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경영학석사 학위논문

# Identifying the Variables that Affect Customers' Choice of Free Sample Brands

고객의 무료 샘플 브랜드 선택에  
영향을 미치는 변수 식별

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# Identifying the Variables that Affect Customers' Choice of Free Sample Brands

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# Abstract

Numerous companies employ free sample promotion strategies to increase sales through risen customer experiences. Prior researches mainly focused on investigating the psychological mechanism of free sample promotion: risk aversion, experience effect, reciprocity. Nowadays, companies are introducing new types of free sample promotion strategies which allow customers' autonomy when they are selecting sampled products. Therefore, identifying the variables that may affect customers' choice of free sample would be new and meaningful to the field.

Based on Korean leading cosmetic company's free sample promotion result data, current research builds a random utility model for individual customer. Then the research conducts multinomial logit to explore significant variables that may explain customers' choice considering the brand level. For the results, customers preferred to choose the brand that the original price is higher due to price-quality inference. Also, customers presented inertia behavior rather than variety-seeking that past purchase amount and frequency for a specific brand played a significant role in selecting the free sample.

In terms of heterogeneity, deal-prone customers showed higher sensitivity for price compared to those who were relatively insensitive to discount. Customers who have experienced various brands before participating the free sample promotion did not show

preferences for a specific brand compared to customers who were loyal to a certain brand.

**Keywords** : free sample promotion, price–quality inference, risk–aversion, deal–proneness, variety–seeking

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# Chapter 1. Introduction

“The best things in life are free. The second–best are very expensive.” As world–renowned fashion designer Coco Chanel emphasized, the concept of ‘free’ has always been considered to be attractive by individual customer who struggles between demand and affordable price. Companies have devised free sample promotion without imposing price in order to induce customer experience for the brand and achieve sales growth (Forrester, 2021). Experiential sample products for trial include food or beverages offered in marketplaces (Nowlis and Shiv, 2005), testers at wine festivals (Lynch and Ariely, 2000), and miniatures for perfumes (Shapiro and Spence, 2002). Correspondingly, 72% of survey participants responded that free cosmetic product samples supported building for brand loyalty (Statista, 2022). Therefore, it is obvious that free sample promotion benefits both the company and the customers.

Due to the rapid growth of e–commerce market and shopping cost reduction, companies are implementing various strategies regarding free sample promotion (Statista, 2022). Classic tactic of offering free samples focused on giving out miniature version of full–size products to in–store customers. For instance, Costco Wholesale reported that in–store sample stations increased beer product sales by 71% (The Atlantic, 2014). Providing bundle of sample products selected by the company based on customer subscription is another



method of promotion strategy. Cosmetic brand Glossybox sends sample of beauty products to monthly subscribers.

Not only consumer packaged goods are the subject of free sample promotion. As for digital goods, companies allow customers free usage of services for a limited time before making decision whether to pay for the usage extension. Over-the-top (OTT) services such as Amazon Prime or Netflix recruit potential customers by managing free usage period. Direction of the paradigm shift is straightforward. Companies are gradually expanding customer autonomy in the domain of free sample promotion. Cosmetic brand Ipsy provides personalized free sample kit based on individual-customized beauty quiz. Some companies even allow customers to manually choose samples by themselves out of numerous product options, which is the case for this research. As companies employ free sample promotion that guarantees individual customer's choice, it would be meaningful to identify the underlying mechanism and variables that affect selection along with the following research questions.

(1) Will customers choose sampled brands which the original product price is higher?

(2) Will customers pursue variety-seeking or inertia behavior regarding choice of sampled brands?

(3) Will there be any heterogeneity that may segment individual specific inclination?

To investigate the presented research questions, free sample

promotion result data from Korean leading cosmetic company will be used. Unique property of the promotion is that the company allowed customers to manually choose specific samples. Utilizing the data, this research will develop a random utility model containing variables that may aid better understanding of customer behavior choosing product samples by considering the brand level.

Since the free sample promotion strategy that maximizes customer autonomy is relatively new to the field, few relevant researches examining customer characteristics regarding choice exist. Therefore, exploring the underlying mechanism about the novel trend may provide academic contribution. Moreover, companies conduct free sample promotion without certainty that customers will definitely purchase the actual product near in the future. Even so, companies invest in manufacturing and distributing various options of product samples which generate cost. If this research can identify specific patterns of customers choosing free samples, marketing managers may utilize the insight and implement optimized promotion which is expected to be a managerial contribution.

## Chapter 2. Literature Review

McGuinness et al. (1995) defined free sample promotion as a marketing strategy utilized by managers to induce customer trial. Such technique involves providing miniature – sized quantity item with

no obligation and little risk. This promotion tool may induce both immediate and delayed use of the sampled product (Amor and Guilbert, 2009). Research stream investigating free sample promotion can be classified into two categories. In earlier stage, researchers examined the effect of free sample promotion on revenue which mainly focused on consumer packaged goods. Also, researches revealing psychological factors that may explain why customers actually purchase the sampled products were conducted. Appearance of the digital goods induced novel strategies for free sample promotion. Relevant researches discuss the methods to alter free trial customers into paid users.

## **2.1. Traditional Free Sample Promotion**

Prior researches regarding traditional free sample promotion roots from the pioneer work of Scott (1976), who tested the effectiveness of trial through field experiment. Holmes and Lett (1977) found out that offering free samples promotes interpersonal communication about the brand. Effects of free sample promotion on altering preconceived perceptions of the customers (Bettinger et al., 1979), higher attitudinal confidence scores compared to advertising (Marks and Kamins, 1988) were also revealed. Moreover, Lammers (1991) discovered that free samples significantly increased the immediate sales of chocolates for retail store customers, which can be referred to foot-in-the door effect. On in-store circumstances, distraction while customers were trying sampled products positively

influenced the effect of the affective component on afterward choice (Shiv and Nowlis, 2004). Furthermore, sampling a product with high incentive value enhanced afterward purchase of other similar incentive cues (Wadhwa et al., 2008).

Jain et al. (1995) employed modeling approach suggesting analytical framework to capture the effect of sample promotion on the diffusion of novel products. Findings propose that sampling may be especially effective in the initial stages regarding product's life cycle for in case that early adopters initiate word-of-mouth (WOM). Gedenk and Neslin (1999) derived positive logit coefficients estimating the effect of sample promotion on consumption event feedback. Heiman et al. (2001) suggest quantitative model to access long-term effects of sample promotion. According to the research, sampling increases customers' cumulative goodwill formation which counteracts the threats of forgetting the product. Also, repeated results based on utility modeling approach indicate that free sample promotion plays an imperative role in creating brand loyalty and inertia behavior (Villas-Boas, 2004; Seetharaman, 2004). Bawa and Shoemaker (2004) made progress to the field by proving the existence of acceleration, cannibalization, and expansion effect of free sample promotion. Empirical results indicate that the customers tend to purchase the sampled brand earlier than their normal consumption but the number of brands they purchased reduced. Sampling also derived expansion of consumption which customers purchased the brand that they would not have considered without free

sample.

## 2.2. Mechanism of Free Sample Promotion

Efforts to reveal the underlying psychological mechanism of free sample promotion effectiveness have also been made. Primary role of free sample is reduction of risk. Due to the uncertainty that one's consumption goals will be achieved, customers recognize risks in most purchase occasions (Cox and Rich, 1964). There are always risks of wasting resources, mostly expenditure, in terms of consumption. However, samples offer a chance to test whether the item is valuable enough to purchase or not. As so, free sample promotion may be an efficient risk-reliever alleviating uncertainty (Akaah, 1988). Importance of free sample promotion has gradually increased since customers perceive risk higher when internet shopping compared to in-store purchase occasion (Tan, 1999). Lack of opportunity to inspect the product before purchase and difficulties in returning defective item are the main reasons why customers perceive internet shopping riskier.

Experience effect may also explain why free sample promotion works. Customers tend to remember the products that they have interacted or experienced before. After participating in sample promotion, the possibility of purchasing the product or brand will eventually increase (Reza et al., 2021). Last but not least, emotion of reciprocity works as a motivation for customers to decide consumption. Reciprocity implicates that in response to beneficial

actions, people become more cooperative than expected (Fehr and Gächter, 2000). When customers are offered a free product, they are inclined to feel obligation to respond more nicely to company's friendly action. Lin et al. (2019) found out that free sample promotion increased the rating of product's online review by 1.1% through empirical research. Customers who participated in the promotion considered providing a higher rating for the product as beneficial behavior that the company deserves.

### **2.3. Digital Free Sample Promotion**

Technological progress enabled companies to make profit out of commodities that exist in digital form. Sample promotion strategies are also applied to the new market in the shape of free trial. Companies often offer digital goods which limit partial functions or provide full version of services only for a certain period. If the customer desires to have an access for the full version or use the service for a longer period, one must pay for subscription of the content. However, the conversion rate of free to paid customers is not high as expected. Koch and Benlian (2017) discovered that only 3% of the customers alter their unpaid usage on average. Therefore, most of the researches regarding digital goods focus on identifying the methods to improve conversion rate.

Customers tend to adhere free mentality which is the belief that digital services are deserved to be free by nature (Dou, 2004). Also, on the circumstance of zero price, customers consider gain related

with free products their priority instead of numerically subtracting cost from benefit, namely zero-price effect (Shampanier et al., 2007). Due to the free mentality and zero-price effect, it is difficult to persuade customers even committing software piracy (Chellappa and Shivendu, 2005) to pay the price for digital goods. Nonetheless, Gu et al. (2018) found that improvement of conversion rate may be achievable through utilizing compromise and attraction effect. Extension of product line setting can induce customers' conversion. Comparing limited-function and limited-period digital samples, allowing full contents for a period of time had greater impact on actual sales from customers (Li et al., 2019). Moreover, Lambrecht and Misra (2017) recommend countercyclical offerings of premium digital goods along with demand cycle. Likewise, researches regarding free sample promotion tend to understand varying strategies. However, there are few researches examining the mechanism of customers choosing free samples by themselves due to the novelty of promotion type, which supports the value of this research.

## **Chapter 3. Hypothesis Development**

### **3.1. Price-Quality Inference**

Prior product knowledge influences the customers' judgments about product quality and purchase decision (Punj and Staelin, 1983).

In traditional economic theory, price has been considered as negative factor for selection since higher price put pressure on customers' budget. However, price can also be perceived as a cue for product quality from a behavioral perspective (Monroe and Krishnan, 1985). Customers may perceive higher quality of a product from higher price since it is plausible to infer that more expensive input has been made through manufacturing process (Rao and Monroe, 1988). For instance, expensive cars are often considered to have higher quality and luxury cars are expected to be expensive than they actually are on the other way. Free samples offered by the company do not have imposed price. However, customers are still able to search for the price of original product and make inference from the figure. Also, the customers may possess prior knowledge of price level for the product or brand. Rao and Monroe (1989) found out that there is also a significant and positive relationship among perceived quality and brand name. Therefore, it is plausible to propose a hypothesis as:

H1. Customers will choose the sampled brand that the original product price is higher.

### **3.2. Monetary and Frequency**

In marketing research context, it is common to derive individual customer' consumption behavior using recency (time of most recent purchase), monetary (spending amount) and frequency (count of purchases) value, namely, RFM characteristics (Fader et al., 2005).



RFM values have been utilized to identify loyal customers who are valuable for the company (Dogan et al., 2018). According to Liu (2007), loyalty programs such as free sample promotion did not prompt to alter consumption behavior of heavy buyer customers. Also, since the primary motivation for customers to engage in free sample promotion is risk aversion as discussed previously, it is able to argue that the customers may persist their past purchase behavior in selecting sampled brands. Therefore, proposed hypotheses are:

H2. Customers who purchased a specific brand more will maintain their behavior of choosing sampled brand.

H3. Customers who purchased a specific brand more frequently will maintain their behavior of choosing sampled brand.

### **3.3. Deal–Proneness**

Objective of this research is exploring individual customers' behavior regarding choice of free samples. Therefore, it would expand the understanding if the research can identify individual heterogeneity variables. Lichtenstein et al. (1990) defined deal–proneness as tendency to react to retailer promotions that are in deal form such as price discounts. Deal–prone customers have traditionally been associated with price sensitivity (Gazquez–Abad and Sanchez–Perez, 2009). Numerous marketing researches confirmed direct relationship between deal–proneness and price sensitivity (Walters and Jamil, 2003; Martinez and Montaner, 2006).

Thus, hypothesis regarding deal-proneness can be related with price as follows:

H4. Deal-prone customers will be more sensitive to the original price of sampled brand.

### **3.4. Variety-Seeking**

Variety-seeking in consumption behavior can be defined as the inclination of customers to seek diversity with their choices (Kahn, 1995). When customers face preference uncertainty, they may try various options instead of concentrating on a single product of brand. Therefore, variety-seeking behavior is known to have negative effect on brand loyalty (Unal and Aydin, 2013). Since brand loyalty is associated with the amount and frequency of the brand consumed by the customer (Odin et al., 2001), it is able to establish hypothesis as follows:

H5. Variety-seeking customers will spend less amount of money for a specific brand.

## **Chapter 4. Data**

Dataset for this research comes from Korean leading cosmetic company and consists of three different contents. First, the free

sample promotion result data was used to seize the individual customer's choice. Promotion was held from September 2020 through July 2021. 26,079 unique customers participated during the promotion for 45 weeks. Next, the sales data for each customer was available. Sales data contains the purchased products and brands by individual customer with purchase date and spending amount from January 2019 to July 2021. Therefore, sales data allows to derive monetary and frequency value along with other possible variables. Finally, customer data identifying individual demographic information was obtainable. Due to the unique properties of company's free sample promotion, the procedure of selecting appropriate customers to be analyzed was essential. Data preprocessing was proceeded as the following sections.

#### **4.1. Data Period**

Cosmetic company offered various products and brands for free sample to the customers throughout the entire promotion period of 45 weeks. However, the number of products and brands provided by the company was not identical during the promotion weeks. The company intended to increase the number of options for both products and brands offered as the free sample promotion proceeded. Figure 1 indicates the variation of products and brands that were available during the promotion period. As obtainable number of options vary between the earlier and later stage of the promotion, selecting specific period for the research was necessary. Therefore,

the very last 4 weeks were chosen to be the target of this research since from week 42, the number of products and brands became stable.

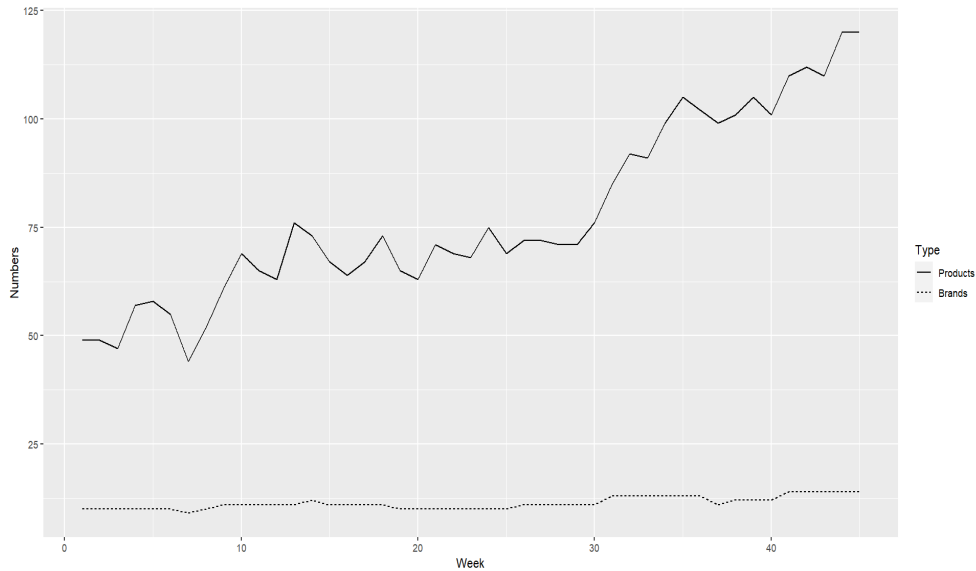


Figure 1. Variation of Brands and Products

## 4.2. Initial Choice

Customers were able to participate in the free sample promotion monthly. For instance, if a customer selected free samples on current month, that customer may participate again on next month. The promotion was held for 11 months. Therefore, customers were allowed to participate in the promotion for maximum 11 times. As Figure 2 shows, 18,418 individuals out of 26,079 entire customers participated once during the promotion period. Still, 7,651 customers took advantage of the promotion more than twice. However, subsequent participation after initial trial would be based on completely different mechanism. Customers who have already tried

free samples through the promotion will certainly be influenced by their prior experiences. Therefore, the customers only who made their initial choice during the promotion period were selected.

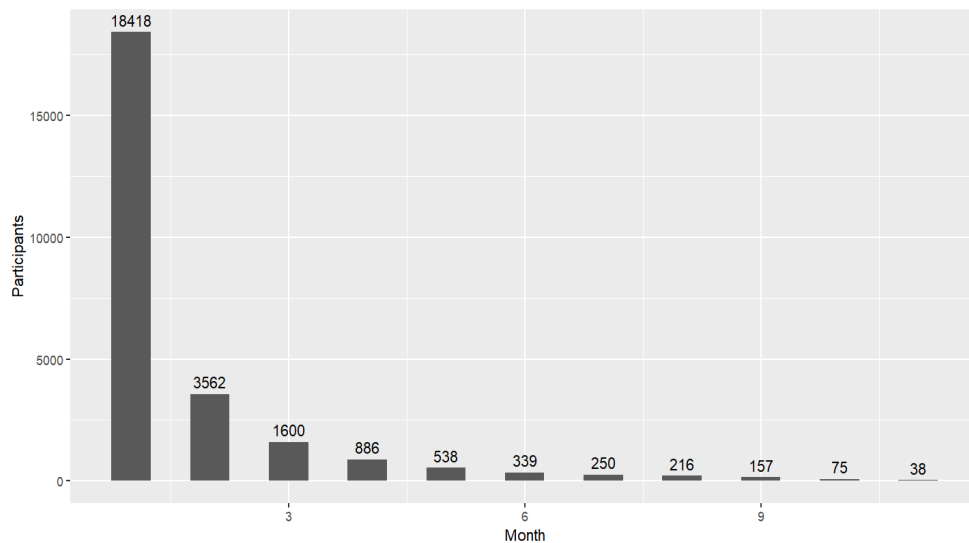


Figure 2. Variation of Participants

### 4.3. Brand Categorization

Throughout the analyzing data period (week 42 to 45), company introduced 14 brands to the customers participating in free sample promotion. However, it would be unnecessary to take into account all of the brands for the research. Guadagni and Little (1983) divided the coffee market into 8 different categories for exploring brand choice with logit model based on market share. This research follows similar procedure by calculating choice share and sorting brands for analysis. As shown in Table 1 and 2, brand A to G accounts for most of the cumulative choice share for both entire and the later period of the free sample promotion. Therefore, top 7 brands selected by the

customers were chosen for the research and the remaining brands were integrated into ‘Others’ category.

All Period (Week 1 to 45)		
Brand	Count	Cumulative Ratio
<i>Brand A</i>	151533	28.29%
<i>Brand B</i>	119801	50.65%
<i>Brand C</i>	29358	56.13%
<i>Brand D</i>	27716	61.31%
<i>Brand E</i>	42083	69.16%
<i>Brand F</i>	46364	77.82%
<i>Brand G</i>	76307	92.06%
<i>Others</i>	42530	100.00%
Sum	535692	100.00%

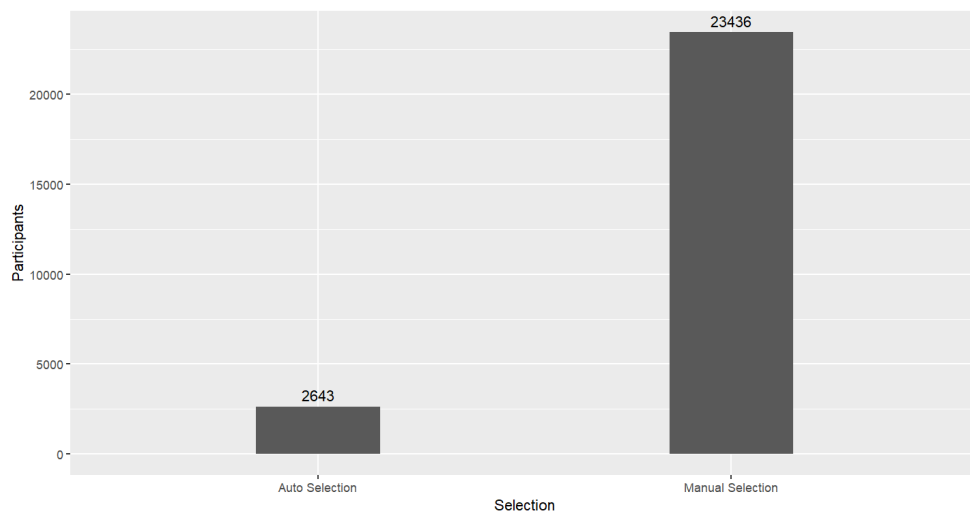
**Table 1. Choice Share of All Promotion Period**

Later Period (Week 40 to 45)		
Brand	Count	Cumulative Ratio
<i>Brand A</i>	30223	30.27%
<i>Brand B</i>	19597	49.89%
<i>Brand C</i>	6153	56.06%
<i>Brand D</i>	8378	64.45%
<i>Brand E</i>	7580	72.04%
<i>Brand F</i>	7423	79.47%
<i>Brand G</i>	8843	88.33%
<i>Others</i>	11655	100.00%
Sum	99852	100.00%

**Table 2. Choice Share of Later Promotion Period**

#### 4.4. Manual Selection

Customers who participated in the free sample promotion were able to select 12 samples whatever they wanted. If a customer does not select 12 items, the company automatically chooses the remaining samples and fill the list. For instance, when a customer selects only 10 samples and proceeds to the ordering step, 2 items are automatically filled in based on the recommendation of the company even if the customer does not want it. However, these cases were excluded for the research since they would not be a pure choice from the customer. Figure 3 elaborates the manual selection rate out of 26,079 customers. 2,643 customers allowed at least one auto selection from the company. For this research, customers who made 12 choices on their own were selected.



**Figure 3. Selection Type**

Since the free sample promotion had various properties, data preprocessing procedure was essential for logical research. Final dataset contains the choice data which meets all four conditions presented. After excluding the disqualified participants, 5,757 unique

customers remained. Each customer made 12 choices on their own, providing 69,084 data points for the research. Week 42, the initial analyzed period of the research, will be considered as Week 1 from now on.

## Chapter 5. Model

This research develops a latent utility model based on random utility theory framework (McFadden, 1973) and employ multinomial logit using R software. Model specification is defined as follows:

$$U_{ijt} = \alpha_j + \beta_1 \ln Price_{jt} + \beta_2 \ln(Monetary_{ijt} + 1) + \beta_3 Frequency_{ijt} + \varepsilon_{ijt}$$

Subscript  $i$  indicates 5,757 individual customer and  $j$  stands for 8 different brands selected. Subscript  $t$  defines 4 separate weeks, the data period. Therefore,  $U_{ijt}$  is the latent utility regarding brand  $j$  for individual customer  $i$  on free sample selecting week  $t$ .  $\alpha_j$  is brand-specific intercept.  $Price_{jt}$  is the variable to validate H1, price quality-inference. It indicates average unit price for a specific brand  $j$  provided on week  $t$ . The number of free samples by brand provided on each week is not identical though relatively stable. Therefore,  $Price_{jt}$  varies across weeks and brands. Also, cosmetic products are all different in capacity and ingredients. To compensate such issue, unit price, which is the original price divided by product-specific



capacity was derived to calculate the average original price for each brands. Then, the figure was log transformed for the purpose of interpretation.

*Monetary<sub>ijt</sub>* is the variable defining past purchase amount that individual customer *i* spent for brand *j* before the free sample selection date and included for the validation of H2. Since the numbers vary and include zeroes, it was log transformed after adding one to each figure. *Frequency<sub>ijt</sub>*, variable for H3, stands for past purchase frequency of individual customer *i* for brand *j*. Subscript *t* is included for proper identification but each customer has participated only once during the data period. Therefore, estimated parameters  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  are expected to be positive and statistically significant to confirm the hypotheses.

## Chapter 6. Results

### 6.1. Main Results

Table 3 elaborates the main outcome of the multinomial logit model. Estimates of brand-specific intercepts implicit that the baseline brand A provides the highest utility compared to other brands. Estimated parameter  $\beta_1$  of variable *Price<sub>jt</sub>* is positive and statistically significant. Therefore, it is able to interpret the result as customers preferred sampled brand which the average original unit price is higher. So, H1 confirmed. Estimated parameters  $\beta_2$  and  $\beta_3$

of variable  $Monetary_{ijt}$  and  $Frequency_{ijt}$  is also positive and statistically significant, respectively. As so, customers maintained inertia-based behavior meaning that they preferred selecting brand with prior consumption experience. Customers did not take risks to try new brands which they have never experienced before even though the samples were free.

Brand	Estimate	Standard Error	Z-Value
<i>Intercept Brand A</i>	<i>Baseline Brand</i>		
<i>Intercept Brand B</i>	-0.3341 ***	0.0344	-9.72
<i>Intercept Brand C</i>	-1.3817 ***	0.0506	-27.29
<i>Intercept Brand D</i>	-1.063 ***	0.0636	-16.72
<i>Intercept Brand E</i>	-0.9832 ***	0.1117	-8.8
<i>Intercept Brand F</i>	-0.9967 ***	0.1264	-7.88
<i>Intercept Brand G</i>	-1.1725 ***	0.1341	-8.75
<i>Intercept Others</i>	-0.7579 ***	0.1539	-4.92
<i>Price</i>	0.1449 *	0.0669	2.17
<i>Monetary</i>	0.1119 ***	0.0014	82.81
<i>Frequency</i>	0.0203 ***	0.0027	7.42

Significance codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Log Likelihood (N = 69,084): -126,330

AIC: 252676.8 BIC: 252768.2

### Table 3. Main Results

It is able to argue whether the variable  $Price_{jt}$  is solely capturing the effect of original price of a specific brand. As mentioned in chapter 3, customers may be influenced by other prior knowledge or

information such as brand name itself and made their choice. In order to eliminate those possibilities, correlation analysis between  $Price_{jt}$  and brand-specific intercept  $\alpha_j$  has been conducted. In circumstances of performing multinomial logit in choice domain, alternative-specific constant is mostly interpreted as unobservable utility distinguisher of the model compared to the baseline alternative. Therefore,  $\alpha_j$  can be interpreted as brand equity. According to Figure 4, correlation analysis result,  $Price_{jt}$  has a positive correlation with brand-specific intercept  $\alpha_j$  and it is statistically significant (0.529,  $p < 0.05$ ). The result indicates that the effect of average original unit price of a specific brand is already included in the name of brand equity. Thus, coefficient of variable  $Price_{jt}$  explains the effect of price itself which is not included in the brand-specific intercept, even so it is still significant.

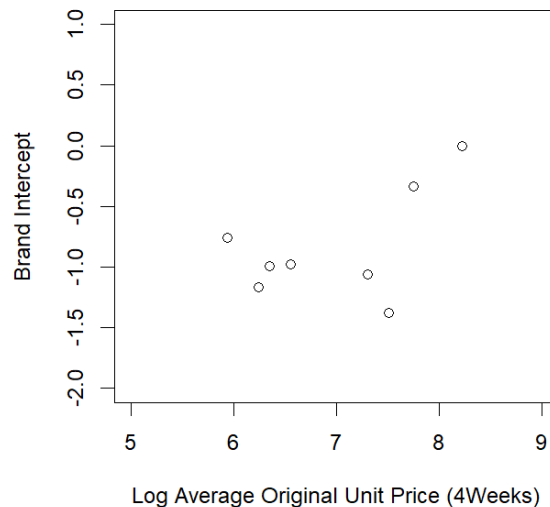


Figure 4. Correlation Analysis Result

## 6.2. Heterogeneity Results

Sales data from the Korean leading cosmetic company provides normal price of the product and also discounted price which the customers have to actually pay for. Gazquez–Abad and Sanchez–Perez (2009) derived deal–proneness with discount percentage that customer took advantage of. Following the approach, it is able to calculate individual–specific discount rate through subtracting the total discounted amount out of total normal price, namely  $Discount_i$ . Subscript  $i$  indicates 5,757 individual customer as before. Customers who are more deal–prone possess higher number for  $Discount_i$ . Also, it is able to figure out how many brands have each customer purchased prior to the sample selection date. Therefore, variable  $Variety_i$  explains one’s variety–seeking behavior. Customers who try more brands possess higher figure for  $Variety_i$ .

Median–split procedure was conducted for both of two variables. For instance, if a customer possesses a number higher than median for  $Discount_i$  variable, one belongs to relatively deal–prone group. After splitting the group, variable  $Discount_i$  was interacted with the variable price and variable  $Variety_i$  with monetary, respectively. Coefficient for the interaction term regarding  $Discount_i$  was expected to be positive and significant. On the other hand, coefficient of interaction term for  $Variety_i$  was expected to be negative and significant according to H4 and H5.

Table 4 supports that both hypotheses were confirmed. Coefficient of the interaction term for deal–proneness was positive

and statistically significant. It implies that customers who showed strong deal-prone behavior were more sensitive to original price of the brand than those who were less deal-prone. Also, coefficient of the interaction term for variety-seeking was negative and statistically significant. It elaborates that the customers who showed more variety-seeking behavior did not have preferences for a specific brand than those who were less variety-seekers, in other words, possessed less loyalty.

Variable	Median	Mean	Standard Deviation
Discount	0.2413	0.2347	0.1535
Variety	3.00	3.0629	1.7499

Brand	Estimate	Standard Error	Z-Value
<i>Intercept Brand A</i>		<i>Baseline Brand</i>	
<i>Intercept Brand B</i>	-0.3229 ***	0.0343	-9.41
<i>Intercept Brand C</i>	-1.3633 ***	0.0506	-26.96
<i>Intercept Brand D</i>	-1.0362 ***	0.0635	-16.32
<i>Intercept Brand E</i>	-0.9415 ***	0.1116	-8.44
<i>Intercept Brand F</i>	-0.9439 ***	0.1262	-7.48
<i>Intercept Brand G</i>	-1.1620 ***	0.1340	-8.67
<i>Intercept Others</i>	-0.7040 ***	0.1538	-4.58
<i>Price</i>	0.0567	0.0669	0.85
<i>Monetary</i>	0.1251 ***	0.0021	58.81

<i>Frequency</i>	0.0193 ***	0.0028	7.01
<i>Discount * Price</i>	0.2237 ***	0.0094	23.81
<i>Variety * Monetary</i>	-0.0122 ***	0.0022	-5.64

Significance codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Log Likelihood (N = 69,084): -126,330

AIC: 252067.1 BIC: 252167.8

**Table 4. Heterogeneity Results**

## Chapter 7. Discussion

### 7.1. Summary

This research focuses on identifying significant variables that affect customers' choice for free sample brands. Based on Korean leading cosmetic company's free sample promotion result data, the research builds random utility model and perform multinomial logit. Empirical results from the research can be summarized into four different findings.

First, the customers showed higher preferences for the sampled brand that the average original unit price was higher due to price-quality inference. Second, the customers tended to choose the sampled brand that they have already experienced rather than trying new brands since the primary motivation for using samples is risk

aversion. Third, in terms of individual-level heterogeneity, customers who preferred discount promotions were more sensitive to the original price of the brand than those who were less deal-prone. Lastly, customers who have purchased various brands before participating free sample promotion did not show preferences for a specific brand than those who were less variety-seekers as they possess lower brand loyalty.

## **7.2. Implication**

Companies gradually employ free sample promotion strategies in the way of guaranteeing customers' autonomy. However, due to the novelty of such approach, few researches have examined the underlying consumer behavioral mechanism. Findings from this research are expected to contribute to the academic field analyzing the effect of free sample promotion.

Also, there are some managerial implications that marketing managers may utilize based on research results. It is apt to think that the only objective of free sample promotion is to boost sales. Sales growth may be a primary goal of promotion indeed, but there may be some other purposes for free sample promotion. For instance, company may operate sample promotion to introduce a new product or brand to potential customers, or to induce brand loyalty for a certain brand. If in this case, allowing unlimited autonomy to individual customer may not be a best option for the company since the research results indicate regular patterns of customer behavior.

Customers considered the original price of the sampled product

as an important factor regarding choice. Therefore, if the company aims for introducing a new brand, excluding premium brands from available options may be effective since it is obvious that the customers will desperately select such brands. Inserting mandatory samples with allowing autonomy may be another effective strategy. For example, the company can offer compulsory free samples to the customers as prerequisite in order to participate in the promotion. As so, it would be possible for marketing managers to manage optimized free sample promotion to achieve the campaign objective.

### **7.3. Limitation and Further Research**

This research is not free from several limitations. First, the research was conducted only based on Korean leading cosmetic company's promotion data. Therefore, it is difficult to generalize the findings into other domains regarding free sample promotion. Further researches from different industries may aid whether the findings of this research is truly reliable.

Next, it would have been ideal if the research could investigate whether the customers actually purchase the sampled brand they have tried in the later period. Through modeling approach, quantifying the accurate effect of free sample promotion would be possible. However, available dataset was limited to the cosmetic company only. Customers may not purchase products or brands at the companies online and offline shops. Instead, they may purchase goods through other platforms such as e-commerce market even after trying free samples. Therefore, without third party's sales data,



it was inappropriate to conduct an analysis relating free sample usage and consumption. Exploring the direct impact of autonomy—allowing free sample promotion on sales based on diverse dataset may contribute broadening insights about the emerging trend.

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## 국문 초록

기업은 무료 샘플 프로모션 전략을 통해 고객 경험을 제공함으로써 매출 증진을 꾀하곤 한다. 샘플 프로모션 전략과 관련한 선행 연구는 주로 위험 회피, 경험 효과, 호혜와 같은 고객의 참여 동인을 탐색하는데 주력했다. 최근, 기업은 고객의 자율성을 허용하는 방식의 새로운 무료 샘플 프로모션 전략을 시도한다. 따라서 이러한 프로모션에 참여하는 고객에게 영향을 미칠 수 있는 변수를 식별하는 연구가 의미 있겠다. 본 연구는 업계를 선도하는 한국 화장품 기업의 무료 샘플 프로모션 결과 데이터를 토대로 개별 고객의 효용을 설명할 수 있는 모형을 수립한다. 이후 다항 로짓 모형을 통해 브랜드 단계에서 고객의 선택에 영향을 미칠 수 있는 변수를 탐색한다.

연구 결과, 고객은 가격-품질 추론 성향에 의해 본 제품의 평균 정상가격이 높은 샘플 브랜드를 선호하는 것으로 나타났다. 또 과거 구매 금액이나 빈도가 높은 브랜드의 샘플을 선택할 확률이 높아 새로운 제품을 모험적으로 시도하기보다 관성적인 경향을 보였다. 개별 고객을 심도 깊게 이해하기 위한 이질성 분석에 따르면, 할인을 선호하는 성향이 강한 고객일수록 그렇지 않은 고객에 비해 본 제품 평균 정상가격에 더욱 민감했다. 또 샘플 선택 이전까지 다양한 브랜드를 사용해본 고객일수록 그렇지 않은 고객에 비해 특정 브랜드에 대한 선호 혹은 충성도가 떨어진다는 연구 결과를 확인할 수 있었다.

**주요어** : 무료 샘플 프로모션, 가격-품질 추론, 위험 회피, 할인 추구, 다양성 추구

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