Consumers' Valuation for Reduced Salt Labeling: A Non-hypothetical Choice Experiment

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Introduction

In recent years, due to the correlation between high dietary salt intakes and heart-related chronic diseases, the reduction of salt intakes has become one of the most important issues in the public health arena.

WHO supported the launching of a public awareness campaign as well as food labeling and reformulation regulations to reduce salt intakes.

However, although food labeling regulations for salt have been encouraged, they still remain voluntary in many countries, including South Korea.

Objectives

This study is to examine consumer's willingness to pay for "reduced salt" labeling in canned ham.

Another objective is to explore the possible sources of heterogeneity in consumers' preferences and willingness to pay.

- examine how consumer choice or valuation is influenced by the presence of "reduced salt" labeling in a food product and
- verify if consumer valuation for "reduced salt" labeling varies depending on consumer risk preference structure

Methods

Step One

This study utilized a non-hypothetical choice experiment to examine consumers' valuation for 'Reduced Salt' labeling in canned ham, a popular product in Korea.

Step Two

Specified and estimated different specifications of a random parameter logit (RPL) model.

Experimental design

- A random sample of 300 consumers was obtained from four supermarkets located in Seoul, South Korea.
- In designing our CE study, we described the canned ham product using price, brand, 'Reduced Salt' labeling, and country of origin as attributes.
- We informed respondents the binding choice set (i.e., the set with the two actual products available) after they finished responding to the whole choice experiment. The respondent paid the corresponding price of the alternative they chose in the binding choice set.

Example of Choice Set

	Option 1	Option 2	Option 3
Set 1	Lospam	Mok-u-chon	no buy
	With Reduced Salt Labeling	Without Reduced Salt Labeling	
	Used Imported Pork	Used 100% Domestic Pork	
	3,300 KRW (340g/can)	3,000 KRW (340g/can)	
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Results

- The range of price discount needed by consumers to switch from 'Reduced Salt' canned ham to standard canned ham is 274 KRW ($0.24) to 313 KRW ($0.28) per can, which is approximately 7.8 ~ 8.9% of the average price of a canned ham.
- Consumers prefer the canned ham using domestic pork to the canned ham using imported pork. More risk averse consumers are more likely to choose the canned ham using domestic pork

Marginal WTP Estimates from Model 4	Baseline Income Group		High Income Group	
Attributes	Coefficients	S.E.	Coefficients	S.E.
Spam Brand	593	85.96	677	98.69
Richam Brand	632	79.80	722	93.51
Moku Brand	292	86.65	333	98.57
Reduced Salt	274	36.58	313	3.65
Domestic -Pork	557	74.21	636	88.11
Domestic Pork * High Risk	831	87.45	947	105.75

Results

Estimates of RPL models		Model 1	Model 2	Model3	Model4
Parameters					
No-buy		5.12 (12.06)[1]	-5.94 (12.32)	-6.03 (12.35)	-6.04 (12.48)
Price		-0.001 (7.36)	-0.001(7.32)	0.001 (7.61)	-0.001 (7.68)
γ^{HI}		-	-	0.0001 (1.91)	0.0001 (1.74)
Spam					
	Mean	0.31 (3.57)	0.32 (3.39)	0.32 (3.37)	0.30 (3.33)
	St.dev	0.96 (8.44)	1.00 (8.37)	1.01 (8.11)	0.99 (8.51)
Richam					
	Mean	0.30 (4.01)	0.30 (3.94)	0.30 (3.95)	0.32 (4.19)
	St.dev	0.60 (6.36)	0.63 (6.53)	0.64 (6.63)	0.64 (6.54)
Moku					
	Mean	-0.16 (1.84)	-0.15 (1.58)	-0.15 (1.63)	-0.15 (1.63)
	St.dev	0.88 (8.90)	0.93 (9.47)	0.94 (9.49)	0.90 (8.98)
Reduced Salt					
	Mean	0.14 (4.24)	0.15 (4.20)	0.15 (4.18)	0.14 (4.02)
	St.dev	0.17 (1.87)	0.17 (2.61)	0.18 (2.61)	0.20 (3.20)
Domestic Pork					
	Mean	0.33 (6.76)	0.33 (6.65)	0.35 (6.92)	0.28 (4.66)
	St.dev	0.44 (5.10)	0.45 (5.77)	0.45(5.87)	0.44 (5.46)
Interaction Term					
Domestic-Pork*High-Risk					0.14 (1.79)
St. Dev. of Err. Comp.		-	1.35 (4.52)	1.33(5.52)	1.38 (4.78)
Summary Statistics					
N (number of obs.)		2400	2400	2400	2400
LL (log likelihood)		1908.09	1880.66	1878.05	1876.71
AIC/N		1.608	1.591	1.589	1.589
AIC3/N		1.618	1.602	1.601	1.601
Parameters		22	28	29	30

Conclusion

- Although food products with high salt content are not currently subject to the sodium content labeling in South Korea, food processing companies could have an incentive to develop low salt content products and voluntarily label them as "reduced salt".
- The Korean government could also have an incentive to broaden reduced salt labeling by including more food products in the regulations given the positive valuation of consumers for reduced salt labeling and potential public health benefits.