

FACTORS AFFECTING CONSUMERS' PURCHASING BEHAVIOUR TOWARDS LOCAL FOODS IN GREECE: THE CASE OF THE PREFECTURE OF XANTHI

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Abstract: *This paper aims to identify the factors that affect consumers purchasing behaviour towards locally produced food in Greece and more precisely in the Prefecture of Xanthi. Field interviews conducted in a random selected sample consisted of 100 consumers in February of 2011. Multivariate statistical analysis performed to identify consumers behaviour toward local products. In particular, principal components analysis (PCA) was conducted in order to identify the factors that affect people in preferring locally produced food. The factors that influence people in the Prefecture of Xanthi to buy local food products are: (a) the topicality of the products, (b) quality and health issues, (c) appearance, (d) freshness and taste issues (e) curiosity and prestige. Furthermore, cluster analysis was employed to classify consumers with similar buying behaviour, and identified 2 groups of consumers: (a) those are influenced by curiosity, prestige and freshness of the product and (b) those are interested in the topicality of the product. Discriminant analysis was performed to assess how the identified factors derived from PCA could predict cluster membership. Non parametric statistical bivariate techniques were performed to profile the identified group of consumers regarding their personal characteristics and some other factors affecting their consuming behaviour.*

Keywords: Consumer behaviour, Local Food, Consumer preferences.

1. INTRODUCTION

In this study the author tried to approach and record the attitudes of consumers in local products, if it is the fact that Greece in recent years is undergoing a difficult financial time and it has been observed a shift of consumers in local products which are superior compared to the mass products.

Booth and Shepherd (1988) argued that cultural and economical factors, consumer's personality, attitudes, values and emotions, affect consumers' decision making process regarding food selection. Many years later, Steenkamp (1996) identified that biological, psychological and socio - demographical consumer's characteristics, marketing of the product, economic and cultural environment affect consumers' purchasing decisions. Kotler (1994) identified that consumers buying behaviour is influenced by cultural, social, personal and psychological factors.

Food quality characteristics, the high importance given by consumers in diet and health issues, price, governmental actions, cultural factors, distribution channels and the dominance of the supermarket chains also affect consumers buying behaviour within E.U countries (Murray *et al.* 1996; Allen 1997; Davies *et al.* 2000; OECD 2000, Tsourgiannis 2008). Furthermore, religious prohibitions, cultural beliefs and counterculture attitudes have a significant influence on Greek consumers purchasing decisions towards food products together with the social characteristics of the consumers, included the size of the family and the role of the head of the family (Michalopoulos and Demoussis 2001; Sdrali and Apostolopoulos 2002; Lazaridis 2003).

A brief synthesis of the studies reveals that the origin label is an important source of value added to European agri-business. Indeed, some authors (Aaker, 1991) even suggest that the origin attribute confers a benefit similar to 'brand image', or may even act as a barrier to entry to potential competitors wishing to replicate the 'original' good (Thienes, 1994). Accordingly, other research suggests that consumers are often willing to pay a price premium for origin labels (Louriero and McCluskey, 2000; Fotopoulos and Krystallis, 2002). Skuras and Dimara (2005) identified three sets of elements of the regional resource base that contribute towards consumer-constructed regional images-namely, factors related to nature and the environment; factors related to history, tradition and heritage; and amenity experiential factors.

Greek economic crisis proved to be detrimental to small traders in the country, it brought along a lot of protests and civil unrest, but there is one positive effect - Greeks began to seek and prefer local over imported goods. To this conclusion came the specialized edition of Marketing Week, which analyzes the change in marketing strategies and consumer preferences after the economic collapse a year ago.

This study examines the attitudes of the consumers towards local products in the Prefecture of Xanthi (that is an elected regional division in Greece) as within this region many local products are produced. The author wanted to examine the consumers' attitudes in this region as the recent years the Greece passes throughout an economic crisis, and it is important to explore what are the impact of this crisis to the local economy and production of an elected region as the prefecture of Xanthi.

2. METHODOLOGY

2.1 The Conceptual Model

In this study, a conceptual model aims to place the key concepts in the literature review into an identifiable framework, which is illustrated in the Figure 1 below. In particular it tries to investigate the relationships between the factors that affect the consumers' attitudes towards the purchase of local products and the development of key strategic dimensions that may influence consumers' attitudes towards local products, their will to pay more for local products, their personal characteristics and the adoption of particular consumption behaviour.

2.2 Hypotheses and Operationalisation

The aims of a research should be turned into operationalised aims, which are the hypotheses to be investigated (Oppenheim 2000). Thus, when a conceptual model is operationalising the hypotheses asserts the relationships between the setting variables.

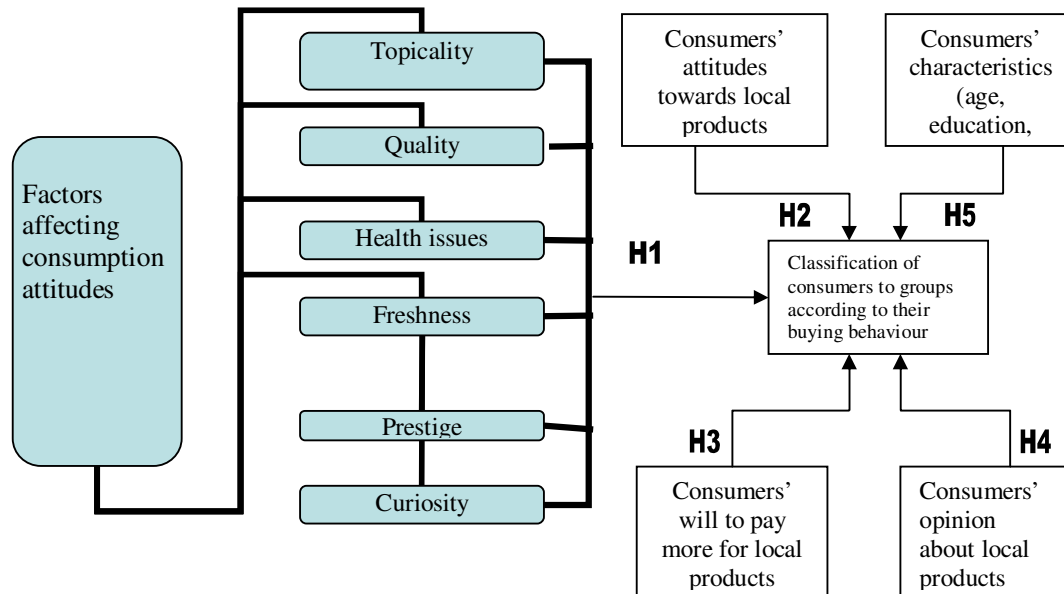


Figure.1: The Conceptual Model

In the conceptual level of this research the hypotheses that are investigated are the following:

- H1:** Consumers in the Prefecture of Xanthi can be classified into groups according to the factors that affect their purchasing behaviour towards local products.
- H2:** Consumers' attitudes towards the existence of a common label within the E.U for food products that will be local are significant related to particular purchasing behaviour.
- H3:** Consumers' willingness to pay more for local products are significant related to particular purchasing behaviour.
- H4:** Consumers' opinion about local products is significant related to particular purchasing behaviour.
- H5:** Consumers' personal characteristics are significant related to particular purchasing behaviour.

2.3 Survey Procedure

The researcher undertook a survey of sample of consumers to gather data necessary to identify the factors that affect consumers buying behaviour in the Prefecture of Xanthi towards local products. Hence, the researcher focuses on sample of Greek consumers, purchasers of local products.

Information were gathered through an interview survey as the consumers in the Prefecture of Xanthi are familiar with this kind of research and their educational level is suitable for the use of this kind of survey method. Additionally, the cost of conducting large postal or telephone survey to develop a typology was considered prohibitive. Furthermore, as many consumers do not have an internet access, the electronic survey methods was not suitable for surveying a representative to a general population sample.

An effort was made to reach consumers at the same time and place where actual purchase decisions are made hoping to better elicit consumers' true preferences about the products. Data were collected in locations frequented by consumers such as supermarkets, groceries, open markets in the city of Xanthi. Interviews took place throughout the day to reduce time of shopping related bias (Chrysohoidis and Krystallis 2005). Hence, one quarter (25%) of interviews were conducted between 9:00 - 15:00 during the week (Monday-Friday), one quarter between 15:00 - 21:00 during the week and 50% during Saturday (9:00 – 19:00). All the respondents were aged above 20.

In this survey, a random selection of consumers was chosen to form the sample due to the fact that the author wished to generalise their finding beyond the sample of consumers covered by the survey. As Errington (1985) argued the only way in which this can be achieved is to ensure that the units for survey are selected at random from the larger population about which generalization are to be made. Therefore, consumers were selected randomly, with the criterion that the interviewer was to solicit every sixth customer who came into the survey area (McCluskey et. al., 2003). The sample that was selected consists of 100 consumers which would be reasonably representative of some larger population about which useful generalization could be made. The size of sample is detailed Table 1:

Table 1: Description of the sample

Prefecture	Number of consumers >20 years old (census data) ²	Sample	Proportion of the Sample to the total population
Xanthi	73,850	100	0.14%

²Compiled data from ESYE (2010)

In order to establish the representatives of the surveyed sample, demographic information from the questionnaire is compared with census information of the population of the Prefecture of Xanthi following the methodology that Errington (1985), Tsourgiannis et. al. (2006), Tsourgiannis (2008), Chen (2007), and Tsourgiannis et. al. (2008) used in their studies. The sample comprises the 0.14% of the total population and is reasonable representative of them as all the characteristics of the sample do not differ from those of the total population based on Census data.

2.4 Questionnaire Design

Factors that affect the consumers' behaviour towards local products were identified by the researchers after searching the literature. Furthermore they designed a questionnaire in order to meet the research objectives pre-tasted it in academics, food marketing experts and consumers. In the next stage the questionnaire was piloted in November 2010 to 40 consumers of the prefecture of Xanthi. The pilot survey indicated that no modification needed to the questionnaire and therefore the main survey was conducted in December of 2010 and January of 2011.

The questionnaires were designed in five parts:

Part 1 – This part consists of 3 questions regarding consumers' knowledge about local products.

Part 2 – This part consists of 24 attitudinal statements on a 3 point liker scale relating to their buying behaviour.

Part 3 - This part consists of 25 attitudinal statements on a 5 point liker scale relating to their buying behaviour and these questions covered areas such as price, quality, ingredients, taste, advertisement.

Part 4 – This part consists of 2 questions related to consumers' opinion regarding local products, consumers will regarding paying more for a local product.

Part 5 – This part consists of 7 questions regarding consumers' personal information including age, education, marital status, number of children, occupation.

2.5 Statistical Methodology

Multivariate analysis techniques were used to the 100 consumers that buying local products to reveal the key information contained in the responses, and these analyses were applied in three stages. First, principal component analysis (PCA) was used to identify the variables that accounted for the maximum amount of variance within the data in terms of the smallest number of uncorrelated variables (components)³.

In this study, PCA reduced the 17 keys attitude variables, which relate to various aspects of consumers behaviour towards local products, to a smaller set of underlying factors (or consumption dimensions)⁴. Factor analysis enables scores to be calculated for each underlying factor, and these are substituted for the original variables. These factors score were then subjected to cluster analysis to group consumers with similar patterns of scores into similar clusters based on their buying behaviour^{5,6}.

Statistical tests based on the outcomes of the multivariate statistical techniques presented above (factor, cluster and discriminated analysis) are used to test five hypotheses presented in previous section.

3. RESULTS

Description of the consumers' buying behaviour towards local products

Principal components and factors analyses (through a varimax rotation) were conducted, and the latent root criterion (eigenvalue = 1), the scree plot test and the percentage of variance were used to determine the number of factors. The latent root criterion (eigenvalue = 1) and

³ The anti-image correlation matrix was used as well as Bartlett's test of sphericity and measure of sampling adequacy (MSA) in order to check the appropriateness of the data for the subsequent factor analysis. The variables that had a high proportion of large absolute values of anti-image correlations as well as MSA less than 0.5 were removed before analysis.

⁴ An orthogonal rotation (varimax method) was conducted and the standard criteria of eigenvalue =1, scree test and percentage of variance were used in order to determine the factors in the first rotation (Hair et. al. 1998). Different trial rotations followed where factor interpretability was compared.

⁵ In this study, both hierarchical and non-hierarchical methods were used according to the recommendations of Hair et. al.(1998) and Punj and Stewart (1983) in order to develop a typology of the consumers' buying behaviour.

⁶ A non-parametric Kruskal-Wallis one way ANOVA was conducted to validate the cluster solutions by examining if variables not used in cluster analysis differ significantly among the identified clusters.

the scree plot test (figure 3) suggested that there were 5 factors in the first rotation.⁷ Moreover, factor analysis identified five factors which explained the 66.729% of the total variance (Table 2)

Table 2: Results of principal Components Analysis of Consumption Preference Variables

Component	Eigenvalues	% of Variance	% Cumulative Variance
1	5,484	32,258	32,258
2	1,964	11,551	43,809
3	1,557	9,158	52,967
4	1,257	7,394	60,361
5	1,083	6,368	66,729
6	0,798	4,697	71,426
7	0,793	4,665	76,091
8	0,681	4,008	80,099
9	0,638	3,754	83,853
10	0,566	3,331	87,184
11	0,467	2,750	89,934
12	0,426	2,509	92,442
13	0,344	2,023	94,466
14	0,320	1,882	96,347
15	0,226	1,331	97,678
16	0,208	1,221	98,899
17	0,187	1,101	100,00

⁷ Several different trial rotations were conducted to compare factor interpretability as suggested by Tabachnick and Fidell 1989, Child 1990, Malhorta 1996, Hair et. Al. 1998.

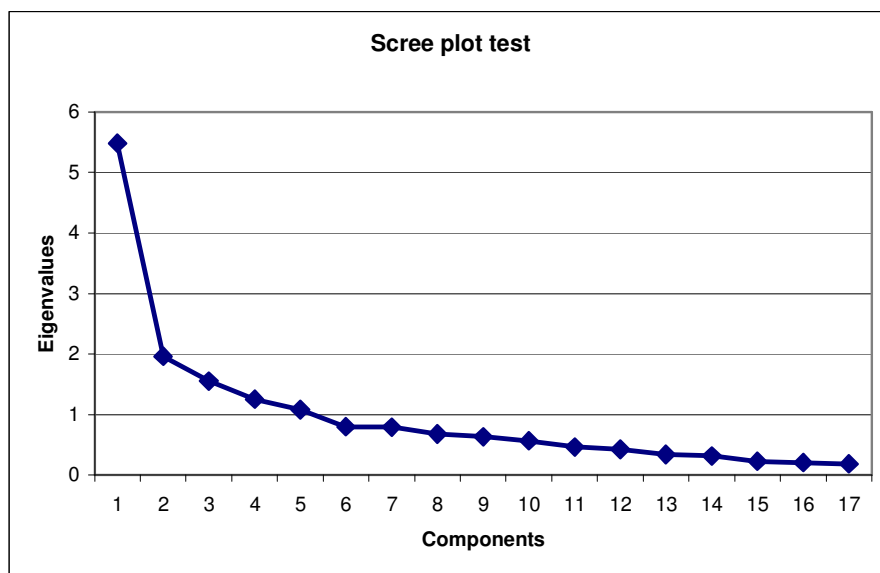


Figure 3: Scree Plot Test

The factor loading scores of the seventeen variables onto the five factors are presented in Table 3. The cut-off point for interpretation of loading scores was 0,459 according to Hair et. al.(1998) and Tabachnick and Fidell (1989) suggestions.

Table 3: Key Consumption Dimensions Derived from Principal Component Analysis

KEY CONSUMPTION DIMENSIONS	Factor Loading
Topicality	
Production methods	0.824
Appearance of special label	0.725
Products without chemical adds	0.677
The help to the local economy	0.650
Price	0.575
High value	0.562
Quality and health issues	
Quality	0.832
Health Protection	0.703
Environmental Protection	0.680
Nutrition Value	0.459
Appearance	
Appearance	0.877
Attractiveness of product's packing	0.834

Freshness and taste issues	
Freshness of the product	0.723
Taste of the product	0.612
Interest about the products being clean	0.570
Curiosity and Prestige	
Curiosity	0.862
Prestige	0.859

In the next stage, hierarchical and non-hierarchical clustering methods were used to develop a typology of the buying behavior of the consumers in the prefecture of Xanthi (Harrigan 1985, Helsen and Green 1991, Hair et al. 1998 and Siardos 1999). Cluster analysis differs from factor analysis in that the former groups objects, whereas the latter is concerned with grouping variables. Factor scores are standardized (mean = 0, standard deviation = 1). Cluster analysis was conducted on the 100 observations, as there were no outliers.

It identified two groups of consumers that were named according to their behavior patterns towards local products (Table 4). These are: (a) **Consumers influenced by curiosity, prestige, and freshness of the product** and (b) **Consumers interested in the topicality of the product**.

Table 4: Characteristics of the two Consumers' Groups

Key Consumption Dimension	Consumers' Groups		P
	Consumers influenced by curiosity, prestige, and freshness	Consumers interested in the topicality of the product	
Production methods and price issues	-0,37390	0,30592	0,001
Quality and health issues	0,9587	0,7844	0,389
Appearance	-0,5350	0,4378	0,631
Freshness and taste issues	0,26276	-0,21499	0,017
Curiosity and prestige issues	0,83110	-0,67999	0,001
Number of consumers (n=100)	45	55	

In particular, the consumers who are influenced by curiosity, prestige, and freshness comprise 45% of the sample. They scored highly on marketing issues as well as on freshness and curiosity dimensions. These consumers are influenced in their buying decisions by the attractiveness of the packing of the product, the appearance of the product generally. On the other hand, they are not interested in production methods, the price of the product, neither in the protection of the environment nor in the nutrition value of the product.

By contrast, the consumers who are interested in product's certification and environment protection were preferred by 55% of the sample. These consumers are interested to buy local products .Moreover they pay attention to the ingredients of the product as well as to its price. Furthermore, the environmental consequences of the product as well as the nutrition value of the product are also factors that affect consumers buying behavior. The certification of the product regarding its origin has a positive impact on these consumers purchase decisions. Besides, they scored negatively on the marketing issues, the prestige and the attractiveness of the packing of the product.

Therefore, the hypothesis **H1**: Consumers in the Prefecture of Xanthi can be classified into groups according to the factors that affect their purchase behavior towards local food may be accepted.

Consumers' attitudes and opinion regarding local products

Bivariate statistical analysis was performed in order to identify consumers' attitudes towards local products. In particular the one sample chi-square analysis employed to identify consumers' attitudes towards the behavior about the local product and the willingness to pay more for buying local products. Furthermore, the non parametric Friedman one way ANOVA test was used to examine consumers' opinion about the local products.

The one way chi-squared analysis identified that both groups have similar attitudes towards local products. Most of the consumers of both groups are familiar with the term local products, prefer the special stores with local food and the open markets as a marketing outlet and usually buy local olive oil, fruits, vegetables and dairy products. Furthermore, the consumers that are interested in the topicality of the product seem to use the supermarkets as a marketing channel but contrary to the consumers who are influenced by curiosity, prestige and freshness they do not buy local wine.

Table 5: Consumers attitudes regarding local products

Consumers' Attitudes		Consumers influenced by curiosity, prestige, and freshness		Consumers interested in the topicality of the product	
		X ²	% consumers	X ²	% consumers
Know the meaning of local products	Yes	X ² =91.444 df=3 P=0,000	45	X ² =51,073 Df=1 P=0,000	55
	No		0		0
Buying them from supermarkets	Often	X ² =4,133 df=2 P=0,127	20	X ² =10,945 Df=2 P=0,004	19
	Not often		9		8
	Rare		16		18
	Total				55
Buying them from special stores	Often	X ² =29,733 df=2 P=0,000	4	X ² =49,891 Df=2 P=0,000	5
	Not often		9		7
	Rare		32		43
	Total		45		55
Buying them from open markets	Often	X ² =22,533 Df=2 P=0,000	30	X ² =35.055 Df=2 P=0,000	39
	Not often		7		7
	Rare		8		9
	Total		45		55

Buying local oil	Often Not often Rare Total	$X^2 = 19,600$ Df=2 P=0,000	29 8 8 45	$X^2 = 2,436$ Df=2 P=0,296	22 13 20 55
Buying local wine	Often Not often Rare Total	$X^2 = 8,933$ Df2 P=0,011	22 6 17 45	$X^2 = 3,636$ Df=2 P=0,162	15 15 25 55
Buying local fruits	Often Not often Rare Total	$X^2 = 25,600$ Df=2 P=0,000	31 7 7 45	$X^2 = 7,018$ Df=2 P=0,030	26 10 19 55
Buying local vegetables	Often Not often Rare Total	$X^2 = 28,933$ Df=2 P=0,000	32 6 7 45	$X^2 = 22,291$ Df=2 P=0,000	34 6 15 55
Buying local milk,cheese,etc.	Often Not often Rare Total	$X^2 = 55,356$ Df=3 P=0,000	32 2 11 45	$X^2 = 16,291$ Df=2 P=0,000	29 5 21 55

Hence the hypothesis **H2**: Consumers' attitudes towards the existence of a common label within the E.U for food products that will be local are significant related to particular purchase behaviour.

On the other hand, no significant difference was found between the adoption of the particular buying behaviour by the consumers and their willingness to pay more to buy local products. Therefore the hypothesis **H3**: Consumers' willingness to pay more for local products are significant related to particular purchase behaviour may not be accepted.

The Friedman one-way non-parametric test was employed to identify the opinion of each consumer group regarding the local products. As figure 3 illustrates, both consumers groups have similar opinion about the local products. They mainly believe that they help the local economy, are better and healthier. Furthermore, they consider more expensive, with better quality and nutrition value. The also believe that local products have no negative environmental impact and are more tasteful.

Thus hypothesis, **H4**: Consumers' opinion about local products is significant related to particular purchase behaviour may be accepted.

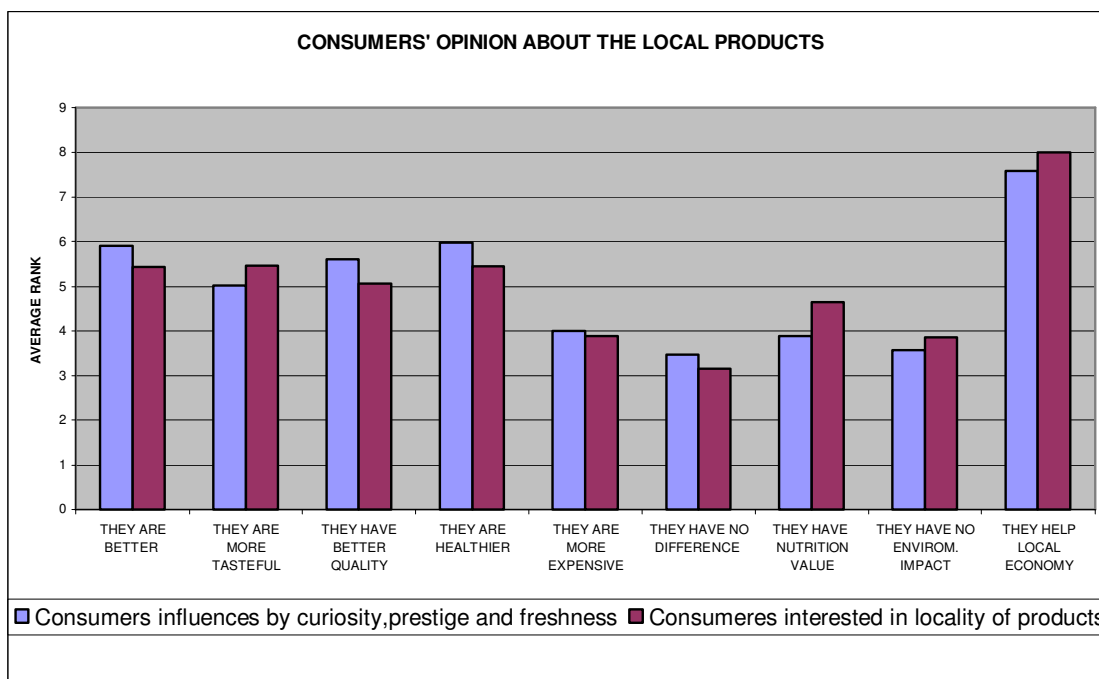


Figure 3: Consumers' opinion about local products

Profiling each consumer group according to consumers' characteristics.

A one-sample chi-square test was performed for each consumer group in order to develop the profile of the consumers who have a particular buying behaviour towards local products regarding their personal characteristics.

The profiles of the two consumers group regarding their personal characteristics are illustrated in table 6.

As table 6 illustrated the two consumers groups have similar profiles. More particularly, most of them are married with one or two children. In the first group they are retired but in the second group they work as private employees. Regarding their education, the consumers' of both of groups they hold a TEI/University Degree.

Table 6: Profile of each consumer group regarding consumers' personal characteristics

Consumers' Attitudes		Consumers influences by curiosity, prestige and freshness of the product		Consumers interested in the locality of the product	
		X ²	%consumers	X ²	%consumers
Education	Primary school	X ² = 34,00 Df = 4 P= 0,000	11.11%	X ² = 28,727 df=4 P=0,000	14.54%
	Secondary school		6.66%		7.27%
	High school		26.67%		29.09%
	TEI/University		51.11%		43.63%
	Postgraduate degree		4.44%		5.45%

Marital Status	Single	$X^2 = 31.600$ Df=2 P= 0,00	24.4%	$X^2 = 3,073$ df= 1 P= 0,080	38.18%
	Married		75.56%		61.82%
Number of children	None	$X^2 = 38,111$ df=3 P=0.000	31.12%	$X^2 = 21,855$ df= 2 P=0,000	47.27%
	1-2 children		60%		49.09%
	3+ children		8.88%		3.63%
Occupation	Private employee	$X^2 = 20,200$ df= 5 P=0,001	11.11%	$X^2 = 13,618$ df = 5 P = 0,018	27.27%
	Public servant		22.22%		20%
	Free licence		15.56%		12.72%
	Retiree		37.78%		23.63%
	Students		11.11%		14.54%
	Other		2.22%		1.82%

Therefore the hypothesis **H6**: Consumers' personal characteristics are significant related to a particular purchase behaviour maybe accepted.

4. DISCUSSION-CONCLUSION

This study indicated that there was a significant association between the adoption of buying behaviour and the factors that influence them to choose local products.

This study indicates that the two identified consumers' groups which prefer to buy local products have similar attitudes and opinion about them. Moreover these two consumers' groups have similar profiles regarding their personal characteristics with the consumers that prefer to buy local products. The main difference between the consumers that prefer the local products and those that buy local products from curiosity and because of the attractiveness of the packing of product is that the latter are private employees while the first groups is parted from retirees. The existence of family maybe a factor, that influences the consumers in the prefecture of Xanthi who are interested in local products.

Besides, this study identified the factors including topicality of products, taste, production methods, environmental impact, quality, price, health safety, attractiveness of packing, curiosity and prestige support the results of the other studies identified in the literature review.

The local producers in the prefecture of Xanthi should focus on the adoption of local product in order to add value to their products and differentiate them from the products produced in other areas or imported from other countries and launched in very low prices by supermarkets and other retailers. Furthermore, they should structure their marketing and promotion mix and focus on the factors and consumers characteristics presented above.

Whilst the paper offers some interesting insights into the questions posited in the methodology section, there are possible directions for further research. Firstly, this study only fielded opinions from consumers in the Prefecture of Xanthi which makes it difficult to generalise our findings.

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