 | 0,921 | 0.939 | 0.783 |
| | T2 | 0,913 | | |
| | T3 | 0,819 | | |
| | T4 | 0,882 | | |
| Loyalty | LOY1 | 0.790 | 0.880 | 0.715 |
| | LOY2 | 0.880 | | |
| | LOY3 | 0.865 | | |
| Intention | IT1 | - | - | - |

Source: Author's Calculation

was required to estimate the path coefficient of each latent variable for the adaptation coefficient calculation (Si et al. 2019). The latent variables were added into the Logit model, setting up the SEM-Logit model, which was used to investigate consumers' intentions to purchase GI cheeses. Among unobserved exogenous latent variables, the socio-demographic variables (income, education level, and family size) were also added to the Logit model.

Values of the unobserved exogenous latent variable were obtained using the data imputation method in AMOS software. The Logit model was analyzed in SPSS 23.0 software, using the Generalized Linear Model, where the type of model was ordinal logistic.

## 4. Results and discussion

### 4.1. Parameter Estimation of SEM

In order to assess the influence of factors on the GI cheese consumption, a SEM model was performed. Common goodness of fit measures were calculated, and the results for a SEM model are reported in Table 3. Generally, the value of RMSEA for a reasonable fit should be less than 0.08 (Hair et al. 2006). The GFI, AGFI, CFI, and TLI indexes should be greater than 0.90. Therefore, the initial measurement model with the main fix indexes has reached standards indicating a good fit. The SEM model explained 64.5% of the variance of the experimental data.

All of the unobserved exogenous latent variables have statistically significant influence on consumers' intentions to purchase GI cheeses. Based on the load factor coefficients, the degree of influence of latent variables on consumers' intentions to purchase GI cheeses is ranked in order: PCB, Loyalty, SN, Attitude, and Trust (table 4).

### 4.2. Parameter Estimation of the SEM-Logit Model

According to the survey data and previous assumptions, the value of each latent variable together with consumers' individual characteristics and intention to purchase GI cheeses, was substituted into the Logit model. The specific parameter estimation results and relevant test results are shown in Table 5.

The results showed that all determinants, except household size, had statistically significant impact on the decision outcomes based on the estimated values of the characteristic variables.

Attitudes were shown to have a direct positive effect on consumer intention ($\beta = 0.243$; $p<0.001$), confirming hypothesis 1. This result confirms the previous results by Kumar and Smith (2017), Haryanto et al. (2019) and Užar and Filipović (2023), indicating that marketers should highlight the benefits of local food on health, environment, and the local community in order to increase the intention to purchase GI food.

Hypothesis 2 predicted that positive subjective

**Table 3. Model fit indices for hypothesized structural model.**

| Model | CMIN/DF | RMSEA | GFI | AGFI | CFI | NFI | TLI |
|---|---|---|---|---|---|---|---|
| Default model | 3.11 | .051 | .937 | .917 | .970 | .956 | .964 |

Source: Author's Calculation

**Table 4. Direct path analysis based on standardized regression weights**

| Path | | | Estimate | S.E. | C.R. | p |
|---|---|---|---|---|---|---|
| Intentions | <--- | Attitude | .164 | 0.037 | 4.873 | *** |
| Intentions | <--- | SN | .196 | 0.051 | 4.644 | *** |
| Intentions | <--- | PCB | .401 | 0.049 | 10.377 | *** |
| Intentions | <--- | Trust | .157 | 0.040 | 4.322 | *** |
| Intentions | <--- | Loyalty | .139 | 0.050 | 3.182 | 0.001 |

Note: ***p<0.001

Source: Author's Calculation

**Table 5. Parameter estimation and test**

| Parameter | | B | S.E. | Hypothesis Test | | | Exp(B) |
|---|---|---|---|---|---|---|---|
| | | | | Wald Chi-Square | df | Sig. | |
| Threshold* | ["I don't agree"=1] | 5.131 | .4749 | 116.748 | 1 | .000 | 169.168 |
| | ["Mostly I disagree"=2] | 6.477 | .4926 | 172.902 | 1 | .000 | 650.276 |
| | ["I am neutral"=3] | 8.265 | .5279 | 245.112 | 1 | .000 | 3884.637 |
| | ["Mostly I agree"=4] | 9.473 | .5496 | 297.142 | 1 | .000 | 13005.449 |
| Education level | | .103 | .0757 | 37.747 | 1 | .000 | 1.108 |
| No. of members in a household | | -.024 | .0552 | .006 | 1 | .939 | .976 |
| Income | | .015 | .0499 | 15.333 | 1 | .000 | 1.015 |
| Loyalty | | .349 | .1113 | 276.056 | 1 | .000 | 1.417 |
| Trust | | .239 | .0886 | 99.911 | 1 | .000 | 1.270 |
| PCB | | 1.341 | .1095 | 177.531 | 1 | .000 | 3.823 |
| SN | | .477 | .1142 | 22.130 | 1 | .000 | 1.612 |
| Attitude | | .243 | .0809 | 8.981 | 1 | .003 | 1.274 |
| Goodness of Fit | | Value | df | Value/df | Sig. | | |
| Deviance | | 1900.600 | 3180 | .598 | | | |
| Pearson Chi – Square | | 3320.135 | 3180 | 1.044 | | | |
| Log Likelihood | | -950.300 | | | | | |
| Likelihood Ratio Chi-Square | | | 8 | .000 | .000 | | |

Note: Reference category for dependent variable is "I completely agree".

Source: Author's Calculation

norms toward buying cheeses with GIs enhance a person's intention to purchase it. Results support the positive and significant path coefficients (β = 0.477; p<0.001) in line with previous studies (Kim et al. 2003; Menozzi and Finardi 2019). A one-unit increase in SN increases the odds of consumer's full agreement to purchase GI cheese by 61.2%. The significant relationship between subjective norm and intention to purchase GI cheeses suggests that marketers should leverage social influences to enhance purchases.

PCB is the strongest determinant of all towards consumers' intention, supporting hypothesis 3. This finding suggests that PCB has the most effective and crucial effect on cheese purchasing in comparison to all the other variables. One unit increase in PCB, increases the odds of consumers fully agreeing to purchase GI cheese by about 3.8 times. Consumers' feeling to be able to buy quality-labeled food influences an intention to purchase that product and, as a result, makes the behavior more likely to occur. This finding confirms the results of other studies in the field (Kim et al. 2003; Menozzi and Finardi 2019; Menozzi et al. 2021; Užar and Filipović 2023).

A higher level of trust leads to greater intention to purchase PDO cheese (B=0.239; p<0.001), allowing to accept hypothesis 4. In this sense, trust proved to be a significant predictor of consumers' intention to buy, as already noted in scarce literature in this domain (Giampietri et al. 2018; Gu et al. 2019; Menozzi et al. 2021).

The effect of loyalty is positive and significant on GI purchasing intentions (B=0.349; p<0.001), emphasizing that as the loyalty increases, the odds of consumers totally agreeing to purchase of GI cheeses increase substantially (by more than 40%). Espejel et al. (2008) proved the same but in the product category of GI olive oil.

Among socio-demographic variables affecting consumer's intention to purchase GI cheeses, education level and income had significant influence. These results partially confirm the H7 hypothesis, which postulates that personal attributes significantly influence the purchasing GI cheeses. The regression coefficient of education was 0.103 showing that improvement of the education degree leads to higher consumers' intention to purchase GI cheeses. This notion could be explained in the manner that customers with a higher level of education are more knowledgeable about the different varieties of cheese, as well as about cheeses with a geographical indication. The regression

coefficient of income is 0.015 indicating that a one-unit increment in income increases the odds of consumers totally agreeing to purchase GI cheese by 1.5%. With an increase in monthly income consumers were more included to purchase GI cheeses, which is also consistent with the widely accepted belief that better-income consumers prefer cheeses with GI due to their premium prices. These results are consistent with the research by Grannis et al. (2003) and Goudis and Skuras (2020), which argue that income is an important factor of cheese purchases intention and that household income is positively related to GI label recognition.

## 5. Conclusions and limitations

Using the TPB, this study provides insights on the motivations for purchasing GI cheeses. First, this study contributes to the current body of literature to the theoretical understanding of individuals' intentions regarding GI food. This paper presents the first assessment of factors that influence GI food consumption in a country in the territory of Serbia. Attitudes, Subjective norms, PCB, trust, loyalty, education level, and income were found to be significant predictors of intention to purchase GI cheeses. The results show that extended model of TPB, which includes trust and loyalty, is a useful framework to understand the consumers' intentions to buy the investigated product category. Trust may drive strong relationships between producers and customers, overcoming consumer misunderstanding and encouraging new loyalty. In order to improve the consumption of GI food, it is needed to build trust with potential consumers. The study contributes to the current literature and theoretical understanding of individuals' intentions regarding products with OGP. Given that there are only a few similar studies based on the intention to purchase cheese with geographical indications, the contributions of this research are critical to the scientific community, which can use the findings as a framework for further scientific research in the field of food product positioning.

Second, the results showed that the expanded SEM-Logit model (including latent variables), considering each latent variable's explanatory power on consumer intention to purchase cheeses, may be used in other research studies involving GI products. The results of the SEM-Logit model reveal that personal variables such as monthly income and level of education significantly influence consumers' intention regarding purchase GI cheeses. This study's empirical technique is broadly relevant and can be employed in other research studies utilizing GI products.

Further, this study provides valuable practical insights for both policymakers and marketing managers. Promotion of GI food and marketing campaigns and strategies should be devoted to emphasize the aspects of local food to lower ill-environmental impact, enhance welfare for the local producers, and improve the health. The goal of the communication campaign by the producer should be to build awareness, obtain credibility, and create a favorable perception regarding the quality and uniqueness of the GI product. Spreading information on GI products' advantages might help to create a positive attitude among consumers and increase sales. Providing reliable labeling information, and demonstrating how products are processed and handled is critical to instill consumer trust and forming positive attitudes (Teng and Wang 2015). In order to improve GI food consumption behavior, governments and producers need to guarantee the availability and access of GI food and ensure that people can easily consume traditional food. Finally, they might develop campaigns to educate consumers about the differences between GI and non-GI food products.

Finally, some limitations should be mentioned. Online questionnaires often contain biases (Kumar and Smith 2017). Individuals who do participate in online questionnaires are often younger and more educated. Future research may include a survey at the point of sale or an experimental study to better represent people's intentions to buy GI food. Additionally, the convenience sampling approach is disabled to represent a population to whom the findings might be generalized. In the next step, the application of the integration model in further examples such as other varieties of GI and traditional food remains to be studied. Finally, it is practical and reasonable to consider satisfaction, moral norms, or other latent variables in predicting consumers' intentions.

## References

Ajzen, I. 1985. From intentions to actions: A theory of planned behavior. In Action control:11-39. Springer, Berlin, Heidelberg.

Ajzen, I. 1991. The theory of planned behaviour: Organizational Behavior and Human Decision Processes 50 (2): 179-211.

Ajzen, I. 2002. Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior 1. Journal of applied social psychology 32 (4): 665-683.

Albuquerque, T. G., Oliveira, M. B. P., and Costa, H. S. 2018. 25 years of European Union (EU) quality schemes for

agricultural products and foodstuffs across EU Member States. Journal of the Science of Food and Agriculture 98 (7): 2475-2489.

Arfini, F., Cozzi, E., Mancini, M. C., Ferrer-Perez, H., and Gil, J. M. 2019. Are geographical indication products fostering public goods? Some evidence from Europe. Sustainability 11 (1): 272.

Barjolle, D., Brecic, R., Cerjak, M., and Giraud, G. 2015. Traditional Food in Western Balkan Countries Consumers' Perceptions and Habits 714-2016-48609: 1-15.

Bartlett, II, J., Kotrlik, J., and Higgins, C. 2001. Organizational Research: Determining Appropriate Sample Size in Survey Research. Information Technology, Learning, and Performance Journal 19 (1): 43-50

Bryla, P. 2015. The role of appeals to tradition in origin food marketing: a survey among Polish consumers, Appetite 91: 302-310

Bryła, P. 2017. The perception of EU quality signs for origin and organic food products among Polish consumers. Quality Assurance and Safety of Crops & Foods 9 (3): 345-355

Carbone, A. 2018. Foods and Places: Comparing Different Supply Chains. Agriculture 8(1):1-12.

de Magistris, T. and López-Galán, B. 2016. Consumers' willingness to pay for nutritional claims fighting the obesity epidemic: the case of reduced-fat and low salt cheese in Spain, Public Health 135: 83-90

Dias, C. and Mendes, L. 2018. Protected Designation of Origin (PDO), Protected Geographical Indication (PGI) and Traditional Speciality Guaranteed (TSG): A bibiliometric analysis. Food Research International 103: 492–508.

Espejel, J., Fandos, C., and Flavian, C. 2008. Consumer satisfaction: A key factor of consumer loyalty and buying intention of a PDO food product. British Food journal 110 (9): 865-881

European Union 2012. Regulation no 1152/2012 of the European Parliament and of the Council of 21 November 2012 on quality schemes for agricultural products and foodstuffs. Brussels: European Parliament and European Council

Fernández-Zarza, M., Amaya-Corchuelo, S., Belletti, G., and Aguilar-Criado, E. 2021. Trust and food quality in the valorisation of geographical indication initiatives. Sustainability 13 (6): 3168.

Food and Agriculture Organization of the United Nations 2019. FAOSTAT Statistical Database, available at: www.fao.org/faostat (accessed 22th March 2022).

Gabay, G., Moskowitz, H. R., Beckley, J., and Ashman, H. 2009. Consumer centered "brand value" of foods: drivers and segmentation. Journal of Product and Brand Management 18/1: 4–16

Giampietri, E., Verneau, F., Del Giudice, T., Carfora, V., and Finco, A. 2018. A Theory of Planned behaviour perspective for investigating the role of trust in consumer purchasing decision related to short food supply chains. Food Quality and Preference 64: 160-166.

Goudis, A. and Skuras, D. 2020. Consumers' awareness of the EU's protected designations of origin logo. British Food journal 123 (13): 1-18.

Grannis, J., Hine, S., and Thilmany, D. 2003. Marketing premium food products in emerging economies: the case of Macedonian cheese. Journal of International Food and Agribusiness Marketing 13 (2-3): 59-76.

Gu, D., Guo, J., Liang, C., Lu, W., Zhao, S., Liu, B., and Long, T. 2019. Social media-based health management systems and sustained health engagement: TPB perspective. International Journal of Environmental Research 16 (9): 1495.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., and Tatham, R.L. 2006. Multivariate Data Analysis, 6th ed., Prentice Hall, New York, NY.

Han, Y., Li, W., Wei, S., and Zhang, T. 2018. Research on passenger's travel mode choice behavior waiting at bus station based on SEM-logit integration model. Sustainability 10 (6): 1996.

Haryanto, B., Purwanto, D., Dewi, A. S., and Cahyono, E. 2019. How does the type of product moderate consumers' buying intentions towards traditional foods?(Study of consumer behavior in Indonesia). Journal of Asia Business Studies 13(4): 525-542

Honkanen, P. and Olsen, S.O. 2005. Verplanken, B. Intention to consume seafood- the importance of habit. Appetite 45: 161–168.

Kim, K., Reicks, M., Sjoberg, S. 2003. Applying the theory of planned behavior to predict dairy product consumption by older adults. Journal of Nutrition education and behavior 35 (6): 294-301.

Kumar, A. and Smith, S. 2018. Understanding local food consumers: Theory of planned behavior and segmentation approach. Journal of Food Products Marketing 24 (2): 196-215.

Lambarraa-Lehnhardt, F., Ihle, R., and Elyoubi, H. 2021. How Successful Is Origin Labeling in a Developing Country Context? Moroccan Consumers' Preferences toward Local Products. Sustainability 13: 8433.

Lora, I., Zidi, A., Magrin, L., Prevedello, P., and Cozzi, G. 2020. An insight into the dairy chain of a protected designation of origin cheese: The case study of Asiago cheese. Journal of Dairy Science 103 (10): 9116-9123.

Maceín, J. L. C., DeHond, M. I., and Miguel, E. 2019. Cheese consumption culture in Central Spain (Madrid Region): drivers and consumer profile. British Food Journal 122 (2): 561-573.

Menozzi, D. and Finardi, C. 2019. May trust and solidarity defy food scares? The case of Parmigiano-Reggiano PDO sales in the aftermath of natural disaster. British Food Journal 121: 3119–3134.

Menozzi, D., Giraud, G., Saïdi, M., and Yeh, C.-H. 2021. Choice Drivers for Quality-Labelled Food: A Cross-Cultural Comparison on PDO Cheese. Foods 10: 1176.

Oliver Richard L. 1997. Satisfaction: A Behavioral Perspective on the Consumer, The McGraw-Hill Companies, Int., USA

Palmieri, N., Pesce, A., Verrascina, M., Perito, M.A. 2021. Market Opportunities for Hay Milk: Factors Influencing Perceptions among Italian Consumers. Animals 11 (2): 431.

Parrott, N., Wilson, N., Murdoch, and J. 2002. Spatializing quality: regional protection and the alternative geography of food, European Urban and Regional Studies 9 (3): 241-261.

Rodrigo, I., Cristóvão, A., Tibério, M. L., Baptista, A., Maggione, L., and Pires, M. 2015. The Portuguese agrifood traditional products: Main constraints and challenges. Revista de Economia e Sociologia Rural 53: 23-32.

Roorda, M.J. and Ruiz, T. 2008. Long- and Short-Term Dynamics in Activity Scheduling: A Structural Equations Approach. Transportation research part a policy and practice journal 42: 545–562.

Sampalean, N.I., Rama, D., and Visentin, G. 2021. An investigation into Italian consumers' awareness, perception, knowledge of European Union quality certifications, and consumption of agrifood products carrying those certifications. Bio-based and Applied Economics 10 (1): 35-49.

Si, Y., Guan, H. and Cui, Y. 2019. Research on the choice behavior of taxis and express services based on the SEM-logit model. Sustainability 11(10): 2974.

Shin, Y. H. and Hancer, M. 2016. The role of attitude, subjective norm, perceived behavioral control, and moral norm in the intention to purchase local food products. Journal of food service business research 19 (4): 338-351.

Skuras, D. and Vakrou, A. 2002. Consumers' willingness to pay for origin labelled wine: a Greek case study. British Food Journal 104 (11): 898-912.

Stojanović, Z., Filipović J., Mugoša, B. 2013. Consumer acceptance of functional foods in Montenegro. Montenegrin Journal of Economics 9 (3): 65.

Taherdoost, H. 2018. A review of technology acceptance and adoption models and theories. Procedia manufacturing 22: 960-967.

Teng, C.C. and Wang, Y. 2015. Decisional factors driving organic food consumption: Generation of consumer purchase intentions. British Food Journal 117 (3): 1066-1081.

Užar, D. and Filipović J. 2023. Determinants of Consumers' Purchase Intention Towards Cheeses with Geographical Indication in a Developing Country: Extending the Theory of Planned Behavior. Market – Tržište – Paper accepted for publication

World Intellectual Property organization, Available at: https://www.wipo.int/geo_indications/en/#:~:text=What%20is%20a%20geographical%20indication,are%20due%20to%20that%20origin. accessed: 10th April, 2022