FOOD CHOICE & SAFETY CERTIFICATION: A MIXED LOGIT INVESTIGATION OF THE SYSTEMATIC, DISTRIBUTIONAL & DIFFERENTIAL INFLUENCES OF INFORMATION PROVISION

Ali Chalal1 and Mohamad Abiad2

1 Department of Agricultural Sciences, Faculty of Agricultural and Food Sciences, American University of Beirut, P.O. Box 11-0236, Riad El Solh, Beirut 1107-2020, Lebanon
2Department of Nutrition and Food Science, Faculty of Agricultural and Food Sciences, American University of Beirut, P.O. Box 11-0236, Riad El Solh, Beirut 1107-2020, Lebanon

BACKGROUND

Food choice behavior is affected by a variety of stimuli and attributes, making food choice a complex process. More importance is usually given to factors that have little or no relevance while ignoring those that in reality pose a substantial threat to safety.

Though consumers value safer food, most are unaware of proper practices to avoid foodborne illnesses. Millions of people around the globe are hospitalized and even die every year from foodborne diseases and illnesses caused by the consumption of contaminated food. The limited public authority or ministerial oversight over food handling practices and hygiene in some countries in the MENA Region exacerbates the issue.

Consumer preferences for healthy food products can influence over food handling practices and hygiene in food. The limited public authority or ministerial process be it in the form of awareness campaigns, advertising or labeling, in order to maximize consumer surplus extraction. An in-depth understanding of the potential influences of information provision on consumers’ food purchasing decisions becomes of paramount importance.

The stated preference and nonmarket valuation literature is replete with studies examining the impact of varying degrees of information provision on preferences and willingness-to-pay. However, literature on food safety has rarely addressed the influence of food safety information provision on consumers’ food purchasing decisions.

Existing literature focused on the effects of information provision on preference means; that is, on systematic shifts in average preferences upon exposure to information.

However, to the best of our knowledge, there is virtually no investigation of the determinants of differential responses to such information, and much less on its impacts on safety and non-safety attribute variances where mixed logit analysis is employed to recover preference heterogeneity.

OBJECTIVES

1. Examine determinants of preferences and purchasing behavior governing food safety certification among Shawarma consumers in Beirut, Lebanon, using a choice experiment.

2. Explore the systematic shifts in average preferences for food safety certification upon exposure to information about safety certification schemes.

3. Explore the differential and distributional impact on individual attributes’ variances.

METHODOLOGY

A choice experiment was designed to study the influence of quality management and safety certification on consumers’ choice of shawarma sandwiches.

In the survey, respondents were presented with meal or portion attributes and a price attribute and were asked to choose their most preferred product from a set of options differing in terms of their attribute levels as described in choice cards or sets presented to them.

Repeated choices by consumers from a set number of choice cards revealed the trade-offs customers are willing to make between the attributes. Preference parameters of the various attributes were then estimated.

Two identical versions of the survey were developed except for the fact that in the second section of Version 2, the choice exercise was made to include, in addition to an explanation of how the choice exercise worked, an extra narrative briefly describing each type of certification that Version 1 did not.

In order to capture the variance heterogeneity effect, the Heteroscedastic Mixed Logit model was used as it accounts for the effect of information on both heterogeneity and means of certification schemes and prices.

RESULTS

5 sequentially nested choice models were estimated which allowed us to conduct likelihood ratio specification tests of adjacent models.

Minimum Akaikie (AIC) and minimum Bayesian information criteria (BIC) were used to assess model specifications.

Price was treated as continuous while dummy variables for remaining attributes were created, leaving out “round the corner”, “taste” and “typical small-sized sandwich” as reference levels for the location/convenience, certification and portion size attributes, respectively.

The best Model was the Hierarchical Bayes Mixed Logit model with interaction terms and correlation (model 5) as it accounts for:

1. Price and attributes preferences
2. Mean effects of information on food safety certification preferences
3. Heterogeneity of attributes and interaction terms
4. Correlation across price, attributes and interaction terms

REFERENCES


ACKNOWLEDGEMENTS

This study was funded by the University Research Board (URB) at the American University of Beirut. The authors thank Statistics Lebanon for their appreciated assistance in data collection, Dr. Lilian Ghandour for her valuable insight and feedback and Ms. Alexandra Irani for her help in preparing the poster.

FURTHER INFORMATION

Please contact ac22@aub.edu.lb for more information.