

The Mediating Role of Effective Strategic Decision Making in the Relationship between Intellectual Capital and Information System Capability effect on Financial Performance

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ABSTRACT

This study analyses the importance of intellectual capital and information system capability applied in stated-owned companies in Indonesia which influences the company's financial performance through mediating variable. Using the theory of resource based view (RBV) and bounded rationality to investigate these relations, a series of hypotheses are developed, taking into account the position of effective strategic decision-making as a mediator variable. The study analyses structural equation modelling (SEM) derived from empirical data from 106 companies in Indonesia. The study attempts to precisely analyze how the impact of intellectual capital and information system capability on established stated-owned companies in Indonesia is affected by effective strategic decision making. The research exposes that information system capability has no influence on financial performance, whereas intellectual capital and information system capability indirectly leverages the financial performance through effective strategic decision-making.

Keywords: Intellectual capital; Information system capability; Effective strategic decision making; Financial performance

INTRODUCTION

Digitalization in industry 4.0 resulted in rapid and continuing market growth. Industry 4.0 describes a technique to move from dominant machinery to digital output. In order to achieve an effective transition of the industrial 4.0 standard, the main elements of a concrete future business climate must be clearly recognized. Industry 4.0's characteristics are based on heterogeneous data and the convergence of information to meet the agile and complex development requirements and increase the performance of the entire industry. Industry 4.0's goal is to improve operating efficiency and productivity as well as the automation level [1]. Emphasize which five main features of Industry 4.0 include digitisation, optimization, and manufacturing customization; automation and adaption; interaction between human machinery; added-value services and enterprises; and automated data sharing and communication. These features are not only very much related to internet technology and advanced algorithms, but also suggest that Industry 4.0 is a technological method for adding value and managing information [2, 3].

In addition, the fourth industrial revolution put great pressure on industry and companies to maintain their competitiveness by

keeping updated with recent developments in information system and technology capabilities infrastructure [4]. Companies draw on the comprehensive information opportunity, based on pace, cost and range, through technology management [5]. Information system (IS) capability will help to improve visibility within supply chains and networks, allowing businesses to introduce suitable IT technologies and thereby incorporate and strengthen decision-making processes [6].

In principle, as IT provides industrial companies with an ongoing changing business environment (such as its impact on information exchange capacities), more research is needed to investigate how IT activities affect cross organizational relations and achievement [7]. The Resource Based View (RBV) states that competitive advantages depend on internal aspects of a company [8]. It is proved by Theory of RBV. However other scholars have shown that IT cannot generate lasting improved performance because of poor income [9] and failure of the information system [10]. In addition firms fail to achieve improved performance after cross organizational information sharing via IT capabilities has been implemented. IS capability is the varied procedure which flexibly describes the impactful conversion into outputs by an enterprise as

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a combination of resources and expertise [10]. Therefore, it creates a wider perspective of a company by merging sources and skills for higher performance. This aims at filling this research gap, therefore, by analyzing the impact of information system capacity on the financial performance of Indonesian state-owned companies.

Information and knowledge control the information age. The role of human capital is also increased [11] where the value of the organization is important to human capital [12]. The managerial accomplishment is influenced significantly by the organization's determination to maximize the significance of intellectual capital.

Bontis affirmed which the connection between intellectual capital and business performance has positive and substantial. Intellectual capital must meet certain strategic criteria to such an extent the key elements of improvement firm. In order to achieve competitive advantage each strategy requires some human resource competences. As the globalized world has come, corporate growth and success have undergone turbulent changes and the role of intelligent capital to obtain greater outcomes is more important. The RBV defines that competitive advantages depend a firm's internal elements or capabilities. It is facilitated by Theory of RBV. Although there is much academic research into and impact on intellectual capital, previous research could not yet demonstrate why certain companies with qualified senior management teams, high-quality institutional mechanisms and management of information systems have still been unsatisfactory in their financial performance [13]. Companies with the relatively similar intellectual capital level might not benefit equally, as they differ in the capacity to sensitize, seize and restructure the capital. This aims, therefore, to fill this research gap by analyzing the influences of intellectual capital on the financial performance in Indonesia of state-owned enterprises.

The concept of bounded rationality theory is, therefore, when making critical decisions, the tractability, cognitive limits and the time allotted for decision-making process is limited to rational thinking [14]. Informational distortion provides a key function in adverse decision-making, since the idea of restricted rationality may even require links to information at some stage. The provision of more accurate and reliable data should support effective decision-making, and the ability to forecast will increase policymakers' ability to make more effective and comprehensive decisions, and then to achieve the organization's goal.

To cope with this gap, this research assesses the influence of the IS capabilities on effective strategic decision-making and the resulting firm's performance. IS capacity plays a key part in making judgment. Managers cope with highly substantially structure less assignments and, despite the high level of uncertainty, have to make decisions [15]. Technology reduces the time expended toward information review. Insufficient of IS capabilities, companies are not making the necessary choices in time compared to their competitors. The duration and dedication taken to take decisions can be minimized using technological resources and related systems. This increases information capacity of managers in the decision-making process in order to accomplish their organization targets [16]. There are several contributions to this research. Firstly, the specification of IS capabilities and intellectual capital allows RBV theory to be used to explore financial performance of stated companies in Indonesia more effectively. Second, the model of the mediating role is intended to regard the impact on the relation between IS capability & intellectual capital and financial result by effective strategic decision-making. Thirdly, this research seeks to explore

the synergy between the RBV theory and the theory of bounded rationality. Finally, this research is considered important for policy-making process, particularly for managers are encouraged to leverage financial performance in companies in Indonesia.

LITERATURE REVIEW

Theory of Bounded Rationality

In practice, this theory indicated that decision making seeks the best form or option in all circumstances in current hypotheses that have been affirmed by decision-makers. This is called as the theory of bounded rationality that people are reasonable by intention. Owing to information processing and knowledge limitations, they are constrained in their comprehension. Any organization would rarely be able to store all potential solutions for a particular problem with the usage instead of seeking to optimize for a solution.

Now the most common way information systems are handled is to reverse the perceptions of a system. In this method, general objectives (measured by the quantitative outputs) are established for system first; then the smaller targets or outputs for the individual component functions are defined and associated and then the inputs necessary for each function to be performed are described. Changing the system's overall performance triggers the chain reaction of adjustments to previous outputs and allows functions at the end of the process to operate on new information inputs. In reality, the need to work on new and new information inputs for organizations grows rapidly in the evolving and unpredictable market climate in which the performance of organizations is challenged every day. But the ability to handle the new information created within the organization is very limited for an organization as a whole. The organization is limited to a predefined smaller set of information inputs and only operates on inputs within limits in order to achieve such satisfactory outcomes rather than optimized outputs [17].

Drawing upon theory of bounded rationality, IS Capabilities and intellectual capital also minimize an organization's level of hierarchy throughout decision-making and contribute to quicker and more exact recognition of challenges and/or possibilities. Precise prediction greatly increases the transparency and decision-making capacity; managers may therefore focus on more important factors. Efficient decision-making also contributes to the implementation and development of successful new products and services through latest tech (Baum & Wily, 2003), helping to increase business process efficiency.

Theory of resource based view (RBV)

The RBV says that for such internal aspects (resources) within the organization a sustainable competitive advantage needs to be achieved. The RBV concentrates on the resources and capability that decide the success of the organization. Sources comprising of assets, knowledge and skills decide the mechanism of empowerment to develop productivity and social welfare. Resources can be generally described as firm-controlled properties, business processes, and characteristics of the company, information and expertise that can be used to establish and execute its strategies. In addition, the business is a set of capital, talents and skills. Unlike its rivals, variations in the capital, capabilities and skills of an organization will decide their competitive benefit.

Sources should meet the following features:

1. Value, implying a critical significance for consumers and firms.
2. Rare resources ensures to be limited and extraordinary in the perceive that they are hard to find in the rivalry.
3. Imperfect imitability, those sources cannot be reproduced by organizations that do not have such resources.
4. Non-substitutivity, the substitution of resources with alternate sources is not feasible.

Drawing on RBV's theory, IS capability and intellectual capital are the fundamental basis for the firm's competitive advantage, its corporate strategy improvement and its propensity to produce higher-average profits.

Relationship between intellectual capital and financial performance

The Firm's resources (RBV) point of view that the competitive advantage is focused on important, rare, inimitable and unsubstituted heterogeneous resources (VRIN) (Barney, 1991). The strategic and specific information structure integrated into organizational processes with VRIN assets is different from tangible resources such as property, packaging materials or capital readily accessible from transactions that lead to major changes in the operational environment of the company. Intellectual capital (IC) is identified as any key contributor to the firm's value generating processes, is regulated by the firm and generated by the firm.

Human capital supports and is important for creative success because the expertise, experience and expertise of workers in today's rapidly evolving world are key. Awareness of intellectual capital is an important part of human capital-influenced organizational learning and business information system. Human capital aims to improve the quality of information and learning and emphasizes the role of individuals and communities in the sharing of knowledge. The effort to acquire sufficient knowledge of intelligence and resources to incorporate and tackle the real challenges and awareness of the complex and on evolving business environment [19]. High-quality affects professionals with strong preparation and advanced expertise are enabling them to build up their intellectual capacity to enhance their work efficiency by providing businesses with stronger strategic judgment, to work more efficiently and eventually to boost the company's innovative results (20, 21). The movement of resources through a relational structure is involved with relational capital and is considered as one of the main factors in recognizing wealth creation [18-20]. A organization may receive valuable information or assistance from its clients, partners and customers. The relational capital of an organization often directly affects the combination and sharing mechanism and makes it reasonably accessible network capacity. As the evidence, the economic and operational output of business and government links. Companies can boost innovative performance through close and embedded customer ties, mainly some manufacturing companies with stronger strategic alliances will faster develop new products at a lower cost to influence innovative performance. Empirical research shows which relational capital improves creative success for companies in Asian.

Innovation capital is a mechanism for the introduction of new products and/or services in an enterprise or the creation of new

manufacturing and operating systems for satisfying consumer requirements. Innovation acts major perform in value creation, including new market growth, preservation of the current market shares and improved competitive advantage. An essential part of the business strategy is creativity. The business has powerful weapons to conquer the innovative market. Creativity is also the subject of academia and market study. Major studies have tackled numerous market issues with attaining successful global competitive advantage. Innovation aims not only to lower prices, but also to increase the quality of goods and services, to develop improved products, to expand the product experiences and to adapt to the preferences and requests of consumers. The growth of the performance company also involves creative products and services, new organizational structures and new business plans. The impact of innovation upon firm success metrics has been shown by Terziovski (2002), which are varieties of strategies such as

- (1) Integral innovation orientation,
- (2) Incremental innovation orientation and
- (3) An extremist innovation orientation demonstrated the impact of innovation on firm achievement metrics (customer fulfillment, efficiency and technical effectiveness).

The extant literature posits that Intellectual capital (IC) is classified as human, relational and innovation capital. These three components of IC reflect and include the collection of intangible assets of the company. The first hypothesis is developed on the basis of previous arguments.

METHODOLOGY

Data Collection and Sample

The data used in this analysis have been gathered from a database of the Indonesian Ministry of State Enterprise. We have randomly chosen 113 firms as the study respondents. The research unit was at the company level. The main informants were general managers, CEOs or directors responsible because they were supposed to have the best knowledge of the results of the businesses and decision makers. The self-addressed and stamped envelopes have also been supplied with a cover letter describing the importance of the study in promoting the return of full questionnaires. Requests for follow-ups and letters of reminders were used to explain challenging questions and increase the response rate. These efforts culminated in the receipt of 106 valid questionnaires with a response rate of 93,8% an appropriate standard for survey-based management study

The researchers defined three variables on the basis of the literature review (intellectual capital, information system capabilities, effective strategic decision making) contributing to financial performance. As example, respondents were asked to state the importance of intellectual capital and information system capabilities to enhance their financial performance, applying a five-point scale, "Strongly disagree" (1) and "strongly agree" (5). This analysis categorizes intellectual capital into human capital, innovation capital and relational capital. Human capital was measured by four items which employees' company has capability to adapt dynamic situation, good integrity, good loyalty, and synergy to create added-value. Relational capital was measured by four items which company has to build good reputation, to maintain good relationship with business partners, commitment to maintain satisfying customers, and good relationship with shareholders. Innovation capital was

measured by four items which company have to enhance innovation in design product, to monitor innovative strategy periodically, information system to be easily for innovative strategy, and good standard operating procedure to support innovation.

Information system (IS) capabilities was measured by twelve items which company have good capacity for IS infrastructure, a high response demand from external client, flexible operating on internet system, a provided data real-time for employee, integrated to involve a different functional unit, capable IT staff to implement new technology, capable IT staff to give fast solution, capable IT staff to synchronize between IS strategy and corporate strategy, to increase effective decision-making, to help effective firm performance, to help purchasing making fast decision, and easily to create the planning of corporate strategy.

Effective strategic decision making was measured by two items which company makes strategic decision with fast, and high quality. Financial performance was measured by three items which company has growth sales, return on asset (ROA) in last three years, and growth net income.

Data Analysis and Results

In order to understand the direct and indirect impact of intellectual capital and information system capabilities on financial performance with the mediating influence of effective strategic decision making at stated-owned companies in Indonesia, for the evaluation of the overall measurement model, a statistical SmartPLS software package (PLS-SEM (Partial Least Square-Structural Equation Modeling) was used.

Measurement Model

Convergent validity and discriminant validity have been tested. Convergent validity is the extent to which the objects to measure a single building agree. We have evaluated convergent validity by testing substantial factor loads exceeding 0.7, composite reliabilities exceeding 0.8 and the average extracted variance (AVE) that should be more than 0.5 for all constructs. The majority of factor charges in our model are greater than 0.7 and measuring objects are removed if their factor loads are less than 0.70. The results show that our model meets the criterion of convergent validity. With Cronbach α , we tested the internal reliability of scales. Table 1 indicates the loading factor, AVE, CR and (C α) of all constructions. (Table 1).

Table 1: Discriminant validity.

| ESDM | FP | IC | ISC |
|------|-------|-------|-----|
| ESDM | | | |
| FP | 0,861 | | |
| IC | 0,859 | 0,878 | |
| ISC | 0,853 | 0,864 | |

DISCUSSION

The research assesses the structural relationships between the variables by analyzing the various mediatory impacts through a path analysis. Path analyses were employed to evaluate hypotheses in the research model using the Smart-PLS program. The research portrays standardized path coefficients of the study model. The path coefficient from Intellectual Capital to Effective Strategic Decision Making was positive and significant ($\beta = 0.400$; $p < 0.01$), and the path coefficient from Information System Capability to

Effective Strategic Decision Making was positive and significant ($\beta = 0.425$; $p < 0.01$). Thus, there is enough evidence to support H3 and H4. Finally, the path coefficient from Effective Strategic Decision Making to Financial Performance was positive and significant ($\beta = 0.382$; $p < 0.01$) that the result supports H5.

Additionally, the indirect relationship of intellectual Capital on financial Performance through Effective Strategic Decision Making as mediator was also positive and significant ($\beta = 0.153$; $p < 0.01$), that H6 is supported. Then, the indirect effects of Information System Capability on Financial Performance through Effective Strategic Decision Making as mediator was also positive and significant ($\beta = 0.162$; $p < 0.05$), that state H7 is supported. Given the above, we can conclude that Effective Strategic Decision Making fully mediates the link between Information System Capability and financial performance. Whereas Effective Strategic Decision Making has partial mediation for link between intellectual Capital and financial performance.

The results of the present study conclude that the intellectual capital (IC) significantly influence the financial performance of the stated-owned companies in Indonesia which confirm the findings of Bontis, 1999; Hsu and Wang, 2012; Han and Li, 2015. The aspect of intellectual capital lies in the wisdom of workers, which is part of human capital. The human capital of Indonesian companies was able to create value for the companies. The employees of stated-owned companies in Indonesia were able to do their utmost to get companies the best from their employees through their ingenuity and intellect. The workers were able to make the companies distinct from other companies with all their efforts. The majority of businesses in Indonesia have high quality recruitment workers with ideal competencies. It means that workers can collaborate with teams, have ideas and prepare for the achievement of the goal. The support of relational capital thus improves the exchange of information by promoting contact between members. It is because the employees of firms believe that communications network structures and arrangements have an important effect on knowledge sharing among employees and can help to improve the knowledge sharing between them in order to achieve their business goal. Otherwise the potential of the information system (IS) may not have had a financial effect on the output of declared companies. It is consistent with research findings for and that lack the IS infrastructure. Tangible and intangible IS capabilities were not both present in order to execute a cohesive plan to prevent IS capabilities from creating business value and preserving the competitiveness of an enterprise in a marketplace. In accordance to the facilities of hardware/software for knowledge diffusion in the company, the employee's ability to introduce and manage technical ways out is lacking, and business goals are designed, coordinated and integrated into business processes that fail to achieve effective IS. Therefore some companies that leave administrative capacity can struggle to achieve the anticipated performance gains, because IS managers have difficult bureaucracy for a management authority.

In addition, intellectual capital has a substantial influence on successful strategic decision-making, consistent with Preston et al.'s results. It is because executives are more likely to have strategic IT decision-making powers in organizations whose senior management team embraces IT. Previous research indicated which managers who inform directly to the CEO should be more able to line up with IT and provide strategic IT implementations to the company. The institutional role enables IT contribution by improving the latitude of the executives to pursue strategic IT initiatives. Managers

will also be given strategic decision-making authority with a proven success record. This finding supports the literature which claims that human capital is a vital factor of strategic decision-making. CEO experience even less knows the essence of the experiences required how IT human resources policies can be built to certify that a new generation of CEOs is set to take up the role.

Thus, the IS capability significantly influence on the effective strategic decision making which is consistent the findings of. Continued investment in developing capabilities contributes to the need of technology and IS solutions by businesses. These additional expenditures should be clear and observable in terms of their contribution to the success of the business. Investing in IS skills should then help effective decision-making to boost their efficiency with intangible assets as both create the organizational foundation to strengthen a company's power. The combined capabilities and competences of the IS capacity play a central role in strategic organizational decision-making.

Therefore, the effective strategic decision making significantly influence on financial performance which is consistent the findings. This will allow an organization to identify issues more rapidly, predict prospects for economies of scale, seek alternative use of resources, efficient, achieve higher job efficiency, and identify new distribution channels and markets. Improved effective decision-making conducts to more efficient market processes that concentrate on quicker customer response. All these attempts have an effect on revenue returns, asset values and net profits, all of which help boost financial results. In this study, we conclude that the importance of IT comes from the management's decision-making latitude. Our study shows that high-level management can be in the presence of strategic decision-making authorities and can lead to financial success in the decisions on strategic decision-making policies.

The results further indicate that effective strategic decision-making is a mediator between IC & IS capability and financial achievement. It is because executives in companies, whose senior management team includes IT, are more likely to have strategic IT decision-making authority. Investments in IS capacities should also help efficient decision-making to boost their efficiency with intangible assets, as they build the organizational foundation to reinforce a company's power. Enhanced efficient decision-making then indicates to more successful business processes based on immediate customer responses.

IMPLICATIONS

Theoretically, this study supports the synergy between theory of resource based view and bounded rationality for relationship intellectual capital to increase financial performance of stated-owned companies through effective strategic decision making, although building IS capability is not able to build a sustained competitive advantage for a company. The effective strategic decision making is arranged as a mediator, this represents the new model creating that solves the research gap of the relationship between intellectual capital and IS capability on financial performance. This study provides finding that effective strategic decision making Improve the consistency, pace and efficiency of strategic and organizational decision-making. This will allow an organization to detect issues more rapidly, predict opportunities for economies of scale, find alternative use of resources, reduce costs, achieve higher job efficiency, and identify new sales channels

and markets.

From a practical point of view, the findings have major repercussions for managers. First of all, financial output requires more competent intellectual capital to prove that businesses should put high focus on intellectual capital discovery and exploitation. In particular, businesses should systematically train workers and enrich their work experience in order to improve human capital, create close relationships with their partners and strengthen partnership capital, and develop efficient processes and systems of knowledge to improve systemic capital. Second, successful strategic decision-making is critical, as it not only serves as a manager, but also a bridge between intellectual capital and financial output capacity of the IS. Since investment in IS ability should help successful strategic decisions to boost their output with intangible assets as both create the corporate backbone to reinforce a company's power. An organization with timely and reliable data increases the ability to assess and evaluate market opportunities and to be agile in strategic decision-making for fact-based business action.

CONCLUSIONS AND LIMITATIONS

The findings of this study have delivered some significantly useful evidences of the role of intellectual capital to improve financial performance in the stated-owned companies in Indonesia whereas IS capability has no a substantial impact on financial performance. Then, the study suggests that effective strategic decision making mediate the link between intellectual capitals & IS capability and financial performance. However, mediating by effective strategic decision making has a greater role impact from IS capability to financial performance rather than from intellectual capital to financial performance.

There are limitations in this analysis that suggest some future research directions. This analysis uses a cross-sectional design, which will allow a longitudinal study to be used for next research to further examine the effects of intellectual capital and the IS capacity on successful strategic decision making that also leverages financial efficiency. Finally, this research is only carried out by declared stated-owned companies, and it is quite advantageous to gather data from other private companies in order to provide more Confirmation of results.

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