

# Factors affecting consumer intention to use internet for food shopping.

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## **Abstract**

*The main objective of this paper is to investigate consumer behavior on selling methods of farm products and especially food, using e-shops in Greece. In other words, to find the factors that affect consumer decision to buy food products using the internet. Through a statistical research, the analysis of the attitudes of consumers on buying food from e-shops have been performed and the relationship between socioeconomic factors and cognitive factors related to beliefs on the risk perception and knowledge about using the internet to buy food, have been studied.*

*The intention to use or not-use the internet for buying farm products was assessed by the question: "I think in the future I will replace part of my food shopping, which I do in traditional ways, with online shopping." This position is considered as the most appropriate parameter to be used as an indicator of the attitudes of consumers towards the use of the internet to buy food. The variables have been used are those which are related to consumer attitudes towards the use of the Internet for food shopping (lack of safety, quality, selection, knowledge, high cost, attitude - in the case of non-use intent and greater comfort, better access, shorter cost, best choice, attitude - in the case of intended use).*

*This paper proposes a new simple model to describe the factors that influence the intention to use internet for food shopping. The conclusions show that there are some important variables: safety feeling (insecurity affects negatively the intention to use e-shops), comfort (the greater comfort positively influences the intention to use e-shops), access (ease of access positively affects intention to use e-shops) and product selection (better choice positively affects intention to use e-shops for food shopping).*

Keywords: food market, internet, e-grocery, online shopping, online food shopping factors

JEL classifications: Q13, M15

## **Introduction**

The food sector is one of the leaders in the international and Greek economy since it is a sector with high contribution in several fundamentals, such as sales, value added, number of enterprises and employments. One of the main challenges that should be faced and adequately responded by the enterprises during the next years to ensure faster development is the change of the retail trade.

The new globalized economic environment requires greater collaboration between producers, retailers and consumers for the creation of stronger business ties. Also the investment in innovation, research and development is more necessary than ever since firms in the food sector, despite significant investments made in the past, are lagging behind in implementing innovations. The innovation relies nowadays as one of the most important parameters for the development both at the national economy, and at the enterprise level. Innovation features prominently on the policy priorities of all the developed and developing countries. The use of Information and Technology (IT) and especially e-business and e-commerce is generally considered as an innovation strategy for most of enterprises. Nowadays, e-business is a reality and companies should restructure in order to cope with the new challenges. Another important issue is the safety and quality of food products. The safety and quality in the food sector is a prerequisite for development, since consumer protection and consumer information are basic requirements that should be handled by utilizing IT innovations.

The structure of the rest of the paper has as follows. In the next section some notions, theoretical aspects and literature review regarding retail and e-retail in food sector are provided. Then, the methodology of the statistical research is described in detail, the proposed model and the hypotheses which will be tested are given. The statistical results are presented and discussed. Conclusions are drawn in the last section.

## **Retail and E-Retail in food sector**

The term "retail" is used to describe all activities taking place for the sale of goods or services directly to final consumers for personal non-commercial use. Retailer or retail store is any enterprise whose sales volume comes primarily from retailing. The increasing penetration of new technologies combined with the high cost of shops, lead enterprises to seek new forms of selling (Kotler, 1999). It is also generally accepted that today new forms of retailing stores are developed. The internet except information channel is also used for promotion and as a very useful business tool. Most companies try to take advantage of cyberspace as it provides multiple benefits at minimal cost. The deployment of new

technologies in the retail sector acts complementary to the integration of the value chain and communication of products and services to the customers (McDonald, 2009).

In electronic retailing a major requirement is the customers trust that the electronic transactions are secure. It requires the formation of an environment that ensures data transmission for both traders and customers. For this reason every business that provides internet transactions collects identity of customers (usually name, address and other personal data) to perform user identification which allows access to the payment procedures. Given that this practice followed by each merchant, the customers need to repeat the same procedure as many times as they want to transact with different companies (Hill et.al., 2009).

The structure and the development of the field of retail e-business play an increasingly important role. Nowadays, more and more agricultural businesses use the internet for providing information and communicate with their partners and their customers. Beyond the need for better supply chain management and better communication with clients, what is characteristic about this sector is that information technology directly affects both productivity and flexibility in commercial enterprises. There are also several farm businesses which now make extensive use of the internet and electronic data management processes (Tsekouropoulos et.al., 2005).

The eBusiness Watch survey for the food and drinks sector that was performed in 2005, studied the penetration of information technology and the adoption of new technologies in several companies of the sector. The investigation revealed differences between large and medium-sized and small enterprises mainly regarding the use of e-business tools. However, the growing competition, combined with the power of retail chains and the legal framework will be essential factors for organizational and technological development of companies in the sector in the following years. Both the infrastructure and access to information technology and the electronic media in the food and beverage industry seems to be a bit lower than in other business sectors. The optimal functioning of the industry is increasingly combined with the use of e-business, always aiming to achieve integrated process and digitize their relationships with both their customers and their suppliers. But it is necessary for companies to improve their relationship with IT. First, companies have realized the need to coordinate their organizational structure and philosophy with the evolution of technology. Second, the IT providers now know what the needs of companies in the industry and have established appropriate software to meet these needs.

The development of electronic procurement is not very dynamic in the food sector. Also, even in cases where it is easy to be applied, the electronic procurement process has failed to overcome the barrier of international commissions because of the high transport costs and delivery times. The reasons for the low use of online sales are many and certainly have to do with the nature of the food products. The majority of food products can be purchased from organized

distribution networks and traditional retail chains. For example, it is not particularly useful for consumers who buy certain foods regularly to search the internet for information about them. Also, even for sociological reasons, consumers prefer visits to the supermarket in order to see and choose for themselves the freshest foods. Perhaps the idea of selling food through the internet is more feasible for more specialized food products. To understand the difficulty of electronic sales in this sector, it is sufficient to consider how many consumers would be willing to fill their digital basket of food from different websites. Very few people use the internet for purchases and limited food is available online for purchase. The use of the internet for purchases foodstuffs is a new treaty for consumers, and it should be noted that attitudes towards new objects are generally weak and it is not easy to predict the future behavior since it is based only on indirect experience (Fazio and Zanna, 1978).

On the contrary, this difficulty could be overcome by the nature of the new technology. A well-developed website offers to the consumers a user friendly environment as a market, better security on transactions in many cases a security that exceeds that of the classical purchase through a store. Food purchases via internet offer something new to the consumer. This is the ability to purchase a wide variety of products without having to move in stores (Murphy, 2007). The demographic characteristics, attitudes and beliefs are the more definitive factors shaping consumer behavior in markets (Aaker, 1997), the attitudes of consumers for online purchases depend roughly in deeper perceptions. The financial position of consumers, such as consumer income level, affects not only on consumer purchasing power but also the way of shopping goods (Durgee, 1986). Also, the educational level and social class of the customer are factors that significantly affect the way of shopping (Engel et.al., 1990).

## **Methodology of Research**

The quantitative research was based on primary data collected after the by hand distribution of a suitable questionnaire. The research took place in Greece in the region of Eastern Macedonia and Thrace, during the period January - March of 2013. The result of this sampling procedure was the collection of a sample of 120 valid completed questionnaires.

The questionnaire starts with questions regarding socioeconomic and demographic data, some personal details such as gender, place of residence, educational level, age, profession, marital status, presence of children in the household and the monthly available family income. Also, in the last part of this section there are five questions about use of technology, the convenience of use of the computer and the existence of free time. Then, the questionnaire consists of five sections. The first section contains questions addressed in the purchasing behavior of members of the sample. The second section is addressed to find from where consumers choose to

buy food. The third section deals with the food product and the criteria for purchase. The fourth section contains questions that focus on methods of promotion of food to consumers. Finally, the fifth section explores how consumer takes information on issues related to food. The questionnaire was validated using Cronbach's alpha test. For the creation of the questionnaire which was used in this research, several elements of previous studies were utilized, suitably modified to fit to the scope of this research (Tzimitra-Kalogianni, 1991, Chaloupka, 1997, Unger et.al. 1999 and Plumridge et.al. 2002).

This paper focuses to the reasons that affect consumer intention to use or not use internet for food shopping. Based on the literature and personal communication with technology experts and consumers **21 reasons** that might influence someone to **not buy** food through an e-shop were determined and clustered in **six factors** as follows:

- Factor 1: **Lack of safety feeling** (contains the 3 reasons: lack of transaction security, possible personal information loss, fear of non-existing companies).
- Factor 2: **Lack of product quality** (contains the 4 reasons: lack of required packaging, ease of spoiling, misleading product presentation, no quality foods offered).
- Factor 3: **Lack of choice** (contains the 5 reasons: no touch or feel the food, no comparison and choice, no visual contact, lack of variety, cannot find the food I used to buy).
- Factor 4: **Lack of Knowledge** (contains the 3 reasons: I do not know that I can buy food through the internet, I do not have the knowledge how to do it, it is not easy to do it).
- Factor 5: **High Cost** (contains the 3 reasons: high prices, high shipping costs, difficult to return unwanted products).
- Factor 6: **Attitude** (contains the 3 reasons: prefer the traditional way, prefer to contact with the owner or employees of the store, remaining of the money I spend in my region).

There were also determined **21 reasons** that might influence someone to **buy** food through an e-shop and they were clustered in **five factors** as follows:

- Factor 1: **Greater Comfort** (contains the 3 reasons: shopping from my house, earn time, shopping is easier).
- Factor 2: **Better Access** (contains the 4 reasons: shopping 24 hours/7 days, shopping from my job, shipping to my house, find easily what usually buy).
- Factor 3: **Low Cost** (contains the 4 reasons: lower prices, save the cost of moving to the store, pay less to intermediaries, ability to compare prices and products quickly and easily).
- Factor 4: **Better Choice** (contains the 6 reasons: a lot of information for every food, not forget what I want to buy, not buy what I don't want to, easily find new food products, offer food products of greater quality, easier to make a choice).

- Factor 5: **Attitude** (contains the 4 reasons: no contact with people, support small producers or producer groups, don't like to move, cannot easily move).

For each reason, the respondent should answer by selecting the significance of the reason in a scale of 5 possible answers (very low, low, moderate, high and very high significance).

According to the previous analysis, the research models that was developed to investigate the factors influencing the intended use and the intention not to use the online food shopping are presented in the following.

First, six hypotheses (H1-H6) concerning which variables influence the **intention not to use** the internet to buy food products are shown in Figure 1.

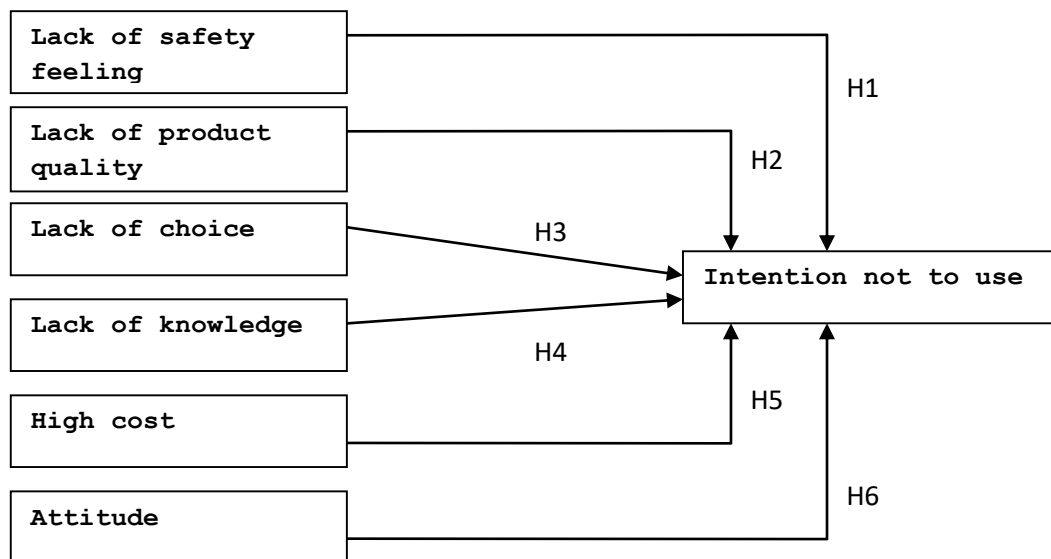


Figure 1. Possible factors affecting the intention not to use the internet to buy food products.

The six hypotheses of the presented model are the following:

- H1: Lack of safety feeling affects positively intention not to use
- H2: Lack of product quality affects positively intention not to use
- H3: Lack of choice affects positively intention not to use
- H4: Lack of knowledge affects positively intention not to use
- H5: High cost affects positively intention not to use
- H6: Attitude affects positively intention not to use

Then, there are also five hypotheses (H7-H11) concerning which variables influence the intention to use the internet to buy food products and they are shown in Figure 2.

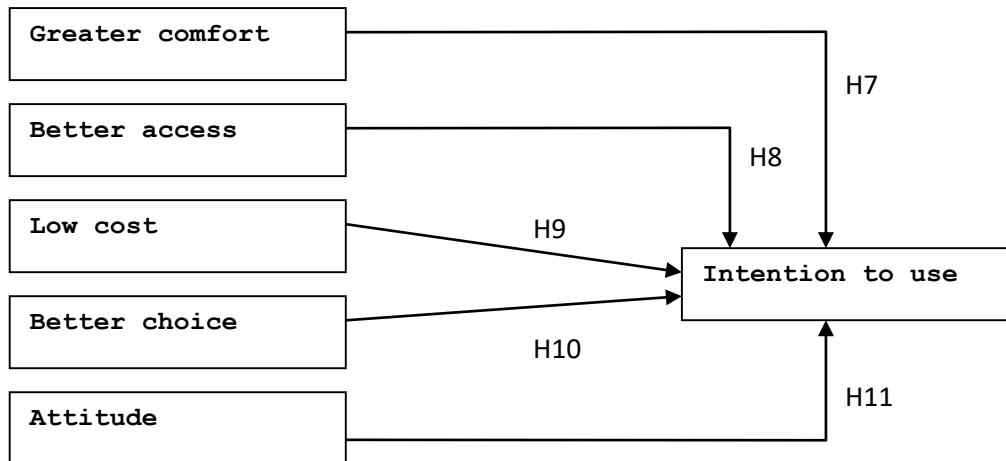


Figure 2. Possible factors affecting the intention to use the internet to buy food products.

The five hypotheses of the presented model are the following:

H7: Greater comfort affects positively intention to use

H8: Better access affects positively intention to use

H9: Low cost affects positively intention to use

H10: Better choice affects positively intention to use

H11: Attitude affects positively intention to use

All the hypotheses (H1-H11) were tested based on the answer of the question: "I think in the future I will replace part of the food shopping that I do in traditional ways, with online shopping". Note that this question expresses the intention to use so if a correlation is found it is expected to be positive for hypotheses H7-H11 and negative for hypotheses H1-H6.

## Statistical Results

### Factors affecting the intention to use e-shopping for food products.

For hypotheses testing the well-known tests of Kendall-t and Spearman-r were used. The results of p-value and correlation coefficients when p-value is less than 5% for both tests are presenting in the following Table 1.

Table 1. Results of hypotheses testing

Hypothesis		Kendall's tau_b		Spearman's rho	
		p-value	Correlation coefficient	p-value	Correlation coefficient
H1	Lack of safety feeling	<b>0.020</b>	<b>-0,180</b>	<b>0.018</b>	<b>-0,229</b>
H2	Lack of product quality	0.336		0.324	
H3	Lack of choice	0.234		0.248	
H4	Lack of knowledge	0.832		0.857	

H5	High cost	0.835		0.838	
H6	Attitude (not)	0.354		0.344	
H7	Greater comfort	<b>0.015</b>	<b>0,188</b>	<b>0.015</b>	<b>0,241</b>
H8	Better access	<b>0.022</b>	<b>0,176</b>	<b>0.022</b>	<b>0,225</b>
H9	Low cost	0.153		0.153	
H10	Better choice	<b>0.050</b>	<b>0,152</b>	<b>0.049</b>	<b>0,198</b>
H11	Attitude	0.328		0.318	

Based on the above results, where a 5% significance level was applied, only the four of the eleven hypotheses were confirmed and the other seven were rejected. Based on these findings we propose to simplify the model of the factors that influence the intention to use as follows:

- Lack of safety feeling negatively affects the intention to use,
- Greater comfort positively affects the intention to use,
- Better access positively affects the intention to use and
- Better choice positively affects the intention to use.

These factors are presented in the following Figure 3 along with the correlation coefficients (selected to present the rates of Kendall-t test) as the proposed model of the factors affecting the intention to use of internet for food shopping.

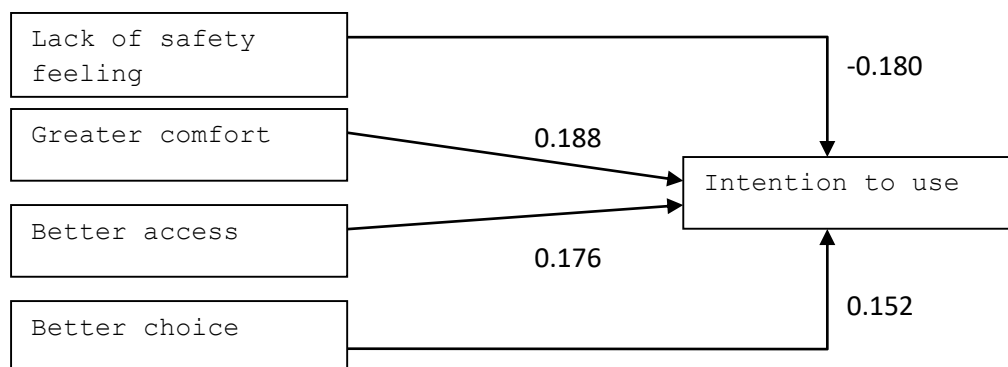


Figure 3. Factors affecting the intention to use the internet to buy food products.

The correlation coefficients that are rather low in all cases ranging from 0.152 to 0.188, show that although there are a dependence between these four factors and the intention to use, this dependence is not very strong and the modification of the way of shopping would be small even if these factors have a great positive change. For example even if the lack of safety feeling is treated this would lead to a small change in the intention to use the internet for food shopping.

Another target of the presented research was to evaluate the possible change in consumer behavior towards the online food shopping, based on two variables that were considered important and therefore were separately tested, the first to shop "well-known and standardized



food" and the second to shop in order "to support small producers". Specifically in the questionnaire there are three separate questions:

- a) I think in the future I will replace part of the food shopping that I do in traditional ways, with online shopping.
- b) I think in the future I will replace part of the food shopping, that I do in traditional ways, with online shopping, only for well-known and standardized food whose packaging cannot be altered.
- c) I think in the future I will replace part of the food shopping, that I do in traditional ways, with online shopping, in order to support small food producers and reduce the cost of middlemen.

In order to assess whether there is a statistically significant difference between the answers to questions (b) and (c) compared with the answers to question (a), i.e. whether consumers are willing to modify consumer behavior when it comes to "known and standardized food" or "to support small producers", the T-test were applied to estimate the average responses. The results are presented in the following table (Table 2):

Table 2. Results of T-test

Question	T-test				95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
(a) I will replace part of the food shopping ...	24.638	109	.000	2.591	2.38	2.80
(b)... only for well-known and standardized food	28.781	104	.000	3.029	2.82	3.24
(c)... in order to support small food producers	31.994	109	.000	3.382	3.17	3.59

According to the results it is concluded that the averages of the responses differ significantly. More specifically the average of the responses to the general question (question a) is 2.591 and when it is specified in "well-known and standardized food" (question b) it is increased to 3.029. When it is specified in "small producers" (question c) is also increased to 3.382. It is also observed that the interval of the difference with a significance level of 95% for the general question (a) stops at 2.80 while for the two specific

questions (b and c) starts from 2.82 and 3.17 respectively without any intersection on intervals with this of general question. Based on these observations we conclude that there is considerable variation in the responses and that the factors of "known and standardized foods" and "small producers" can diversify the people's consumption behavior.

## **Conclusions**

The main way of food shopping is still by far the traditional stores. However it seems that the choice of internet shopping is an increasing trend. Especially at ages from 15 to 45 years, middle-income, educated consumers who have completed or are going to complete higher education, online food shopping was reported in the research and the intention to use it was observed in a higher level.

The most significant reason that consumers don't have the intention to buy food from the internet is the lack of safety feeling, followed by the lack of choice. On the other hand for those consumers who intend to buy food through internet the most significant reason would be the lower cost, followed by the greater comfort and the better access that internet gives. Although these reasons are considered significant, all of them were not proven that could change consumer intention to use online food shopping. The eleven hypotheses that were tested in this research concluded to the proposed simplified model that describes the factors influencing the intention of online food shopping use. The confirmed hypotheses were: the lack of safety feeling of online shopping negatively affects the intention to use and the greater comfort, the better access and the better choice provided by online shopping positively affects the intention to use.

Another interesting conclusion of the research was that consumers will probably change their behavior and are going to shop more often through the internet when they buy well-known and standardized foods and when they are going to help small producers.

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