

THE EFFECT OF INTELLECTUAL CAPITAL ON FINANCIAL PERFORMANCE OF INNOVATIVE MANUFACTURING COMPANIES IN INDONESIA: THE MEDIATING EFFECTS OF COMPETITIVE ADVANTAGE

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Abstract

In the era of knowledge economy, Intellectual Capital is an important factor for corporate competitive advantage and higher Financial Performance. This study aims to examine the mediating effect of Competitive Advantage on the influence of Intellectual Capital on Financial Performance. The study was conducted on 31 innovative manufacturing companies listed on the Indonesia Stock Exchange. Innovative manufacturing companies are companies that demonstrate a commitment to conducting research and development activities. The data analyzed was data from 2011-2016. Data analyzed used Generalized Structured Component Analysis (GSCA). The mediating effect of Competitive Advantage was tested used Sobel Test. The result of this research concludes that Intellectual Capital has positive and significant influence on Competitive Advantage, Intellectual Capital has positive and significant influence on Financial Performance, and Competitive Advantage has negative and significant effect on Financial Performance. Competitive Advantage significantly mediates the influence of Intellectual Capital on Financial Performance.

Keywords: Intellectual Capital; Competitive Advantage; Financial Performance; Innovative Firm

INTRODUCTION

The shift of the economic era from a post-industrial economy to a knowledge-based economy led to an intensive study of the importance of Intellectual Capital for the company. Intellectual Capital (IC) is an intellectual material that includes knowledge, information, intellectual property, experiences that can be utilized to create wealth by producing a higher-valued asset [1]–[5] and is the root for future earnings capabilities. Intellectual Capital is believed to be an essential resource for the Competitive Advantage [1], [3], [6] and higher financial performance [7], [8].

Intellectual Capital is one of the intangible assets of an organization owned by an individual. Relationships, customer loyalty, employee knowledge, culture, and values are the elements of Intellectual Capital [9]. Stewart defines Intellectual Capital as an intellectual material that includes knowledge, information, intellectual property, experiences that can be exploited to create wealth [1], [2] and is the root for future income ability.

The relationship between company resources (including Intellectual Capital), Competitive Advantage (CA) and Financial Performance (FP) is explained by the Resource-Based Theory (RBT) and Knowledge-Based Theory (KBT). Intellectual Capital is an intangible corporate resource that affects Competitive Advantage and Financial Performance [10]–[16]. Competitive Advantage mediates the relationship between Intellectual Capital and Financial Performance [10], [11], [17]. Although studies of the importance of the role of Intellectual Capital in achieving higher Financial Performance have been emphasized in various literatures [18], however, studies examining the mediating effects of Competitive Advantage on the relationship between Intellectual Capital and Financial Performance are still very limited [11].

A study by Kamukama et al. [11] was the first study which examine the mediating effect of Competitive Advantage on the relationship between Intellectual Capital and Financial Performance. His research was conducted at 65 microfinance institutions in Uganda. The research conclude that Competitive Advantage was a significant mediator on the relationship between Intellectual Capital and Financial Performance. Competitive Advantage mediation type is partial mediation.

The contribution of this study: (a) confirm the theory and findings of Kamukama's et al. research [11]; (b) provide additional empirical evidence regarding the mediating effects of Competitive Advantage on the relationships between Intellectual Capital and Financial Performance in the context of innovative manufacturing companies in Indonesia; (c) using accounting ratios as a Competitive Advantage proxy where previously most were measured perceptually [11], [19]–[21]. The use of accounting ratios to measure Competitive Advantage based on resource-based perspectives [10] and non-resources factors [22].

We examine the mediating effect of Competitive Advantage in the relationship between Intellectual Capital and Financial Performance on innovative manufacturing company in Indonesia. Innovative companies are companies

that conduct Research and Development and disclosed it in the financial statements. Innovative manufacturing companies were selected because: first, based on previous research, Intellectual Capital proved to have a greater influence on the manufacturing industry compared to the service industry [23]. Second, the manufacturing sector is the driver of economic growth in Indonesia [24]. Third, the competitiveness of Indonesia's manufacturing industry among ASEAN countries is quite weak [25]. Fourth, Intellectual Capital is an innovative factor that must be managed well by the company [26].

The results of this study will provide evidence on the research hypothesis as follows: (a) Intellectual Capital has a significant effect on Competitive Advantage; (b) Competitive Advantage has a significant effect on Financial Performance; (c) Intellectual Capital has a significant effect on Financial Performance; (d) Competitive Advantage significantly mediates the influence of Intellectual Capital on Financial Performance.

METHODS

The research was conducted on 31 innovative manufacturing companies in Indonesia. Innovative company is a company that conducts Research and Development activities and discloses it in the company's financial statements [27]. We use data from 2011 to 2016 obtained from the IDX.

Measurement of Intellectual Capital used Pulic's Value Added Intellectual Coefficient (VAIC) with indicators of Human Capital Efficiency Coefficient (HCE), Structural Capital Efficiency Coefficient (SCE), and Capital Employed Efficiency Coefficient (CEE) [28]. Competitive Advantage was measured used the accounting ratios [19] formulated by Dickinson and Sommers which includes yang meliputi rasio Cost of Sales (CoS), Capital intensity (CapInt), Operating Liability Leverage (OLLev), Inventory Turnover (ITO), Receivables Turnover, Financial leverage (FL), dan Excess Funds (ExF) [19]. Financial Performance was measured by Return On Asset (ROA), Return On Equity (ROE) and Asset Turnover (ATO). Data analysis was performed used Generalized Structured Component Analysis (GSCA) [29]. The Competitive Advantage mediating effect was tested used Sobel Test [30]. The research model is shown in Figure 1.

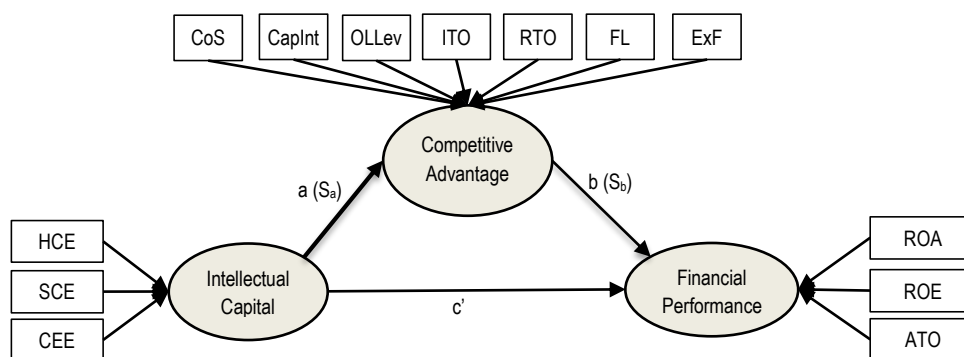


Figure 2 Research Model

Note: HCE=Human Capital Efficiency; SCE=Structural Capital Efficiency; CEE=Capital Employed Efficiency; CoS= Cost of Sales; CapInt=Capital intensity; OLLev=Operating Liability Leverage; ITO=Inventory Turnover; RTO= Receivables Turnover; FL=Financial leverage; ExF=Excess Funds; ROA=Return On Asset; ROE=Return On Equity; ATO=Asset Turnover; a=path coefficients a; S_a =SE of a; b=path coefficients b; S_b =SE of b; c' =path coefficients c' .

FINDINGS AND ARGUMENT

The result of data analysis shows that the model is able to explain 34.4% variation of dependent variable shown by FIT value of 0.344. Variations of the Competitive Advantage variables can be explained by the Intellectual Capital variable of 35 percent. While 68.2 percent of the variation of the Financial Performance variables can be explained by Intellectual Capital and Competitive Advantage. The FIT and R Square values of the data analysis results are shown in Table 1.

Table 1 Model Fit and R square

Model Fit		R square of Latent Variable	
FIT	0.344	Intellectual Capital	0
AFIT	0.340	Competitive Advantage	0.350
NPAR	16	Financial Performance	0.682

Source: GSCA Output

Path coefficients on Table 2 show that the influence of Intellectual Capital on Competitive Advantage is positive and significant at $\alpha = 0.05$ (CR = 7.29). The higher the company's intellectual capital, the higher the Company's Competitive Advantage. These findings support Barney's [10] and Grant's [5] statement that Intellectual Capital is a firm-specific, socially complex and difficult to replicate resources. The effect of Intellectual Capital on Financial Performance is positive and significant at $\alpha = 0.05$ (CR = 6.71). An increase in the company's intellectual capital will lead to a higher Financial Performance. These findings support the statement of Marr & Roos [31] and Nahapiet & Ghoshal [8].

The effect of Competitive Advantage on Financial Performance is negative and significant at $\alpha = 0.05$ (CR = 3.21). The study found that manufacturing companies in Indonesia with higher Competitive Advantage have lower Financial Performance. This is because the company's focus on creating competitive advantage will encourage companies to invest more in innovation. As a result, the high expenditure on research and development means the high of operating expenses that impact on the decline in profits. This finding is consistent with Ma's explanation [32] and Rose [33] that there are three conditions concerning the relationship between Competitive Advantage and performance: Competitive Advantage leads to higher Performance, the organization has Competitive Advantage but does not lead to superior performance and the company has superior performance but has no competitive advantage.

Table 2 Path Coefficients and Sobel Test

Path Coefficients				
Path	Estimate	SE	CR	p-value
IC->CA	0.592	0.081	7.29*	-
IC->FP	0.981	0.146	6.71*	-
CA->FP	-0.818	0.255	3.21*	-
Sobel Test	-2.937	0.165	-	0.003*

CR* = significant at .05 level

The findings of this study indicate that a large investment in Competitive Advantage can reduce the Financial Performance. The implication for business practices is that companies should be able to increase revenues above the additional expenditures made to achieve competitive advantage.

The Sobel Test result shows the test statistics -2.937 with p-value 0.003 significant at $\alpha=0.05$. The conclusion is that Competitive Advantage significantly mediates the influence of Intellectual Capital on Financial Performance. The mediation type is partial mediation. These findings support Barney's [10] and Chahal and Bakshi [17] statement that Intellectual Capital is the source of Competitive Advantage which in turn leads to higher performance. The findings of this study support the results of Kamukama et al. [11] who found that Competitive Advantage was a significant mediator in the relationship between Intellectual Capital and Financial Performance. Organizations that succeed in mobilizing their Intellectual Capital in the form of knowledge, technological capabilities, experience and strategic capabilities will achieve competitive advantage which leads to better organizational performance.

CONCLUSION

The findings proves hypothesis that Competitive Advantage mediates the effect of Intellectual Capital on Financial Performance. This conclusion supports Kamukama's findings [11] which proves the partial mediation effect of Competitive Advantage on the relationship between Intellectual Capital and Financial Performance, but in different directions. Highly innovative companies will spend a lot of money on Research and Development that impact on reduced profits [34]. The implications of this study on business theory and application are: (a) complementing the existing literature on evidence of the mediating effect of Competitive Advantage on the influence of Intellectual Capital on Financial Performance; (b) shows that a large investment in Competitive Advantage can reduce Financial Performance. Companies should be able to raise revenues above expenses

incurred in order to gain competitive advantage. The limitation of this study is that few manufacturing firms in Indonesia are disclosing Research and Development expenditure in their financial statements thus affecting the number of samples. Further research is recommended to broaden the observations of not only manufacturing companies but also service sector companies.

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