

## The Effect of the Problem Solving Ability of Management Consultants on Satisfaction of Consulting Performance: Participation of the Consulted Firm as a Mediating Effect

<sup>1</sup>Bong-Cheol Lee and <sup>2</sup>Yen-Yoo You

<sup>1</sup>Department of Smart Convergence Consulting,

<sup>2</sup>Department of Knowledge Service and Consulting, Hansung University,  
116 Samseongyo 16 gil, Seongbuk-gu, 02876 Seoul Metropolitan Government, Korea

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**Abstract:** This study is to verify that a participation of a consulted firm functions as a mediating effect in the correlation of a consultant's problem solving ability to the performance satisfaction rate that a consultant experiences during a consulting process. The objects were the current management consultants who have performed the management consulting at least more than once and the direct survey was used to collect the data. The survey, in reference to the questionnaires in the precedent studies, was comprised of 7 questions of demographic statistics, 3 questions of problem solving skills, 3 questions of problem solving knowledge, 5 questions of participation of the consulted firm and 5 questions of satisfaction of consulting performance, a total of 23 questions in Likert's 5 points scale measurements. In the results of the study model fitness test and the validity test analysis as a rotated element series, the 4 elements equivalent to the study model setup were extracted; the characteristic values were all higher than 1.0, the factor loadings were all above 0.5 and every variable was taken into the analysis. Including the parameter, the independent variable and the dependent variable's explanatory total variance was 75.98% and the Cronbach-alpha value of the entire study model was 94.9%. In the correlation of a problem solving skill and a problem solving knowledge of a consultant to the performance satisfaction rate of a consultant, the effect of a participating consulted firm was analyzed and the results showed that the skill and the knowledge both were significant in the t and the p-values of the first, second and third steps and the independent variable effect in the second step showed a higher effect than the independent variable effect on the third step. These results indicate that the consultant's problem solving ability influences the participation rate of a consulted firm and the performance satisfaction rate of the consultant. If this study may continue in the future, new tools to measure the problem solving skills and knowledge should be developed and the validity test of the tools also should be assessed.

**Key words:** Consultant competence, problem solving ability, problem solving skill, problem solving knowledge, consultant job satisfaction, consulting participation

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### INTRODUCTION

The three characteristics of the consulting industry are the client directivity, the professionalism and the business value and the professionalism among these characters is considered the key factor to determine the appropriateness and the reliability of the consulting performance result. Therefore, the problem solving skills of a management consultant is an important ability and this skill will improve the consulted firm executive member's understanding of the consulting projects and enhance the participation rate. As a higher participation rate of the consulted firm involves, the consultant becomes being able to utilize the knowledge and the skills better and the performance delivered showed a higher

matching tendency to the expectancy. Therefore, this study attempts to prove the effect of the problem solving ability of a management consultant on the satisfaction of a consulting performance and that the participation of the consulted firm has a mediating effect, based on the study models of the precedent studies on the effect of the consultant competency on the consulting service quality, the consulting outcome and the business's management performance.

### MATERIALS AND METHODS

**Concept of management consulting:** By definition, the management consultant is a professional, hired by a business who investigates the actual management

conditions and diagnoses the problem to provide an improvement solution (Kang, 2015). The previous studies defined a consultant as a consultant is defined as a professional who uses one's professional knowledge and experience to give an advice to a requested management problem or an assigned project or a person who provides a professional advice service through one's insights or professional knowledge, in order to reach a management goal by suggesting a solution to an existing problem in a business management (Yuk, 2013; Yeo, 2016). On the other hand, Australia Association of the Management Consulting Firms defined a consultant as a service provider who gives a management advice or an instruction to establish a goal and organize a business through a development plan, an organization, a motivation, a communication or resource utilization.

**Concept of problem solving skills:** Kim (2003) has defined the problem solving skills as an ability to redefine a problem to solve the problem that occurs in daily basis which involves an activity of data collection and analysis to find a solution, a consideration of priorities in solution, an idea creation, an appropriate decision making on a strategy or a tool, a development skill to execute a solution in business conduct and an ability to provide a proper, logical, predictive, brilliant and novel idea (Kim, 2003). Ha *et al.* (2016) referred to P. Heppner's study to argue that the problem solving skill is an ability to understand the current issues and to handle a problem in systematic steps that searches for an alternative, predicts the results and maximizes the positive outcome (Ha *et al.*, 2016).

**Concept of comprehension and participation of the consulted firm:** By definition, a comprehension is a degree of interpreting or accepting a matter or a status. A management consulting is a professional service that contributes to the performance enhancement of a business by analyzing a current issued problem that figures out and suggests a feasible and a specific solution. However, even with a professional knowledge and an ability, if the employees of the consulted firm do not understand the reasons why a consulting is needed or do not comprehend the specific meanings of the suggested solutions and the conclusions, the consulting project will not succeed. In other words, a successful consulting project involves a executives of the consulted firm's precise recognition about the problem and a full comprehension of the goals that the consulting process is reaching to develop (Kang, 2015). Meanwhile, the dictionary definition of the participation is "a degree of action of taking a part or an involvement" and an

involvement means a "participation in relating to something"; therefore, the participation of a consulted firm is "a degree of involvement in participation of consulted firm in the process" (Ha *et al.*, 2016). In this study, the comprehension and the participation of the firms considering a consulting is defined as continuous attention and support of the management during the consulting process, the existence of designated organization and support group to perform the successful consulting, the comprehension of general consulting process and the outcome, the cooperation and the support from the employees during the consulting process and the will power of executives to carry out the consulting outcome.

**Concept of satisfaction of the consultant performance:** Kim (1992) defined the satisfaction as pleasurable or positive emotional states that represent an analysis on a perception of a duty and a condition of an object in the constituent individuals of an organization. Choi (2002) argued that the satisfaction is an attitude of an individual towards one's duty and an emotional state that the constituent individuals of the organization experience relating to their duties (Kim, 1992; Choi, 2002). Therefore, a satisfaction is a series of an attitude that the consultant encompass toward their duty which represents the degrees of joy relating to their duties or the pleasurable emotional states earned through work experience evaluated by others. In similar opinions, Choi (2002) suggested the elements of satisfaction as the nature of the work itself, the personal growth, the co-workers, the promotion opportunities, the job conditions, the appreciation, the security, the supervision, the pay, the communication, the fringe benefits, the recognition, the organization itself and the organization's policies and procedures.

#### **Study model and hypothesis**

**Study model:** The purpose of this study is to verify that a participation of a consulted firm functions as a mediating effect in the correlation of a consultant's problem solving ability to the performance satisfaction rate that a consultant experiences during a consulting process. Therefore, the problem solving ability of a consultant was set as an independent variable in the subdivisions of problem solving skills and problem solving knowledge. The dependent variable is the performance satisfaction of a consultant and the participation of the consulted firm is the parameter. The subdivisions of the dependent variable and the

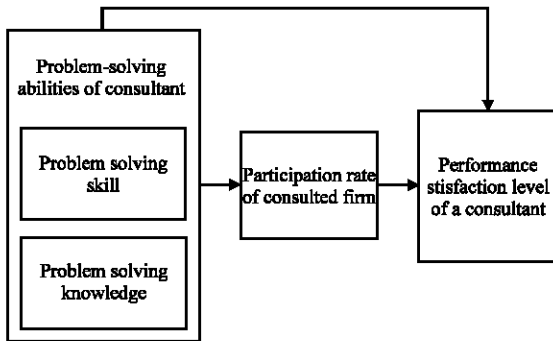


Fig. 1: Study model

independent variables were not set and each was analyzed as a single variable. The explanatory diagram of the study model is as follows in Fig. 1.

**Hypothesis:**

- H<sub>1</sub>: in correlation of a consultant’s problem solving ability influencing to the performance satisfaction level, the participation of a consulted firm will take an intermediary effect
- H<sub>1a</sub>: among the problem solving abilities of a consultant, the problem solving skills correlates to the performance satisfaction level and the participation of the consulted firm has a mediating effect
- H<sub>1b</sub>: among the problem solving abilities of a consultant, the problem solving knowledge correlates to the performance satisfaction level and the participation of the consulted firm has a mediating effect

**The operational definition of an independent variable (problem solving ability of a consultant):** In the precedent studies of a consultant’s competency, an evaluation index of a problem solving ability of a consultant was not defined as an independent ability. Therefore, as a measurement tool of the problem solving ability, the only questions considered as relevant to the problem solving ability among the categories of the ability, the knowledge and the attitude in the surveys were referenced from the surveys by Yeo (2016) and Shin (2012) and the survey comprised of 3 questions of problem solving ability and 3 questions of problem solving knowledge, in a total of 6 questions.

**The operational definition of a dependent variable (performance satisfaction level of a consultant):** The self-evaluation of a performance satisfaction during a consulting project process may vary by the consultants. The performance satisfaction rate during a consulting

process can be defined as a series of attitude a consultant takes about a project and a degree of satisfaction during a service delivery in comparison to the expectations by fully utilizing the knowledge skills and the abilities to carry out the process smoothly. As a measurement tool, the surveys made by the small medium business administration and the Korea Management Association, “A Strategy to Reorganize the Consulting Supporting Policy (SMBA and KMA., 2011) was referenced, in the 5 questions regarding the “utilization of the professional knowledge skills in consulting performance”, the “management problem in consulting performance” and the “consulting results” were extracted (SMBA and KMA., 2011).

**The operational definition of a parameter (participation of the consulted firm):** A parameter is a variable affecting the dependent variable in the same manner as an independent variable but as in a series, it is placed in between the independent variable and the dependent variable (Song, 2014). Kang (2015) set the moderating variable dividing the participation and the understanding of the consulted firms, but in this study, the parameter was defined as a “participation of a consulted firm” in a combination of a participation and the understanding as a single variable (Kang, 2015). As an evaluation index, 5 questions, same as the dependent variables, were selected from the survey of the of the small medium business administration and the Korea management association, “A Strategy to Reorganize the Consulting Supporting Policy (SMBA and KMA., 2011) was used (Kang, 2015).

**The object of study and methods:** A parameter is a variable affecting the dependent variable in the same manner as an independent variable but as in The currently working management consultants who have at least more than once performed on a management consulting were selected as objects and the surveys were taken as a method. From an approximate of 300 surveys given, 192 surveys were collected and excluding the 8 surveys with data omissions or insincere answers, a total of 184 samples were taken with a 61.3% of collection rate. In reference to the precedent studies, the questionnaire of the survey comprised of 7 questions on demographics, 3 questions on problem solving skills, 3 questions on problem solving knowledge, 5 questions on participation of the consulted firm and 5 questions on performance satisfaction of the consultant with a total of 23 questions and the Likert 5 point measurement scales. In the empirical analysis, using the SPSS 23.0, the validity analysis, the reliability analysis and the correlation analysis were performed and the regression analysis was used in the mediation effect test.

Table 1: Factor analysis and reliability analysis result

Items	Factor analysis					Reliability analysis	
	Performance satisfaction of a consultant	Participation rate of the consulted firm	Problem solving knowledge of a consultant	Problem solving skill of skill ability	Communality	Alpha if item deleted	Cronbach $\alpha$
	S1	0.669	0.320	0.349	0.147	0.693	0.949
S2	0.852	0.247	0.201	0.215	0.873	0.920	
S3	0.906	0.178	0.106	0.153	0.887	0.922	
S4	0.880	0.210	0.114	0.136	0.851	0.927	
S5	0.851	0.153	0.219	0.203	0.837	0.928	
P1	0.198	0.793	0.096	0.075	0.683	0.818	0.853
P2	0.077	0.677	0.175	0.138	0.514	0.853	
P3	0.076	0.822	0.086	0.241	0.746	0.807	
P4	0.365	0.696	-0.122	0.224	0.683	0.823	
P5	0.375	0.758	0.004	0.081	0.721	0.811	
K1	0.197	0.193	0.836	0.046	0.776	0.857	0.873
K2	0.229	0.086	0.866	0.167	0.837	0.756	
K3	0.142	-0.064	0.850	0.276	0.823	0.845	
A1	0.198	0.142	0.199	0.776	0.701	0.805	0.824
A2	0.185	0.272	0.131	0.804	0.772	0.737	
A3	0.187	0.172	0.143	0.822	0.760	0.732	

**RESULTS AND DISCUSSION**

**Demographics characteristics analysis:** Out of 185 total respondents, 98.5% were males with an average age of 47.5 years and the average of work history of 12.2 years. The academic background showed that 36.6% of consultants had bachelor’s degrees, 47.0% had master’s degrees and 16.4% had doctor’s degrees and in the certificates, CMC (Certified Management Consultant) and CTC (Certified Technology Consultants) were the most commonly earned certificates with a 48.5% rate. The location of their consulting firms consisted of 66.5% of Seoul or a capital region in Kyung-gi Do and 33.5% of a non-capital region and the types of consulting firms consisted of 76.1% of corporate firms and 23.9% of private firms. The 84.3% was full-time regular employees and 15.7% was part-time employees.

**Validity and reliability test on study methods:** Excluding the demographic questions, 16 survey questions were used in the SPSS23.0 program validity test and the reliability test. As in Table 1, elements same as the study model were extracted as a rotated series of components. Since, each of the 4 elements had a characteristic value >1.0 with a factor loading of 0.5 or higher, all the variables were used in the analysis. Including the parameter, the total explained variance in the independent variable and dependent variable was 75.98%. In the reliability analysis, the alpha if item deleted test of the first category of the 5 categories in the consultant’s performance satisfaction was higher than the total value and was excluded in the final analysis.

**Correlation analysis:** In the correlation analysis of the 4 elements, problem solving ability of the consultant, problem solving knowledge of consultant, participation of

the consulted firm and performance satisfaction of the consultant, excluding the correlation of the problem solving knowledge of the consultant to the participation of the consulted firm (0.237), the correlations between each element was >0.4 and showed high correlations. Therefore, in the correlations of the problem solving ability influencing the performance satisfaction of a consultant, the hypothesis  $H_1$  that the participation of the consulted firm taking a mediating effect was proven correct.

**Hypothesis test:** To test the hypotheses of  $H_{1a}$  and  $H_{1b}$ , that the participation of the consulted firm will take a mediating effect in the correlation of the problem solving ability of a consultant to the performance satisfaction of the consultant, a regression analysis was performed. The result of the analysis is represented in Table 2. The details in the results of the analysis on the effect of the problem solving ability of a management consultant on the performance satisfaction with a participation of the consulted firm as a mediating effect is as follows.

The regression coefficient was 0.453 and showed a positive (+) relationship in the first step, 0.461 in the second step and 0.298 of independent variable and 0.359 of parameter in the third step. The t and p-value that can estimate the significance level, showed a significant level in each of the first, the second and the third step. Also, in the second step, the effect of an independent variable showed a higher value than the effect of an independent variable in the third step. Therefore, the hypothesis  $H_{1a}$  was adopted. The  $R^2$  value which represents the explanation power showed a 20.5% of the explanation power in the first step and 21.2% in the second step and 31.4% in the third step. Also, the effect of the problem solving knowledge of a consultant on the performance

**Table 2: Mediation effect analysis results**

Independent variable/parameter/ dependent variable/mediation effect test step	Standardized $\beta$ values	t-values	p-value	R <sup>2</sup>
<b>Problem solving skill/participation rate/ satisfaction rate</b>				
Step 1	0.453	5.832	0.001	0.205
Step 2	0.461	5.961	0.001	0.212
Step 3 (independent variable)	0.298	3.676	0.001	0.314
Step 3 (parameter)	0.359	4.419	0.001	
<b>Problem solving knowledge/participation rate/satisfaction rate</b>				
Step 1	0.237	2.801	0.060	0.056
Step 2	0.414	5.221	0.001	0.171
Step 3 (independent variable)	0.314	4.294	0.001	0.337
Step 3 (parameter)	0.419	5.723	0.001	

satisfaction in the analysis of participation of the consulted firm as a mediating effect showed as follows. The first step regression coefficient was 0.237 and showed a positive (+) relationship, the second step showed 0.414, the third step showed 0.314 of independent variable and 0.419 of parameter. All the t and p-values in each step, representing the significance level, indicated the significant levels. Also, the effect of the independent variable in the second step showed a higher value than the effect of the independent variable in the third step. Therefore, the hypothesis H<sub>1b</sub> was also adopted. The R<sup>2</sup> value that represents the explanation power, showed 5.6% of explanation power in the first step and 17.12% in the second step and 33.7% in the third step.

The hypothesis (H<sub>1</sub>), “in correlation of a consultant’s problem solving ability influencing to the performance satisfaction level, the participation of a consulted firm will take an intermediary effect” was adopted. The hypothesis H<sub>1a</sub>, “among the problem solving abilities of a consultant, the problem solving skills correlates to the performance satisfaction level and the participation of the consulted firm has a mediating effect” was adopted. The hypothesis H<sub>1b</sub>, “among the problem solving abilities of a consultant, the problem solving knowledge correlates to the performance satisfaction level and the participation of the consulted firm has a mediating effect” was adopted.

**CONCLUSION**

This study was performed to prove the effect of the participation of the consulted firm, taking a mediating effect in the correlation of the problem solving ability of a consultant and the performance satisfaction of a consultant. The results showed that there is a positive effect on the satisfaction of the performance: as the consultant’s problem solving ability enhances, the consultant is able to fully utilize the given knowledge and the techniques and manages the project better which results in bringing a better the satisfaction rate by fulfilling the expectations assumed in prior to the project was performed. Also, the participation of the consulted firms in the process enhances the problem solving ability and showed a mediating effect on the results. The problem solving ability of a consultant showed a positive

relation to the participation of the consulted firms and also implicated the effect on the performance satisfaction of the consultant during the project execution. Therefore, a consultant should enhance the problem solving ability to raise the participation rate of the consulted firms and fulfill higher performance satisfaction during the consulting process.

**LIMITATIONS**

The limitation of this study not being able to use the various and wider perspectives of index in the methods to measure the problem solving ability as Lee (2006) has suggested and using the some of the questions reorganized from the performed survey as the method.

**RECOMMENDATIONS**

Therefore, if the follow-up study of the present study is to be carried out, the development of tools to clearly determine the variables used in this study and the validity of these tools should be preceded.

**ACKNOWLEDGEMENT**

This study was conducted with the support of the research fund of the Graduate School of Hansung University, Korea.

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