

The Effect of PM Competency on Consultant Competency and Consulting Performance: From the Perspective of Consulted Companies

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Abstract

Objectives: This study, by exploring the effects of PM competency and consultant competency on consulting performance, tried to find ways of supporting development of consultant competency. **Methods/Statistical Analysis:** The data was collected from the survey conducted to representatives and staffers of companies which have received consulting on the coupon system. The survey was done by e-mail and 204 copies of the questionnaire were used in the analysis. Using statistical programs, the data was analyzed through descriptive analysis, factor analysis and structural analysis. **Findings:** Data analyses showed that while leadership of PM, passing through consultant competency, has effect on consulting performance, work competency of PM does not have such effect. **Improvements/Applications:** It is necessary that PM participating in consulting should develop his or her competency needed in client management by suggesting the importance of the roles of consulting participants by clearly defining them and trying to form continuous relationships with clients.

Keywords: Consultant Competency, Consulting Outcomes. Competency of PM

1. Introduction

The consulting-related policy of the Korean government started with the establishment of 'the comprehensive measures to promote small and medium-sized companies' in 1961. And 'the Law to Promote Small and Medium-sized Companies and Procurement of Products of Those Companies' in 2004 triggered the consulting support project for small and medium-sized companies. Over time, consulting businesses have increased a lot. According to a 2013 report of the Korean Statistical Information Service (KOSIS), the number of management consulting companies is 5,582 and those companies employ 35,636 workers and annual turnover of them is 5,232.3 billion won¹. However, in spite of such a quantitative expansion of consulting businesses, the public consulting market in the level of public service by the government and the

public sector provides consulting free of charge or for minimal fees, causing side effect of moral hazard in the market where companies seek benefits of policy support of the government². In such an environment, it is doubtful whether competency of consultants can have real effect on performance of customers. It is necessary to verify what effects consultant competency has on performance the consulted companies feel. This research focused on consulted companies to verify the effect of consulting to those companies, in which sense this study is different from other existing studies. To get the data, this study conducted a survey to representatives and staffers of Korean small and medium-sized companies which have received the consulting on the coupon system. The survey was conducted through e-mail. Among the copies of the questionnaire I received from those representatives and

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staffers of those companies, 204 copies in total finally chosen excluding some problematic copies. Data analysis was done through SPSS 22.0, social science statistical package. AMOS 22.0 was used as well to verify suitability of the structural model. Using SPSS 22.0, frequency analysis was conducted to treat general attribute variables of the companies. Through exploratory factor analysis, this study empirically analyzed how accurately variables measure constructs.

2. Theoretical Background

2.1 Concept of Competency

The concept of competency was introduced in 1973 by Harvard psychologist David McClelland. For over 40 years after that, the concept has been dealt with by various scholars. Dictionary definitions of competency are as follows: “The degree of condition or capacity to which one is equipped with proper or excellent qualifications”, “knowledge, skills and attributes necessary to perform works”. In general, competency is capacity of an organization or a person. It is used to denote work performance capacity, job capacity, attitudes and characteristics³. Competency is divided into organizational competency and personal competency. Organizational competency is the ability accumulated through long-term and continuous experiences and learning which differentiate it from other organization is not easily mimicked by others and enables the organization to maintain its competitiveness and competitive edge⁴. Personal competency is personal knowledge, skills and attributes which are helpful in effectively performing duties and role and achieving high performance³. Though personal competency is defined differently by scholars, it is generally categorized into leadership competency, duty competency and common competency⁵. Leadership competency is behavioral attributes required to all organizational members in all ranks and positions. It is called management competency or rank competency. Common competency is the competency required commonly to all members and it is called basic competency or core competency as well⁶.

2.2 Consultant Competency

Consultant competency is the competency of consultant needed to successfully consult customers. It consists of strategy establishment ability, management related abil-

ity, planning and operating ability and knowledge and creative thought⁷. In the respect of the role required to consultants, some suggested the followings as core attributes of consultant competency⁸: specialist competency in which consultant provides information in special area and advice on it; manager competency of managing and monitoring the overall project; educator competency where consultant helps customers to learn special knowledge and solve problems for themselves. Among 20 kinds of consultant competency derived from existing researches, this research categorized it into three kinds of competency: Work duty competency, common competency and management competency. The components of each kind are as follows: Work duty competency – special knowledge, capacity to analyze and suggest alternatives, strategic thinking ability, information collection ability, communication ability; common competency – customer orientation, preservation of dignity as specialist, self-confidence, self control, work ethics; management competency – driving force, teamwork, relationship-forming ability, coaching and empowerment, flexibility and leadership⁹. It has been empirically proven that, to successfully perform consulting project, manager competency of consultants is important and competency of consultant as specialist has effect on performance improvement of consulted companies¹⁰⁻¹².

2.3 Competency of PM

Based on PMBOK (Project Management Body Of Knowledge)⁴, this study divided competency of project manager into three kinds: Management competency, technology competency and communication competency. Management competency is the competency related with management activities to successfully complete the project such as the scope of the project, schedule, cost, quality and purchasing management, etc. It is competency related with the role of detailed action plans on each area in project management and the final person in charge in management activities. Technology competency is the technological knowledge regarding work type and required work of the project and is the competency to instruct and test detailed activities of the related project on the final product.

Communication competency is human resources management, communication and leadership related with the project¹³. As the most important and basic technology competency able manager should be equipped

with, this study offered three technology types □ special technology, human relations technology and conceptualization technology¹⁴. Though the competencies of Project Manager (PM) and team members are similar, there are some differences depending on works and roles. As core competencies required to PM can be classified into three competencies: Work competency (possession of special knowledge, possession of necessary management knowledge, rational decision-making and problem-solving capabilities), common competency (investigation and use of knowledge and information, communication skills, creativity and challenge, positive and active attitudes) and leadership competency (suggestion of vision and goal, development of competencies of team members, recognition and reward and formation of teamwork)^{6,15}.

2.4 Consulting Outcomes

The most desirable indicators to measure the effects of management consulting must be concrete and objective indicators like contribution of consulting to the profit of the company, improvement of productivity. But, it is almost impossible to measure them. As such objective results are influenced by other sub-systems of the organization as well as by the effects of management consulting; it is difficult to separate only the contribution of management consulting to such results. As the cost and benefit of implementation of management consulting is, in many cases, intangible, it is in fact almost impossible to evaluate the benefits the consulted company reaps. And, though it is possible to measure actual use of the results of implementing management consulting with micro and objective performance indicators, it is also difficult to measure them accurately. As described above, it is very difficult to measure the effects of such management consulting with objective performance indicators. And, even in the cases where measurement is possible to some extent, there are no records, in most cases. Thus, as most performance indicators of projects are subjective ones¹⁰. The degree of completion of consulting projects, the followings can be suggested - observance of the period, observance of budget, achievement of predicted performance, satisfaction of clients by implementation of the project, etc¹⁶. Consequently, when those promoting a project not only must satisfy intra-organizational considerations such as period, budget, the capacity of the organization to adopt the consulting, but also extra-organizational considerations like satisfaction of clients, we can say that the project has been successfully performed¹².

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3. Research Models and Hypothesis

3.1 Research Model

Based on concretized concepts and theoretical background of previous researchers, this research intended to the effects of PM competency and consultant competency on the performance of consulted companies. It also wanted to identify mediating effects of consultant competency on the performance of consulted companies. Thus, this research sets the research model shown in Figure 1.

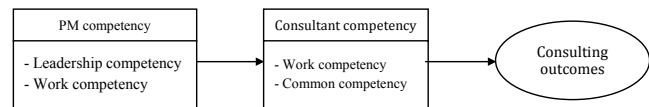


Figure 1. Research model.

3.2 Setting of Hypotheses

PM competency can be defined as leadership competency, work competency and common competency. The team performing the project consists of Project Manager and team members. The competencies of project team members influence the effect of the project to the client company. Project Manager (PM) manages project participants (team members) as well as managing project scope, schedule, budget and quality to make the project finish successfully. As the consulting project has the characteristics where creativity as well as special knowledge and technology of PM and team members is inputted, competency of PM can make different results to the client company. Personal competency of PM also influences the works of team members. Competency of the leader of R&D project has been found to affect competencies of team members¹⁷. Based on such findings, this research, to examine the effect of personal competency (work competency and leadership competency) of PM on personal competency (work competency and common competency) of team members, set the following hypotheses.

H1. Leadership competency of PM will have positive (+) effect on work competency of consultant.

H2. Leadership competency of PM will have positive (+) effect on common competency of consultant.

H3. Work competency of PM will have positive (+) effect on work competency of consultant.

H4. Work competency of PM will have positive (+) effect on common competency of consultant.

Consultant competency can be defined as personal capabilities of consultant necessary to perform consulting works and successfully achieve consulting goals. Consulting results are divided into the degree of completion and the degree of contribution. The former can be defined as whether the consulting project observes the periods, budget, target goals and consulting qualities. And the latter is measured with indicators to measure how much the consulting contributes to management of the consulted company such as client satisfaction, financial improvement, process improvement and strengthening of problem-solving competency¹⁰. Consultant competency is concrete capabilities and attributes consultant should be equipped with such as specialty, personal value system and characteristics and the role related with consulting works¹¹. It was found that competencies security consultants possess affect quality levels of security consulting¹⁸. Technical knowledge of consultants and the capabilities of consultants to maintain harmonious relationship with their clients were pointed out to be core elements in getting good results from management consulting¹⁹. Thus, to examine the effect of consultant competency on the results of consulting for client companies, this research set the following hypotheses (H5, H6).

H5: Common competency of consultant will have positive (+) effect on consulting performance.

H6: Work competency of consultant will have positive (+) effect on consulting performance.

Intellectual capacity, management capacity and emotional capacity of PM have been found to affect project performance²⁰ and basic competency and personal competency of PM and team competency have proved to be influential to the success of project¹⁵. In previous researches on the relationship between project management and project performance, all the knowledge areas on project management affect project success for the manpower dealing with information system²¹. There are other researches proving that project management affects project performance. Accordingly, this research, to examine the effect of PM competency on consulting performance with mediating effects of consultant competency set the following hypotheses (H7, H8).

H7. Leadership competency of PM will have indirect effect on consulting performance.

H8. Work competency of PM will have indirect effect on consulting performance.

4. Research Design and Analytical Method

4.1 Research Design

To get the data, this study conducted a survey to representatives and staffers of Korean small and medium-sized companies which have received the consulting on the coupon system. The survey was conducted through e-mail. Among the copies of the questionnaire I received from those representatives and staffers of those companies, 204 copies in total finally chosen excluding some problematic copies. Using the data, this study did empirical analysis.

4.2 Analysis Method

The survey questions given to respondents in this study were based on existing researches. They were made to match the characteristics of PM competency, consultant competency and consulting performance in the perspective of consulted companies - small and medium-sized companies. The questionnaire was designed to be self-report format in which respondents answer the questions for themselves. The number of questions was 37 in roughly 3 categories. Likert 5-point scale was given to respondents. Data analysis was done through SPSS 22.0, social science statistical package. AMOS 22.0 was used as well to verify suitability of the structural model. Using SPSS 22.0, frequency analysis was conducted to treat general attribute variables of the companies. Through exploratory factor analysis, this study empirically analyzed how accurately variables measure constructs. And reliability test was conducted to check internal consistency among factors of the model. And through confirmatory factor analysis, the scale was revised again and Covariance Structure Analysis (CSA) was conducted to confirm suitability of the research model and test hypotheses.

5. Empirical Analysis

5.1 Analysis of Basic Statistics

Demographic characteristics of respondents are as follows. 172 respondents were males (84.3%) and 32 were

females (15.7%). The distribution of job ranks of respondents were as follows: Employees - 3.4%; low-level managers - 8.3%; high-level managers - 24%; department heads - 20.1%; division heads - 44.1%, which shows that those in higher ranks participated in the survey more than those in lower ranks (see Table 1).

Table 1. Demographic characteristics of respondents (n = 204)

Division		Frequency	Ratio
Gender	Male	172	84.3
	Female	32	15.7
job ranks	employee	7	3.4
	low-level manager	17	8.3
	high-level manager	49	24
	Dept. head	41	20.1
	division head	90	44.1
consulting experiences	More than once	120	58.8
	2 times	44	21.6
	3 times	19	9.3
	More than 5 times	21	10.3
number of employees	50 people or less	118	57.8
	51 ~ 100	27	13.2
	101 ~ 200	29	14.2
	more than 200	30	14.7
types of companies	manufacturing industry	150	73.5
	service businesses	42	20.6
	Retail and Wholesale	3	1.5
	others	9	4.4
consulting periods	30 days or less	18	8.8
	30~59 days	24	11.8
	60~79 days	66	32.4
	80~99 days	63	30.9
	100 days or more	33	16.2
consulting area	management/operation/finance	90	44.1
	personnel/organization/labor	74	36.3
	marketing	17	8.3
	manufacturing/technology	20	9.8
	other	3	1.5

In the distribution of the types of companies, 150 companies belonged to the manufacturing industry, taking up 73.5% of all the responding companies. 42 companies (20.6%) were in service businesses and 5.9% of companies were wholesale and retail companies and others. The results show that most of the small and medium-sized companies tend to be manufacturing companies. The distribution in the number of consulting experiences is as follows: 120 companies (58.8%) had consulting once or did not get consulting before; 44 companies (21.6%) did two times; 19 companies (9.3%) did three times or more, showing that the largest number of companies were those which got consulting for the first time. The distribution in the number of employees of companies is as follows: 118 companies (57.8%) have 50 or less employees; 13.2% have 51~100 employees; 14.2% have 101~200 employees; 14.7% have more than 200 employees, which shows that the proportion of small and medium-sized companies with 50 or less employees is the largest group among all sizes of companies which participated in the survey. The distribution of consulting periods is as follows: 8.8% of companies got consulting for 30 days or less; 11.8% for 30~59 days; 32.4% for 60~79 days; 30.9% for 80~99 days; 16.2% for 100 days or more. The distribution of consulting areas is as follows: 44.1% of companies got consulting in management/operation/finance areas; 36.3% in personnel/organization/labor areas; 8.3% in marketing area; 9.8% in manufacturing/technology; 1.5% in other areas. The demographic characteristics of respondents are summarized in Table 1.

5.2 Reliability and Validity Analysis

To examine validity, this study conducted exploratory factor analysis. For all the measurement variables, principal component analysis was used to extract their composing factors. To simplify factor loading, varimax rotation was adopted. The criteria this study adopted in selecting questions are as follows: eigenvalue - 1.0 or above; factor loading - 0.40 or above. Among 31 questions, 2 questions which were not properly loaded following theoretical structure were eliminated and 29 questions were used in the analysis. Cronbach- α values measured after items which harm reliability in the relationship among items were from 0.940 to 0.971, proving that internal consistency was secured. The data explains 83.49% of all variance and KMO values, showing correlations among variables were over 0.9, demonstrating that variable selec-

tions were proper as shown in Table 2. If KMO value is over 0.9, it is considered as quite good. If it is below 0.5, it is considered as not acceptable.

To examine convergent validity, this study evaluated Average Variance Extracted (AVE) and Construct Reliability (CR) simultaneously. If AVE value is 0.5 or over and CR value is 0.7 or over, it is accepted as having convergent validity (C. Fornell and D. F. Larker, 1981). The results of confirmatory factor analysis for each latent factor are shown in Table 3. Among correlation coefficients between latent variables, the biggest one is .822 and its square, coefficient of determination is .676 (.8222). If AVE among all the latent variables is bigger than the biggest coefficient of determination, .676, they can be evaluated as securing discriminant validity.

To examine construct validity on PM competency, consultant competency and consulting performance, this study conducted Confirmatory Factor Analysis (CFA). The first test of the model's goodness of fit led to the followings: $\chi^2 = 800.119$, $df = 367$, $p\text{-value} = .000$, $Q = 2.180$. The model's goodness of it ($GFI = .792$, $CFI = .940$, $NFI = .898$, $NNFI = .936$, $RMR = .032$, $RMSEA = .076$) did not satisfy the criteria. Consequently, to improve goodness of fit, goodness of fit test was done by using Multiple Imputation (MI). A way to improve goodness of it is to set covariance. Setting covariance three times using MI improved model's goodness of it to a great extent, satisfying the criteria as shown in Table 4. χ^2 value of the revised model was 727.982, which is lower than that of the research model by 72.137. To revise a model using MI,

Table 2. Exploratory factor analysis and reliability test

Factor		variables	Factor loading	Eigenvalue	Distributed explanatory power	Cronbach- α
PM Competency	Leadership competency	7	0.699 ~ 0.824	5.851	20.174	0.94
	Work competency	5	0.713 ~ 0.810	3.942	13.592	0.961
Consultant competency	Work competency	6	0.769 ~ 0.822	6.073	20.942	0.963
	Common competency	5	0.628 ~ 0.770	3.507	12.093	0.948
Consulting outcomes	Completeness and contributions	6	0.655 ~ 0.821	4.841	16.693	0.971
Kaiser-Meyer-Olkin: .954, p-value : .000						

Table 3. Validity test

	PM Leadership competency	PM Work competency	Consultant Work competency	Consultant Common competency	Consulting outcomes	AVE	CR
PM Leadership competency	1					.801	.966
PM Work competency	.822	1				.855	.975
Consultant Work competency	.544	.453	1			.837	.969
Consultant Common competency	.530	.479	.810	1		.818	.957
Consulting outcomes	.589	.543	.816	.810	1	.844	.970

Table 4. Model's goodness of fit test

	χ^2	df	P	Q	GFI	CFI	NFI	NNFI	RMR	RMSEA
Basic Model	800.119	367	.000	2.180	.792	.940	.898	.936	.032	.076
Correction Model	727.982	365	.000	.1994	.808	.951	.908	.946	.030	.070

setting covariance of measurement error can be a desirable way (Table 4).

5.3 Hypothesis Test and Explanation

To test hypotheses, this study used structural model of structural equation model. The overall goodness of fit of the structural model of this study was as follows: $\chi^2 = 713.282$, $df = 362$, $p = .000$, $GFI = .810$, $CFI = .953$, $NFI = .909$, $NNFI = .948$, $RMR = .030$, $RMSEA = .066$. Though GFI value does not satisfy the recommended level, it does not deviate far from the level. And, considering that it is difficult to get the goodness of fit values satisfying all the requirements, the model's goodness of fit is good. Path analysis performed in this study is reliable. The results of AMOS analysis are in Table 5.

Hypothesis 1 that leadership competency of PM will have positive (+) effect on work competency of consultant was supported ($\beta = 0.534$, $t\text{-value} = 4.347$). Hypothesis 2 that leadership competency of PM will have positive (+) effect on common competency of consultant was also statistically significant ($\beta = 0.394$, $t\text{-value} = 3.164$). Hypothesis 5 that work competency of consultant will have positive (+) effect on consulting performance was also statistically significant ($\beta = 0.401$, $t\text{-value} = 4.677$).

Hypothesis 6 that common competency of consultant will have positive (+) effect on consulting performance was also statistically significant ($\beta = 0.401$, $t\text{-value} = 4.677$). However, hypothesis 3 that work competency of PM will have positive (+) effect on work competency of consultant and hypothesis 4 that work competency of PM will have positive (+) effect on common competency of consultant were not statistically significant. p-value indicating the indirect effect that leadership competency of PM will passing through common competency of consultant have effect on consulting performance is 0.006, testifying that there is the indirect effect. On the other hand, p-value indicating the indirect effect that work competency of PM will, passing through work competency and common competency of consultant, have consulting performance is 0.541 testifying that there is no indirect effect.

6. Conclusion

6.1 Research Findings

To search for the ways to develop PM competency and find desirable consulting management method, this study did empirical research on the effect of PM competency

Table 5. Hypothesis test results

Path		B	SE	β	t	P B	indirect effect	
							P	
H1	PM Leadership competency → Consultant Work competency	.548	.126	.534	4.347	***		
H2	PM Leadership competency → Consultant Common competency	.381	.120	.394	3.164	.002		
H3	PM Work competency → Consultant Work competency	.016	.122	.016	.135	.892		
H4	PM Work competency → Consultant Common competency	.148	.117	.153	1.267	.205		
H5	Consultant Work competency → Consulting outcomes	.486	.104	.401	4.677	***		
H6	Consultant Common competency → Consulting outcomes	.493	.111	.383	4.455	***		
H7	PM Leadership competency → Consulting outcomes	.075	.101	.060	.745	.456	.365	.006
H8	PM Work competency → Consulting outcomes	.161	.095	.129	1.701	.089	.065	.541
Model Fit		$\chi^2 = 713.282$, $df = 362$, $p = .000$, $GFI = .810$, $CFI = .953$, $NFI = .909$, $NNFI = .948$, $RMR = .030$, $RMSEA = .066$						

* $P < .05$, ** $p < .001$, *** $p < .000$

on consulting performance by doing survey to executives and staffers of consulted companies. Though there are many researches showing that high consultant competency is likely to lead to high consulting performance, this study is unique, because it studied the effect of PM competency and consultant competency from the perspective of the clients.

Analyses showed that, though leadership competency of PM have significant effect on work competency and common competency of consultant, work competency of PM does not have significant effect on work competency and common competency of consultant. While leadership competency and work competency of PM do not directly affect consulting performance, work competency and common competency of consultant have significant effects on consulting performance. In the indirect effect in which competency of PM, passing through competency of consultant, will have effect on consulting performance, leadership competency of PM, passing through competency of consultant, has effect on consulting performance. But work competency of PM does not have such an effect.

The analysis revealed that clients think that while leadership competency of PM has effect on work competency and common competency of consultant, leading to better consulting performance, work competency of PM does not have such an effect on consulting performance. It seems to prove that work competency of PM is less important than leadership competency of PM in improving consulting performance. Thus, PM should focus more on improving leadership competency than on developing his or her work competency. On the other hand, clients perceive that PM manages consultants rather than directly participating in the project. So, it is necessary for PM to participate more in consulting.

6.2 Limits of this Research and its Suggestions

This research has some limits. First, as the survey was conducted only to those companies which have experiences of participating in consulting on the coupon system, it has limits in representativeness. Second, most respondents are males and the proportion of manufacturing companies are too high among all industries. So, sample composition is biased. In the future study, it is necessary to construct samples in proportion of the number of registered companies in all the industries. And it is necessary to include both consultants and clients in the

survey. However, this research offers some suggestions to consultants by showing how clients view the factors affecting consulting performance. First, it is necessary to clearly define the role of consultants who participate in consulting and to make all the persons participating in consulting to clearly recognize their roles by collaborating with consulted companies. Second, it is necessary to periodically issue reports or materials containing the names of consultants and let clients know them in the consulting process. Finally, it seems desirable to form good and continuous relationship with clients through periodic meetings with clients.

There have been many researches on consultant competency and consulting performance. However, most of them focus on the effect of consultant competency on consulting performance. But, there have been few researches focusing on clients of such consulting. In the future researches dealing with consulting performance, it seems desirable to do survey both consultants and clients to examine the opposite perspectives on the same results. This research is meaningful in the sense that it empirically analyzed the effects of consultants participating in consulting on consulting performance from the perspective of consulted companies.

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