Empirical Testing of the Implementation of Supply Chain Management and Successful Supporting Factors of Management Accounting Information Systems

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***Abstract*-This study aims to measure empirically tested conceptual models regarding the magnitude of intellectual capital influence, operational risk management, and business strategy on the effectiveness of management accounting information systems and their implications on the performance of a balanced scorecard based company. This research used sensus as sampling technique, it used all existing population. This research was conducted using a survey method in Banking Sectors in Indonesia based on the supply chain management. Data analysis was performed using Structural Equation Model (SEM) approach alongside a Linear Structural Relationship (LISREL) analysis tool. The results of the study found that intellectual capital, operational risk management, and business strategy have a significant positive effect on the effectiveness of accounting information system; while its significance on the performance of balanced scorecard based company, operational risk management and business strategy alone has a significant positive effect. While the effectiveness of accounting information systems are known to have significant implications on the company's performance-based balanced scorecard.**

Keywords *- Intellectual capital, supply chain management,operational risk management,business strategy.*

1. Introduction

It is increasingly recognized that performance measurement that focuses solely on the financial aspects alone to measure executive performance is no longer adequate. Performance measurement with this system narrows the company's orientation only to short-term profits and tends to ignore the long-term viability of the company. A comprehensive method of measuring company performance has been developed: Balanced Scorecard, which consists of four perspectives that include financial perspective, consumer, internal business processes, and learning and growth. However, there are some obstacles in implementing the Balanced Scorecard's performance. This phenomenon can be seen in the difficulties encountered in the use of Balanced Scorecard when interpreting companies with varying perspectives. These difficulties relate to the need for technical skills to compile or interpret the concepts into operational functions. Furthermore, [1] reveals that in most cases of the system relationship is crucial to the success of a system because in, for example, the company's system, the objectives of the system can only be achieved if each part of the system works together. As it is widely acknowledged that the people within an organisation possess a variety of different personal goals, the people within the organisation must work together in their areas of expertise and responsibly communicate to achieve an organisational goal. Information is data that has been arranged, processed to have a certain meaning within a particular context, and which the end user can utilize to improve the decision making process. This is in accordance with the statement of Ida farida, one of commision member of The Audit Board of the Republic of Indonesia call as BPK, in the occasion of BPK Entry Meeting Audit to the Financial Statement of National Agency of Drug and Food Control (NA-

DFC) of the Republic of Indonesia call as BPOM-RI year 2014, which emphasizes the importance of the completeness of financial information, for example the use of budget whether it obeys the rules and regulations applicable, and used to support data in the preparation of financial statements. All organisations need information to make effective decisions; to do this, organisations must determine what decisions they need to make, what information they need, and collect and process the data necessary to generate information. Without information, the organisation cannot exist. Information through communication becomes the glue holding an organisation together [2,1]. The phenomenon of management accounting information systems is associated with some elements, namely planning, control, and inappropriate decisions. Various phenomena related to the implementation of management accounting information system can be observed through various cases that often occur in the banking world, especially in Indonesia. Effective risk management, especially for operational banking risks, is an important role in the management of a bank's assets. The phenomenon of disintermediation occurring in America is the beginning of the emergence of credit crunch issues and stalled banking lending because of tight monetary policy to overcome inflation by the Federal Reserve. That phenomenon will certainly be a big challenge for Indonesia in the future, especially when it is associated with the successful implementation of management accounting information systems. Another factor that is important in determining the success of the implementation of management accounting information systems is the determination of business strategy. Some studies suggest that there is little correlation between strategy formulation and strategy execution. For example, Sterling's study found that almost 70% of strategy designs have never been successfully implemented. Even *Fortune*, the leading business magazine, states that less than 10% of effective strategy formulations are executed effectively. Today, the world of banking is still considered a business that is loaded with formal aspects that prioritize security and accuracy. The intense competition when acquiring customers and increasing assets is the main focus in the banking business, particularly in Indonesia. To accommodate this, branding strategies are highly sought after in the banking world. Based on this phenomenon, it is clear that a business strategy used to run information systems is vital. The successful implementation of management accounting information systems will ultimately provide positive implications of the performance of the company, especially its performance based balanced scorecard. This study aims to obtain empirical evidence of how much influence intellectual capital, operational risk management, and business strategy have on the successful implementation of management accounting information systems and their implications on the company's performance-based balance scorecard. This research uses the survey method to investigate the research variables in the Indonesian-banking sector.

2. Experimental (Research)

2.1. Intellectual Capital

Ref. [3] proposed a concept of capital that refers to the intangible capital (IC) associated with human knowledge and experience, as well as the technology used. However, according to [4], researchers generally divide IC into three components: Human Capital (HC), Structural Capital (SC), and Capital Employed (CE). Furthermore, according to [4], HC simply reflects the individual knowledge of an organisation's stock presented by its employees. HC includes competence, commitment, and employee loyalty to the company. Based on some of the definitions above, it can be concluded that IC is an important concept that can provide knowledge-based resources and describe intangible assets, which, if used optimally, enable the company to execute its strategy effectively and efficiently. The measurement of IC used in this study uses a non-monetary measurement method, the Direct IC (DIC) method, which is to assess the value of IC based on the diagnostic analysis of the company's response to the questions posed which includes three main components of IC: (1) HC (2) SC (3) Customer capital.

2.2. Operational Risk Management

According to [5], operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk. Legal risk includes, but is not limited to, exposure to fines, penalties, or punitive damages resulting from

supervisory actions, as well as private settlements. Based on the above understanding, it can be said that operational risk is the potential loss caused by failure of people, systems, or from external events. In this research, operational risk management is measured using two dimensions: (1) Risk Assessment and (2) Risk Control.

2.3. Business Strategy

According to [6],business strategy is the determination of the basic long-term goals and objectives of an enterprise, and the adaption of the course of action and the allocation of resources necessary for carrying out these goals. [7] suggests business strategy determines how the organisation deals with its competitors, what products it sells in what markets, and through what delivery method. Furthermore, [8] stated that business strategy determines how the firm positions itself in its environment to achieve a competitive advantage. Based on the business strategy definitions that have been described above, it can be concluded that business strategy is a draft of activities aimed at improving the prosperity and success of the company in the facing of business competition and creation of competitive advantages, which will be implemented by conducting various integrated activities. In this study, the measurement of business strategy reflects [9] with the following dimensions: (1) Cost Leadership Strategy, (2) Differentiation Strategy, and (3) Focus.

2.4. Successful Implementation of Management accounting information systems

[10] states that the quality of management accounting information systems is a statement of a condition in which a management accounting information system produces management accounting information useful to managers in performing its functions. Likewise, [11] determine the success of an information system using the success of its efforts to produce quality information. Similarly,[12] states that the dimensions of an information system’s quality are its frequency of use, nature of use, appropriateness of use, extent of use, and purpose of use. Based on the definitions put forward by some experts above, the success of the implementation of the management accounting information system referred to in this study is its ability to generate management accounting information that has quality characteristics that are useful in supporting decision-making processes. The dimensions used to measure the successful implementation of the management accounting information systems in this study are: (1) integration, (2) flexibility, (3) accessibility, (4) formalisation, and (5) media enrichment.

2.5. Company's performance-based balanced scorecard

The Balanced Scorecard concept was developed by [13], in which the Balanced Scorecard is a method for the organisation to systematically consider what it should do to develop an internally consistent and comprehensive system of planning and control and a basis for understanding the difference between successful and unsuccessful organisations. According to [14],a Balanced Scorecard (a strategic-based responsibility accounting system) is responsible for the objectives and measurements of four different perspectives, the financial perspective, the customer perspective, the process perspective, and the learning and growth perspective. Meanwhile, according to [15], Balanced Scorecard consists of an integrated set of performance measures that are derived from the company's strategy and that support the company's strategy throughout the organization. Based on the definition above, it can be concluded that Balanced Scorecard is a strategic management system or more appropriately called a "Strategic based responsibility accounting system", which describes the mission and strategy of an organization into operational objectives and performance benchmarks for four different perspectives , namely perspectives of financial, customer, internal business process, learning and growth. Measurement of company performance success based on Balanced Scorecard approach, in this study using dimensions divided into four perspectives [13], namely: (1) Financial Perspective, (2) Customer Perspective, (3) Internal Business Process Perspective, 4) Learning and Growth Perspective.

2.6. Theoretical Framework and Hypotheses Development

2.6.1. The Influence of Intellectual Capital to Successful Implementation of Management Accounting Information System

Management accounting practices can be a determinant of a company's business performance, especially when it is associated with the level of IC in the company. A key element in this is the ability of the company's IC to positively impact the company's business performance. Some previous studies have strongly supported this perspective [16]. Similarly, it can be said that IC has an effect on the successful implementation of Management Accounting Information System. This one supports the results of previous research [17, 18, 16, 19].

2.7. The Influence of Operational Risk Management to Successful implementation of Management Accounting Information System

According to [20], every company will risk the development of information systems; this risk must be predicted by the company's management so that policies can be implemented to minimise risk. Risk is part of life and an important factor in the development of information systems [21]. The results of [22] shows that the magnitude of potential losses is a strong factor in establishing potential risks; furthermore, this factor demonstrates a significant relationship between risk perception and the development of information systems. Similarly, the results of study of [23] found that the influence of the social and technical subsystem risk, which influences the level of risk in operational management in terms of the success of the information system's project performance. Based on the descriptions and statements above, it can be concluded that operational risk management is an analysis technique that focuses on risk assessment and the process of identification, evaluation, and control by integrating operational procedures and processes that affect and contribute to the implementation of accounting information systems. Moreover, it can be said that operational risk management affects the successful implementation of management accounting information systems. [24, 1, 21, 22, 25, 26, 27].

2.8. The Influence of Implementation of Business Strategy to Successful implementation of Management Accounting Information System

Ref.[2] states that there are three factors that influence the design of an Accounting Information System is: development in information technology (IT), business strategy, and organisational culture. This opinion is reinforced [28], who state that to implement effective information systems, a new top-down approach is required in the company's "business strategy". The same thing is also expressed, who states that the influence of business strategy on the effectiveness of accounting information systems, namely business strategy, is the broadest pattern of resource allocation decisions; decisions that are more specific are related to information systems and IT. [29] provide empirical evidence that business strategy significantly influences the performance of accounting information systems. [30] also prove that business strategy has a significant effect on accounting information systems. This is also reinforced, which produces empirical evidence that business strategy has a significant effect on the effectiveness of accounting information systems. Based on the descriptions and statements above, it can be said that business strategy affects the successful implementation of management accounting information systems. [29, 30].

2.9. The Effect of Successful implementation of Management Accounting Information System on the performance of Balanced Scorecard based company.

The quality of management accounting information partially affects company performance; it illustrates that the quality of management accounting information is accurate, relevant, and timely, thereby affecting the performance of the company. Thus, the quality of management accounting information is able to improve the performance of the company, meaning that the company's performance is determined by the quality of management accounting information; this is echoed. Various studies have tested the relationship and influence of management accounting information systems on company performance, especially based on the Balanced Scorecard. The use of management accounting information affects the performance of the company. This illustrates that the joint use of routine reports, non-routine reports, and the quality of management accounting information will improve the performance of the company. Thus, in the case of the use of these reports, both routine reports, non-routine reports, and the quality of management accounting information have been able to improve the performance of the company, meaning that the company's performance, when in conjunction with a balanced scorecard

approach and which includes financial perspective, customer perspective, internal business process perspective, and perspective learning and growth, is determined by effective reports designed by company management; the same conclusion was also found. Based on the descriptions and statements above, it can be said that the successful implementation of management accounting information systems influences the corporate performance based balanced scorecard. IC influences the performance of balanced scorecard based companies. conducted research on the influence of IC on company performance; their results indicate that IC only affects the marketto book value and productivity. Profitability has no influence on value or productivity. Overall, the results of this study indicate that physical capital is the most significant factor affecting the performance of companies in South Africa. conducted a study on banking companies in Japan, where the results prove that the best example was a bank that manages its ICwell and less in using of physical capital. in addition to testing the relationship between IC and company performance, tested the predictive capabilities of ICs for future financial performance. Using thePLS test apparatus, this study showed a significant relationship between IC (VAIC ™) and financial return in relation to industry type. Based on the descriptions and statements above, it can be said that IC affects corporate performance based balanced scorecards.

The Influence of Operational Risk Management on the Performance of Balanced Scorecard Based Companies

The influence of operational risk management on banking performance is in accordance with the evidence One of the implementation objectives of operational risk management are to increase market value or customer base, increase profitability, reduce profit volatility and cash flow, and improve the behaviour of subordinates and employee arrangements. All these objectives are elements of the company's performance. Numerous studies have found an association between operational risk management and improved performance. Based on the descriptions and statements above, it can be said that operational risk management affects the corporate performance based balanced scorecard.

The Influence of Business Strategy Implementation on the Performance of Balanced Scorecard Based Companies

The effectiveness of a business strategy as a whole depends on how well the activities in various functional areas are integrated into a pattern [9]. states that a strategy is a gap between the vision and mission between current and expected conditions. Effective strategies must be designed to achieve company goals at all times. Numerous studies have found a link between business strategy and improved balanced scorecard performance. Based on the descriptions and statements above, it can be said that the business strategy affects company performance based on its balanced scorecard.Referring to the conceptual review and the results of previous research, the authors assumed that the IC, operational risk management, and business strategy affect the effectiveness of management accounting information systems and their implications for the company's performance-based balanced scorecard, illustrated in Figure 1. below:

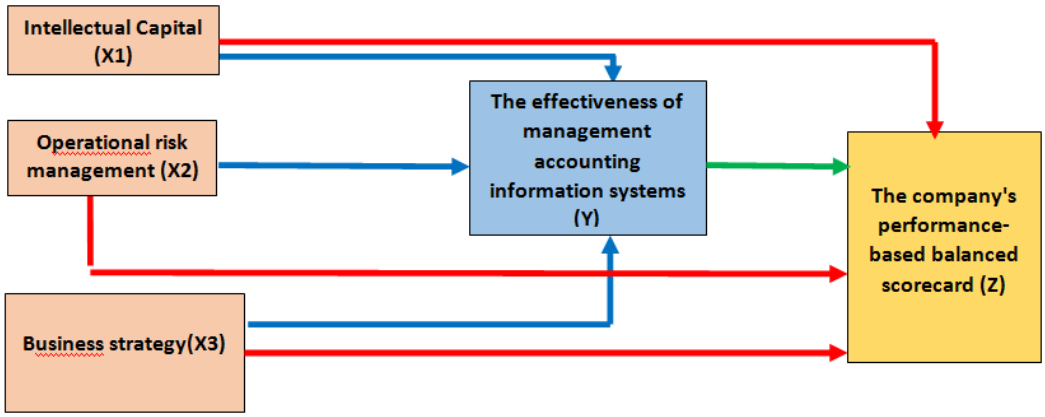

Figure1. Theoretical Framework

3. Research Methodology

This research uses the Explanatory Survey Method. The aim is to test the previously formulated hypothesis. Although the explanation also contains a description, as a relational study its focus lies in explaining the relationship between variables. The consequences of this study required the operationalization of the fundamental variables related to itsconstructs and indicators. In accordance with the hypothesis proposed, this study used inferential hypothesis testing/verification with SEM on the grounds that this model is an integrated approach between confirmatory factor analysis, the structural model, and path analysis. This is in line with the views of, who state that by using SEM, researchers can simultaneously obtain three benefits: (1) validity and reliability checks of the instrument (equivalent to Confirmatory Factor Analysis); (2) test the relationship between latent variables (equivalent to Path Analysis); and (3) obtain a useful model for predictions (equivalent regression analysis with Structural Models). This study reveals the general level of validity or generalisation of the results, limited to phenomena occurring in the study sites. The analysis unit of this research is the entire Indonesian banking industry, represented by the corporate secretary as an observation unit, to provide statements regarding IC, operational risk management and business strategy in the successful implementation of management accounting information systems, as well as the balanced scorecard performance achieved by the Indonesian banking industry is utilised. In other words, banking is the unit of analysis and corporate secretary is the observation unit (data source). The recapitulation of Indonesia banks, as of December 31, 2016, amounts to 115 banks. The data collected is primary data, and was obtained from 115 corporate secretaries in 115 banks, which we expected to provide statements regarding IC, operational risk management, business strategy, management accounting information systems, and balanced scorecard based performance. For the observation unit of this study, it is assumed that 1 (one) bank is represented by 1 corporate secretary, which at the time of writing is being discussed with the related departments. Data collection techniques were conducted by indirect and direct communication techniques. Indirect communication techniques use questionnaires as the instrument, while direct communication techniques used limited interviews and documentation studies. There are two types of data used in this study: primary data and secondary data. Primary data collection was conducted to collect comprehensive information about corporate secretary statements representing division managers in the banking environment, along with their currentsituation, conducted through survey activities. Primary data collection in descriptive and verification research was simultaneously conducted with each responded using documentation study techniques, limited interviews, and questionnaires. Data collection was done by distributing questionnaires to a number of banks registered by the Financial Services Authority call as OJK. Secondary data collection was conducted using available data, either from publications, data from the OJK, or data from middle managers in the banking industry, as well as general data relating to various sources in printed form, books, reports, or electronics, including websites. All primary data were collected with structured statements by using questionnaires and limited interviews, and qualitative data changed into quantitative were ordinal on a scale of 1 to 5.

4. Results

Before doing further calculations, the questionnaire used had to pass the validity and reliability test. The validity and reliability test results are as follows:

Table1.Validity Test Intellectual Capital

Variables	Item	Validity coefficient	R-Tabel	Result
Human Capital	IC1.1	0.735	0.237	Valid
	IC1.2	0.740	0.237	Valid
	IC1.3	0.737	0.237	Valid
	IC1.4	0.744	0.237	Valid
	IC1.5	0.682	0.237	Valid

	IC1.6	0.736	0.237	Valid
Structural Capital	IC2.1	0.656	0.237	Valid
	IC2.2	0.856	0.237	Valid
	IC2.3	0.771	0.237	Valid
	IC2.4	0.766	0.237	Valid
	IC2.5	0.693	0.237	Valid
	IC2.6	0.761	0.237	Valid
Customer Capital	IC3.1	0.636	0.237	Valid
	IC3.2	0.750	0.237	Valid
	IC3.3	0.653	0.237	Valid
	IC3.4	0.771	0.237	Valid
	IC3.5	0.754	0.237	Valid
	IC3.6	0.762	0.237	Valid

Source: Primary Data 2018

The results of the validity test show that for all indicators, the IC variable has a validity coefficient value above 0.237. Therefore, all question items in the IC variable can be used because they have good validity.

Table2. Validity Test of Operational Risk Management

Variables	Items	Validity coefficient	R-Tabel	Result
Risk Assessment	MRO1.1	0.897	0.237	Valid
	MRO1.2	0.906	0.237	Valid
Risk Control	MRO2.1	0.885	0.237	Valid
	MRO2.2	0.881	0.237	Valid

Source: Primary Data 2018

The results of the validity test analysis show that all indicators on the operational risk management variable have a validity coefficient value above 0.237. Therefore, all question items related to the operational risk management variables can be used because they have good validity.

Table3. Validity test of Implementation of Business Strategy

Variables	Item	Validity coefficient	R-Tabel	Result
Cost Leadership Strategy	SB1.1	0.707	0.237	Valid
	SB1.2	0.696	0.237	Valid
	SB1.3	0.870	0.237	Valid
	SB1.4	0.661	0.237	Valid
Differensiasi Strategy	SB2.1	0.728	0.237	Valid
	SB2.2	0.763	0.237	Valid
	SB2.3	0.750	0.237	Valid
Fokus Strategy	SB3.1	0.805	0.237	Valid
	SB3.2	0.679	0.237	Valid
	SB3.3	0.769	0.237	Valid

Source: Data Processed, 2018

The results of the validity test analysis show that all indicators on the business implementation strategy variables have a validity coefficient value above 0.237. Therefore, all question items related to the business strategy implementation variables can be used because they have good validity.

Tabe l4. Validity Test of Successful implementation of Management Accounting Information System

Variables	Item	Validity coefficient	R-Tabel	Result
Integration	KSIAM1.1	0.719	0.237	Valid
	KSIAM1.2	0.726	0.237	Valid
	KSIAM1.3	0.679	0.237	Valid
Flexibility	KSIAM2.1	0.715	0.237	Valid
	KSIAM2.2	0.737	0.237	Valid
Accessibility	KSIAM3.1	0.820	0.237	Valid
	KSIAM3.2	0.784	0.237	Valid
Formalization	KSIAM4.1	0.775	0.237	Valid
Media Richness	KSIAM5.1	0.640	0.237	Valid
	KSIAM5.2	0.702	0.237	Valid

Source: Data Processed 2018

The results of the validity test analysis indicate that all indicators on the variables of the successful implementation of management accounting information systems have a value of validity coefficient above 0.237. Therefore, all the question items in the variables of the successful implementation of management accounting information system can be used because they have good validity.

Tabel5. Performance Validity Test of Balanced Scorecard based company

Variables	Item	Validity coefficient	Tabel	Complement
Perspective of finance	KBSC1.1	0.726	0.237	Valid
	KBSC1.2	0.651	0.237	Valid
	KBSC1.3	0.677	0.237	Valid
	KBSC1.4	0.736	0.237	Valid
Perspective of customer	KBSC2.1	0.679	0.237	Valid
	KBSC2.2	0.690	0.237	Valid
	KBSC2.3	0.725	0.237	Valid
	KBSC2.4	0.724	0.237	Valid
Perspective of internal business process	KBSC3.1	0.708	0.237	Valid
	KBSC3.2	0.697	0.237	Valid
	KBSC3.3	0.711	0.237	Valid
Perspective of growth &learning	KBSC4.1	0.796	0.237	Valid
	KBSC4.2	0.725	0.237	Valid
	KBSC4.3	0.608	0.237	Valid

Source: Data Processed 2018

The results of the validity test analysis show that for all indicators on the performance of balanced scorecard based company variable have a validity coefficient value above 0.237. Therefore, all the

question items in the performance of balanced scorecard based company variables can be used because they have good validity.

Tabel6. Reliability Test

Variable	Reliability coefficient	Tabel	Complement
Intellectual Capital	0.946	0.7	Reliable
Operational Risk Management	0.913	0.7	Reliable
Implementation of Business Strategy	0.910	0.7	Reliable
Successful implementation of Management Accounting Information System	0.897	0.7	Reliable
Performance of Balanced Scorecard based company	0.921	0.7	Reliable

Source: Primary Data 2018

The results of the reliability test show that all variables have good reliability, with a Cronbach's alpha coefficient above 0.7.

4.1 Analysis of SEM

The SEM analysis used the LISREL software assistant; the results of the structural modelling can be seen in the following figure:

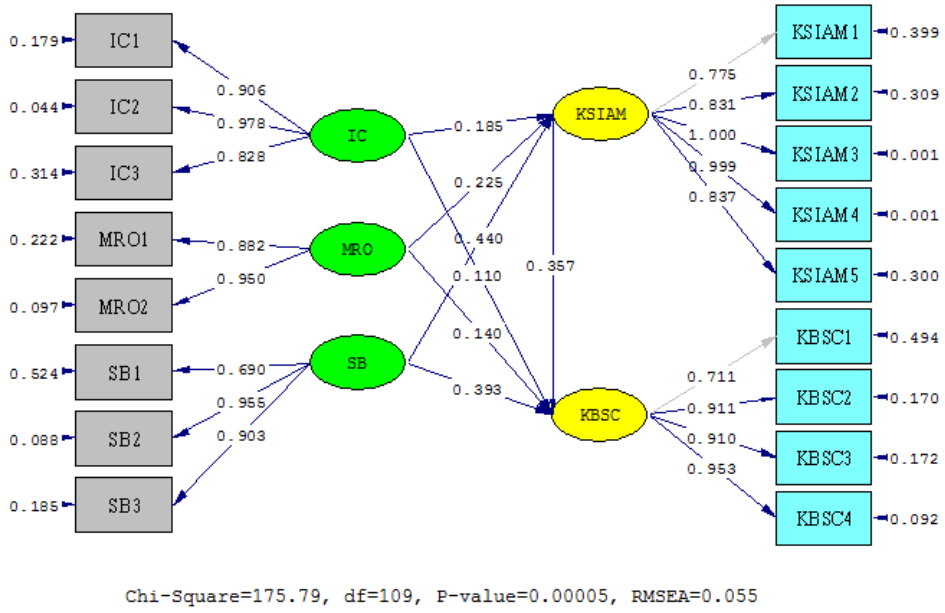

Figure2. Path Diagram of Structural Model

Based on the picture above obtained the structural equation as follows:

1. KSIAM = 0.185*IC + 0.225*MRO + 0.440*SB, Errorvar.= 0.480 , R^2 = 0.520
2. KBSC = 0.357*KSIAM + 0.110*IC + 0.140*MRO + 0.393*SB, Errorvar.= 0.273 , R^2 = 0.727

From the first equation, we can see that the relationship of IC, operational risk management, and the implementation of business strategy with the successful implementation of a management accounting information system is positive, with a total influence of 52%. Furthermore, in the equation both relationship directions between the successful implementation of management accounting information systems, IC, operational risk management, and the implementation of a business strategy with the performance of a balanced scorecard based company is positive, with a total influence of 72.7%.

4.1.1. Goodness of Fit

The goodness of fit criteria of the above SEM is presented in the following table:

Tabel7. Goodness of Fit Testing Research Model

No.	*Goodness 0f Fix Index*	*Cut-off Value*	Result	Conclusion
1	*Chi-Square*	Less than 0,05	175,786 < 134,369	Good Fit
2	*Significant Probability*	≥ 0,05	0,000	Not Fit
3	RMSEA	≤ 0,08	0,055	Good Fit
4	GFI	≥ 0,90	0,906	Good Fit
5	AGFI	≤ 0,90	0,868	Marginal Fit
6	CMIN/DF	≤ 2,00	1,823	Good Fit
7	TLI	≥ 0,95	0,987	Good Fit
8	CFI	≥ 0,94	0.990	Good Fit

Source: Ferdinand (2014)

Based on RMSEA, CMIN / DF, TLI, and CFI are included in the category of good fit and based on other indicators the model is quite fit.

4.1.2. Hypothesis Testing

The next objective in the structural model analysis is to estimate the effect parameters between variables, which will also prove the research hypothesis. Below is a summary of the results of the parameter estimation of the SEM analysis, which has been performed as presented in the following table:

Tabel8. Hypothesis testing

Variable	Estimate	C.R	Complement
IC → KSIAM	0.185	2.441	Significant
MRO → KSIAM	0.225	3.559	Significant
SB → KSIAM	0.440	5.090	Significant
KSIAM → KBSC	0.357	5.208	Significant
IC → KBSC	0.110	1.763	Not Significant
MRO → KBSC	0.140	2.645	Significant
SB → KBSC	0.393	4.971	Significant

5. Discussion

The results of influence testing the Intellectual Capital on the successful implementation of management accounting information system shows the value of the standardised regression weight coefficient between the IC and the successful implementation of management accounting information system variable values to be 0.185, with a critical ratio (CR) of 2.441; if this was greater than 1.96, H0 would be rejected. This means that IC variables positively and significantly influence the successful implementation of management accounting information system variable, so Hypothesis 1 is accepted. The conclusion that IC positively affects the successful implementation of management accounting information systems

supports previous research conducted [19who say that companies should retain key "employee[s]" to maintain good relations with external parties to facilitate long-term company interests. The results of this study support the hypothesis that has been built and provide empirical evidence that the effective management of IC in an organisation can improve the successful implementation of management accounting information systems. The results of the effect of operational risk management on the successful implementation of management accounting information systems show the coefficient value of standardised regression weight between the operational risk management variable and the successful implementation of Management Accounting Information System is 0.225 and has a critical ratio (CR) of 3.559 or greater than 1.96 then H0 is rejected. This means that operational risk management variables positively and significantly influence the successful implementation of management accounting information system variable, so Hypothesis 2 can be accepted. The conclusion that

operational risk management positively affects the successful implementation of management accounting information systems supports previous research conducted [26], which states that operational risk management significantly contributes to the development of accounting information system software. However, the results of research conducted [27] found that three categories of risk (there is an unclear role definition between team members, implementation complexity, and lack of user experience in implementations) are significantly related to the success of information systems. The results of this study support the hypothesis that has been built and provide empirical evidence that operational risk management positively influences the successful implementation of management accounting information systems. The results of influence testing the implementation of business strategies on the successful implementation of management accounting information systems show the value of the coefficient of the standardised regression weight between the business strategy implementation variable and the successful implementation of management accounting information system variable to be 0.440, with a CR of 5.090 or greater than 1.96 and so H0 is rejected. This means that the business strategy implementation variable positively and significantly influences the successful implementation of the management accounting information system variable, so Hypothesis 3 can be accepted. The conclusion that the implementation of business strategies positively influences the successful implementation of management accounting information systems supports previous research conducted [29], [30], whose research produced empirical evidence that business strategies significantly influences the effectiveness of accounting information systems. The results of this study support the hypothesis that has been built and provide empirical evidence that the implementation of business strategies positively influences the successful implementation of management accounting information systems. The result of testing the influence of the successful implementation of the management accounting information systems on the performance of balanced scorecard based companies shows the coefficient value and standardised regression weight between the successful implementation of management accounting information system variable and the performance balanced scorecard based companies variable to be 0,357, with a CR of 5,208 or greater than 1.96, and so H0 is rejected. This means that the successful implementation of management accounting information system variable has a positive and significant influence on the balanced scorecard based company performance variable, so Hypothesis 4 can be accepted. The conclusion that the successful implementation of a management accounting information system has a positive effect on the performance of balanced scorecard based companies supports previous research conducted which produced empirical evidence that a management accounting system can demonstrate and improve company performance. The results of this study support the hypothesis that has been built and provides empirical evidence that the successful implementation of management accounting information systems has a positive effect on the performance of company based balanced scorecards [31,32]. The result of the examination of IC's influence on the performance of balanced scorecard based companies shows the coefficient value and standardised regression weight between the IC variable and the performance of the balanced scorecard based companies variable is 0,110, with a CR equal to 1,765 or smaller than 1,96 and so H0 can be accepted. This means that the IC variable has no positive or significant effect on the performance of balanced scorecard based companies and so Hypothesis 5 is rejected. The conclusion that IC does not affect the performance of a balanced scorecard based company supports previous research conducted, where the IC and company performance are not positively related; IC is not related to future company financial performance, and ROGIC is not positively related to the performance of the company or the contribution of IC to the performance of different companies, according to the literature. The results of this study are not in accordance with the hypothesis that has been built and provides empirical evidence that IC has no positive or significant effect on the company performance based balanced scorecard variable. The result of testing of the effect of operational risk management on the performance of balanced scorecard based companies shows the coefficient value of standardised regression weight between the operational risk management variable and the performance of balanced scorecard based companies variable to be 0.140, with a CR of 2.645

or greater than 1.96, and so H0 is rejected. This means that the operational risk management variable positively and significantly affects the performance of balanced scorecard based companies, so Hypothesis 6 can be accepted. The conclusion that operational risk management positively affects the performance of a balanced scorecard based company supports previous studies conducted in which the results found a positive and significant relationship and influence between operational risk management and improved performance. The results of this study support the hypothesis that has been built and provide empirical evidence that the operational risk management positively affects performance based balanced scorecards. The result of testing the influence of business strategy implementation on the performance of balanced scorecard based companies shows the coefficient value of the standardised regression weight between the business strategy implementation variable and the corporate performance based on balanced scorecard variable to be 0,393,with a CR of 4,971 or greater than 1,96, and so H0 is rejected. This means that the business strategy implementation variable positively and significantly influences the company performance based balanced scorecard variable, and so Hypothesis 7 can be accepted. The conclusion that the implementation of a business strategy positively affects the performance of a balanced scorecard based company supports a number of previous studies conducted,in which the results found a link between business strategy and the improvement of balanced scorecard performance. The results of this study support the hypothesis that has been built and provide empirical evidence that the implementation of business strategy positively affects the performance of the company based balanced scorecard.

6. Conclusions

Conclusions can be drawn as follows:

1. IC has a significant effect on the successful implementation of management accounting information systems. The influence of IC on the successful implementation of management accounting information systems shows a positive direction; this means that the better IC in an organisation/company, the bigger the increase on the success of the implementation of management accounting information systems within the company.
2. Operational risk management has a significant effect on the successful implementation of management accounting information systems. The effect of operational risk management shows a positive direction; this means that the better the operational risk management in an organisation/company, the bigger the success of the implementation of management accounting information systems within the company.
3. Implementation of business strategy has a significant effect on the successful implementation of management accounting information systems. The influence of business strategy implementation shows a positive direction; this means that the better the implementation of business strategy in an organisation/company, the bigger the successful implementation within the company.
4. Successful implementation of management accounting information systems has a significant effect on the performance of balanced scorecard based companies. The influence of the successful implementation of management accounting information systems shows a positive direction; this means that the better the success of the implementation of management accounting information systems in an organisation/company, the bigger the increase in its performance.
5. IC has no significant effect on the performance of balanced scorecard based companies. The influence of IC on the performance of balanced scorecard based companies shows a positive direction; this means that the better the IC in an organisation/company, the bigger the increase in the performance of the company based balanced scorecard.
6. Operational risk management significantly affects the performance of a balanced scorecard based company. The effect of operational risk management on the performance of a balanced scorecard based company shows a positive direction; this means that the better the operational risk management in an organisation/company, the bigger the increase in the performance of the company based balanced scorecard.
7. Implementation of business strategy has a significant effect on the performance of a balanced scorecard based company. The influence of business strategy implementation on a balanced scorecard based company performance shows a positive direction; this means that the better the implementation of business strategy within an

organisation/company, the bigger the increase in the performance of a balanced scorecard based company.

References

[1] Mulyani, S. *Sistem Informasi Manajemen (Rumah Sakit: Analisis dan Perancangan). Cetakan ke-1.* . Bandung: Abdi Sistematika, 2009.

[2] Romney, M. B., & Steinbart, P. J. *Accounting Information System. Tenth Edition.* New Jersey: Pearson Education, 2012.

[3] Stewart, T. *Intellectual Capital: The new Wealth of Organizations.* New York: Doubleday Dell Publishing Group, Inc, 1997.

[4] Bontis, N. A.-A. *Intellectual capital and business performance in Malaysian industries*. Journal of Intellectual Capital, 85-100, 2000.

[5] Morgan, N. A. *Linking marketing capabilities with profit growth*. International Journal of Research in Marketing, 26(4), 284–293, 2009.

[6] Campbell, e. a. *Business Strategy: An Introduction. Second Edition*. United Kingdom: Butterworth-Heinemann an Imprint of Elsevier Selencez, 2002.

[7] Considine, B. *Accounting Information System: Understanding Business Process*. Australia: John Willey &Sons, 2010.

[8] Healy, P. M. *Business Analysis and Valuation. 2nd ed.* South-Western College Publishing, 2000.

[9] Porter, M. E. *Towards a Dynamic Theory of Strategy*. Strategic Management Journal, 12 (Special Issue: Fundamental Research Issues in Strategy and Economics), 95-117, 1991.

[10] Hoque, Z. *Strategic Management Accounting*, 2nd Edition: Concepts, Processes and Issues. Spiro Press, 2004.

[11] DeLone, W., & and McLean, E. *The DeLone and McLean Model of Information System Success: A ten Years Update*. Journal of Management Information Systems / Spring 2003. Vol. 19, No. 4, Pp. 9-30, 2003.

[12] Mulyani, S., Hasan, R., & Anugrah, F. *The Critical Succes Factor For The Use Information Systems And Its Impact On The Organizational Performance*. International Business Management 10 (4). ISSN:1993-5250., 552-560, 2016.

[13] Kaplan, R. S. and D.P. Norton. *The Balanced Scorecard: Translating Strategy into Action,*. Boston: HBS Press, 1996a.

[14] Hansen, D. R. *Cost Management Accounting and Control, Five Edition*. United States of America: Prentice Hall, 2006.

[15] Garrison, R. N. *Akuntansi Manajerial Buku I Edisi 11*. Jakarta: Salemba Empat, 2006.

[16] Wang, W. Y. *Intellectual Capital and Performance in Causal Models: Evidence from the Information Technology Industry in Taiwan*. Journal of Intellectual Capital, Vol. 6 No.2, pp. 226-36, 2005.

[17] Bontis, N. "*Intellectual capital: an exploratory study that develops measures and models*. Management decision, 63-76, 1998.

[18] Fitz-enz, B. a. *Intellectual capital ROI: a causal map of human capital antecedents and consequents*. Journal of Intellectual Capital, Vol. 3 No.3, pp. 223-47, 2002.

[19] Ittner, C. a. *Are Nonfinancial Measures Leading Indicators of Financial Performances: An Analysis of Customer Satisfaction*. Journal of Accounting Research, 1-35, 1998.

[20] Mulyani, S., & Azmi, F. *Factors That Affect Accounting Information System Success and its Implication on Accounting Information.* Asian Journal of Information Technology 14 (5), ISSN : 1682-3915 (Print), ISSN : 1993-5994 (Online), 154-161, 2015.

[21] Bobera. *Project Management.* Subotica: Fakulty of ekonomics: Subotika, 2007.

[22] Keil, M. & Mann, J. *Understanding the nature and extent of IS project escalation:*. Proceedings of the Thirteenth Annual Hawaii International Conference, (hal. 1-11), 1997.

[23] Wallace, D. M.-R. *Training educators to implemet functional analyses*. Journal of Applied Behavior Analysis, Vo.37, Issue 1, 89-92, 2004.

[24] Jalote, P. *Software Project Management in Practice.* Boston, MA: Addison-Wesley, 2002.

[25] Durcovic Ozren & lazar Rakovic . *Risks in Information Systems Development Projects Management Information Systems*. Vol 4, No.1, 013-019, 2009.

[26] Boehm, B. e.-2. *Software development cost estimation approaches-A survey.* Annals of Software Engineering, Vol.10, issue 1, 177-205, 2000.

[27] Jiang, J., & Klein, G. *Software development risks to project effectiveness*. Journal of Systems and Software, nr. 52(1), 3-10, 2000.

[28] Ward,John and Joe Peppard. *Strategic Planning for Information System* . England: John Wiley & Sons, 2002.

[29] Xiaoying, D., Qianqian, L.I.U., Dezhi, Y.I.N. *Business performance, business strategy, and information system strategic alignment: an empirical study on Chinese firms,*. Tsinghua Science AndTechnology, 13(3): 348–354, 2008.

[30] Gilbert, J. A. *The Strategic Impact Of Environmental Uncertainty And Information Systems Design*. Review of Business Information Systems (RBIS), 3(3), 1-14, 1999.

[31] Farzaneh, Dalir Rezagholi Gheshlaghi , Yunes ,Ahmadzadeh , Fahimeh, Faal. *The cash flow statement's component effect on Management Performance in firms enlisted in Tehran Stock Exchange*, UCT Journal of Management and Accounting Studies, Issue1, pp. 14-21, 2014.

[32] Muhammad K. *The Effects of Electronic Human Resource Management on Financial Institutes*. Journal of Humanities Insights. 02(01):01-5, 2018.