PURCHASE BEHAVIOR OF ORGANIC SEAFOOD CONSUMERS IN VIETNAM

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Consumers make buying decisions according to specific market conditions and also to various attribute of the product, namely, the specie, the form, and the place of purchasing, product size and its quality. The results of the consumption surveys reveal that consumers perceive fish as a rather safe food, and also as healthy and nutritious food product but seafood consumption varies quite a lot across Vietnam, not only in relation to frequency of consumption but also by types of fish products and types of species preferred in different provinces. Overall, little is known concerning the attitudes and knowledge among Vietnamese people regarding seafood consumption. Therefore, our research aim was to study the consumption habits and preferences of Vietnamese people regarding seafood on the example of the residents in HCM city. The rates of organic seafood consumption and the consumption frequency increase proportionally to the age of consumers. Most of the respondents (32.16%) consume seafood once a week and they believe they should consume seafood more often. If seafood were more available, many participants (39.45%) state they would consume more seafood.

Keywords: seafood; consumer attitudes; consumption patterns; consumer behavior; Vietnam.

Introduction

Fish is known to be an important element of healthy diet. Growing consumers' interest in safe food, along with other crucial components, can affect food acceptance and choice.

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Cultural differences can also influence preferences in food. Furthermore, the demand for healthy food, convenience, versatility, cheapness, quality and quantity are perceived by different people in many dissimilar ways. Some consumers, for example, tend to consider food responsible for good health. In other case, traditional food plays a decisive role in consumer choices. We should also pay attention to the issue of fish welfare as an emerging factor. Also, effective ways of providing information concerning fish production and fish products is another factor exerting its positive influence on consumer decision-making. Qualitative aspects of aquaculture development and fisheries, namely, consumer demand and product choice, require further studies, especially such factors as changing consumer attitudes towards fish products, differences in perception of fish quality, evolutionary development of the aquaculture systems and so on.

On the basis of all the aforementioned considerations, the overall aim of this paper is to explore consumers' attitudes towards farmed fish. The paper synthetically analyses some of the most important factors that may influence farmed fish choices and thus - consumer purchase. Many developing countries today are considering future increases in food demand and consumption in view of population increase. Seafood industry will evolve as a consequence of specific consumer demands, in both developing and developed countries. At the same time, consumers have become increasingly conscious of their needs and they frequently ask for more healthy and at the same time cheaper products.

Theoretical background and hypotheses

This study focuses on consumers' attitudinal behavior with respect to fish product forms and market outlets. It has generated information regarding the potential factors affecting consumer choices between different purchase forms and between various market outlets. Our results indicate that onshore fish markets are the most popular outlets for fish purchases in the coastal regions. They provide a variety of fish products in the most preferred forms and quality. Retailers and fish shops are primarily important in rural inland areas. According to one of the latest reports by the Food and Agriculture Organization of the United Nations (FAO), today seafood consumption per capita in the world has risen to over 27 kg per year, thanks to abundant supplies and steady demand. The volumes of shipped fish products have hit the record for a number of key species.

Attitudes and habits of consumers have been previously studied to determine the influencing factors in many countries, see, for example (Feng et al., 2009). Fresh and frozen fish are the most common forms sold at both domestic and export markets. The local market of Vietnam is very important, as on average per capita Vietnam consumption of fish has been increasing and reached around 55.9 kg per person back in 2015. However, data on the attitudes and knowledge of Vietnamese people regarding seafood consumption, which is very important for marketing policies of national and international seafood trade, is still very limited (Akpınar et al., 2009). In our opinion, the following groups of factors seem to be the most relevant for our study of the local seafood market:

Social Norms: These are characterized as perceived social pressure or expectations of the society or that of a specific group of individuals (Olsen, 2004). Normative beliefs are informing us about the well established subjective norms (Ajzen, 1991). It has been found that social factors are more liable for forming individual food preferences than genetic factors (Rozin, 1995). Thus, the very concept of subjective norms emphasizes on the

possibility of gaining approval or disapproval from significant others for one's intentions and actions, while descriptive norms refer to the perceptions of other people's behavior in a specific domain (Sheeran & Orbell, 1999). In this study, subjective norms are defined as social pressures and family expectations that determine behavioral intentions in consuming fish and other seafood products. However, in this study the concept will be assessed through a global measure; it is not our intention to focus on normative beliefs.

Perceived Behavioral Control (PBC): Perceived Behavioral Control (PBC) refers to person's beliefs about easiness or difficulties in performing a certain behavior (Pawlak & Malinauskas, 2008). The central beliefs are the third group of salient beliefs that result in perceived behavioral control (Pawlak & Malinauskas, 2008). Olsen (2004) found the most important control factors influencing consumers' seafood purchasing to be price/cost, convenience/availability and knowledge. As fish and seafood overall are being highly valued products in many parts of the world, the intention of buying seafood/fish is often affected by the price issue (Olsen, 2004). In this study, the PBC construct is defined as an integrated component of internal, external control and also the contextual factors that consumers may perceive as easiness or hardships while implementing their intention to consume, that is, to engage in fish consumption.

Consumers' perception of fish quality: Consumers who are more concerned with product quality are likely to demonstrate higher utility, i.e. higher valuation, as compared to consumers who are unconcerned about food quality. The concept of subjective sense of concern towards an object, or importance or personal relevance is closely related to involvement (Zaichkowsky, 1985). Consumers who lack confidence in assessing fish product quality – because of limited experience or low perceptual ability – are expected to act differently during the decision-making process as compared to more knowledgeable and thus also more self-confident consumers. As a result, involvement with quality, which refers to the importance attached to quality or quality consciousness is the first hypothesized dimension in our fish quality evaluation.

Knowledge of seafood consumption: Consumer behavior and consumer knowledge are the key constructs in any consumer-related research (Klerck and Sweeney, 2007). In Vietnam family structure of the local households is a very important factors as food is still predominantly prepared by women, and still in most of the families' women are housewives. They have ample time to prepare foods, cooking is treated as a some of art for women in most of the families. Thus, it is assumed that procedural knowledge might not be a barrier in consuming fish in most of the families in Vietnam. However, day by day the number of working families is growing, in these families, both partners are often equally busy; thus the impact of one's knowledge about preparing and cooking fish as well as the convenience issue in consuming fish demands further research and exploration due to these social changes. In this study, knowledge will be defined as product knowledge and also procedural knowledge among the local consumers. Product knowledge in this case includes knowledge about the origin of a product, thus also including quality of the fish product (e.g., fresh/not fresh); about the preservatives and so on while procedural knowledge means knowing how to prepare and cook fish overall and its specific types (Olsen, 2004).

Consumption Habits: Fish and seafood consumption is influenced by many factors such as socioeconomic background, general food consumption patterns, individual health status of consumers, and a number of attitudinal dimensions (Trondsen et al., 2004). Previous studies regarding seafood consumption have shown that age, taste, health/nutrition, and convenience

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are most important for seafood consumption behavior (Myrland et al., 2000; Olsen, 1989; Olsen, 2003). It can be said that consumer behavior and consumption habits regarding kinds of seafood are important factors affecting overall development of the seafood sector. Therefore, attitudes and habits of consumers have been studied to determine these factors in many countries (Feng et al., 2009).

Seafood and Human Health: Consumers nowadays seek to make wiser decisions when buying food, in order to ultimately consume food that is healthy (Mason-Jenkins, 1991). In order to better understand the patterns of seafood consumption, it is necessary to determine consumer behavior pertaining to consumption, consumer attitudes towards seafood products, the importance of certain product attributes for purchasing choices, and satisfaction with the inventory. This is best demonstrated by the fact that global consumption of seafood amounted to 9.9 kg per capita in the 1960s, but by 2012 it rose up to the level of 20.7 kg per capita (FAO, 2014). In this research, consumer attitudes regarding health, nutritional value, and safety of fresh seafood have been investigated. The importance of researching these attitudes regarding the three mentioned concepts stems both from the fact that health and nutritional value represent two major concerns among consumers in both developed and developing countries (Capps and Schmitz, 1991) while food safety represents one of the central issues in food economics (Grunert, 2005).

Table 1 - Definition of acceptance factors and the research hypotheses,
(made by the authors)

Factors	Definition	Hypotheses	Source
Social norms	The influence caused by groups of people in society or people close to consumers (Bearden et al., 1989).	H1: Social norms have a positive effect on purchase behavior of organic seafood consumers	Ajzen (1991)
Perceived behavioral control	Perceived behavioral control refers to people's perceptions of their ability to perform a given behavior (Ajzen, 2006)	H2: Perceived behavioral control has a positive effect on purchase behavior of organic seafood consumers	Pawley & Malinauskas (2008)
Seafood and human health	Food security is crucial as consumers search for food without chemicals and/pr genetically modified organisms (Michaelidou and Hassan, 2008)	H3: Seafood and human health factor has a positive effect on purchase behavior of organic seafood consumers	Schifferstein & Oude Ophuis (1998)
Knowledge of seafood consumption	Consumer knowledge is the initial and also one of the main constructs in consumer behavior (Klerck and Sweeney, 2007)	H4: Knowledge of seafood consumption has a positive effect on purchase behavior of organic seafood consumers	Aertsens et al. (2011)
Consumers' perception of fish quality	The concept of subjective sense of concern, closely related to involvement (Zaichkowsky, 1985)	H5: Consumers' perception of fish quality has a positive effect on purchase behavior of organic seafood consumers	Myrland et al. (2000)
Consumption habits	For many, purchasing food is a routine that may or may not require a lot of thought in the course of an actual purchase (Arvola et al., 2008).	H6: Rational choice has a positive effect on purchase behavior of organic seafood consumers	Goode (1997)

Materials and methods

Questionnaire

Doing a research by means of questionnaires is probably one of the most popular methods, irrespective of the scientific sector. This study deals with the problems of seafood safety affecting consumer buying decisions in the HCM, Vietnam. The research design of the study elaborates that the constraints were identified from the responses of the customers, as they know best the problems they normally/frequently face while purchasing fish or other seafood products. For serving this purpose, we have prepared a structured questionnaire. The questionnaire for this study was prepared on the basis of literature review and also taking into account regional peculiarities. It consists of 30 questions in total, these questions are together covering 6 concerning variables as a variety of factors affecting purchase behavior when it comes to seafood. A seven-point Likert scale was used in the questionnaire, where 1 = strongly disagree and 7 = strongly agree. The data analysis has been done by means of utilizing both quantitative and qualitative analysis techniques. This study has been conducted with the application of SPSS software, version 22.0. To ensure that the questionnaires' contents and design are understood clearly and unambiguously by all the respondents, it was preliminary tested by 7 experts and 30 experimental customers.

Statistics and Analyses

Our survey questionnaire was sent to customers by means of emails and direct surveys. Quantitative data were collected using a three-page survey. A sample of 346 customers was drawn, using the systematic sampling method. The respondents who fully completed their questionnaires during the group administration process were taken as the final sample. Thus, at the end we got 299 valid samples to be further analyzed. Therefore, the effective response rate of our initial sample was 86.28%. Statistical analyses were done in two phases: first, an explanatory factor analysis was performed and then a linear regression model was employed to determine which factor groups have greater effects on purchase behavior of the seafood consumers.

Data analysis and interpretation

Motives in seafood purchasing behavior

When asked to provide their positions on the related statements, 36% from the urban market group stated they "Agree" and 34% said they "Strongly Agreed" with the statement "I buy safety seafood to support fishermen" (Tab. 2). Within the online group, 28% agreed with this statement and 33% said they "strongly agree". 15% of the respondents from the urban Market group either disagreed, or strongly disagreed with this statement. Among the online group, 16% either indicated they "disagree" or "strongly disagree" with this statement.

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Table 2- Percentage of people who “Agree” and “Strongly Agree” with the statements
(made by the authors)

Site	I buy seafood to support local fishing owners	I buy seafood to support fishermen
Urban Market Group n=104	36% Agree, 43% Strongly Agree	37% Agree, 34% Strongly Agree
Online Group n=76	28% Agree, 32% Strongly Agree	24% Agree, 33% Strongly Agree

“Restrict preservative or chemicals” is ranked as the highest priority for the consumers in the urban market group with 75% ranking this as the “Top Priority”. “Applying natural methods” was ranked as the highest by the online group, with 52% of the participants ranking this as “Top Priority”. Of the 5 food issues, “Perishable and easily infected” and “Expensive price” were ranked 4th and 5th respectively by the urban market group. These same issues were ranked 3rd and 4th priority, respectively, by the online group. Consumers from the online group ranked “Applying natural methods” as their #1 priority (Tab. 3).

Table 3 - The highest priorities for the consumers of seafood
(made by the authors)

Food Issues	Urban Market	Ranking	Online Group	Ranking
Products without antibiotics or hormones	43%	2	24%	5
Perishable and easily infected	38%	4	29%	3
Restricted use of preservative or chemicals	75%	1	47%	2
Expensive price, much higher than usual	34%	5	33%	4
Applying natural methods	47%	3	52%	1

Using SPSS software, the measurement model was examined to assess reliability and validity before testing the proposed research model. Reliability has been tested in this study through Cronbach’s alpha, Composite reliability (CR), Average Variance Extracted (AVE), and factor loadings. Table 4 shows the results of the measurement model, where factor loadings of all the items were higher than 0.70, Cronbach’s alpha value of all the constructs were greater than 0.70 and AVE of all the constructs were more than 0.50. The composite reliability values of all the variables were much above the threshold value of 0.70, thus, confirming good quality of the measurement model.

The results of the EFA, summarized in Table 4, demonstrate 6 factors with 26 observed concepts. KMO coefficient = 0.823, EFA matches the data and the statistical test Chi-square Bartlett 4210.643, at $p = 0.000$ significance level. Thus, the observed concepts are correlated with each other considering the overall scope. Therefore, the scale draw is acceptable. The scales have observed the concepts excluded by EFA, then Cronbach’s alpha coefficients were recalculated, and the results achieved the needed reliability requirements.

Regression Analysis

The estimated results of the multiple regression models indicate good of data ($F = 42.337$, $p < 0.000$; $R^2 = 68.4\%$; $\text{Dubin-Watson } 1.623 > 1$; all $\text{VIF} < 2.0$). The dependent variable has quite a strong linear correlation ($\alpha > 0.05$) with five independent concepts, namely, KSC, SHH, PBC, SN, CPK, and CH. Since all the absolute correlation coefficients between the concepts are in the range from 0.554 to 0.789, satisfying the condition $-1 \geq r \geq +1$, all the concepts also satisfy the rule of multiple linear regressions.

Correlation matrix also shows that variables of the perceived behavioral control (PBC) have the strongest impact on the dependent variable which is seafood purchase behavior. In contrast, consumer perception of fish quality and also consumption habits has a negative impact on the dependent variable of the seafood purchase behavior.

Table 4 - Seafood properties and their measures
(made by the authors)

Construct	Cronbach's Alpha Composite Reliability, Average Variance Extracted	Item	Loading
Social norms (SN)	$\alpha = 0.779$; CR = 0.812; AVE = 0.767	SN4	0.908
		SN5	0.895
		SN1	0.889
		SN3	0.888
		SN2	0.624
Seafood and Human Health (SHH)	$\alpha = 0.830$; CR = 0.824; AVE = 0.874	SHH6	0.862
		SHH5	0.858
		SHH3	0.828
		SHH2	0.767
		SHH4	0.682
Perceived behavioral control (PBC)	$\alpha = 0.824$; CR = 0.863; AVE = 0.865	PBC 4	0.927
		PBC3	0.873
		PBC2	0.792
		PBC1	0.790
Knowledge of seafood consumption (KSC)	$\alpha = 0.846$; CR = 0.869; AVE = 0.853	KSC1	0.809
		KSC2	0.703
		KSC3	0.652
Consumers' perception of fish quality (CPK)	$\alpha = 0.810$; CR = 0.881; AVE = 0.825	CPK1	0.794
		CPK2	0.755
		CPK3	0.692
Consumption habits (CH)	$\alpha = 0.821$; CR = 0.781; AVE = 0.842	CH2	0.852
		CH3	0.850
		CH4	0.818
		CH5	0.755
		CH1	0.676

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There are four factors - KSC, SHH, SN and PBC - of the scale factors affecting seafood purchase behavior, all three have a positive impact on seafood purchase behavior (SPB) at $\text{Sig} = 0.000-0.001 < 0.05$. The remaining factors -- CPK and CH ($\text{Sig} = 0.235$ and $0.524 > 0.05$), are found to be not significant statistically. Thus, the researchers conclude that the hypotheses H1 (KSC), H2 (SN), H3 (SHH) and H4 (PBC) can be accepted.

Conclusion

When consumer decides whether to buy seafood products or not, this process of decision-making clearly involves a complex set of factors that cannot easily be interpreted. In Vietnam, the issues regarding seafood safety as a food product are still at the introductory stage of development, not so many people are aware of it. Consumers have the knowledge of factors that contribute to sustainable environment, thus, they have all possibilities and options to change their current consumption patterns, however, changing their perception towards safety of seafood products may take a while.

The results confirm there is a positive relationship between perceived behavioral control (PBC) with seafood purchase behavior ($\text{Beta} = 0.426$, $p = 0.000 < 0.05$). The government should emphasize more on the environmental knowledge when it comes to studying programs and while the future consumers are still young. Additionally, changing customer attitudes is one of the most important parts in terms of shaping new opportunities for purchasing seafood with the satisfactory safety level.

The findings demonstrate the positive effect of the Knowledge of seafood consumption (KSC) on the seafood purchase behavior ($\text{Beta} = 0.241$, $p = 0.000 < 0.05$). Also, the findings show a there is a positive effect of the Seafood and Human Health (SHH) on the seafood purchase behavior ($\text{Beta} = 0.232$, $p = 0.000 < 0.05$).

In a similar vein, the findings show that the positive effect of social norms (SN) on seafood purchase behavior is the weakest ($\text{Beta} = 0.226$, $p = 0.001 < 0.05$). According to these results, it could be understood that customers pay more attention to their health, thus worry about food safety. Therefore, awareness about seafood safety is rising as consumers are becoming more and more sensitive to environmental protection too, indirectly though.

Finally, the results show there is a negative relationship between consumers' perception of fish quality (CPK) and consumption habits (CH) with seafood purchase behavior ($\text{Beta} = 0.077$, $p = 0.235 > 0.05$). This could be explained mostly by the inclusion of environmental knowledge and subjective norms that are shown to be significant determinants in consumer purchasing of safe seafood. Besides that, food safety concerns tend to impact positively on the more rational choice of seafood, and this belongs to the most important new findings of our study.

Our participants all stated they consume seafood, and they agreed that these products are beneficial for health. Likewise, Verbeke et al. (2007) reported that the general attitude towards eating fish is usually very positive. Our respondents were most strongly convinced that eating fish is healthy and also nutritious. In the US, the participants of a similar survey all considered themselves to be "seafood eaters" (Hicks et al., 2008). 35% of the respondents from the US indicated that they had increased seafood consumption during the previous two years, and their reasons were primarily related to health or to changes in tastes and lifestyle (Wessells et al., 1996). The belief that seafood is important for health is the most important factor influencing fish consumption in the world these days (Trondsen et al., 2004).

However, an interesting result was presented by the already mentioned above Hicks et al. (2008): the absolute majority (79%) of consumers did not agree or “were not sure” about whether pregnant women should be eating organic seafood.

The biggest limitation of our research is that the sample was restricted to a single geographic area in Vietnam. Therefore, additional studies seem to be necessary to better discriminate between consumer groups and also to determine which segments of consumers are most appropriate to be targeted while promoting seafood safety as a way of building more sustainable consumption patterns overall.

Further research should also use a much larger sample in different national settings so that to validate the findings of this study and also to see whether the measures developed here are statistically reliable and valid across different national settings.

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