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Activities on Doctors' Decisions about
Prescription Drugs

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ABSTRACT

In this study, we analyze the impact of pharmaceutical companies' CSR (corporate social responsibility) activities on doctors' decisions about prescription drugs in a qualitative approach. In Japan, the decision-makers of prescription drugs are not patients who actually use the drugs but doctors, as specialists, who usually select the drugs. Thus, the pharmaceutical industry has a special structure, with its products having some characteristics of consumer products (in business-to-consumer environments) and those of industrial products (in business-to-business environments). Our interviews with doctors suggest that pharmaceutical companies' CSR activities hardly influence doctors' decisions about prescription drugs directly. Instead, usefulness (*i.e.*, efficacy and safety) is recognized to be the most important decision-making factor for prescription drugs in their specialized medical fields and reputation of pharmaceutical companies in their non-specialized fields. The results also show that the CSR activities of pharmaceutical companies strengthen their reputation. In addition, our interviews with patients and their supporters reveal that the views of patients about pharmaceutical companies' CSR activities are different from those of doctors.

Keywords:

Corporate social responsibility, pharmaceutical industry, prescription drug, qualitative data, Japan

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Introduction

Recently, in accordance with increased awareness of the pink-ribbon movement in Japan, more and more pharmaceutical companies have started to hold a mammography examination caravan. This is a free mammography examination campaign conducted all over Japan as a part of the social contribution of pharmaceutical companies. In fact, many local governments provide mammography examination services at only a small charge throughout the year. However, presently, those services provided by local governments are not well recognized. Instead, pharmaceutical companies' social contribution activities starting with mammography examination caravans have stimulated the mass media to promote early detection of breast cancer.

Then, it is natural to question whether mammography examination caravans were a meaningful activity for pharmaceutical companies, who pay for the cost of the activity. Of course, pharmaceutical companies may not expect a direct return from mammography examination caravans, but such activities cannot be sustained unless the situation is win-win for both pharmaceutical companies and breast cancer patients. Thus, we decided to investigate the impact of pharmaceutical companies' CSR (corporate social responsibility) activities on doctors' decisions about prescription drugs.

Mammography examination caravans are exactly a part of pharmaceutical companies' CSR activities. CSR activities are becoming a competitive factor in many industries because of the increased public opinion based on consumers. A growing number of companies, especially those whose customers are consumers, invest a large amount of money in CSR activities and propagate those activities through advertisements and their websites. However, in Japan, the decision-makers of prescription drugs are not patients who actually use the drugs but doctors, as specialists, who usually select the drugs. Thus, the pharmaceutical industry has a special

structure, with its products having some characteristics of consumer products (in B2C (business-to-consumer) environments) and those of industrial products (in B2B (business-to-business) environments).

In this study, we conducted interviews with six breast cancer specialists to analyze the impact of pharmaceutical companies' CSR activities on doctors' decisions about prescription drugs in a qualitative approach. Similarly, we conducted interviews with six breast cancer patients and their supporters to compare their views about pharmaceutical companies' CSR activities with doctors'.

CSR Activities in the Pharmaceutical Industry

Since there are some differences in the definition of CSR among Japan, the US (United States), and EU (European Union) countries, those by two representative business groups of Japan are introduced as follows: The definition of CSR by the Japan Business Federation (Nippon Keidanren) is "to understand economic, environmental and social aspects comprehensively to make them sources of competitiveness and improve corporate values" (Nippon Keidanren, 2004). Furthermore, CSR "should be executed not by government initiatives but by the voluntary efforts of industry." On the other hand, the Japan Association of Corporate Executives (Keizai Doyukai) positioned the year 2003 as "the first CSR year in Japan" and CSR management as "a management system to develop both companies and society synergistically, considering various stakeholders (customers, shareholders, employees, people of the next generations, local communities, *etc.*) widely and to harmonize the benefits for both companies and society at a high level based on current social needs" (Keizai Doyukai, 2004). Therefore, CSR is to be "not merely a social contribution or compliance but an investment which should be positioned as the core of business and an active challenge to obtain future

competitive advantage."

Almost all companies are more or less engaged in CSR activities due to the influence of public opinion. In recent years, many companies have made use of CSR activities strategically since consumers are likely to favor products of companies which are enthusiastic about CSR activities. For example, Volvic supports UNICEF's (United Nations Children's Fund's) activities to dig and maintain wells to secure drinking water in Africa, using a part of their proceeds from the sales of Volvic water under the concept of the "Drink 1, Give 10" program. Of course, this does not necessarily mean that exactly 10 liters of well water is supplied in Africa for every 1 liter of Volvic water sold. However, this is a mechanism by which consumers can feel that they are supporting African people who are suffering from a shortage of drinking water by purchasing Volvic water, and Volvic can increase their sales while contributing to society at the same time.

As for pharmaceutical companies' CSR activities, according to the latest ranking of global companies, which is announced by Newsweek Japan every year, no less than three of the top ten companies in CSR scores were pharmaceutical companies (AstraZeneca, Bayer, and Novo Nordisk) (Nakamura, 2008). However, no pharmaceutical company was included in the top 50 Japanese companies in terms of CSR scores (Kishimoto & Nakamura, 2008). The CSR score consists of four items: corporate governance, employee care, social contribution, and environmental action. Companies are ranked based on the total of a financial score out of 50 points and the CSR score out of 50 points. In fact, Astellas Pharma, a Japanese pharmaceutical company, was ranked 35th in the ranking of global companies, which was the highest among Japanese companies. However, their very high financial score, the 7th in the world, compensated for their rather low CSR score. In a way, large-scale Japanese pharmaceutical companies tend to have low CSR scores in comparison to their high financial scores. This

suggests their efforts toward CSR activities are not very aggressive, compared to their financial power. In addition, another ranking of Japanese companies rated by Toyo Keizai indicates a similar tendency, in that the total score of Takeda Pharmaceutical Company, whose financial score had been the top for the past three years, fell to 97th after adding their CSR score, and the total score of Astellas Pharma, whose financial score was 8th, decreased to 56th with their CSR score (Toyo Keizai, 2009). The ranking of companies rated by Toyo Keizai was also determined based on the total of the financial score out of 50 points and the CSR score out of 50 points. However, Toyo Keizai determines CSR scores based on a CSR survey conducted by itself, while those by Newsweek Japan are based on a CSR survey by EIRIS of the UK (United Kingdom).

Literature Review

Theme of whether a mammography examination caravan, one of the CSR initiatives conducted by a pharmaceutical company, can contribute to the pharmaceutical company is related to that of whether high CSP (corporate social performance) leads to high CFP (corporate financial performance). There have been many studies on the causal relationship between CSP and CFP, that is, CSR activities and financial performance, and various interpretations have been made for the relationship: There is no relationship between CSR activities and financial performance, CSR activities better financial performance, CSR activities lower financial performance, good financial performance enhances CSR activities, *etc.* This debate started in the 1960s and has continued until today. The following is the main body of literature discussing the relationship between CSP, which represents CSR activities, and CFP, which represents financial performance, introduced chronologically.

Cochran and Wood classified 13 research papers published between 1972 and 1980, which investigated the relationship between CSP and CFP, to report that nine showed positive

correlations, three showed no correlation and only one showed a negative correlation (Cochran & Wood, 1984). Although Cochran and Wood's study itself suggested a positive correlation between CSP and CFP, one of the reasons for inconsistent results in the early studies was that the definitions of CSR varied and the indices of CSP were not unified. Therefore, Aupperle and Carroll excluded profits-related CSP and investigated the relationship of CSP only related to social matters (laws, ethics, and charity) with short-term (one year) ROA (return on assets) and long-term (five years) ROA, to find no correlation with ROA on either a long term or short term basis (Aupperle & Carroll, 1985). Ullmann assumed that the reason for the inconsistent results on the relationship between CSP and CFP derived from different extensiveness of information disclosure for CSR activities conducted through manual reporting to shareholders (Ullmann, 1985). He proposed an analytical framework, considering the interactions between three factors: CSP, CFP, and social disclosure.

McGuire *et al.* compared CSP with both CFP before the commencement of CSR activities and CFP after the commencement, to find that CFP before the commencement of CSR activities had a stronger relationship with CSP than that after the commencement (McGuire *et al.*, 1988). This implies that when CFP is good, CSP thereafter becomes better, rather than that when CSP is good, CFP thereafter becomes better. Waddock and Graves recognized the two-way causal relationship between CSP and CFP, and explained each relationship with a different theory (Waddock & Graves, 1997). Since companies with good CSP are supposed to conduct good business management, excellent business management may improve CFP thereafter. On the other hand, since companies with good CFP often have slack resources in their organizations, CSP may be improved by allocating the slack resources to CSR activities thereafter.

McWilliams and Siegel asserted that the reason for the positive relationship between CSP and CFP, which was observed in many of the previous studies, was overestimation of CFP,

as investment in research and development was not controlled (McWilliams & Siegel, 2000). It was shown that when investment in research and development was added as a control variable, CSP rarely affected CFP. In addition, Ruf *et al.* focused on variations in CSP and found a positive relationship between variations in CSP and those in CFP (Ruf et al., 1998).

The relationship between CSP and CFP was also analyzed from the viewpoint of SRI (socially responsible investment), which shows whether an investor invests in companies conducting CSR management preferentially. By using modern portfolio theory and stakeholder theory, Barnett and Salomon found a curvilinear relationship, showing that when CSP was low or high, CFP was high, and when CSP was medium, CFP was low (Barnett & Salomon, 2006). This is because a SRI fund manager invests in companies with low CSP by setting milder conditions for the purpose of diversification from the viewpoint of modern portfolio theory, and also invests in those with a good relationship with their stakeholders, which means high CSP, from the viewpoint of stakeholder theory at the same time. Therefore, when CSP is shown on the x-axis and CFP on the y-axis, the curve becomes U-shaped.

The review study which covered the largest number of studies on the relationship between CSP and CFP is the one conducted by Margolis and Walsh (Margolis & Walsh, 2003). They analyzed 127 studies published between 1972 and 2002. Of the 127 studies, 109 studies examined the impact of CSP on CFP, and 54 of them reported positive influences, 7 reported negative influences, 28 reported insignificant influences, and 20 reported mixed influences. Unfortunately, no study on the investigation of CSP and CFP in Japan was included in the 127 studies. However, Nakao *et al.* focused on the environmental performance of Japanese companies in CSP and found that environmental performance had a positive impact on CFP (Nakao et al., 2007).

Orlitzky *et al.* conducted meta-analysis of the relationship between CSP and CFP based

on the results of 52 studies, to find that CSP had a stronger relationship with account-based CFP such as ROA and ROE (return on equity) rather than market-based CFP such as stock prices (Orlitzky et al., 2003). In addition, it was also indicated that reputation-related indices in CSP had a stronger relationship with CFP than any other indices. In fact, many scholars have investigated the interactions between reputation and CFP (*e.g.*, Roberts & Dowling, 2002).

Decision-Making Model of Prescription Drugs

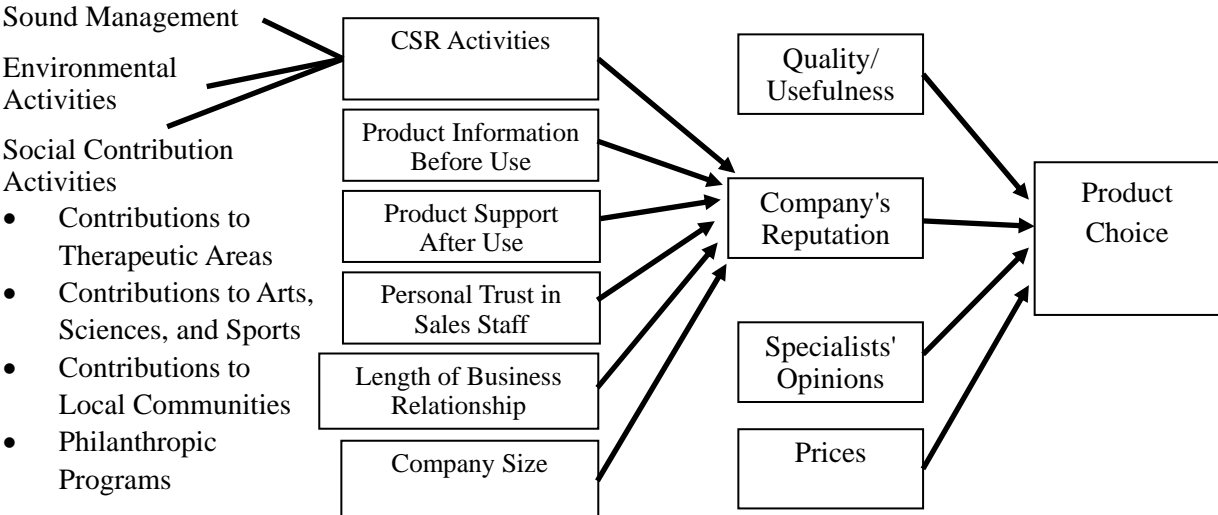
As shown in the conceptual model in Figure 1, if mammography examination caravans, a part of CSR activities, influence doctors' decisions about prescription drugs, no direct causal relationship can be easily thought of, so that it can be assumed that the reputation of a pharmaceutical company may mediate CSR activities and doctors' decisions about prescription drugs. Then, other than CSR activities of a pharmaceutical company starting with a mammography examination caravan, what factors are related to the reputation of pharmaceutical companies? We thought of "a pharmaceutical company's product information before use", "a pharmaceutical company's product support after use", "personal trust in a pharmaceutical company's sales staff", "time length of business relationship with a pharmaceutical company or time length of the use of a pharmaceutical company's products", and "pharmaceutical company size". Similarly, other than "a pharmaceutical company's reputation", what factors influence doctors' decisions about prescription drugs? We thought of "quality of drugs/usefulness (efficacy and safety) of drugs", "opinions of specialists in drugs", and "prices of drugs".

Furthermore, in this study, CSR activities were considered to consist of three pillars: "sound management", "environmental activities", and "social contribution activities". Among the three pillars, especially, social contribution activities are aggressively practiced in the Japanese pharmaceutical industry and these are roughly categorized into "contributions to

therapeutic areas", "contributions to arts, sciences, and sports", "contributions to local communities", and "philanthropic programs". For example, according to the above-mentioned ranking of global companies announced by Newsweek Japan, Takeda Pharmaceutical Company, which had the highest CSR score among Japanese pharmaceutical companies, has provided antidiabetic drugs for low-income patients in the US for free (contributions to therapeutic areas), provided grants for scientific and technological research and cosponsored a marathon (contributions to arts, sciences, and sports), repaired buildings and houses in low-income residential areas of Chicago (contributions to local communities), and aided disaster victims and supported the United Nations World Food Program (philanthropic programs) (Takeda Pharmaceutical Company, 2007). Mammography examination caravans should be categorized into "contributions to therapeutic areas".

FIGURE 1

Decision-Making Model of a Product Choice



Research Methodology

In this study, we conducted exploratory research in a qualitative approach. We

interviewed doctors to construct a basic theory on the impact of pharmaceutical companies' CSR activities on their decisions about prescription drugs. As a pre-test before the interviews, the opinions of an employee of a pharmaceutical company and a doctor were obtained to draw up a decision-making model for product choice, shown in Figure 1. Although the conceptual model in Figure 1 contained factors that some interviewees did not consider at all or did not contain those that an interviewee considered (*e.g.*, advertisements as a factor leading to the reputation of the company), all the interviewees basically agreed that the model is appropriate as a common model for product choice. Interviews were conducted in a semi-structured form, and open questions, multiple-choice questions, and questions to be answered with only numbers were prepared in advance. According to the contents of the actual answers, some extra questions were added. The number of questions asked of all the doctors was 12 in total, and the questions and answer forms are shown in Table 4 of the Appendix. Although the same interviews were conducted for both doctors and patients/their supporters, some of the questions were omitted for patients/their supporters, as they were irrelevant to them. The interviewees for each question are also shown in Table 4.

The interviewees were six breast cancer specialists and six patients/their supporters. Among the six specialists, three doctors went on the air or appeared in the newspapers to advertise mammography examination caravans or became a lecturer on the day of the caravans, and another three doctors were not related to any of such events. Five of the six doctors were breast cancer specialists approved by the Japanese Breast Cancer Society, and all of them were working at a hospital or had worked at a hospital until recently. On the other hand, two patients of the six had breast cancer, and all of the four supporters regularly worked for cancer patient-support organizations and were either family members of the patients or healthcare professionals at the same time.

For doctors, interviews were conducted in five different situations by showing Figure 1: (1) when selecting general consumer products (drinking water or PCs (personal computers)) as a consumer, (2) when selecting OTC (over-the-counter) drugs as a consumer, (3) when selecting prescription drugs in specialized fields as a doctor, (4) when selecting prescription drugs in non-specialized fields as a doctor, (5) when selecting prescription drugs five years ago in specialized fields as a doctor. Regarding the last situation, although memories of five years ago should have been easily recalled, we have to note that the answers may have lacked precision. However, since the questions were made as a comparison with the current situation, the answers should be useful for relative comparison. In addition, not only the ratio of factors for product selection in Figure 1 but also reasons for the ratio and interviewees' evaluation of the conceptual model itself were asked interactively through the interviews.

Additionally, as shown in Table 4, both doctors and patients/their supporters were asked whether the CSR activities which pharmaceutical companies are engaged in have improved the reputation of the company. The answers were evaluated for each activity with a 5-point Likert scale: "strongly agree" (5 points), "somewhat agree" (4 points), "neither agree nor disagree" (3 points), "somewhat disagree" (2 points) and "strongly disagree" (1 point). Furthermore, the relationship between CSR activities and selection of prescription drugs, evaluation of a specific CSR activity (*i.e.*, a mammography examination caravan) of pharmaceutical companies, and evaluation of a specific CSR activity ("Drink 1, Give 10" program of Volvic) of consumer product manufacturers were also asked with a 5-point Likert scale in a similar way.

Results

Before presenting Figure 1, we asked the doctors to freely give the decision-making factors for their choice of prescription drugs. With regard to the choice of drugs in their

specialized fields (*i.e.*, anticancer drugs), four of the six doctors mentioned the effects (*i.e.*, efficacy) and two mentioned usefulness (*i.e.*, both efficacy and safety) as the decision-making factors. The interviews also revealed that all six doctors relied on EBM (evidence-based medicine). In other words, they use objective evaluations based on clinical trial results as the criteria to determine the usefulness of drugs. Meanwhile, regarding drugs in their non-specialized fields (*e.g.*, antihypertensives, antibiotics, *etc.*), all responded that they choose drugs that they "have used before" or that they "know", and no one mentioned the effects as a decision-making factor. Of course, they choose drugs that they "have used before" not only because of the experience of using them but also because of the positive effects as a result of using them. The drugs they "know" specifically meant the well-known drugs that have been used widely for a long time, or that were advertised frequently in medical journals or commercial media, as well as the drugs about which information had been provided by MRs (medical representatives) of pharmaceutical companies. Some said that they consult with a professional pharmacist in that specific field to select the most appropriate drugs. In short, doctors tend to choose the drugs they consider as the most useful based on their knowledge when they have sufficient professional expertise about the disease, while they select drugs that they have used before, drugs that are widely known, drugs about which information has been provided, or drugs recommended by a specialist in that field when their knowledge is not sufficient.

Next, we showed Figure 1 to the doctors and asked them to give a percentage to each of the decision-making factors for their choice of prescription drugs in their specialized medical fields, drugs in their specialized fields five years ago, and drugs in non-specialized fields from the standpoint of doctors. We also asked them to give a percentage to each of the decision-making factors for their choice of drinking water, PCs, and OTC drugs from the

standpoint of consumers, just for reference. The percentages shown in Table 1 are the mean values for the six doctors. The characteristics of each product (*i.e.*, time of decision-making, prices, and periods of use) are also evaluated on four levels since the product characteristics may influence the product choice. When choosing a drug in their specialized fields, doctors placed the highest emphasis on usefulness based on their own specialist knowledge without asking for others' opinions. The interview results, however, also show that they consider the prices of products depending on the medical or economic situation of patients. For instance, when a patient suffers recurrence of cancer or requires a long period of medication, they present the amount of money estimated to be needed, ask the priorities of the patient, and then choose a drug taking into account the prognosis, together with the patient. When choosing a drug in doctors' non-specialized fields, meanwhile, because their knowledge is poorer than that in their specialized fields, they place the highest emphasis on the pharmaceutical company's reputation, and opinions of a specialist in that field also have a great influence on their decision-making. As shown in Table 1, percentages given to doctors' decision-making factors for drugs in their non-specialized fields were similar to those of OTC, rather than those of drugs in their specialized fields. Needless to say, the specialists for OTC drugs mean pharmacists.

As to doctors' choice of prescription drugs in their specialized fields five years ago, emphasis on usefulness and prices is lower while pharmaceutical company's reputation is higher compared to the figures for choices made now. Except for one who gave exactly the same percentage to prices now and prices five years ago, all of the other five answered that they did not consider prices five years ago. Since the concept of EBM was not very common five years ago, doctors made decisions based mostly on pharmaceutical companies' reputation that was mainly affected by availability of product information before use and doctors' personal trust in MRs. Moreover, the concept of "living with cancer" was not widely known five years ago and it

was not common in Japan for patients to decide by themselves their way of life or treatment method. Focus was placed only on treatment of the lesion, based on which necessary drugs were selected, and prices of drugs were rarely considered. Furthermore, few patients talked with their doctors about the cost of drugs in those days. The change over the past five years seems to have been brought by a social consensus that the drug cost should be considered, which has been formed due to the recent rise of generic drugs, and the social awareness that patients should play a central role in medical treatment.

TABLE 1
Percentages of Each Decision-Making Factor of a Product Choice and Product Characteristics

Decision-Making Factors of a Product Choice	Prescription Drugs in Specialized Fields	Prescription Drugs in Specialized Fields (5 years ago)	Prescription Drugs in Non-Specialized Fields	Drinking Water	Personal Computers	OTC Drugs
Quality/Usefulness	72.5%	62.5%	34.0%	17.5%	30.8%	26.7%
A Company's Reputation	19.2%	36.7%	38.0%	47.5%	26.7%	27.5%
Specialists' Opinions	0%	0%	23.0%	0%	20.0%	29.2%
Prices	8.3%	0.8%	5.0%	35.0%	22.5%	16.7%
Time of Decision-Making	Relatively Long	Relatively Long	Relatively Short	Short	Long	Short
Prices	High	High	Relatively High	Low	High	Relatively Low
Periods of Use	Long	Long	Relatively Long	Short	Long	Relatively Short

As Figure 1 shows, various factors including CSR activities contribute to the improved reputation of a company, which will influence doctors' choice of drugs in their specialized fields. However, the company's reputation rate as a contribution to the choice of drugs is less than 20% as shown in Table 1, and the CSR activities rate as a contribution to a company's reputation is below 10% as shown in Table 2. This means that the rate of a company's CSR activities

affecting the choice of drugs through the improved company's reputation is less than 2% (= 20% x 10%). Thus, a pharmaceutical company's CSR activities contribute little to doctors' decisions about prescription drugs in their specialized fields.

TABLE 2
Percentages of Each Factor Affecting a Company's Reputation

Factors Affecting a Company's Reputation	Doctors				Patients/ Patients' Supporters
	Prescription Drugs in Specialized Fields	Prescription Drugs in Non-Specialized Fields	Personal Computers	OTC Drugs	OTC Drugs
CSR Activities	8.4%	3.8%	10.0%	2.0%	13.0%
A Company's Product Information before Use	37.0%	26.3%	25.0%	4.0%	24.0%
A Company's Product Support after Use	15.4%	8.8%	24.0%	4.0%	10.0%
Personal Trust in a Company's Sales Staff	26.4%	21.3%	0%	0%	0%
Time Length of Business Relationship with a Company (Time Length of the Use of a Company's Products)	8.4%	5.0%	10.0%	2.0%	12.0%
Company Size	4.4%	35.0%	31.0%	88.0%	41.0%

As shown in Table 2, among the factors that may influence the reputation of a pharmaceutical company, doctors place higher emphasis on the company's product information before use and personal trust in the company's sales staff (*i.e.*, MRs) rather than on the company's CSR activities, when they select drugs in their specialized fields. Since MRs provide doctors with information about prescription drugs, information provided by a company before use and personal trust in a company's sales staff are closely related to each other. According to the respondents, elements that constitute trust in an MR include: honest attitude such as keeping promises, flexible actions that match the doctors' situation, rich medical knowledge not only

about his/her own company's products but also about the disease as a whole, practical ability in organizing events, *etc.*

Meanwhile, in doctors' choice of drugs in their non-specialized fields, while a company's product information before use and personal trust in a company's sales staff are considered to be important factors that lead to an improved reputation of the company, greater emphasis is placed on the size of the pharmaceutical company. If a company is large, it is unlikely to go bankrupt and therefore doctors can feel relieved that a stable supply of drugs is ensured, and more importantly, advertisements for such a company or its products are often seen, which enables consumers to recognize the product names visually, resulting in an improved reputation of the company. This tendency of greater emphasis on company size is particularly strong for the choice of OTC drugs. From the viewpoint of doctors, company size seems to be the only factor that leads to the improved reputation of a company. The view of patients and their supporters, however, is a little different from each other. They place a rather high emphasis on CSR activities as a factor contributing to a company's reputation, though they see company size as the most important factor in the choice of OTC drugs.

While doctors and patients/patients' supporters evaluate CSR activities by pharmaceutical companies differently as shown in Table 3, what both parties strongly want pharmaceutical companies to do is to contribute to therapeutic areas. Doctors do not have strong opinions about what sort of CSR activities pharmaceutical companies should be engaged in. Some are not even interested in CSR activities by pharmaceutical companies. As the reason for such lack of interest, mostly they said that since doctors are responsible for patients as professionals, their choice of drugs should be based on usefulness and should not be affected by the CSR activities of pharmaceutical companies. Some doctors said, however, that if they obtain much information about CSR activities through MRs, it may affect their decisions about the

choice of drugs.

TABLE 3

Evaluation of CSR Activities that Gain Pharmaceutical Companies' Reputation

Types of CSR Activities	Doctors (Out of 5 Points)	Patients/Patients' Supporters (Out of 5 Points)
Sound Management	4.3	5.0
Environmental Activities	3.2	4.0
Social Contribution Activities: Contributions to Therapeutic Areas	5.0	5.0
Social Contribution Activities: Contributions to Arts, Sciences, and Sports	3.2	2.3
Social Contribution Activities: Contributions to Local Communities	3.7	3.3
Social Contribution Activities: Philanthropic Programs	3.5	3.7

On the other hand, patients and their supporters said that they strongly believe that pharmaceutical companies should place higher emphasis on contributions to therapeutic areas rather than on general contributions and support for developing countries. There was also an opinion that companies should use their profits to satisfy unmet medical needs instead of using them for CSR activities. The mammography examination caravan, a disease awareness-raising campaign, is highly appreciated not only by patients/patients' supporters but also by doctors, no matter whether they participated in the caravan or not. Some patients, however, said since activities like the mammography examination caravan, which they highly appreciate, can be conducted by local governments, they want pharmaceutical companies to conduct the type of CSR activities that only pharmaceutical companies can do.

Discussions and Conclusions

In this study, with the aim of finding an answer to the question of whether the

mammography examination caravan makes any contributions to a company, qualitative analysis was conducted to determine the impact of CSR activities on doctors' decision-making on prescription drugs. Like many other countries, it is rare in Japan for patients, despite being the consumers of drugs, to actually choose the drugs themselves, and the choice is usually made by doctors, who are the specialists. In US hospitals, doctors specify generic names of prescription drugs instead of their product names for promotion of wider use of generic drugs, and the decision to select a specific drug is made by pharmacists working at an out-of-hospital pharmacy or the patients. Like many other countries, in Japan, the financial cost of drugs is ultimately borne by patients, or consumers, though by means of national health insurance or private insurance in most cases. In short, in Japan, unlike the system for general consumer products, the system for prescription drugs is unique in that doctors decide the products to purchase on behalf of patients using their specialist knowledge while patients just pay for the cost of the products. In this sense, prescription drugs have the characteristics of both B2C and B2B.

This seems to be the reason why large Japanese pharmaceutical companies' CSR activities are not very active compared to their financial capacity. According to CSR scores presented in the company rankings by Newsweek Japan and Toyo Keizai, B2C companies generally receive higher CSR scores than B2B companies. This means that B2C companies place higher emphasis on CSR activities than do B2B companies. Of course, B2B companies are making efforts to satisfy the environmental standards required by their client companies. But they are probably not making the kind of efforts that B2C companies are making to enable consumers, who are their customers, to be aware of their social contribution activities. In other words, B2C companies are actively engaged in CSR activities while the CSR activities by B2B companies are rather passive.

With this in mind, this study conducted an investigation to find answers to the following questions: In the prescription drug industry, which has the characteristics of both B2C and B2B, do CSR activities have an influence on doctors' decisions about drug selection? If they do, what are the other influential factors and what kind of CSR activities are recommended? Or if CSR activities have no direct impact on doctors' decisions about the choice of drugs, what are the mediating factors between CSR activities and doctors' decisions about drugs? Are there any differences in doctors' decision-making factors for the choice of prescription drugs in their specialized medical fields and in their non-specialized fields? Are the decision-making factors different from those of five years ago when the concept of EBM was not as well-known? And are such decision-making factors also effective when doctors choose a general consumer product such as drinking water, PCs, or OTC drugs at a pharmacy, as consumers?

The answer to the question of whether the CSR activities of a pharmaceutical company have an influence on doctors' decisions about drugs is: Although no direct relationship was found, there appears to be a slight indirect relationship in that a company's CSR activities contribute to improving the reputation of the company, and a better reputation influences decision-making about the choice of drugs. Improving a company's reputation requires a long-term strategy and it may be too early to conclude at this point that CSR activities have little influence on doctors' decisions about prescription drugs directly or indirectly. Since CSR activities include many elements other than advertising, it is more appropriate to think about what kind of CSR activities are effective than to think about how many CSR activities should be carried out. It is therefore necessary to listen to the opinions about CSR activities from doctors, who actually select drugs, and patients/patients' supporters, who are the users of drugs. The type of CSR activities that were supported by all those interviewed was contributions to therapeutic areas. This demonstrates that the mammography examination caravan as a CSR activity satisfies

the needs of customers.

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Appendix

TABLE 4

Questions in the Interviews

Question Items	Questions	Answer Forms	Interviewees
Q1: Decision-making factors of prescription drugs in specialized medical fields	What factors do you consider when selecting prescription drugs (<i>i.e.</i> , anti-cancer drugs) in your specialized medical fields (<i>i.e.</i> , breast cancer)?	Open	Doctors
Q2: Decision-making factors of prescription drugs in non-specialized medical fields	What factors do you consider when selecting prescription drugs in your non-specialized medical fields (<i>e.g.</i> , antihypertensives, antibiotics, <i>etc.</i>)	Open	Doctors
Q3: Decision-making factors of drinking water as a general consumer product	In Figure 1, what percentage does each of the factors, "quality/usefulness", "a company's reputation", "specialists' opinions" and "prices", affect your product choice of drinking water as a general consumer?	Percentages of each factor to make 100% in total	Doctors and Patients/ Patients' Supporters
Q4: Decision-making factors of a personal computer as a general consumer product	In Figure 1, what percentage does each of the factors, "quality/usefulness", "a company's reputation", "specialists' opinions" and "prices", affect your product choice of a personal computer as a general consumer? Regarding "a company's reputation", what percentage does each of the factors, "CSR activities", "product information before use", "product support after use", "personal trust in sales staff", "time length of business relationship (or product use)" and "company size", affect the product choice?	Percentages of each factor to make 100% in total	Doctors and Patients/ Patients' Supporters
Q5: Decision-making factors of OTC drugs	In Figure 1, what percentage does each of the factors, "quality/usefulness", "a company's reputation", "specialists' opinions" and "prices", affect your product choice of OTC drugs as a general consumer? Regarding "a company's reputation", what percentage does each of the factors, "CSR activities", "product information before use", "product support after use", "personal trust in sales staff", "time length of business relationship (or product use)" and "company size", affect the product choice?	Percentages of each factor to make 100% in total	Doctors and Patients/ Patients' Supporters

<p>Q6: Decision-making factors of prescription drugs in specialized medical fields</p>	<p>In Figure 1, what percentage does each of the factors, "quality/usefulness", "a company's reputation", "specialists' opinions" and "prices", affect your product choice of prescription drugs (<i>i.e.</i>, anti-cancer drugs) in your specialized medical fields (<i>i.e.</i>, breast cancer)? Regarding "a company's reputation", what percentage does each of the factors, "CSR activities", "product information before use", "product support after use", "personal trust in sales staff", "time length of business relationship (or product use)" and "company size", affect the product choice?</p>	<p>Percentages of each factor to make 100% in total</p>	<p>Doctors</p>
<p>Q7: Decision-making factors of prescription drugs in specialized medical fields (5 years ago)</p>	<p>In Figure 1, what percentage does each of the factors, "quality/usefulness", "a company's reputation", "specialists' opinions" and "prices", affect your product choice of prescription drugs (<i>i.e.</i>, anti-cancer drugs) in your specialized medical fields (<i>i.e.</i>, breast cancer) 5 years ago? If the percentages of each factor are different from now, why are they different?</p>	<p>Percentages of each factor to make 100% in total</p>	<p>Doctors</p>
<p>Q8: Decision-making factors of prescription drugs in non-specialized medical fields</p>	<p>In Figure 1, what percentage does each of the factors, "quality/usefulness", "a company's reputation", "specialists' opinions" and "prices", affect your product choice of prescription drugs in your non-specialized medical fields (<i>e.g.</i>, antihypertensives, antibiotics, <i>etc.</i>)? Regarding "a company's reputation", what percentage does each of the factors, "CSR activities", "product information before use", "product support after use", "personal trust in sales staff", "time length of business relationship (or product use)" and "company size", affect the product choice?</p>	<p>Percentages of each factor to make 100% in total</p>	<p>Doctors</p>
<p>Q9: Relationship between CSR activities and a company's reputation</p>	<p>Do you think CSR activities that a pharmaceutical company is engaged in gain its reputation? Please answer, according to each of the following categories:</p> <ul style="list-style-type: none"> • Sound management • Environmental activities • Social contribution activities: Contributions to therapeutic areas • Social contribution activities: Contributions to arts, sciences, and sports • Social contribution activities: Contributions to local communities • Social contribution activities: Philanthropic programs 	<p>5-point Likert Scales (Disagree-Agree)</p>	<p>Doctors and Patients/ Patients' Supporters</p>

Q10: Relationship between CSR activities and a product choice	Do you want to purchase products of companies that are positively engaged in CSR activities?	5-point Likert Scales (Disagree-Agree)	Doctors and Patients/ Patients' Supporters
Q11: Evaluation for specific CSR activities of pharmaceutical companies	Regarding "Mammography Examination Caravan", (1) do you think the reputation of a company that is engaged in this program was gained? (2) Do you want to choose a drug of a company that is engaged in this program? (3) Do you want to choose an anti-cancer drug of a company that is engaged in this program?	5-point Likert Scales (Disagree-Agree)	Doctors and Patients/ Patients' Supporters
Q12: Evaluation for specific CSR activities of consumer product manufacturers	Volvic implemented "Drink 1, Give 10" program. (1) Do you think the company's reputation was gained? (2) Do you want to purchase Volvic water because of this program?	5-point Likert Scales (Disagree-Agree)	Doctors and Patients/ Patients' Supporters