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THE EFFECT OF RISK AND QUALITY PERCEPTIONS OF COSMETIC SAMPLES ON SAM PLE USE AND PURCHASE CONVERSION

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ABSTRACT

Aims: The purpose of this study is to investigate the impact of risk and quality perceptions on cosmetic sample use and purchase conversion rate among Korean adult women. **Methods:** An online survey was conducted among 433 Korean adult women in their 20s to 50s. The survey collected data on the consumers' risk perception, quality perception, sample usage rate, and actual purchase conversion rate about cosmetic samples. **Results:** The results indicate that risk perception of cosmetic samples has a negative effect on quality perception and sample usage rate. However, quality perception has a positive effect on sample usage rate and actual purchase conversion rate. Furthermore, the study found that the sample usage rate has a positive effect on actual purchase conversion rate. **Conclusions:** Future research could expand the scope to include other demographic groups or cultural contexts. Cosmetic companies can use these findings to design more effective free sample promotions that address customers' risk perceptions while enhancing their quality perceptions. This study may contribute to improving customer satisfaction and loyalty in the cosmetics industry by providing insights into how cosmetic companies can effectively use free samples as a sales promotion tool.

Keywords: cosmetic sample, free sample, sample promotion, risk perception, quality perception, sample usage, purchase conversion rate

INTRODUCTION

Free samples are a common way to promote sales in the field of retail industry. Providing free samples eliminates potential risks customers might have on purchasing a new product, increases familiarity and can create favorable impressions.[1] (Marks and Kamins, 1988). Various studies have confirmed that free samples are the most popular and useful tool to promote sales.[2,3] (Schultz et al., 1993; Heiman et al., 2001). A free sample promotion lets consumers know what a new product is, what its characteristics are, improves the reputation of the company, increases interest and brand awareness in consumers, creates marketing and advertising effects through word of mouth, and forges a stronger relationship with consumers, while helping to increase brand loyalty[4,5] (A1Dezine, 2019; Hawlk, 2017).

Free cosmetic samples are one marketing tool that offers customers an opportunity to obtain and evaluate a product before having to spend money to buy it. Cosmetic samples are often given away freely for trying out, but unlike other kinds of samples, they are also commonly given as free gifts after purchases have been made. Both are part of a strategy for promoting products, but they are different in that giving samples to non-purchasing customers aims to promote new products, while giving them to purchasing customers aims to encourage re-purchase. Samples given to unpurchased customers are, in many cases, provided after customers apply for the samples to try new products out, so that it is relatively easy to see the relationship between providing samples and product sales. Giving to purchasing customers, however, makes it difficult to assess the rate of purchase conversion, as such samples are given as free gifts after purchases without clear guidelines.

Studies on free sample promotions generally claim that it has positive effects on product purchases, particularly when: 1) customers can immediately buy the provided samples, 2) the products or their brands are well-known, and 3) when the expectations are that longer-term increases will be seen in purchases rather than short-term.[3,6,7] (Lawson et al., 1990; Heiman et al., 2001; Bawa and Shoemaker, 2004). Some works, however, claim that the connection between sample provision and their sales are not strong or even that they are negatively correlated.[3,7,8] (Bawa and Shoemaker, 2004; Heiman et al., 2001; Steinberg and Yalch, 1978). For companies, the cost for sample provision may hinder other product promotion activities, e.g. such samples might help promote certain products but demote the sales of other products; or customers might delay the use of new products because they get the use of free samples, thus creating cannibalizing effects. As well, there might be a generalization effect where using free samples could lead to the purchase of products from a competitor.[8,9,10] (McGuinness et al., 1992; McColl et al., 2020; Steinberg and Yalch, 1978).

There have been many studies on the effects of offering free samples, but ones focusing specifically on the offering of free cosmetic samples have been rare. There is also little research on how many provided samples are actually used. Cosmetic samples are given with the aim of reducing the perceived risk for consumers regarding products they have never experienced. However, the samples themselves could be new products that consumers have not tried, thus becoming the target of such risk perception. The only research on the effect of giving cosmetic samples to customers before they have made purchases, was the work of Ben Amor and Guilbert.[11] (2009). To date, there has been no clear investigation into the usage rate of samples given as free gifts, nor into whether these samples affect purchase conversion for the products they promote.

This work aims to empirically confirm the effects of giving away cosmetic samples as a tool to promote cosmetic sales. In particular, it aims to identify consumers' risk perception and quality recognition of cosmetic samples and, accordingly, to analyze whether the use rate and the rate of purchase conversion after the use of the samples might change. The results of this work will identify customers' cosmetic sample use behavior and confirm how much free sample promotion would help increase purchase conversion, and in which situations the method works. If customer behaviors around cosmetic samples are not what companies assume, the method and strategy around free sample promotion needs to be reconsidered.

LITERATURE REVIEW

Sample and Sample Promotion

The Definition of Sample and Sample Promotion

According to the American Marketing Association, sales promotion comprises all measures taken to secure or increase sales in the short-term, and is about marketing activities to stimulate retail sales or sales effects other than individual sales. These include advertisements, or public relations, as well as various and unrepeated sales efforts such as demonstration, exhibition, and displays.

Sales promotion largely falls into one of two categories: price-reduction promotion and value-adding promotion.[12] (Diamond and Campbell, 1989). Price-reduction promotion provides direct monetary benefits in the form of price discount, sales coupons, or compensation. Value-adding promotion is about giving non-monetary benefits such as free samples, free gifts, free delivery, additional compensation. Free samples are one form of value-adding promotion for product try-out or consumer try-out,[9] (McGuinness et al., 1992), and mainly aims to establish

product trust among consumers or positively change consumer attitudes toward it (Marks and Kamins, 1988). Such free sample promotion has been actively employed with fast-moving consumer goods (FMCG) brands such as those of Unilever and P&G, that trade in cosmetics or daily necessities.[14] (Chief Marketer Staff, 2001).

According to chiefmarket-er.com[14] (2001), a US content-creating company that publishes online content for marketers, the total amount of sample promotion aimed at encouraging purchase, decreased, but the total marketing cost for sales promotion as a whole increased compared to the 1990s. In the past, sample try-out promotions were mainly led by hard-to-get luxury items, but now most companies do a sample promotion when launching a new product, making it likely that the promotion costs of sales promotions using samples would continue to increase. The company reported after interviewing those who worked in the field that the total size of sample promotions exceeded 1.2 billion dollars in the U.S. and, as of 2000, they make up about 7.1 percent of all promotion costs.

The Effectiveness of Free Sample Promotion

Several theories have been proposed to explain how free samples stimulate purchase, and affect product revenues. According to Kahneman and Tversky,[15] (1979), people are basically more sensitive about avoiding risks and minimizing losses than about gaining benefits. Consumers recognize uncertainties and interpret them as risks when faced with new products or ones they have no experience of, but samples to try-out can reduce the immediate risks and potential future uncertainties, making future purchase more likely. Schütte and Ciarlante[16] (1998) concluded that providing samples or trying out products are effective ways for consumers to overcome such perceived risks.

Behavioral Learning Theory also explains the effects of free samples with operant conditioning, in terms of selective rewards (reinforcement or punishment) for certain behaviors resulting in correction or modification of behaviors. Skinner[17] (1948) stated that continued reinforcing stimuli that leads to a positive action results in the action being maintained, thus increasing the rate of the action, or the operant reaction. Consequently, if provision of free cosmetic samples and ensuing positive experiences are continued, it will lead to the reinforced behavior of buying that product, leading to increased revenue.

The Self-perception Theory of Bem[18] (1972) also supports the effectiveness of free samples. This theory states that it is likely that an action interprets an attitude. For example, "you are provided a cosmetic sample" (an action) makes you think that "you wanted to use the sample in the first place" (an attitude). By extension, Freedman and Fraser[19] (1966) explain the effectiveness of free sample promotions with the 'foot-in-the-door' effect during the process of self-perception; meaning that

once a person experiences a good impression of a cosmetic sample after being provided with it and using it, they will continue to behave positively toward it to maintain self-consistency.

Most conventional works on the effectiveness of free samples have been about their effects on purchase when the samples are provided for try-out, with or without purchases. Related works show that such free samples have positive impacts on purchase.[9,20] (Diamond and Johnson, 1990; McGuinness et al., 1992). In a work on sales promotion, Diamond and Johnson[20] (1990) conducted an experiment with the aim of sophisticating and expanding behavior theories on sales promotions, and in this the research subjects recognized non-monetary promotions including free cosmetic samples, as rewards and monetary promotions as reduced losses. Consumers felt a pronounced effect of the promotions because they perceived non-monetary sales promotions and immediate benefits as rewards. McGuinness at al.[9] (1992) provided three retail goods - a liquid laundry detergent, instant coffee sticks and toothpaste - for free, and their revenues increased 10 percent, 18 percent and 22 percent respectively, compared with when the samples were not provided.

Some works, on the other hand, have claimed that while free samples from highly recognizable brands may help increase revenue in the short-term, for less recognizable or new brands, the samples might not increase revenue, and their sample promotions could be unrelated to, or negatively related to their revenue.[3,7] (Bawa and Shoemaker, 2004; Heiman et al., 2001). Bawa and Shoemaker (2004) also suggested that when a consumer uses a free sample, there might be an accelerating effect where the rate of purchase of the brand product might increase compared to those from other brands; and an expanding effect, where a consumer who otherwise wouldn't have used the product is led to purchase. Their work concluded that a free sample promotion impacts long-term revenue for less recognizable brands and leads to a short-term revenue increase for large brands. Heiman et al.[3] (2001) suggested that if a consumer can purchase the very product after being provided a sample, short-term revenue would increase, but otherwise, the revenue increase is not significantly higher. They also stated that for newly launched products which most people are not familiar with and have never used, free sample promotions would not yield any significant results.

There are also works that claim free samples lead not only to the purchase of the product, but also similar products from other brands in the same category.[8,21] (Korea Marketing Research Institute, 1992; Steinberg and Yalch, 1978). The work of Steinberg and Yalch[8] (1978) conducted a free tasting event of a certain item from a local bakery at the entrance of a mart, and the results showed that the sales of not only the product of the tasting event, but also overall items of the mart increased. Likewise, the Korean Marketing Research Institute (1992) did a free giveaway of a

certain brand of chocolate and investigated its sales. The results showed that, of the people who had received chocolate for free in that shopping mall, 83.9 percent bought chocolate. However, 22.6 percent bought the same product and 61.3% bought other brands, showing a generalized outcome where the free sample giveaway led to the purchase of chocolate products from other brands.

As described, conventional works on free sample promotion generally conclude that free samples have a positive impact on purchase, but at the same time they point out that it could guide people to similar products or other brands, diluting the effect or even creating a negative outcome due to a cannibalizing effect. Furthermore, almost all of the works deal with the effects of free samples when they are provided for a try-out with or without customers purchasing anything. This way of providing free samples however, is not the only way, so additional confirmation is needed to see whether the strategy of providing free samples only after making a purchase, would have the same effect on sales.

Perceived Risk & Quality Recognition

Risk Perception

Bauer[22] (1960) stated that a perceived risk is not a risk a consumer feels, but a subjective and intrinsic risk perceived during the process of acquiring and choosing information for a certain purpose. He claimed that a perceived risk is not real and, despite the fact it is not an objective risk, it actually has more impact on the behavior of consumers. Yonezawa and Richards[23] (2017) also claimed that consumers generally tend to buy in the minimum amount when trying new products. This is because approximately 79 percent of consumers exhibit risk-averse tendencies, and make efforts to minimize perceived risks when buying new products.

Kaplan et al.[24] (1974) divided perceived risks of consumers during the process of using goods or services into functional, financial, physical, social/phycological and temporal risks. A functional risk relates to the risk of goods or services not working properly. A financial risk is where the provided goods or services are not worth the price or might be bought at an exorbitant price. A physical risk is one of getting physically harmed while using the product or service. A social/psychological risk is one that causes people to feel anxious from the fear that using goods or services might bring negative attention upon themselves or others, or the fear of making a mistake. A temporal risk is over concern about the time spent for the purchase or the repurchase, or to repair, return or exchange goods or services.

Perceived risks have negative impacts on consumer behaviors such as the intention to use or purchase, the behavior of use or purchase, consumer satisfaction, the intention to revisit and so on. As Kahneman and Tversky[15] (1979) said in the

prospect theory, consumers have a risk-averse tendency and are more sensitive to losses than to benefits. Even though there are similar amounts of benefits and losses, to consumers inefficiency caused by losses look bigger than benefits, and from a set time point, perceived losses and benefits feel more pronounced. This is particularly true the more recent they are. In a circumstance where provided benefits are not clear, consumers try to avoid risks even if the risks are not big, as long as they are clear. Accordingly, when a consumer perceives a risk about certain goods or services, unless expected benefits are huge they will not buy the goods or services.

Perceived Quality

Perceived quality has different sub-dimensions depending on whether the target of the perception is goods or services, and applied models will also differ accordingly. As well, applied quality evaluation criteria are different, even though they deal with the same products or the same services category, depending on the characteristics of the goods or services. Quality evaluations of tangible goods mostly use the eight criteria of Garvin.[25] (1987). Garvin defines the product quality by the degree of its intrinsic characteristics or performance, and his criteria are as follows: performance (how much a product satisfies its essential and basic features), characteristics (the property to supplement or enhance its basic features), reliability (the likelihood of the product functioning without problems), suitability (how much its design or standards satisfy specific criteria), durability (how long a product can be used), convenience (how quickly and easily it can be repaired or mended), aesthetics (how much is satisfies an individual's subjective aesthetic disposition or preference) and perceived quality (subjectively perceived fame or reputation).

However, the criteria for judging a product's quality can vary widely depending on its category. Lee and Li[26] (2021) judged quality based on security, safety, usefulness and functionality, while Jeong et al.[27] (2016) judged the quality of makeup products based on aesthetics, appearance, suitability and reliability. In terms of luxury goods, Hwang and Kim[28] (2016) judged quality according to functional quality, symbolic quality and sensual quality.

The SERVQUAL and SERV-PERF models are commonly used to evaluate service qualities. SERVQUAL is an indicator that measures a service's quality by turning the difference between the expectation and reception of service quality, into a score with five key evaluation dimensions; these being tangibles, reliability, responsiveness, assurance, and empathy map.[29] (Parasuraman et al., 1985). The SERVPERF model was developed to evaluate service quality solely based on the reception of quality as it is difficult to evaluate quality with the SERVQUAL model when there is a mismatch between the expectation and reception.[30] (Cronin and Taylor, 1992). It has the same key evaluation dimensions as the SERVQUAL model however.

Grönroos[31] (1984) stated that technical SERV-PERF quality constitutes a "what" question, and the functional quality that constitutes a "how" question would create an image of consumer goods or services, and such images determine perceived service quality in marketing application research on service quality models.

The Effect of Perceived Risk on Perceived Quality

Works on the effect of perceived risk and perceived quality on consumer behaviors, generally conclude that the more perceived risk there is, the lower the perceived quality, leading to negative effects on consumer attitudes and behaviors such as consumer satisfaction, the intention to re-use/re-utilize, the intention to recommend, the intention to purchase, or purchase behavior.[32,33] (Jang et al., 2005; Chung and Oh, 2001).

Jang et al. (2005) concluded that when customers have high perceived risk from a hotel company, their perceived quality would be lower. Their research results showed that the higher the perceived risk, the lower the service quality. The work of Chung and Oh[33] (2001) on the effect of the perceived risk of an online shopping mall on its service quality, found that the higher the temporal and functional risks, the lower the general service quality, however, they confirmed that other risk factors did not affect the perceived service quality.

There are, other studies however, that claim some risk factors related to the risk of goods and services, had no effect on the perceived quality, and even when they did, they would not affect all quality factors.[34,35] (Yoon and Kim, 2011; Choi and Kim, 2014), Because factors other than perceived quality or perceived risk can affect the quality of a service, low perceived quality does not guarantee that consumer behaviors in response will always be negative.[36] (Shim and Jeong, 2020).

In the work of Yoon and Kim[34] (2011) on the relationship between the perceived risk and the received quality of beef from different producing areas, the higher the functional risk and transactional risk of imported beef, the lower the absolute perceived quality and the relative perceived quality. But the work confirmed that a physical risk affected beef's relative quality, not its absolute quality. Choi and Kim[35] (2014) assumed that the higher the perceived risk, the lower the perceived service quality, and it would lead to a negative impact on consumer satisfaction. Respondents' evaluations showed that the higher the perceived risks, the lower the perceived personnel, flight/cabin, airport service qualities, and the higher the perceived risk on airline ticket purchase, the lower the personnel service quality, but other risks did not affect perceived qualities.

In the work of Shim and Jeong[36] (2020) on the structural relationships among the perceived risk, price sensitivity, hesitation and the service quality from overseas direct purchase consumers, they found the higher the perceived service quality felt

by consumers, the lower the perceived risk becomes, and the lowered perceived risk reduces price sensitivity. Coupled with that, as prices and sensitivity lower, it reduces hesitation in purchasing, which increases consumers' perceptions of the quality of overseas direct purchase goods and services, and it reduces price sensitivity.

Perceived risk and quality are considered major factors when it comes to choosing and purchasing goods and services in various areas, but they have received almost no attention in the field of cosmetics or cosmetic sample research.

Cosmetic Purchasing Behavior and the Effects of Cosmetic Samples

The Effects of Cosmetic Samples on Cosmetic Purchase

Cosmetic samples are one of the major ways used to promote sales in the Korean cosmetic market, for both online and offline shopping. Compared to the number of studies on the effects of general advertising or samples provided freely, works on free cosmetic samples are restricted to just those of Ben Amor and Guilbert[11] (2009), and Yoo and Kim[37] (2019).

In the research by Ben Amor and Guilbert[11] (2009), free cosmetic samples were given to outlet store visitors, who were then studied for how much of the sample they used, their usage by customer type, and inquiries as to what sample characteristics would increase their use. They gave seven cosmetic sample sets and two surveys to 500 female visitors aged between 20 to 60 and aggregated the data from 287 responders via logistic analysis. The results showed that 72 percent of consumers who received samples used more than one, regardless of the kind of sample. The amount of samples used was not correlated to the age or income of customers and the rate of use was significantly high for women without jobs such as housewives compared to ones with a job. The rate of use increased when the sample was highly priced or the brand had high market penetration or was well-recognizable. Also, for those samples with high market penetration or high brand recognition, the rate of use increased by 1.46 times compared to other products. The researchers concluded that for cosmetic samples to work, they should be of high brand recognition, otherwise the samples are perceived as more of a risk, making it difficult to promote their use. The conclusion matches that of Bawa and Schoemaker[7] (2004) and Heiman et al.[3] (2001) which stated that, for products newly launched or ones of low brand recognition, providing free samples does not significantly increase sales.

Yoo and Kim[37] (2019) investigated whether there is a difference in the attitude, satisfaction and preference around cosmetic samples, depending on what cosmetics people usually bought and the motivation and the location of purchase behind the purchase and the source of information. Consumer satisfaction was rated on a scale of 0 to 5 with 5 the highest, and respondents said their satisfaction was lower than

average. Also, each respondent had a different cosmetic sample based on their preferences and had different numbers of times to use. For example, consumers who purchased products such as perfume and consumers who purchased cosmetics as gifts preferred color cosmetics samples over basic cosmetics samples. Consumers who usually bought dermatology cosmetics were more interested in cosmetics than others and had more interest in the products the samples represented. Consumers who used blogs more than others, evaluated that cosmetic samples were more hygienic than using the very products the samples represented.

A few studies that claim providing cosmetic samples increases their sales, make it possible to infer that samples reduce the perceived risk towards the represented cosmetics. Cosmetic promotion cases and cosmetics-related laws also indirectly show the risks that consumers perceive about cosmetics. Despite samples themselves being cosmetic products, the recognition that consumers could perceive them as risks doesn't seem true. This is because samples are provided in small numbers to test whether there could be potential problems in the cosmetic products the samples represent. Unlike in the past, the number of consumers who want to receive only cosmetic samples of their choosing has been increasing, and there is increasing interest among users to wish to figure out the characteristics of their own skin and a desire to buy customized cosmetics. Therefore there is a need to realize the possibility of perceived risks surrounding cosmetics and to analyze the perceived quality followed by the perceived risk, on the use rate of cosmetic samples and the rate of purchase conversion.

RESEARCH METHODS

Problem Statement

This research aims to 1) define how consumers' receive and use free cosmetic samples, and analyze the consumers' perceived risks, how they perceive quality, and their behavior when using the samples, and 2) quantify purchase conversion behavior. More specifically, it aims to figure out the types of perceived risks consumers feel from cosmetic samples and understand the relationship between perceived risks and perceived quality. Additionally, we want to understand the effects of perceived risks and perceived quality on the use rate of cosmetic samples and purchase conversion into the very products the samples represent. The problem statement is as follows:

Problem Statement 1. What are the relationships among the perceived risks, perceived quality, the use rate of the samples and the purchase conversion rate into the represented cosmetics?

1-1. What are the effects of the perceived risks of the cosmetic samples on their perceived quality?

1-2. What are the effects of the perceived risks and perceived quality of the cosmetic samples on the use rate of the samples?

1-3. What are the effects of the perceived risks, perceived quality and the use rate of the samples on the purchase conversion rate into the cosmetics the samples represent?

Definition of Variables and of Criteria

Perceived risk

Conventional works show a variety of sub-categories of risks perceived by consumers depending on the product. Considering that acquiring cosmetic samples doesn't incur a cost and the use of cosmetic samples has a direct bodily effect in the same way the represented cosmetic products do, this work excludes the financial risk and sets the sub-dimensions of perceived risks into four categories: received functional risk, received personally unsuitable risk, received psychological risk, received retail risk.

Received functional risk and received personally unsuitable risk correspond to the type, use and quality of cosmetic samples, making them direct risks towards an individual's body; and perceived psychological risk and received retail risk are indirect risks that are worries and concerns felt when consumers use the samples, regardless of the type, use and quality. The questions used to measure risk factors are formed in reference to factors extracted from conventional literature, reviews from online cosmetic forums and a preliminary interview of consumers.

For perceived risk a total of 27 questions was formulated: 10 questions on perceived functional risk, six on perceived personally unsuitable risk, five on perceived psychological risk, six on perceived retail risk. After analyzing the factors, a total of 18 questions were selected: five questions on perceived functional risk, five on perceived personally unsuitable risk, five on psychological risk, three on perceived retail risk. Per factor credibility was calculated by Cronbach Alpha Coefficient, and all factors showed high internal consistency with 0.89 for perceived functional risk, 0.90 for perceived personally unsuitable risk, 0.91 for perceived psychological risk and 0.85 for perceived retail risk.

Perceived Quality

Leveraging the conventional literature and cosmetics evaluation attributes from forums specializing in cosmetics, this study's measure of perceived quality consisted of five questions. In particular, we referenced frequent keywords used in major cosmetics forums such as Hwahae, Glowpick, Unnie's Pouch, Powder Room. Table 1 organizes keywords related to quality factors that attract attention from

consumers. The Cronbach Alpha Coefficient of perceived quality factors was 0.87, showing relatively high internal consistency.

The Use Rate of Samples and Purchase Conversion into Represented Cosmetics

The use rate of cosmetic samples is the average rate of use of cosmetic products given for free, and the rate of purchase conversion into represented cosmetics is the average rate of buying the product after using its sample. The rate of use and the rate of purchase conversion are measured by the written input of consumers with 100 percent the highest. The operant definition and measurement questions on each factor are as written in Table 2.

Method to gather and analyze data

Data Gathering Method

We conducted an online survey to quantitatively examine the relationship among customers' perceived risks, perceived quality, the rate of sample use and the rate of purchase conversion. The survey was conducted on 433 Korean adult women in their 20s to 50s, a quota sampling by age group from a marketing research firm's online panel. The survey lasted for four days from September 18th 2020 to September 21st 2020.

Data Analysis Method

The data was statistically analyzed using SPSS 21.0. The analysis method used to validate the research problem was as follows: a regression analysis was conducted to find out the effects of the perceived risks of cosmetic samples on their perceived quality, the effects of the perceived risks and perceived quality on the use rate of samples, and the effects of the perceived risks, perceived quality, and the use rate on the rate of purchase conversion into the represented cosmetic products. An exploratory factor analysis was done to categorize the perceived risks and perceived quality into sub-dimensions, and a Cronbach' Alpha value was extracted to validate the reliability of each factor.

RESEARCH FINDINGS

General Characteristics of Survey Respondents

Survey respondents were women consumers in their 20s to 50s. The general characteristics of the survey respondents are listed in Table 3. Of the group, 26.56 percent of them were in their 20s, 25.40 percent in their 30s, 24.94 percent in their 40s and 23.09 percent in their 50s, showing that their age groups are well-distributed. Respondents living in Seoul or Gyeonggi-do accounted for 64.20 percent, those in

five metropolitan cities were 21.71 percent, and those in the rest of the country were 14.09 percent. In terms of the level of education, the largest share of 71.13 percent had graduated from university. As for occupation, the most common answer was an office worker, making up about 61.20 percent. Respondents' average monthly household revenue was 4.19 million Korean won, and the largest bracket when it comes to monthly income accounted for 33.49 percent with the range of 2.01 million to 4 million Korean won. On average, they spend about 76 thousand Korea won monthly to buy cosmetics, with 32.56 percent spending less then 50 thousand won, and 32.79 percent spending more than 50 thousand but less than 100 thousand Korean Won.

The Difference in Perceived Quality by Perceived Risk

A regression analysis was conducted to find the difference in perceived quality by perceived physical risk, perceived safety risk and perceived social risk. The regression model was appropriate with $R2=0.49$, $F=104.16$ ($p<0.001$), with no multicollinearity issue as the tolerance was above 0.1 and FIV below 10.0 for each variable. All of the perceived functional risk, perceived unsuitability risk, perceived psychological risk and perceived retail risk had a meaningful negative impact on the perceived quality. The most influential risk was the perceived psychological risk, as the perceived quality of a cosmetic sample lowered when customers themselves had a negative impression upon using a sample. The second most negatively impactful risk following perceived psychological risk was perceived functional risk (Table 4).

The Effects of Perceived Risk and Perceived Quality on the Sample Use Rate

Table 5 shows the results of regression analysis to find out the effects of perceived functional, perceived unsuitability, perceived psychological, and perceived retail risks on the sample use rate. The regression model was appropriate with $R2=0.13$, $F=13.04$ ($p<.001$), and no multicollinearity issue (tolerance above 0.1 and VIF below 10.0). As for the direct effects of perceived risk on the sample use rate, perceived functional risk ($t=-2.03$, $p<0.05$) and perceived unsuitability risk ($t=-2.16$, $p<0.05$) were meaningful. Perceived quality had a positive impact on the sample use rate ($t=4.36$, $p<0.001$). Collectively these mean that higher perceived functional risk or perceived unsuitability risk, lowers perceived quality, leading to lower sample use rate, but also, regardless of perceived quality, they had a negative impact on the sample use rate. Perceived psychological risk and perceived retail risk, however, did not have any meaningful impact on the sample use rate. This suggests that these risks can indirectly reduce the sample use rate by lowering perceived quality, but they will not affect the sample use rate as long as perceived quality could be improved.

The most influential variable on the sample use rate was perceived quality, which is consistent with other works that found perceived quality having positive impacts on behaviors related to cosmetics, such as consumer satisfaction, use, recommendation and purchase.

The effects of perceived risk, perceived quality, and the sample use rate on the purchase conversion rate

Then, we examined the effects of perceived risk, perceived quality and the sample use rate on the rate of purchase conversion into sampled products. The regression model was appropriate with $R2=0.28$, $F= 26.91$ ($p<0.001$) with no multicollinearity issues.

After examining the influence of perceived risk, perceived quality and the sample use rate on the rate of purchase conversion into sampled products, none of the risks were statistically meaningful. Perceived functional risk and perceived retail risk indirectly affected the purchase conversion rate only through perceived quality, and perceived unsuitability risk indirectly affected the purchase conversion rate only through perceived quality and the sample use rate. Perceived psychological risk, however, turned out to directly exert a significant influence on the purchase of sampled products ($t=2.73$, $p<0.05$).

The positive correlation between perceived psychological risk and perceived quality can be explained by the cognitive dissonance theory which states that, when faced with an incongruity between cognition and behavior, consumers adjust the cognition to strike a balance between cognition and behavior[38] (Festinger, 1957). Consumers experience the incongruity between cognition and behavior when using free samples in places where they are seen such as a travel destination or a Korean dry sauna. Those who are sensitive to psychological risk find that the sample is of low perceived quality, but after using it, the consumer changes their attitude to think that the cosmetic sample was of high perceived quality, leading to the purchase of the sampled product.

The effects of perceived quality and the sample use rate on the rate of purchase conversion into sampled products were statistically meaningful ($t=3.09$, $p<0.001$ & $t=9.81$, $p<0.001$). The sample use rate had the largest effect on the purchase conversion rate, followed by perceived quality and perceived psychological risk, in that order. The finding that the sample use rate had a strong and positive effect on the purchase conversion rate corroborates other works such as those of McGuinness at al.,[9] Bem,[18] (1972), Freedman and Fraser[19] (1966), (1992). The details are listed in Table 6.

CONCLUSION AND SUGGESTION

Cosmetic samples are small amounts of cosmetic products provided either as a free gift to purchasing customers or for a tryout with or without any purchase involved. The aim of providing free samples is to eliminate consumers' uncertainties about purchasing a new product. However, the very samples meant to reduce perceived risks could actually become a source of perceived risks. There has been almost no academic research or investigation on how many samples are actually used and whether giving away cosmetic samples affects the purchase of the sampled products, making it difficult to determine if it is a cost-effective strategy.

In this study we focused on understanding the sub-dimensions of risks that may be perceived by consumers, and attempted to determine the effects of such perceived risks on perceived quality or, even further, on the sample use rate or the rate of purchase conversion into sampled products. The required data was gathered through a survey of 433 Korean adult women in their 20s to 50s, and they were selected through a quota sampling based on age groups.

The research found that cosmetic samples had meaningfully negative effects on the received quality of the samples. Perceived quality had a positive impact on the sample use rate, and, among different types of perceived risks, only perceived unsuitability risk had a direct and negative effect. Other than perceived quality and the sample use rate, only perceived psychological risk had a positive impact on the purchase conversion rate. In terms of the effects of perceived functional risk, perceived psychological risk and perceived retail risk on the sample use rate, their effects were meaningful only when they were indirect effects through perceived quality, and perceived functional risk and the perceived retail risk had only had an indirect effect through perceived quality on the purchase conversion rate. Perceived unsuitability risk had an indirect impact on the purchase conversion rate by mediating through perceived quality and the sample use rate.

This analysis allows us to draw the following conclusions: First, the data confirms that cosmetic samples provide practical benefits to consumers in the form of reducing risks for sampled products by giving an opportunity to 'try it out' and by giving an additional bonus after purchase.

Second, consumer-perceived risk for cosmetic samples was generally not very high. However, it is necessary to reduce the perceived risk for cosmetic samples because it influences the perceived quality of the sample, as well as the sample usage rate and the purchase rate of sampled cosmetics. To reduce the perceived risks of samples, companies should consider customers' skin type, skin condition, the type of purchased items, and circumstances of use. This is because consumers consider the individual suitability of samples when purchasing cosmetics. Additionally, it may be possible to reduce the perceived suitability risk for cosmetic samples by establishing

a web page or app where customers can apply for samples. By providing information about sample ingredients and suitability, and sharing customer reviews, consumers can choose the right samples they want.

Third, among related variables, the sample use rate had the largest impact on the purchase conversion rate. To increase the sample use rate, other than reducing perceived unsuitability risk, the circumstances under which samples are used should be considered. The qualities of samples, such as their volume, packaging, and ingredient lists, should be improved to make samples easier to use. For example, most samples are designed for single use, but depending on consumer preferences or circumstances—such as makeup habits, hair length, or the amount used—they might find the quantity too much or not enough. While most cosmetic samples are easy to carry because they are provided in pouch (sachet, film) form, some are hard to tear depending on their thickness or material. Therefore, volumes and packaging need to be tailored to consumer preferences and circumstances.

Fourth, as the sample use rate is strongly correlated to the purchase conversion, the convenience and connectedness should improve when sample users want to purchase sampled products. Heiman, et al.[3] (2001) stated that purchase conversion rates increase under circumstances where people can buy sampled products immediately after using their samples. To achieve that, some measures can be considered, such as putting a QR code in the sample, through which consumers can immediately purchase sampled products, or providing incentives such as a special discount to those access the QR code on a sample. Moreover, using the same design language or image with the sampled product would lead to higher connection between samples and the sampled products.

Author Contributions

Both authors contributed significantly to this work. I.S. and K.K jointly conceived and designed the study, analyzed and interpreted the data, and wrote and revised the manuscript. I.S. conducted the experiments and collected the data, while K.K provided critical feedback on the manuscript and helped to shape the research direction. Both authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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None declared.

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Not applicable

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Tables

Table 1. Cosmetics Evaluation Criteria from Major Cosmetics Forums.

Channel Name	URL	Quality Factors
Hwahae	hwahae.co.kr	What it does (anti-wrinkle, whitening, improve skin texture, improve complexion, improve skin elasticity, shrink pores, block UV, etc.), moisture, spreadability, persistency, permeability, fragrance, texture (viscosity), price, design, ingredient safety, manufactured date
Glowpick	glowpick.com	
Unnie's Pouch	unpa.me	
Power Room	powderroom.co.kr	

Table 2. The Operant Definition and Measurement Questions of the Factors.

Factors	Operant Definition		Score	Questions
Purchase Conversion Rate	The average rate of buying the product after using its sample.		0~100% The number is written by hand	1
The sample use rate	The average rate of using the provided free cosmetic samples.			1
Perceived Functional Risk	The risk a cosmetic sample will not work properly	Anxiety of never having used	The 5-point Likert scale	5
		Anxiety about quality		
		Finding unnoticed flaws		
		Unmet expectation and desire		
		Using in the wrong way		
Perceived Unsuitability Risk	The risk a cosmetic sample could be incompatible with my skin	Causes skin problems		5
		Not for my skin type		
		Might cause harm to skin		
		Not the right ingredient for me		

		Reluctant because it's unproven	
Perceived psychological risk	Feel psychologically burdened to use a cosmetic sample	Embarrassed to use in front of others	5
		Might be seen as frugal	
		Feel as if I don't respect myself	
		Too old or too young for it	
		Unfit for my status	
Perceived retail risk	Risk of a cosmetic sample that might happen while being sold or stored	Can't trust its retail or best before period	3
		Unsafe way to retail or store	
		Unhygienically exposed package	
Perceived quality	Subjective reception about a cosmetic sample's specific effects and effectiveness	Moist	5
		Refreshing	
		Texture	
		Skin permeability	
		Spreadability	

Table 3. The General Characteristics of the Survey Respondents.

Item	Category	n(%)	Item	Category	n(%)
Age	In their 20s	115(26.56)	Occupation	Student	49(11.32)
	in their 30s	110(25.40)		Office worker	265(61.20)
	In their 40s	108(24.94)		Housewife	87(20.09)
	In their 50s	100(23.09)		Unemployed	32(7.39)
Residence	Seoul or Gyeonggi	278(64.20)	Monthly average household income	Fewer than 2 million	100(23.09)
	5 major metropolitan cities	94(21.71)		More than 2 million and	145(33.49)

				less than 4 million	
	Etc	61(14.09)		More than 4 million and less then 6 million	110(25.40)
Marital status	Married	214(49.42)		More than 6 million and less then 8 million	53(12.24)
	Not married	219(50.58)		More than 8 million	25(5.77)
Children	Have	175(40.42)		Fewer than 50k	141(32.56)
	Don't have	258(59.58)		From 50k to 100k	142(32.79)
Level of education	Didn't graduate highschool	65(15.01)	Money spent on cosmetics monthly	100k to 150k	94(21.71)
	University(enrolled)	308(71.13)		150k to 200k	23(5.31)
	Graduate school(enrolled)	60(13.86)		More than 200k	33(7.62)
n=433(100.00)					

Table 4. The Difference in perceived quality by perceived risk.

Dimension	**Unstandardized Coefficient**		**Standardized Coefficient**	**t**
	B	**SE**	**β**	
Invariable	5.37	0.09		59.12
Functional	-0.22	0.03	-0.27	-6.63***
Unsuitability	-0.08	0.04	-0.11	-2.38*
Psychological	-0.33	0.03	-0.38	-10.07***
Retail	-0.13	0.03	-0.17	-3.75***

R^2= 0.49, F= 104.16* **	

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

Table 5. The effects of perceived risk and perceived quality on the sample use rate.

Dimension	Unstandardized Coefficient		Standardized Coefficient	t
	B	SE	β	
(invariable)	64.65	14.33		4.51
Functional	-3.61	1.78	-0.11	-2.03*
Unsuitability	-4.51	1.84	-0.15	-2.45*
Psychological	-1.44	1.77	-0.05	-0.81
Retail	1.49	1.92	0.04	0.78
Perceived Quality	6.81	2.52	0.17	2.70**
R^2=0.13, F=13.04**				

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

Table 6. The effects of perceived risk, perceived quality and the sample use rate on purchase conversion into sample products.

Dimension	Unstandardized Coefficient	Standardized Coefficient	Model	t
	B	SE	β	
(invariable)	-12.43	10.88		-1.14
Functional	-0.82	1.32	-0.03	-0.62
Unsuitability	-1.18	1.38	-0.05	-0.86
Psychological	3.89	1.42	0.14	2.73*
Retail	-0.11	1.32	0.00	-0.09
Perceived Quality	5.83	1.89	0.18	3.09***
Rate of Sample Use	0.35	0.04	0.43	9.81***
R^2=0.28, F=26.91***				

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