

# ASSOCIATION BETWEEN CORPORATE FINANCIAL PERFORMANCE AND CORPORATE SOCIAL RESPONSIBILITY IN A CRISIS: FOCUSING ON THE MARCH 11 DISASTER

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## ABSTRACT

This study investigates how firms damaged by the Great East Japan Earthquake and Tsunami in 2011 (March 11 Disaster) proceeded toward a turnaround by focusing on corporate social responsibility (CSR). We define CSR as the responsibility that a firm has to pursue as a public institution for the benefit of the community and its environment. Ota and Nakashima (2015) proposed the Ota-Nakashima CSR model that measures CSR by applying the Ota turnaround model (2013) to the Kanji-Chopra CSR model. We compute CSR using the Ota and Nakashima CSR models (2015), and analyze the association between CSR and corporate financial performance (CFP). By examining the association between CSR and CFP, we investigate how firms damaged by the March 11 disaster consider planning and implementing CSR to proceed toward a turnaround.

**Keywords:** corporate social responsibility (CSR), the Great East Japan earthquake and tsunami of 2011, corporate financial performance (CFP), Ota and Nakashima CSR models.

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## **INTRODUCTION**

This study discusses how firms damaged by the Great East Japan Earthquake and Tsunami of 2011 (March 11 Disaster) proceeded toward a turnaround by focusing on corporate social responsibility (CSR). We define CSR as the responsibility that a firm has to pursue as a public institution for the benefit of the community and its environment. Ota and Nakashima (2015) proposed the Ota-Nakashima CSR model that measures CSR by applying the Ota turnaround model (2013) to the Kanji-Chopra CSR model. We compute CSR using the Ota and Nakashima CSR models (2015), and analyze the association between CSR and corporate financial performance (CFP). By examining the association between CSR and CFP, we investigate how firms damaged by the March 11 disaster consider planning and implementing CSR to proceed toward a turnaround.

This study makes the following contributions. First, grasping the financial performance and current state of the internal system of firms affected by the disaster is difficult because available data on firms that suffered from the March 11 disaster are limited. We directly obtain financial performance and actual consciousness and attitudes of managers using a survey. Second, a firm facing a crisis provides guidelines or clues on firms initiating a turnaround, such as discussing socially responsible behavior and its attitudes. These actions are common for firms affected by the March 11 disaster. At present, when natural disasters are increasing on a global scale, evaluating whether a disaster is a threat or opportunity is useful when natural disasters are increasing on a global scale. Third, few surveys on a CSR report have been conducted because CSR reporting is voluntary. This study contributes to the literature on CSR research by analyzing the association between CFP and CSR using the survey results.

The remainder of this paper is organized as follows. Chapter 2 describes the outline of a CSR model. Chapter 3 reviews the previous literature and develops the hypothesis. Chapter 4 discusses the research design. Chapter 5 reports the empirical results, and Chapter 6 provides the conclusion and limitations to this study and describes possible future studies.

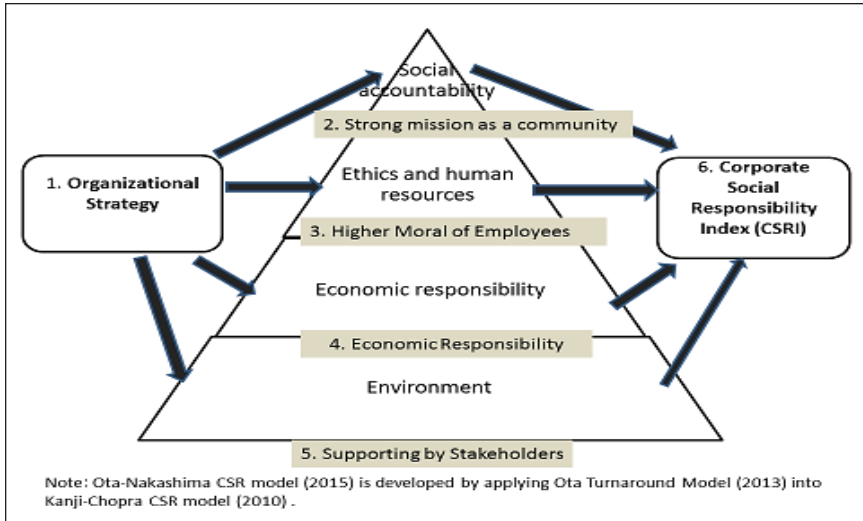
## **CSR MODEL**

Although grasping the degree to which a firm fulfills its social responsibility is important, measuring its social responsibility remains difficult. Kanji and Chopra (2010) indicated the necessity of a framework to gauge the social responsibility of a firm and developed a model to measure CSR using a hierarchical approach. The Kanji-Chopra CSR model (2010) is viewed as a new system in measuring social responsibility based on a hierarchical modeling approach. In the Kanji-Chopra CSR model (2010),<sup>1</sup> the social responsibility index is measured by dividing it into social responsibility index, a social investment index, an environmental protection and sustainability index, a governance and economical responsibility index, and an ethics and human rights in peacetime index.

We applied the Ota turnaround model (2009) to the Kanji-Chopra CSR model (2010) to develop the Ota-Nakashima CSR model in measuring the CSR of firms that were affected by the March 11 disaster. Figure 1 shows the Ota-Nakashima CSR model. The “organizational strategy” in the left box reflects a business plan for the CSR of a firm. The corporate social responsibility index (CSRI) in the right box reflects the CSR activity that the firm essentially fulfills. Social accountability, ethics and human resources, economic responsibility, and the environment exist between organizational strategy and CSRI as components of social responsibility. An arrow that points from “organizational strategy” indicates the social responsibility components that a firm emphasizes. The arrow also indicates whether each CSR component reflects actual CSR activity.

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1 Kanji and Chopra (2010, p.120) affirmed that CSR is a component of business activity and represents a method of thinking that reflects a voluntary contribution from a firm to society by the economy, environment, ethics, and social investments. The Kanji-Chopra CSR model (2010) offers a mechanism to enable social responsibility to be communicated using a system.



**Figure 1: The Ota-Nakashima CSR Model**

The Ota-Nakashima CSR model (2015a) differs from the Kanji-Chopra CSR model (2010) with respect to its environment, which is at the bottom of the pyramid. Although the Kanji-Chopra CSR model (2010) focuses on global environmental protection, the Ota-Nakashima CSR model focuses on whether small and medium-sized firms supported by stakeholders promote turnarounds. Therefore, the difference between the Kanji-Chopra and the Ota-Nakashima CSR models is seen based on their focuses; whether a firm has activities that are friendly to the global environment or whether firms recognize that they are supported by stakeholders.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### Association between Corporate Social Responsibility (CSR) and Corporate Financial Performance (CFP) in Peacetime

Orlitzkey, Schmidt and Rynes (2003) indicated a positive relationship between CSR and CFP using a meta-analysis of empirical research from 1970 to 2000. Suto and Takehara (2008) analyzed hypotheses based on competitive advantage, risk management, and overinvestment theories; they suggested a negative association between CSR and risk. They supported

the risk management theory but found mixed results on the association between CSR and profitability. These two researchers also indicated that each CSR item affects CFP by a different channel related to the relationship with stakeholders.

By using the slack theory of resources and good management theory, Fauzi and Idris (2009) developed a hypothesis on the relationship between CSR and CFP using an Indonesian firm sample that suggested a positive association between the two. The slack theory states that when financial performance improves, slack resources are available (Fauzi & Idris 2009). The good management theory indicates that good management is highly associated with higher CSR because good management improves the relationship with stakeholders and results in good CSR (Fauzi & Idris 2009). By contrast, Fauzi (2009) analyzed the hypothesis from the same theory using a sample of U.S. firms, which did not support the hypothesis. Mittal, Sinha and Singh (2008) also investigated the relationship between CSR and CFP using a sample of Indian firms but found no positive association.

### **Association between Corporate Social Responsibility (CSR) and Corporate Financial Performance (CFP) in a Crisis**

Firms began to reduce costs after the 2008 financial crisis, and CSR projects decreased (Stoian, 2013; Karabrahimoglu, 2010). Yelkikalan and Kose (2012) indicated that firms intend to survive, maintain profitability, and minimize losses in times of a crisis. A firm may also prioritize the satisfaction of economic responsibility when confronted with a threat to ensure that the firm survives a crisis (Yelkikalan & Kose, 2012).

By contrast, Arevalo and Aravind (2010) reported that firms that apply the United National Global Compact (UNGC)<sup>2</sup> to a business strategy did not experience financial decline or economic shocks. They suggested that CSR standard is an important basis when improving businesses and improves financial performance in a crisis. Souto (2009); Yelkikalan and Kose (2012) indicated that using CSR gives businesses the chance to remain stable during a crisis, switch to profitable states by converting fundamental values, and overcome serious environmental crises (Yelkikalan & Kose 2012).

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<sup>2</sup> This CSR framework was formulated by the United Nations in 2000. <http://www.unglobalcompact.org/>

We predict that firms affected by the March 11 disaster can manage a turnaround even during a crisis because their mission is a socially responsible one of maintaining the businesses of small and medium-sized firms. Ota (2013) analyzed firm A, which suffered from the March 11 disaster, and found that it revived itself because it possessed a strong mission that protected a local lifeline, such as maintaining food for local community and saving the lives of local residents. Firm A also had strong support from a client (a financial institution in the same line of business) and the government. Therefore, we predict that firms affected by the March 11 disaster have a strong mission as local firms that receive support from its stakeholders and its management for their turnaround process. Therefore, the following hypothesis is established:

**H<sub>1</sub>:** No positive association is found between corporate financial performance and corporate social responsibility behavior for the firms affected by the March 11 Disaster.

## RESEARCH DESIGN

### Outline of Survey Research

Tokyo Shoko Research (TSR) investigated the current situation and the cooperation of 135 firms that experienced a turnaround-type bankruptcy, including 1,570 firms involved in March 11 disaster-related bankruptcies<sup>3</sup> (Corporate Rehabilitation Law and Civil Rehabilitation Law).<sup>4</sup> As our sample in this survey, we selected 36 firms that currently exist and that

3 TSR defines a “bankruptcy” as “the state in which an enterprise fails to make payments for its debt and continuing economic activity becomes difficult.” Bankruptcy is divided into “legal bankruptcy” and “private bankruptcy.” Legal bankruptcy is classified into the turnaround-type—Corporate Rehabilitation Law and Civil Rehabilitation Law—and the settlement type bankruptcy—closures and special closures. “Private bankruptcy” is divided into “suspension of business transactions with banks” and “winding up.” [http://www.tsr-net.co.jp/guide/knowledge/glossary/ta\\_14.html](http://www.tsr-net.co.jp/guide/knowledge/glossary/ta_14.html)

4 According to the TSR website, Corporate Rehabilitation Law represents a reconstruction type bankruptcy that involves plans for a turnaround by carrying on with the business. A courthouse-nominated custodian forces a corporation to focus on a turnaround based on a rehabilitation plan. As a principle, the firm should repay its debt and continue its operations from the support of selected sponsors. The Civil Rehabilitation Law is a substitute for the conventional peace negotiation law and was enacted in April 2000 as a legal procedure primarily for the reconstruction of small and medium-size firms; its targets are a corporation, a special corporation, and an individual. A proprietor can continue to operate a bankrupt firm. One of the positive characteristics of the law is that even if a firm does not currently have excessive debt and impossible payments, it can apply for relief if it faces such a possibility. [http://www.tsr-net.co.jp/guide/knowledge/glossary/ta\\_14.html](http://www.tsr-net.co.jp/guide/knowledge/glossary/ta_14.html)

cooperated with the TSR in its investigation. Table 1 indicates the sample selected.

**Table 1: Sample Selection**

<b>Selection Criteria</b>	<b>Number of Observations</b>
Bankruptcy related to March 11 Disaster	1,570
Bankrupt by the Turnaround-type Bankruptcy (Corporate Rehabilitation Law and Civil Rehabilitation Law)	135
Less: Non-continuation firms (After a procedure finish, it is cleaned out.)	32
Less: Non-continuation firms (After a procedure finish, it dismisses.)	14
Less: Non-continuation firms (After a procedure finish, it is closed.)	2
Less: Firms merged by an offer other firm	9
Less: Continuation firms that are friendly cooperative with TSR	38
Total observations by TSR	36
Less: Firms that refused questionnaire answers	13
<b>Total Observations</b>	<b>23</b>

Next, we interviewed these firms between April 24, 2015 and May 21, 2015 using a questionnaire entitled “Survey Investigation about Social Responsibility.” We received 23 effective responses (63.8% collection rate). The topics covered in this questionnaire are organizational strategy, social responsibility, employee ethics, economic responsibility, shareholder support, and CSRI.

The industry distribution, attributes classification, and location classification of the respondents are shown in Figures 2, 3, and 4, respectively. Figure 2 indicates that the service, machine, and construction industries consist of more firms. Figure 3 indicates that 35%, 4%, 4%, and 9% of the respondents were presidents, senior managing directors, managing directors, and directors, respectively. These figures suggest that half of the firm representatives who led their employees to a turnaround answered our questionnaires. Figure 4 indicates that the northeast had the highest percent of respondents at 35%; however, the firms affected by the March 11 disaster were distributed throughout the country, including metropolitan areas.

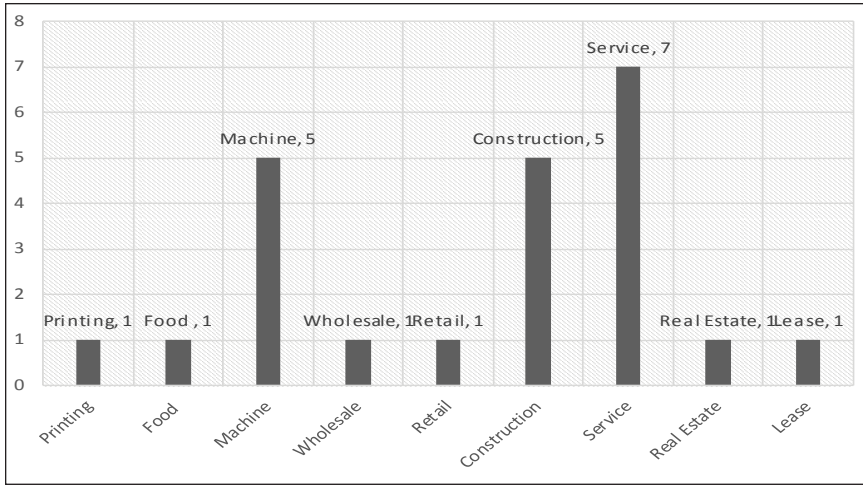


Figure 2: Industry Distribution

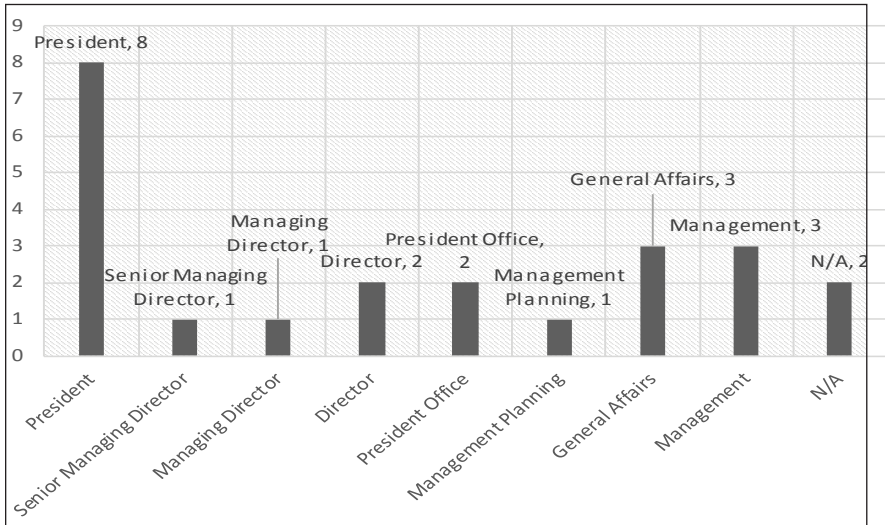


Figure 3: Positions of Respondents



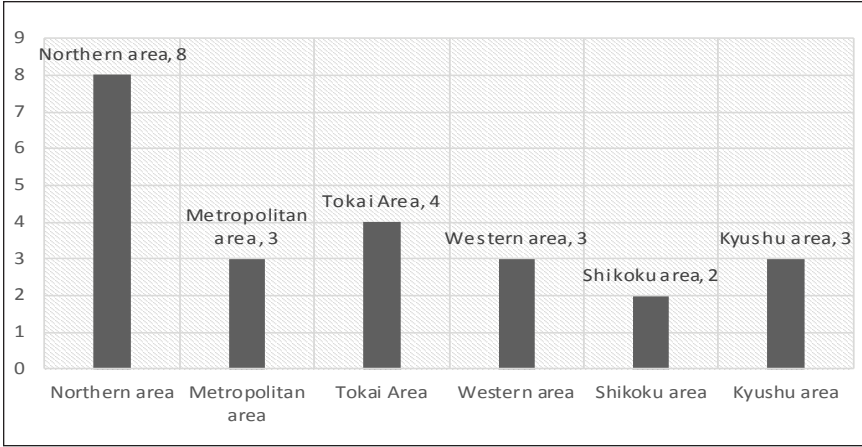


Figure 4: Location of Firms

### Survey Results

The responses regarding organizational strategy, employee morale, economic responsibility, stakeholder support by stakeholders, and environment supporting the firms for a turnaround are shown in Figures 5, 6, 7, 8, and 9, respectively.

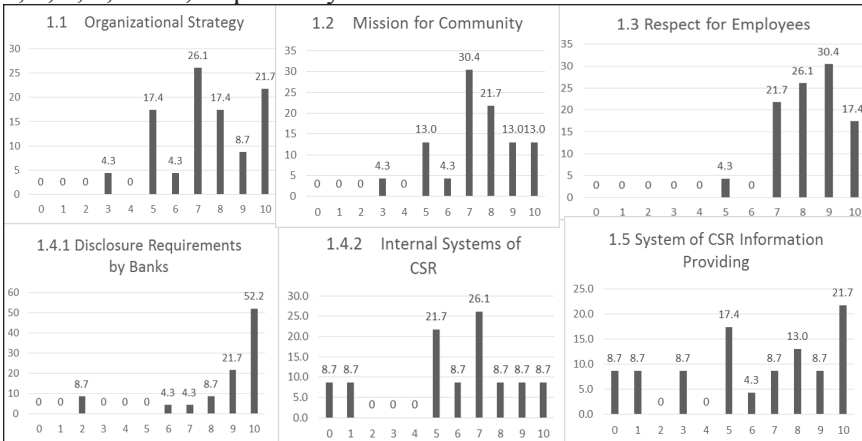


Figure 5: Responses Regarding Organizational Strategy

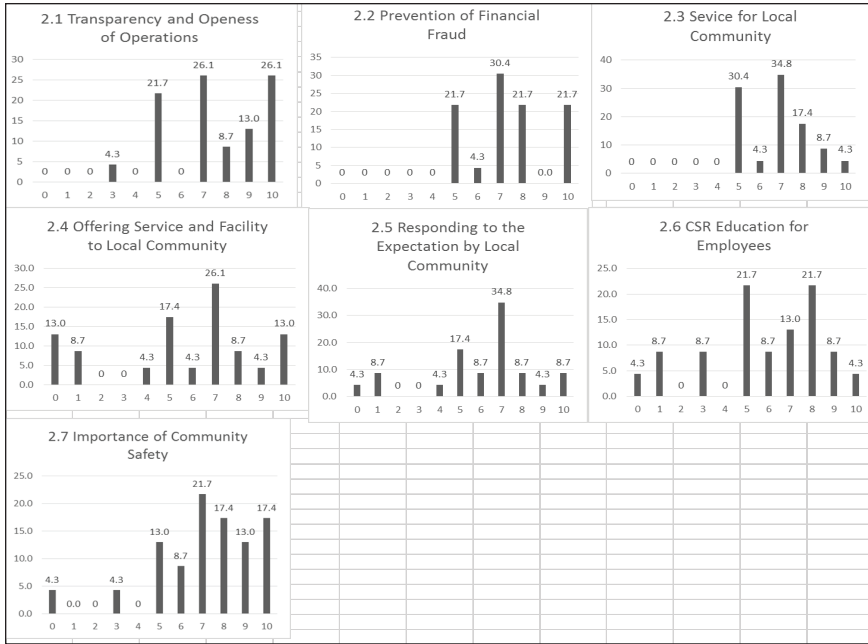


Figure 6: Responses Regarding Employee Morale

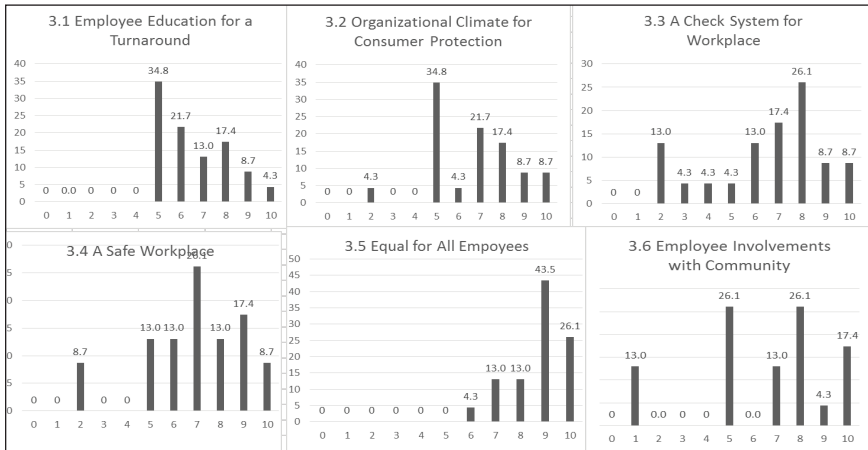


Figure 7: Responses Regarding Economic Responsibility

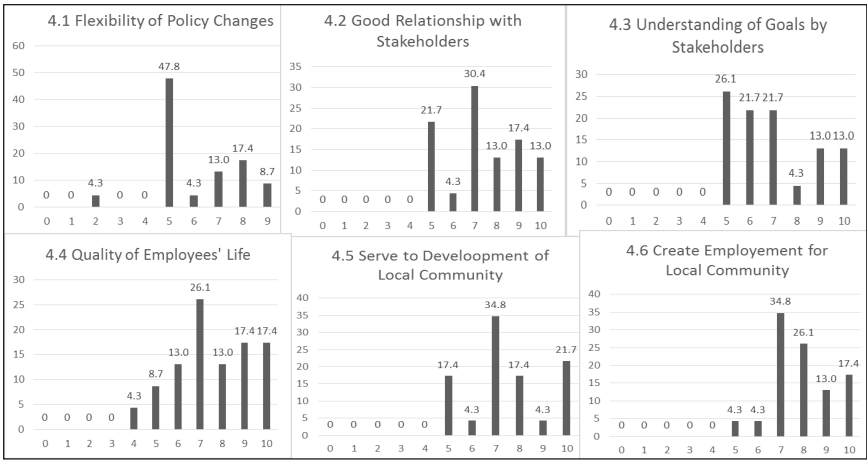
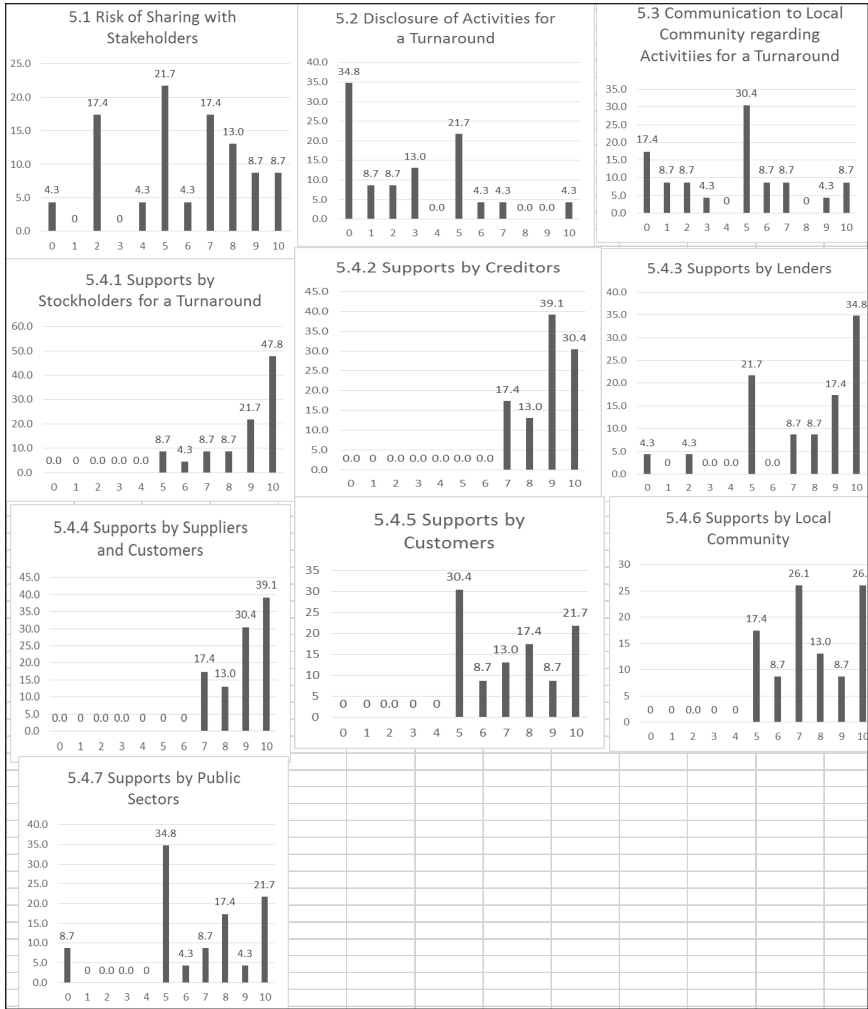


Figure 8: Responses Regarding Stakeholder Support by Stakeholders



**Figure 9: Responses Regarding Environment Supporting the Firms for a Turnaround**

## Observation Variables

An observation variable for each CSR component is shown in Figure 10.

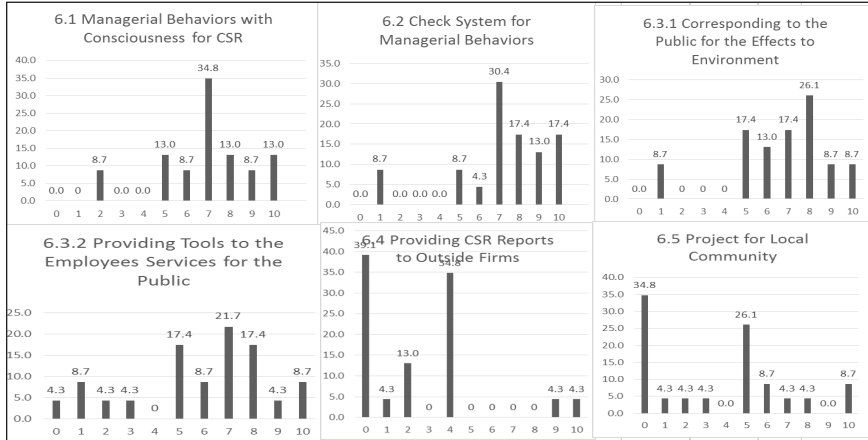


Figure 10: Responses Regarding Corporate Social Responsibility Index

## Hypothesis Test

The following regression model is used to analyze the hypothesis. Following the Ota-Nakashima CSR model (2015b), CFP is used as the dependent variable and CSR is used as the independent variable in the model as follows:

$$CFP = \beta_0 + \beta_1 OSPS\_1 + \beta_2 OSPS\_2 + \beta_3 OSPS\_3 + \beta_4 OSPS\_4.1 + \beta_5 OSPS\_4.2 + \beta_6 OSPS\_5 + \beta_7 SIZE + \beta_8 AGE + \epsilon$$

$$CFP = \beta_0 + \beta_1 EHR\_1 + \beta_2 EHR\_2 + \beta_3 EHR\_3 + \beta_4 EHR\_4 + \beta_5 EHR\_5 + \beta_6 EHR\_6 + \beta_7 SIZE + \beta_8 AGE + \epsilon$$

$$CFP = \beta_0 + \beta_1 ES\_1 + \beta_2 ES\_2 + \beta_3 ES\_3 + \beta_4 ES\_4 + \beta_5 ES\_5 + \beta_6 ES\_6 + \beta_7 ES\_7 + \beta_8 SIZE + \beta_9 AGE + \epsilon$$

Here, CFP means corporate financial performance, which refers to the net income/equity; OSPS means organizational strategy variables; HER means employee ethics; ES means economic responsibility; SIZE means ln, which refers to the number of employees; and AGE means ln, which refers to the years a firm was in operation.

## EMPRICAL RESULTS

### Conformability of the Model

The internal consistency of the CSR linear measure is tested to analyze whether our CSR model fits. The  $\alpha$  coefficient of each CSR item calculated is shown in Table 2. We find that the Cronbach’s  $\alpha$  values are sufficient and the corrected items are all positive. Moreover, Cronbach’s  $\alpha$  is shown when an item was eliminated, suggesting that only the stakeholder support exceeds 0.875, which is the  $\alpha$  coefficient of the whole. The  $\alpha$  of each CSR component, including organizational strategy, employee ethics, social responsibility, economic responsibility, and stakeholder support, were 0.779, 0.807, 0.813, 0.836, 0.797, and 0.875, respectively; all are higher than 0.7. This result suggests that because these latent variables fit with the model as a positive index, this CSR model can be considered to conform.

**Table 2: Model Credibility Analysis**

Cronbach’s Alpha					
1	2	3	4	5	6
OSPS	SA	HER	SR	SS	CSRI
.779	.807	.813	.836	.797	.875

### Descriptive Statistics

The descriptive statistics are shown in Table 3; these statistics indicate that the mean and median of the firms affected by the March 11 disaster are generally positive. For some firms, the minimum value is the deficit.

**Table 3: Descriptive Statistics**

	N	MIN	MAX	MEAN	STD. DEVIATION	MEDIAN
<i>EARNING</i>	16	-289.532	977.925	52.373	268.902	3.893
<i>SIZE</i>	22	0.693	5.768	3.681	1.217	3.421
<i>AGE</i>	20	1.609	4.956	3.783	0.701	3.882

Note: Each variable are defined as follows:

*EARNING* Net income / Equity  
*SIZE* Logarithm of Number of Employees  
*AGE* Logarithm of Number of Years when the Firm Began

## Correlation

Table 4 shows the correlations between net income and each CSR in 2014. The correlation indicates that in OSPS Question A141 in HER, disclosure requirements by stakeholders, check on the work environments of the employees, employee ethics, employee involvement in services to the local community are  $-732$ ,  $-513$ , and  $-503$ , respectively. This result suggests a significant negative correlation.

Therefore, firms affected by the March 11 disaster are in the Zone B stage, also known as an emergency turnaround. Firms appear to implement CSR project step by step for turnarounds. They do not reach the CSR project, such as inspection of work environments of the employees, and employee involvement of services to the local community in employee ethics.

**Table 4: Correlation with CFP**

OSPS		EHR		ES	
Q11	-.356	Q31	-.231	Q41	-.087
	.177		.388		.749
Q12	-.272	Q32	-.155	Q42	-.364
	.309		.566		.166
Q13	-0.76	Q33	-.513*	Q43	.136
	.780		.042		.616
Q141	-.732**	Q34	-.121	Q44	-.028
	.001		.656		.919
Q142	-.423	Q35	.189	Q45	-.265
	.102		.484		.321
Q15	-.408	Q36	-.503*	Q46	-.044
	.116		.047		.872
SIZE	.039	SIZE	.039	Q47	-.484
	.885		.885		.058
AGE	.071	AGE	.071	SIZE	.039
	.795		.795		.885
				AGE	.071
					.795

See Table 3 for variables. \*\* Correlation and \*. Correlation are significant at the 0.01 0.05 level (2-tailed)

## Regression Analysis

The results of the association between CFP and CSR are provided for firms affected by the March 11 disaster using the regression analysis in Table 5. Panels A, B, and C of Table 5 show the results of the regression analysis in which organizational strategy, employee ethics, and economic responsibility are inserted as dependent variables, and CFP is inserted into the regression model.

Panel A indicates that the CFP of firms is significantly and negatively associated with financial content and governance disclosure. Panel B indicates that the CFP of the firms is significantly positively associated with consumer protection and a safe work environment; the CFP is significantly and negatively associated with employee work-check systems and employee services to the local community. In addition, CFP is significantly associated with whether stakeholders understand important employee-related items, such as employee loyalty, high productivity, and maintaining employee employment.

**Table 5: An Association between CFP and CSR (CSPS, EHR, ER)**

<b>Dependent Variable: EARNING</b>			
<b>PANEL A: OSPS</b>			
	B	t	Sig.
(Constant)	-175.804	-.249	.810
Q11	26.634	.425	.684
Q12	-13.061	-.221	.832
Q13	86.980	1.110	.304
Q141	-102.034	-3.300	.013
Q142	-63.191	-.957	.370
Q15	53.752	.997	.352
SIZE	131.953	4.692	.134
AGE	-52.371	-.565	.589
Adjusted R <sup>2</sup>	0.361		
F-value	2.061		



<b>PANEL B: HER</b>				
		B	t	Sig.
	(Constant)	-1169.919	-1.567	.161
	Q31	-56.217	-.803	.448
	Q32	101.206	1.946	.093
	Q33	-85.327	1.964	.090
	Q34	105.169	2.133	.070
	Q35	41.662	.898	.399
	Q36	-60.666	-2.294	.055
	SIZE	123.290	1.486	.181
	AGE	89.284	.945	.376
	Adjusted R <sup>2</sup>	0.400		
	F-value	2.249		
<b>PANEL C: ES</b>				
		B	t	Sig.
	(Constant)	-218.713	-.242	.817
	Q41	-4.215	-.077	.941
	Q42	-77.964	-.844	.431
	Q43	152.753	2.083	.082
	Q44	25.150	.376	.720
	Q45	-12.797	-.142	.892
	Q46	-17.164	-.175	.866
	Q47	-73.512	-1.235	.263
	SIZE	71.277	.888	.408
	AGE	29.709	.275	.793
	Adjusted R <sup>2</sup>	0.166		
	F-value	1.332		
Dependent variable is CFP See Table 3 for variables. **, Correlation and *, Correlation is significant at the 0.01 level and (2-tailed).				

Ota (2013) asserted that firms suffered from the March 11 disaster experienced three imbalanced functions, namely, production, distribution, and financing. This imbalance resulted in poor conditions in organizational financial health or in a stage known as Zone A. Zone A stage indicates that the firm is financially impaired, thereby suggesting that its profitability, liquidity, productivity, growth, and other finances become disproportionate (Ota 2013). 5 Firms in Zone A aim to organize and recover their organization,

<sup>5</sup> The Ota-risk response for a turnaround model (2013) is the recycling economic system of a matrix that results from the suffering related to turnaround. The firms affected by the March 11 Disaster faced a crisis related to moving to Zone A and moving from impairment to emergency turnaround for a period to maintain their financial health. If they maintain their financial health and increase their corporate value, they move to the formal turnaround stage (Ota 2013).

production, and distribution and to simultaneously advance their financial functions (Ota 2013). Following Ota (2013), the turnaround from the stage of impairment is considered undergoing an “emergency turnaround” (Figure 4).

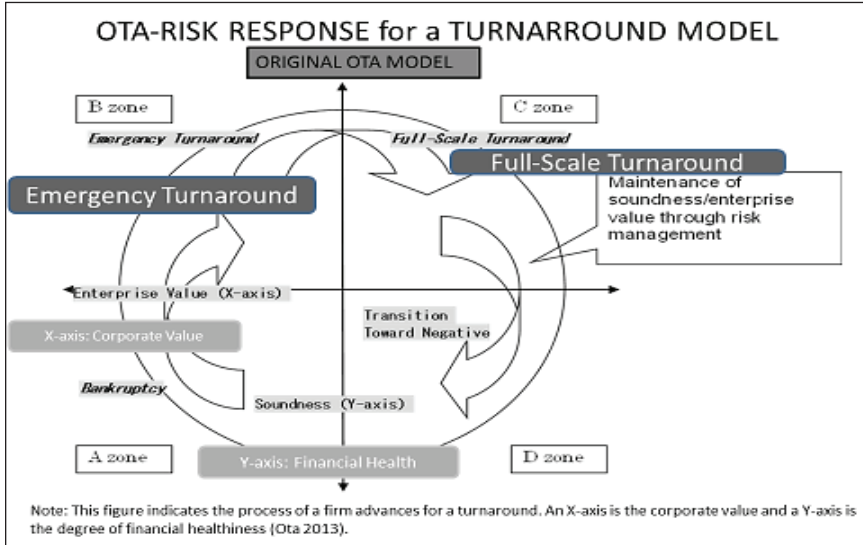


Figure 4: Ota-Risk Response for Turnaround Model

The firms affected by the March 11 disaster are in the Zone B stage, which involves emergency turnaround. We find that such firms do not maintain work-check system and are not engaged with employee involvement in local community services. The result does not support the hypothesis. However, even if they are in the Zone B stage, they focus on providing a safe work environment and on creating an organization that corresponds to the viewpoint of consumer protection. The results indicate that stakeholders understand the important items for employees and suggest responsible behavior, thereby supporting the hypothesis. Therefore, our results are mixed.

## CONCLUSIONS AND FUTURE RESEARCH

This study analyzes the association between CFP and CSR using the survey results. The following implications are provided. The correlation results suggest a significant negative correlation, which indicates that the

firms affected by the March 11 disaster are in the Zone B stage, which is called an emergency turnaround. As previously mentioned, order exists in the turnaround process. The firms involved did not reach the CSR project, such as inspection of work environment for employees, and employee involvement in the local community services of employee ethics.

The firms affected by the March 11 disaster that are in the emergency turnaround stage carry out their responsibilities in a systematic manner. The most important CSR for them is organizational culture, which stresses consumer protection, employee safety, and the understanding of stakeholders toward significant employee items. We predict that the next step in a real turnaround is to address the CSR of financial content and governance disclosure requirement, to implement a system for checking the work environment, and to build understanding among employees toward the services needed for the local community.

This study has certain limitations. The sample size used is small, and the analytical method was limited. We need to analyze the association between CSR and CFP using a large sample in the future. We would also like to investigate the relationship between the turnaround stage and CSR using the same questionnaire.

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