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The Effect of Public Relations and Corporate Reputation on Return on Investment

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Abstract

The tangible value of public relations to corporations remains unsolved in the domain of public relations research. It is similar in the case of quantitatively proving the value of corporate reputation. In general, it is regarded that public relations is an effective strategy to acquire a higher corporate reputation that would ultimately contribute to the organisations' return on investment (ROI).

This study attempted to identify the causal relationships among variables such as organisation size and complexity, public relations department size and formality, and corporate reputation, and how these variables affected economic ROI. The top 300 South Korean corporations were surveyed and their responses were analysed using structural equation modelling.

Sizes of public relations departments and organisations were the most important variables affecting ROI. Both public relations and corporate reputation positively affected ROI. There was a positive correlation between the complexity of an organisation, and the size and formality of a public relations department. This suggested that even a smaller corporation could enhance its reputation and thus ROI by having a well-established public relations or strategic communication department. Implication of findings and suggestions for future study were made.

Keywords: public relations, corporate reputation, reputation management, ROI, South Korea

Introduction

According to general systems theory (Broom, 1986, 2006; von Bertalanffy, 1968), an organisation is a dynamic organism. McElreath (1997) argued that 'an organisation is a living entity because it has boundaries, inputs, outputs, "through-puts," and enough feedback from both internal and external environments' (p. 13). Like a human being is affected by environment, the environments that surround an organisation influence it. As the world we are living in becomes complicated and diversified, it becomes increasingly important for an organisation to effectively communicate with its publics in marketing its products and services, in turn increasing the importance of effective public relations and reputation management.

However, few studies have been conducted that quantitatively connect the value of public relations and its contribution to actual increases in sales volume. Instead, it is regarded that public relations is an effective strategy to improve corporate reputation that ultimately contributes to the organisation's return on investment (ROI). Several studies have identified that size of an organisation and its task complexity affect the size of the organisation's public relations department and its formal activities (McElreath, 1997; Mitroff, Swerling, & Floto, 2002). Also, studies showed that an excellent public relations department not only enhanced a corporation's value and contributed to perceptual economic return (Grunig, Grunig, & Ehling, 1992), but also affected corporate reputation and economic return (Bae & Cameron, 2006; Kim, 2001).

This study attempted to identify the causal relationships among variables such as organisation size and complexity, public relations department size and formality, and corporate reputation, and how they affected ROI using structural equation modelling. The top 300 South Korean corporations were selected as they were rarely studied in this context.

Literature review

South Korea's public relations industry

South Korea's public relations industry is regarded as one of the fastest growing and dynamic industries outside of the Western hemisphere. South Korea's public relations industry is relatively newer than that of Western countries. Its 'public relations industry was originated from the U.S. military whose main role was to inform government activity and public information to [South] Korean citizens around the restoration of Independence Day of Korea' from the Japanese colonial status (Kim, 2005, p. 8). Until South Korea hosted the 1988 Seoul Olympic Games, public relations was mostly practiced by Korean conglomerates and government agencies. Since then, thanks to the growing needs of multinational firms rushing into South Korea, its public relations industry has begun to grow rapidly. The IMF bailout system in 1997 (Kim, 2006) and the subsequent information technology boom gave birth to many public relations agencies in Korea. As of 2012, there are 34 member firms of the Korea Public Relations Consultancy Association (KPRCA, 2012), and 34,000 individual members of the Korea Public Relations Association (ZDNet Korea, 2012). In addition, the Korean Academic Society for Public Relations (KASPR) publishes a quarterly *Korean Journal of Public Relations Research* in the Korean language (KASPR, 2012).

An organisation and public relations

McElreath (1997) analysed situational variables that affected an organisation's public relations strategy from the perspective of systems theory, identifying variables such as an organisation's size, role of a public relations practitioner, organisational technology, power of the public relations department, management expectations, organisational scope (the size and domain of its marketplace), organisational culture, and management's perception of an organisation's environments. Based on these variables, he divided organisations into four types: *a traditional organisation* using one-way communication; *a mechanical organisation* using two-way asymmetrical communication; *an organic organisation* using two-way symmetrical communication; and *a mixed mechanical/organic organisation* using mixed-motive, two-way communication. He argued that differentiated public relations strategies should be leveraged by the organisation type. His research, which surveyed the members of the Public Relations Society of America (PRSA) and International Association of Business Communications (IABC), showed that public relations activities varied according to the size and type of an organisation. 'Public relations practitioners working for large-scale organisations engage in more employee relations … engage more frequently in consumer affairs and community relations … [and] use more mass media for both internal and external public relations' whereas 'smaller organisations, often because they lack the institutional clout and lack resources of larger organisations, engage more frequently in staging special events, holding meetings, and trying to raise funds' (McElreath, 1997, p. 28).

Mitroff et al. (2002) also argued in their public relations generally accepted practices (GAP) study that public relations activities differed depending on the size and type of organisations. In particular, they argued that corporations with high revenue and good reputation undertook more diversified public relations activities and allocated more budgets to public relations.

According to structural contingency theory (Pfeffer, 1982), an organisation's structure is affected by external organisational environmental factors such as technology, size and strategy, as well as internal factors such as complexity, formality and centralisation. In particular, formality refers to an organisation's job description and the degree of standardisation which is coherently related to centralisation. Mintzberg (1979) argued that as the size of an organisation expands, so does the degree of specialisation; therefore, an organisation's size and complexity positively affect the degree of the formality of its structure.

In this vein, public relations scholars studied the relationship between the characteristics of organisational environment and public relations department (Grunig et al., 1992). Acharya (1985) studied a role model of public relations practitioners, focusing on the decision-making environment of an organisation. He argued that the role of public relations practitioners differed based on the organisation type. In a simple and static environment, the role of public relations practitioners is more related to a technician function, whereas a more problem-solving facilitator function is required in a complex and dynamic environment.

Schneider (1985) categorised organisations into four types based on the size and complexity of the organisation. She argued that the public relations department size and the influence of public relations increased as the type of organisation became larger and more complex. Guth (1995) suggested that organisation size – in particular, number of employees – was the most important factor affecting public relations strategy or crisis management planning. He found that if an organisation had a large number of employees, the organisation was more likely to have various crisis management experiences and be equipped with written crisis management plans. Based on this finding, he argued that there were strong positive correlations among the crisis experiences, public relations function, size of an organisation, and the public relations strategy or crisis management planning.

Studies in South Korea also showed that there was a positive correlation between an organisational structure or the characteristics of a public relations department, and strategic public relations activities (Kim, 1995; Yoo, 2001). Kim (1995), who attempted to evaluate the level of Korean corporations' crisis management preparedness, argued that the larger an organisation was in terms of revenue volume and number of employees, the larger the budget that was allocated to the public relations department. Yoo (2001), who replicated Kim's (1995) study, reached the same conclusion. In addition, Cha and Kim (2010), who developed the corporate communication capital index, maintained that the expertise of the public relations department, degree of open internal communication and support of the CEO positively affected a corporation's public relations activities and corporate reputation.

Also, larger corporations were more aware of the importance of having public relations consulting services from independent public relations firms. Grunig (1992) argued that excellent organisations undertake excellent public relations activities because these organisations are sensitive to the environment and have dynamic organisation structures. In particular, he argued that characteristics of an organisation's environment or organisational culture and characteristics of public relations departments also affect public relations activities.

In sum, public relations strategies of an organisation are highly determined by environmental factors. In other words, the size and type of the organisation, organisational culture and complexity of technology largely influence the size and structure of a public relations department and the role of public relations practitioners. The public relations strategy should be differentiated accordingly.

Public relations and corporate reputation

Studies on corporate reputation

Since Fombrun (1996) established a reputation management institute and published the *Corporate Reputation Review* in 1997, a plethora of studies have been undertaken about corporate reputation. Cha (2004) categorised these studies into four types: the concepts and definitions of corporate reputation; the constructing factors and measurement of corporate reputation; the relationship between corporate reputation and other variables such as brand value, ROI, management technique and employee relations; and various aspects of reputation management strategies. She defined corporate reputation as 'an overall positive evaluation of an organisation that has been formed over a long-term period among audiences based on various constructs such as a corporation's philosophy, activities and communications' (p. 261). In this study, this definition is used.

Studies on the constructing factors of corporate reputation can be categorised into three types: studies focused on emotional factors (Davis, 2003; Dowling, 2001), corporate identity factors (Caruana, 1997; Fombrun, 1996; Lewis, 2001) and communication factors (Hutton, 1999; Manuel & Puente, 2003; Melewar & Jenkins, 2002).

In addition, there have been various attempts by scholars and public relations research institutes to measure corporate reputation. Fombrun (1996) developed a 'reputation quotient', and measured corporate reputation (Fombrun & Gardberg, 2000; Fombrun & Shanley, 1990).

Caruana (1997) suggested a reputation index composed of 34 items utilising a marketing survey method and measured their effects by ranking. Global public relations consulting firms such as Porter Novelli, Edelman and Burson-Marsteller also use their own indices to measure corporate reputation.

In South Korea, Cha (2004) developed a Korean corporate reputation index by surveying 300 leading Korean corporations. KorCom Porter Novelli uses its exclusively developed corporate reputation index as well to measure the corporate reputations of Korean corporations in the Korean business environment (KorCom, 2009).

Public relations and corporate reputation

Studies have shown that corporate reputation is positively affected by public relations activities; therefore, reputation management is an important part of public relations strategies (Cha & Kim, 2010; Grunig, 1993; Hon, 1998; Kim, 2001; Plowman, Briggs, & Huang, 2001). Hon (1998) argued that the goal of public relations was to communicate the image of an organisation. Grunig (1993) suggested that reputation was one of the dependent variables of public relations effectiveness along with relationship with stockholders and employee satisfaction. Plowman et al. (2001) argued that maintaining the reputation of an organisation was the most important function of public relations. More practically, Kim (2001) argued that 'as the unit of public relations expense increases, a positive effect on the company's reputation [is] expected' (p. 22). Cha and Kim (2010) also maintained that there was a positive correlation between a corporation's public relations activities and corporation reputation.

In this regard, it is not unreasonable to assume that larger corporations have larger public relations departments than smaller corporations and have correspondingly larger public relations budgets. Furthermore, it is likely that the more strategically and actively public relations activities are conducted, the higher and more positive reputation the corporation will have.

Corporate reputation and economic return (ROI)

Public relations activities positively affect corporate reputation. However, a good reputation is not necessarily the ultimate goal of public relations activities. As Grunig et al. (1992) argued, communication objectives should be connected to the broader organisation goals. Studies have shown that public relations or corporate reputation positively contribute to achievement of organisation goals and are positively related to economic value (Grunig et al., 1992; Kim, 2001).

The Excellence Study conducted by Grunig and his colleagues (1992) showed that the perceptual return on investment was the economic value of public relations to the organisation (Lindeborg, 1994). In a pilot study of 92 companies in 11 industry categories, Kim (2001) found that there was a positive relationship between a corporation's reputation and economic returns. He argued that the variance in revenues could be explained by corporate reputation, using economic linear and nonlinear models. He maintained that '[a] company's reputation affects the company's revenue positively. Thus, public relations expense indirectly affects the company's revenue' (p. 22).

Carmeli and Tishler (2005) argued that corporate reputation was the most important intangible asset contributing to a corporation's success. They maintained that corporate reputation could add value to a corporation, allow it to attract quality applicants or investors, and improve both economic and non-economic performances. Fombrun and Shanley (1990) also contended that a corporation with a high reputation could have an advantage over its competitors by building an entry barrier, attracting investors' interest and, therefore, save costs and bolster its competitiveness. In this regard, it is assumed that an organisation with better corporate reputation is more likely to have better economic return; that is, ROI.

Hypotheses

An organisation's strategic decision making is affected by situational factors such as organisation size and task complexity (Steiner & Miner, 1982). More specifically, based on Schneider's (1985) and McElreath's (1997) research findings, this study assumes that organisational factors such as size and task complexity positively affect public relations factors such as the size and formality of a public relations department. Also, it is assumed that size and formality of a public relations department are endogenous variables that positively affect corporate reputation, and the corporate reputation consequently positively affects the organisation's goal, maximisation of the economic return. This study attempted to identify the direct and indirect effects of public relations and corporate reputation on a corporation's ROI. The following hypotheses were posed:

H1 The size of an organisation will have a positive impact on the size of public relations department.

H2 The complexity of an organisation will have a positive impact on the formality of public relations department.

H3a The size of a public relations department will have a positive impact on the corporate reputation of that organisation.

H3b The formality of a public relations department will have a positive impact on the corporate reputation of that organisation.

H4 The corporate reputation of an organisation will have a positive impact on the return on investment of that organisation.

RQ1 What is the relationship between the size of a public relations department and the return on investment of that organisation?

RQ2 What is the relationship between the size of an organisation and the return on investment of that organisation?

Method

Respondents and data collection

The managers in charge of reputation management from the top 300 Korean firms selected by *Korea Economic Daily* in 2003 were surveyed via email from June 21 to August 10, 2004. Prior to sending an email survey to them, a phone screening process was undertaken that asked if they were responsible for reputation management in their corporations. Of the 300 email recipients, 157 managers (52.3 per cent) responded to the survey. A majority of the managers belonged to public relations / advertising departments or a corporate planning department (70 per cent and 21 per cent, respectively).

Financial industries such as banks, securities and insurance responded the most with 28 corporations each, followed by manufacturing, technology and service industries (21 corporations each), and food/beverage, fishing and chemical industries (16 corporations each). Of the total respondents, 57 per cent of the corporations had between 3,000 and 10,000 employees, and 35 per cent had between 1,000 and 3,000 employees.

Measurement of major variables and reliability check

Organisation environment factor

The organisation environment factor was constructed with organisation size factor and organisation complexity factor based on Schneider's (1985) study. In general, organisation size can be measured by four methods: 1) the organisation's physical capacity, such as building size and production line speed; 2) number of employees, the most widely used guideline; 3) input and output of an organisation, such as sales volume, mainly used to compare the size between similar organisations; and 4) general resources that can be utilised as assets. In this study, the number of employees was used as a criterion to measure organisation size factor because it is regarded as the most appropriate and can be measured objectively (Guth, 1995).

To measure organisation complexity, five-point Likert scales (1 = strongly disagree, 5 = strongly agree) were used. Two items were constructed: 'the knowledge level required to execute a general job in my company is changing rapidly' (*complexity 1*); and 'to undertake a job in my company, professional knowledge or professional with such expertise is required' (*complexity 2*). The reliability coefficient between these two items was $\alpha = .65$, and the correlation between them was statistically significant at $p < .01$ level. Therefore, average of these items' scores was used to measure complexity.

Public relations factor

The public relations factor was constructed with public relations department size and formality factors, based on Schneider's (1985) work. For public relations department size, number of public relations staff members was used. For the formality of public relations department, five-point Likert scales (1 = strongly disagree, 5 = strongly agree) were used. Three items were constructed: 'when an important decision is to be made, members' opinion is reflected' (*formality 1*); 'it is easy to transfer works to new members because the work process is arranged well' (*formality 2*); and 'members try to keep internal regulations or job descriptions' (*formality 3*). As the reliability coefficient was adequate ($\alpha = .77$) and the correlation among the items was statistically significant ($p < .001$), the formality of the public relations department was measured by averaging scores for the three items.

Corporate reputation factor

The corporate reputation factor was developed in multiple stages. First, reputation index items were examined based on the reputation index frames suggested by previous studies (Fombrun, 1996; Gotsi & Wilson, 2001; Melewar & Jenkins, 2002). Seventy-seven items were constructed through in-depth interviews with 23 audiences from various backgrounds. Second, to secure external validity and concurrent validity, an audit was conducted for the selected 77 items with 15 professionals from academia, public relations and marketing industries. Reflecting their assessment, 45 reputation items were reconstructed. Third, an email survey was distributed to 300 public relations managers, one from each corporation. Finally, a reputation index was developed after securing reliability and construct validity from the survey results using exploratory factor analysis and structural equation modelling (Table 1).

TABLE 1: REPUTATION INDEX FACTOR AND RELIABILITY COEFFICIENTS

Reputation Index Dimension	Factor	Item (45)	Reliability coefficient
Corporate identity (14) (72.7%)	Corporate philosophy/culture (28.8%)	6	.91
	CEO leadership (28.0%)	5	.93
	Social responsibility (15.8%)	3	.75
Corporate strategy (17) (62.8%)	Business management/human resources (31.8%)	8	.92
	Financial performance/quality of product (31.1%)	9	.91
Corporate communication (14) (64.5%)	Public relations/communication (36.4%)	9	.91
	Image management (28.1%)	5	.89

Note: This is a combined table of three reputation index dimensions.
Total variance stands for variance of each dimension.
Details of each factor analysis are shown in the Tables 1-1, 1-2 and 1-3.

Reliability of the reputation index was verified in three ways: factors were identified using exploratory factor analysis, reliability (Cronbach's alpha) of identified factors was checked, and the correlation among the identified factors was checked using item analysis (Babbie, 2003).

First, as shown in Table 1, the 45 reputation index items were factor analysed using Varimax rotation. Items were categorised into three dimensions: corporate identity (14 items), corporate strategy (17 items), and corporate communication (14 items). The items with factor loading over .5 were constructed as factors. The *corporate identity dimension* (*reputation 1*) accounted for 72.7 per cent of the total variance, and was composed of three factors: corporate philosophy/culture (6 items, 28.8 per cent), CEO leadership (5 items, 28.0 per cent) and social responsibility (3 items, 15.8 per cent) (Table 1-1). The *corporate strategy dimension* (*reputation 2*) accounted for 62.8 per cent of the total variance and was composed of two factors: business management / human resources (8 items, 31.8 per cent) and financial performance/quality of products (9 items, 31.1 per cent) (Table 1-2). The *corporate communication dimension* (*reputation 3*) accounted for 64.5 per cent of the total variance and was composed of two factors: public relations/communication (9 items, 36.4 per cent) and image management (5 items, 28.1 per cent) (Table 1-3). All factors were reliable and acceptable with reliability coefficients over .75 (Babbie, 2003). Finally, the item analysis showed significant correlations (p < .001) between the average of the sum of each factor and individual items. Based on these results, the reputation index used the average of the scores for the seven factors comprising the three dimensions.

TABLE 1-1: REPUTATION INDEX FACTOR ANALYSIS (1): CORPORATE IDENTITY DIMENSION

Item [This corporation… This corporation is (has) … This corporation's …]	Factor 1	Factor 2	Factor 3
unique corporate/management philosophy differentiated from other corporations	**.682**	.367	.160
organisational culture positively affects its development	**.693**	.189	.310
employees share organisational philosophy and vision	**.879**	.184	.132
employees actively involved in corporation's issues/tasks	**.745**	.181	.200
clear organisational philosophy	**.810**	.353	.181
free and well-established internal communication system	**.759**	.263	.143
CEO is ethical and attaches much importance to social responsibility	.244	**.730**	.353
CEO has excellent leadership	.317	**.834**	.128
CEO has professional experience and expertise	.211	**.852**	.184
CEO has clear vision and management philosophy	.280	**.841**	.203
CEO is reliable	.289	**.832**	.227
undertakes active social responsibility activities	.338	.226	**.681**
contributes to the community	.166	.230	**.883**
contributes to the nation's economy	.155	.184	**.686**
Eigen value	**4.036**	**3.921**	**2.214**
Variance	**28.830**	**28.010**	**15.811**
Cronbach's alpha	.91	.93	.75
Total variance = 72.65%			

Factor 1 = corporate philosophy/culture (6 items)
Factor 2 = CEO leadership (5 items)
Factor 3 = social responsibility (3 items)

TABLE 1-2: REPUTATION INDEX FACTOR ANALYSIS (2): CORPORATE STRATEGY DIMENSION

Item [This corporation… This corporation is (has) … This corporation's …]	Factor 1	Factor 2
management transparency	**.517**	.337
management decision based on long-term perspective	**.658**	.454
excellent coping capability with changes	**.767**	.351
invests to secure quality employees and staff members	**.876**	.142
well-established employee education/training programs	**.808**	.196
excellent capabilities of employees	**.775**	.241
excellent capabilities and expertise of management	**.741**	.448
employees are satisfied with the corporation	**.633**	.462
excellent economic performance (revenue and profit ratio)	.264	**.691**
stable growth structure	.080	**.777**
reasonable management capability	.576	**.596**
leads the industry	.230	**.624**
controls production quality and sales activities	.399	**.686**
invests to research and development to improve its products/services	.366	**.723**
excellent technology and innovative	.418	**.686**
excellent product quality	.256	**.775**
excellent brand value	.383	**.646**
Eigen value	**5.401**	**5.281**
Variance	**31.768**	**31.065**
Cronbach's alpha	.92	.91
Total variance = 62.83%		

Factor 1 = business management/human resources
Factor 2 = financial performance/quality of products

TABLE 1-3: REPUTATION INDEX FACTOR ANALYSIS (3): CORPORATE COMMUNICATION DIMENSION

Item [This corporation… This corporation is (has) … This corporation's …]	Factor 1	Factor 2
understands media and conducts media relations activities effectively	**.656**	.479
has direct communication channels with its customers	**.789**	.232
puts customers profits and satisfaction first	**.804**	.177
conducts investor relations actively	**.573**	.331
corporate philosophy and vision were well-known to its publics	**.631**	.439
advertisements deliver positive corporate image	**.581**	.443
has many positive media coverage on the corporation	**.792**	.153
handles issues and crises well	**.635**	.423
has specialised public relations/advertising staff members and budgets	**.575**	.525
all activities (public relations/advertising/management) are consistent and coherent	.609	**.614***
well-developed corporate website with easy search function	.190	**.919**
corporate websites are well managed and updated regularly	.217	**.907**
corporate symbol, logo and design match with corporate image well	.477	**.565**
corporate buildings/signboards show the corporation's characteristics and identity well	.542	**.532***
Eigen value	**5.100**	**3.934**
Variance	**36.426**	**28.104**
Cronbach's alpha	.91	.89
Total variance = 64.53%		

Factor 1 = public relations/communication
Factor 2 = image management
*Note: items that belong to both factors were confirmed by correlation and reliability analyses.

Economic return factor

The economic return factor, ROI, was measured using the ranks of the top 300 Korean corporations listed by *Korea Economic Daily*[1]. The *Korea Economic Daily* reviews and announces the ranks based on the business results of the year among the corporations enlisted in either KOSPI (Korea Stock Exchange) or KOSDAQ (Korea Securities Dealers Automated Quotation) market since 2000. This data is regarded as highly reliable and valid. The ranks were grouped from one to nine, with one the highest and nine the lowest. In the analysis, the rank was reverse coded to delete negative coefficient.

[1] Like the *Fortune* 500 list, *Korea Economic Daily* announces the top 300 Korean corporations every year among the Korean corporations that are listed either in the KOSPI or KOSDAQ market. The criteria are based on average of total assets, revenue and net profits as of 31 December.

Findings

To test the hypotheses and research questions, structural equation modelling was used. The structural equation modelling combines measurement model (CFA: confirmatory factor analysis) and simultaneous equation modelling (SEM). To identify whether the CFA measurement model and SEM model fit the data, two-step modelling procedure and model comparison tests were used (Kline, 2005).

To run structural equation modelling, a correlation matrix for all 11 variables was developed using SPSS 17.0 for Windows (Table 2), and from the correlation matrix, using LIRSEL 8.8 software, the CFA and SEM models were examined.

TABLE 2: DESCRIPTIVE STATISTICS & CORRELATION COEFFICIENTS FOR ORGANISATION, PR DEPARTMENT, REPUTATION & ROI

	Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1	Complexity 1	3.47	0.90	1.00										
2	Complexity 2	3.77	0.90	0.48*	1.00									
3	Org size	6.38	2.56	0.09	0.11	1.00								
4	Formality 1	3.68	0.87	0.44*	0.34*	0.14	1.00							
5	Formality 2	3.50	0.90	0.45*	0.32*	0.08	0.48*	1.00						
6	Formality 3	3.93	0.79	0.49*	0.39*	0.05	0.53*	0.56*	1.00					
7	PR size	7.72	4.25	0.21*	0.20*	0.64*	0.19*	0.16	0.19*	1.00				
8	Reputation 1	3.93	0.61	0.47*	0.43*	0.25*	0.48*	0.47*	0.50*	0.33*	1.00			
9	Reputation 2	3.85	0.64	0.41*	0.37*	0.15	0.52*	0.55*	0.55*	0.26*	.80*	1.00		
10	Reputation 3	3.75	0.71	0.47*	0.40*	0.25*	0.56*	0.55*	0.59*	0.47*	.71*	0.77*	1.00	
11	ROI	4.80	2.44	0.04	0.01	0.48*	0.09	0.07	0.04	0.54*	0.21*	0.29*	0.24*	1.00

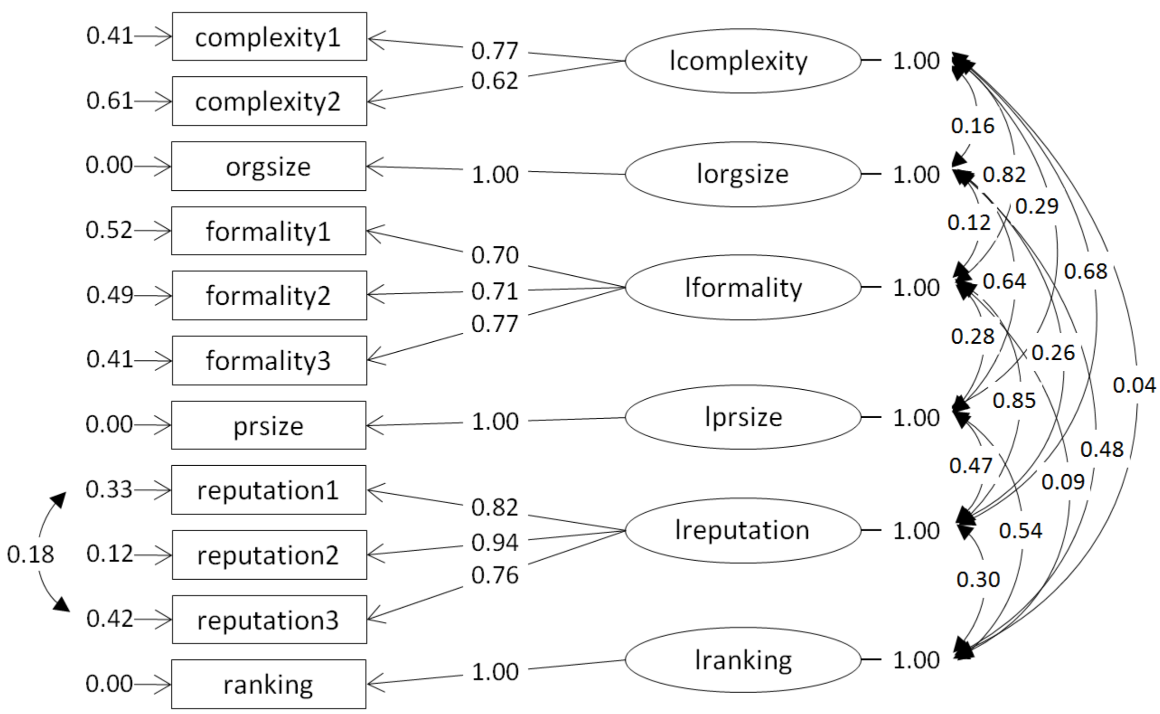
*$p < .05$

Note: *Complexity 1* = the knowledge level required to execute a general job in my company is changing rapidly; *Complexity 2* = to undertake a job in my company, professional knowledge or professional with such expertise is required; *Org size* = number of employees; *Formality 1* = when an important decision is to be made, members' opinion is reflected; *Formality 2* = it is easy to transfer works to new members because the work process is arranged well; *Formality 3* = members try to keep internal regulations or job descriptions; *PR size* = number of PR employees; *Reputation 1* = corporate identity; *Reputation 2* = corporate strategy; *Reputation 3* = corporate communication; *RO1* = corporate ranking (*Korea Economic Daily* index).

CFA measurement model and simultaneous equation model

First, for the CFA measurement model, path coefficients were examined to identify if the measurement items were appropriate for each factor. From the goodness-of-fit statistics, the model showed that it fits the data well with GOF indices, degree of freedom (*d.f.*) = 31, minimum fit function chi-square (MFF χ^2) = 30.59 (p = .49), normal theory weighted least squares chi-square (WLS χ^2) = 29.49 (p = .54), root mean square error of approximation (RMSEA) = 0.0, non-normed fit index (NNFI) = 1.00 and standardised root mean square residual (SRMR) = .03. The proposed latent variables were organisation complexity, formality and reputation variables. However, in LISREL, if at least one endogenous variable is a latent variable, all non-latent variables must be treated as latent variables with error variance equal to zero (Kline, 2005). Therefore, the observed variables such as organisation size and public relations department size were treated as latent variables by setting their error variance equal to zero. In the LISREL equation, their factor loadings were set to one. In the measurement model, to improve the goodness-of-fit statistics, from the modification indices for theta-delta (θ_δ) that showed the largest discrepancy from the LIRSEL output, the corporate identity dimension (*reputation 1*) and corporate communication dimension (*reputation 3*) were positively correlated (Figure 1).

FIGURE 1: CFA MEASUREMENT MODEL



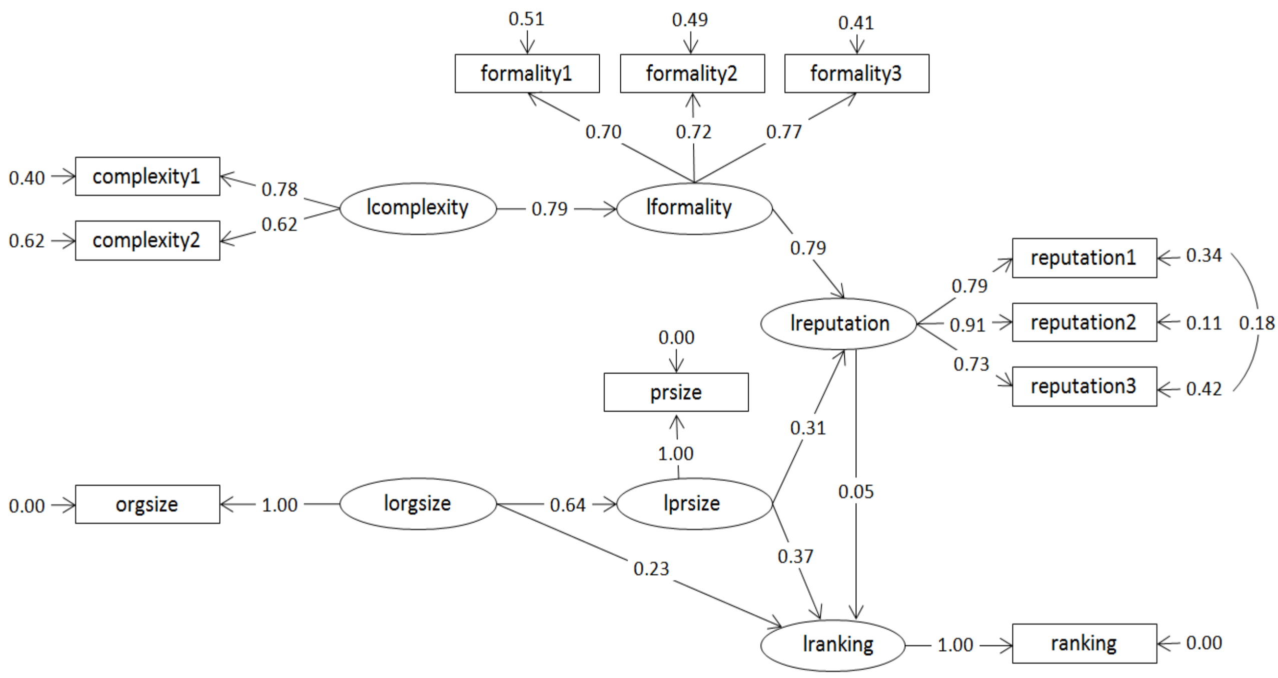
As a second step, simultaneous equation model for latent variables was examined and compared with the CFA measurement model. The goodness-of-fit statistics showed that the SEM model fits the data well with *d.f.* = 38, MFF χ^2 = 44.73 (p = .21), WLS χ^2 = 41.35 (p = .33), RMSEA = .024, NNFI = .00 and SRMR = .058, satisfying all of the requirements to be statistically significant (Table 3).

TABLE 3: COMPARISON OF GOF INDICES FOR CFA MODEL AND SEM MODEL

	Measurement model	SEM model	Criteria
d.f.	31	38	
MFF χ^2	30.59 (p = .49)	44.73 (p = .21)	p > .05
WLS χ^2	29.49 (p = .54)	41.35 (p = .33)	p > .05
RMSEA	0.0	0.024	< .06
NNFI	1.00	0.99	> .95
SRMR	0.030	0.058	< .09

As both models fit the data, to identify whether there was any significant difference between the two models, a model comparison test was conducted. In the recursive model comparison test, the simultaneous equation model is less complex because it has fewer parameters, and the measurement model is equivalent to a simultaneous equation model with all possible connections between exogenous and endogenous variables. Therefore, simultaneous equation model is nested in the measurement model (Kline, 2005). The chi-square for simultaneous model is χ^2_{sem} (38) = 41.35 while the chi-square for measurement model is χ^2_{mm} (31) = 29.49. The difference is $\chi^2 = \chi^2_{less\ complex} - \chi^2_{more\ complex}$, and $df = df_{less\ complex} - df_{more\ complex}$. Therefore, df = 38 – 31 = 7, and χ^2 (7) = 41.35 – 29.49 = 11.86, p > .05, and the structural equation model is accepted (Figure 2)

FIGURE 2: ROI PATH DIAGRAM



Hypotheses testing

As the structural equation modelling fits the data, the hypotheses and research questions were examined. The organisation size positively affected public relations department size. The larger an organisation, the larger the size of the public relations department of that organisation. Thus Hypothesis 1 was supported.

An organisation's task complexity also positively affected the formality of public relations department. The more complex knowledge and expertise required to undertake general jobs in an organisation, the more job descriptions of a public relations department tended to be systematic, flexible and members' opinion was reflected in the decision process. Hypothesis 2 was supported.

The size and formality of a public relations department also positively affected the corporate reputation of that organisation. That is, an organisation with a relatively larger public relations department or with a strong public relations function is more likely to conduct active and strategic public relations activities, and therefore, more likely to have a better corporate reputation than other organisations with weak public relations functions. Thus, Hypotheses 3a and 3b were both supported. Corporate reputation positively affected ROI as well. Hypothesis 4 was supported. As shown from research questions 1 and 2, the size of an organisation and public relations department positively affected ROI. This may be due to the fact that corporate ranking was based on the average of the total assets, revenue and net profits, while the reputation index encompassed various facets of an organisation, including corporate identity, management strategy and communication factors.

On the other hand, organisation size (RQ1) and public relations department size (RQ2) were important endogenous variables that affected ROI with coefficients of .48 and .38 respectively (Table 4).

TABLE 4: RESULT OF THE HYPOTHESES AND RESEARCH QUESTIONS

Hs/RQs	Path	Coefficient	Standard Error	Z-statistics	Results
H1	Org size → PR size	.64	.06	10.10	Supported
H2	Complexity → Formality	.79	.12	6.74	Supported
H3a	PR size → Reputation	.31	.06	5.07	Supported
H3b	Formality → Reputation	.79	.11	7.30	Supported
H4	Reputation → ROI	.05	.08	.68	Supported
RQ1	PR size → ROI	.38	.09	4.34	
RQ2	Org size → ROI	.48	.07	6.58	

Effects of each factor

The organisation size was the most influential variable that affected ROI with a path coefficient of .48. Organisation size also positively affected the size of public relations department and corporate reputations indirectly. An organisation's complexity has the strongest impact on public relations department formality (path coefficient = .79), together with formality on corporate reputation (.79). There were indirect effects of complexity on reputation (.63) and organisation size on reputation (.20). Also, organisation size affected ROI both directly (.23) and indirectly (.25). Corporate reputation had the weakest effect on ROI (with path coefficient .05) (Table 5).

TABLE 5: TOTAL AND DIRECT/INDIRECT EFFECTS

	Variables	Effects		
		Total	DE*	IDE*
ξ→ η	Complexity→ Formality	.79	.79	–
	Org size → PR size	.64	.64	–
	Complexity→ Reputation	.63	–	.63
	Org size → Rank	.48	.23	.25
	Org size → Reputation	.20	–	.20
η→ η	Formality → Reputation	.79	.79	–
	PR size → Reputation	.31	.31	–
	PR size → Rank	.38	.38	–
η → Y	Reputation → Rank	.05	.05	–

*DE: Direct effect; IDE: Indirect effect (Total effect = DE + IDE)

Conclusion

Size matters. The organisation size is the most important variable affecting the size of public relations department and ROI. The larger the size of an organisation and the more complex its task scopes, the larger the size and formality of a public relations department. In turn, an organisation with a larger public relations department in which jobs are more formal is more likely to undertake a better reputation management strategy and, therefore, has a better corporate reputation than does a smaller organisation.

Those excellent organisations are more likely to have a superior corporate philosophy, clear vision, powerful CEO leadership and more actively participate in community-related activities. They are also more likely to have an excellent management capability, brand strategy, personnel resources as well as undertake integrated communications, systematic public relations activities and active online communication strategies; and have proactive issues and crisis management strategies.

On the other hand, a large corporation may have a small number of public relations employees depending on its industry characteristics, CEO's philosophy and perception of public relations and media relations. This suggests that even a relatively smaller corporation can enhance its corporate reputation and thus ROI by having a well-established public relations or strategic communication department. An organisation with an excellent public relations department will be able to conduct more strategic and proactive public relations activities from a longer-term perspective, develop and maintain friendly relationships with its key stakeholders/publics based on two-way symmetrical communication philosophy (Hon, 1998; Grunig et al., 1992), detect and prevent issues from a *prodromal* stage through proactive environmental scanning (Fink, 2002), and handle a crisis strategically to mitigate its damages as well as undertake relevant image restoration activities, and therefore ultimately contribute to ROI both tangibly and intangibly (Coombs, 2007; Fearn-Banks, 2007). This finding explains why some small corporations have better reputations than other larger corporations.

For the effects of public relations factors, both size and formality of a public relations department positively affected corporate reputation. In particular, formality positively affected reputation greatly. It appears that a corporation with a public relations or communication department that has a well-defined job description is more likely to have a better reputation as it has an open internal communication system and allows its employees to plan and work strategically and efficiently.

Finally, the effect of corporate reputation on ROI was relatively weak. Instead, the sizes of organisation and public relations department had stronger positive effects on ROI.

Limitations and suggestion for future research

Even though the CFA measurement model and SEM for latent variables turned out to fit the data, corporate reputation had a relatively weaker effect on ROI than did public relations department size. It may be due to the different criteria of corporate ranking (ROI) and the reputation index. The corporate ranking mainly focused on economic aspects while the reputation index was based on more complex factors such as corporate identity, management strategy and communication aspects. It could be due to the failure to distinguish between public relations and reputation management activities, as the two terms are used interchangeably from time to time (Hutton, Goodman, Alexander, & Genest, 2001). In addition, this study used only used corporations in South Korea, which may limit generalisation of the result to Western corporations.

Future study should include factors that more clearly distinguish reputation management from public relations, especially the logic that public relations precedes reputation management.

In particular, it would be possible to figure out additional variables that may mediate or moderate public relations and corporate reputation. Those variables may include organisation–public relationship (Huang, 2001), trust, public relations strategy, communication capital or competence. In particular, a recent study (Cha & Kim, 2010) that surveyed top 300 Korean corporations using a communication capital index (CCI) argued that a corporation with a high CCI has higher ROI as well as better corporate reputation. It would be worthwhile to identify other moderating or mediating variables based on this study's findings. For instance, characteristics and strategies of a public relations department may positively affect communication capital, and it may consecutively affect reputation and ROI.

This study used corporate rankings as an indicator of ROI. There might be a better way to measure ROI than using raw data or corporation rankings, not only assessing tangible returns but also encompassing intangible returns such as customer loyalty, employee satisfaction and retention, public reputation and relationship with stakeholders (Grunig, 1993).

Another task for researchers of reputation management may be to find better logic and evidence that reputation can be managed by a corporation's proactive public relations and sustainable corporate responsibility activities, as some scholars argue that reputation cannot be managed but rather is formed by the public or stakeholders (Hutton et al., 2001).

Finally, this study employed data collected in 2004 that focused on off-line corporate reputation. However, as corporations are increasingly exposed to online publics and engage in online communication with them, future research should consider and compare online and off-line corporate reputation. Indeed, many global public relations consulting firms including Edelman Berland (n.d.) already provide clients with online reputation management and communication strategy services. For online corporate reputation management, size may matter less than off-line corporate reputation management thanks to the characteristics of cyberspace, which allow a corporation to communicate with multiple target audiences simultaneously without relying on mass media. The merging power of social media such as Facebook and Twitter should be considered and leveraged as well.

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