

A comparison of convenience food consumption among different income levels in South Korea

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Abstract The interest in convenience food has increased over the years. Many researchers have tried to discover what factors affect the consumption of convenience food. Despite the diversity of studies, few studies emphasize a household's income. The aim of this article is to identify the different consumption patterns between upper, middle, and lower income brackets. Generally, households with higher income consumed more convenience food or the relationship was not significant. However, many convenience foods are regarded as nutritionally unbalanced and have a lower quality. So, the hypothesis cannot be easily confirmed because there are tradeoffs not only between health, as nutrition balance and cost, but also health and convenience. Thus, there is a need to indicate the divergent attributes of buying convenience food in a distinct income group. In addition, the convenience food is subdivided into two distinct categories: convenience food as a substitution for a whole meal (unhealthy) and substitution as part of a diet (healthy). We found that higher income groups purchase healthier convenience food while lower income groups purchase unhealthier convenience food. Also there are distinct attributes that influence the consumption of healthy and unhealthy convenience food.

Key words: convenience food, income level, healthy convenience food

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Introduction

The interest in convenience food has increased in recent years (Jang, Kim, & Yang, 2011). The size of the convenience food market in South Korea reached over 1.6 billion dollars in 2016, which is approximately 17% higher than 2015 (Global Economic, 2016). Given the growing economic importance of convenience food, previous studies have discovered many factors such as socio-demographics (Park & Capps, 1997; Sharon & Fox, 1983), wife's working status (Reilly, 1982; Schaninger & Allen, 1981; Strober & Weinberg, 1980) convenience orientation (Candel, 2001), health concern (Brunner, van der Horst, & Siegrist, 2010; Geeroms, Verbeke, & Van Kenhove, 2008; Nina Veflen Olsen, Menichelli, Sørheim, & Næs, 2012) and personal attitudes (Bottonaki & Mattas, 2010; N. V. Olsen, Sijtsema, & Hall, 2010) that affect the purchase of convenience food consumption.

While there is a rich body of literature on convenience food, research thoroughly concerning income level is scant. Convenience food is relatively expensive because it contains extra cost for the convenience. However, it cannot be concluded that people with higher income purchase more convenience food as some studies fail to reveal a significant linear relationship between convenience food consumption and income (Park & Capps, 1997; Brunner, van der Horst, & Siegrist, 2010). In addition, there is lack of studies comparing healthy and unhealthy convenience food. So, in this article, we will distinguish between healthy and unhealthy convenience food and income level in order to identify different consumption patterns of convenience food.

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Literature review

Definition and properties of convenience food

Convenience food is defined as “any fully or partially prepared foods in which significant preparation time, culinary skills, or energy inputs have been transferred from the home kitchen to the food processor or distribution” (Traub, 1983). Generally, households with higher income consume more convenience food because, as mentioned earlier, the extra cost for the convenience is relatively expensive (Schaninger & Allen, 1981; Shiptsova, 2007; Turrell & Giskes, 2008).

However, this hypothesis cannot be easily confirmed because there are tradeoffs not only between a nutritional balance (health) and cost, but also health and convenience (Blaylock, Smallwood, Kassel, Variyam, & Aldrich, 1999). Convenience food is positively and negatively related to convenience and health. According to Sharon and Fox (1983), affluent households pursue convenience as time and labor substitutes. Also, higher income people consume more takeaway foods and ready meals (Harris & Shiptsova, 2007; Turrell & Giskes, 2008). On the other hand, Kanzler, Manschein, Lammer, and Wagner (2015) revealed that many convenience foods are nutritionally unbalanced and are of a lower quality. One study suggests that richer consumers have a lower level of concern with convenience and are more likely to use organic goods, which means they are more concerned about health than convenience.

Distinguishing healthy convenience food

The typical Korean diet consists of rice, soup and side dishes (Lee, Popkin, & Kim, 2002). Generally, a variety of dishes during meals are healthier and have a higher nutritional balance (Song & Joung, 2012). There are various definitions of healthy eating: eating low fat, eating natural/unprocessed foods, balanced eating, eating to prevent disease, maintaining nutrient balance, eating to manage an existing disease and eating to control weight (Bandura, 2004). However, because many studies are chiefly concerned with nutrition and health (Dixey, 1998), health will be regarded as nutrition balance in this article.

According to the Organization for Economic Co-operation and Development (OECD)’s standard definition of the middle class, people can be divided into three distinct income groups: upper, middle, and lower classes. Previous studies shows that the relationship between convenience food consumption and income is limited and contradictory.

Thus, it is necessary to indicate divergent attributes of buying convenience food in a distinct income group. In addition, the convenience food is subdivided into two distinct categories: convenience food as a substitution for a whole meal and substitution as part of a diet. The former subset of convenience food refers to unhealthy food and the latter healthy food. In this way, we will be able to compare the pattern between income levels and different subsets of convenience food.

Determinants of the purchase of convenience food

Socio-demographic factors have been used as explanatory variables in many articles. Age is the strongest predictor of convenience food consumption (Strober & Weinberg; Schaninger & Allen, 1981; Reilly, 1982; Nickols & Fox, 1983; Park & Capps, 1997; Harris & Shiptsova, 2007; Brunner, Horst & Siegrist, 2010; Candel, 2011; Olsen et al., 2012). Park and Capps (1997) discovered that households headed by younger, more educated, and time constrained managers were more likely to buy prepared meals. Brunner, Horst and Siegrist (2010) divided convenience food into four categories. Age was the only socio-demographic factor that influenced all of them, having a negative effect.

When it comes to the working status of wives, Douglas (1976) found that canned food, frozen food, and instant dessert consumption, which can be considered as a convenience food, do not have a significant relationship with wives’ working status. However, Darian (1992) disproved existing studies showing no relationship between convenience food purchases and wives’ working status; working wives consume more convenience food, especially those with a higher income. In addition, family with children or with more children eat more ready meals (Jae et al., 2000; Harris & Shiptsova, 2007).

Some additional independent variables were added in order to compare the difference between the income groups: health, safety, freshness, price, taste, and pleasure. The variables are chosen from the food choice motive analysis framework (Geeroms et al., 2008; Steptoe, Pollard, & Wardle, 1995).

Methodology

Data

The data have been collected through the ‘food consumption trend project’ of the Rural Development Administration. Panels were asked to submit their grocery

Table 1 Summary of the panel data

	low income	middle income	high income
total number of panels	110	335	114
Age	44.55	42.18	43.77
number of family members	3.30	3.68	3.83
number of children	1.46	1.61	1.78
number of housewives	55	177	54
Health	5.77	5.83	6.03
safety	5.74	5.85	6.05
freshness	6.01	6.06	6.40
price	5.55	5.54	5.54
taste	5.95	5.94	6.20
pleasure	4.86	4.78	5.04
amount of total food consumption (KRW)	26076313.07	29986210.83	34813243.81
amount of convenience food consumption (KRW)	1110651.27	1315387.92	1483497.29
ratio of convenience food	4.46%	4.50%	4.32%

shopping receipts once per month. Since October 2009, 703 panels have been participating. Table 1 shows the summary of the panel data. However, because of the missing demographic data and survey, only 559 data were used.

The socio-demographic factors and other choice motive variables were collected through the survey. The survey was conducted in written form in August 2014. The motive questions were modified according to Korean circumstances and were rated on a scale of 7, from strongly agree to strongly disagree.

Description of the variables

The dependent variable was the ratio of convenience food consumption, which was to control the effect of income on the increase in consumption. The convenience food items were selected based on existing studies (Costa et al., 2001; Brunner et al., 2010). Independent variables consist of socio-demographic factors and food purchase

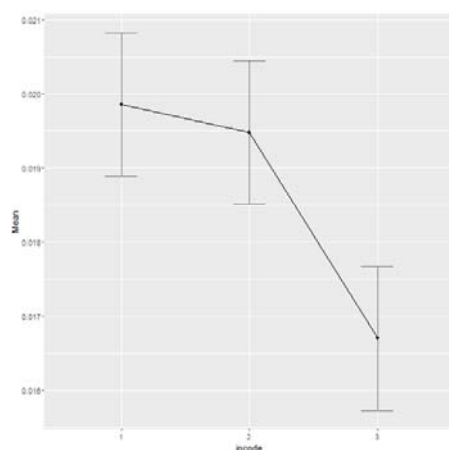
motive.

Modeling methods

The study uses analysis of variance (ANOVA) and multiple regression analysis. ANOVA is used to analyze whether there is a difference in the convenience of healthy and unhealthy food consumption between income classes. Then, multiple regression analysis was used to test the attributes of each group and what affects the consumption of healthy and unhealthy food.

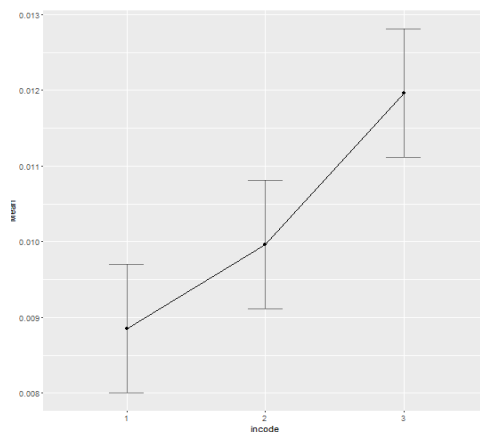
Results

The results of the ANOVA, see Figure 1 and 2, show that the lower income group is the highest consumer of convenience food as a substitution for a whole meal ($p < 0.05$). Also, the upper income group consumes convenience food as a substitution for a diet ($p < 0.05$). These

Figure 1 Mean graph of substitution of whole meal with income level (unhealthy food)

Result of ANOVA			
Effect	F	p	ges
income	4.22	0.015*	0.015
Levene's Test for Homogeneity of Variance			
SSn	SSd	F	p
7.27e-05	0.022	0.915	0.401

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Figure 2 Mean graph of substitution of part of a diet with income level (healthy food)

Result of ANOVA			
Effect	F	p	ges
income	4.13	0.0165*	0.0147

Levene's Test for Homogeneity of Variance			
SSn	SSd	F	p
0.00017	0.0267	1.789	0.168

*** p<0.001, ** p<0.01, * p<0.05

findings provide evidence of a significant linear relationship between income and convenience food purchases, which some previous studies had failed to show. The results of the ANOVA are consistent with the prevalent South Korean perception of foods.

The results of the multiple regression are shown in Table 2 and 3. Table 2 suggests the factors influencing the consumption of convenience food as a substitution of the whole meal, which is unhealthier. Those who earn lower income buy unhealthier convenience food when they are younger and ($p<0.05$) are more likely to consider economic issues when purchasing food ($p<0.05$). The high income group consumes unhealthier convenience food, at a younger age and is less likely to consider food safety. The middle income class purchases more convenience food as a

substitution for a whole meal when they have more children ($p<0.001$) and consider health less ($p<0.05$).

On the other hand, when it comes to convenience food as a substitution for part of diet, the lower income group purchases more if older ($p<0.05$) and considers taste more ($p<0.01$). Those who have a high income ($p<0.05$) and enjoy meal preparation less ($p<0.05$) buy more convenience food. None of the factors were significant for the middle income group except age ($p<0.05$).

Table 2 result of multiple regression of substitution of the whole meal with income level (unhealthy food)

	Upper income			Middle income			Lower income		
	Estimate	Pr(> t)		Estimate	Pr(> t)		Estimate	Pr(> t)	
(Intercept)	5.77E-02	3.13e-07	***	1.71E-02	0.000907	***	0.01314	0.2016	
age	-3.65E-04	0.00208	**	-1.38E-04	0.052455	.	-0.00034	0.00697	**
Housewife	-1.42E-03	0.39354		-5.51E-04	0.579565		-0.00068	0.72221	
Number of children	1.03E-03	0.312		2.46E-03	0.000471	***	0.001086	0.34851	
Health	1.83E-04	0.87997		-1.69E-03	0.035051	*	0.00044	0.73039	
safety	-2.93E-03	0.02707	*	1.54E-03	0.070062	.	-0.00186	0.18256	
freshness	-7.69E-05	0.95747		-2.67E-04	0.727095		-3E-05	0.98404	
price	2.73E-04	0.76099		8.74E-04	0.110319		0.002989	0.00775	**
taste	-1.47E-03	0.26587		6.14E-05	0.926973		0.001553	0.31987	
pleasure	-5.80E-07	0.99927		4.99E-04	0.234231		0.000885	0.25987	
R-square (adjusted)	0.2393 (0.1734)			0.1146 (0.09007)			0.2354 (0.1665)		

*** p<0.001, ** p<0.01, * p<0.05

Table 3 Results of multiple regression of substitution of part of a diet with income level

	Upper income		Middle income		Lower income		
	Estimate	Pr(> t)	Estimate	Pr(> t)	Estimate	Pr(> t)	
(Intercept)	0.004593	0.705	2.63E-03	0.5838	-3.30E-03	0.56775	
age	0.0002	0.134	1.32E-04	0.0480	* 1.75E-04	0.01222	*
Housewife	-0.00238	0.212	-1.16E-03	0.2156	-1.51E-03	0.16103	
Number of children	-0.00182	0.118	1.39E-06	0.9983	1.01E-03	0.12315	
Health	0.001868	0.18	-1.13E-03	0.1326	-1.26E-03	0.08152	.
Safety	-0.00032	0.831	1.32E-03	0.0992	. 4.73E-04	0.54549	
freshness	0.002029	0.221	-5.11E-04	0.4762	-1.62E-03	0.0614	.
price	0.000275	0.789	-8.97E-04	0.0809	. 1.42E-04	0.81931	
taste	-0.00198	0.19	8.81E-04	0.1615	2.38E-03	0.00783	**
pleasure	-0.00188	0.011	* 7.23E-04	0.0665	. 4.71E-04	0.28661	
R-square (adjusted)	0.1514 (0.07796)		0.05493 (0.02876)		0.1754 (0.112)		

*** p<0.001, ** p<0.01, * p<0.05

Discussion and Conclusion

This article helps verify the previously ambiguous relationship between income and convenience food consumption. We saw that with different income groups there are distinct factors that exert influence on consumption. Each factor is significant for each different circumstance about income and type of convenience food, except nonworking status and concerns about the freshness of food. Empirically, the results provide insight into what characteristics are important for marketing/positioning convenience food products or segmenting consumers of convenience foods.

One interesting point is that the impact of age on the consumption of healthy convenience food was opposite to the consumption of unhealthy convenience food. Younger people buy more convenience food as a substitution for a whole meal, which is healthier, while older people buy more convenience food as a substitution for a diet. This can be explained by the research by Johansson, Thelle, Solvoll, Bjørneboe, and Dreven (1999) which includes age was positively associated with healthy dietary habits.

The limitation of the study is the lack of data on people living alone. An additional study will be conducted with more data with one-person households. Also a future study should investigate the reasons for the insignificant relationship status of working and freshness with consumption.

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