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Gøril Voldnes & Morten Heide

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# Industrial Buyers' Food Neophobia – A Barrier to Market Entry? A Case Study of Introducing Lumpfish to South Korea and Vietnam

Gøril Voldnes and Morten Heide

Nofima AS, Tromsø, Norway

**ABSTRACT**

The need to find sustainable food sources to feed the growing population makes the utilization of all available food resources especially important. But introducing new food is challenging and often fails. In the consumer behavior literature, food neophobia (FN), the unwillingness to try new food, has been identified as a crucial factor in understanding the adoption of new food products. However, limited research can be found on the role of FN in industrial buyers' choice of new food products. Industrial buyers are important gatekeepers for the introduction of new food products as they decide what is offered to the consumers and may stop any market entry long before a new food product reaches the consumers' attention. Thus, the understanding of the potential FN in industrial buying behavior, in different markets, is important to succeed with the introduction of new food products. In this study, we have explored FN as a potential barrier to the adoption of a new seafood product, farmed lumpfish (*Cyclopterus lumpus*), by industrial buyers in South Korea and Vietnam. The results revealed differences between the two countries' industrial buyers, with South Koreans demonstrating more FN than the Vietnamese. This contradicts with the consumer research showing that FN decreases with increased income, education, and urbanization.

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Food neophobia; Industrial buyers; Market entry; Lumpfish

## Introduction

Today's food production is estimated to account for 1/3 of the global CO2 emissions (UN 2022). The CO2 emissions need to decrease due to the serious climate challenges, while at the same time, food production needs to increase to feed the growing population. According to FAO (2023), food production needs to increase by 70% to be able to feed the estimated 10 billion people by 2050 (FAO 2023; Siddiqui et al. 2022). In addition, climate change threatens the ability of food systems to provide adequate

**CONTACT** Morten Heide morten.heide@nofima.no Nofima AS, P.O. Box 6122, Tromsø, 9291, Norway.

nutrition to a fast-growing human population (Campbell et al. 2016). This requires both identifying new sustainable food sources and increasing the exploitation of existing ones – especially from the ocean. Although water constitutes more than 70 percent of the earth's surface, and 97 percent of this water surface is ocean, humans utilize less than 2 percent of the sea for food (EU 2022). Furthermore, one-third of the commercial species already exploited in the ocean suffer from overfishing (FAO 2019). Thus, diversifying the target species is essential for the sustainability of fisheries and contributing to improving resource-efficient processes (Silva et al. 1994).

Valuable marine resources are unexploited or even treated as waste. This is the case with farmed lumpfish, which is used as a cleaner fish in the aquaculture industry in Norway. The challenge of sea lice in the salmon aquaculture industry has resulted in the introduction of various measures to reduce this problem. Sea lice (*Lepoeophteirus salmonis*) are a natural parasite found on salmonids in salt water in the northern hemisphere. They are small crustaceans that feed on the blood, skin, and mucus of salmon and are not harmful to people. A particularly high density of lice on the salmon may, however, cause damage to the fish. Among the measures taken, the use of cleaner fish that feed on the sea lice that live on farmed salmon has become an effective way to reduce the amounts of lice. Farmed lumpfish is the most common species of cleaner fish used in the Norwegian aquaculture industry. The increased demand for cleaner fish has resulted in a new industry in Norway, which is the farming of the cleaner fish species lumpfish. The use of lumpfish for this purpose has significantly grown in the last years, from slightly above 0.4 million fish in 2012 to more than 27 million in 2021 (Directorate of Fisheries (Fiskeridirektoratet), 2023).

A major challenge with the use of the lumpfish is the lack of after-use of this fish (Ageeva et al. 2021). The lumpfish stops eating lice when it reaches 300–500 grams (Powell et al. 2018). Millions of fish go to waste or, in the best case, are used for silage when removed from the salmon pens (Voldnes et al. 2021). The most sustainable solution would be to utilize this fish resource for human consumption when it stops eating lice. However, to succeed in introducing this fish as food for humans, the identification of potential markets and consumers willing to eat this fish is crucial.

Introducing new foods like lumpfish to the market is challenging. A common belief is that 80% of new products fail (Castellion and Markham 2013), although recent studies suggest that this rate may be lower (Victory et al. 2021). Before food producers can sell new food products to consumers, they need to convince industrial (professional) buyers (i.e., distribution channel members like importers, wholesalers, retailers, food service, etc.) to buy their product (Voldnes, Sogn-Grundvåg, and Young

2023). The industrial buyers act as gatekeepers to market entry, as they decide what is offered to the consumers in supermarkets, restaurants, and other food outlets (Knight, Holdsworth, and Mather 2008).

In addition to being a new product, this fish has quite a unique appearance, a challenging texture, and a small filet yield. On the positive side, it contains a good fatty-acid composition and is a good source of vital B and D vitamins (Ageeva et al. 2021).

A possible contributing factor to the low success rate of new food products is food neophobia (FN) the tendency to avoid trying new foods. FN plays a significant role in increasing the likelihood of consumers rejecting new food (Barrena and Sánchez 2013). Consumers' FN has been well documented in the research literature (Rabadán and Bernabéu 2021). As industrial buyers are also individuals, they might be affected by FN themselves, or they might be concerned that the consumers they are targeting may be affected by FN. According to Rabadán and Bernabéu (2021), specific attention should be paid to fast-growing countries in Asia, where society and food consumption are changing rapidly as FN in societies decreases with increased income, education, and urbanization (Beltrán, Gómez, and León 2016; Predieri et al. 2020). FN among these important gatekeepers has received limited research attention.

Considering the above-mentioned gaps in the literature, the overall aim of this research was to increase the understanding of how FN affects industrial buyers to improve the knowledge of how to introduce new food products into a new market successfully.

The structure of this paper is as follows: First, we provide the theoretical and practical background of this study. Second, the methodological approach is described before the results are presented. Finally, we discuss the results in relation to existing literature, present research limitations, and suggestions for future research.

## Theoretical background

Research shows that individuals are generally reluctant to try new things. This is often explained by people's FN, which is defined as the unwillingness or refusal to eat or the tendency to avoid new foods (Pliner and Hobden 1992). FN is generally characterized as a personality trait, a continuum along which people can be placed in terms of their tendency to accept or avoid new foods (Pliner and Salvy 2006). Given that FN can shape preferences for new foods (Tuorila et al. 2001), it plays a significant role in accounting for the high failure rate of new or innovative food products (Barrena and Sánchez 2013). Understanding FN's influence on consumers' food choices is thus a crucial challenge for food product developers and marketers to innovate and adapt food products to reduce

the high failure rate in the market. In this study, we want to explore the effect of FN on the introduction of a new seafood product, farmed lumpfish, to new markets. Olabi et al. (2009) have indicated that it would be challenging for food companies to launch "highly novel non-traditional foods" into markets with high FN levels and to assess whether these markets would require the elements of more aggressive marketing campaigns.

A systematic review of FN studies in the last 30 years (Rabadán and Bernabéu 2021) showed that most were conducted in developed countries, mainly in the US and Europe. Differences have been reported between countries, such as between Koreans and Americans (Chung et al. 2012), and between well-educated and wealthy people from Western and emerging nations (Brunner and Nuttavuthisit 2019). In emerging countries, consumers have been found to be more conservative (more neophobic) about food than in developed ones. According to Rabadán and Bernabéu (2021), specific attention should be paid to fast-growing countries in Asia, where society and food consumption are changing rapidly, as results indicate that FN in societies decreases with increased income, education, and urbanization (Beltrán, Gómez, and León 2016; Predieri et al. 2020). Thus, studying FN among industrial buyers in fast-growing Asian countries, especially developed and developing ones, seems relevant.

Introducing new foods or products to new markets may be even more challenging as the cultural background of a country seems crucial in explaining the level of FN of its inhabitants (Rabadán and Bernabéu 2021). Numerous factors can affect the degree of neophobia, with some of them being linked to the extent of exposure to new foods (Pliner, Pelchat, and Grabski 1993). People who travel extensively and are receptive to the cultures of different countries tend to show less neophobic tendencies (Olabi et al. 2009). The occurrence of FN seems to be shaped by various socio-demographic factors. There is a negative correlation between urbanization, income, and education with neophobia. It is observed that neophobia predominantly impacts older people and children, while it is less prevalent among the youth, particularly those residing in urban areas. As individuals age, the tendency toward neophobia tends to rise. However, newer generations, exposed to a wider range of both traditional and ethnic foods, are becoming more used to variety (Meiselman, King, and Gillette 2010; Siegrist, Hartmann, and Keller 2013). FN has been found to have a positive association with factors such as familiarity, convenience, and price, while it exhibits a negative correlation with health, natural content, weight control, environmental considerations, animal welfare, social justice, and motives for ethical food choices (Jaeger et al. 2021). Furthermore, Nezlek and Forestell (2019) discovered that food neophobia is inversely related to agreeableness (the degree to which one seeks interpersonal

harmony and avoids conflicts), openness (the degree to which one is comfortable with new experiences), and extraversion (the degree to which one is outgoing or socially oriented).

Literature investigating the potential role of FN among industrial buyers is limited. Knight, Holdsworth, and Mather (2008) studied industrial actors' neophobia toward genetically modified foods in Europe, China, and India, concluding that these actors were key for market diffusion. Industrial buyers can stop new foods from entering markets, long before they reach consumers; in effect, they are the most important gatekeepers to market entry. Understanding how and why industrial buyers adopt new food products is thus essential for the successful introduction of a new product to the market. These gatekeepers may make their decisions based on factors other than rational or realistic criteria, and the process is often related to minimizing risk (Sheth 1973). Thus, the limited research focus on the industrial buyers is surprising given that they constitute the critical focal point through which most of the food must pass.

Industrial buyers can be considered "expert consumers," uniquely qualified to assess product quality and desirability (Silva et al. 1994). However, this also means that the choices of these gatekeepers may be influenced by factors similar to those affecting regular consumers, or they might make inferences about what they believe the consumers want based on their own food choice behavior. Thus, the factors influencing the food choices of industrial buyers, including FN, may have a great impact on which new products are introduced in the market.

The overall aim of this study is to increase the understanding of how FN influences the introduction of a new food product, farmed lumpfish, to new markets. Considering the gaps in the literature we want to:

1. Increase the understanding of how FN can influence industrial buyer behavior.
2. Study FN among industrial buyers in fast-growing Asian countries.
3. Explore if a developing country (Vietnam) has higher FN than a developed country (South Korea).

To solve the overall aim product testing and in-depth interviews of industrial buyers in two Asian markets were conducted. The markets were chosen based on several factors; in line with the theory section above, this study focuses on fast-growing countries in Asia, one developed country (Korea) and one developing country (Vietnam). These markets were also chosen based on the results of a pre-study conducted in Tromsø, Norway, where different restaurants tested and evaluated the lumpfish. Local Asian restaurants gave significantly more positive feedback to the fish compared to the local ones. South Korea and Vietnam are in the same region of

Asia and have both historic and current relationships, both culturally and in trade. South Korea is Vietnam's third-largest export market, as well as its largest foreign investor. In 2022, South Korea and Vietnam elevated their relationship to a "comprehensive strategic partnership", increasing their cooperation in the fields of national defense, humanitarian aid, and search and rescue operations. South Korea also exerts a significant cultural influence on Vietnam, which is evident in aspects such as music, TV shows, movies, Korean food products, and fashion trends (Duc and Cang 2018). Finally, the countries were selected based on research contacts in the selected countries. Organizing product testing for a food item in foreign countries can present significant challenges due to various logistical challenges. These obstacles include transportation to the country, cold storage, customs, and distribution to customers within the country. Product testing was considered important as tasting foods is indicated as one of the most efficient means to ensure neophobia reduction in new foods and new food trends (Siddiqui et al. 2022).

FN has been previously studied in South Korea (Choe and Cho 2011). The results indicated that Korean consumers had slightly more FN than people from Western countries. FN was influenced by factors such as the number of foreign countries visited and familiarity with the food. No study of Vietnamese FN or similar behavior was found.

## Research methodology

### *Study procedure*

In relation to a large research project with the main goal of achieving more sustainable after-use of the cleaner fish, lumpfish, a sub-goal was to explore the opportunity for utilizing this fish for human consumption. To succeed in using this for human consumption, we needed to explore the market opportunities for this fish. An explorative approach was chosen, given the complexity of the research question, to increase the understanding of how FN influences the introduction of a new food product, farmed lumpfish, to new markets. We followed the step-by-step research onion of Saunders, Lewis, and Thornhill (2019) and Stuart et al. (2002) five-stage research process defining the research question, developing the instrument, gathering data, analyzing data and disseminating it.

The characteristics of this fish are quite unique in comparison to other consumable fish, both in terms of appearance and texture. Therefore, a pre-study was carried out, which involved chefs from six different restaurants, each representing a different nationality, in our hometown. These chefs were given the opportunity to experiment with this fish and cook it according to their own knowledge and preference. The pilot test

demonstrated that the perceptions of eating this fish were much more favorable in restaurants that served Asian cuisine. Consequently, Asia was identified as the target market for our primary study. Considering the strong research ties to South Korea and Vietnam, along with their distinct cultural and developmental differences, these two nations were selected for in-depth investigation.

### *Instrument development, sample collection and data gathering*

Since this fish was unfamiliar to the participants, it was important that they personally could experiment with the fish and create dishes that they deemed appropriate for their respective cultural cuisines. Further, qualitative interviews were chosen to gain an in-depth understanding of their perceptions of the fish and its potential in their market (Churchill 1992; Eisenhardt 1989). As we could not know the respondents' reactions to this fish, questionnaires with locked down questions did not seem appropriate given our explorative approach. To enter a new market with a new product, one need to get by the industrial buyers. Thus, the industrial buyers in the two selected countries were chosen for as study unit.

In the first study, a market test of farmed lumpfish was conducted in Seoul, South Korea. The farmed lumpfish was sent by airplane to Seoul from Tromsø, Norway. The fish was further distributed to the respondents, who received 10 fish each for testing. In total, seven South Korean industrial buyers participated. The industrial buyers were from different parts of the distribution chain and included two importers, one wholesaler, and four restaurant chefs. They were given the task of evaluating the fish both before and after the preparation of dishes they believed would be appropriate for the fish and suitable for the local cuisine. The product test was followed up with in-depth interviews.

An interview guide was made for the South Korean industrial buyers with several pre-determined open questions to prompt discussion. If the opportunity presented itself, themes or responses were further explored. The respondents were asked questions about their perceptions of new food/products in general and the lumpfish in particular. The fish was assessed through questions relating to the appearance, texture, smell, size, and taste, as well as how the fish was perceived in a finished dish, in addition to its suitability to local cuisine. Because of traveling restrictions during the Covid-19 pandemic, it was not possible for the researchers to conduct face-to-face interviews. The first two interviews were conducted by the researchers via Microsoft Teams with interpretation by a senior advisor working in Innovation Norway (IN) in South Korea. The senior advisor has much experience in assisting in research projects and has worked with us previously and gained insight into the seafood industry.

During the first two interviews, the authors joined the interviews, and all the questions were asked by us in English, translated by the Korean advisor and asked to the respondents; they answered in Korean, and he translated them back to us. By doing this we made sure that the questions were correctly understood, and the rest of the interviews could be conducted by the IN advisor following careful guidance from the researchers and the experience of participating in the first interviews. The interviews were recorded and transcribed and thorough content analysis was done by the authors. Results were inserted in Excel tables to reveal patterns, similarities, and differences. The interviews varied in length depending on the respondents' answers and lasted between 30 and 60 minutes.

In study 2, farmed lumpfish were flown to two cities in Vietnam, Ho Chi Minh and Nha Trang. Ten fish were distributed to six industrial buyers in the two cities. The respondents were from different parts of the distribution chain: two food producers and one restaurant owner in Ho Chi Minh, as well as two restaurant chefs and one food manufacturer in Nha Trang. For the face-to-face interviews with the food producers, several representatives from the companies joined, ranging from staff in the production department and customer relations personnel, as well as the head of research and development, the director, the chief executive officer, and the chairman of the board. They had all participated in tastings of the fish. The respondents were given the same task as in South Korea in terms of making dishes they found suitable for the fish and assessing lumpfish suitability for local cuisine.

### *Data analysis*

The results of study 1, revealed clear indications of FN with reluctance to try out new products/food. These results were used to further develop the interview guide for Vietnam to include a bit more specific questions for exploring the possible FN among the industrial buyers in Vietnam. Examples of such questions include the respondents' willingness to buy new types of food products, their liking for buying products from different countries, and how much they enjoyed trying out new foods. The Pliner and Hobden (1992) FN scale was used as inspiration to develop targeted questions about different issues around FN, e.g., asking questions about the respondents' preferences to try out new food products, enjoy tasting new food, enjoy buying food from different countries. In addition, the same questions posed to the Koreans were asked to evaluate the fish (appearance, smell, texture, taste, suitability to local dishes, etc.).

All the interviews in Vietnam were conducted face-to-face by the authors personally, with translation help from our cooperation partner in the project from Nha Trang University. The Vietnamese researcher speaks

English fluidly and has long experience with research into the seafood industry. During the interviews, we asked the questions that were translated by our Vietnamese partner to the Vietnamese respondents. And their answers were translated back to us, some also knew English well. The Vietnamese research partner had also been involved in the making of the interview guide, making him well-prepared for the interviews.

An assessment of the study's trustworthiness was performed, based on Lincoln and Guba's criteria for evaluating qualitative research (Guba and Lincoln 1994). Table 1 provides an overview of the methods used to gauge the trustworthiness of the study. The left column lists the Guba and Lincoln's criteria for ensuring trustworthiness in qualitative research (credibility, transferability, dependability, and confirmability). The right column provides a short description of how the criteria were met.

All research carried out by Nofima is regulated by the Research Ethics Act and implies that everyone must carry out their professional activities in accordance with the applicable law and recognized research ethics norms, both national, and international. This study followed Nofima's ethical guidelines. Information about the project aim, as well as data storage/handling and publication, was given to the respondents in advance. Written consent to participate was given from all the respondents.

**Table 1.** The trustworthiness of the study and the findings (based on Guba and Lincoln 1994).

| Trustworthiness criteria | Methods in this study |
|---|---|
| *Credibility*: The degree to which the results are a credible account of the social reality. | First, a thorough literature review was conducted. An interview guide was made for the South Korean respondents including questions about the product, test results, and how to introduce new food products into their market. The results of the study in South Korea, which revealed clear indications of FN, were analyzed, and the interview guide for the Vietnamese industrial respondents was a bit modified to include questions more specifically about FN modified from Pliner's scale (1991) to fit an interview situation.<br>*Result*: Credible account of the reality of the introduction of new food to Vietnam and South Korea. |
| *Transferability*: The extent to which findings hold in another context or in the same context at another time. | Extensive descriptions and excerpts from the respondents are offered in the text. The cultural context is specific for these countries, but the results may be relevant and should be considered in other cultures.<br>*Result*: Provide others with a database for making judgments about the possible transferability of findings to another milieu. |
| *Dependability*: The stability or consistency of explanation – whether the findings are unique to time or place. | Use of semi-structured, in-depth interviews, which allow probing, were used. Repeated findings were detected, and records were kept of all phases of the research process. The course of the research and findings were discussed with peers, using an "auditing" approach.<br>*Result*: Dependability assured. |
| *Confirmability*: Interpretations are the results of data and the studied phenomenon, not personal values and researcher biases. | Full transcription of all the recorded interviews allowed interpretation by both authors. Excel was used to systemize results. Repeated findings.<br>*Result*: Confirmability of the interpretation of data. |

## Results

### *South Korea*

The South Korean respondents prepared several different dishes with the lumpfish. Examples included fried, deep-fried, baked, or boiled lumpfish in different sauces. The general evaluations of the farmed lumpfish were negative. The respondents did not like the appearance or taste of the fish, nor the texture, which they perceived as too soft: "Koreans like chewing food, they love chewing texture." Furthermore, the respondents expressed that the fish had too little meat inside, and they perceived the lice-eating history as unpleasant. One of the respondents expressed: "We have much uglier fish in Korea, but this is different from ugly; it is scary." The respondent further explained that if taste and texture are good, it does not matter if the fish is ugly, but it was problematic when the fish was scary. In addition, the respondent said that the size of the lumpfish needed to be larger to provide more meat. One of the respondents noted that the color of the lumpfish was a bit blue, including after preparation, and the "blue color makes you lose your appetite." Another respondent said: "It definitely didn't have a mouthwatering look." No positive comments were given in their evaluations of the fish. Four of the respondents said that the fish could not be sold without filleting, because it was necessary to disguise the appearance of the whole fish. It was further recommended to make a stew or "spread" with the fish or to slice it and dry it for snacks, but the original look of the fish should not be shown to the consumer. One chef was slightly positive about the fish and said that as the local seafood catches were decreasing in Korea, they needed new species. But for this fish some good recipes would need to be developed to make it taste pleasant.

Several of the results gave indications of FN. Many of the respondents mentioned that Koreans, in general, are not fond of new things. One of the respondents said "In China, it seems that things sell anyway. Koreans don't like new items." This respondent had a general impression that Koreans are neophobic. Another respondent believed that Koreans would search on the internet for lumpfish, and when they saw a picture of the fish, they would say, "Nope, no way." Another respondent expressed this reluctance to try out new things in the following way: "Koreans are very conservative people. They don't like unfamiliar things. They don't even consider a thing at all if it is new and not familiar. It is extremely difficult to penetrate the Korean market with a new item." Yet another expressed: "Whoever the first penguin is (referring to the seller), he must put in a tremendous effort. Otherwise, it's almost impossible."

### *Vietnam*

As in Korea, the Vietnamese respondents prepared several different dishes with farmed lumpfish. Examples included dumplings, gyoza, fishcake, sashimi, fillets, hot pot (a traditional Chinese dish commonly used in all Asian countries) and many more. In terms of the evaluation of the fish, the Vietnamese were generally more positive about the lumpfish. They found the lumpfish ugly but expressed that the texture and flavor were adequate. One of the respondents said: "It tastes better than it looks." Two of the respondents said that the lumpfish texture and flavor reminded them a little of sturgeon, a highly valued fish species in Vietnam.

In contrast to study 1, little of the feedback could be related to FN. However, all the industrial respondents in Vietnam expressed that they find enjoyment in tasting new foods. The general response from all the respondents was that they enjoy and "like to taste all types of products." A couple of the respondents also said that in addition to enjoying tasting new foods, this is a necessity for their business. As one of the food manufacturers said: "trying out new foods is the way we survive. We all copy each other, thus looking for new products is our purpose." It was added that their continuous search for new raw materials or products was mainly driven by a cost focus, as they needed to reduce costs to be competitive. This could be achieved by buying cheap raw materials and/or increasing yield. A restaurant chef expressed it as follows: "We always try to find new things to make us different from others." The respondent further explained that finding a type of seafood they could put on the menu and promote as something special and unique was important for them to attract customers. The competition to attract customers was fierce, especially during and after COVID-19 and the war between Russia and Ukraine.

## Discussion and concluding remarks

FN was predominately expressed by South Korean industrial buyers. According to them, Koreans tend to be reluctant to try out new food products, indicating a high level of FN among Korean consumers. The Korean industrial buyers expressed that entering the Korean market with something new is generally very challenging, indicating a general neophobia toward new products. In the context of the new fish species evaluated in this study, South Korean respondents expressed negativity. Their primary concern stemmed from their perception of the sensory attributes of the farmed lumpfish. Specifically, the taste, texture and appearance of the fish were not well-received by Korean industrial buyers. The fish's unconventional appearance may have triggered a neophobic response, impacting their overall taste perception. Alternatively, this negative

sentiment could be attributed to a general dislike of this particular fish. Given that the respondents are the food channel gatekeepers in Korea, the acceptance of lumpfish as a product appears to be unlikely. This is particularly true as these individuals' decision-making process can often be viewed as an effort to reduce perceived risks (Knight, Holdsworth, and Mather 2008)

The Vietnamese industrial respondents seemed to have a totally different attitude to new products and foods. Trying out new products was expressed as something the respondents personally enjoyed. This indicates that the industrial buyers in Vietnam are not food-neophobic, but rather food-neophiliac. Food neophilia is defined as a liking for new food items (Tuncdogan and Ar 2018), and is thus the opposite of FN. Food-neophiliac persons have an actively variety-seeking food personality and are thus important individuals to target when introducing new food products to the market. For Vietnamese industrial buyers, trying out new foods was perceived not only as enjoyable for them but also as a necessity in terms of business. Finding new and different foods was viewed as important, both in terms of reducing costs to be competitive and to attract customers. This could be done by using the new food product in advertising or other marketing activities. This observation indicates that Vietnamese consumers are actively exploring new food products. This trend could be influenced by the growing popularity of foreign food practices, particularly in urban areas. Notably, transnational food giants have set up restaurants and supermarkets in Vietnam, introducing a diverse range of culinary experiences. Additionally, the influence of Eastern food practices, such as BBQ restaurants and instant noodles, has left its mark on Vietnamese cuisine (Hansen 2018). Consequently, the ability to offer intriguing new food items at a reasonable price is crucial for maintaining competitiveness in the Vietnamese market. The Vietnamese general evaluation of lumpfish was positive. The taste and texture were generally perceived as good, although some of the respondents found the taste only "adequate." This result might be attributed to the Vietnamese openness and interest in new foreign food products.

Based on the results of the interviews with industrial buyers in these two markets, it seems like FN is more prevalent in South Korea than in Vietnam. In the literature, FN has been found to decrease with increased income, education, and urbanization (Beltrán, Gómez, and León 2016; Predieri et al. 2020). This is not in accordance with our findings, where the industrial buyers in the more developed country South Korea describe and display a seemingly higher level of FN than the developing country Vietnam (CNBC 2019). South Korean consumers generally have a higher income and education than Vietnamese (according to United Nations income and education statistics).

In relation to the research question of whether industrial buyers' FN influences the evaluation of farmed lumpfish, this seems more prevalent in South Korea, than in Vietnam. However, it is difficult to say whether FN is a personality trait of South Korean industrial buyers or is one that the industrial buyers are aware of and need to consider when evaluating new products. This can be illustrated by the fact that the Korean industrial buyers often spoke very assertively on behalf of the consumers, using expressions like: "the consumers will react to it," "they (the consumers) will not like it," and "the consumers will think that …," without knowing the consumers' true perceptions/reactions. However, past studies have shown that the personal acceptance of food by industrial buyers plays a significant role in shaping their attitudes toward the adoption of new food products (Deng et al. 2019).

The Vietnamese industrial buyers also sometimes speak on behalf of the possible consumers but were generally more positive about what the consumers would think. One of the respondents said that Vietnamese people preferred foreign products, so the fact that this was a foreign product gave it potential. Given that we haven't made a direct comparison of FN between consumers in South Korea and Vietnam, it's not possible to determine if there are genuine differences in FN. The perception of FN by industrial buyers in both countries, whether accurate or not, plays a crucial role as they are the decision-makers when it comes to accepting or rejecting new food products. If lumpfish isn't appealing to these industrial buyers, they won't present it to the consumers, irrespective of their correctness about consumer preferences.

Some of the results might point to a sense of disgust among the respondents. Especially in South Korea, several of the respondents revealed a sense of disgust toward the fish. Some expressed that the appearance of the fish did not make them want to eat it, only look at it in an aquarium. They described the fish as unpleasant, not for eating and not having a mouthwatering look.

## Implications

### *Theoretical implications*

FN and the opposite, food neophilia, are factors that can influence the introduction of new products to the market. However, the level of FN seems to be country-dependent and might be explained by socio-demographic factors like education and income. Contrary to previous research by Rabadán and Bernabéu (2021), this study suggests that a country with a higher level of development, often associated with increased education and income, exhibits a greater prevalence of FN compared to a less developed country. Previously, the correlation of FN with higher

income and education has been explained by the greater exposure to cultural diversity among consumers of higher socio-economic status (Flight, Leppard, and Cox 2003). However, as we do not see this in our study, a possible explanation might be that Vietnamese consumers are exposed to a wider variety of food products than Korean consumers, possibly because of the popularity of foreign food practices. This research contributes to the understanding of industrial purchasers' crucial role as gatekeepers in the food distribution channels, as highlighted by Knight, Holdsworth, and Mather (2008). Previous research has shown that FN significantly influences consumer choices (Giordano et al. 2018), and our findings suggest that FN also impacts the purchasing decisions of industrial buyers.

### *Practical implications*

The lack of research focusing on industrial buyers and their possible FN may have practical implications for businesses aiming to introduce new food products into a new market. Our study results demonstrate that when introducing new food products to a market, potential FN among industrial buyers can hinder the acceptance of the product long before it reaches potential consumers. Thus, an investigation of the potential FN of selected industrial buyers may be beneficial before deciding on a target market for a new food product.

As for the case with this fish species and the possible challenge with the lice-eating history, this has never been explored among the consumers in these markets. The results indicate that in some markets, the industrial buyers decide what kind of information the consumers are exposed to. Thus, when entering new markets with new products, it is of the utmost importance to understand the behavior of industrial buyers as gatekeepers to the market, who may decide both what is being offered to the consumers and what information about the product the consumers are exposed to. Positive results from a consumer study for a product may thus have limited value if the possible influence of the industrial buyer is not understood.

A previous study by Choe and Cho (2011) found that when entering a market with a more neophobic cultural background, marketers may focus on how their nontraditional foods can be made to be more adaptable and familiar to local markets by using well-known food ingredients and familiar spices (Choe and Cho 2011). In this research, we tried to accommodate the cultural cuisine and let the respondents themselves decide how to prepare the fish according to their cultural cuisine. However, this did not seem to help reduce any sense of FN by the Korean industrial respondent. This can be explained by the limited positive attributes and the lice-eating history of this fish species. Taking the cultural differences

and specific cultural cuisines of the target market into account is important, but one must realize that sometimes the product simply does not fit the market preferences.

## Limitations and direction for future research

This study used an explorative approach due to limited research on the industrial buyers' FN and made no claim of representativity. Future studies should explore whether FN is a personality trait of the industrial buyer or if it is something the industrial buyers consider in terms of what food they believe the consumers will not like because of FN. A limitation of this work is the small number of respondents. More cross-cultural research into FN in various societies could be beneficial, especially with larger sample sizes and other industries for cross-industry comparison. Also, only using the perceptions of lumpfish as an indication of FN may be idiosyncratic. On the other hand, using a specific new food to test FN is common in several studies, e.g., seaweed as food in Spain (Losada-Lopez, Dopico, and Faína-Medín 2021) and Italy (Palmieri and Forleo 2020). This evaluation indicates that disgust could be a possible factor that influences how industrial buyers evaluate new products. The role of disgust in industrial buying behavior is something that could be interesting to investigate in the future.

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