

CONTINGENCY PERSPECTIVES ON KNOWLEDGE-BASED SYSTEMS: MODERATION FITNESS OF STRATEGIC GROUPS AND BUSINESS CYCLES ON VALUE RELEVANCE

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ABSTRACT. *This paper aims to discover and extract the potential and valuable knowledge by exploring the value relevance of intellectual capital (IC) and financial capital (FC), and the moderation fitness of strategic groups (SG) and business cycles (BC). It combines the domains of knowledge management (KM), IC, strategy and finance. By applying SG and BC, and citing complete IC aspects to combine FC of Ohlson model, this paper is cross disciplinary and would be helpful in performing strategic knowledge-based systems to maintain and further create higher firm value (V). The results indicate the contingency perspective on strategic knowledge-based systems. In addition to ICs and FC, the moderation fitness of SGs and BCs must be taken into account. The value relevancy and variables significance of ICs and FC are moderated by SG and BC. Corporations must formulate strategies based on the BC, and the adopted strategies give shareholders the signals.*

Keywords: Knowledge-based systems, Clustering and data analysis, Multi-group analysis, Intellectual capital, Resource-based-value, Environment-strategy-performance

1. **Introduction.** Porter [1] proposed the resource-based-value (RBV) argument and indicated that the competitive advantages are valuable resources, which are often intangible assets. For intellectual capital (IC), commonly referred as “intangible assets” and relative extremely to knowledge-based systems, Edvinsson and Malone [2] classified it into customer, process, innovation, and human capital is being recognized as a strong driver of firm value (V) [3,4]. Since the capital market’s evaluation is no longer limited to tangible elements in today’s knowledge economy, many scholars also revealed that knowledge management (KM) is one of the major driving forces of performance and V [5-7]. While the issues of KM have been widely discussed by numerous researchers, there is a paucity of studies with respect to the impact direction and magnitude of indicators for KM research and practice, and how IC impacts organizational performance [8-11]. Naidenova and Oskolkova [12] combined the theory of IC with value-based management and RBV to investigate the way that firm’s intellectual resources transform into its value. Therefore, this paper aims to investigate the impact direction and magnitude of IC on the business V.

Creating shareholder value has become a corporate slogan and management anthem since the 1990s [13]. The main goal of corporation is to maximize V, and the shareholders expect managers to pursue maximum shareholders’ wealth. The Ohlson model [14,15] – renowned for creating a profound impact on accounting research – serves as the basis for business valuations in the capital market. However, the empirical study of Ohlson model

has yet to yield clear results with respect to “other information” [16]. Given the theoretical framework that V is equal to the sum of financial capital (FC) and IC (non-FC), this paper combines the Ohlson model and ICs as the proxies of other information for deeply exploring the influences of FC and ICs on V . Exploring the factors affecting shareholders’ wealth is valuable in understanding the capital market’s evaluation of corporations.

This paper follows the RBV and environment-strategy-performance (ESP) framework [17-19]. It attempts to integrate the cross knowledge fields in the hope of extracting the potential and valuable knowledge. Under the framework that firm V is equal to the sum of IC and FC, the paper considers the complete IC aspects as “other information” to combine the Ohlson model with IC. In order to recognize whether the model will be moderated for strategic groups (SGs) and business cycles (BCs), this study draws clustering and data analysis to classify the samples, and uses multi-group analysis to explore the models’ explanatory capacity and variables’ significance. The results would serve as the managerial criterion of ICs and FC, and be helpful in performing strategic knowledge-based systems to create higher V . It might serve as a reference for enterprises to maintain competitive edge, and also for investors and governments to make the investment and policy decisions.

The organization of this paper is as follows. In Section 1, we briefly introduce the research background, motives, and purposes. In Section 2, we describe the literature review on the moderation of SGs and BCs. Therefore, we develop the research design including the data sources, hypotheses, and conceptual framework in Section 3. We present the empirical results with regard to the value relevancies and moderation of SGs and BCs in Section 4. We provide summary and conclusions in Section 5.

2. Moderation of Strategic Groups and Business Cycles. SG classifies firms within an industry according to the similarity of their strategies models. It can be treated as a source of competitive advantage. Porter [20] developed the SG concept and applied it within his overall system of strategic analysis. After Porter, a number of scholars have confirmed the relevance of SG within an industry [21-23]. This paper then draws clustering and data analysis, to classify the samples and explore the explanatory capacity of each model and the significance of each variable among different SGs. To classify the firms, this paper is anchored on the paper of Anthony and Ramesh [21], combining four variables – sales growth rate (SGR), capital expenditure rate (CER), dividend payout rate (DPR), and firm age (FAG) – with return on equity (ROE) and debt ratio (DRA), representing the firm’s ability to generate profit and the financing strategy of capital structure.

The results show that Taiwan’s IT industry can be classified into three SGs. There are significant differences among groups. SG1 has the biggest value on SGR, ROE, CER, and DRA. It also displays the smallest FAG. SG1 is, therefore, classified as “growth firms”. SG3, on the other hand, has the smallest value in terms of SGR, ROE, CER, and DPR. In fact, even its SGR, ROE, and CER all appear negative. Given these, SG3 is classified as “defensive firms”. Meanwhile, SG2 is classified as “stability firms”.

BC is known as the economic fluctuation. With the fluctuations of BCs and the rapid developments in information technology, the impacts of environment on a corporate V have become more complex and multiple [24]. Considering the capital market can respond and rapidly evaluate V , this study adopts Taiwan’s weighted stock index as the proxy for BC. Regarding the classification of BC, the quartile of the stock index is selected as a basis for the classification in this study, that is, greater than or equal to the third quartile as Prosperity (B1), larger than the first quartile and less than the third percentile as Stability (B2), and less than and equal to the first quartile as Recession (B3).

Successful organizations respond intelligently to change. Corporate responses to the environmental fluctuations can be understood by the contingency fitness between the environment and strategy. Some scholars considered the fitness of environment-strategy

TABLE 1. Clustering and data analysis

	ALL	Cluster			ANOVA
		Growth (SG1)	Stability (SG2)	Defensive (SG3)	F-val sig
SGR	8.64	44.30	-0.49	-11.55	1572.04 ***
ROE	8.08	18.42	12.98	-9.24	805.42 ***
CER	0.19	2.05	0.18	-1.58	92.56 ***
DPR	44.32	34.20	77.69	3.25	2850.23 ***
FAG	21.76	19.07	23.00	22.44	59.14 ***
DRA	35.03	38.65	30.89	37.87	106.87 ***
Samples	3528	970	1543	1015	

Note: *** indicates that the significance level reaches 1%. The significance of ANOVA represents that the variables used by clustering and data analysis indicate significant differences among various groups as well as the appropriateness of clustering and data analysis.

is a key determinant of performance [24-27]. Regarding BCs as the environment, the ESP framework [17-19] would inspire the authors to follow. The BCs may influence the formation of FC and ICs. BCs, in turn, may also have an influence on V. Therefore, BCs have a role as moderator between ICs (or FC) and V. From the RBV perspective and following the ESP framework, this study integrates ICs and Ohlson model to explore the influences of BCs and the value relevance of ICs and FC for the conduct of strategic KM.

3. Research Design.

3.1. Hypotheses and conceptual framework. This research combines the FC of Ohlson model and the aspects of IC, and applies SG and BC to integrating the knowledge domains of strategy, KM, IC and finance. The hypotheses are proposed as follows.

H1: FC can serve as the important evaluation information. According to the Ohlson model, firm value (V) is determined by BV, XI, and other information. Many studies have confirmed the validity of Ohlson model [13-15].

H2: The involvement of ICs reveals incremental information for V. The argument of IC's influence on V has been supported by many studies [3-12]. Under the framework that the creation of V can be formed by ICs and FC, this paper selects the variables from each aspect of IC as the proxies of "other information" in Ohlson model. It combines the Ohlson model with IC, and expects the involvement of IC, compared with FC, to reveal incremental information significant to V.

H3: Significant differences exist in the explored constructs among SGs. SG can be treated as the source of competitive advantage in the industry. A number of scholars have realized the relevance of SG in conducting analysis within an industry [20-23]. Based on the results of clustering and data analysis, the paper respectively explores the characteristics of growth, stability, and defensive firms. It is assumed that significant differences exist in the explored constructs among SGs.

H4: The value relevancies of ICs and FC are moderated by SGs. Successful organizations respond intelligently to change. Some scholars considered that the environment-strategy fitness is a key determinant of performance [24-27]. The SG firm applied may impact the formation of ICs and FC. SG may also have an impact on V. Therefore, the study assumes that SG plays a moderator, and the value relevancies of ICs and FC are moderated by the SGs.

H5: Significant differences exist in the explored constructs among BCs. Considering the effects of BCs and the capital market can respond V rapidly [24], this

study adopts Taiwan's weighted stock index as proxy for BC, that is, greater than or equal to the third quartile as Prosperity, larger than the first quartile and less than the third percentile as Stability, and less than or equal to the first quartile as Recession. The characteristics of a firm under three phases are explored, and significant differences are assumed to exist in the constructs among BCs.

H6: The value relevancies of FC and ICs are moderated by BCs. Considering the said premise, the environment-strategy fitness is a key determinant of performance [24-27], this study thus regards BCs as part of the external environment. The BCs may influence the formation of ICs (FC), and BCs may also have an influence on V. Therefore, BCs may have a moderator role between ICs (FC) and V.

H7: Moderation fitness of SGs and BCs exists on value relevance. Based on the above hypotheses, the conceptual framework of this paper is developed as Figure 1. It takes the RBV and the fitness of environment strategy argument [24-27] and then adopts the ESP framework [17-19] to explore the contingency perspectives on strategic KM: moderation fitness of SGs and BCs on value relevance.

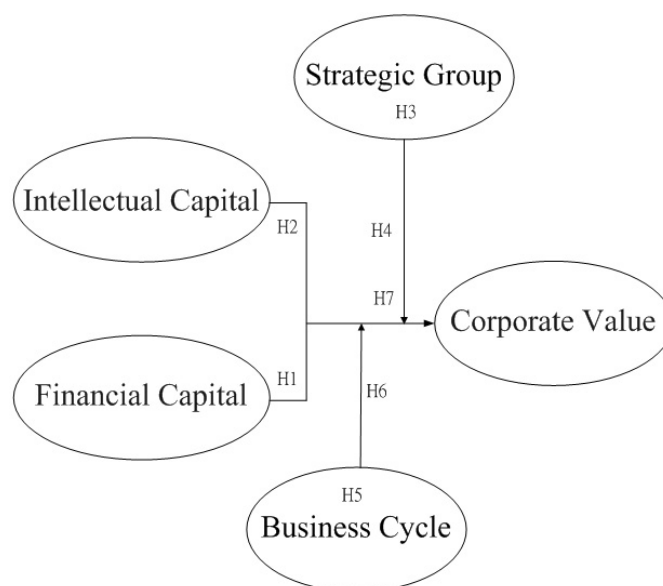


FIGURE 1. Strategic KM framework

3.2. Data sources. In recent years, Taiwan has emerged as the leading provider of information technology (IT) products. As stated by the Semiconductor Equipment and Materials International [28], Taiwan is the largest equipment spending region in 2012, and is expected to remain the top for 2013-2014. Taiwan's experiences are relevant to the countries searching for a niche in global economy, and the experiences could provide insights for the countries to explore in technology-intensive industries. Thus, this paper is designed for IT corporations listed in the Taiwan Stock Exchange. The research period covers thirteen years (from 2001 to 2013). A total of 3528 samples are chosen.

4. Empirical Results.

(1) **FC can serve as the important evaluation information.** This research analyzed the value relevance and the research findings (Table 2, Model 1) reveal that the model is suitable. BV and XI reveal significant positive correlation with P. All the models (Models 1 to 4) show that BV and XI reveal significantly positive correlation with P. The results, therefore, support H1.

(2) **The involvement of ICs reveals incremental information for V.** The results support H2. After adding the IC variables (Table 2, Panel B), compared with Ohlson

TABLE 2. Regression analyses among SG groups

Panel A FC		Model		Model 1 (ALL)		Model 2 Growth (SG1)		Model 3 Stability (SG2)		Model 4 Defensive (SG3)			
Variable		Coef.	T-value	Sig	Coef.	T-value	Sig	Coef.	T-value	Sig	Coef.	T-value	Sig
FC	Book value	0.31	25.77***		0.29	11.57***		0.19	10.75***		0.57	24.66***	
	Excess income	0.62	51.25***		0.65	26.27***		0.74	42.49***		0.28	12.14***	
Adj-R ² (%)		74.82			80.86			78.22			48.26		
F-value (P-value)		5241.77 (0.00)			2047.36 (0.00)			2769.41 (0.00)			473.86 (0.00)		
Panel B IC and FC		Model		Model 5 (ALL)		Model 6 Growth (SG1)		Model 7 Stability (SG2)		Model 8 Defensive (SG3)			
Variable		Coef.	T-value	Sig	Coef.	T-value	Sig	Coef.	T-value	Sig	Coef.	T-value	Sig
FC	Book value	0.30	24.43***		0.28	10.97***		0.19	10.57***		0.53	21.40***	
	Excess income	0.63	48.16***		0.64	24.73***		0.71	38.03***		0.29	11.43***	
Customer capital	Marketing expense ratio	-0.02	-2.02**		-0.01	-0.61		-0.02	-1.60		-0.04	-1.60	
	Revenue growth rate	-0.01	-0.92		0.01	0.37		0.02	1.48		-0.05	-2.00**	
	Accepted ratio of products	-0.03	-3.46***		-0.03	-2.15**		-0.03	-2.14**		-0.05	-2.07**	
	Proportion of major customers	0.02	2.30**		0.02	1.27		0.01	0.50		-0.02	-0.98	
Process capital	Equipment per employee	0.03	3.93***		0.01	0.51		0.01	1.05		0.05	2.15**	
	Managerial expenses ratio	0.03	3.07***		0.01	0.36		0.00	0.23		0.04	1.38	
	Current assets turnover rate	-0.02	-1.73*		-0.04	-2.23**		-0.02	-1.29		0.02	0.80	
Innovation capital	R&D density	0.05	4.70***		0.07	3.84***		0.08	4.82***		0.03	1.17	
	Number of patents	0.00	0.16		-0.01	-0.61		0.01	0.41		0.06	2.71***	
	Corporation establishment years	-0.02	-2.10**		0.04	2.11**		-0.02	-1.58		-0.07	-2.81***	
Human capital	Employees' average age	-0.03	-2.24**		-0.02	-1.00		-0.04	-2.09**		-0.01	-0.31	
	Average education degree	0.03	2.51***		0.02	0.86		0.02	0.99		0.07	2.64***	
	Employees' average years	-0.02	-1.50		-0.01	-0.43		0.00	0.13		-0.05	-1.46	
	Revenue per employee	-0.01	-0.85		0.03	1.77*		0.01	0.36		0.06	2.30***	
Adj-R ² (%)		76.05			81.56			79.29			51.34		
F-value (P-value)		701.05 (0.00)			268.82 (0.00)			369.96 (0.00)			67.87 (0.00)		

Note: ***, **, * indicate that the significance level reaches 1%, 5%, and 10%. The author additionally performs diagnostics for multicollinearity by examining VIFs. The diagnostics shows that there is no VIF value greater than 10. This means that there is no severe or serious multicollinearity.

models (Panel A), all the explanatory capacities of models increased. The incremental explanatory capacity of ICs on defensive (Model 8) is the most ($\Delta 3.08\% = 51.34\% - 48.26\%$) in the three SGs.

(3) Significant differences exist in the explored constructs among SGs. The samples are split into three groups to determine existing relationships in SGs. Results of clustering and data analysis reveal that significant differences exist in the constructs explored by this paper among growth, stability, and defensive firms. The results, therefore, support H3.

(4) The value relevancies of ICs and FC are moderated by the SGs. The value relevance of FC varies among groups. After applying the clustering and data analysis, growth and stability firms (SG1 and SG2) have more explanatory capacities (Table 2, Panel B, 81.56% and 79.29%). In contrast, the explanatory capacity of defensive firms (SG3) is low (51.34%). This study has further performed the multi-group analysis to test whether the coefficient is moderated by the SGs (Table 3). According to the results of SG analyses, regression and multi-group analyses, the results reveal that the value relevance of FC is different among SGs. The incremental explanatory of ICs also varies among groups. The involvement of ICs can increase little explanatory capacity on growth ($\Delta 0.70\% = 81.56\% - 80.86\%$, SG1). In contrast, the addition of ICs can increase more capacity on defensive ($\Delta 3.08\% = 51.34\% - 48.26\%$, SG3). This paper also discovered that the significance of IC variables varies among groups. H4 is subsequently proven. The value relevancies of FC and ICs are moderated by SGs.

(5) Significant differences exist in the explored constructs among BCs. The study explores the firm's characteristics under three phases, namely, Prosperity, Stability, and Recession of BC analyses. The results show that many significant differences are

TABLE 3. Multi-group analyses – Test the coefficients across SG groups

Panel A BV of FC						
Model	Growth (SG1)	Stability (SG2)	Growth (SG1)	Defensive (SG3)	Stability (SG2)	Defensive (SG3)
Size	970	1543	970	1015	1543	1015
Coefficient	1.60	0.69	1.60	1.27	0.69	1.27
Standard error	0.14	0.06	0.14	0.05	0.06	0.05
Z-statistic	5.97***		2.22**		-7.43***	
Panel B XI of FC						
Model	Growth (SG1)	Stability (SG2)	Growth (SG1)	Defensive (SG3)	Stability (SG2)	Defensive (SG3)
Size	970	1543	970	1015	1543	1015
Coefficient	10.33	11.35	10.33	2.28	11.35	2.28
Standard error	0.39	0.27	0.39	0.19	0.27	0.19
Z-statistic	-2.15**		18.56***		27.47***	

Note: *** represents the value of Z-statistic is greater than 2.58 or smaller than -2.58, and these two coefficients are significantly different at the 0.01 level. ** represents the value of Z-statistic is greater than 1.96 or smaller than -1.96, and these two coefficients are significantly different at the 0.05 level.

TABLE 4. Regression analyses among SGs under the Prosperity (BC1) models

Panel A FC													
		Model	Model 9 Prosperity (BC1)		Model 10 Growth (SG1)		Model 11 Stability (SG2)		Model 12 Defensive (SG3)				
Variable			Coef.	T-value	Sig	Coef.	T-value	Sig	Coef.	T-value	Sig		
FC	Book value		0.29	15.43***		0.19	4.66**		0.18	6.90***		0.72	19.36***
	Excess income		0.66	35.22***		0.78	19.68***		0.76	29.78***		0.13	3.39***
Adj-R ² (%)			80.18		89.28		79.99		56.18				
F-value (P-value)			2500.95 (0.00)		1104.60 (0.00)		1300.32 (0.00)		205.51 (0.00)				
Panel B IC and FC													
		Model	Model 13 Prosperity (BC1)		Model 14 Growth (SG1)		Model 15 Stability (SG2)		Model 16 Defensive(SG3)				
Variable			Coef.	T-value	Sig	Coef.	T-value	Sig	Coef.	T-value	Sig		
FC	Book value		0.28	14.51***		0.15	3.39***		0.17	6.75***		0.62	14.34***
	Excess income		0.68	35.14***		0.80	18.99***		0.75	27.52***		0.06	1.30***
Customer capital	Marketing expense ratio		-0.01	-0.65		-0.02	-0.66		-0.02	-0.84		-0.03	-0.61
	Revenue growth rate		-0.02	-1.66*		0.03	1.45		-0.00	-0.19		-0.06	-1.41
	Accepted ratio of products		-0.01	-0.72		-0.03	-1.15		-0.00	-0.08		-0.03	-0.91
	Proportion of major customers		0.03	2.58***		0.02	0.76		0.03	1.65*		-0.01	-0.36
Process capital	Equipment per employee		0.03	2.06**		0.01	0.35		0.01	0.41		0.11	2.80***
	Managerial expenses ratio		0.01	0.38		-0.01	-0.56		-0.01	-0.64		0.02	0.37
	Current assets turnover rate		0.01	0.47		0.01	0.24		-0.00	-0.08		0.01	0.26
Innovation capital	R&D density		0.08	5.06***		0.11	4.35***		0.08	3.25***		0.00	0.08
	Number of patents		-0.01	-0.92		-0.00	-0.05		-0.01	-0.58		0.10	2.35**
	Corporation establishment years		-0.03	-1.91*		0.03	1.18		-0.04	-2.10**		-0.06	-1.57
Human capital	Employees' average age		0.00	-0.02		0.00	0.08		-0.02	-0.74		0.04	0.69
	Average education degree		-0.01	-0.47		-0.03	-1.21		0.02	0.72		0.08	1.83*
	Employees' average years		-0.03	-1.81*		-0.01	-0.21		-0.01	-0.37		-0.06	-1.09
	Revenue per employee		-0.03	-2.30**		-0.00	-0.17		-0.03	-1.40		0.20	4.08***
Adj-R ² (%)			81.44		89.97		81.01		60.13				
F-value (P-value)			340.06 (0.00)		149.56 (0.00)		174.28 (0.00)		32.22 (0.00)				

Note: ***, **, * indicate that the significance level reaches 1%, 5%, and 10%. The author additionally performs diagnostics for multicollinearity by examining VIFs. The diagnostics shows that there is no VIF value greater than 10. This means that there is no severe or serious multicollinearity.

observed in all the explored constructs, V, FC, and ICs, among BC phases. Accordingly, H5 is proven.

(6) **The value relevancies of ICs and FC are moderated by the BCs.** The explanatory capacities of FC are shown different among BCs. The capacities of Prosperity

TABLE 5. Fitness of SGs and BCs on value relevance

Panel A FC					
BC	SG	Growth (SG1)	Stability (SG2)	Defensive (SG3)	BCs
	Prosperity (BC1)	Model 10	89.28*** (266)	Model 11 79.99 (651)	Model 12 56.18 (320)
Stability (BC2)	Model 18	79.82 (365)	Model 19 79.83*** (637)	Model 20 53.95 (435)	Model 17 74.32 (1437)
Recession (BC3)	Model 26	66.70 (339)	Model 27 69.75*** (255)	Model 28 22.25 (260)	Model 25 61.10 (854)
SGs	Model 2	80.86 (970)	Model 3 78.22 (1543)	Model 4 48.26 (1015)	Model 1 74.82 (3528)

Panel B IC and FC					
BC	SG	Growth (SG1)	Stability (SG2)	Defensive (SG3)	BCs
	Prosperity (BC1)	Model 14	89.97*** (266)	Model 15 81.01 (651)	Model 16 60.13 (320)
Stability (BC2)	Model 22	80.28 (365)	Model 23 81.04*** (637)	Model 24 56.68 (435)	Model 21 75.35 (1437)
Recession (BC3)	Model 30	70.07 (339)	Model 31 73.25*** (255)	Model 32 31.71 (260)	Model 29 65.43 (854)
SGs	Model 6	81.56 (970)	Model 7 79.29 (1543)	Model 8 51.34 (1015)	Model 5 76.05 (3528)

Note: *** represents the SG with the highest explanatory in the business cycle phase. The value means the coefficient of determination, adjusted R² (%), and also the explanatory of the model. The value in parentheses is the size of samples.

(80.18%; Table 4, Panel A, BC1; Model 9) and Stability (74.32%; Table 5, BC2; Model 17) are higher than Recession (61.10%; Table 5, BC3; Model 25). The study has also further performed the multi-group analysis, and revealed that the coefficients of BV and XI are different among BCs. The results show that the coefficients of BV and XI between BCs are different. The value relevancies of ICs also vary among BCs. The involvement of ICs can increase small capacity in Stability ($\Delta 1.03\%$; Table 5, from 74.32% (Model 17) to 75.35% (Model 21)). By contrast, the addition of ICs increased more capacity in Recession ($\Delta 4.33\%$; Table 5, from 61.10% (Model 25) to 65.43% (Model 29)). The significance of IC variables also varies among phases. H6 is thus proven, and the value relevancies of FC and ICs are moderated by BCs.

(7) Moderation fitness of SGs and BCs exists on value relevance. According to the previously mentioned results, the fitness of BCs and SGs can be summarized as Table 5. The growth firms (SG1) fitted with Prosperity (BC1) has the highest capacity (89.97%) to V in BC1 (Model 14). Because the model of growth firms has the biggest value on sales growth rate, ROE, capital expenditure rate, and debt ratio, they are able to have good performance in the Prosperity. When the economy is Stability (BC2), the revenue and

profitability are relatively stable, and the stability firms (SG2) fitted with Stability (Model 23) has the highest explanatory capacity (81.04%). In Recession (BC3), the stability firms (SG2) also has the highest capacity (73.25%) fitted with Recession (Model 31). Instead of taking Defensive strategy, companies should adopt Stability strategy in Recession. Presumably because in the time of recession, the companies adopt Stability strategy to maintain positive sales growth, ROE and capital expenditures, and to take lower debt ratio (lower interest costs) and sufficient dividend payments, which can give shareholders the confidence signal, stability firms (SG2) fitted with Recession (BC3) would have the highest explanatory to V (Model 31).

5. Summary and Conclusions. This paper has cross disciplinary nature. It attempts to combine the knowledge domains of strategy, KM, IC, and finance by applying the concepts of SG and BC to exploring the value relevance of ICs and FC, which would be helpful in extracting the potential, clear, and valuable knowledge information and performing strategic KM to maintain stable V and further create higher V. Under the theoretical framework that V equals the sum of non-financial capital (IC) and FC, the paper follows the RBV argument and ESP framework, and analyzes the value relevancies and strategies of FC and ICs.

The results indicate the moderation fitness of SGs and BCs on value relevance, and the contingency perspective on strategic knowledge-based systems. FC is the critical evaluation information and the explanatory capacities were different among SGs and BCs. The involvement of ICs showed incremental information for V, and its incremental explanatory capacities appear to be different among SGs and BCs. Moreover, the results further indicate the moderation fitness of SGs and BCs on V. Growth firms fitted with Prosperity has the highest explanatory capacity to share price. Stability firms fitted with Stability economy has the highest, and the Stability firms also has the highest fitted with Recession. The SGs and BCs analyses on value relevancies could serve as the strategic managerial criterions of ICs and FC, and the strategies company adopted might give shareholders the signals.

When conducting business valuation and strategic knowledge-based systems in the future, what should be considered as critical aspects are not only FC and intangible ICs, but also the economic phases and group's characteristics. To maintain long-term competitiveness and create higher corporate value, corporations must actively place a high premium on their strategies according to their organizational traits and present economic condition. The further research can explore the deferred effect of expense, including marketing, management, or R&D, on the value relevancies. Aside from obtaining quantitative data, further studies can also collect more qualitative data by conducting survey and questionnaire administration to derive the latent variables undisclosed by firm managers.

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