

**What Do Celebrity Endorsers Bring to Companies?
Empirical Analysis on Risks of Celebrity Endorsers as Corporate Social Capital**

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Abstract

We examine how celebrity endorser scandals affect the endorser's individual value and corporate value of the companies which he/she has endorsed. We analyze a case of Becky, a popular celebrity in Japan. The reason we focus on Japanese case is that companies tend to appoint more celebrities as their endorsers than in other developed countries. As a result of our analysis, the scandal did not significantly affect the corporate value of companies she had endorsed, while it significantly reduced her individual value,. This indicates that there is an insignificant difference between the consumers' and investors' evaluation of the impacts of the scandal. Further investigation is needed to explain the mechanism behind it.

Key Words:

Celebrity, Corporate Value, Endorsement, Likability Rating, Scandal

1. Introduction and Objectives

Various studies, as represented by Agrawal and Kamakura (1995), have been examined the impact of celebrity endorsement on corporate value. Although many of them indicated that celebrity endorsement has a positive influence on corporate value (Farrel et al. 2000, Elberse and Verleun 2012, Mishra et al. 1997, Miyazaki and Morgan 2001, etc.), there are also some studies that show insignificant results (Ding and Stork 2010, Stork 2011), and a definite answer has not been found yet. This paper aims to give useful indications to the demonstration of the answer from some previously under-studied perspectives.

Firstly, we focus on the celebrities' individual value. Almost all of the previous studies, which analyze the impact of celebrity endorsers on corporate value, have not paid attention to how the celebrities' individual value change when their scandals happen. By examining the relationship between the evaluation that the celebrity, who occurred the scandal, received from the public and his/her value as the endorser, we provide a new viewpoint on the research of the endorser impact.

Secondly, we set the endorser scandal as an event of our analysis, although many extant studies focus on the announcement date that the endorsement contract started. It is difficult to examine the influence of the endorser itself because the new endorsement often starts at the same time as new products and services start. To overwhelm such problem, in this paper, with reference to Knittel and Stango (2012), we analyze the value that endorser originally possessed by analyzing negative events.

Thirdly, we focus on celebrity endorser¹ excepted athletes. Referring to the theory of source effect (Hovland and Waiss 1951-1952, McGuire 1985), the effect of the athlete endorser and the effect of the celebrity endorser are not quite similar. Most previous studies have been analyzed the athlete endorsers or the whole endorsers, but little is known about celebrity endorsers themselves with a role separately from athletes. Thus, in this paper, we analyze the celebrity endorser.

Finally, we analyze a case in Japan, which companies tend to appoint celebrities to endorsers more often than other developed countries' companies (Praet 2001). In Japan's case, it's expected that the effect of endorser will appear more significant.

In this paper, based on the above viewpoint, we examine the influence of the endorser on corporate value.

2. Research Question

¹ In this paper, we use the word "celebrity" in narrow definition as distinguished from athletes. It includes actors, actresses, fashion models, TV personalities, singers and so on.

There are two main questions of this paper. One is that whether the celebrity endorser has a significant influence on the corporate value. We focus on the negative events of endorser such as scandal to examine this question. If celebrity endorser has a positive influence on corporate value, the endorser scandal brings significant losses to it.

Another question is how celebrity's individual value related to the value of the company which he/she endorsed when he/she cause scandal. As McGuire (1985) shows, the source effect of endorser appears remarkably when consumers feel attracted to the celebrity. From this point of view, it is important for considering companies' advertising strategies to analyze how the celebrity's individual value changes around the endorser scandal.

In this paper, we examine these two research questions. Before that, we explain conceptual frameworks and our research model with reviewing previous studies in next section

3. Conceptual Framework/ Literature Review/ Research Model

3-1. Conceptual Framework

Before examining the influence of endorser on corporate value, we explain the conceptual framework about what kind of effect endorser is generally said to have.

It is said that endorser is a source of advertising messages for companies and can greatly affect consumers' attitudes. This is called the source effect (Hovland and Waiss 1951-1952). Companies raise consumers' interest to them by appointing experts or attractive people to advertisements of their products. The most important feature of the endorser to produce the source effect is "credibility" (Hovland and Waiss 1951-1952) and "attractiveness" (McGuire 1985).

It can be said that the athlete endorsers are the endorsers who have strong credibility as experts of the sports products they use. As Mathur and Rangan (1997) and Elbers and Verleun (2012) show, athletes' endorsing sports brands significantly raise their value when they make remarkable achievements. Also, when Tiger Woods caused a scandal, the stock price of Nike, the sports brand he used, fell down the most among the brands he endorsed (Knittel and Stango 2014).

On the other hand, compared with athletes and doctors, celebrity endorsers, whom we focused in this paper, can be said to be endorsers who have attractiveness rather than credibility. By these attractive stars, McCracken (1989) says, the meaning of the product is conveyed from the companies to the consumers. Also, famous faces are easier to attract consumers' attention and promote their efficient information processing than ordinary faces (Buttle and Danziger 1999). Through such a mechanism, celebrities are improving consumers' awareness to corporate advertising and enhancing both consumers' attitude to company and brand (Kamins 1989, Kamen et al. 1975).

Based on these concepts, if a more attractive celebrity endorses a corporate brand, investors will expect the higher increase in the sales of the company, and then the corporate value will be higher. On the contrary, when a celebrity's scandal occurs, his/her individual attractiveness will decrease, then investors will consider its negative impact on companies, so the corporate value will be expected to decline. In order to verify whether this is correct or not, several studies have been made as follows.

3-2. Literature Review

Agrawal and Kamakura (1995) is the representative of researches that analyze the influence of celebrity endorsers on the corporate stock price around the announcement date of endorsement. This study shows that when an endorsement is announced, a company can get +0.44 percent return on average. In addition to this, many studies such as Farrell et al. (2000) report that celebrity endorsers have the significantly positive influence on companies.

On the other hand, there are also some papers indicate that celebrity endorsers have no significant influence. For example, Stork (2011) shows insignificant results of celebrity endorsers' effect in any industries except the technology industry. The reason for this is that the incremental benefits from celebrity endorsements closely match the incremental costs due to appointment them. Besides this, there are some studies show the insignificant results such as Ding and Stork (2008), while many studies observe positive abnormal return.

Although most of the extant researches focus on the announcement date of endorsement, there are several studies analyze endorsers' scandals. For example, Knittel and Stango (2012) uses the case of Tiger Woods scandal and reveals that the event has a significantly negative impact on the corporate value of his sponsor companies, especially core three sponsors (EA, Nike, and PepsiCo).

While many studies have examined the endorsers' effect on their endorsing companies, they have some limitations in their studies. First, many of them focus on athlete endorsers. Second, they don't concern how endorser's individual value change. Third, while the most of them analyze cases in Europe and the U.S., little is known about the Japanese case. According to Praet (2001), Japanese advertisement more often uses celebrity than Western countries', and given this, we expected to observe more remarkable endorsers' effect by using the Japanese case. In this paper, overwhelming these limitations, we analyze a case of celebrity in Japan with using the following model.

3-3. Research Model

In this section, we describe our hypotheses and research models to examine them. As we mentioned, we focus endorser's scandal in this paper. Due to this, we postulate that endorsers have the positive impact on their endorsing companies around the announcement date, as many

of the extant empirical studies such as Agrawal and Kamakura (1995) reveal. Based on this, we set up the following two hypotheses:

H1: When the celebrity endorsers' scandals are caused, endorsers' individual value as the celebrity significantly decreases.

H2: When the celebrity endorsers' scandals are caused, corporate value of the companies they endorse significantly decreases.

In order to verify these hypotheses, this paper analyzes a case of Becky, a famous celebrity in Japan. She began activities as an entertainer since 1998, and she has been appointed as an endorser by various companies thanks to her high likability rating from consumers. However, on January 5th, 2016, the fact of her adultery scandal was reported in *Shuukanbunshun*² and became a big topic in Japan. Finally, her endorsement contracts were all terminated,³ and we guess the event became a significant negative signal to investors of the companies she endorsed. Thus, we examine how this event affected her likability rating and the corporate value of her endorsing companies at the time the scandal happened. We are supposed to verify our hypotheses by analyzing multiple cases, but due to the smallness of the number of samples, this time we use one big case as evidence, as well as Knittel and Stango (2012) does. We explain the detailed method in the next chapter.

4. Method

In this chapter, we describe a model for verifying our hypotheses. Because we analyze a hypothesis 1 and a hypothesis 2 in different ways, we explain individually below.

4-1. Method for analysis of a hypothesis 1

In the verification of hypothesis 1, we analyze how the value of individual celebrity changed around the scandal date. The data we use in this model is the likability rating recorded by TOKYO KIKAKU CO., Ltd., CM Soken Consulting. The data period is semi-annual from January 2009 to December 2016, and the number of the celebrities we used in the analysis is 2065. Then, we analyzed by the following procedure.

First, we rank all celebrities in the order of higher likability ratings in each period and make 14 groups for every 20th place. Here, in the group which number is lower, there are celebrities

² A major weekly magazine in Japan issued by Bungeishunju Ltd.

³ The companies which Becky endorsed when she caused the scandal are Kao Corporation, Lawson Inc., NTT Urban Development Co., Ltd, Sompo Holdings Inc., Sourcenext Corporation, Studio Alice Co., Ltd. and Suzuki Motor Corporation.

who got higher likability rating. We define G_t as the group that each celebrity belongs to in period t ($1 \leq t \leq 14$). Then, we obtain the following probability;

$$P\{G_{t+1} = n \mid G_t = m\} = p(n, m), \quad (1)$$

$$p(n, m) = \frac{NUM\{(G_{t+1} = n) \cap (G_t = m)\}}{NUM(G_t = m)}, \quad (2)$$

where, m is a number of the group in the period t ($1 \leq m \leq 14$) and n is a number of the group in the period $t+1$ ($1 \leq n \leq 14$), and $p(n, m)$ represents the probability that the celebrities who belong to the group m in the period t move to the group n in the period $t+1$. Here, $NUM(G_t = m)$ means the number of celebrities in the group m in the period t , $NUM\{(G_{t+1} = n) \cap (G_t = m)\}$ represents the number of people in the group m in the period t move to the group n in the period $t+1$. Also, there are 196 combinations of $(G_t, G_{t+1}) = (m, n)$. For each of them, we use $\overline{p(n, m)}$, the average of the probabilities among 14 periods, as the representative probability.

Here, we verify whether each $\overline{p(n, m)}$ is significantly different from zero or not by using the t-test. The groups which are significantly different from zero at a level of 10% in the test are expressed as $(G_t^*, G_{t+1}^*) = (m, n)$. These pairs represent the shifts of celebrities' group that are generally able to occur from the period t to the period $t+1$. In order to analyze what tendencies can be discerned regarding (G_t^*, G_{t+1}^*) , we do the following statistical analysis.

First, because pairs of (G_t, G_{t+1}) are the ordinal scales, we convert them to the quantitative scales in order to use them in quantitative analysis:

$$K(G_t) = 15 - m, \quad (3)$$

$$K(G_{t+1}) = 15 - n, \quad (4)$$

where, $K(G_t)$ and $K(G_{t+1})$ represent relative scores of G_t and G_{t+1} . Here, the lower the group number, the higher the score. For these two variables, we define the following relationship:

$$(x, y) = \{K(G_t), K(G_{t+1})\}. \quad (5)$$

From the expression (5), we consider a plane which axes are $K(G_t)$ and $K(G_{t+1})$. Then, we plot points $(x, y) = \{K(G_t^*), K(G_{t+1}^*)\}$ on this plane and derive the regression line l :

$$\text{Line } l : K(G_{t+1}) = \alpha + \beta * K(G_t) + \varepsilon, \quad (6)$$

where, α and β are parameters of the line l , and ε is an error term. This straight line represents

the expected transition of the celebrities' group from period t to period $t+1$. Subsequently, using this line, we analyze the cases of Becky. The combinations of Becky's groups in period t and period $t+1$ are expressed as follows:

$$\{K(G_t), K(G_{t+1})\} = \{K(G_t^B), K(G_{t+1}^B)\}. \quad (7)$$

Then, we calculated $E[K(G_{t+1}^B)]$, the score of expected group shifts when $K(G_t) = K(G_t^B)$ by expression (6), and analyze the difference between $E[K(G_{t+1}^B)]$ and $K(G_{t+1}^B)$ is significantly different from zero:

$$E[K(G_{t+1}^B)] = \hat{\alpha} + \hat{\beta} * K(G_t^B), \quad (8)$$

$$ACV_{t+1}^B = K(G_{t+1}^B) - E[K(G_{t+1}^B)], \quad (9)$$

where, $\hat{\alpha}$ and $\hat{\beta}$ are estimated parameters, ACV_{t+1}^B expresses the difference between realized $K(G_{t+1}^B)$ and expected $K(G_{t+1}^B)$. Finally, we verify the following two conditions:

- $$\begin{cases} 1: ACV_{t+1}^B (1 \leq t \leq 13) \text{ are significantly equal to zero,} \\ 2: ACV_{t+1}^B (t = 14) \text{ is significantly different from zero.} \end{cases}$$

When these two conditions are satisfied at the same time, H1 will be adopted.

4-2. Method for analysis of a hypothesis 2

In the verification of hypothesis 2, we use event study to analyze. This method is a typical method to measure the impact of specific events on the stock market in various fields such as marketing, finance, and economics. We refer to MacKinlay (1997) and use the general event study methods.

In this section, we estimate the return that would have been realized if the event did not occur and analyzed the difference from the actual return, using the returns of individual companies and the market returns. We define t as a daily period in this analysis. First, in order to obtain the parameters for the estimation of returns, we use the following market model:

$$R_{i,t} = \alpha_i + \beta_i * R_{m,t} + \varepsilon_{i,t} \quad (10)$$

where, $R_{i,t}$ is the return of firm i at date t , $R_{m,t}$ is the market return at date t , α and β are parameters of an intercept and a slope in market model, and ε is an error term. Since this analysis focuses on the companies listed on the First Section of the Tokyo Stock Exchange, we use the TOPIX as the market index. As the estimation period of the model, we use 100 days ($-120 \leq t$

≤ -11). Using the parameters $\hat{\alpha}_i$ and $\hat{\beta}_i$ estimated by expression (10), we calculate the normal return (NR) in the event period of 21 days ($-10 \leq t \leq +10$) by the following formula:

$$NR_{i,t} = \hat{\alpha}_i + \hat{\beta}_i * R_{m,t}, \quad (11)$$

where, NR is a return expected to be realized if the event didn't happen. By subtracting this NR from the return realized in the event period, we calculate the abnormal return rate (AR):

$$AR_{i,t} = R_{i,t} - NR_{i,t}. \quad (12)$$

Then, the average AR (\overline{AR}) on the day t among targeted companies is calculated as follows:

$$\overline{AR}_{i,t} = \frac{1}{N} \sum_{i=1}^N AR_{i,t} \quad (13)$$

where, N is the number of the target companies.

Substantially, we calculate the cumulative \overline{AR} (\overline{CAR}) for each day as the following expression:

$$\overline{CAR}_{i,t} = \sum_{t=t1}^{t2} \overline{AR}_{i,t}, \quad (14)$$

where, $t1$ and $t2$ indicate the cumulative period of CAR. By analyzing the transitions of AR and CAR in the event period, we analyze whether the celebrity's scandal has a significant impact on the corporate value of the companies Becky endorsed.

Finally, in order to verify the significance of the AR and CAR, we conduct the t-test. In addition to the two parametric t-tests explained in Brown and Warner (1985), we use the nonparametric rank test detailed in Corrado (1989). This is because the normality of the data cannot be guaranteed due to our small number of samples, and in such cases, this rank test is very useful. By comparing these tests' results, we verify whether a hypothesis 2 is correct or not.

5. Findings

In this chapter, we show the results of our analysis by the two models as we described in the previous chapter.

5-1. Empirical results of hypothesis 1

First, we explain the result of the verification of hypothesis 1. 1 shows the probability that the celebrities who belong to the group m in the period t move to the group n in the period $t+1$. Among all transitions, those that are statistically significant at less than 10% are the following 20 patterns:

$$(G_t^*, G_{t+1}^*) = (m, n) = (1, 1), (1, 2), (2, 1), (2, 2), (2, 3), (2, 4), (3, 3), (4, 4), (4, 6), (4, 7), (5, 5), (6, 3), (7, 9), (8, 7), (8, 8), (8, 10), (9, 9), (10, 11), (13, 8), (14, 14),$$

Table 1

G_{t+1}		n													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
m	1	55.08%	*** 19.99%	** 7.99%	3.49%	0.66%	2.64%	1.17%	0.33%	0.50%	0.33%	0.33%	0.48%	0.33%	0.50%
	2	13.44%	** 23.68%	** 19.42%	** 11.05%	* 3.41%	4.07%	4.75%	2.28%	1.93%	1.61%	0.98%	3.31%	0.65%	0.65%
	3	6.80%	12.81%	13.37%	** 12.30%	6.77%	9.80%	6.87%	4.63%	4.44%	3.58%	2.18%	2.34%	0.82%	1.17%
	4	5.17%	7.76%	9.18%	13.48%	* 4.91%	9.29%	* 8.70%	** 4.74%	4.63%	5.68%	2.96%	2.46%	1.16%	1.50%
	5	2.30%	5.54%	11.92%	8.49%	7.25%	* 7.88%	7.98%	6.47%	4.83%	7.14%	3.56%	1.97%	1.99%	0.95%
	6	1.13%	4.83%	8.66%	* 9.05%	2.93%	8.83%	7.38%	8.40%	5.95%	7.09%	4.80%	4.27%	2.89%	1.63%
	7	1.13%	3.82%	5.86%	5.68%	4.43%	6.54%	7.84%	8.21%	6.02%	* 6.67%	5.97%	4.77%	2.60%	4.24%
	8	1.22%	2.69%	1.86%	3.61%	2.11%	6.67%	7.96%	* 7.13%	** 8.76%	7.62%	** 5.03%	5.59%	5.17%	2.39%
	9	0.82%	1.11%	1.69%	3.70%	1.77%	5.60%	5.69%	8.40%	4.97%	* 7.76%	4.35%	5.03%	6.30%	5.24%
	10	1.00%	0.83%	2.26%	3.51%	0.97%	3.35%	5.73%	5.10%	5.43%	4.61%	7.53%	* 7.04%	6.27%	4.49%
	11	0.28%	0.45%	1.39%	2.74%	0.91%	2.62%	2.66%	4.27%	4.60%	5.52%	5.38%	7.56%	4.76%	4.99%
	12	0.46%	0.78%	1.88%	1.27%	0.93%	2.88%	3.24%	3.26%	5.06%	3.30%	5.61%	5.27%	4.86%	5.31%
	13	0.35%	0.73%	0.68%	1.72%	0.73%	2.07%	2.40%	4.96%	* 6.36%	2.61%	5.25%	4.80%	3.26%	6.55%
	14	0.34%	0.25%	0.29%	1.58%	0.69%	1.81%	1.45%	1.60%	3.33%	4.00%	3.67%	4.19%	2.27%	5.17%

and the other 176 combinations of probabilities are statistically the same as 0.

Next, using the above combinations of (G_t^*, G_{t+1}^*) , we consider the relationship between groups in the period t and the period $t+1$. As discussed in the previous chapter, since (G_t, G_{t+1}) are the ordinal scales, we convert them to the quantitative scales and plot them on the XY plane. Figure 1 shows the regression line l calculated from the plotted points, which estimated parameters are $\alpha = 1.88$ and $\beta = 0.78$. The line l represents the celebrity's expected transition from the period t to the period $t+1$. For example, the celebrity who was in the group 1 in the period t is highly likely to move to the group 1 or 2 in the period $t+1$.

Using the line 1, we analyze the individual cases of Becky. The group of Becky has moved as follows.

Table 2

t	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
G_t	10	12	14	13	14	11	11	10	12	10	11	12	11	10	4

The scandal occurred is during the period 15, and here, we verify that her movement from G_{14} to G_{15} significantly separate from the theoretical line l in comparison with other

transitions. Figure 2 shows the line l and the points which indicate transitions of Becky's groupe. Here, a coordinate $(x, y) = (10, 4)$ represents the period during which the scandal occurred. Table 3 examines whether the transitions of Becky's group are statistically significant. The t value (14) is a statistic calculated by using the variance of the whole period, and the t value (13) is the statistic calculated by the variance of the whole period with excluding the scandal period. From this table, in both test using the t value (14) and t value (13), although all of the values of y from the period 1 to the period 13 are statistically significant at the 1% level, the value of y in the period 14 is shown to be statistically insignificant.

Table 3

t	x	y	Expectation value	T(14)		T(13)	
1	10	12	9.64	5.59	***	7.56	***
2	12	14	11.19	6.52	***	8.82	***
3	14	13	12.75	6.05	***	8.19	***
4	13	14	11.97	6.52	***	8.82	***
5	14	11	12.75	5.12	***	6.93	***
6	11	11	10.42	5.12	***	6.93	***
7	11	10	10.42	4.66	***	6.30	***
8	10	12	9.64	5.59	***	7.56	***
9	12	10	11.19	4.66	***	6.30	***
10	10	11	9.64	5.12	***	6.93	***
11	11	12	10.42	5.59	***	7.56	***
12	12	11	11.19	5.12	***	6.93	***
13	11	10	10.42	4.66	***	6.30	***
14	10	4	9.64	1.86			

Var. (14)	4.61
Var. (13)	2.52

Information of the line l	
Sloppe	0.78
Intercept	1.88

These results show that Becky's group had realized theoretically ideal transition during the period except the final period. However, only during the final period, we can observe the statistically abnormal movement. From this, hypothesis 1 is demonstrated as follows.

Empirical results of H1:

When the celebrity endorser causes a scandal, his/her individual value as the endorser significantly decreases.

5-2. Empirical results of hypothesis 2

Table 4

day	Mean Abnormal Return	T-test 1	T-test 2	Rank Z Test	Cumulative Abnormal Return	Event Window	Mean Cumulative Abnormal Return	T-test 1	T-test 2
10	0.00%	0.01	0.30	-0.12	-2.50%	(-10, -10)	-2.50%	-0.94	-0.53
9	0.33%	0.56	0.36	0.73	-2.51%	(-10, 0)	-0.91%	-0.47	-0.27
8	-0.35%	-0.60	-0.05	-0.03	-2.83%	(-10, +1)	-1.12%	-0.55	-0.34
7	-0.78%	-1.34	-0.77	-0.43	-2.48%	(-7, -4)	-1.40%	-1.20	-0.82
6	-0.52%	-0.88	-0.82	-1.01	-1.70%	(-5, -4)	-1.04%	-1.26	-1.07
5	0.34%	0.59	0.28	0.62	-1.19%	(-3, -2)	1.02%	1.24	0.86
4	-0.37%	-0.64	-0.04	-0.03	-1.53%	(-1, 0)	-1.15%	-1.39	-1.12
3	-0.79%	-1.36	-1.64	-1.82	-1.16%	(-1, +1)	-1.36%	-1.34	-1.07
2	0.75%	1.29	1.13	1.30	-0.36%	(-1, +4)	-1.77%	-1.24	-0.98
1	-0.21%	-0.36	-0.26	-0.35	-1.12%	(-1, +8)	-3.07%	-1.67	-1.19
0	-0.64%	-1.09	-0.77	-0.89	-0.91%	(0, +1)	-0.84%	-1.02	-0.73
-1	-0.51%	-0.88	-0.81	-1.10	-0.27%	(+3, +4)	-1.17%	-1.41	-1.19
-2	0.38%	0.64	0.28	0.55	0.24%	(+3, +8)	-2.47%	-1.73	-1.24
-3	0.65%	1.11	0.93	1.02	-0.14%	(+3, +10)	-2.14%	-1.30	-0.84
-4	-0.64%	-1.09	-1.41	-1.35	-0.78%	(+6, +8)	-1.65%	-1.63	-0.95
-5	-0.40%	-0.69	-0.10	-0.67	-0.15%				
-6	-0.14%	-0.24	0.13	0.31	0.25%				
-7	-0.22%	-0.38	-0.26	-0.62	0.39%				
-8	0.95%	1.63	1.48	2.30	0.61%				
-9	-0.33%	-0.57	-0.61	-0.37	-0.34%				
-10	0.00%	-0.01	0.23	0.27	0.00%				

Next, we explain the result of the demonstration of hypothesis 2 using the event studies. Figure 3 shows the transition of CAR around the date of the scandal. Also, Table 4 shows statistical test results of AR for each day and ones of CAR for multiple periods during the event period. From the graph, it seems that the CAR tends to decrease after the scandal occurs. However, looking at Table 4, two kinds of t-tests described in Brown and Warner (1985) and rank test used in Corrado (1989) indicate that the trend is not significant at the 5% level. We observe significant value at the 10% level 8 days before the announcement of the scandal ($t = -8$) in the rank test, which seems to have low importance in our analysis. From the above results, contrary to our expectation, hypothesis 2 is the following demonstration result.

Empirical results of H2:

The celebrity's endorser does not significantly reduce the corporate value of the companies he/she endorsed.

6. Discussion

In the previous chapter, hypothesis 1 is adopted, while hypothesis 2 is not. In other words, although the scandal of the celebrity endorser decreasing the celebrity's individual value as the endorser, it does not much affect the corporate value. In this chapter, we discuss what the fact indicates and consider the essential questions, what value the celebrity endorsers bring to the company they endorse.

As discussed in Chapter 3, in many extant studies, it has been advocated that celebrity endorsers have a source effect for companies. The factors of the effect are endorser's credibility and attractiveness, and the celebrity endorser focused in our analysis is more related to attractiveness. Celebrities who more attracted consumers would obtain higher likability ratings from them, thus companies would regard them to have a potential communication ability with consumers. In other words, companies can possess more social capital which the celebrities have, such as human network and trust, by making endorsement contracts with more favorable celebrities. From this point of view, as Agrawal and Kamakura (1995) examines, investors would believe that such contracts can be positive signals of expected future earnings. At the same time, if endorsers cause scandals, it would be negative signals indicating decrease future earnings.

There are several reasons why the results differed from our expectations. Firstly, when the endorser causes the scandal, we able to consider that the investor would pay more attention to how companies deal with the problem than the endorser's scandal itself. By terminating the endorser's contract immediately or appointing a new endorser, companies would try not to receive as much damage as possible from the scandal. Considering this, investors may judge that the endorser scandal does not have a significant impact on the companies' future revenues.

Secondly, we speculate that investors may not consider that the change of the earnings from one brand which the celebrity endorsed have a big influence on the revenue of the entire company when the celebrity causes the scandal. For companies which consisted of many brands, the decrease in sales of one brand may not be a big loss in total. Investors may anticipate this and not pay much attention to that problem.

Finally, we guess that investors may understand that companies can possess the social capital which the celebrities originally had by appointing them to their endorsers, and even if the celebrities' individual value significantly decrease, the company can utilize it. In other words, even consumers who first purchased a companies' product by influenced from an endorser, from the second time onwards, they may make purchasing decisions in more consideration of the product factors such as ease of use and switching cost to other products rather than the attractiveness of the endorser.

In this paper, although we have found no clear grounds for the above examinations yet, we provide new perspectives beyond the previous research. By further examining these considerations, we believe that it will be closer to the demonstration of the central question as to what the celebrity endorser brings to the company.

7. Conclusion

In summary of the discussion above, while the scandal of the Becky significantly reduced her individual value as the endorser, it cannot be said that it significantly reduced the corporate value of the companies which she had endorsed. This result provided us an opportunity to

consider how investors act when the endorser cause scandal. First, we suspect that investors may pay more attention to how the companies deal with the scandal rather than the scandal itself. Second, there is a possibility that investors do not consider the loss from the brand which the endorser endorsed would significantly affect the entire corporate value. Finally, we refer to that the social capital which the celebrity originally has would belong to the companies after they appoint the endorser. However, we found no clear evidence about these matters in this paper, thus we need to continue further investigations.

Although we could not demonstrate strong evidence of our results, our research contributes to the accumulation of the studies of endorser effect by shedding light on some new previously under-studied aspects. Although we could not demonstrate strong evidence of our results, our research contributes to the accumulation of the studies of the endorser effect by shedding light on some new previously under-studied aspects of the celebrity's individual value. Firms have to pay higher costs to make an endorsement contract with a more attractive celebrity, and investors may wonder that there are higher risks to appoint the more attractive endorsers for companies. However, this research shows that investors are unlikely to need to consider the risk of loss of the corporate value due to future celebrity scandals, even if companies which they're investing use more attractive endorsers.

8. Limitation and Further Research

In this study, there are some limitations in terms of data constraints. One is the constraint on celebrities' likability rating data. The period of the data we used was every half year, and it was difficult to measure the daily effect of the scandal. The other is a constraint on the number of samples of the scandals. Compared with endorsement announcement events, the number of endorser scandal events is extremely small, and, among them, the case that one celebrity endorsed more than seven listed companies at the time of scandal is rare. From a statistical point of view, we should obtain a sufficient number of samples. The similar problem is also seen in analyzing the Tiger Woods scandal in Knittel and Stango (2012), and it's one of the subjects of future research to analyze the endorser scandals.

9. Managerial Implication

Despite Becky, who had continuously earned high likability rating from consumers, dropped her individual value because of the scandal, the firms which she had endorsed suffered insignificant damage in their corporate value. Our research may help practitioners by showing that companies can make decisions to appoint more attractive endorsers without paying much attention to the risks of their scandals.

On the other hand, some questions remain for the companies, whether they should appoint an endorser for their one product which occupies a small portion of their whole products, and

which celebrities they should appoint if the celebrities have similar attributes. Our future research should give attention to clarifying these matters.

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