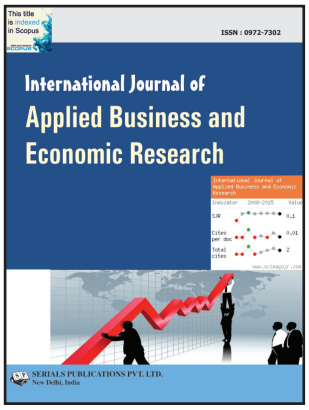

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Can Servant Leadership Improve Organizational Performance through use of MCS and Organizational Capabilities?

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ABSTRACT

This study empirically analy zed the relationship among servant leadership, use of Management Control System (MCS), organizational capabilities, and organizational performance, by integrating existing studies of specific areas. This study fuses various areas of business administration. It is significant because it confirms the effect of servant leadership on organizational performance through MCS and organizational capabilities. Major findings of this study are as follows. First, servant leadership has positive effects on the diagnostic use of MCS, the interactive use, existing organizational capabilities, and new capabilities. Second, the diagnostic use of MCS has a positive effect on existing capabilities; the interactive use of MCS has a positive effect on new capabilities. Third, existing capabilities have positive effects on financial performance; new capabilities have positive effects on non-financial performance. Finally, while servant leadership does not have a direct effect on organizational performance, it has an indirect effect through MCS and organizational capabilities.

Keywords: Servant Leadership; MCS; Organizational performance; Organizational Capabilities.

1. INTRODUCTION

Business executives exercise influence to lead organization members to contribute to the achievement of the organization's goal. To that end, business executives design and use a Management Control System (MCS). It is expected that leadership and MCS affect organizational capabilities, which can serve as a source of competitive advantage, and that organizational capabilities will contribute to the improvement of organizational performance. Leadership uses members and employs their collective efforts to achieve a common goal (Yukl, 2005). MCS is the process whereby managers acquire resources and help members

use those resources efficiently and effectively (Anthony, 1965). Organizational capabilities are dynamic and atypical mechanisms that enable members to acquire, develop, and allocate resources to achieve performance superior to that of competitors (Dierickx & Cool, 1989); alternatively, they are important resources that promote and support business strategies and guarantee sustainable development (Burgelman, 2009).

Existing studies have tended to deal individually with leadership, MCS, organizational capabilities, and organizational performance. Existing studies have not analyzed these areas comprehensively. Accordingly, too few studies address the relationship between leadership and MCS, and the effect of leadership and MCS on organizational capabilities. Consequently, it is important to empirically analyze the relationship among these elements in a single research model. Through such an analysis, it will be possible to identify the contribution of leadership and MCS on the competitive advantage of an organization and improvement of its performance.

Among the various types of leadership, this paper will focus on servant leadership, which has attracted great attention recently in the business world (Wong, 1997; Stone, Russell & Patterson, 2004). MCS will be divided into diagnostic use and interactive use, depending on the method of application (Simons, 1995; Bisbe & Otley, 2004; Henri, 2006; Widener, 2007). Organizational capabilities will be divided into existing capabilities and new capabilities, depending on inherent attributes (Grafton, Lillis & Widener, 2010). Because leaders design their own MCS and decide how to use it, the method of using MCS can vary depending on the leadership composition. The effects of MCS on existing capabilities and new capabilities can also vary depending on how MCS is applied.

It is expected that, in a highly uncertain business world, such analyses will identify the way in which servant leadership contributes to the improvement of organizational performance, the roles that MCS and organizational capabilities play, and the effects of methods of applying MCS and types of organizational capabilities on financial performance and non-financial performance. It is expected that the findings of this research will provide meaningful guidance to business executives who wish to secure a competitive advantage over competitors and improve organizational performance.

The objectives and significance of this research are as follows. First, this research analyzes the relationship between servant leadership and use of MCS. Such research has rarely been conducted, and it will fuse the personnel and organization area with managerial accounting. Second, this research divides organizational capabilities into existing capabilities and new capabilities, depending on inherent attributes. It will not only provide a more detailed study, but also contribute to the understanding and interpretation of inconsistent research findings about the use of MCS and organizational capabilities. Third, this research analyzes the effect of servant leadership on organizational capabilities and that of organizational capabilities on organizational performance. This analysis will reveal whether servant leadership can contribute to the improvement of an organization's competitiveness. Finally, this research will identify the roles of MCS and organizational capabilities in the relationship between servant leadership and organizational performance.

2. LITERATURE AND HYPOTHESIS DEVELOPMENT

Servant Leadership and Organizational Performance

Recently, with the transition to an information and knowledge-based society, a new role for leaders has emerged. The concept of servant leadership has attracted attention (Stone, Russell & Patterson, 2004;

Yi, Shin & Chang, 2012). To maximize opportunities and optimize resources in rapidly changing social and economic situations, open and ethical servant leadership is required. Servant leadership is defined as leadership that focuses on serving others; gives priority to employees, customers, and the community; and requires leaders to devote themselves to satisfying others' needs (Greenleaf, 1970). Servant leaders see themselves as servants, and devote themselves to the growth and development of those they oversee and to the formation of the community (Greenleaf, 1970). Servant leaders respect subordinates, help them grow by providing opportunities to express creativity, and lead departments or teams in becoming true communities (Block, 1998; Senge, 1995). Under servant leadership, all the members of a department or a team voluntarily participate in their work, and learning is promoted (Senge, 1995). Servant leadership focuses more on the goals and demands of the leader's subordinates, rather than on the leader's desires, and emphasizes the development and transfer of rights to such subordinates (Russell & Stone, 2002). It boosts subordinates' creative talents and focuses on their capability development to improve their ability to fulfill work responsibilities.

Servant leaders immerse others in the organization by helping them recognize the importance and meaning of their work (Taylor-Gillham, 1998). Servant leaders are role models for their subordinates, whose behavior is imitated, leading others to act voluntarily to help other employees and the organization to repay the support of the leader (Smith, Organ & Near, 1983). Many studies have shown that servant leadership has positive effects on immersion in an organization (Hampton, Dubinsky & Skinner, 1986; Liden, Waynem, Zhao & Henderson, 2008; Jaramillo, Grisaffe, Chonko & Roberts, 2009) and on organizational citizenship (Ehrhart, 2004; Liden, Waynem, Zhao & Henderson, 2008; Smith, Organ & Near, 1983). Mutual trust relationships formed through servant leadership have positive effects on the devotion of employees to the organization and on employees' attitudes toward their work (McAllister, 1995). Studies show that servant leadership has positive effects on customer-orientation, organizational immersion, organizational citizenship behavior, and organizational performance (Ha, 2013). Various studies have also proven that servant leadership is an appropriate leadership type that supports the survival and growth of an organization in a rapidly changing competitive environment (Laub, 1999; Russell & Stone, 2002; Stone, Russell & Patterson, 2004; Mayer, Bardes & Piccolo, 2008; Walumbwa, Hartnell & Oke, 2010). In the knowledge society, when a leader treats workers as co-managers rather than subordinates, organizational performance can be enhanced (Drucker, 1999).

Management uses various measures to define organizational structure, decide the order of strategic priority, embody the official control system, and implement strategies. A personal relationship between a leader and members transforms the behavior of the members and improves organizational performance (Abernethy, Bouwens & Vanlent, 2010). By providing members with personal support, mentoring, coaching, and opportunities for learning, servant leaders results in members' immersion in the organization and voluntarily action. As a result, organizational performance is improved. Based on the above discussion and supporting studies, this research proposes the following hypotheses:

H1: Servant leadership will have an effect on organizational performance.

H1(a): Servant leadership will have a positive effect on financial performance.

H1(b): Servant leadership will have a positive effect on non-financial performance.

Servant Leadership and Organizational Capabilities

Diericks and Cool (1989) defined organizational capabilities as dynamic and atypical mechanisms that allow resources to be acquired, developed, and allocated, thereby enabling a company to achieve higher performance than its competitors. According to the resource-based view (RBV), a company is a collection of resources (Barney, 1991), and resources are a bundle of potential services (Penrose, 1959). A company's resources have characteristics that include value, rarity, impossibility of imitation, and irreplaceability (Barney, 1991). Resources are core elements of competitiveness, and the continuous competitive advantage of a company is determined by the extent to which resources are created and used (Lado, Nancy, Wright & Kroll, 2006; Burgelman, 2009). Organizational capabilities are the collection of differentiated skills, assets, and procedures needed to continuously maintain and secure competitiveness and competitive advantage (Teece, Pisano & Shuen, 1997).

Regarding competitive advantage, studies in managerial accounting classify organizational capabilities into categories such as organizational learning, innovation, market orientation, and entrepreneurship, and analyze some or all of these variables (Simons, 1995; Bisbe & Otley, 2004; Henri, 2006; Widener, 2007). Other studies, depending on the inherent attributes of organizational capabilities, classify them into exploitative capabilities and exploratory capabilities, or into existing capabilities and new capabilities (Gibson & Birkinshaw, 2004; Grafton, Lillis & Widener, 2010). Some studies classify organizational capabilities into different types, and analyze some or all of these types (Henri, 2006; Widener, 2007). This research intends to divide organizational capabilities into the categories of existing capabilities and new capabilities, because it is expected that the effect of organizational capabilities on organizational performance varies, depending on the inherent attributes of the capabilities. Grafton, Lillis and Widener (2010) argued that existing capabilities are those that enable a company to innovate and make incremental changes, while new capabilities are those that enable exploration, radical change, and the development of capabilities, resources, technologies, and processes. They posited that a company pursues stability and adaptability simultaneously to react to environmental changes.

Leadership is a critical element affecting organizational capabilities, because such capabilities result from the efforts of a leader who intentionally seeks to match the organization's capabilities to environmental conditions (Senge, 1990). A servant leader leads subordinates to participate voluntarily in the work of the organization and promotes learning (Senge, 1995). Such a leader respects subordinates and promotes their creative capabilities. Such a leader promotes a shared vision (Sims, 1997). Servant leadership focuses on capability development to improve subordinates' creative capabilities so they can more easily fulfill their responsibilities (Patterson, 2003). In the theoretical perspective described above, servant leadership is expected to have a positive effect on organizational capabilities.

Few studies have addressed the relationship between servant leadership and organizational capabilities. According to such studies, servant leadership is either the same or similar to transformational leadership (Burns, 1978; Livovich, 1999), or an extended concept of it (Taylor, Martin, Hutchinson & Jinks, 2007). Consequently, based on empirical findings regarding the relationship between transformational leadership and organizational capabilities, we can infer the effect of servant leadership on organizational capabilities. Vera and Crossan (2004) argued that transformational leadership has a positive effect on organizational learning. A transformational leader emphasizes innovation more than a transactional leader does (Church & Waclawski, 1998), and has positive effects on the innovative behavior of subordinates, the performance

of the research and development team, and innovation generally (Keller, 1992; Waldman & Atwater, 1994; Jung, Chow & Wu, 2003).

A servant leader helps members understand the importance and meaning of their work, develop a sense of ownership, and become immersed in the work. Such a leader inspires members to play an active role in serving the community. A servant leader also attaches importance to interaction and communication with those under his supervision. Such a leader creates an atmosphere where members can exhibit their own ideas and creativity. Consequently, such a leader influences members not only to develop current capabilities, but also to improve their abilities in finding new opportunities. Based on such findings, this research proposes the following hypotheses:

H2: Servant leadership will have an effect on organizational capabilities.

H2(a): Servant leadership will have a positive effect on existing capabilities.

H2(b): Servant leadership will have a positive effect on new capabilities.

Servant Leadership and Use of MCS

Berry, Broadbent and Otley (1995) defined MCS as the process of guiding the activities of an organization to help it survive changes in the administrative environment. Simons (1991) argued that MCS is the official process in which one uses information to maintain or change the activities of an organization, and that it includes all the information treatment processes related to planning, budgeting, resource allocation, cost control, business environment monitoring, and compensation. Simons (1990, 1995), focusing on the inherent attributes of MCS, classified the uses of MCS into diagnostic use and interactive use. The diagnostic use of MCS is a traditional control method used to compare previously set goals and actual performance, and to take remedial measures to address the difference between goals and performance. The interactive use of MCS focuses on sharing information, eliminating uncertainty, and adapting to the environment through frequent dialogue.

The interactive use of MCS focuses on monitoring environmental changes, and, through the information produced by such monitoring, establishing future strategies. A number of studies (Ittner & Randall, 2003; Chenhall, 2005; Bisbe & Otley, 2004; Henri, 2006; Widener, 2007) made after Simons (1995) classified various elements of MCS using the classification method developed by Simons (1995). A performance measurement system (PMS) is a typical element of MCS, and has frequently been used as a substitute for MCS in studies. Thus, this research will use PMS to measure MCS.

In the managerial accounting literature, the leadership framework includes vision setting, communication, rights transfer, vision implementation, and ethics (Abernethy, Bouwens & Vanlent, 2010; Bolton, Brunnermeier & Veldkamp, 2008). Vision setting occurs when a leader collects information from the business environment and then offers direction to the organization, while vision implementation occurs when a leader implements the vision using available information and MCS (Abernethy, Bouwens & Vanlent, 2010; Bolton, Brunnermeier & Veldkamp, 2008). The communication ability of a leader is one of the elements constituting leadership. A leader not only communicates a vision to members, but also converts the vision into a management goal (Abernethy, Bouwens & Vanlent, 2010). By using MCS, a leader communicates a vision to members, and resolves differences of opinion between the leader and members,

which could otherwise prevent the achievement of the vision. As top executive use MCS to create and achieve organizational visions, companies can differ in their design and use of MCS (Simons, 1995).

To use MCS for diagnosis, one must set a desirable goal of action and measure the value of goal versus performance. MCS diagnosis is used to remedy the difference between goals and actual performance by monitoring organizational performance (Simons, 1995). Servant leadership sets the goal of a project, as well as the official process and procedures for decision-making and communication. In the diagnostic use of MCS, servant leadership is supported by the monitoring and analysis of goals versus performance, as well as the method of communication with members (Jansen, 2011). A servant leader pays attention to each member, lets members participate in the decision-making process, and actively reflects their opinions in decisions. Servant leaders encourage interdependence, trust, cooperation, and dialogue with members. Top executives deliver information to members, and use the interactive function of MCS to generate continuous dialogue with members (Simons, 1995). The interactive use of MCS is an organic control that encourages the free flow of information (Simons, 2000). The more management uses MCS interactively, the more dialogue and communication between management and members will be promoted. Based on the above discussion and existing research, this research proposes the following hypotheses:

H3: Servant leadership will have an effect on the use of MCS.

H3(a): Servant leadership will have a positive effect on the diagnostic use of MCS.

H3(b): Servant leadership will have a positive effect on the interactive use of MCS.

MCS and Organizational Capabilities

To use organizational capabilities to secure a competitive advantage, one must foster the related capability of organizational routine. MCS is at the core of organizational routine (Henri, 2006). The diagnostic use of MCS focuses on remedying problems under the current operating paradigm and managing errors in the process of achieving goals. The diagnostic use of MCS was designed to compare the level of performance achievement to a goal, and monitor problems in current operations (Simons, 1995). The diagnostic use of MCS does not question existing policies (Kloot, 1997), and it has a limitation in pursuing new opportunities and innovations (Henri, 2006). If MCS is used diagnostically, it is likely that existing capabilities will be used and improved to achieve a goal more efficiently under the existing paradigm, and that new capabilities will not be developed. Due to the emphasis on feedback and performance information, the diagnostic use of MCS promotes the use of existing capabilities (Maritan, 2001). Leem, Lee and Kim (2012) analyzed the relationship between MCS use and innovative types, and found that the diagnostic use of MCS has a positive effect on exploitative innovation.

On the other hand, the interactive use of MCS contributes greatly to the development of new capabilities by identifying and exploiting future opportunities, because the interactive use of MCS can contribute greatly to strategic dialogue, planning, and goal-setting (Maritan, 2001). It also improves creativity and knowledge (Simons, 1995). This is true because the interactive use of MCS can focus people on strategic uncertainty and the detection of new threats and opportunities. It also strengthens organizational learning through organization-level dialogue and discussion, and promotes the emergence of new strategies (Henri, 2006). Through interactive MCS, an organization identifies opportunities in the market and changes itself (Bisbe & Otley, 2004). Because the interactive use of MCS can generate creative ideas through frequent communication and continuous debate, and supply a new way to solve problems, it can guide the development of new

capabilities. Leem, Lee and Kim (2012) analyzed the relationship between MCS use and innovative types, and found that the interactive use of MCS has a positive effect on exploratory innovation. Based on the above discussion and existing research, this research proposes the following hypotheses:

H4: Use of MCS will have an effect on organizational capabilities.

H4(a): The diagnostic use of MCS will have a positive effect on existing capabilities.

H4(b): The interactive use of MCS will have a positive effect on new capabilities.

MCS and Organizational Performance

If members know they are being monitored by their boss, they tend to exert more effort to achieve a given goal (Merchant, 1985). MCS provides members with information to lead them to implement a strategic policy, and motivates them to fulfill a strategic goal (Simons, 1987). If members are evaluated by performance indicators, they are motivated to achieve the strategic goal (Blau 1955), and they exert greater effort to achieve the goal. Thus, they improve performance. The importance of performance evaluation lies in the fact that performance evaluation criteria change members' behavior patterns (Chenhall, 1997).

Diagnostic control is helpful in informing organizational members that they are being monitored, and stimulating them to exert themselves to achieve a goal. Many studies show that control-oriented use of MCS has positive effects on performance (Schaffer & Steiners 2004, Henri 2006). On the other hand, interactive control, by raising questions about fundamental assumptions inherent in the management plan and goal setting, and by emphasizing creativity and innovation, encourages the creation of ideas that can benefit the organization and improve organizational learning in a changing environment. If differences arise between targeted performance and real performance, organic control can foster continuous dialogue between top management and lower employees, which may help identify the causes of such differences, leading to solutions (Simons, 1990; Abernethy & Brownell, 1999).

Studies on the effect of the use of MCS on organizational performance have shown mixed results. This is apparently because there are various definitions and classifications of MCS. Howsoever it is used, an active MCS seems to improve the performance of a company (Vandenbosch, 1999), because MCS is a tool for achieving a strategic goal and it collects various elements that bring the behavior of members into alignment with an organizational goal. Based on the above discussion and existing research, this research proposes the following hypotheses:

H5: Use of MCS will have an effect on organizational performance.

H5(a): The diagnostic use of MCS will have a positive effect on organizational performance.

H5(b): The interactive use of MCS will have a positive effect on organizational performance.

Organizational Capabilities and Organizational Performance

Organizational capabilities allow an organization to respond to the market more quickly than its competitors and generate excellent value for customers, thereby improving organizational performance. They also enable the organization to adjust effectively to the market, technology, and competition, and take preemptive actions that can affect the business environment (Damanpour, 1991). Shefer and Frenkel (2005) found that organizational capabilities contribute to the improvement of financial performance through improvement

of opportunities to found a new business, enhancement of growth potential, and increase of market share and production efficiency. Additionally, organizational capabilities have positive effects on financial performance by strengthening competitiveness in domestic and foreign markets, promoting the acquisition of new business opportunities, supporting a prior occupation advantage (Kanter, 1999), and increasing competitive advantages by creating better conditions for entrance into foreign markets and survival as a company (Mone, McKinley & Barker, 1998). According to Bisbe and Otley (2004) and Widener (2007), organizational capabilities have a positive effect on organizational performance.

To survive, a company must use existing capabilities or develop new capabilities (Makino & Inkpen, 2003). It is easy for a company to use existing capabilities to secure and strengthen the unique capabilities of existing technologies and products. It is also possible for a company to understand existing technological capabilities more deeply by combining various kinds of information, and to find ways to combine these capabilities to greater effect (Katila & Ahuja, 2002). New capabilities introduce new knowledge to a company, increasing variety in the knowledge pool. This variety supports the creation of various approaches to solving problems; it is useful in developing new products and services, and in securing new customers. Additionally, new capabilities lead members to experience various perspectives and approaches relating to new technologies and products, allowing members to define problems in new ways and identify solutions (Ahuja & Lampert, 2001). Consequently, new capabilities serve as a source of competitive advantage, contributing to the improvement of organizational performance. Based on the above discussion and existing research, this research proposes the following hypotheses:

H6: Organizational capabilities will have an effect on organizational performance.

H6(a): Existing capabilities will have a positive effect on organizational performance.

H6(b): New capabilities will have a positive effect on organizational performance.

3. RESEARCH DESIGN

Research Model

This research empirically analyzes the relationships among servant leadership, use of MCS, organizational capabilities, and organizational performance. To test these relationships, this research sets forth the research model shown in Figure 3.1.

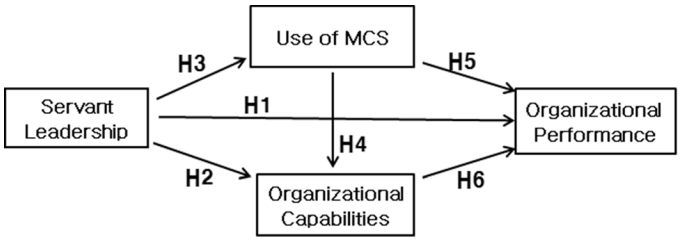

Figure 3.1: Research Model

Operational Definitions of Variables and Measurement of Them

Servant leadership is defined as leadership that respects the dignity and value of subordinates, supports their growth, transfers authority to them, and contributes to the formation of a community. Using survey

questions developed in previous research (Livovich, 1999; Laub, 1999; Girard, 2000), this research uses 20 questions and measures responses using a 7-point Likert scale. Specific survey questions are shown in Table 3.3. The use of MCS was categorized as either diagnostic or interactive. The diagnostic use of MCS is defined as managers' use of PMS to monitor organizational performance and remedy problems when there are differences between the original goal and the actual performance. The interactive use of MCS is defined as managers' use of PMS to establish future strategies and reduce strategic uncertainties. By revising the survey questions developed in previous studies (Henri, 2006; Widener, 2007), this research used four questions for the diagnostic use of MCS and seven questions for the interactive use of MCS, on a 7-point Likert scale. Specific survey questions are shown in Table 3.4.

Organizational capabilities were measured by dividing them into existing capabilities and new capabilities. Existing capabilities are defined as the degree to which a business section can exploit and improve current capabilities, and new capabilities are defined as the degree to which a business section can search for new capabilities and use new opportunities. The questions regarding organizational capabilities were based on previous research (Grafton, Lillis & Widener, 2010; Teece, Pisano & Shuen, 1997). They consist of two questions about existing capabilities and three questions about new capabilities, as shown in Table 3.5. A 7-point Likert scale was used here as well. Organizational performance consists of financial performance and non-financial performance. It is defined as the degree of performance achieved in a given year. By revising questions used in previous studies (Abernethy & Brownell, 1999; Henri, 2006), this research uses eight questions, as shown in Table 3.6. To secure the reliability of organizational performance measured with perceived performance, a correlation analysis of publicized financial data and perceived performance was conducted.[1] This analysis demonstrated the reliability of the perceived performance data acquired by the survey. Finally, to control for the effect of organizational size on measured variables, this research identifies natural log values, using the number of employees as the control variable.

Data Collection and Analytic Method

KIS (Korea Investors Service Inc.) values were used to identify 400 Korean companies that had 100 employees or more and recorded sales of 150 billion won or more, as of the end of 2014; the questionnaire was sent to them, and their responses were received. Samples of this research data were selected, consistent with the methods used in other studies (Henri, 2006; Abernethy, Bouwens & Vanlent, 2010). Respondents to the questionnaire were managers, generally, in business divisions, who understand the use of MCS in those firms. One questionnaire was sent to each company. The survey consisted of a preliminary survey and a main survey. A preliminary survey was conducted in two stages. In the first stage, the questionnaire was based on a literature review, and the interview was directed to managers in manufacturing firms. In the second stage, the responses to the first-stage interview were reviewed by one top executive, four department heads, and three college professors. Based on their advice and comments, the pilot test was completed with 30 respondents. From the list of 24 leadership questions in the pilot test, four questions were eliminated due to duplicated content and validity problems.

[1] Perceived financial performance showed significant correlation with each of the followings: operating profit rate (corr = 0.220, $p < 0.05$); sales increase rate (corr = 0.242, $p < 0.05$); and net profit of this term (corr = 0.208, $p < 0.05$). Perceived non-financial performance showed similarly significant correlation with each of the following: operating profit rate (corr = 0.228, $p<0.05$); sales increase rate (corr = 0.241, $p < 0.05$); and net profit of this term corr = 0.204, $p < 0.05$).

The survey was conducted from September 7 to October 23, 2015. The questionnaire was recovered by a variety of methods, including visits, telephone, e-mail, postal service, and fax. From the 400 copies delivered, 108 copies (27%) were returned. From these 108 copies, seven were removed because they were deemed unsuitable for analysis due to missing responses and lack of consistency. In total, 101 copies (25%) were used for the analysis. To examine non-response bias, the study examined whether there was a significant difference in response patterns between the early group of respondents and the latter group of respondents. There were no significant differences in response patterns between the two groups.

Table 3.1
Non-Response Bias

Variable[2]		*Initial response (60) average*	*Later response (41) average*	*p value*
Leadership	SL	5.05	5.02	0.879
MCS	DMCS	5.22	5.00	0.387
	IMCS	4.45	4.50	0.803
Capabilities	EC	4.90	4.91	0.976
	NC	4.45	4.58	0.606
Performance	FP	4.21	4.22	0.972
	NFP	4.29	4.32	0.893

$^{*}P < 0.05$, $^{**}P < 0.01$.

4. EMPIRICAL ANALYSIS

Basic Statistics of Samples

Business type, number of employees, and sales of companies are displayed in Table 3.2. The number of respondents belonging to each type of department is as follows: finance/accounting (34 respondents); planning/general affairs (23); marketing/business (21); personnel (6); production (6); and R&D and others (11). The number of respondents holding each type of position is as follows: deputy-chief of department (32 respondents); chief of department (62); and director or above (7). The average working time of respondents was 15.8 years, and the average working time in the current department was 10.1 years.

Table 3.2
Characteristics of sampled companies

Panel A: Business type	*N*	*%*	*Panel B: NO of employees*	*N*	*%*
Chemistry	22	21.7	100 – 500	32	31.7
Transport machinery	20	19.8	501 – 1,000	22	21.8
Steel/Iron	20	19.8	1,001 – 5,000	36	35.6
Food	12	11.9	Over 5,000	11	10.9
Electricity/Electronics	10	9.9	*Panel C: Sales*	*N*	*%*
Machinery	6	5.9	150 bil. won – 500 bil. won	36	35.6
Medical supplies	5	5.0	500 bil. won – 1 tri. won	18	17.9
Textile/Clothes	3	3.0	1 tri. won – 10 tri. won	35	34.6
Others[3]	3	3.0	Over 10 tri. won	12	11.9

[2] SL = servant leadership, DMCS = Diagnostic Use of MCS, IMCS = interactive Use of MCS, EC = Existing Capabilities, NC = New Capabilities, FP = Financial Performance, and NFP = Non-Financial Performance.

[3] Other business types are non-metallic ore, paper, and wood companies.

Basic Statistics on Variables

Survey questions and the mean value of responses are shown in Tables 3.3 through 3.6.

Table 3.3
Basic statistics on questions about leadership

	Question	*Mean*	*St. Dev.*
SL	① Clearly offers organizational vision	5.41	1.282
	② Demand members to be immersed in the shared vision	5.49	1.055
	③ Ask members about a desirable picture of the company	4.56	1.438
	④ Reveal the organizational goal, and make members understand it clearly	5.07	1.227
	⑤ Emphasize teamwork and cooperation to members	5.76	1.159
	⑥ Actively participate in department activities besides work-related activities	4.67	1.401
	⑦ Encourage members to actively communicate among themselves	5.44	1.203
	⑧ Emphasize cooperation to members	5.16	1.247
	⑨ Effectively support to improve work ability	5.00	1.175
	⑩ Encourage members to work autonomously	4.89	1.207
	⑪ Encourage members to cultivate themselves	5.05	1.359
	⑫ Support members to become specialists	4.86	1.304
	⑬ Truly pay attention to members	4.65	1.260
	⑭ Encourage members and pay attention to them	4.74	1.262
	⑮ Show passion to members	5.10	1.187
	⑯ Form a highly ethical atmosphere	5.18	1.276
	⑰ Provide members with opportunities to enhance work level	5.10	1.136
	⑱ Give members rights to make them have sense of responsibility	5.05	1.211
	⑲ Transfer rights to make decisions to members	4.68	1.256
	⑳ Give members rights to perform works	4.95	1.252
	Total average	5.04	

Table 3.4
Basic statistics on questions about Use of MCS

	Question	*Mean*	*St. Dev.*
DMCS	① Use it to examine progress of goal achievement	5.26	1.332
	② Use it to monitor performance	5.16	1.332
	③ Use it to compare goal and real performance	5.09	1.335
	④ Use it to check major measurement indicators	5.04	1.318
	Total average	5.14	
IMCS	① Use it to communicate	4.76	1.379
	② Use it to discuss action plan, and assumed matters, etc.	4.56	1.307
	③ Use it to provide common concerns and viewpoint of organization	4.49	1.285
	④ Use it to unite organization	4.37	1.325
	⑤ Use it to make members focus on the common problem	4.52	1.339
	⑥ Use it to let members focus on major success factors	4.37	1.302
	⑦ Use it to develop common language within organization	4.25	1.228
	Total average	4.47	

Table 3.5
Basic statistics on questions about Organizational capabilities

	Question	*Mean*	*St. Dev.*
EC	① Degree to which one can use current capabilities	5.00	1.105
	② Degree to which one can remedy current capabilities	4.82	1.117
	Total average	4.91	
NC	① Degree to which one can sense demand for strategic changes	4.61	1.257
	② Degree to which one can explore new capabilities considering demand for strategic changes	4.49	1.213
	③ Degree to which one can use new capabilities	4.43	1.424
	Total average	4.50	

Table 3.6
Basic statistics on questions about Organizational performance

	Question	*Mean*	*St. Dev.*
FP	① Sales increase rate	4.24	1.379
	② Operating profit rate	4.26	1.339
	③ Net benefit on current period	4.17	1.327
	④ Return on Investment (ROI)	4.22	1.262
	Total average	4.22	
NFP	① Market share rate	4.32	1.264
	② Customer satisfaction	4.60	1.114
	③ Employee satisfaction	4.15	1.090
	④ Release of new products	4.16	1.247
	Total average	4.30	

Reliability and Validity of Variables

To test reliability, Cronbach's α values were used. If α value is 0.6 or higher, the variable is considered to be reliable. As shown in Table 3.7, the values of all variables are over 0.8.

Table 3.7
Reliability

Variable category	*Variable name*	*NO of questions*	*Cronbach's* α
Leadership	SL	20	0.962
MCS	DMCS	4	0.971
	IMCS	7	0.965
Capabilities	EC	2	0.827
	NC	3	0.931
Performance	FP	4	0.959
	NFP	4	0.862

To test validity, this research performed factor analysis, especially principal component analysis and varimax rotation. Through factor analysis, items that had low factor loadings or that were combined

meaninglessly were eliminated. Additionally, a second-factor analysis was performed for the remaining items. This analysis confirmed whether eigenvalue was 1.0 or above, whether factor loading was 0.4 or above, and whether the explanatory power by accumulated variance was proper. The results of the factor analysis are shown in Table 3.8.

Table 3.8
Results of factor analysis

Leadership		*MCS*			*Capabilities*			*Performance*		
	f1		*f1*	*f2*		*f1*	*f2*		*f1*	*f2*
SL3	.754	DMCS1	.357	**.885**	EC1	.315	**.864**	FP2	**.923**	.295
SL4	.792	DMCS2	.367	**.893**	EC2	.254	**.893**	FP3	**.932**	.295
SL5	.669	DMCS3	.364	**.890**	NC1	**.883**	.317	FP4	**.884**	.337
SL6	.702	DMCS4	.374	**.879**	NC2	**.915**	.251	NFP2	.264	**.833**
SL7	.852	IMCS1	**.808**	.396	NC3	**.884**	.301	NFP3	.381	**.792**
SL8	.777	IMCS2	**.867**	.347				NFP4	.220	**.813**
SL9	.757	IMCS3	**.855**	.358						
SL10	.813	IMCS4	**.871**	.288						
SL11	.787	IMCS5	**.826**	.388						
SL12	.774									
SL13	.740									
SL14	.854									
SL15	.762									
SL16	.840									
SL17	.805									
SL18	.800									
Eigenvalue	9.77		4.11	3.78		2.56	1.79		2.764	2.269
% of Variance	61.06		45.68	42.07		51.24	35.94		46.07	37.82
Cumulative %	61.06		87.75			87.19			83.89	

In the first factor analysis, the following items were not suitable for inclusion in a specific factor, and were therefore eliminated: servant leadership items 1, 2, 19, and 20; interactive use of MCS items 6 and 7; financial performance item 1; and non-financial performance item 1. In the second factor analysis, all items were deemed suitable for inclusion in specific factors. All items in the organizational capabilities belonged neatly to two factors, from the beginning. The eigenvalues of all factors were 1 or above, factor loading for each item was 0.6 or above, and accumulated variance was over 60%.

Analysis of the Measurement Model

To test the research hypotheses, this analysis created equation models for the research model shown in Figure 3.1, and analyzed them using the Smart PLS software. PLS (partial least squares) has no restrictions on sample size, variables, and normal distribution of residuals, and compared to other statistics packages (LISREL, AMOS, and so forth) it has the merit of being able to evaluate the validity, path, and explanatory power of variables simultaneously (Chin, 1998; Chenhall, 2005).

Before testing the hypotheses, this study identified convergent validity, discriminant validity, and internal consistency. First, convergent validity was examined through the reliability of each item. In general, if factor loading is 0.6 or over, an item is evaluated as being reliable (Yoo & Alavi, 2001). As shown in Table 3.9, the factor loadings of all variables were higher than this threshold. Accordingly, convergent validity was confirmed. Second, discriminant validity was evaluated by reference to two conditions[4] suggested by Gefen and Straub (2005). As shown in Table 3.9 and Table 3.10, all the variables met these two conditions, so discriminant validity was confirmed. Third, internal consistency was analyzed with Chronbach's α, composite reliability, and average variance extracted (AVE). If Cronbach's α value is 0.6 or over, the composite reliability value is 0.7 or over, and the AVE value is 0.5 or over, then the variable is evaluated as having internal consistency (Fornell & Larcker, 1981). As shown in Table 3.11, these values for all variables exceed the thresholds, proving that they have internal consistency.

A global fit of the model, reflecting the characteristics of PLS, is calculated by multiplying the mean of R^2 values of all endogenous variables by the mean of communality, and extracting the square root of the resulting value. If the result is 0.36 or higher, then the fit level of the model is very high (Wetzeals, Odekerken & Oppen, 2009). As shown in Table 3.11, the global fit of the model of this research is 0.5279, which is a very high value.

Table 3.9
Loading values and Cross-loading values of the PLS Model

	SL	*DMCS*	*IMCS*	*EC*	*NC*	*FP*	*NFP*	*SIZE*
SL3	**0.7538**	0.2460	0.3339	0.4385	0.3899	0.1526	0.3868	0.0610
SL4	**0.7978**	0.3202	0.3905	0.5826	0.4481	0.1838	0.4078	0.2037
SL5	**0.6563**	0.2164	0.1319	0.2944	0.1974	0.1055	0.3028	0.0874
SL6	**0.7118**	0.3046	0.3268	0.4211	0.3583	0.3035	0.4065	0.1396
SL7	**0.8491**	0.3517	0.4039	0.5161	0.3508	0.1587	0.3681	0.0514
SL8	**0.7706**	0.2184	0.2441	0.4245	0.2618	0.1937	0.3462	0.0244
SL9	**0.7694**	0.2507	0.3329	0.6040	0.4173	0.2964	0.4034	0.0157
SL10	**0.8168**	0.2185	0.3644	0.4749	0.4614	0.3258	0.4181	0.0561
SL11	**0.7863**	0.2891	0.2839	0.4179	0.3564	0.3062	0.3606	0.1027
SL12	**0.7775**	0.2434	0.3020	0.3844	0.3811	0.2790	0.3763	0.0505
SL13	**0.7483**	0.2048	0.3167	0.4651	0.3527	0.3525	0.4291	-0.0079
SL14	**0.8506**	0.2698	0.3137	0.4515	0.3285	0.2376	0.3834	0.0088
SL15	**0.7580**	0.3532	0.2856	0.4190	0.3191	0.2370	0.3755	0.0941
SL16	**0.8324**	0.2605	0.2949	0.4289	0.3861	0.1747	0.3397	0.1315
SL17	**0.7992**	0.2324	0.2181	0.4482	0.3527	0.1728	0.3732	0.0434
SL18	**0.7959**	0.3573	0.3097	0.4589	0.3835	0.1215	0.3469	0.1886
DMCS1	0.3265	**0.9549**	0.6731	0.5408	0.5920	0.3476	0.3552	0.1422
DMCS2	0.3043	**0.9640**	0.6848	0.4950	0.5485	0.3222	0.3203	0.1233
DMCS3	0.3466	**0.9631**	0.6813	0.5523	0.5536	0.3606	0.3532	0.1294

[4] First, the loading for the factor that has a theoretical relationship in the factor analysis must be greater than the loaded value of the factor that does not have a relationship. Second, the square root of the AVE for all variables must be greater than the correlation coefficient with other variables

	SL	*DMCS*	*IMCS*	*EC*	*NC*	*FP*	*NFP*	*SIZE*
DMCS4	0.3601	**0.9560**	0.6859	0.5322	0.5265	0.3111	0.3181	0.1363
IMCS1	0.3462	0.6695	**0.8991**	0.5885	0.5606	0.4125	0.3241	0.2105
IMCS2	0.3571	0.6508	**0.9314**	0.5513	0.5539	0.3727	0.3419	0.1991
IMCS3	0.3843	0.6560	**0.9290**	0.6025	0.6402	0.3649	0.4054	0.2694
IMCS4	0.3433	0.6034	**0.9117**	0.5388	0.5190	0.4031	0.3914	0.1612
IMCS5	0.3858	0.6736	**0.9143**	0.5347	0.6086	0.3630	0.4180	0.1877
EC1	0.5154	0.5491	0.5935	**0.9125**	0.5622	0.3534	0.4620	0.2554
EC2	0.5661	0.4778	0.5447	**0.9335**	0.5221	0.5022	0.5676	0.1556
NC1	0.4301	0.5578	0.5889	0.5684	**0.9397**	0.4037	0.5773	0.2746
NC2	0.3700	0.5177	0.5718	0.5241	**0.9421**	0.3880	0.4863	0.1711
NC3	0.5106	0.5543	0.6145	0.5559	**0.9378**	0.4417	0.5224	0.2477
FP2	0.2908	0.3484	0.3837	0.4550	0.4383	**0.9695**	0.5870	0.2347
FP3	0.3004	0.3279	0.4050	0.4705	0.4216	**0.9760**	0.5911	0.1789
FP4	0.2576	0.3366	0.4180	0.4295	0.4080	**0.9469**	0.6065	0.2785
NFP2	0.3380	0.3026	0.3560	0.4819	0.4847	0.5192	**0.8602**	0.3131
NFP3	0.5211	0.3454	0.4402	0.4861	0.5151	0.5994	**0.8804**	0.2215
NFP4	0.3939	0.2636	0.2733	0.4830	0.4599	0.4797	**0.8463**	0.4511
SIZE	0.1008	0.1386	0.2252	0.2190	0.2480	0.2392	0.3844	**1**

Table 3.10
Correlations among variables and AVE square root in PLS

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
SL(1)	**0.7810**							
DMCS(2)	0.3491**	**0.9595**						
IMCS(3)	0.3969**	0.7099**	**0.9171**					
EC(4)	0.5872**	0.5534**	0.6144**	**0.9230**				
NC(5)	0.4676**	0.5790**	0.6305**	0.5855**	**0.9398**			
FP(6)	0.2935**	0.3502**	0.4171**	0.4685**	0.4384**	**0.9642**		
NFP(7)	0.4852**	0.3516**	0.4115**	0.5611**	0.5639**	0.6169**	**0.8624**	
SIZE(8)	0.1008	0.1386	0.2252*	0.2190*	0.2480*	0.2392*	0.3844**	**1**

Note: 1. Diagonal coefficient is square root of AVE value.
2. $^{*}p < 0.05$, $^{**}p < 0.01$.

Table 3.11
Global fit of the PLS path model

	AVE	*Composite Reliability*	R^2	*Cronbach's* α	*Communality*
SIZE	1	1		1	1
SL	0.6101	0.9615		0.9571	0.6101
DMCS	0.9207	0.9789	0.1218	0.9713	0.9207
IMCS	0.8412	0.9636	0.1576	0.9528	0.8412
EC	0.8520	0.9201	0.4831	0.8270	0.8520

	AVE	*Composite Reliability*	R^2	*Cronbach's* α	*Communality*
NC	0.8834	0.9578	0.4536	0.9341	0.8834
FP	0.9297	0.9754	0.2791	0.9621	0.9297
NFP	0.7438	0.8970	0.4781	0.8279	0.7438
Global Fit			0.5279		

Hypothesis Test Using PLS Structural Model

Hypotheses were tested using path coefficients of the PLS structural model. t value was calculated via repetitive extraction sub-sampling (No: 500), through bootstrapping (Hall, 2008). In the PLS path model, the bootstrapping method is used mainly to evaluate the significance of path coefficients (Tenenhaus, Vinzi, Chatelin & Lauro, 2005). The results of hypothesis tests using PLS are shown in Table 3.12.

Table 3.12
PLS analysis results and hypothesis test

Hypothesis		*Path*	*Path coefficient*		*St. error*	*t value*	*Test results*
H1	H1(a)	SL → FP	–0.0084		0.1102	0.0765	R
	H1(b)	SL → NFP	0.1932		0.1417	1.3627	R
H2	H2(a)	SL → EC	0.4488	**	0.1048	4.2825	A
	H2(b)	SL → NC	0.2580	*	0.1080	2.3891	A
H3	H3(a)	SL → DMCS	0.3491	**	0.1184	2.9469	A
	H3(b)	SL → IMCS	0.3969	**	0.1036	3.8324	A
H4	H4(a)	DMCS → EC	0.3967	**	0.1124	3.5297	A
	H4(b)	IMCS → NC	0.5280	**	0.1040	5.0766	A
H5	H5(a)	DMCS → FP	0.0016		0.1261	0.0128	R
		DMCS → NFP	–0.0415		0.1018	0.4079	R
	H5(b)	IMCS → FP	0.1107		0.1514	0.7315	R
		IMCS → NFP	–0.0518		0.1325	0.3909	R
H6	H6(a)	EC → FP	0.2721		0.1341	2.0287	R
		EC → NFP	0.2645	*	0.1236	2.1404	A
	H6(b)	NC → FP	0.1852		0.1333	1.389	R
		NC → NFP	0.3142	**	0.1025	3.0657	A
		SIZE → FP	0.1094		0.0916	1.1947	
		SIZE → NFP	0.2465	**	0.0746	3.3026	

Note: $^{*}p < 0.05$, $^{**}p < 0.01$

The findings of this research regarding the hypotheses are as follows.

The test of hypothesis 1 showed that servant leadership does not have a significant effect on financial performance and non-financial performance. Studies have shown that servant leadership has a direct effect on organizational civil activities, organizational immersion, and administrative performance, and so forth. Consequently, it is possible that servant leadership can have an indirect effect on organizational performance

through different variables. Additional analysis seems to be required. The test of hypothesis 2 showed that servant leadership has significant and positive effects on both existing capabilities and new capabilities. These findings prove that various characteristics of servant leadership can strengthen organizational capabilities by making interactions and communications active, and by developing the capabilities of employees. The test of hypothesis 3 showed that servant leadership has a significant and positive effect on both the diagnostic and the interactive use of MCS. The findings demonstrate that servant leadership enhances both the diagnostic and the interactive use of MCS for vision offering, communication, goal achievement, work level improvement, and so forth. The test of hypothesis 4 showed that the diagnostic use of MCS has a positive and significant effect on existing capabilities, and that the interactive use of MCS has a positive and significant effect on new capabilities. Henri (2006) showed that, while the diagnostic use of MCS reduces organizational capabilities, only the interactive use of MCS strengthens organizational capabilities. However, this research analyzes organizational capabilities, by dividing them by attribute rather than by type, confirmed that not only the interactive use, but also the diagnostic use of MCS, can contribute to the increase of organizational capabilities (existing capabilities). The test of hypothesis 5 showed that both the diagnostic and the interactive use of MCS have significant effects on organizational performance. Such findings match some research findings while contradicting others (Abernethy & Brownell, 1999; Bisbe & Otley, 2004; Vandenbosch, 1999). Use of MCS does not have a direct effect on organizational performance, but it does have an indirect effect through organizational capabilities developed via the use of MCS (Widener, 2007). Finally, a test of hypothesis 6 showed that existing capabilities have significant and positive effects on financial performance, and new capabilities have significant and positive effects on non-financial performance. These results show that using new opportunities and searching for new capabilities, as well as using and improving existing capabilities, can contribute to the improvement of organizational performance.

Additional Analysis

All of these findings demonstrate that, in the process in which servant leadership improves financial performance and non-financial performance, the use of MCS and organizational capabilities play mediating roles. To analyze the mediating effects of the use of MCS and organizational capabilities, this research additionally conducted direct and indirect effect tests and Sobel tests on PLS analysis (Preacher & Hayes, 2004; Lau & Moser, 2008). The indirect effect is judged by the criterion of 0.05 value suggested by Lau and Moser (2008), and, in the Sobel test, significance was judged by acquiring Z statistics,[5] the standard error ratio of the indirect effect.

Panel A, Panel B, Panel C, and Panel D in Table 3.13 test mediating effects. When we judged significance by the z value acquired by the Sobel test, it was found that, in the relationship between servant leadership and existing capabilities, the diagnostic use of MCS plays a mediating role, that in the relationship between servant leadership and new capabilities, the interactive use of MCS plays a mediating role, and in the relationship between the interactive use of MCS and non-financial performance, new capabilities play such a role. Panel E analyzes direct and indirect effects in the relationship between servant leadership

[5] $Z = \frac{a \times b}{\sqrt{\left(b^2 \times SE_a^2\right) + \left(a^2 \times SE_b^2\right)}}$ (a and SE_a are coefficient and standard error of independent variable and mediating variable; b and SE_b are coefficient and standard error of mediating variable and independent variable.)

and financial performance. The indirect effect value of 0.1598 satisfies the threshold requirement of 0.05 suggested by Lau and Moser (2008). Consequently, in the relationship between servant leadership and financial performance, the diagnostic use of MCS and existing capabilities play mediating roles. Finally, Panel F analyzes direct and indirect effects in the relationship between servant leadership and non-financial performance. The indirect effect value 0.1542 shows that, in the relationship between servant leadership and non-financial performance, the interactive use of MCS and new capabilities play mediating roles.

Table 3.13
Direct and indirect effects and Sobel test

Panel A: SL → DMCS → EC					
Indep. var.	*Dep. var.*	*Direct effect*	*Indirect effect*	*Total effect*	*Sobel test(z)*
SL	DMCS	0.3491			
SL	EC	0.4488	0.1384	0.5872	2.195*
DMCS	EC	0.3967			
Panel B: SL → IMCS → NC					
Indep. var.	*Dep. var.*	*Direct effect*	*Indirect effect*	*Total effect*	*Sobel test(z)*
SL	IMCS	0.3969			
SL	NC	0.258	0.2095	0.4675	3.058**
IMCS	NC	0.528			
Panel C: DMCS → EC → FP					
Indep. var.	*Dep. var.*	*Direct effect*	*Indirect effect*	*Total effect*	*Sobel test(z)*
DMCS	EC	0.3967			
DMCS	FP	0.0016	0.1079	0.1095	1.759
EC	FP	0.2721			
Panel D: IMCS → NC → NFP					
Indep. var.	*Dep. var.*	*Direct effect*	*Indirect effect*	*Total effect*	*Sobel test(z)*
IMCS	NC	0.528			
IMCS	NFP	-0.0518	0.1658	0.1140	2.624**
NC	NFP	0.3142			
Panel E: direct and indirect effects between SL and FP					
Path(1) SL → EC → FP: 0.4448*0.2721					0.1221
Path(2) SL → DMCS → EC → FP: 0.3491*0.3967*0.2721					0.0376
Indirect effect					0.1598
Direct effect					-0.0084
Total effect					0.1514
Panel F: direct and indirect effects between SL and NFP					
Path(1) SL → NC → NFP: 0.258*0.3142					0.0810
Path(2) SL → IMCS → NC → NFP: 0.3969*0.528*0.3142					0.0658
Indirect effect					0.1542
Direct effect:					0.1932
Total effect					0.3474

5. CONCLUSION

In a rapidly changing environment, to strengthen competitiveness, companies invest huge amounts to improve organizational capabilities, which are the sources of competitive advantage. The leadership of top executives is an important element (Vera & Crossan, 2004; Stone, Russell & Patterson, 2004). This research comprehensively analyzed the effects of servant leadership, use of MCS, and organizational capabilities on organizational performance within a single research model. Such an analysis had not been conducted previously. Specifically, to overcome the limits of most research that had analyzed the relationship between MCS and organizational capabilities, and which had not differentiated between the attributes inherent in organizational capabilities, this research divided organizational capabilities into existing capabilities and new capabilities. The findings and some resulting suggestions are as follows.

First, while servant leadership does not have a significant effect on organizational performance, it does have an indirect effect through the use of MCS and organizational capabilities. This suggests that, while the direct effect of leadership on organizational performance is small, there is great possibility that organizational performance is improved through an MCS designed and used by a leader and organizational capabilities. Second, it was found that servant leadership has a positive effect on both existing capabilities and new capabilities. These findings prove that, in the horizontal knowledge society, servant leadership can serve as a source of competitive advantage. Third, it was found that servant leadership has a positive effect on both the diagnostic and the interactive use of MCS. Accordingly, servant leadership can increase the interactive use of MCS, as well as its diagnostic use. Fourth, the diagnostic use of MCS has a positive effect on existing capabilities, and the interactive use of MCS has a positive effect on new capabilities. These findings help us interpret the mixed findings of previous research. It would be incorrect to conclude that the interactive use of MCS has a positive effect on organizational capabilities, and that the diagnostic use of MCS has a negative effect on organizational capabilities. Instead, from the perspective of inherent attributes, it appears that methods of using MCS can strengthen different kinds of organizational capabilities. Fifth, it was found that neither the diagnostic nor the interactive use of MCS has a significant effect on organizational performance. It was confirmed, however, that the methods of using MCS can contribute to the improvement of organizational performance through organizational capabilities. Finally, it was found that existing capabilities have a positive effect on financial performance, and new capabilities have a positive effect on non-financial performance. Such findings hint that, while existing capabilities can directly improve financial performance, new capabilities can contribute to the improvement of financial performance through improvement of non-financial performance.

Because this research analyzed survey data, it has the methodological limits of such research. Because it only used the top 400 companies as research targets, the generalizability of the findings is limited. Additionally, the findings are based on cross-sectional data, and it is unclear whether the same results would occur if the survey were conducted at a different time.

Based on the findings of this research, it is possible to suggest the following future research directions. First, it is necessary to conduct vertical research on servant leadership, changes in use of MCS, and changes in organizational capabilities. Second, it is necessary to consider additional situational variables, like organizational culture and management strategies, which could affect the use of MCS, in addition to leadership. Third, it is necessary to expand the targets of such research to public institutions, service businesses, and hospitals.

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