A Study on Consumers’ Perceptions, Acceptance, and Willingness to Pay (WTP) for Cell-Based Seafood Products

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MOTIVATIONS

With the growing human population, consumer demand for seafood is increasing while the current production rate of capture fisheries and aquaculture cannot keep up\(^\text{5}\). Soon, there will be a substantial gap between the supply and demand of seafood\(^\text{6}\).

Cell-based seafood, the production of seafood from cells such as muscle and fat cells using cell culture techniques, has been proposed as a novel approach to complement the conventional seafood industry\(^\text{7}\).

Customers have the greatest influence on the marketability and success of cell-based seafood. However, there are multiple studies on consumer perceptions of cell-based meat but not seafood.

-39\% of marine species in the past 40 years\(^\text{8}\).
30\% of the world’s fish stocks are overfished\(^\text{9}\).
60\% of the world’s fish stocks are fully fished\(^\text{10}\).
10\% of the world’s fish stocks are underfished\(^\text{11}\).

ECONOMIC CONSUMPTION

WILLINGNESS TO PAY (WTP) FOR CELL-BASED SEAFOOD PRODUCTS

OBJECTIVES

- To understand the influence of personal and family’s seafood consumption patterns, socioeconomic status, and demographic factors on their cell-based seafood attitude.
- To identify the factors affecting cell-based seafood consumption, which are cost, taste, environmental impact, health benefit, and accessibility.
- To explore consumers’ willingness to pay for cell-based seafood.
- To investigate the potential of cell-based seafood as an alternative product in the market and restaurants.

SURVEY DESIGN

Platform: Qualtrics
Participants: 1,500 U.S. residents, ages 18 to 65
There are 5 sections in this survey:

a. Consumers’ dietary background, personal and family’s seafood consumption patterns
b. Education materials to help consumers understand cell-based seafood production
c. Presenting a hypothetical scenario in which both conventional and cell-based fish fillet have similar nutritional and sensory attributes to understand consumers’ motivations on choosing cell-based seafood
d. Consumers’ WTP for cell-based seafood compared to conventional seafood
e. Consumers’ demographic

RESEARCH DIRECTIONS

- Study the effect of vitamin D concentration on its bioavailability and sensory attributes in tilapia fillets.
- Investigate the efficacy of nano-encapsulated vitamin D and its bioavailability in the tilapia diet.
- Research the ideal culturing conditions and methods for growing tilapia cell lines.
- Explore the use of 3D printing techniques to fabricate scaffolds that provide structural support for cells.

TIMELINE

- Nov 21: Received FSI Research Grant
- Mar 22: Finalize Survey With Focus Group
- Mar 22: Obtain IRB’s Approval
- May 22: Open Survey To Public
- Aug 22: Analyze Data And Prepare Manuscript

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REFERENCES