# FACTORS AFFECTING CONSUMER BEHAVIOR TOWARD ECO-FRIENDLY SEAFOOD IN HO CHI MINH CITY, VIETNAM

Tran Huu Ai

Dr.
Faculty of Economics, Van Hien University,
Ho Chi Minh City, Vietnam
aith@vhu.edu.vn

*The safety and quality of aquaculture products have been often concerned in recent years. Green consumption is a problematic concept, not least because it is an apparent oxymoron. "Green" means the conservation of environmental resources, while consumption is often related to their destruction. Green consumption behavior is significantly related to concern for the environment and behavioral intentions. This research used structured questionnaires and a stratified random sampling method to collect data from 326 residents of 3 big districts in Ho Chi Minh City (HCMC) the city with a structural equation model used to identify factors affecting consumption behavior and buying eco-friendly seafood, the study found that environmental response, brand image, emotional response, fake seafood products, social media behavior and perceived quality have a positive and significant correlation with eco-friendly seafood consumption behavior.*

## Introduction

Aquaculture and fisheries are an important sources of food and livelihoods for people along the world's seashores and waterways (Smith et al., 2010a) and identifyed by the income for more than one billion people. However, awareness of environmental protection leads to the risk of coastal pollution. Aquaculture is distinguished from the other aquatic production such as fishing by the degree of human intervention and control (Anderson, 2002). This leads to over exploitation, and the goods are fished down to low and unsustainable levels.

Nowadays social networking is the most important means of media to understand the customers' perception about safety, traceability and quality of fishery products and to identify communication levers to improve the perceived image of fishery products. Research focuses on the fresh, frozen or processed fishery products.

In the short term, ecological and social matter has become significant external influences on companies and the markets within which they operate. In the longer term, the pursuit of sustainability will demand basic changes to the management model which underpins marketing and other business function (Shrivastava, 1994).

**Literature Review**

Expanding more environment-friendly consuming systems and sustainable production depends on the customers' wishes to engage in a "green customer" behavior. Research efforts have sought to identify, analyze and understand the "green customer" marketing and research were initially focused on the purchasing activities, has been added by studies from industrial areas such as ecology and sociology, supplemented more comprehensive picture of "green consumption" as a process. The knob picture of eco-friendly consumption is a process heavily influenced by emotional and environmental responses, perceived quality, also it is very complex, various and depends on the context of social media behavior, fake products, brand image. There are opportunities for future research to add more scientific knowledge and challenge the assumptions and expectations of our consumption and the nature of customer society.

Environmental response is defined by attitude theory, which is based on beliefs and norms, constructed through individual perception. This perception should be taken as individual's opinion rather than an attitude (Heberlein, 1989). Environmental variables might affect on purchasing behavior of customers (Stern, 1962).

Social media behavior means individual shopping orientation, influences and surroundings that can further change our behavior. Shopping orientation refers to the degree to which an individual sees themselves as a shopper and takes pleasure or personal satisfaction from the act of shopping. Shopping orientation is among the most influential predictors of customer protectorship behavior (Darden & Howell, 1987). Social media is fastly becoming a medium of customer voices.

Perceived quality can be defined as the customer's perception of the overall product or service quality or superiority related with intended purpose and alternatives. Perceived quality is the overall subjective judgment of quality depending on the expectation of quality. These expectations are based on one's own and others' experiences, plus various other sources including brand reputation, price, and advertising (Zeithaml, 1988; Johnson et al., 1995).

Fake product is a form of customer fraud that sold product purported to be something that it is not real. The production and dealing of fake goods are often considered an intellectual property theft, and through this prism it gathers little concerning.

The brand image is developed over time through advertising campaigns with a consistent theme and is authenticated through the consumers' direct experience. When buyer

watches an advertisement about the brand and develops appearance for the brand and then eventually willing to buy it (Goldsmith & Lafferty, 2002).

Green consumption behavior can convert to the act of products' consuming that is not a result of statutory control, beneficial for the environment and responding to environmental. Chan (1999) found that green consumption behavior is significantly related to concerning of environment and behavioral intentions and their green consciousness.

Consumer behavior refers to the selection, purchase and consumption of goods and services for the satisfaction of customers' wants. There are different processes involved in the consumer behavior. Initially the consumer tries to find what commodities he would like to consume, then he selects only those commodities that promise greater utility (Shah, 2010). Considering this issue, many manufacturing companies found that producing eco-friendly products will give them a chance to make a profit. The overall review in Tab. 1 shows a comprehensive picture of the effects of behavior for buying eco-friendly seafood of residents in HCM city

Table 1 - Motives of behavior to buy eco-friendly seafood
(considered by the autor)

| Authors | Measures of buying eco-friendly behavior |
| --- | --- |
| Adelaar et al. (2003) | Emotional state and responses (arousal, dominance, pleasure) Behavioural responses (sense modalities, information rate) |
| Khan Niazi et al. (2012) | Emotional response (arousal, dominance, pleasure, brand recall), Enviromental response (information rates, sensory stimulus) |
| Zayerkabeh et al. (2012) | Brand loyalty, perceived quality, brand prestige , brand credibility |
| Yusepaldo Pasharibu (2013) | Online advertising, social networking site, attitude, brand recognition |
| Sallam et al. (2015) | Brand credibility, brand commitment, word of mouth communication |
| Rahpeima et al. (2014) | Fake products, attitudes toward fake products, integrity, personal gratification |
| Stegemann (2006), Wu & Chen (2014) | Brand awareness, customer benefits,customer attitudes, brand image, perceived benefit, perceived risk, moral obligation, subjective norm, control strength, control belief |

**Theoretical models and hypotheses**

Based on the above discussions, this study explores the factors relation between: perceived quality, emotional response, environmental response, brand image, social media behavior, fake sea products and eco-friendly seafood consumption behavior.

Table 2 - Measures of variables in the proposed model
(considered by the autor)

| Measures of variables | Authors |
|---|---|
| Perceived quality | Hanzaee & Taghipourian (2012); Aaker (1996) |
| Emotional Response | Sohail & Shaikh, (2004) |
| Environmental response | Abdullah (2006), Kwek (2010) |
| Social Media Behavior | Kang & James (2004), Kwek (2010) |
| Fake seaproducts | Helgesen & Nesset (2007); Heberlein (2011) |
| Consumption behavior | Shah (2010) |

The following hypotheses are suggested:

There are significant positive relationships between -

$H_0 1$: perceived quality and eco-friendly seafood consumption behavior,

$H_0 2$: emotional response and eco-friendly seafood consumption behavior,

$H_0 3$: brand image and eco-friendly seafood consumption behavior,

$H_0 4$: social media behavior and eco-friendly seafood consumption behavior,

$H_0 5$: environmental response and eco-friendly seafood consumption behavior,

$H_0 6$: fake sea products and eco-friendly seafood consumption behavior.

This study expects that there are relations between the perceived quality (PerceivedQ), emotional response (EmotionalR), environmental response (EnvironmentaalR), brand image (Brandimage), social media behavior (SocialmediaB), fake sea products (FakeS) and eco-friendly seafood consumption behavior (EFSCB).

**Research methodology**

*Data screening and analysis*

The screening of the data sets was conducted through an examination of basic descriptive statistics and frequency distributions. Then, the study is preliminary assessed and screened by EFA method and Cronbach's Alpha coefficients for each component. Selection criteria are satisfied when concepts have correlation coefficients turn-total > 0.40, Cronbach's alpha coefficients > 0.60; system load factor >0.40; total variance extracted for ≥ 50% (Hair et al., 1998).

Quantitative research methods are used in this study. Theoretical models have six independent concepts measured by 28 observed concepts and one dependent concept measured by 03 observed concept. A total of 500 questionnaires were distributed and 364 questionnaires (77.33%) were returned for analysis. In the study, the Likert scale recorded as 1- strongly disagree, and 7 - strongly agree. Finally, 326 valid samples were analyzed. The step in structural equation modeling (SEM) analysis by AMOS 22.0 are CFA analysis, measurement, analysis, discriminant analysis, composite reliability analysis and direct

impact analysis, testing the fit of the hypothesized structural model, revised model (Sentosa et al., 2012).

### Data checking

The first step is to assess the CFA measurement model by examining offending estimates. The three most common offending estimates include: (1) negative error variances, (2) standardized coefficients exceeding or very close to 1.0, or (3) very large standard errors associated with any estimated coefficient (Hair et al., 1998). In this study, several fit indices were examined to assess the overall fit of the full measurement model: chi-square ($\chi^2$), $c^2$/df ratio, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), root mean square error of approximation (RMSEA), non-normed fit index (NNFI), comparative fit index (CFI), and standardized root mean square residual (SRMR).

*Demographic profile of the respondents*

Of the total 326 respondents, the proportions of men and women have rather small differences, accounting for 47.24 % male and 52.76 % female, more than 18.4% are below 25 years of age group, maximum is 60 years old.12% are from the age group of 26 - 35 years old. Nearly 15.95% are from the age group 35- 50 years old and the rest of the 5.53% is from the age group over 50 years old.

The results of the EFA, showed 28 observed variables in the 6 components of the Eco-friendly seafood consumption behavior scale are retained 6 factors with 26 observed variables. As KMO coefficient = 0.887, EFA matches the data and the statistical test Chi-square Bartlett 9113.007, p = 0.000 significance level. Thus, the observed variables are correlated with each other considering the overall scope. The variance extracted by 78.809 shows that factors derived from 78.809% explained variance of the data, eigenvalues in the system by 1.378. Therefore, the scale draw is acceptable. The scales have observed variables excluded by EFA, Cronbach's Alpha coefficients were recalculated.

### Confirming factor analysis (CFA)

The correlation coefficient between the components with accompanying standard deviation (Table 2) shows us these coefficients less than 0.05 (with statistical significance). Therefore, the components: perceived quality (PerceivedQ), emotional response (EmotionalR), environmental response (EnvironmentaalR), brand image Brandimage), social media behavior (SocialmediaB), fake seaproducts (FakeS) and eco-friendly seafood consumption behavior (EFSCB).

Regarding the relevance (Fig. 2), linear structural analysis shows this valuable model chi-squared statistic is 368.513 with 191 degrees of freedom and the value of P = 0.000. Chi - squared relative degrees of freedom according Cmin/df was 1.929 (< 2). Other indicators such as GFI = 0.906 (> 0.9), TLI = 0.966 (> 0.9), CFI = 0.972 (> 0.9) and RMSEA = 0.053

(< 0.08). Therefore, this model fits the collected data. About values converge, the standardized weights of the scales are > 0.5 and with statistical significance p < 0.05, so the scale achieved convergence value.

Table 1 - Results of testing the value of distinguishing between the components of the scale
(author's calculations in SPSS 22.0)

| Correlation | | | Estimate | S.E. | C.R. | P |
|---|---|---|---|---|---|---|
| EmotionalR | <--> | SocialMediaB | .426 | .021 | 5.722 | *** |
| BrandImage | <--> | EmotionalR | .341 | .020 | 5.495 | *** |
| BrandImage | <--> | SocialMediaB | .301 | .018 | 4.276 | *** |
| BrandImage | <--> | PerceivedQ | .864 | .026 | 10.775 | *** |
| EmotionalR | <--> | PerceivedQ | .421 | .022 | 6.895 | *** |
| SocialMediaB | <--> | PerceivedQ | .344 | .020 | 4.948 | *** |

### Results of structural equation model

The results showed that the model last calibration value chi-squared statistic is 176.846 with 75 degrees of freedom (p = 0.000). Chi-squared relative degrees of freedom according Cmin/df was 2.358 (< 3). Other indicators such as GFI = 0.936 (> 0.9), TLI = 0.975 (> 0.9), CFI = 0.982 (> 0.9) and RMSEA = 0.065 (< 0.08). Therefore, this model achieved compatibility with data already collected.

Table 2 - Results of estimating causal relationships between the
factors of consumption behavior
(author's calculations in SPSS 22.0)

| Relations | | | Estimate | S.E. | C.R. | P | Label |
|---|---|---|---|---|---|---|---|
| EFSCB | <--- | BrandImage | .546 | .111 | 4.899 | *** | accept |
| EFSCB | <--- | EmotionalR | .117 | .055 | 2.125 | .034 | accept |
| EFSCB | <--- | SocialMediaB | .776 | .091 | 8.516 | *** | accept |
| EFSCB | <--- | PerceivedQ | .354 | .101 | 3.498 | *** | accept |

### Testing the reliability of estimates by Bootstrap

Bootstrap method used to test the model estimates the last model with the pattern repeat is N = 1000. The estimation results from 1000 samples are averaged together with the deviations are presented in Tab. 5, CR has very small absolute value than 2, it can be said that the deviation is very small; while not statistically significant at the 95% confidence level. Thus, we can conclude that the estimated model can be trusted. As a result of hypotheses testing: perceived quality, emotional response, brand image, social media behavior are in

same direct relationship with the eco-friendly seafood consumption behavior. There are four relationships are worth theoretically.

Table 3 - The results estimated by bootstrap with N = 1000
(author's calculations in SPSS 22)

| Parameter | | | Estimate standard | | | Estimate Bootstrap with N=1000 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Estimate | SE | SE-SE | Mean | Bias | SE-Bias | CR |
| EFSCB | <--- | BrandImage | 0.546 | 0.19 | 0.006 | 0.563 | 0.018 | 0.009 | 2.000 |
| EFSCB | <--- | EmotionalR | 0.117 | 0.068 | 0.002 | 0.122 | 0.005 | 0.003 | 1.667 |
| EFSCB | <--- | SocialMediaB | 0.776 | 0.115 | 0.004 | 0.785 | 0.009 | 0.005 | 1.800 |
| EFSCB | <--- | PerceivedQ | 0.354 | 0.163 | 0.005 | 0.374 | -0.02 | 0.007 | -2.857 |

**Conclusions**

*Results and Discussion*

This study has inherited the previous studies (Geyer-Allely, 2002), This research results show eco-friendly customers have different perception of fishery products. The information channels of brand images are mainly from friends, relatives and neighbors, so word of mouth spreading is very important for a brand. The higher perceived quality and price of foreign fishery brands, images may reduce consumers' emotional response and purchase intention to them.

The results confirm social media behavior (ES = 0.776, p = 0.000 < 0.05) was circumstantial life events, influence, and surroundings can further change our behavior. Social media already highly influence our shopping, relationships, and education.

The results confirm the positive relationship between brand image and eco-friendly seafood consumption behavior (ES = 0.546, p = 0.000 < 0.05). This result is consistent with most previous studies (Li, Y., et al., 2012). The success of a brand image depends on the level of value that consumers perceive. The results confirm the positive relationship between perceived quality with eco-friendly seafood consumption behavior, (ES = 0.354, p = 0.000 < 0.05). The findings show a positive effect of the emotional response on Eco-friendly seafood consumption behavior is the weakest (ES = 0.117, p = 0.034 < 0.05). This result is similar to those of most previous studies (Kassim, 2001) examined emotional response toward the economic, social-cultural and ecological impacts of consumption behavior in Vietnam.

*Implications of the Research*

Considered problem related to the transportation of fish catches in the domestic market is not local. According to this the quality of products requires an improvement of distribution channels and products' promotion. Behavioral research indicates that this may be a significant challenge in practice and it needs to by studued more. The purpose of the further

studies is to understand how to motivate, influence, and equip public policy goals (Geyer-Allely, 2002). Fish food quality has always been very difficult problem. The two main parts of overall quality are safety and novelty. That is how the consumer feels about the product based upon their senses, while the consumers normally examine color, flavor, odor and texture when evaluating fishery products (Brockman, 2006).

### *Some suggestions for further research*

The limitation of our research is that the sample was restricted to a certain geographic area in Vietnam. Further research should be  used a much larger sample in a different national setting to validate the findings of this study and to see can be developed measures statistically reliable and valid across different national settings. The potential influence of group norms and collective consumption initiatives is likely to emerge as a significant field for future research.

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*Paper submitted on 11 September 2016*