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Revista de Antropología, Ciencias de la Comunicación y de la Información, Filosofía,
Lingüística y Semiótica, Problemas del Desarrollo, la Ciencia y la Tecnología

Año 35, diciembre 2019 N°

90-2

Revista de Ciencias Humanas y Sociales

ISSN 1012-1537/ ISSNc: 2477-9385

Depósito Legal pp 198402ZU45



Universidad del Zulia
Facultad Experimental de Ciencias
Departamento de Ciencias Humanas
Maracaibo - Venezuela

The influence innovation strategy and company's financial performance mediated by intellectual capital and internal process performance

Hariyati

Universitas Negeri Surabaya, Indonesia
hariyati@unesa.ac.id

Lintang Venusita

Universitas Negeri Surabaya, Indonesia
lintangvenusita@unesa.ac.id

Abstract

This research examines the influence of innovation strategy and the company's financial performance through mediation between intellectual capital and internal process performance. This research is quantitative research on the explanatory level. The data is collected through questionnaires. The research respondent is the manager or owner of the business unit in the Manufacturing Company in East Java. The research result shows that the intellectual capital and internal process performance mediates partially the relation between innovation strategy and financial performance. In conclusion, the relation between innovation strategy and financial performance is mediated partially by the intellectual capital and internal process performance.

Keywords: Innovation strategy, Mediation, Financial performance.

La Estrategia de innovación de influencia y el desempeño financiero de la compañía mediado por el capital intelectual

Resumen

Esta investigación examina la influencia de la estrategia de innovación y el desempeño financiero de la compañía a través de la mediación entre el capital intelectual y el desempeño del proceso interno. Esta investigación es investigación cuantitativa en el nivel explicativo. Los datos se recopilan a través de cuestionarios. El encuestado de investigación es el gerente o propietario de la unidad de negocios de la Compañía de Manufactura en Java Oriental. El resultado de la investigación muestra que el capital intelectual y el desempeño del proceso interno median parcialmente la relación entre la estrategia de innovación y el desempeño financiero. En conclusión, la relación entre la estrategia de innovación y el desempeño financiero está mediada en parte por el capital intelectual y el desempeño del proceso interno.

Palabras clave: Estrategia de innovación, Mediación, Desempeño financiero.

1. INTRODUCTION

The economic development nowadays is controlled by the information and knowledge which affect the improvement of the attention in the intellectual capital. The intellectual capital is a variable to determine the company value. Furthermore, CHEREAU & MESCHI (2019) stated that the company's success is affected by the routine ways to maximize the value of the intellectual capital they have. It is in line with CHEREAU &

MESCHI (2019) who found that there is a positive and significant relation between structural capital and business performance.

According to Resources Based Theory, intellectual capital meets the criteria as a unique source that is able to create a competitive advantage in formulating the strategy, which can create value for the company. Some practitioners state that intellectual capital consists of three main elements, there are human capital, structural capital or organizational capital, and relational capital or customer capital.

Intellectual capital is an important element to achieve performance. Organizational or company performance is multidimensional. The organizational performance consists of financial performance and non-financial performance. Achieving the expected financial performance needs non-financial performance such as internal process performance (Nagahisarchoghaei et al., 2018). CHEREAU & MESCHI (2019) group the organizational internal process into four. They are operations management processes, customer management processes, innovation processes, and regulatory and social processes.

Organizational or company performance is multidimensional. Measuring the performance by using single measurement dimension cannot give a comprehensive understanding (CHEREAU & MESCHI, 2019). The performance measurement is expected to integrate the various measurements (BHARGAVA, DUBELAAR, & RAMASWAMI). Designing the organization's performance needs a model that can describe all of the organizational performance. There are some models of multidimensional performance measurement system. There is a Balanced Scorecard (BSC) by CHEREAU & MESCHI (2019), Integrated Performance Measurement System (IPMS) by BITITCI, CARRIE, MCDEVITT & TURNER (1997), and SMART System by (GHALAYANI & NOBLE, 1997).

Achieving the multidimensional organization performance needs a competitive advantage. Achieving competitive advantage needs strategy. According to BONTIS (1998) company strategy is a pattern of decision which relates to performance achievement. There are some strategies used by the company, such as prospector typology strategy purposed by BONTIS (1998) and differentiation strategy purposed which focuses on the competition through innovation process and

innovation strategy which is applied continuously as stated by (CHEREAU & MESCHI, 2019).

Competitive advantage can be achieved by doing the innovation process either product innovation or process innovation. Innovation is an organizational capability that is valuable, difficult to be imitated, and cannot be changed (ANDERSÉN & SAMUELSSON, 2016). The innovation is a source for competitive advantage continuously and gives a positive contribution to the organizational performance. The innovation is a critical factor for the company to compete effectively in the domestic and global markets. It is also considered as one of the most important strategies in the organizational strategy. An organization that has high innovation can develop a competitive advantage and achieve a higher performance level (EDVINSSON & MALONE, 1997).

Innovation strategy affects the company performance in various ways as explained in the contingencies theory. Intellectual capital and internal process performance are important things. Both of them are very important in applying the innovation strategy which affects financial performance. The innovation strategy affects financial performance through some

variables of mediation such as intellectual capital and internal process performance (MARDANI & FALLAH, 2018).

The issue of product and process innovation in various manufacturing businesses is an interesting issue in Indonesia. It is because of the short product life cycle. The production cost by using lower cost by giving priority to good quality also becomes an important thing to consider. There are [±]1266 companies in Indonesia, especially in East Java, which are included in the big and medium manufacturing companies. The growth level of manufacturing companies is fluctuating since 2012. Based on the data of Industry and Trade Institution of East Java, the manufacturing company in East Java places the third rank in 2012 after DKI Jakarta and East Kalimantan in case of export performance. That is by giving a contribution of 10.04% for the Indonesian Export. East Java contributes the biggest PDB for 20.85%. Facing the globalization era, manufacturing companies in East Java must have a competitive advantage. Achieving a competitive advantage can be done by applying the appropriate strategy. That is continuous innovation strategy through product innovation and process innovation by considering the role of good intellectual capital and internal process performance. It will affect the company's financial performance.

2. THEORETICAL FRAMEWORK

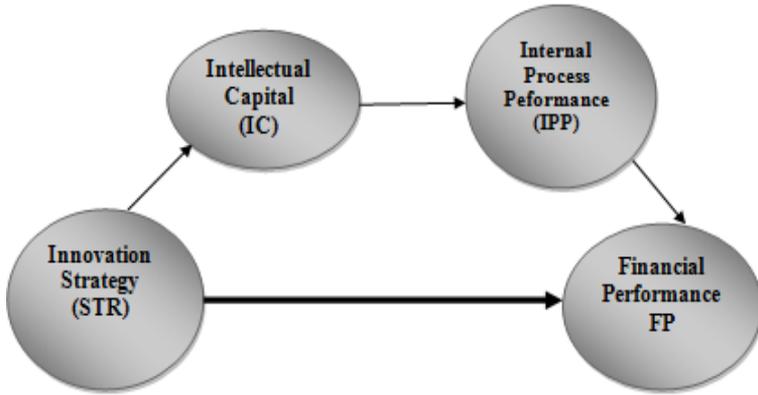
The theory I/O explains that the external factor (industry) is more important than the internal factor to achieve a competitive advantage. The main consideration of theory I/O is competition. Power structures analysis is needed in the competition it is known as five forces model. There are five important things in five forces model. They are (1) intensity of competitive rivalry, (2) threat of new entrants, (3) threat of substitute products or services, (4) bargaining power of suppliers and (5) bargaining power of customers.

The theory I/O explains that above-ranger return (AAR) for the company is determined by the characteristics outside the company. This theory focuses on the industrial structures or external environment attractiveness which then focuses on the company's internal sources. The external factors meant in the Theory I/O are (1) economic strength, (2) social, cultural, demography, and environmental strength, (3) political, government, and law strength, (4) technological strength.

The previous studies which are related to the I/O model have been conducted by some researchers. The external environment factor plays a role in the business condition

because the environmental factors really determine the strategy which will be run (COVIN & COVIN, 1990). BARNEY, WRIGHT & KETCHEN (2001) also stated that the relation between the environment changing and strategy planning is very strong. It is in the numerous numbers to anticipate the inconsistent changing and condition. BONTIS (1998) stated that the complexity and the changing of the environment in a certain industry may affect the intensity of strategic planning. The research which is conducted by BONTIS (1999) concluded that strategic planning does not affect financial performance but financial performance improves strategic planning. The previous research shows that there is various result related to the performance achievement and Above Average Return which are expected by implementing fit strategy.

Based on the theoretical framework, the research model is developed as presented in the picture below. This research model describes that the innovation strategy (STR) affects financial performance (FP) which is mediated by the intellectual capital (IC) and internal process performance (IPP).



3. METHODOLOGY

This research is designed as causal studies. This research is quantitative research in the explanatory level which aims to examine the hypothesis whether there is an effect of intellectual capital and internal process performance mediation for the relation of innovation strategy and financial performance. The data is collected through a questionnaire. The research analysis unit is business unit. The research respondents are the manager of business unit in the manufacturing company in East Java, this research is a research on the behavior which uses the perception of the manager as the part who is assumed to have enough holistic knowledge about the research variables.

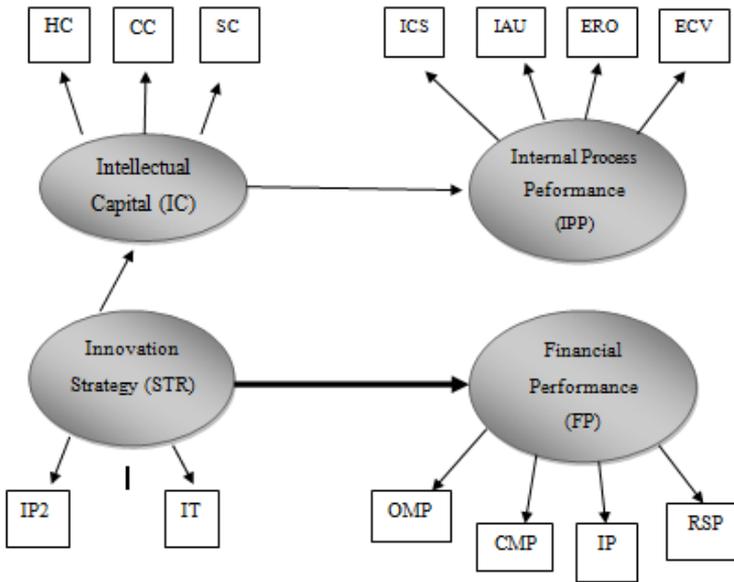
4. ANALYSIS AND DISCUSSION

Analysis of the data using Structural Equation Modeling (SEM) - PLS-based variant. WARP program PLS 3:00 version is used to test the hypothesis. Analysis of data through two stages, namely (1) a direct influence on the relationship of sustainable innovation strategy and financial performance and (2) indirect effect on the relationship of sustainable innovation strategy and financial performance by mediation variables (intellectual capital (IC) and Internal Process Performance (IPP)).

The indirect effect in this study is the effect of meditation on the environmental performance of Sustainable innovation strategy relationship with financial performance. Test methods for mediating variable coefficient difference approach. Testing the following steps: (a) examine the effect of the independent variable on the dependent variable in the model without the involvement of mediating variables, (b) examine the direct effect of the independent variable on the dependent variable in the model involving mediating variables, (c) examine the effect of the independent variable

on the variable mediation, and (d) examine the effect of mediating variables on the dependent variable.

Mediation testing criteria are as follows: (1) variable is declared as a perfect mediation variable (full mediation), if after entering mediating variables, the effect of the independent variable (X) to the dependent variable (Y) decreases to zero ($c = 0$) or the effect of variable X to Y which was significant (before entering the variable M) becomes not significant after entering Mediation variable into the regression equation models. (2) Mediation Variables declared as partial mediating variables if, after entering Mediation variables influence the independent variable (X) to the dependent variable (Y) decreased but not to zero ($c \neq 0$) or the influence of variable X to Y was significant (before entering the variable M) be remained significant after entering variables into the model equation M regress but decreased regression coefficient.



Note:

IP2 = Inovation Produk and proses

IT = Information Teknologi

HC = Human Capital

CC = Customer Capital

SC = Structural Capital

- OMP = Operations Management process
- CMP = Customer Management process
- IP = Innovation process
- RSP = Regulatory dan Social processes
- ICS = Improve cost structure
- IAU = Increase Asset Utilization
- ERO = Expand Revenue Opportunity
- ECV = Enhance Customer Value

Testing the direct effect is to examine the direct effect on the relationship between innovation strategy and financial performance. This test consists of:

The loading value of STR and FP is more than 0.701 with P-value which is less than 5% (Significant). It means that the construct measurement of STR and FP have met the requirements of convergent validity. The convergent validity also can be seen from the value of AVE, that is:

	SE	STR	FP	P value
IP2	(0.920)	0.079	0.084	<0.001
IT	(0.920)	-0.079	0.095	<0.001
ICS	-0.235	(0.836)	0.059	<0.001
IAU	-0.232	(0.855)	0.054	<0.001
ERO	0.118	(0.917)	0.071	<0.001
ECV	0.321	(0.895)	0.091	<0.001
VALUE of AVE				
STR	0.847			
FP	0.768			

The value of AVE from the STR, IPP, IC, and FP is more than 0.50. It means that the construct measurement of STR, IPP, IC, and FP has met the requirements of convergent validity. The reliability test can be observed from Composite Reliability Coefficient and Cronbach’s Alpha Coefficient. That is:

Composite Reliability Coefficients		Cronbach's Alpha Coefficients	
STR	0.917	STR	0.819
FP	0.930	FP	0.899

The value of Composite Reliability Coefficient and Cronbach's Alpha Coefficient from the variable STR, IPP, IC, and FP is more than 0.70 which means that all of those variables are reliable.

APC=0.730, P<0.001
 ARS=0.533, P<0.001
 AVIF=1.000, Good if < 5

The average path coefficient (APC) is 0.730. The significant is less than 5%. The Average-R Square (ARS) value is 0.533. The significant is also less than 5%. The average variance inflation factor (AVIF) is 1 which is less than 5. Therefore, it can be concluded that the goodness of fit model has been completed.

Path coefficients	P values
STR FP STR FP 0.730	STR FP STR FP <0.001

The result of the path coefficient is positive, 0.730. The significant is less than 5%. It means that STR has significant effect and positive effect on FP. The better STR, the better FP.

	STR
	FP
STR	
FP	0.533

The Effect size value is 0.533 and more than 0.35. It shows that STR has a big effect on FP. It means that STR has an important role to improve FP. The major influence of STR for FP can be seen from the value of R-squared Coefficients. That is 0.533. It means that the major influence of STR for FP is 53.3%.

Loadings core of the indicators STR, IPP, IC and FP is more than 0.70 by P-value which is less than 5% (Significant). It means that the construct measurement of STR, IPP, IC, and FP have met the requirements of convergent validity. The convergent validity also can be seen from the value of AVE, that is:

	STR	IC	IPP	FP	SE	P value
IP2	0.920	-0.037	-0.009	0.095	0.085	<0.001
IT	0.920	0.037	0.009	-0.095	0.095	<0.001
hc	-0.053	0.823	0.007	0.113	0.108	<0.001
cc	0.024	0.744	-0.055	-0.061	0.091	<0.001
sc	0.031	0.852	0.042	-0.056	0.075	<0.001
OMP	0.231	-0.058	0.837	-0.047	0.063	<0.001
CMP	-0.278	0.033	0.844	0.035	0.062	<0.001
IP	-0.181	0.043	0.897	-0.126	0.056	<0.001
RSP	0.238	-0.021	0.855	0.144	0.062	<0.001
ICS	-0.260	0.054	0.015	0.836	0.059	<0.001
IAU	-0.217	0.046	-0.031	0.855	0.054	<0.001
ERO	0.060	-0.063	0.115	0.917	0.071	<0.001
ECV	0.388	-0.030	-0.101	0.895	0.091	<0.001
VALUE OF AVE						

STR	IC	IPP	FP
0.847	0.653	0.737	0.768

The value of AVE from the STR, IPP, IC, and FP is more than 0.50. It means that the construct measurement of STR, IPP, IC, and FP has met the requirements of convergent validity.

The reliability test can be observed from the Composite Reliability Coefficient and Cronbach’s Alpha Coefficient. That is:

Composite Reliability Coefficients				Cronbach's Alpha Coefficients			
STR	IC	IPP	FP	STR	IC	IPP	FP
0.917	0.849	0.918	0.930	0.819	0.732	0.881	0.899

The value of Composite Reliability Coefficient and Cronbach’s Alpha Coefficient from the variable STR, IPP, IC, and FP is more than 0.70 which means that all of those variables are reliable.

APC=0.432, P<0.001
 ARS=0.341, P<0.001
 AVIF=2.545, Good if < 5

The value of the average path coefficient (APC) is 0.432 and the sign is less than 5%. The value of average R-Square (ARS) is 0.41 and the significant is also less than 5%. The average variance inflation factor (AVIF) is 2.545 and less than 5. Therefore, it can be concluded that the goodness of fit model has been achieved.

Path coefficients				P values		
	STR	IC	IPP	STR	IC	IPP
STR				STR		
IC	0.470			IC	<0.001	
IPP		0.420		IPP		<0.001
FP	0.352		0.485	FP	0.011	<0.001

The path coefficient which is got is positive with the p-value which is less than 5%. It means that STR has significant

effect positively on the IC. STR has significant effect positively for FP. IC has significant effect positively on IPP. IPP has significant effect positively for FP.

	STR	IC	IPP	FP
STR				
IC	0.221			
IPP		0.176		
FP	0.257		0.368	

The value of Effect size between STR and IC is 0.221 (medium). It shows that STR has a medium effect on IC. The value of Effect size between STR and FP is 0.257 (medium). It shows that STR has a medium effect on FP. The value of Effect size between IPP and FP is 0.368 (major). It shows that IPP has a major effect on KP. The value of Effect size between IC and IPP is 0.176 (low). It shows that IPP has a low effect on IC.

Indirect effects				P values		
	STR	IC	IPP	STR	IPP	SIAM
	FP			FP		
STR				STR		
IC				IPP		
IPP				SIAM		
FP	0.096			FP	0.011	

The estimation result shows that there is an indirect effect of STR for FP through IPP and IC. It is 9.6% and the p-value is less than 5%.

5. CONCLUSION

Based on the description above, it can be concluded that:

1. The innovation strategy affects intellectual capital.
2. The intellectual capital affects the internal process performance.
3. The internal process performance affects financial performance.
4. There is a direct relationship between innovation strategy and financial performance.
5. The relation between innovation strategy and financial performance is mediated partially by the intellectual capital an internal process performance.

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**UNIVERSIDAD
DEL ZULIA**

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Revista de Ciencias Humanas y Sociales

Año 35, N° 90-2 (2019)

Esta revista fue editada en formato digital por el personal de la Oficina de Publicaciones Científicas de la Facultad Experimental de Ciencias, Universidad del Zulia.

Maracaibo - Venezuela

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