

The Perception of Aquaponics Products in Romania

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The paper follows two main objectives: to understand consumers' perception and image of aquaponics products and to identify levers communication in order to improve the perceived image of aquaponics products. Orientations in terms of communication aims product-focused and aim at enhancing the reputation of products, consequently with impact on product consumption. The present research is focused on the aquaponics products, regardless of their presentation - fresh, frozen or processed. This paper conducted a questionnaire survey of Romanian consumers' perception of aquaponics products. The empirical study for aquaponics products indicated box that consumers shown different awareness to domestic and foreign aquaponics products. Aquaponics national products got more attention from the consumers. Foreign aquaponics products had insightful higher price, but Romanian aquaponics products acquired insightful higher value, and got a better rank in the preference list and in the purchase intention of the consumers.

Keywords: aquaponics products perception, insightful price, image of aquaponics product

Introduction

The adaptation of the sector of fisheries and aquaculture to the challenges sec. XXI through the development and diversification of systems and innovative technologies in the field, which can ensure an increase in production and production of animal products with a value high biological and reduce to a minimum the negative impact on the environment.

Aquaponics represents a major innovation in the field of production of fish. Aquaculture products has been sector of production supply the fastest growing, reaching a rate of increase of the average world of 8 % per year. In 1950 the world aquaculture products have a global production of 638577 tones. The overall production of almost 84 million tons in 2011, reflect an increase in the production of more than 50 % from the beginning of the millennium and an average annual growth of 5 % in the past ten years.

Aquaculture provides the already taken half of the world offer more than intended for human consumption and has a potentially important to further increase. Therefore, aquaculture will contribute essentially to the satisfaction of the future application of fish. However, the development of aquaculture must not undermine the need to minimize and disposal at a given moment of excessive fisheries of stocks in nature, in order to reach a sustainable exploitation of the oceans. Therefore, aquaculture offers significant and generate significant challenges, in particular as regards environmental sustainability of production, as well as the quality and safety of the products. Aquaculture is an economic activity of importance in certain areas of the coast of the Continental and of the EU. It includes the increase in fish, mollusks and crustaceans of salted water or sweet, based on various types of production systems: open or closed extensive, or intensive applications on land, in the lakes or in pond - powered by courses of water or even the groundwater - near the shoreline or on the high seas. More Community policies influence this activity and structural policy which supports the scope of the common fisheries policy has significantly contributed to the evolution of the Europe of this sector. In the past the craft activity at small scale, aquaculture has become an industry of high

technology with commercial activities fully integrated. In 2006, the aquaculture sector in the EU-27 has produced about 1.3 million tons of fish, mollusks and crustaceans, which represents a turnover of about 3 billion and EUR generates approximately 65 000 jobs. The application of the current consumption of the EU amounts to about 12 million tones.

The environmentally friendly fish market is concentrated material in five countries, representing 71 % of the total European market: Spain (18%), France (17%) and Italy (14%), the United Kingdom (12%) and Germany (10%). These are the most populated countries in Europe, representing a naturally more of Community consumption. Apparent consumption in the EU 25, for products amounted in 2009 to 21.8 kg per capita in equivalent live weight, 16.1 kg of which 5.7 kg of fish and shell-fish). This date includes all presentations (fresh, chilled, frozen or sprinkling) and all places of consumption (home, restaurant or while usually). The average consumption of the i is slightly different from the average world consumption (20.0 kg) (Xiong et al, 2010).

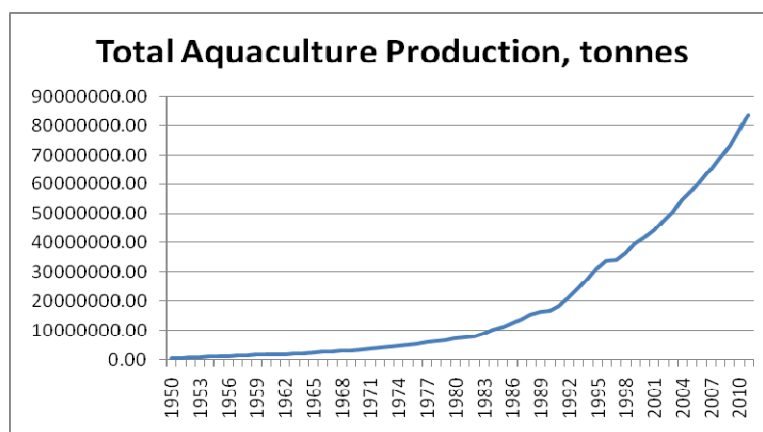


Figure 1: Total Aquaculture Production, tones

The general trend, however, masks the heterogeneous midrange levels of consumption by country and type of product. Thus, by way of example, per capita consumption is 20 times higher in Portugal than in Romania. Three categories of consumer countries in Europe stand out:

- countries with high consumers (40 kg and over): Portugal and Spain
- consumer countries moderately (16 to 30 kg): Finland, France, Malta, Sweden, Estonia, Greece, 9, Cyprus, Italy, Latvia, United Kingdom, the Netherlands, Ireland, Belgium and Malta.
- low-consumption countries (2.5 to 13 kg): Germany, Austria, Poland, Czech Republic, Slovakia, Slovenia, Hungary, Bulgaria and Romania.

The financial advantages of multifunction platform aquaponics production result from the sale of vegetables, aquaculture products and services. Additional benefits derived are represented by reduce the fuel consumption and reduction of the cost of energy or sale of the product, higher productivity and the real available income. Environmental benefits include: mitigated global warming, avoided emissions in comparison, and has improved the water quality.

The aquaponics products represent a kind of important producer goods as it plays a as 'significant part in Greenhouse film production market. With the development of aquaculture, there is rapidly growing demands for aquaponics products from consumer, of aquaponics products farms will be increasing fierce competition in the market. (Armstrong et al, 2000) in the modern market economy consumers are the main body of aquaponics products market, their attitude survey, perception and preference.

There is plenty of research on brand management based on consumers' perspectives, such as consumers' brand experience (Bernd, 2009), brand image and consumers' injunction purchase (East et al. 2008), brand competition (Ding, 2009), and brand satisfaction (Zeng, 2009). Moreover, there has not many researchers pay close attention to the consumer-based ecological products research in Romania. Some papers involve brand development research of aquaponics products, but mostly has qualitative research and macro-economy approach (Ernst et al, 2000).

This paper purpose is to investigated and analyzes consumers' aquaponics products awareness, purchasing behaviour, based on empirical year survey.

Materials and methods

The conceptual framework

Common run' perception to the aquaponics product included product opinions, high price and value, which were influenced by consumers' demographic window characters and their economy condition, toilette by their purchase experience and information from others.

Questionnaire

The questionnaire about aquaponics products consumers' perception was designed based on the conceptual framework. The questionnaire consists in these sections:

1. Consumer demographic window gender, age, education level, labour number and annual income of household);
2. Farmers' purchase behaviour of aquaponics products (purchase experience, money source, information source);
3. Product perception (opinions, insightful price, value).

Survey

The questionnaire survey was conducted with consumers from Braila, Galati, Tulcea, Constanta, Vrancea and Buzau, all being counties of South East Romania's development region, were chosen as the respondents.

200 questionnaires were distributed in the above 6 counties and returned 134. After eliminating the validity of the returned questionnaire, 26 questionnaires that incomplete and with logical mistakes were deleted, 106 valid questionnaires were obtained; the effective response rate was 53 %. From 106 respondents 82 expressed the intention to buy the fish organic products.

Statistical methods

All the data obtained from the responses at the questionnaires were transformed into statistics variables and then processed. Descriptive Statistics method material was adopted to calculate the mean with standard deviation of each variable, and to examine the different levels of consumers' awareness.

The index values of product opinions were the ratio between each product's opinions value and the average value. The same calculation method was adopted in the high price and high value.

Results and discussion

Consumer characters

The questionnaire survey gained a total of 106 valid samples and 82 with intention to buy the fish organic products. Table 1 shows the demographic window characters of respondents.

Samples has mostly female (62.20%). They are more inclined to interest in aquaponics organic products. Women show a higher sensitivity in health and of greater propensity than men to follow the recommendations for nutrition. This however does not always reflected by a high consumption of fish higher in women than in men in Western Europe.

Age is often presented as an important determinant of demand for food in general and more specifically the consumption of fish. However, the demographic window determinants such as age toilette will be correlated with other determinants such as interest and knowledge of nutrition topics including aspects so the benefit to health) or health status of person shooters. The interest in the Gold members Member related to health and nutrition, for example increases with age. The most common age group was 31-40; educational level college (46.34%). Less than 3 person accounts for 50 % in the labour number of household.

Table no. 1 Demographic window description of aquaponics organic products consumers

Demographic window Variables	Categories	Subjects N o.	Percent %
The gender	Male	31	37.80
	Female	51	62.20
Age	Aged 18-30	24	29.27
	31-40	29	35.37
	41-50	19	23.17
	Numbers 51-60	6	7.32
	Above	4	4.88%
Educate Sears catalog thing going level	<primary school	1	1.22

Demographic window Variables	Categories	Subjects N o.	Percent %
	Primary school	5	6.10
	Junior school	18	21.95
	Senior school	20	24.39
	≥ college	38	46.34
Labor number of household	<3	41	50.00
	3	19	23.17
	4	21	24.39
	5	2	2.44
	>5	0	0.00

The education level is positively correlated to the image of the fish food i easy to prepare. The higher the education level increases, the consumer sees the fish as a food easy to prepare.

Place of residence (and more specifically its coastal or continental character) is an important factor in explaining the consumption of different seafood and is linked to historical and current availability of fresh fish.

Purchase behaviour

Information plays an important rolls in the process o f consumer purchase. The survey research displayed consumers' main sources of organic fish products information coming from friends and relatives, 34.74% consumers chosen this item. It implied consumers were convinced of people that having close relationship with them or surrounding them. Notifications Notify me of updates to it implied that word of mouth communication of the public would have a strong impact on consumers' brand awareness, which was in accord with the existing research Wang et al., 2009). Aquaponics products producers must attach much importance to their brand reputation so as to retain their old specials resides and new specials, and then keep specials loyal on their brand, which is a successful marketing.

Purchase intention is t directly interrelated with purchase behaviour, it is the main index to forecast whether the consumer will purchase (Zheng appealed et all, 2010), so the fish organic products intention could imply the opinions of whether the consumer will choose the fish organic product in the future. Among the respondents, 82 described that considering they purchase organic to fish.

Price, the risks of contamination (microbiological and chemical), sustainability aspects such as environmental risks (damage of the ecosystem, animal cruelty, etc.) and risks of depleting fish stocks. Has the main barriers to Cum Eating fish in general for the consumers. Barriers vary a lot depending on the levels of processing (for example, price is no longer the main barrier for Cum Eating frozen fish products).

In general, consumers would insert a new more aquaponics and aquaculture products: if there was a quality label, prices were more affordable and they had a better knowledge of the quality of these products.

Guarantee of the European origin of fish encourages consumers to insert a new fish in general, all the more so in Southern European countries. Consumers have a positive overall image of aquaponics and aquaculture products. In general, they think they are good for health, and that they are fresh products.

Fresh fish received the most positive overall image scores and the most positive image with certain to health (Table 2).

Table no. 2. Image scores for fish production method in the South East development region of Romania

	Health	Quality /Price	Fresh	Environment
Wild	1.26	2.52	1.68	1,86
Farmed	1.63	2.34	1,59	1,85

Thus, the image of fresh fish is very similar to the image of fish in general. However, this kind of product obtains a poorer image in terms of quality/price ratio (mostly due to its price, since its quality terminological is as good). With certain to health benefits, frozen fish has a less positive image than fresh fish, but its quality/price ratio is to be good and its availability to be higher. Preserved fish has a poorer image in terms of quality, but its quality/price ratio is more positive. This product is by all respondents to be the most available. Fish-based ready meals receive the poorest image with certain to health and to quality/price ratio (Fig. 2).

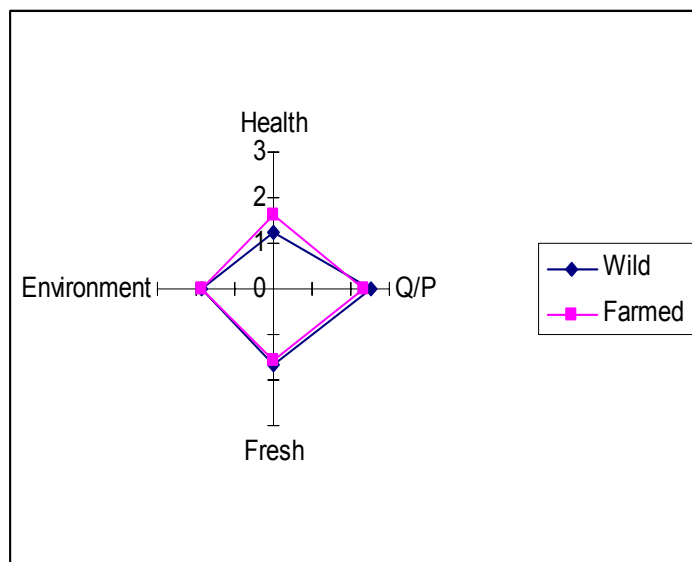


Fig. 2: results on the perception of the fish product

When buying fish, of quality and/or food safety label is the most important expectation of consumers in terms of information on aquaponics products. The nutritional information as well as information on the geographic origin of production is among the most important pieces advert of information has consumers looking for. However, fishing zones as defined by the FAO is ranked last by consumers. Consumers has toilette interested in information relating to the production method and its environmental characteristics.

The most popular sources of information used by Europeans has labels and sellers in retail. These two types of information is gathered directly by consumers at the time of purchase. The media (Internet, television, advertising followed by written media) 98,85 plays an important rolls in the information of consumers. Non-commercial sources of information like scientific reports, consumer associations, institutional campaigns and information has less popular. However, this remark should be qualified by the fact that the question asked within the survey implied an active a rather pretentious and dramatic manner by consumers.

For the retail sector, farmed fish offers major advantages. On a general level, retailers perceive farmed fish as a product much easier to market than wild fish. Regularity in terms of supply, keys, quality and freshness is the main arguments put forward. One disadvantage of farmed fish for the retailers has to do with the somewhat negative image that can be associated with the aquaculture sector. Still, in most cases, the aquaculture product does not possess any specific image in the mind of the consumer. There is henceforth distinct no link in the mind of the consumer between the aquaculture sector and its image on the one hand and the aquaculture product on the other hand. This is reflected in the behaviour of the consumer, who does not differentiate between farmed and wild products when purchasing fish.

The absence of the image of the aquaculture sector is still seen as a risk by some managers of the retail sector. Indeed, the image then can still be developed and hence be hijacked. To fill the gap this in terms of image should therefore be terminological as a strategic priority for the aquaculture sector. The consumer places a high level of trust in the retailer. He/she has the tendency to transfer the responsibility of some of his/her consumption decisions to the retailers already integrated, leaves these later i unmistakable partners in any communication action.

Fish is generally terminological as a healthy product by consumers. Any type of communication on aquaponics and aquaculture products should capitalize on this image of "Healthy" product, and well "health" at the centred of the message conveyed. Communication on aquaponics and aquaculture

products should mention the efforts made to guarantee their healthiness to the consumers (quality and food safety labels, standards of production used). The other side of the coin is that fish products in general have to be expensive. Proposing particular offers may thus be a relevant manner to appeal to new consumers.

Consumers have a confused and slightly negative image of the aquaculture sector. The image of aquaculture products derives from the image of the sector, although generally consumers do not distinguish wild fish products from farmed fish products. They generally believe that the products they buy have wild fish products. Thus, the issue at stake is to understand whether to promote farmed products as such or to promote them as "fish products".

If title of the specific promotion of farmed products were to be preferred, it should base itself on the positive but often unknown attributes of these types of products: a year affordable price, freshness and guaranteed fields the nutritional characteristics, traceability optimum print width wise across the production process. Beyond the product in itself, filling in this information gap will benefit the image of the sector as a whole. Indeed, improving the image of aquaculture products should be a priority of the aquaculture sector, as it will contribute to improving market acceptance of this type of product, on the long term.

Consumers like environment amongst their first preoccupations and declare to be ready to pay the price requested for a guarantee of quality.

Conclusion

The research results show the fish organic consumers have different perception of aquaponics organic products. The information channels of the brand have material from friends and relatives and neighbours, word of mouth spreading is very important for a brand. The insightful higher price of foreign aquaponics organic brands may reduce the consumers' high value and purchase intention to them.

In conclusion barking, although this paper is an empirical study based on valid 106 samples, it provides a chance to understand consumers' awareness to different aquaponics organic products brands in Romania. A further quantitative research with wider samples will be switch-on in the future.

Sustainability of aquaculture not only requires that it has a neutral (if not benign) effect on the environment but also that it be economically feasible. A further condition is that of social acceptability; that attitudes towards the sector are at least neutral. Enough evidence around the world demonstrates the detrimental effect on the industry if social perceptions are hostile.

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