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The Effect of Information Literacy on Managerial Performance: The Mediating Role of Strategic Management Accounting and the Moderating Role of Self Efficacy

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Abstract

This study attempts to examine the mediating effect of Strategic Management Accounting (SMA) information usage on the relationship between information literacy and managerial performance, and the moderating effect of self efficacy on the relationship between strategic management accounting and managerial performance. Using multiple regression as analytical method, responses from 236 managers of Banking institutions in Pekanbaru, Indonesia were analyzed. The results of this study support the direct effect of information literacy, self efficacy and SMA information use on managerial performance. Further analysis of the mediating effect of SMA information usage suggests that SMA mediates the relationship between information literacy and managerial performance. The findings of this study also suggest that the effect of SMA information use on managerial performance is strengthened by self efficacy.

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Keywords: Strategic Management Accounting; Information Literacy; Self Efficacy; Managerial Performance

1. Introduction

Managerial performance, as the indicator of the successfulness of managers to realize goals, becomes one of the most prominent keys that should be improved over time. The improvement of managerial performance can be

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sought through improvement of decision making process. In decision making process, managers utilize information and their interpretation skills to make an effective decision.

However, according to Bounded Rationality Theory (Simon, 1978) managers as decision makers are bounded by some constraints in making a rational and effective decision. These constraints, include 1) the limited availability of information, 2) limitation capacity of human mind and 3) limited amount of time to make decision, have resulted the managers to become locally rational in decision making process.

To prevent a dysfunctional decision making caused by bounded rationality, managers need a specific skill to enable them in utilizing information properly. A set of skills that enable individuals in recognizing information, identifying information, utilizing and interpreting information is called information literacy (Mishra and Mishra, 2010). Information literacy skills will enable managers in utilizing, evaluating, organizing, integrating, and interpreting information critically and properly in problem solving (Doyle, 1992). By having these skills, managers will be able to use information effectively and thus will enable them in making an effective and proper decision. A rational and proper decision will then enable managers to solve problems in executing managerial function and thus improve their managerial performance.

In carrying out managerial function, managers are often faced with challenges. Those challenges require positive and proper reaction by managers. Bandura (1986) has found that an individual self efficacy plays major role in how goals, tasks and challenges are approached. Managers with a strong sense of self efficacy will view challenges and tasks as something that should be mastered. Instead of viewing challenges and tasks as constraints, managers with strong sense of self efficacy will view them as motivation in accomplishing goals.

Self efficacy is found to have an important role in setting individual's reaction towards unpleasant and complex situation (Bandura, 1986). A strong level of self efficacy is believed to guide individual to commit positively towards challenges and tasks. Managers in achieving goals are often faced with uncertainty and complex situation. A positive reaction is required to solve uncertainty and complex situation in order to accomplish goals. By having a strong level of self efficacy, managers will behave positively towards challenges and uncertainty and thus will increase their managerial performance.

Increasing level of competition and shifting of the business environment has changed managers' need of information. The uncertainty of the business environment has demanded managers to consider a wide range and long oriented information in order to make a rational and effective decision. According to Lord (1996), in facing uncertainty, managers require an externally and market-oriented, competitors focused, future and long term information for decision making. These are provided by strategic management accounting.

Strategic management accounting is the provision and analysis of management accounting data about its business and competitors, for use in developing and monitoring business strategy (Simmonds, 1981). Broomwich (1990) defines strategic management accounting as the provision and analysis of financial information on the firm's product markets and competitor's costs and cost structures and the monitoring of the enterprise's strategies and those of its competitors in these markets over a number of periods.

Prior studies have proven that the use of strategic management accounting has a positive impact on managerial performance and organization performance. Ah Lay and Jusoh (2011) found that the use of strategic management accounting enhances the relationship between strategy and organization performance. Zenita (2012), found that information literacy and strategic management accounting have positively influenced managerial performance. Mediating effect analysis conducted by Zenita (2010) also found that strategic management accounting mediates the relationship between information literacy and managerial performance. Some other studies about managerial performance and self efficacy have also been conducted (Katarina, 1993; Gul & Chia, 1994; Chia 1995) however there is still lack of study conducted in examining the relationship among information literacy, self efficacy, strategic management accounting and managerial performance. Therefore, a study that explores the relationship between information literacy, self efficacy, strategic management accounting and managerial performance is needed to be done.

This study aims to examine the influence of information literacy and strategic management accounting on managerial performance. In addition, this study also intends to examine the mediating effect of strategic management accounting to the relationship between information literacy and managerial performance, and to examine the moderating effect of self efficacy on the relationship between strategic management accounting and managerial performance.

The results of this study are expected to give additional insights related to information literacy, self efficacy and strategic management accounting. For managers, the results of this study are expected to encourage managers in improving information literacy and self efficacy. For business organization, the results of this study are expected to provide strategic management accounting information as the basis in decision making process.

2. Literature Review and Hypothesis Development

2.1 Information literacy and strategic management accounting

Business environment uncertainty often leads managers to make adjustments in order to maintain the existence of the company. Managers need to adapt with any changes in business environment as soon as possible and thus managers need a relevant and broad information in making decision. Strategic management accounting provides a long term orientation and externally focused information (Lord, 1996) that managers need in making decision. Using strategic management accounting information, managers will be able to identify market and competitors, predict future and thus enable them in making an anticipative and effective decision.

Strategic management accounting information consists of financial and non financial data from both internal and external resources. This makes strategic management accounting information broad and strategic. To be able to utilize it effectively without being distorted by its broad and strategic information, managers need a specific skill that will enable them to utilize strategic management accounting information effectively. The skills that will enable managers in utilizing information effectively are called information literacy.

Information literacy is a set of skills that will enable managers in identifying, evaluating, utilizing and interpreting information effectively (Bruce, 1999). By having information literacy skills, managers will be able to identify information that they need efficiently (Mishra and Mishra, 2010), and thus will enable them in sorting information correctly. Information literacy is also found to enable managers in evaluating information that managers obtained (Doyle, 2010).

By having information evaluated, managers will be able to sort which of among the broad scope strategic management accounting information that is relevant with their business environment and challenges. Since information literacy helps managers in identifying, evaluating, utilizing and interpreting strategic management accounting information effectively, information literacy is alleged to have effect on strategic management accounting. Having the above argument, the following hypothesis is proposed:

H₁ : Information literacy affects the usage of strategic management accounting information.

2.2 Strategic management accounting and managerial performance

The dynamic shifting of business environment has enhanced the information needed by managers. The uncertainty of business environment requires managers to yield an effective decision in order to enhance performance through a long-term oriented, externally and future focused information. Strategic management accounting information facilitates managers in decision making by providing a wide scope information, long term and external focused information that is needed to survive in environmental uncertainty (Lord, 1996). Additionally, strategic management accounting also provides managers with a broader perspective about market and competitor and thus will yield a more strategic decision that lead to enhanced performance (Broomwich, 1990).

Strategic management accounting is perceived to have advantages and added value in providing information as the basis in decision making process. This is due to predictive and future oriented information that strategic management accounting offers to managers (Zenita, 2012). As the result, the decision that is made based on strategic management accounting information will be more anticipative in facing dynamic changes in business environment. As an effective decision is made based in strategic management accounting, organization will be able to face uncertainty and thus managerial performance will be enhanced. Based on above arguments, the following hypothesis is proposed:

H₂: Strategic management accounting affects managerial performance

2.3 The mediating role of strategic management accounting in the relationship between information literacy and managerial performance

Traditionally, managers utilize financial information from internal resource as the basis in decision making. However, as competition and market change significantly, managers require information that give them a long term, future oriented, predictive, strategic and externally focused information (Shank, 1989). Strategic management accounting provides financial and non financial analysis related to market and competitors that can be done in developing the implementation of strategy and business uncertainty (Simmonds, 1981). Thus, the usage of strategic management accounting information will enable managers to yield effective decision and acquire competitive advantage. As managers apply information literacy skills that enable them in utilizing information effectively, the using of strategic management accounting information will enhance the quality of decision made by managers, since broader and relevant information is used. From this argument, it can be suggested that the information literacy affects managerial performance through the usage of strategic management accounting information. Based on the above argument the following hypothesis is proposed:

H₃: Strategic management accounting mediates the relationship between information literacy and managerial performance

2.4 The moderating role of self efficacy on the relationship between strategic management accounting and managerial performance

Strategic management accounting information helps managers to adapt with the uncertainties in business environment through its comparison analysis of information related to external and internal data. The information provided by strategic management accounting includes competitor information analysis, competitive position and analysis of strategic cost and performance (Sari et.al, 2006). Since strategic management accounting information is obtained both from external and internal resources, managers who utilize strategic management accounting information should have a reasonable assurance when utilizing it. Strategic management accounting information may provide a long term and predictive information that can or cannot be realized in the future. Thus in utilizing it as consideration in decision making process, managers should have a reasonable confidence in using the information. Managers' perception of self confidence in achieving goals, utilizing, organizing and implementing actions is called self efficacy. According to Bandura (1986), people who have high level of self efficacy tend to select and sort environment correctly. Bandura (1986) also found that people who have a high level of self efficacy will have a high commitment and confidence to realize goals. Since self efficacy influences the level of confidence and commitment in achieving goals, managers who have high level of self efficacy are alleged to use strategic management accounting information with confidence and full commitment. As a results, the managerial activities that are based on strategic management accounting information would run effectively and would yield to better managerial performance.

Based on above arguments, the following hypothesis is proposed:

H₄: Self efficacy strengthen the relationship between strategic management accounting with managerial performance

3. Research Design

3.1 Sample and data collection procedure

The data for this study were collected from division managers, branch office managers, and sub-branch managers employed in banking institutions (125 companies) in Pekanbaru, Indonesia. 400 questionnaires were send directly and a total of 290 questionnaires (72,5% respond rate) were returned, and a total of 236 (81,4%) of them were then used in final analysis.

3.2 Measurement

The major measures for the study were information literacy, self efficacy, strategic management accounting and managerial performance. Respondents also completed the questionnaire by giving some information on background or personal characteristics of respondents.

- *Information Literacy*: Information literacy is the ability to identify access, locate, evaluate and use information effectively. Indicators used to measure information literacy skills are adapted from the model of Seven Pillars

created by Sconull (2011). The instrument used in this study has been proved and valid following its usage by Zenita (2012).

- *Self Efficacy*: Self efficacy is feelings, beliefs, perceptions, and confidence in the ability to cope with a particular situation which affects the individual's reaction in troubleshooting. Indicators used in this study were made by Bandura (1986) that consist of 8 set of questions.
- *Strategic Management Accounting*: Strategic management accounting is defined as provision and analysis of management accounting data about a business and its competitors for use in developing and monitoring business strategy that is long-term and future-oriented. The instrument used in this study was adopted from Guilding et.al (2000) and Sari et.al (2006).
- *Managerial Performance*: Managerial performance was measured using eight performance measures taken from Mahoney, Jerdee and Carrol (1965).

4. Results and Discussion

4.1 Demographics details of respondents and statistics of variables

Table 1. presents the demographics details of respondents. In general respondents of this study had a good education background since 67.3% of them hold undergraduate degree. 53.81% of respondents are experienced managers, with more than five years working experience.

Table 1. Demographics details of respondents

Demographic Variable	Classification	Frequency	%
Gender	Male	127	53.81
	Female	109	46.191
Age	21-30 year	133	56.36
	31-40 year	81	34.32
	41-50 year	18	7.63
	>50	4	1.69
Work Experience	Less than 5 years	109	46.19
	More than 5 years	127	53.81
Education	Diploma	15	6.36
	Undergraduate	159	67.37
	Master	62	26.27

Table 2. shows the descriptive statistics for the variables being studied. From the descriptive analysis it can be inferred that respondent has high managerial performance with the maximum value at 62. As described in the table the mean value of strategic management accounting was 53.17 with the maximum value of 69. It can be inferred that the usage of strategic management accounting in banking institution in Pekanbaru was in medium level. From the descriptive analysis it can also be inferred that respondents possess high level of information literacy (mean = 85.39) and self efficacy (mean = 45.39).

Table 2. Descriptive statistic for variables

	Minimum	Maximum	Mean	Standard Deviation
Information Literacy	55	145	85.39	9.468
Self Efficacy	25	56	45.39	4.732
Strategic Management Accounting	25	69	53.17	8.205
Managerial Performance	28	62	47.51	6.627

Validity and reliability testing are done to ensure that the instrument is valid and reliable. Based on validity and reliability testing, all variables are valid and reliable ($R > 0.1272$; Cronbach Alpha > 0.6). To meet a good path analysis, linearity and normality test should be done. Based on linearity and normality test, regression model used in this study has met the linearity and normality qualification.

The goodness of fit of the model test is also done. The model is well-constructed; information literacy, self efficacy, strategic management accounting and managerial performance are good fit. Table 3. shows the result of hypothesis testing for H_1 , H_2 and H_4 .

4.2 Hypotheses Testing and Data analysis

The hypothesis testing is done by using regression analysis. H1 and H2 were tested by running simple linear regression model, while H4 was tested by running moderated regression analysis. The mediating effect of SMA information use (H3) is tested by following the 4 steps outlined by Frazier, Barron, and Tix (2004).

Table 3. Regression Results

		β Coef	t-value	Sig	R ²	Support
H ₁	The effect of Information Literacy on Strategic Management Accounting	.557	10.259	.000	.307	Yes
H ₂	The effect of Strategic Management Accounting on Managerial Performance	.678	14.104	.000	.457	Yes
H ₄	The moderating effect of Self Efficacy on Strategic Management Accounting - Managerial Performance Relationship	.731	10.573	.017	.500	Yes

The first objective of this study is to examine the direct effect of information literacy on strategic management accounting. Table 3 shows the results of direct effect of information literacy on strategic management accounting. The findings indicate that there is a strong positive effect of information literacy on strategic management accounting ($\beta = .557$; t-value=10.259, p=.000). Hence, H₁ is accepted.

The finding indicates that there is a strong positive effect of strategic management accounting on managerial performance ($\beta = .578$; t-value=14.104, p=.000). Thus, H₃ is accepted.

The third objective of this study was to examine the mediating effect of strategic management accounting on the relationship between information literacy and managerial performance. Table 4 shows the regression results of mediating effect. There are 4 steps that should be done to test the mediating. In the first step, information literacy is shown to have a significant influence on managerial performance ($\beta = .560$, p=.000), thus the first criteria for testing the mediating variables have been met. In the second step, information literacy is shown to have a significant influence on SMA information use ($\beta = .557$, p=0.000), thus the second criterion to test the mediating variables have been met. In the third step SMA information use has shown to have a significant influence on managerial performance with p= 0.000, thus, the third criterion for testing the mediating variables have been met. In the last step, the value of β which shows the effect of information literacy on managerial performance after inclusion of SMA information use became smaller than the previous value of β (.264 < 0.560). Based on the results of the regression analysis it is shown that SMA information use met the criteria as a mediating variable. Therefore, it can be concluded that SMA information use mediates the relationship between information literacy and managerial performance. Thus, H3 is accepted.

The fourth objective of this study was to examine whether self efficacy moderates the relationship between strategic management accounting and managerial performance. The data of this study proved that interaction between self efficacy and strategic management accounting strengthen the relationship between strategic management accounting and managerial performance (see Table 3; $\beta = .731$; t-value=10.573, p=.017). It infers that self efficacy moderates the effect of strategic management accounting on managerial performance. Thus H₄ is accepted.

Table 4. Regression Results of Mediating Effect

		Coefficient	t-value	Sig	Support
Step 1	Information Literacy (IV) – Managerial Performance (DV)	.560	10.337	.000	Yes
Step 2	Information Literacy (IV) – SMA Information Use (DV)	.557	10.259	.000	Yes
Step 3	SMA Information Use (IV) – Managerial Performance (DV)	.678	14.104	.000	Yes
Step 4	Information Literacy (IV), SMA Information Use (MV) – Managerial Performance (DV)	.264 (IV) .531 (MV)	4.776 9.587	.000 .000	Yes, (β Information literacy reduced from .560 to .264)

5. Conclusions

This study was conducted to 236 respondents of division managers, branch office managers and sub-branch office managers. Descriptive analysis shows that the respondents believe that they possess high managerial performance, high level of information literacy, and high level of self efficacy. Meanwhile, based on descriptive analysis, the level of strategic management accounting usage is in medium level. Based on data quality testing, all of research variables are varied and valid. The study found that information literacy significantly and positively affects strategic management accounting. The mediating role of strategic management accounting on the relationship between information literacy and managerial performance is proved. The finding also found that self efficacy strengthen the relationship between strategic management accounting and managerial performance. The study suggests that managers who possess high level of information literacy, high level of self efficacy and utilize strategic management accounting information in decision making process will have an enhanced managerial performance.

Although the study has reached its objectives, the findings of the study need to be interpreted with the following study limitations in mind. First, all respondents in this study are from banking institutions at one city in Indonesia. Therefore, generalization of this study is limited. Future study can replicate this study to other industries to achieve a better generalization of the results. Secondly, this study used self-report questionnaire that might present bias, especially in measuring managerial performance. Third, this study only focus to two psychological factors (information literacy and self efficacy). Future study can add other variables related to psychological factors that may be able to influence managerial performance such as tolerance of ambiguity (Chong, 1998) .

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