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Influence of convenience on healthy food choice: The case of seafood

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Abstract

Although seafood is considered to be a healthy food choice, the recommended consumption level of two servings per week is still not reached in most countries. Previous research has identified potential barriers of seafood consumption, including purchase and consumption convenience, but it is still unclear to what degree consumer choice is affected by convenience relative to known choice drivers such as price, species and region of origin. This study contributes to filling this research gap by analyzing how consumers' in-store choice of ready-packaged aquaculture oysters is driven by convenience factors (opened versus unopened presentation format, packaging format and accompaniments with or without visual serving suggestions) relative to traditionally examined demand factors of price, origin, species, health, environmental and quality claims. A total of 1,718 Australian oyster consumers participated in an online choice experiment with visual product stimuli to simulate their choice of oysters in a retail store. Considering preference heterogeneity respondents' choices were analyzed with a scale adjusted latent class model and six different consumer segments differing in their preferences were identified. Over all respondents price, presentation format and species were the most important choice drivers, while packaging format and claims only had a minor impact on consumer choice. Origin and accompaniments were found to be important for some consumer segments.

These results provide recommendations for policy makers as well as seafood marketers and are in line with the presented literature in that convenience seems to be an important driver which can be manipulated in order to increase seafood consumption. Consumers strongly prefer the 'ready to eat' half shell open oysters over closed oysters, although those are saver and keep fresh longer. Visual serving suggestions and accompaniments in form of easy to prepare flavor sachets were found to positively increase choice likelihood.

Key words: oysters, discrete choice experiment, retail packaging, convenience

JEL: M3, D12, Q13

1 Introduction

Cardiovascular diseases are one of the major health problems in developed countries. Seafood is considered to be a healthy food choice due to the high content of essential fatty acids, which can prevent the onset of cardiovascular diseases (Kow, et al., 2008, Kris-Etherton, et al., 2002, Schmidt, et al., 2000). Across several countries this led to the recommendation to consume at least two servings of seafood per week (Kris-Etherton, et al., 2003, NHMRC, 2003, USDA, 2010). Nevertheless, several studies found evidence that the majority of people still does not reach these dietary guidelines – even in countries with traditionally high fish consumption (Welch, et al., 2002). Hence, it is important for public health to analyze what determines seafood consumption in order to find ways to increase it, i.e. arrive at the recommended level. At the same time producers of aquaculture seafood species such as salmon and oysters aim to better understand consumer preferences to market their products more efficiently (Gempeasaw, et al., 1995, Liu, et al., 2006). Previous studies identified among others perceived inconvenience as substantial barrier to seafood consumption, because consumers believe it is too time consuming to prepare seafood or lack knowledge of seafood preparation and judgment of its freshness (Altintzoglou, et al., 2010, Olsen, et al., 2007, Rortveit and Olsen, 2009).

This study focuses on oysters, which are produced in aquaculture across Australia. Oysters are the eighth most widely consumed seafood species in Australia, with 37% of Australians having consumed oysters in 2010 (Danenberg and Mueller, 2011). Contrary to previous research, mainly carried out investigating consumption habits of rather common fish products, oysters are chosen because they are more likely to be consumed at special occasions and are also more difficult to handle in terms of transportation and preparation compared to seafood like salmon and cod. A number of potential barriers of oyster consumption were previously identified. So far, their distribution in Australia is mainly limited to specialty fish stores, narrowing wider availability; consumers find them hard to open and potential meal usages are seen as limited. This study investigates ways to overcome these barriers.

It thereby addresses two main research questions. First, what is the relative importance of convenience factors, such as presentation format, product packaging, serving suggestions and preparation accompaniments, for consumer choice of oysters relative to traditional economic factors such as price, region of origin, health, quality and environmental claims? Second, to what degree do consumer segments differ regarding the importance of oyster characteristics on choice behavior?

In order to analyze the preferences for oysters at the point of sale we use a discrete choice experiment (DCE) with visual shelf simulation, aiming to mirror consumers' choice of oyster product alternatives in store. The following section provides a literature review and section three discusses the methodological background. In section four results are presented and the final section concludes.

2 Literature Review

2.1 Research questions

The literature review identified a large number of factors that were found to determine the choice of seafood in general and of oysters in particular. While the relative impact of traditional choice factors such as price, food safety and region of origin have been already examined in several studies, the relative importance of various convenience factors is still unknown. Hence, the underlying research questions are:

- 1) To what degree can the choice of oysters as one specific seafood category be increased by convenience factors such as presentation format, product packaging, serving suggestions and preparation accompaniments? Related to this, what is the relative importance of convenience factors relative to traditional economic factors such as price, region of origin, health, quality and environmental claims?

Consumers are generally found to differ in their food preferences (Askegaard and Madsen, 1995, Mueller and Szolnoki, 2010), both in the importance of seafood choice drivers (Birch and Lawley, 2012) and in their demand for convenience (de Boer, et al., 2004). Taking heterogeneity into account allows producers to identify and target consumer segments, which differ in their needs and choice drivers for oyster consumption. This is investigated by a second research question:

- 2) To what degree differ consumer segments regarding the importance of oyster characteristics on choice behavior?

3 Research Methods and Empirical Analysis

4 Results

5 Discussion and Conclusion

This study analyzed determinants of seafood consumption using the example of oysters in Australia. Overall, price was found to be the strongest driver for Australian consumers' oyster choices, with a strong preference for the two lowest price levels. This confirms that economic factors still play an important role in the presence of marketing and convenience factors (Brunsø, et al., 2009, Olsen, 2004, Verbeke, et al., 2005). The presentation format of oysters which is related to convenience of 'ready-to-eat', concerns about food safety and potential injury risks was the second most important attribute, accounting for 26% of choice variance. Concurring with findings by Kow et al. (2008) and Liu et al. (2006) there was a strong preference for pre-opened half-shell oysters, ready to be eaten. The Australian market shows a strong tendency to reject unopened oysters, seeking the convenience of already opened oysters. Our results provide evidence that all consumer segments prefer pre-shucked, easy-open oysters over unopened oysters, even though respondents most likely were unfamiliar as well as unaware of this innovative format, which has not been introduced to Australia yet. If pre-shucked (easy-open) oysters were introduced to the market, concerted marketing campaigns were needed in order to build awareness for the new processing and attached benefits. Today, innovations are unlikely to be successful, without such marketing activities. Furthermore, the appearance of easy-open and unopened oysters is very similar. In order to avoid confusion among shoppers clear and distinct differentiations for example in form of labels are vital at the point of sale (see for example the 'Gold Band' approach currently used in the US).

Species explained 25% of choice variance for opposing preference segments, which either favor Pacific or Sydney Rock Oysters. We cannot exclude that the species names might have been associated with region (Sydney and Pacific), but we could not observe a significant over-representation of eastern Australian states for the preference segment C1 that showed the highest preference for Sydney Rock Oysters. Region of origin per se was the fourth most important choice driver. Australian consumers were found to strongly prefer Australian regions over New Zealand origin. This result concurs with prior findings (FRDC, 2002). Other than expected, we found no general preference for more specific regions of origin (e.g. NSW or Corrie Island). Most likely, sub-regions would have to build up a national reputation of particular quality associations first, in order to gain an advantage and a price premium in the market.

Offering oysters with accompanied flavor sachets and serving suggestions only explained 4% of choice variance, suggesting that adding this ‘ready-to-heat’ accompaniment to oysters would only provide little additional market share. Of both offered flavors the popular Kilpatrick preparation generally received a significantly higher preference than the less known ‘Champagne Sabayon’ preparation, which was generally less preferred than oysters without accompaniments. Although the overall impact was low, we identified one consumer segment (C5) for which accompaniments were the second most important choice driver. For the majority of segments, providing a visual serving suggestion resulted in a higher utility than only adding a blank flavor sachet and would therefore be recommended to be used as a means to attractively present oysters with accompaniments

Although packaging format only explained 2% of variance, consumers clearly preferred the more traditional black PET packaging, usually used by seafood specialty stores to prevent oysters from tilting or slipping. There was only a small disutility for the glad-wrapped packaging, particularly suitable for large-scale offering in supermarket shelves. This suggests that this would be a viable option to increase the wider distribution of oysters through retail chains, particularly if it was offered at a small price discount.

The fact that seafood products are generally considered to be a healthy option might explain why the health claim influenced the purchase decision only marginally. An environmental ‘carbon zero’ claim had an even smaller positive influence on consumer choice and was even less preferred than no claim by the most price sensitive segment C6. Carbon zero claims currently have a low market penetration in Australia and generally suffer from distrust (Dhanda and Hartman, 2011, Mueller Loose and Remaud, 2012). A quality award in form of a food show medal had the lowest impact on oyster choice and there was no sizable segment, which preferred it above average. This is likely due to the lack of familiar context of consumers seeing oysters sold with such Gold Medals from tasting events, where such events are relatively rare. While Gold Medals are a strong driver of consumer preference for wine, this was not transferable to the situation of oysters. Results suggest to display such medals, where they are available. However, the investment of resources needed in the attempt to win such gold medals needs to be well reasoned and our results point towards the opinion that they are rather unjustified.

Overall, the findings confirmed that convenience is an important factor for seafood choice, where presentation format, packaging format and accompaniments with serving suggestions jointly explained 31.7% of choice variance. Also, this study identified some scope for product differentiation. First of all, consumers differed in their price sensitivity and

preferred oyster species. Two segments, did react stronger than average on accompaniments with serving suggestions (segments C5 and C1, comprising 36% of all consumes). Similarly, 14% of respondents (segment C2) showed some preference for health claims. There was strong agreement in Australian consumers' preferences for domestic origins, open half-shell oysters and black pre-molded PET packaging trays.

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