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# 실증적분석을 통한 전략정보 시스템 구축 방안에 관한 연구

-경쟁적인 우위를 얻기 위한 정보기술 구조와 경쟁 전략-

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## The Effect of IST Structure and Competitive Strategy on Competitive Advantage : An Empirical Investigation

*In a study involving 52 large organizations in the savings institutions industry, the relationship between information systems technology (IST) structure and competitive strategy was investigated based on structural contingency theory. Structural contingency theory argues that organizational performance is contingent on the congruence between structure and contingent factors. Competitive strategy is considered to be the most important contingent factor among organizational context variables. Two dimensions of IST structure and three types of competitive strategy were employed to test a contingency model. It was found that enhanced congruence between IST structure and competitive strategy was associated with higher competitive advantage. The structural dimension significantly associated with the "defender" strategic stance was more centralized and more integrated application of IST, while the structural dimension significantly associated with "prospector" positioning was more decentralized and less integrated application of IST.*

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## I . INTRODUCTION

In recent years, there has been increasing recognition of the strategic value of information system technology (IST) in a wide range of businesses. The strategic impact of IST has attracted the attention of computer and social scientists as well as business managers. Many articles on the strategic use of IST have appeared in the business literature [Reich and Benbasat, 1990; Venkatraman and Short, 1990; King et al., 1989; Johnston and Carrico, 1988; Copeland and McKenney, 1988; McFarlan, 1984; Cash and Konsynski, 1985; Porter and Millar, 1985].

IST is too important to remain the sole domain of technologists. Senior executives and line managers are increasingly turning their attention toward opportunities for achieving competitive advantage through IST [Bakos and Treacy, 1986]. In particular, they are struggling to strategize how these new technologies can be linked to their organization's activities in innovative ways that create sustainable competitive advantage.

Strategic information systems (SIS) are now considered as one of the most important weapons used by an organization in

gaining competitive advantages [Wiseman, 1988; Clemons and Row, 1988]. Thus, the success of an SIS depends on its ability to establish or enhance competitive advantages [Reich and Benbasat, 1990; Sethi, 1988].

One of the factors identified as being significant in SIS success is IST structure. Structuring an organization effectively is paramount for its survival. This study addresses the following question: How can the IST be best structured in the savings institutions industry? The dominant approach to explaining organizational structure in the management literature has been structural contingency theory, which argues that the design of the organization should depend on various contextual factors. The present study is designed to answer the above question by applying structural contingency theory.

The empirical and theoretical development of the structure-strategy relationship has progressed rapidly since structural contingency theory was developed. Channon [1973], Rumelt [1974], and Galbraith and Nathanson [1978] provided the direction for developing this link in models of organization design. This line of research has posited that organizational performance is contingent on a congru-

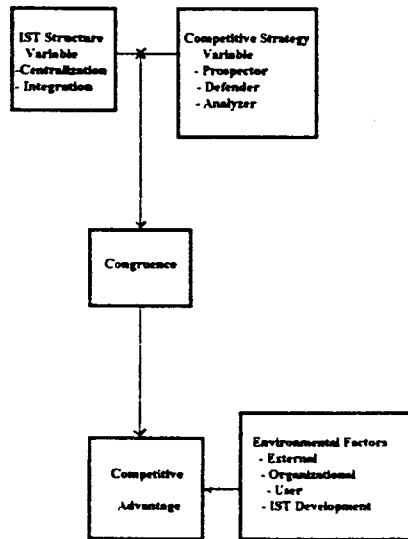


Figure 1.1 Overall Research Framework

ence between strategy and structure, and that organization structures should depend on the strategies used.

Based upon structural contingency theory, it seems logical to infer that a match between IST structure and competitive strategy leads to competitive advantage. The success of a strategic information system is based on how well it responds to the demands and expectations of its organization. Thus, it is appropriate to select SIS success as the dependent variable to test the structural contingency perspective.

The purpose of this research is to test a contingency prediction of competitive advantage. In contingency theory an assertion of fit implies relationship between two variables, which in turn predicts a third

variable [Schoonhoven, 1981]. The assertion studied in this study is: There is a relationship between IST structure and competitive strategy, and this relationship affects competitive advantage. The overall research framework is shown in Figure 1.1.

## II. LITERATURE REVIEW

### 1. Structure and Strategy

Management's strategic choices shape the organization's structure [Miles and Snow, 1978]. Chandler [1962], Channon [1973], Child [1972], and Galbraith and Nathanson [1978] studied the compatibility of strategy and organizational structure. One of the most influential pro-

ponents of the link between strategy and structure was Chandler [1962], who discussed the impact of strategy on organization structure. He found that no simple causal linkage exists between strategy and structure, but that relationships between strategy and structure definitely exist.

Following the early work of Chandler, other authors such as Thompson [1967], Lawrence and Lorsch [1969], Perrow [1967], and Galbraith [1973] have attempted to develop frameworks and criteria for making choices about organizational structure and processes given the nature of the environment and management's choice of strategy. Among these frameworks, Miles and Snow's is most widely accepted as resting on the most rigorous theoretical background because of its comprehensiveness [Zahra and Pearce, 1990]. Miles and Snow [1978] investigated interrelationships of various organizational attributes within each strategy type, e.g., structure, control mechanism, strategic planning, market entry behavior, and power distribution. Miles and Snow contended that all these strategies perform equally well in any industry, provided that the strategy is well implemented. Snow and Hrebiniak's [1980] study supported their contention. Miles and Snow deter-

mined that four types of organizations, i.e. prospector, analyzer, defender, and reactor, tend to develop certain internal consistencies and perpetuate their strategies. Zahra [1987] pointed out that managerial orientations vary among the Miles and Snow typology. Prospectors stress risk taking, innovation, and growth oriented objectives, whereas defenders emphasize the match between strategy and structure.

A generally accepted tenet of business policy is that management will form an organization structure congruent with the requirements of strategy [Bart, 1986]. The root of this argument stems from studies which indicate that relationships between strategy and structure exist [Bower, 1970; Chandler, 1962; Scott, 1973]. The second reason for this argument is that the choice of organization structure will make a difference in strategy implementation [Lawrence and Lorsch, 1967; Lorsch and Allen, 1973; Lorsch, 1976; and Rumelt, 1974]. A compatible match between these two variables will facilitate the implementation part of a strategy [Christen et al., 1980; Jelinek et al., 1981].

Thus, it is reasonable to investigate the relationship between IST structure and competitive strategy based on the theoretical background of structure and strategy.

Also, structural contingency theory connects these two variables and SIS success.

## 2. Empirical Study on MIS Structure

Ein-Dor and Segev [1982], using a sample of 53 organizations in a large U.S. metropolitan area, tested the proposition that organizational structure is related to the dimensions of MIS structure. Their major findings were that MIS structure is significantly correlated with organizational structure which, in turn, is closely associated with organizational size. Additional relationships were found between organizational size and the rank of the MIS director and between implementor/user relationships and psychological climate toward MIS.

Ahituv et al. [1989], using a sample of 303 organizations, tested the relationship between organization attributes and the deployment of hardware resources. The salient finding was that the most influential variable is distribution of decision making processes in the organization. No significant relationships were found between hardware distribution, organizational structure, and the size of the organization.

Tavakolian [1989], in a study of 52 large organizations in the computer com-

ponents industry, investigated the relationship between IST structure and organizational strategy.

The major finding was that IST structure, as measured by the locus of responsibilities for information systems, is strongly related to organizational strategy. There are common weaknesses in the research design of empirical investigations based on the above literature. Although the importance of IST as a tool for organizational strategy is emphasized, little empirical research considers competitive strategy as an organizational context variable. Moreover, all of these studies do not treat organizational competitive advantage as a dependent variable. Most utilized financial performance measures such as return on investment (ROI), return on assets (ROA), or profitability, in a simple correlational research design without controlling extraneous variables. In the absence of adequate control, the existence of simple correlation between two variables does not reveal anything about the nature of the underlying relationship. Without controlling the effects of extraneous variables upon the dependent variable, the relationship among the dependent and independent variables cannot be accurately measured.

### III. HYPOTHESES

A prospector is inclined to have complex coordination mechanisms with decentralized control. A prospector tends to develop and implement SIS through extensive IST to gain competitive advantage. A prospector must be willing to alter its IST structure in order to facilitate rapid responses to environmental change. A prospector develops and implements an IST with a low degree of centralization since it would not be economically feasible to adapt a highly centralized system to a very competitive environment. The effectiveness orientation requires the prospector's control system to be decentralized. Decentralized decision making and control facilitate and enhance the organization's ability to respond rapidly to environmental change and even to create such change. Based upon Miles and Snow's theory, it is logical to expect that the IST structure of a prospector must be more decentralized in locus of authority for IST activities than that of a defender.

A defender is usually in a position to establish a stable IST and IST structure suitable to gain maximum competitive advantage from IST application. Defenders generally outperform prospectors in terms

of profitability, while prospectors outperform defenders in terms of market share gain in innovative industries. A defender has a tendency to rely on both centralization of decision making and a vertical integration system. Also, the degree of IST integration is dependent upon the organization's strategic type due to the interdependence of IST [Rockart and Short, 1989].

Acceptance of IST as a strategic business factor is now commonplace. Because recent organizations strategically use IST to gain competitive advantage [Johnston and Carrico, 1988; Bakos and Treacy, 1986; Cash and Konsynski, 1985; Porter and Millar, 1985; McFarlan, 1984; Parsons, 1983; Pyburn, 1983], it seems logical to infer a strong relationship between competitive strategy and IST structure. Based upon structural contingency theory, the relationship between IST structure and competitive strategy implies an interaction, which predicts a third variable (competitive advantage).

Building upon an understanding of the organizational competitive strategy typology and IST structure dimensions, we can explore the best match, in terms of organizational competitive advantage, between the strategy types and the IST

structure dimensions. According to Miles and Snow [1978], there are four strategy types: prospector, defender, analyzer, and reactor. This paper deals with variation within each of the three basic types (excluding reactors) by varying IST structure. Based on the above discussion the Hypotheses are:

- H1 : A centralized IST of an organization will interact with the organization's strategy to influence its competitive advantage.
- H1a : When an organization is a defender, centralization of IST will positively influence competitive advantage.
- H1b : When an organization is a prospector, centralization of IST will negatively influence competitive advantage.
- H2 : IST integration of an organization will interact with the organization's strategy to influence its competitive advantage.
- H2a : When an organization is a defender, integration will positively influence competitive advantage.
- H2b : When an organization is a prospector, integration will negatively influence competitive advantage.

## IV. MEASURES

**Competitive Strategy:** The present study applies the competitive strategic typology framework developed by Miles and Snow [1978] because of its comprehensiveness [Zahra and Pearce, 1990]. This typology classifies strategies into four basic types, i.e., prospectors, defenders, analyzers, and reactors, and describes in detail characteristics and attributes of organizations following each strategy type. The features of each type have been presented in detail in Miles and Snow [1978], Miles, Snow, Meyer, and Coleman [1978], and Miles [1982]. Since a reactor is an organization that lacks a consistent strategy in dealing with environmental forces, this type is not included in this research.

**IST Structure:** According to Ein-Dor and Segev [1982], MIS structure is a multi-attribute variable since it consists of several dimensions. These are the degree of centralization of IST, degree of integration of IST, deployment of hardware, and place within the organizational hierarchy. Loch [1988] described MIS structure as a combination of integration and flexibility. Tavakolian [1989] used IST structure as the degree of centralization for IST

activities Various authors have posited a variety of IST structure dimensions. Two dimensions are commonly accepted as representing IST structure. These dimensions are IST centralization and IST integration.

**IST Centralization:** The centralization or decentralization of decision making in IST activities is of considerable interest. Centralized IST organizations are those that control all system development activities from one centralized location. This does not suggest that all personnel involved in system development must be physically located in one central organizational unit. The degree of centralization means the centralization of the development and implementation activities within the organization. Tavakolian's [1989] instrument measuring the degree of IST centralization is used to operationalize IST centralization.

**IST Integration:** IST is driving new and powerful forms of integration in companies [Benjamin and Scott Morton, 1988]. Integration of IST throughout the organization is an important factor in the strategic use of IST [Kim and Michelman, 1990]. Different forms of integration realized through improved communication and larger, more complete data bases are often the basis for deriving strategic

advantages [Benjamin and Scott Morton, 1988]. That is, strategic information systems must generally integrate the more traditional transaction processing and information reporting systems.

In this study, the dimension of integration of IST is the integration of data from different areas of the organization by means of a database management system. In particular, IST integration is critical if existing corporate databases and other applications are to communicate with new systems under design so as to avoid redundant development and maintenance efforts. IST integration in this study is measured using three questions developed by Ein-Dor and Segev [1982]

**Dependent Variable:** In this study, competitive advantage (CA) measures are used to represent SIS success because commonly used financial measures may be inappropriate in the case of strategic use of IST. The contribution made by the IST to the profitability and competitive strength of a company is difficult to isolate by examining the company's financial statements [Reich and Benbasat, 1990]. For the purposes of this research, competitive advantage is chosen as the prime criterion of SIS success. To measure the extent to which IST provides competitive advantage,



Sethi's [1988] instrument "Competitive Advantage from an Information Technology Application" were employed.

**Extraneous Variables:** To identify the confounding variables that may affect the success of SIS, the IS research framework provided by Ives, Hamilton, and Davis [1980] is utilized. The extraneous variables included in the research design are organizational size, organizational structure, organizational rank of IS manager, top management support, and user participation.

The measurement scales were taken from previous studies. Organizational size was measured by the amount of assets. The rank of the IS manager was measured by the position's number of levels below the chief executive officer of the savings institution. Organizational structure was measured by asking the CEO to indicate the degree of centralization of the organization. Top management support was measured by asking IS managers to indicate their degree of agreement with the description of top management support on a five point scale. User participation was measured by averaging IS managers' responses to two questions on five-point scales: (1) about user involvement in the development of new SIS applications and

(2) about user involvement in the performance evaluation of the SIS.

## V. METHODOLOGY

### 1. Unit of Analysis

In this research, the unit of analysis is the savings institution organization. In order to find a relationship between IST structure, competitive strategy, and competitive advantage, the linkage among them must be bounded by the unit of analysis.

### 2. Data Collection

A field survey was used for data collection because of the large sample size requirement. The sample consisted of 52 savings institutions listed in the 500 largest savings institutions directory in the U. S.

The main research design in this study is a cross-sectional survey using a mail questionnaire. Each participating savings institution is asked to respond to two different questionnaires. One questionnaire is directed at the CEO or a senior management member who could accurately express the opinions of the head of the insti-

tution. The second questionnaire is directed to the top level IS manager. The CEO is the primary respondent for strategy typology and most of the extraneous variables. In particular, the CEO is very important in strategy formulation [Chandler, 1962]. Chief executives' perceptions of their organizations' strategies are more closely aligned to external measures of strategy than the perceptions of other executives [Hambrick, 1981]. It is now widely believed that to exploit strategic opportunities from IST, the chief executive must view IST as a component of competitive strategy. As applications of IST become a necessary element of organizational strategy, the CEO's leadership and views about investments in IST are anticipated to become considerably more relevant and, presumably, more instrumental in corporate success or failure [Clemons and Row, 1989].

74 replies (39.8% response rate) were collected from the 186 questionnaires sent to the President/CEO. All the replies were usable. The number of usable responses from IS managers was 72. These returns provided 57 matched pairs of questionnaires (30.6% response rate), among which three questionnaires were not fully completed and were therefore removed from the subsequent analysis.

## VI. CORRELATION AMONG VARIABLES

Table 1 represents the zero-order correlation matrix among competitive advantage and the independent variables. As can be seen from the table, IST centralization is highly correlated with organizational structure (0.251,  $p=0.05$ ). According to Ein-Dor and Segev [1982], MIS structure is significantly correlated with organizational structure.

The degree of centralized IST activities is highly correlated with the structure of the organization (0.251,  $p=0.05$ ). User involvement is significantly correlated with top management support (0.325,  $p=0.05$ ). The opportunities for users to get involved in the functions of IST increased with an increase in top management support. Also, there was a high correlation between the organizational rank of IS director (-0.319,  $p=0.05$ ), measured by the number of levels below the President/CEO, and the degree of user involvement. The negative correlation means that the higher the IS director's organizational rank, the more opportunities for user involvement.

Asset size is highly correlated with the organizational rank of the IS director (-0.374,  $p=0.01$ ). The larger the asset size, the

Table 1. Correlations among Variables

Construct	CA	2	3	4	5	6	7
Structural Variables							
1. ITCENT	.272*						
2. ITINT	.193	.175					
Extraneous Variables							
3. UINVOL	.059	.018	.105				
4. ASSET	.278*	-.032	.042	.008			
5. OSTR	-.053	.251*	.211	.027	.014		
6. ISLEVEL	-.098	-.243	-.232	-.319*	-.374**	-.266*	
7. TOPART	.517**	.183	2.096	.325*	-.086	.022	-.111

Notes : N=52, \* p<.05, \*\* p<.01

higher the IS director's organizational rank. The structure of the organization is highly correlated with the organizational rank of the IS director (-0.266, p=0.05). The more decentralized the organization, the higher the IS director's organizational rank.

Finally, the competitive advantage of savings institutions is significantly correlated with the centralization of IST (0.272, p=0.05), asset size (0.278, p=0.05), and top management support (0.517, p=0.01) of the organization. Asset size and top management support are controlled as extraneous variables.

## VII. SAMPLE SIZE

It is necessary to determine the appropri-

ate sample size for this research. In the absence of substantive guidelines, Cohen [1983] recommends that the power of 0.80 be sought. Also, a conventional alpha level of 0.05 is accepted as a rule of thumb. Jaccard et al. [1990] show appropriate sample sizes to achieve a power of 0.80 at an alpha level of 0.05 in the case of the squared multiple correlation in the population for the main-effect-only model (0.25) and the corresponding squared multiple correlation for the full model (0.40). The approximate sample size that is needed to achieve power of 0.80 for testing the interaction effect at an alpha level of 0.05 is larger than 33 [Jaccard et al., 1990]. Therefore, the sample size of 52 is enough to test the proposed hypotheses.

## VIII. TEST OF HYPOTHESES

Drazin and Van de Ven [1985] classified three approaches to measure fit in structural contingency theory: the selection, interaction, and systems approaches. This study used the interaction approach, which defines fit as the interaction of pairs of organizational context-structure factors.

The interaction hypotheses were tested using hierarchical multiple analysis as suggested by Blalock [1979], Arnold [1982], and Cohen and Cohen [1983]. In this study, it was hypothesized that competitive advantage was affected by the interaction between IST structure and competitive strategy. That is, the form of relationships between IST structure and SIS success is contingent upon the competitive strategy. One tailed tests were used since all of the hypotheses specified the direction of the expected relationships. Thus, the null hypothesis that is being evaluated is that the regression coefficient for the product term is zero in the population.

## IX. RESULTS

In order to test hypothesis 1, the effect on competitive advantage of the interac-

tion between IST centralization and competitive strategy, the following regression formulas were developed:

$$\begin{aligned} CA = & B1 + B2xTOPART + B3xISLEVEL \\ & + B4xOSTR + B5xASSET \\ & + B6xUINVOL + B7xITCENT \\ & + B8xE1 + B9xE2 + e \end{aligned} \quad (1)$$

$$\begin{aligned} CA = & B1 + B2xTOPART + B3xISLEVEL \\ & + B4xOSTR + B5xASSET \\ & + B6xUINVOL + B7xITCENT \\ & + B8xE1 + B9xE2 + B10xE3 \\ & + B11xE4 + e \end{aligned} \quad (2)$$

where

CA is the overall competitive advantage of the organization

ISLEVEL is the organizational rank of the responsible executive

OSTR is the degree of organizational structure

TOPART is the level of top management support

ASSET is the total asset size of savings institution

UINVOL is the level of user participation in SIS development

ITCENT is the degree of IST centralization

E1 and E2 are effect coding for competi-

### tive strategy

### E3 and E4 are the interaction of IST centralization-competitive strategy for competitive advantage

In models (1) and (2), the constituent variables of centralization x competitive strategy (E1, E2, E3, E4, ITCENT) were included to partial out all the lower order main effects from the higher order interaction effect. In model (2), IST centralization-competitive strategy interaction was added to model (1).

The regression results are presented in Table 3. The F-ratios for both models were significant at an alpha level of 0.05. A test was performed to see whether the addition of the interaction term resulted in a significant increment in the percent of variance explained in the criterion variable. The regression result, a one-tailed test, indicated that the centralization-competitive strategy interaction, H1, was significantly different from zero at an alpha of 0.05. The investigation of H1 indicates that IST centralization significantly influenced the competitive advantage when the extraneous variables were controlled.

Further analysis to test the subhypotheses, H1a and H1b, was performed. Examining the sign of the interaction term can

indicate whether the effect is in the hypothesized direction. As shown in Table 2, the direction of the interaction for the defender strategy is positive (H1a: +2.37\*). When an organization is a defender, centralization positively influences competitive advantage, an effect which was significant at an alpha level of 0.05. In a prospector organization, centralization negatively influences competitive advantage, constituting another significant effect (H2b: -1.33\*). Thus, H1a and H2b were supported.

In order to test hypothesis 2, the effect on competitive advantage of the interaction between IST integration and competitive strategy, the following regression formulas were developed:

$$\begin{aligned} CA = & B_1 + B_2 \times TOPART + B_3 \times ISLEVEL \\ & + B_4 \times OSTR + B_5 \times ASSET \\ & + B_6 \times UINVOL + B_7 \times ITINT \\ & + B_8 \times E1 + B_9 \times E2 + e \end{aligned} \quad (3)$$

$$\begin{aligned} CA = & B_1 + B_2 \times TOPPART + B_3 \times ISLEVEL \\ & + B_4 \times OSTR + B_5 \times ASSET \\ & + B_6 \times UINVOL + B_7 \times ITINT \\ & + B_8 \times E1 + B_9 \times E2 + B_{10} \times E3 \\ & + B_{11} \times E4 + e \end{aligned} \quad (4)$$

where

ITINT is the degree of IST integration

Table 2

## Direction of Hypothesis 1

## 1. Regression Model

$$CA = 23.58 - 0.48xUINVOL + 3.95^{**}xASSET - 1.22xOSTR + 1.81xISLEVEL + 5.70^{**}xTOPART + 1.52^{**}xITCENT - 49.75^{**}xE1 + 27.21^{*}xE2 + 2.37^{**}xE3 - 1.33^{*}xE4$$

## 2. Effect Code

$$E3 = E1xITCENT$$

$$E4 = E2xITCENT$$

## 3. Directions of H1

(1) Defender ( $E1 = 1, E2 = 0$ )

$$2.37^{**}xE3 - 1.33^{*}xE4 = +2.37^{**}xITCENT: \text{positive}$$

(2) Prospector ( $E1 = 0, E2 = 1$ )

$$2.37^{**}xE3 - 1.33^{*}xE4 = -1.33^{*}xITCENT: \text{negative}$$

(3) Analyzer ( $E1 = -1, E2 = -1$ )

$$2.37^{**}xE3 - 1.33^{*}xE4 = -1.04xITCENT: \text{negative}$$

Notes : N=52, \*  $p < .05$ , \*\*  $p < .01$ 

Table 3

## Multiple Regression Results for H1

Variables	Model (1)	Model (2)
TOPART	5.81**	5.70**
ASSET	3.55*	3.95**
OSTR	-1.92	-1.22
ISLEVEL	1.15	1.81
UINVOL	-2.60	-.48
ITCENT	.91	1.52**
E1	-3.02	-49.75**
E2	1.73	27.21*
E3		2.37**
E4		-1.33*
R2	.461	.603
F-ratio	3.640**	4.865**
p(F)	.0037	.0003

F-ratio of R2 increment 5.721\*\* ( $p = .0075$ )Notes : N=52, \*  $p < .05$ , \*\*  $p < .01$

Table 4

## Direction of Hypothesis 2

## 1. Regression model

$$CA = 60.11 - 0.91xUINVOL + 1.82xASSET - 2.21xOSTR + 1.61xISLEVEL + 5.49 * * xTOPPART + 0.55xITINT - 23.98**xE1 + 13.92*xE2 + 2.07**xE3 - 1.35*xE4$$

## 2. Effect code

$$E3 = E1 \times ITINT$$

$$E4 = E2 \times ITINT$$

## 3. Direction of H2

(1) Defender (E1 = 1, E2 = 0)

$$2.07**xE3 - 1.35*xE4 = +2.07**xITINT: \text{positive}$$

(2) Prospector (E1 = 0, E2 = 1)

$$2.07**xE3 - 1.35*xE4 = -1.35xITINT: \text{negative}$$

(3) Analyzer (E1 = -1, E2 = -1)

$$2.07**xE3 - 1.35*xE4 = -0.72xITINT: \text{negative}$$

Notes : N=52, \* p&lt;.05, \*\*p&lt;.01

Table 5

## Multiple Regression Results for H2

Variables	Model (3)	Model (4)
TOPART	6.20**	5.49**
ASSET	3.00	1.82
OSTR	-1.49	-2.21
ISLEVEL	1.00	1.61
UINVOL	- 0.82	- .91
ITINT	.53	.55
E1	- 1.94	-23.98**
E2	1.12	13.92*
E3		2.07**
E4		- 1.35*
R2	.416	.615
F-ratio	2.760*	4.639**
p(F)	.0199	.0006

F-ratio of R2 increment 7.515\*\* (p=.0023)

Notes : N=52, \*p&lt;.05, \*\*p&lt;.01

In model (4), the IST integration-competitive strategy interaction term was added to model (3). The regression results were also represented in Table 5. The F-ratios for both models were significant at an alpha level of 0.01. Testing the incremental R<sup>2</sup> between model (3) and model (4) indicated that the interaction between IST integration and competitive strategy significantly influenced competitive advantage when the extraneous variables were controlled.

Further analysis to test H2a and H2b was performed. Examining the sign of the interaction term can indicate whether the effect is in the hypothesized direction. As is shown in Table 4, the direction of the interaction with the defender strategy was positive (+2.07), which was significant at an alpha level of 0.01. For an organization which was a defender, integration of IST positively influenced competitive advantage. When an organization was a prospector, integration of IST negatively (-1.35) influenced competitive advantage. Thus, H2a and H2b were supported.

## X. CONCLUSIONS

Summarizing the overall findings with respect to organizational competitive strat-

egy and IST structure, there was a significant relationship between IST structure and competitive strategy, and this relationship affected the competitive advantage of savings institutions, as expected. In other words, the congruence between IST structure and competitive strategy leads to increased competitive advantage, when the effects of extraneous variables are controlled. The structural dimension significantly associated with the defender strategic stance was more centralized and more integrated application of IST, while the structural dimension significantly associated with the prospector strategy type was more decentralized and less integrated application of IST. These findings provide support for the major argument of structural contingency theory in which organizational competitive advantage is contingent upon a congruence between IST structure and competitive strategy.

Based on these findings, a conservative competitive strategy exerts pressure for the centralization of IST responsibilities, while an aggressive competitive strategy exerts pressure for the decentralization of IST responsibilities. However, the managers of aggressive decentralized savings institutions may insist on maintaining close control over IST activities to integrate



them closely with the organization's strategy. In general, the findings of this study additionally support the organizational fit

concept and Miles and Snow's [1978] theory.

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## ◇ 저자소개 ◇



공동저자 김승남은 연세대학교에서 토목학과를 졸업하고 연세대학교에서 경영학석사, 조선대학교에서 경영학박사 학위를 취득하였으며 현재 조선대학교에서 경상대학장 및 중소기업 대학원 원장을 겸직하고 있다. 주요 관심 분야는 정보기술, 일정 계획, 물류관리, FMS/CIM 등이다.



공동저자 정락재는 연세대학교 경영학과를 졸업 후, 미국 오레곤 주립대학교 MBA와 네브라스카 대학에서 경영학 박사학위(경영정보시스템 전공)를 취득하였으며, 현재 용인대학교 경영정보학과에 재직하고 있다. 주요 관심 분야는 정보시스템 전략 및 관리, 정보기술의 전략적 활용, EDI 시스템을 포함한 통신관련 정보 시스템 등이다.