Sustainability management control systems in Japanese companies: The influence of institutional pressures and the impact on organizational capabilities and performance

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***Abstract*: Drawing on the Simons' [1] Levers of Control (LOC) framework, this study aims to examine the influence of institutional pressures (coercive, mimetic and normative) on Sustainability Management Control Systems (SMCS), and the impact of SMCS on organizational capabilities and performance simultaneously. A mail survey questionnaire was used to collect data from Corporate Social Responsibility (CSR) managers in Japanese companies across various industries.**

Both coercive and normative pressures were found to have influence on the use of SMCS. In addition, the results of this study showed that SMCS as a package fosters organizational capabilities that can contribute both directly to CSR performance, and indirectly to economic performance. It is suggested that companies should be conscious of the role that coercive and normative pressures play in influencing SMCS, and that the simultaneous use of several control systems seems to be necessary to support the implementation of CSR strategy.

I. INTRODUCTION

Interest in CSR is increasing worldwide. ISO 26000, an international standard for CSR management, was issued in 2010, and CSR has become an essential activity for global companies. Under these circumstances, today's companies are beginning to deal with CSR management from a strategic point of view not simply for charitable activities, but for gaining a competitive advantage. To effectively and efficiently implement CSR activities, companies formulate a CSR strategy that can contribute to environmental and social benefits, and promote active participation by employees in CSR management.

In previous research on Management Control Systems (MCS), it has been pointed out that companies need to use and design MCS by appropriately combining control systems suitable for their environment, in order to implement corporate strategies and match employee's behavior to organizational goals [2]-[4]. In addition, in order to effectively and efficiently implement corporate strategy, it is necessary for companies to consider not only accounting information systems but also planning, reward and compensation, organization design, etc. simultaneously, which is understood as a package [1][3][5][6].

Likewise, in order to execute CSR strategy and activities, SMCS, which is the MCS for CSR strategy, also needs to be understood as a package. Numerous studies have shown that in fact, companies do not deploy a single specific management system, but simultaneously utilize various control systems such as risk management, performance evaluation, and compensation management

systems for the implementation of CSR strategy [7]-[9]. However, even if a growing body of literature argues that SMCS is essential in promoting CSR activities, only a few empirical studies have investigated the use and role of SMCS as a package of practices to promote participation by employees in CSR management [8][10][11].

Previous literature has examined the association between organizational factors such as size, industry, organizational culture, stakeholder concern, top management's commitment with the use of SMCS. However, despite the fact that CSR strategy and activities in companies are influenced by institutional pressures such as laws, regulations, norms on environmental and social issues, it has not been revealed how these institutional pressures influence SMCS yet. This suggests that grasping the institutional pressures that influence SMCS can contribute to efficient SMCS design for implementing CSR strategy. In addition, previous literature showed that SMCS may represent one of the mechanisms that can facilitate companies' economic, environmental and social performance simultaneously. Although previous literature has provided insights into the contributory use and role of SMCS with regard to organizational performance, little is known about how SMCS can influence organizational performance.

Therefore, with regard to SMCS as a package, this study aims to clarify the influence of institutional pressures on SMCS and the impact of SMCS on organizational capabilities and performance in Japanese companies. Drawing on the Simons' [1] LOC framework, hypotheses are tested using the survey data collected from 151 Japanese companies. The empirical results presented are based on Structural Equation Modelling (SEM) analysis, which is considered useful to test two or more relationships between endogenous and exogenous variables simultaneously.

The remainder of this paper is organized as follows. The next section develops the theoretical framework and a set of hypotheses. The following section describes the variables along with the data source. This is followed by a presentation of results. The final section discusses the results and concludes the paper by presenting theoretical contributions and practical implications.

II. THEORY AND HYPOTHESES DEVELOPMENT

A. SMCS as a package

Simons [1] defined the MCS as formalized procedures and systems that use information to maintain or alter patterns in organizational activities. Simons' [1] LOC

framework includes four control systems – beliefs, boundary, diagnostic, and interactive – as a way of analyzing how organizations leverage their MCS in order to implement business strategies. The four levers of control are realized when they are mobilized together so that they facilitate the attainment of an organization's strategic objectives. In particular, the framework highlights the interrelationship between the control systems. Simons' [1] LOC framework is a fit model to analyze SMCS as a package comprising several control systems, each playing different roles, rather than the specific independent role of each control system. Further, the LOC framework is the most cited model in a variety of frameworks. Though a variety of frameworks on MCS are presented, this study employs Simons' [1] LOC framework as an analytical tool.

In the context of SMCS, the beliefs systems include a vision and a mission statement, credos, and a statement of purpose that integrates CSR aspects. The boundary systems include CSR checklists, codes of conduct, and operational guidelines. The diagnostic control systems represent feedback systems that monitor organizational outcomes and correct deviations from the present CSR goal and intended CSR strategy. The interactive control systems represent formal CSR information systems used by top managers to regularly and personally become involved in the decisions concerning the CSR activities of subordinates.

B. Relationships between institutional pressures and SMCS

Drawing upon DiMaggio and Powell's [12] theoretical constructs of institutional isomorphism, this study examines the kind of institutional pressures that influence SMCS. DiMaggio and Powell [12] introduced the concept of isomorphism, a process that "forces one unit in a population to resemble other units that face the same set of environmental conditions." DiMaggio and Powell [12] suggests that managerial decisions are greatly influenced by coercive, mimetic, and normative isomorphism. Coercive isomorphism results from "both formal and informal pressures exerted on organizations by other organizations upon which they are dependent." Mimetic isomorphism happens when organizations imitate other organizations in response to uncertainty. Normative isomorphism is primarily associated with professionalization.

First, in relation to CSR issues, coercive pressures are associated with government and regulatory bodies. In particular, mandatory CSR regulations have been proved to be an effective tool in motivating organizations to improve their CSR management [13][14]. The threat of legal sanction is perceived to be the main reason why companies implement CSR strategy [15]. Second, mimetic pressures have been found to be relevant in explaining management activities. It can also be a motivation for management to develop a system that provides information for evaluating CSR issues [13][16]. For example, Zhu and Geng [17] found that mimetic pressures were an important motivation for Chinese manufacturers to implement extended supply chains, in order to achieve Energy and Emission Reduction goals. Third, normative pressures have been found to encourage organizations to implement CSR practices in order to be perceived as having legitimate organizational activities [17]. In order to justify their own CSR activities, companies may seek to require advice from external experts. Boiral and Henri [18] found that normative pressures such as from customers, suppliers, employees, the media, and communities strongly influence environmental management systems. Based on the above, it is expected that companies that face greater institutional pressures are more likely to actively use SMCS, which can effectively and efficiently execute CSR management.

H1: Companies subject to greater (1) coercive, (2) mimetic and (3) normative pressures are expected to actively use SMCS.

C. Relationships between SMCS and organizational capabilities

The theoretical foundation of organization capability is Resource Based View (RBV). It rests on the principle that competitiveness, and performance, depend on the specific organizational capabilities developed by companies [19]. Following this view, the development and maintenance of unique organizational capabilities for CSR can help create competitive advantage and improve organizational performance [11]. Research on RBV classifies organizational capabilities in various ways, but this study investigates two of the most pervasive organizational capabilities for CSR found in the RBV literature: organizational learning and innovation.

First, SMCS can foster organizational learning. The beliefs systems in SMCS communicate a unified purpose aligned with the core CSR values of the company. The boundary systems set the behavioral limits. These control systems can help define the field of organizational learning for CSR [11]. In addition, the diagnostic control systems in SMCS allow for achievement of intended CSR objectives, and the interactive control systems can support employees in their search for new CSR opportunities. These control systems can help promote organizational learning for CSR [7]. Thus, SMCS is positively associated with organizational learning for CSR.

Second, SMCS can foster innovation in CSR-related activities. The beliefs systems in SMCS can focus employee attention on CSR aspects, while the boundary systems clarify behavior of employees to improve CSR aspects. These control systems can help employees perform continuous improvements of products and routines in CSR-related activities [11]. Moreover, the diagnostic control systems in SMCS provide CSR-related information for innovation such as environmental and social costs, benefits, and impacts [7][11]. The interactive control systems can help employees to perform new CSR-related innovation by communicating. Thus, SMCS is positively associated with CSR innovation.

H2: SMCS is positively associated with (1) organizational learning and (2) innovation for CSR.

D. Relationships between SMCS and CSR performance

In previous research on Environmental Management Control Systems (EMCS) and an eco-control package,

which is the MCS for environmental management, it is revealed that EMCS and eco-control positively influence environmental performance. For example, Judge and Douglas [20] and Wisner et al. [21] found support for a positive correlation between integration of environmental management concerns in the strategic planning process and environmental performance. Similarly, Henri and Journeault [10] found a positive relationship between the eco-control package and environmental performance.

By extending the aforementioned finding of the environmental dimension to the social dimension of CSR, it is possible to expect that the use of SMCS is positively associated with social performance. Regarding this, Lisi [22] found that the use of social performance indicators has a positive influence on corporate social performance. It has been shown that SMCS such as social performance indicators can contribute to the improvement of social performance. SMCS allows for the integration of social concerns within organizational routines and processes. Based on the preceding discussion, the following hypothesis is proposed.

H3: SMCS is positively associated with CSR performance.

E. Indirect relationships between SMCS and economic performance through organizational capabilities and CSR performance

Following the RBV perspective, valuable organizational capabilities can provide a competitive advantage that leads to improvements in economic performance [19]. Likewise, organizational learning and innovation in CSR-related activities can contribute to economic performance because they have been recognized as valuable capabilities [23]. As seen above, since the use of SMCS has been linked to organizational capabilities for CSR activities (H2) and these capabilities can have a positive influence on economic performance, the use of SMCS can lead to a positive indirect implication for economic performance by contributing to organizational capabilities for CSR activities.

Additionally, the use of SMCS appears to affect economic performance through CSR (environmental and social) performance as a mediator variable [10][11][22][24]. In this regard, Henri and Journeault [10] and Journeault [11] analyzed the impact of an eco-control package on environmental performance and financial performance. It was found that the eco-control package positively affects financial performance through environmental performance. Based on the results of these empirical studies, it is thought that the use of SMCS for implementing CSR strategy can lead to a positive indirect implication for economic performance through improvement of CSR performance. Thus, the following hypothesis is proposed.

H4: SMCS is indirectly associated with economic performance through its contributions to (1) organization learning, (2) innovation and (3) CSR performance.

III. RESEARCH DESIGN

A. Data collection

Survey questionnaires were distributed to 1,325 Japanese companies across various industries listed in Toyo Keizai's "2016 CSR Companies". The target respondents were CSR managers in each company. The questionnaire was first validated using a pretest administrated to three academics and five practitioners. This pretest confirmed their understanding of each measurement instrument.

As 175 questionnaires were returned, the response rate was 13.2%, of which 138 (10.4%) questionnaires were from the first mail-out, and 37 (2.8%) were from the second mail-out. Additionally, 24 (1.8%) were omitted due to substantial missing data, resulting in 151 usable questionnaires (11.4%).

Different analyzes for non-response bias were performed to confirm the validity of the data. First, the comparison between respondents and non-respondents with respect to size (based on the number of employees and sales) and industry did not reveal any significant differences. Moreover, the comparison between early respondents and late respondents did not reveal any significant differences. The results indicate that non-response bias was unlikely to be a problem.

B. Variable measurement

A survey questionnaire was developed based on extant literature on CSR, MCS and organizational performance. To establish the validity and reliability of the constructs, most of the variables studied were measured by instruments that have previously been developed and used.

First, the 12 items of institutional pressures measured were mainly adapted from DiMaggio and Powell [12], Boiral and Henri [18], Zhu and Geng [17], Wendy et al. [25], and Phan and Baird [13]. Respondents were asked to indicate, on a scale from "1 = not at all" to "7 = to a great extent," the extent to which these factors had influenced their organization's focus on CSR issues. Exploratory Factor Analysis (EFA), using maximum likelihood and varimax rotation, resulted in three factors with eigenvalues greater than 1. Since two items of institutional pressures did not load onto any factor, and one item had celling effect, these three items were removed.

Second, respondents were asked to indicate, on a scale from "1 = not at all" to "7 = to a great extent," the extent to which their organization had implemented the 21 items of SMCS from Arjaliès and Mundy [7], Henri [26], and Widener [27]. EFA, using maximum likelihood and varimax rotation, resulted in four factors with eigenvalues greater than 1. Since four items of SMCS had celling effect, these four items were removed.

Third, the nine items of organization capability measured were adapted from Henri [26], Widener [27], and Hurley and Hult [28]. Respondents were asked to indicate, on a scale from "1 = not at all" to "7 = to a great extent," the extent to which their organization had recognized organizational capability. The measure

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consisted of nine items, of which four items related to organizational learning and five items related to innovation. EFA, using maximum likelihood and varimax rotation, resulted in two factors with eigenvalues greater than 1.

Fourth, CSR and economic performance were measured using the data from "2017 CSR Companies" issued by Toyo Keizai. CSR performance was measured by three items: human resources, environmental management, and social management. Economic performance was also measured by three items: growth, profitability, and stability.

C. Data analysis

SEM was used to test the hypotheses. SEM presents a set of multivariate techniques that allow the simultaneous study of several causal relationships between endogenous and exogenous variables [11][26]. SEM was chosen for this study because it is suitable for the causal-predictive analysis of complex relationships with institutional pressures, SMCS, organizational capabilities, and performance. Data collected from the survey were analyzed with Amos 23.0. First, the reliability and validity of the measurement model were assessed and then the structural model was assessed.

IV. RESULTS

A. Evaluation of measurement model

To assess the reliability and validity of the measurement scales, Confirmative Factor Analysis (CFA) was performed for each construct, with the exception of SMCS, where a second-order CFA was conducted. Composite Reliability (CR) was used to examine internal reliability. The CR value and Cronbach's Alpha measure, each score above 0.7, which can be regarded as satisfactory and therefore confirm the construct's reliability [29]. Average Variance Extracted (AVE) was also used to evaluate convergent validity. The AVE of each construct is higher than 0.5, which demonstrated adequate convergent validity [29]. In addition, one item of organizational capabilities was removed due to an inadequate loading factor which was 0.4 or less.

The fitness of the measurement model was analyzed by normed χ^2 (CMIN/DF), Incremental Fit Index (IFI), Turker-Lewis Index (TLI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). In general, it is judged that the model is acceptable, if the normed χ^2 is 3.0 or less, IFI, TLI and CFI are 0.9 or more, and RMSEA is 0.1 or less. Since all the measurement models were satisfactory, the research hypotheses will be examined below using each variable.

B. Evaluation of structural model

Tables 1 and 2, and figure1 present the results of the structural equation model in terms of path coefficients, t-value, Z statistic, and goodness-of-fit-indices. Overall, this indicates a good fit between the data and the model. Next, the research hypotheses are examined using the structural equation model.

TABLE 1: RESULTS FOR THE STRUCTURAL EQUATION MODEL

Hypotheses	Descriptions of paths	Path Coeff.	t-value.
H1.1	Coercive pressures ⇒SMCS	0.481	2.456**
H1.2	Mimetic pressures ⇒SMCS	0.002	0.022
H1.3	Normative pressures ⇒SMCS	0.376	2.095**
H2.1	SMCS ⇒Organizational learning	0.646	6.787***
H2.2	SMSC ⇒innovation	0.745	5.084***
H3	SMCS ⇒CSR performance	0.676	4.447***
H4	Organizational learning ⇒CSR performance	0.066	0.739
H4	Organizational learning ⇒Economic performance	0.212	1.985**
H4	Innovation ⇒CSR performance	-0.083	-0.714
H4	Innovation ⇒Economic performance	-0.062	-0.446
H4	SMCS ⇒Economic performance	0.015	0.080
H4	CSR performance ⇒Economic performance	0.182	1.682*

* p<0.1, ** p<0.05, *** p<0.01
χ^2/df= 892.997/564= 1.583 (p<0.001),
IFI=0.926, TLI=0.916, CFI=0.925, RMSEA=0.062

TABLE 2: INDIRECT RELATIONSHIPS BETWEEN SMCS USE AND ECONOMIC PERFORMANCE

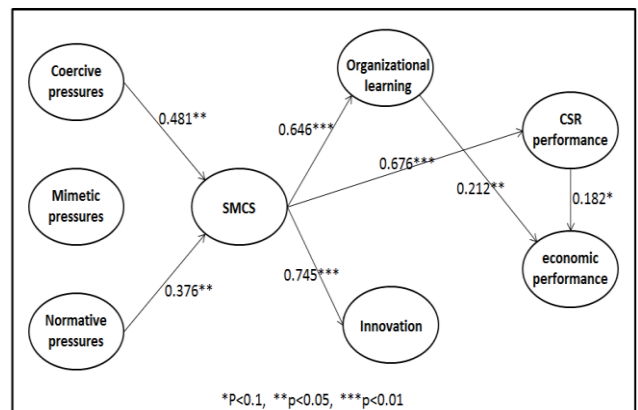| Hypotheses	Descriptions of paths	Total Effect	Sobel Test (Z).
H4.1	SMCS ⇒Organizational learning ⇒Economic performance	0.152	1.982**
H4.2	SMCS ⇒Innovation ⇒Economic performance	—	—
H4.3	SMCS ⇒CSR performance ⇒Economic performance	0.138	1.972**

* p<0.1, ** p<0.05, *** p<0.01

FIGURE1: STANDARDIZED RESULTS FOR THE STRUCTURAL EQUATION MODEL

Firstly, coercive pressures (β=0.481, p<0.05) and normative pressures (β=0.376, p<0.05) were positively associated with SMCS, therefore providing support for hypotheses 1.1and 1.3. However, since there was no significant result in the relationship between mimetic pressures and SMCS, hypothesis 1.2 was not supported. This finding suggests that coercive pressures (such as

CSR-related laws, regulations, and international standards) and normative pressures (such as external CSR-related experts and stakeholders) foster the use of SMCS.

Secondly, SMCS was found to be positively associated with both dimensions of organizational capabilities for CSR activities, namely organizational learning (β=0.646, $p<0.01$) and innovation (β=0.745, $p<0.01$). Therefore, hypotheses 2.1 and 2.2 were supported. This result showed that utilizing multiple control systems simultaneously can strengthen organizational learning and innovation for CSR activities.

Thirdly, SMCS was found to be positively associated with CSR performance (β=0.676, $p<0.01$), therefore hypothesis 3 was supported. This result also showed that SMCS can strengthen CSR performance. This further suggests that the use of SMCS plays an important role in implementing CSR strategy and activities in a company.

The Sobel test was used to assess whether the mediator carries the influence of the independent variable to the dependent variable [30]. In order to test hypotheses 4.1, 4.2 and 4.3, this study also conducted the Sobel test. Fourthly, SMCS is indirectly associated with economic performance through its contribution to organizational learning (Z=1.982, $p<0.05$) and CSR performance (Z=1.972, $p<0.05$). Therefore, hypotheses 4.1 and 4.3 were supported. These results showed how organizational learning and CSR performance act as mediator variables between SMCS and economic performance within the company.

However, organizational learning has a direct impact on financial performance, not CSR performance. The reason why organization capabilities do not directly affect CSR performance might be that there is no immediate effect on the relationship between organizational capability and CSR performance. Further research will be necessary for this point.

V. CONCLUSION

Based on Simons' [1] LOC framework, this study examined the influence of institutional pressures on SMCS, and the simultaneous impact of organizational capabilities and performance.

In order to obtain legitimacy for corporate activities, companies recognize external social norms, values, regulations, etc. This study examined whether responses to institutional pressures by companies are primarily to obtain legitimacy for expectations of society, rather than to improve organizational capabilities and performance. Although the results of this study showed that institutional pressures are not directly related to the improvement of organizational capabilities and performance, responses to institutional pressures by companies implementing CSR activities enables them improve organizational capabilities and performance through the use of SMCS. In other words, SMCS can directly and indirectly foster organizational capabilities and performance.

The first contribution of this study is to clarify the effects of SMCS for the implementation of CSR strategy and activities using a questionnaire survey. Few studies on SMCS considered the economic, environmental and social activities of companies simultaneously were case studies. However, we examined new findings on the relationships between institutional pressures, the use of SMCS, organizational capabilities and performance, which heretofore were not clarified in the context of CSR.

The second contribution of this study is to use the archival data and the data from the questionnaire survey simultaneously. In most previous research on MCS, organizational performance (such as economic, environmental and social performance) was measured by questionnaires. It is impossible to exclude bias by respondents. On the contrary, since this study measured organizational performance using archival data from "2017 CSR Companies" provided by Toyo Keizai, it seems that more objective results were acquired.

Third, this study makes a practical contribution giving strong motivation to managers who have a sense of resistance to the implementation of CSR activities. This study illustrated how important it is for managers to adopt various control systems (such as beliefs, boundary, diagnostic, and interactive systems) and use them complementarily to support the development of organizational capabilities and performance within their company. Furthermore, the indirect effect of SMCS on economic performance through organizational learning and CSR performance, guides the way for executives and managers to understand the importance of CSR activities as the source of competitive advantage in the market. Therefore, the results of this study enable managers to incorporate SMCS into their business strategies and activities.

This study is subject to potential limitation that can provide avenues for future research. First, although the effect of using multiple control systems simultaneously could be confirmed, it has not been analyzed how the relationship among the control systems that make up SMCS affects the improvement of organizational capabilities and performance. In future research, it will be necessary to empirically analyze the influence of the relationships among the control systems, each of which works through a different role.

Companies are using not only SMCS, but also MCS, to achieve the goals of core business simultaneously. Since this study focused on the use of SMCS, aspects of MCS to achieve companies' core business have not been analyzed. Second, therefore, future research could examine the relationship between MCS and SMCS. In order to establish the use of SMCS and to execute CSR management over the long term within the company, in addition to the relationship among the individual control systems that make up SMCS, an analysis on integration between MCS and SMCS could be thought to make a theoretical and practical contribution.

Finally, as the survey in the study was conducted in 2016, it may not be possible to generalize the results across other years. However, if we analyze the relationships among institutional pressures, SMCS, organizational capabilities and performance in the long term, it would be possible to elucidate the relationship more accurately. Since there are still many unknown

facets about SMCS, long term research on this field is considered significant.

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