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Attitudinal and Behavioral Responses to Innovation: The Role of Person-Innovation Fit

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ABSTRACT

While most research on successful implementation of innovations focuses on managerial and organizational determinants, this study presents a framework to explain individual-level processes. This framework proposes that fit between person and innovation in terms of values and resources positively influence employees' attitudinal and behavioral responses toward the innovation. An empirical test involving two electronics companies showed that the congruence of innovation values with organizational culture and employees' personal values influenced psychological commitment to implementing the innovation, whereas the availability of personal and situational resources determined actual behavior of innovation use. The results demonstrate how personal and innovation characteristics combine to differentially influence attitudinal and behavioral responses in organizations.

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Ⅰ. Introduction

Organizational scholars have long believed that innovation is the source of organizational adaptation to environmental demands. Organizations need to continually manage innovations if they are to succeed in the contemporary business environment often characterized by increasing competitiveness as well as rapid and unpredictable changes (Van de Ven & Grazman, 1997). Researchers have intensively investigated innovations in organizations, studying both administrative and technological innovations (e.g., Frost & Egri, 1991; Kimberly & Evanisko, 1981) or innovation as a contextual element(e.g. King, de Chermont, West, Dawson & Hebl, 2007) implemented in both non-profit and for-profit organizations (e.g., Rogers, 1995). Previous studies have also addressed different aspects of innovation, including innovation generation (e.g., Kanter, 1988) and innovation adoption and diffusion (e.g., Rogers, 1995; Frambach & Schillewaert, 2002).

A natural process that follows innovation generation and adoption is innovation implementation, the process by which innovations are actually put into use. For many organizations, innovation implementation involves high-risks and challenges (Van de Ven & Grazman, 1997). Organizations therefore often successfully generate and adopt innovation, but fail to gain target employees' and users' 'skilled, consistent, and committed use' of the innovation (Klein & Knight, 2005). Surprisingly high failure rate of implementation of business process reengineering which closes in upon 80% is a good example showing the practical difficulty in innovation implementation (Hammer & Champy, 1993). In the case of activity-based costing, only 10 percent of the companies who adopted this innovation successfully implemented this new managerial practice (Ness & Cucuzza, 1995).

Literature of innovation implementation studies has been focused on organizational factors that influences implementation such as structural

factors (organizational structure; Clayton, 1997, support systems; Klein & Sorra, 1996) or factors that influences organizational climate (organizational culture; Clayton, 1997, leader characteristics promote successful implementation; Kanter, 1988; Van de Ven & Grazman, 1997). Because of this emphasis on organizational level factors, the microprocesses of implementation involving individual users of innovations have not yet been properly investigated. However, the success of innovation implementation is often determined by individual reactions (Hartwick & Barki, 1994; Leonard-Barton, 1988). For example, research has reported that efforts to implement new manufacturing technologies may fail just because not enough proportion of the members comply to the implementation plan (Majchrzak, 1988). Despite the fact that most innovations require the personal acceptance and commitment of organizational members who are often end-users of innovations, theories on implementation that specify individual-level processes are rare.

The present study complements the extant innovation literature by empirically testing a model of *individual-level* processes of innovation implementation in organizational settings. To this end, we first present a theoretical framework developed specifically to explain both individual attitudes toward potential implementation and the actual behavior of implementing innovations. To predict attitudinal and behavioral responses to innovations, this framework identifies individual characteristics (work values, skills) as well as organizational factors (culture and organizational support). The framework is then empirically tested using the data collected from two electronics companies.

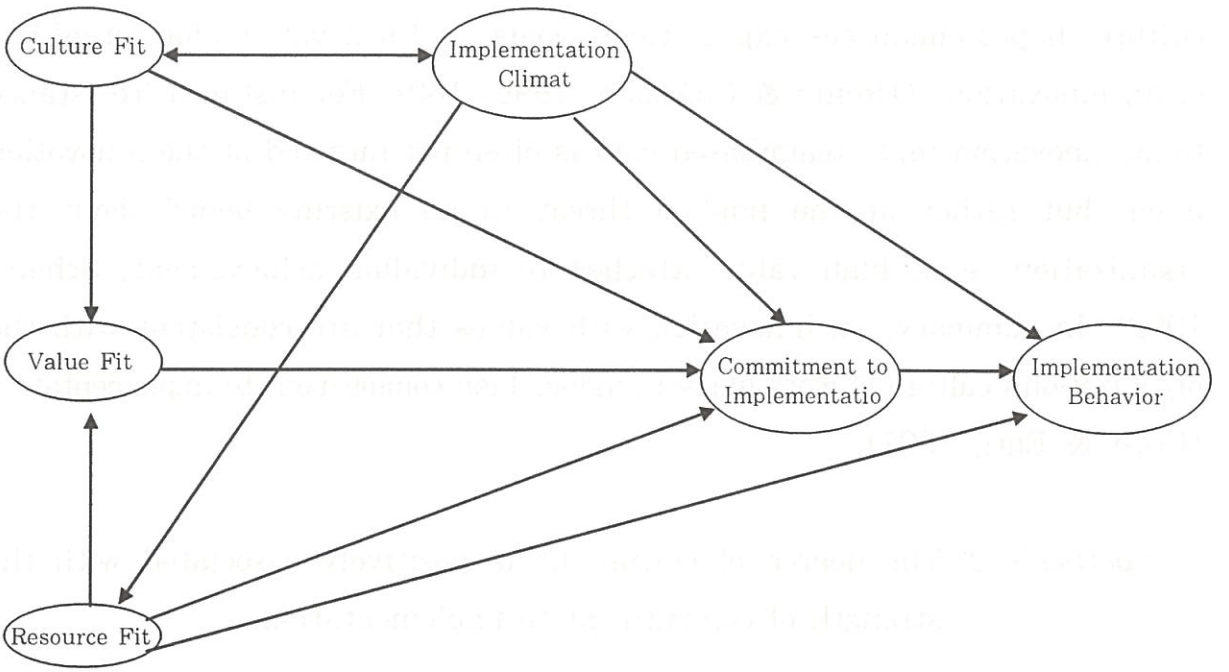
Ⅱ. Conceptual Framework: Person-Innovation Fit Perspective

To explain individual-level processes underlying organizational members' reactions to innovations, the present framework draws on two well-known

theories: Ajzen's (1991) theory of planned behavior and Thomson's (1967) contingency theory. The theory of planned behavior, a social psychological model of human behavior, states that human behavior can be predicted by intention, which is in turn determined by subjective norms, attitudes toward the behavior, and perceived behavioral control. Drawing on contingency theory, we propose that the concept of fit, defined as similarity or compatibility between two constituents such as person and innovation, comprises a core mechanism by which the person and innovation relate to each other. Overall, the theory of planned behavior provides a conceptual ground for understanding psychological mechanisms governing individual behavior, while contingency theory, or the idea of fit, provides insights for conceptualizing the relationship between the innovation and its users.

Drawing on these theories, we develop a theoretical framework that accounts for individual organizational members' attitudinal and behavioral reactions to innovations. As shown in Figure 1, the outcome of this framework is *implementation behavior*, a term referring to "an individual's consistent and committed use of a particular innovation" (adapted from Klein & Sorra, 1996). This particular behavior is predicted by a person's *commitment to implementation*, defined as "belief in and willingness to exert considerable effort to implement a particular innovation" (adapted from Mowday, Porter, & Steers, 1982). Numerous empirical studies have demonstrated the behavioral consequences of commitment to a specific object (e.g., job, organization) in terms of the amount of effort exerted for the object (e.g., Hartwick & Barki, 1994). Similarly, we hypothesize that commitment to implementation increases the likelihood of implementation behavior because commitment reflects the motivational intensity of an individual pursuing a specific course of action.

Hypothesis 1: The strength of commitment to implementation is positively associated with the intensity of implementation behavior.



〈Figure 1〉 Person-Innovation Fit Model of Innovation Implementation

We propose that organizational members become committed to and actually perform implementation behavior when they perceive substantial similarity or congruence between a particular innovation and themselves in several meaningful dimensions discussed below. This comparison between the person and innovation represents the fundamental psychological mechanism that shapes people's appraisal of an object and their subsequent behavior (Festinger, 1957). Three types of such psychological comparison are hypothesized to predict organizational members' reactions to an innovation: culture fit, value fit, and resource fit.

Culture fit, a term referring to the congruence between innovation values and organizational culture, has a strong potential to modulate the level of individual and collective motivation to implement the innovation. Innovation values refer to values and goals underlying an innovation as perceived by users (cf. "spirit" of an innovation, DeSanctis & Poole, 1994). The compatibility of innovation values with organizational culture is crucial because organizational

culture shapes employees' expectations, goals, and motivations for actual use of an innovation (O'Reilly & Chatman, 1996: 160). For instance, resistance to an innovation (e.g., team-based pay) is often not targeted at the innovation itself, but rather at the implied threat to an existing belief about the organization (e.g., high value attached to individual achievement, Schein, 1992). In summary, an innovation with values that are consistent with the organization's culture is more likely to induce high commitment to implementation (Frost & Egri, 1991).

Hypothesis 2: The degree of culture fit is positively associated with the strength of commitment to implementation.

Value fit—the congruence between innovation values and personal values—also has an impact on employees' motivation to implement a particular innovation. Individual organizational members have their own values that cannot be completely accounted for by their membership to a particular organization or group, even after a long period of intensive socialization (Manstead, 2000). Accordingly, value fit may have a distinctive effect on employees' evaluation of the potential implementation because people tend to commit to behavior that is congruent with their personal values (Ajzen, 1991).

Hypothesis 3: The degree of value fit is positively associated with the strength of commitment to implementation.

Employees may commit to a behavior if they believe that they *can* perform the behavior (Taylor & Todd, 1995; van Vuuren, de Jong, & Seydel, 2008). In the present framework, this proposition pertains to *resource fit*, a comparison between "personal" resources (e.g., skills, knowledge, experiences) needed to implement an innovation and personal resources available to a particular

individual. For example, adoption of advanced manufacturing technologies (AMTs) based on computerized systems removed tasks that are routine and simple, increasing overall difficulty of the remaining jobs (Dean, Yoon, & Susman, 1992). As a result, implementing AMTs often requires higher technical skills for successful operation. This may threaten employees who do not have adequate personal resources (e.g., computer literacy) to use the new technology (Zammuto & O'Connor, 1992). In general, high congruence between the innovation's resource demands and employees' current resources may positively influence motivation toward innovation use.

Hypothesis 4a: The degree of resource fit is positively associated with the strength of commitment to implementation.

Resource fit, reflecting the actor's belief concerning the feasibility of implementation behavior, establishes psychological readiness to perform the behavior. For this reason, resource fit may have a direct impact on implementation behavior beyond its indirect effect through commitment (Hypothesis 1 and 4a, see Figure 1). For example, empirical studies have demonstrated that self-efficacy for a specific behavior is a critical condition for actual performance of the behavior after controlling for motivation (Bandura, 1997).

Hypothesis 4b: The degree of resource fit is positively associated with the intensity of implementation behavior.

As to the relationship between the three fit constructs, we hypothesize that culture fit and resource fit predict value fit. The individual judgment of value fit can be influenced by culture fit because individuals are often subject to influences from their social surroundings such as organizations (Salancik & Pfeffer, 1978). Similarly, resource fit may affect the judgment

of value fit because people often consider plausibility of a particular behavior in shaping their cognitive image of the behavior (Ajzen, 1991).

Hypothesis 5a: The degree of culture fit is positively associated with the degree of value fit.

Hypothesis 5b: The degree of resource fit is positively associated with the degree of value fit.

In addition to the three fit constructs discussed above, the present framework includes a variable representing an overall organization context for innovation implementation, *implementation climate*, defined as "a target employee's perception of the extent to which his/her use of a specific innovation is rewarded, supported, and expected within his/her organization" (adapted from Klein & Sorra, 1996: 1060). Klein and Sorra proposed that implementation climate involves ensuring that employees have skills required to use the innovation through training and technical assistance; rewarding innovation use by both tangible and intangible incentives; and removing obstacles to innovation use by allowing enough time for experimentation with the innovation and keeping the innovation accessible to employees. A strong implementation climate attaches positive incentives (e.g., supervisor's acknowledgement, monetary reward) to innovation use and thus enhances organizational members' motivation for implementing the innovation (Ajzen, 1991).

Hypothesis 6a: The strength of implementation climate is positively associated with the strength of commitment to implementation.

Further, implementation climate in the form of training and technical assistance may equip employees with necessary skills and knowledge. For those innovations asking substantial skills and knowledge, organizations

often provide training/mentoring programs or technical manuals to better prepare their members (Clayton, 1997). This kind of organizational support may influence organizational members' perception of whether they can meet the technical demands of the innovation. In a sense, implementation climate supplies "situational" resources that reinforce personal resources of employees. In addition, with a strong implementation climate that offers various situational resources including rewards and training, employees are more likely to actually use the innovation (Klein & Sorra, 1992).

Hypothesis 6b: The strength of implementation climate is positively associated with the degree of resource fit.

Hypothesis 6c: The strength of implementation climate is positively associated with the intensity of implementation behavior.

In our empirical testing of this framework, we address three questions concerning organizational members' attitudinal and behavioral reactions to an innovation. First, we are interested in examining unique roles of the three fit constructs in the context of innovation implementation. Specifically, culture fit and value fit in this study represent supply-value fit, where fit is present when the environment provides values that are compatible with a person's preferences or needs, whereas resource fit reflects the idea of demand-ability fit, in which fit occurs when people have abilities that are demanded by their environment (Edwards, 1996; Muchinsky & Monahan, 1987). Because these two types of fit reflect distinctive contents and functions linking person and environment, we expect that the three fit constructs in our model play different roles in predicting commitment to implementation and implementation behavior. Second, we pursue the question of how employees' attitudinal and behavioral reactions to an innovation are influenced by their own individual characteristics (personal values, competencies) and the nature of the

implementation context (organizational culture, organizational support). One plausible scenario is that individual characteristics guide employees' commitment to implementation, whereas implementation contexts are more responsible for actual, public performance of implementation behavior. Finally, we examine the attitude-behavior relationship in the context of innovation implementation. Despite the prevalent belief about attitude-behavior consistency among organizational scholars (e.g., Hartwick & Barki, 1994), the social psychology literature has made a strong case of discrepancy between private attitude and public behavior (Terry, Hogg, & White, 2000). We are interested in how employees' attitudes about innovation implementation are associated, or dissociated, with their behavior of innovation use.

Ⅲ. Method

An empirical investigation of the person-environment fit has identified two distinct methods in measuring the fit construct. The first is the *actual fit* approach which relies on the comparison of two commensurate measures of personal and environmental dimensions. A measure about a person assesses the focal person's characteristics, such as personal values and skills. The corresponding measure of the environment assesses environmental characteristics, such as organizational culture and task requirements. The other is the *perceived fit* approach which directly measures individuals' judgment of congruence between their own characteristic and environmental attributes surrounding them. Measuring the degree of perceived fit involves questions comparing corresponding dimensions of person and environment, such as "Do you think your values reflect your own organization's values and 'personality'?" (Cable & Judge, 1997). Despite some controversies regarding the measurement of the fit construct (e.g. Kristoff, 1996), *perceived fit* is a more proximal predictor and

is considered as a better determinants of people's attitudinal and behavioral reactions (Cable & Judge, 1997; Cable & DeRue, 2002; Kristof-Brown, Zimmerman, & Johnson, 2005). Therefore we applied *perceived fit* measure in this research, leaving *actual fit* out of the scope of this paper. To analyze perceived fit data, we used structural equation modeling that tests complex relationships involving multiple predictors and outcomes as is the case for the present model (see Figure 1).

1. Data Collection Procedure

Empirical examination of the present framework involved two large Korean electronics companies where we used identical data collection procedures. First, we identified one target innovation per organization based on three criteria: (a) the innovation had been introduced into the organization within the twelve months prior to this field study; (b) the innovation introduced substantial changes in employees' behaviors and/or beliefs; and (c) implementing the innovation was regarded as a current and important management agenda item within the organization. Based on these criteria, "Six Sigma" (a statistical approach to quality management) and "Cyber Culture" (a cultural initiative pursuing a paperless office) were selected as the target innovations, both of which will be described in detail below.

The next step involved interviews with employees including innovation experts who were knowledgeable about the target innovation. Most of these experts were responsible for introducing and disseminating the target innovation in their organization. The interviews with the innovation experts were semi-structured, covering several pre-identified areas of interest: (a) a brief history of implementing the innovation within their organization; (b) individual skills and knowledge bases required to use the innovation; (c) organizational support such as top management's endorsement, training, and

incentives for using the innovation; and (d) appropriate forms of implementation behavior. Based on the interview data, we developed a survey instrument for each organization that reflected the nature of the target innovation and the distinctive organizational context for implementation. The collaborating managers reviewed and revised the instruments for the relevance of the questions and the appropriateness of the vocabulary. A final version of the survey instrument was administered to the employees who were supposed to use the target innovations.

2. Research Settings

The research settings consisted of two Korean electronics companies that have successfully developed, manufactured, and marketed their products worldwide and have maintained market leadership with some of their products. Below, we describe the characteristics of the target innovations and the organizational contexts for implementation.

1) Six Sigma and Sigma company

Six Sigma is an innovation that consists of a set of interventions and statistical tools designed to increase the quality of products including both goods and services. In a statistical sense, Sigma, a Greek letter, designates a standard deviation from the mean. A process with "Six Sigma" capability indicates that the process variation is reduced to the extent that no more than 3.4 parts per million fall outside of acceptable quality—that is, almost defect-free performance. More broadly, Six Sigma also refers to a philosophy, goals and/or methodologies that can be utilized to achieve extremely high-quality outputs. Largely developed by Motorola during 1980s, Six Sigma has become a widely used set of tools for advanced quality management.

Sigma is an independent operating business unit (OBU) within a large

electronics firm. Sigma specializes in optical storage devices. In 1998, Sigma's top management decided to adopt Six Sigma and the company began to establish infrastructures for Six Sigma by forming a task force responsible for introducing Six Sigma to the organization, obtaining external experts' help, preparing computer and software systems, and creating training courses. Since the beginning of 1999, Sigma has disseminated Six Sigma within the organization by training employees, assigning employees to project teams formed to utilize Six Sigma, and encouraging the use of Six Sigma tools in daily operations. During the interviews, innovation experts and other employees mentioned substantial pressure from the top managers to incorporate Six Sigma into daily tasks. Although the use of tangible rewards for using Six Sigma had not yet been implemented, Sigma planned to require proficiency and successful use of Six Sigma as a criterion for promotion in the coming year.

2) Cyber Culture and Cyber company

Cyber Culture is an innovation that began with a cultural campaign initiated in Cyber at the beginning of 1999. The Cyber Culture project was implemented to achieve 'paperless office' that utilizes information technologies with new work norms among white-collar workers. In particular, this cultural initiative encouraged employees to maximize the use of the electronic document system and the intranet for business transactions instead of having meetings in person. They were also induced to use brief phone calls and emails instead of using numerous formal documents. To support this change in the workplace, managers were asked to offer their subordinates considerable autonomy in day-by-day operations. Overall, Cyber Culture was an innovative project that aimed to increase efficiency in professional workers' performance by simplifying work procedures and speeding up communications among workers, utilizing 'cyber tools' such as the intranet.

Cyber is a large electronics company manufacturing household electronic goods as well as computers and semiconductors. This company has launched several innovations to improve the office work of its professional workers. Cyber Culture is a new initiative with a concrete image of a paperless office based on information technology. To encourage Cyber Culture, Cyber has used videotaped endorsements from the top managers and E-mail messages promoting Cyber Culture. Unlike Sigma, Cyber employees did not report any formal pressure to implement Cyber Culture. Instead, employees regarded Cyber Culture as a recommended way to work and felt substantial autonomy in implementing it.

3. Survey Instrument

To test the present hypotheses, we developed a survey instrument that is sensitive to the implementation context as well as to the target innovation. This goal was achieved through interviews with innovation experts and employees of the two participating organizations. Although two separate instruments were developed for each organization reflecting the nature of the innovation and the particular organizational contexts, they addressed the same set of constructs so that the results from the two organizations could be compared. Overall, the present research strategy allows a constructive replication of the proposed theoretical framework and thus increases the generalizability of the results when the results from different organizations show converging patterns (Rosenthal & Rosnow, 1991: 58-59).

1) Measuring fit

We measured each of the three fit constructs by asking participants about their subjective judgments regarding fit (perceived fit). Perceived culture fit was assessed by items such as "Six Sigma (Cyber Culture) matches with the

behaviors and mindsets emphasized in my company." Items for perceived value fit included "Through Six Sigma (Cyber Culture), I can do what I believe important" or "Six Sigma (Cyber Culture) is congruent with the work style that I prefer." An example item of the perceived-resource-fit scale is "I have enough skills and knowledge to implement Six Sigma (Cyber Culture)." For each of the three fit constructs, two-item and three-item scales were used in Cyber and Sigma, respectively. In both organizations, the scales measuring perceived fit showed acceptable reliabilities ranging from .70 to .90.

2) Measuring implementation climate.

To measure the implementation climate of Six Sigma, we used six items (α = .87) asking about training, technical assistance, and the support from top managers and direct supervisors (e.g., "I had enough training for Six Sigma," "I have adequate technical assistance for using Six Sigma," "My direct supervisor explicitly encourages the use of Six Sigma tools"). In Cyber, two items (α = .56) were used to measure the implementation climate: "The top management regularly and clearly states the importance of Cyber Culture," and "Our company equips with enough infrastructure that allows information sharing among all employees." Each item was followed by a six-point Likert-type scale, ranging from "not at all true" to "very true."

3) Measuring commitment to implementation

To measure participants' commitment to implementation, we used a three-item scale (α = .90 and .92 in Sigma and Cyber, respectively) including the items: "I believe that Six Sigma (Cyber Culture) leads to positive changes in my job," "I believe that Six Sigma (Cyber Culture) improves my performance at work," and "I want to fully implement Six Sigma (Cyber Culture) in my task."

4) Measuring implementation behavior

We developed items measuring participants' implementation behavior by transforming preliminary forms of implantation behavior that we achieved through interviews with experts. For Six Sigma, we developed a five-item scale (α = .94) including items such as "I perform my daily tasks using Six-Sigma tools," and "I have changed my work procedures according to Six Sigma." On the other hand, reflecting the multi-faceted nature of Cyber Culture, a seven-item scale (α = .83) was created to measure the intensity of six different behaviors (e.g., "I heavily use the electronic document system at work," "I use the intranet for task-related communication," "I try to remove paper documents in my work space") in addition to an item for the overall rating ("Overall, I perform behaviors to enhance Cyber Culture in my company"). Each item was followed by a six-point Likert-type scale, ranging from "strongly disagree" to "strongly agree."

Ⅳ. Results

The final sample included a total of 369 employees working in the two electronics companies. Among the 203 Sigma employees who completed the survey (response rate = 68 %), 191 participants provided usable data. The Sigma sample included 91 % males with a mean age of 34 years (*SD* = 5.45) and an average company tenure of 8 years (*SD* = 4.99). Thirty per cent of the sample reported that they occupied a managerial position. Of the initial sample of 183 Cyber employees (response rate = 61 %), 178 participants offered usable data. The Cyber sample included 88 % males and 38 % managers with an average age of 33 years (*SD* = 4.80) and a mean tenure of 8 years (*SD* = 4.70). Overall, the two samples from Sigma and Cyber showed sufficient similarity in terms of gender, age, tenure, and

hierarchical status that allows comparative analyses.

Tables 1 and 2 present means, standard deviations, and reliabilities of variables measured for Sigma and Cyber, respectively. All inter-scale correlations were in the predicted directions and in many cases statistically significant.

〈Table 1〉 Means, Standard Deviations, Reliabilities, and Correlations: Sigma Company[a]

Variables	M	SD	α	6	7	8	9	10	11
1. Perceived Culture Fit	4.00	.96	.90	--					
2. Perceived Value Fit	4.00	.93	.88	.69	--				
3. Perceived Resource Fit	3.49	.95	.77	.52	.65	--			
4. Implementation Climate	3.83	.91	.87	.56	.61	.68	--		
5. Commitment to Implementation	4.10	1.07	.90	.63	.70	.66	.64	--	
6. Implementation Behavior	3.40	1.01	.94	.49	.64	.78	.75	.68	--

[a] $r > .16$, $p < .05$; $r > .20$, $p < .01$ $r > .27$, $p < .001$

〈Table 2〉 Means, Standard Deviations, Reliabilities, and Correlations: Cyber Company[a]

Variables	M	SD	α	1	2	3	4	5	6
1. Perceived Culture Fit	3.91	1.00	.71	--					
2. Perceived Value Fit	4.29	1.06	.78	.59	--				
3. Perceived Resource Fit	4.17	.91	.70	.07	.20	--			
4. Implementation Climate	3.56	.96	.56	.40	.26	.06	--		
5. Commitment to Implementation	4.33	.92	.75	.57	.78	.30	.33	--	
6. Implementation Behavior	4.11	.78	.83	.20	.26	.44	.28	.38	--

[a] $r > .16$, $p < .05$; $r > .20$, $p < .01$; $r > .27$, $p < .001$

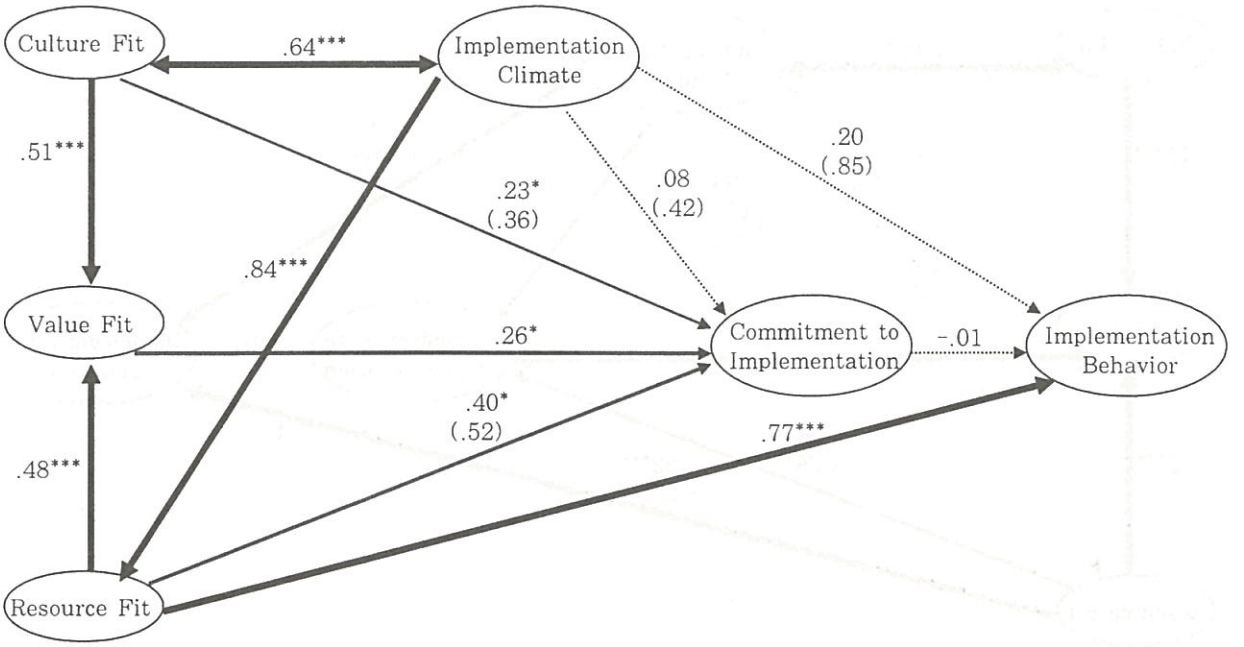
For the purpose of an overall empirical testing of the model presented in Figure 1, structural equation modeling (SEM) is an appropriate statistical procedure because it estimates relative impact of multiple predictors on multiple outcomes that are linked by more than two causal steps, controlling for measurement errors (Bentler, 1990). The present theoretical framework was fitted to the data from Sigma and Cyber using perceived fit measures. In both samples, the sample size was not large enough to

establish a measurement model incorporating all scale items as indicators of each latent variable. Thus, instead of creating a full measurement model, scale means were used as single indicators of corresponding latent factors (cf. Liang, Lawrence, Bennett, & Whitelaw, 1990). Measurement errors of each scale were incorporated into the model by setting random variance of a scale to its variance multiplied by one minus its reliability estimate (i.e., Variance × (1 - α), see Bollen, 1989).

For the sake of a complete comparison, the same conceptual model was tested for both samples without removing non-significant relationships. The results of this confirmatory latent-variable SEM with the EQS program (Bentler, 1990) are presented in Figure 2 and 3 prepared for Sigma and Cyber, respectively. In both samples, although several structural coefficients were not statistically significant, the proposed model showed good fit to the data (NNFI = .99 and .99, AGFI = .95 and .96, RMR = .019 and .017, for Sigma and Cyber, respectively). Modification indices suggested that the structural models could fit better to the data by removing non-significant paths, but no additional paths could significantly enhance the goodness of fit of the present model.

1) Structural model of the Sigma data

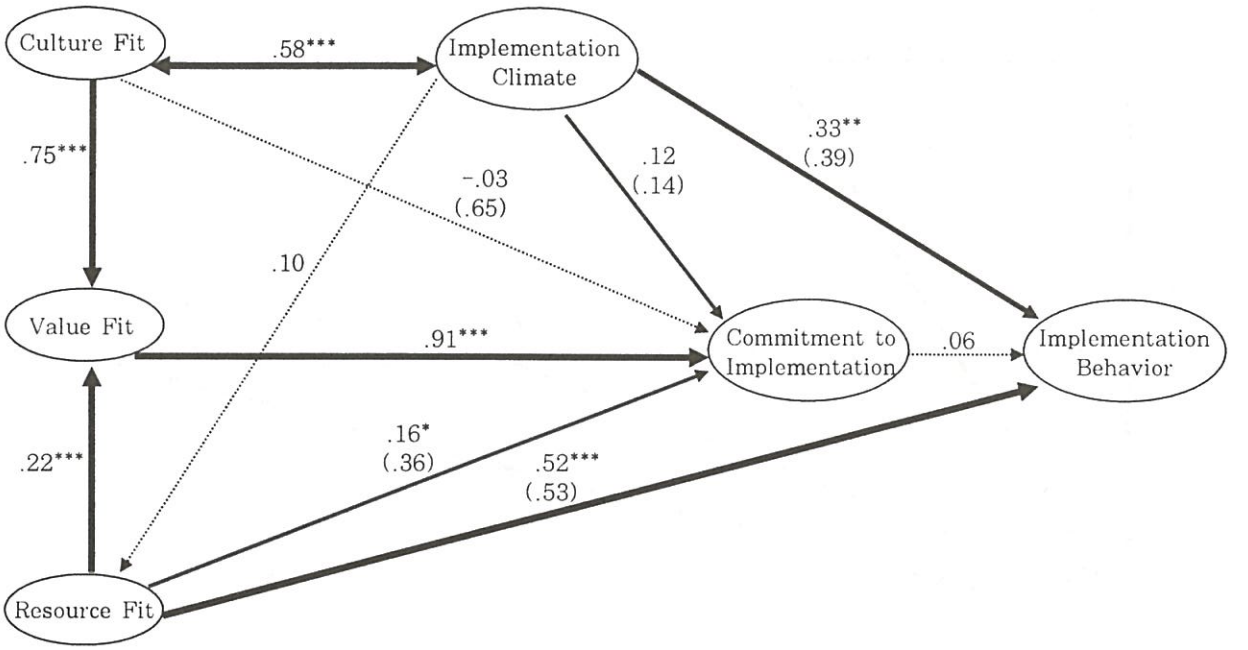
The structural model based on the Sigma data (see Figure 2) showed that, as hypothesized, value fit was significantly predicted by culture fit and resource fit. In addition, implementation climate largely determined employees' perceived resource fit (β = .84, p < .001). Confirming the hypotheses, all three fit indices showed significant impacts on commitment with the largest total effect from resource fit (.40 + .48 × .26 = .52) followed by culture fit (.23 + .51 × .26 = .36) and value fit (.26). Implementation climate also had a substantial total effect on commitment to implementing Six Sigma (.08 + .84 × .40 = .42).



[a] Chi-Square = 6.07 (n = 191, df = 4, p > .10); NFI = .99; NNFI = .99; CFI = .99; AGFI = .95; RMR = .019; RMSEA = .052
[b] Total effects appear in parentheses.
[c] Dotted lines indicate non-significant results. Thicker lines indicate more significant results.
* $p < .05$
** $p < .01$
*** $p < .001$

〈Figure 2〉 Test of the Proposed Conceptual Model: Sigma Company[a, b, c]

With regard to the hypotheses predicting implementation behavior, the Sigma data present mixed support. The impacts of resource fit and implementation climate on implementation behavior were highly significant (total effect sizes of .77 and .85, respectively, both $p < .001$). Surprisingly, commitment did not predict implementation behavior at all. The significant positive zero-order correlation between commitment and implementation behavior (r = .68, $p < .001$) completely disappeared when this link was tested with other relationships present simultaneously. Overall, implementation behavior of Six Sigma was strongly influenced by personal (resource fit) and situational resources (implementation climate) rather than by psychological commitment to the behavior.



[a] Chi-Square = 4.67 (n = 178, df = 4, p > .30); NFI = .99; NNFI = .99; CFI = .99; AGFI = .96; RMR = .017; RMSEA = .031
[b] Total effects appear in parentheses.
[c] Dotted lines indicate non-significant results. Thicker lines indicate more significant results.
* $p < .05$
** $p < .01$
*** $p < .001$

〈Figure 3〉 Test of the Proposed Conceptual Model: Cyber Company[a, b, c]

2) Structural model of the Cyber data

The same conceptual model was fitted to the Cyber data using the identical SEM procedure. As shown in Figure 3, the basic pattern observed in Sigma was replicated with the Cyber data. However, unlike Sigma, implementation climate in Cyber did not have significant impact on resource fit (β = .10, n.s.). In predicting commitment to implementing Cyber Culture, perceived value fit was the dominant predictor (β = .91, p 〈 .001), followed by culture fit (-.03 + .75 × .90 = .65) and resource fit (.16 + .22 × .90 = .36). With no formal pressure for immediate implementation, employees seemed to commit

to Cyber Culture based on their personal inclinations toward the innovation.

As to implementation behavior, resource fit and implementation climate were dominant predictors (total effect sizes of .52 and .39, respectively). Again, psychological commitment was not associated with implementation behavior at all. Although this pattern can be disregarded simply as a statistical artifact due to multicolinearity between predictors, the identical pattern observed in the two organizations may convey a substantive message. Perhaps there is a meaningful separation between psychological reactions (commitment to implementation) and behavioral reactions (implementation behavior) to an innovation in organizational settings.

V. Discussion

Understanding and identifying factors influencing individual-level processes in innovation implementation carry both theoretical and practical significance. This study addresses a critical gap in the innovation literature by exploring how individual organizational members react to innovations both psychologically and behaviorally. We proposed and tested a person-innovation fit framework, comparing impacts of individual characteristics and organizational attributes on both commitment to implementation and implementation behavior. Because the current data were collected in two Korean electronics companies, the present findings may have limited generalizability across different cultures (e.g., US firms) or other industrial settings (e.g., low-tech, stable industries). However, this study revealed several interesting patterns in organizational members' reactions to innovations, offering implications for both theory and practice.

1. Distinctive Impacts of Two Types of Fit on Commitment and Behavior

The person-environment fit literature has articulated two types of fit between individual and environmental characteristics: supplies-values fit and demands-abilities fit (Kristof, 1996; Muchinsky & Monahan, 1987). Supplies-values fit is present when the environment (e.g., organization, task) fulfills a person's values or preferences, whereas demands-abilities fit occurs if a person possesses abilities that are necessary to fulfill demands from the environment. Of the three fit constructs examined in this study, value fit and culture fit reflect the ideas of supplies-values fit and resource fit represents demands-abilities fit.

Previous studies have looked at the impact of supplies-values fit and demands-abilities fit on psychological outcomes, such as job satisfaction, organizational or job commitment, stress or well-being, and intention to leave (Kristof, 1996; Verquer, Beehr, & Wagner, 2003). Only a few studies have examined the relationship between supplies-values fit and behavioral outcomes such as turnover or organizational citizenship behaviors (O'Reilly & Chatman, 1996). Nevertheless, the existing literature is silent about how a person's behavior is influenced by demands-abilities fit, a construct that appears to have direct implications for behavior. Only recently, Kristof (1996: 31) speculated on the potentially different impacts of the two versions of fit on psychological and behavioral outcomes:

> "Supplementary (supplies-values) fit on values and goals may be predicted to have a strong effect on affective outcomes because they both involve attitudes, but a lesser effect on individual performance because they are distally removed from daily work behaviors. The opposite effect could be proposed for complementary (demands-abilities) fit on KSAs (i.e., knowledge, skills, and abilities), such that this type of fit would strongly influence daily on-the-job performance."

Supporting Kristof's speculation, the present study shows that supplies-values fit indices (in this study, value fit and culture fit) were highly predictive of psychological commitment but *not* of implementation behavior. In addition, implementation behavior was strongly associated with demands-abilities fit (in this study, resource fit) but *not* with the supplies-values fit indices. A clear demonstration of this pattern was obtained in structural equation models (see Figure 2 and 3). The overall pattern indicates that the two versions of fit were associated with different outcomes, rather than competing to explain more variance of the same outcome as has been often assumed.

2. The Role of Organizational Context

The present results suggest that individual-level processes of implementing innovations can be colored, or even directed, by the organizational context in which the implementation effort is embedded. The role played by organizational context was reflected in two aspects of the results: (a) determinants of psychological commitment, and (b) relative independence of attitude and behavior.

The present results suggest that the nature of implementation context determines which variables predicted employees' commitment to implementing an innovation. With strong organizational pressure in Sigma, both supplies-values fit (culture fit and value fit) and demands-abilities fit (resource fit) influenced employees' commitment to implementing Six Sigma. In a situation demanding the immediate utilization of an innovation, the two versions of fit may be tightly coupled and work together to shape employees' commitment to innovation use. In contrast, with no substantial pressure in Cyber, supplies-values fit, particularly value fit, determined employees' commitment to Cyber Culture. Apparently, in such an organizational context, personal inclinations toward potential implementation (value fit) might be sufficient for developing

psychological commitment.

Organizational context may also affect the relationship between employees' attitude and their behavior. In this study, although commitment to implementation and implementation behavior were highly correlated, they were not associated within the overall framework (see Figures 2 and 3). Obviously, this observation departs from the common assumption and existing findings that psychological commitment (e.g., attachment, intention, attitude) constitutes a key predecessor of actual behavior (Ajzen, 1991; Hartwick & Barki, 1994). In this study, however, organizational context, even in its minimal strength as in Cyber, may constitute a "strong social situation" that holds uniform expectancies regarding appropriate behavior, inducing behavioral uniformity among employees (Mischel, 1977). Therefore, simply being a member of an organization where implementing a particular innovation is a high priority led employees to implement the innovation if they had enough personal and situational resources, regardless of their personal judgment about implementation. Perhaps for this reason, psychological commitment was not related to actual behavior in the presence of resource-related factors such as resource fit and implementation climate in our samples. This finding implies a powerful role of situational constraints in shaping individual-level processes.

This separation between attitude and behavior might also be a result of the unique corporate culture of Korean firms, which strongly demand compliance and loyalty to the organization (Kim, 1992). Indeed, the collectivistic mindset in Asian countries (Triandis, 1994) may render the organizational context more forceful, resulting in a high level of behavioral compliance. In an individualistic culture such as the US, personal commitment may maintain its influence on implementation behavior, even after controlling for organizational influences. Future studies addressing this cultural issue may broaden our understanding of how organizational context operates on

individuals in different cultures.

3. Implications for Managing Innovations

The present findings suggest that organizations might use different strategies depending on the goal of the innovation to be implemented. If the ultimate goal of implementing a particular innovation is aligning employees' behavior with the ideas or practices of the target innovation, an effective implementation strategy may focus on personal and situational resources needed for implementation. Personal and situational resources seem to create a sufficient condition for employees' behavioral changes. An effective strategy for innovations targeting behavioral changes, therefore, may involve training programs that enhance personal resources as well as other organizational support that promotes experimentation, opportunities, and facilities for the innovation (Clayton, 1997; Klein & Sorra, 1996).

In the case of implementing innovations such as customer orientation, empowerment, and teamwork, the goal is to change values or the basic orientations to work and relationships held by employees rather than the task itself. Successful implementation of these innovations may require organizational members' voluntary effort based on their positive evaluation of the innovation. To this end, the present results recommend that change agents adapt the innovation and combine it with features that are desired by organizational members. This implementation strategy may increase positive values attached to the innovation, leading to commitment to implementation.

4. Implications for Research

Drawing on the current findings, future studies may focus on several issues not yet addressed here. First, the person-situation interaction in the context

of innovation implementation awaits a more sophisticated examination. The existing literature has focused on value aspects of person and situation (e.g., attitudinal control versus normative control of human behavior, see Trafimow, 2000). However, the current findings suggest that researchers may need to take resource-related factors (e.g., abilities, organizational support) into account to fully understand person-situation interaction. This seems particularly critical for understanding employees' public behaviors in organizational settings because organizationally-expected behaviors (e.g., innovation use, task performance) are often more seriously restrained by various resources than are those behaviors in personal domain (e.g., health behaviors). Thus, employees' behavior can be better predicted when collective influences of value and resource characteristics of person and situation that present at the particular moment. Of theoretical significance is the identification of potential mechanisms that link these factors (e.g., fit, additive or muliplicative relationship, moderation, mediation) with regard to employees' behavior.

Second, the issue of attitude-behavior consistency (or inconsistency) in organizational settings needs additional exploration. One interpretation for disjunction between attitude and behavior draws on social identity theory (Turner, 1987). Because people often behave as a *prototypical* member of a group, they can perform counter-attitudinal behaviors when group norms are not consistent with their personal attitudes (Trafimow, 2000). In fact, Terry et al. (2000) show that a strong social identity strengthens the relationship between social norms and behavior. However, when the particular behavior cannot be easily performed as is the case for many organizational tasks, the influence of social identity is restricted to the link between social norms and behavioral intention (Ajzen, 1991), rather than actual behavior. Instead, as the present findings imply, a strong social identity may strengthen the relationship between personal (or situational) resources and behavior. Further investigation should address the question of how organizational members'

social identity influence their adoption of social norms and performance of expected behavior.

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혁신에 대한 태도적, 행동적 반응: 개인 - 혁신간 적합성의 역할을 중심으로

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요 약

성공적인 혁신실행에 관한 기존연구는 경영관리적 내지는 조직 수준의 결정요인에 치우쳐 있었다. 이에 본 연구는 개인수준에 발생하는 심리적 과정에 초점을 맞추어 조직성원들의 혁신실행행동을 설명하는 이론적 모델을 제시하였다. 본 연구의 이론적 모델은 개인과 혁신간의 가치 및 자원의 적합성이 조직성원의 혁신에 대한 태도적, 행동적 반응에 긍정적 영향을 미침을 제시한다. 이러한 내용을 분석하기 위해 두 개의 국내 전자회사를 대상으로 실증연구를 실시하였다. 실증분석 결과 혁신의 가치와 조직문화 및 직원들의 개인적 가치 간의 적합성은 혁신실행에 대한 심리적 몰입에 영향을 미치는 반면, 개인과 혁신 간의 자원상의 적합성 및 상황적 자원의 가용성은 혁신실행의 실제적 행동을 결정하는 것으로 나타났다. 본 연구의 결과는 개인 및 혁신의 특성이 어떻게 결합되어 조직에서의 직원들의 태도적, 행동적 반응에 차별적인 영향을 미치는지에 대한 이해와 조직혁신과 관련한 실무적 시사점을 제시한다.

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