Measuring Willingness to Accept for GM Food by Characteristics

Tae-Kyun Kim, Hyun-Ji Lee, Na-Kyoung Hong

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Author Affiliations and Contact Information:

Tae-Kyun Kim
Dept. of Agricultural Economics
Kyungpook National University
Daegu, Korea
tkkim@knu.ac.kr

Hyun-Ji Lee
Daegu-Gyeongbuk
Development Institution
Daegu, Korea
ssomezz@dgi.re.kr

Na-Kyoung Hong
Dept. of Agricultural Economics
Kyungpook National University
Daegu, Korea
invinciblenk@naver.com

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I. Introduction

- Rapid increase in the area and market size of genetically modified (GM) agricultural products.
- The cultivation area of stacked GM crops, which consists of two or three composed characters, is increasing rapidly.
- The rapid growth of GM food market reveals that even many consumers who do not accept GM food are accepting GM food due to other characteristic advantages.
- The study of consumer preference of GM food by technical characteristics is imperative in that provides the economic rationale to develop GM food.

II. Objectives

Questions to Address

- How strong is consumer willingness to accept GM foods of different characteristics?
- How does the hypothetic bias develop in a choice experiment?

Purpose of Research

- Literature and previous studies have acknowledged that GM foods can be categorised into:
  - Estimation of GM food value with different characteristics.
  - A study on the hypothesis bias in GM choice experiments.
- To differentiate the three GM food values with different characteristics.
- To investigate the existence of hypothetic bias in GM choice experiments.
- To verify the differences of WTA between real situations and hypothetical situations.

III. Methods

Conduct choice experiment under real situation and hypothetical situation.

- All conditions are same except actual payment situation.

Experiment Item: Rice (1 kg)

- Moderate resistance DMG, heavily resistant DMG, non-resistant DMG.
- All characteristics such as weight, color, freshness, and packaging are identical.
- To perform a choice experiment more naturally, there are no payments or information about the choice experiment except the option that was indicated.
- To improve the validity of the product, a new container was attached to the product.

IV. Results & Discussions

Setting the experimental conditions for hypothetical value evaluation

- Hypothetic bias
- Setting the parameters of the hypothetical situation for the experiment.

The WTA values for GM food of different characteristics are

Multinomial Logit Model

- The WTA values for GM food of different characteristics are estimated.
- The choice experiment was done using the non-parametric Wilcoxon test.

V. Conclusions

- Most consumers did not give a positive attitude toward heavily-enhanced DMG (golden rice).
- The analysis result of consumer willingness to accept DMG for GM food of different characteristics was conducted.
- The hypothetical bias was caused by the consumers' perception of the experimental conditions, which affected their choices.
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