The Relationship between Management Accounting Information System Capability and Firm Success: Evidence from Beverage Businesses in Thailand

Supapan Saithong-in*, Kornchai Phornlaphatrachakorn[2] and Saranya Raksong[3]

Received: February 26,2018, Revised: July 18,2018, Accepted : July 27 ,2018

Abstract

The purpose of this research is to investigate the relationships among the dimensions of management accounting information system capability, strategic positioning effectiveness, cost management efficiency, operational process excellence, and firm success. The questionnaire was used as a research instrument to collect the data from 141 beverage businesses in Thailand. Multiple regression analysis was used to test hypotheses. Results of this research found that business management intelligence focus was the key dimension of management accounting information system capability that had a positive effect on strategic positioning effectiveness, cost management efficiency, operational process excellence, and firm success. Likewise, operational information integration orientation, cost management efficiency, and operational process excellence had a positive influence on firm success. Furthermore, accounting information technology linkage had a positive effect on operational process excellence and management information reporting competency had a positive impact on cost management efficiency.

Keyword: Management Accounting Information System Capability, Strategic Positioning Effectiveness, Cost Management Efficiency, Operational Process Excellence, Firm Success

* PhD Student in Accounting, Mahasarakham Business School, Mahasarakham University

[2] Associate Professor, Mahasarakham Business School, Mahasarakham University

[3] Assistant Professor, Mahasarakham Business School, Mahasarakham University

1. Introduction

Nowadays, the organization faces intense competition, both nationally and globally. The business environment has changed dramatically in social, economic, and customer demands, particularly in technology (Agbim, 2013). As a result, the commercial activities are more complex and diverse. To succeed in businesses, organizations must adapt to a rapidly changing environment. Therefore, effective management processes are essential for the organization. In order to be effective in the management, managers need to rely on information from several divisions for planning, controlling, and making a decision. Reviews of accounting and information system research show that accounting information plays a very important role in management decisions. Accounting information is not only essential for the evaluation of past performance and present conditions, but it is useful in planning the future of the organization (Nnenna, 2012).

Accounting information is the output from the accounting information system, which is a system used to record the financial transactions of business. This system combines accounting techniques, practices and controls with information technology to track transactions and to provide operational information, financial reporting, and trend analysis capabilities to affect organizational performance (Grande, Estebanez & Colomian, 2011). The accounting information system of an organization consists of two main sub-systems. There are financial accounting information systems and management accounting information systems. Both sub-systems have different objectives, preparations, and presentations (Hansen & Mowen, 2007). The financial accounting information system serves to collect and process data in order to present financial information to external users, while the management accounting information system is the process that prepares information related to the operation for presentation to the managers or internal users.

The literature reviews showed that accounting information system research was conducted in a variety of perspectives. The scope of accounting information system research includes the organization and management of an information system, internal control and auditing, judgment and decision-making, databases, expert systems, artificial intelligence and decision aids for general accounting information system frameworks, accounting and consulting professions, educational issues, and capital markets (Ferguson & Seow, 2011). Currently, there is a lack of empirical research that focuses on accounting management information systems. This study attempts to fill this gap by empirically examining management accounting information system capability and firm success in the context of beverage businesses in Thailand. The main reason for choosing the beverage business for this study is that the beverage business in Thailand has been growing steadily due to many supporting factors, especially the growth of export markets from the economies and trade of CLMV (Cambodia, Laos, Myanmar, and Vietnam). In addition, consumers rarely have brand loyalty, resulting in intense competition between products and cross products that can be substituted (GSB Research, 2017). In this highly competitive environment, organizations need to be well-planned and be managed to cope with such competition. Accounting information derived from a management accounting information system, especially cost data,

is important to the decision-makers involved. Having accurate, up-to-date, and timely information will be beneficial to the decision-making process.

This research aims to examine the relationships among five dimensions of management accounting information system capability, strategic positioning effectiveness, cost management efficiency, operational process excellence, and firm success of beverage businesses in Thailand. The main research question is "How does each dimension of management accounting information system capability relate to strategic positioning effectiveness, cost management efficiency, operational process excellence, and firm success?" Importantly, this research is beneficial to help improve organization performance under highly competitive environments by enhancing the ability to provide information needed to satisfy specific management objectives.

2. Literature review

Organizational information processing theory is applied to explain the congruence among five dimensions of management accounting information system capability, and the consequences. In this research, organizational information processing theory provides the foundations for the assertion that management accounting information system capability can serve as an organization's information processing capabilities that influence managing operational and financial information sufficiently for the needs of using that which influences decision-making, and leads to firm success. Figure 1 presents the conceptual model used in this research, which covers all proposed hypotheses. The detailed discussion of the concept, linkage, and relationships is provided below.

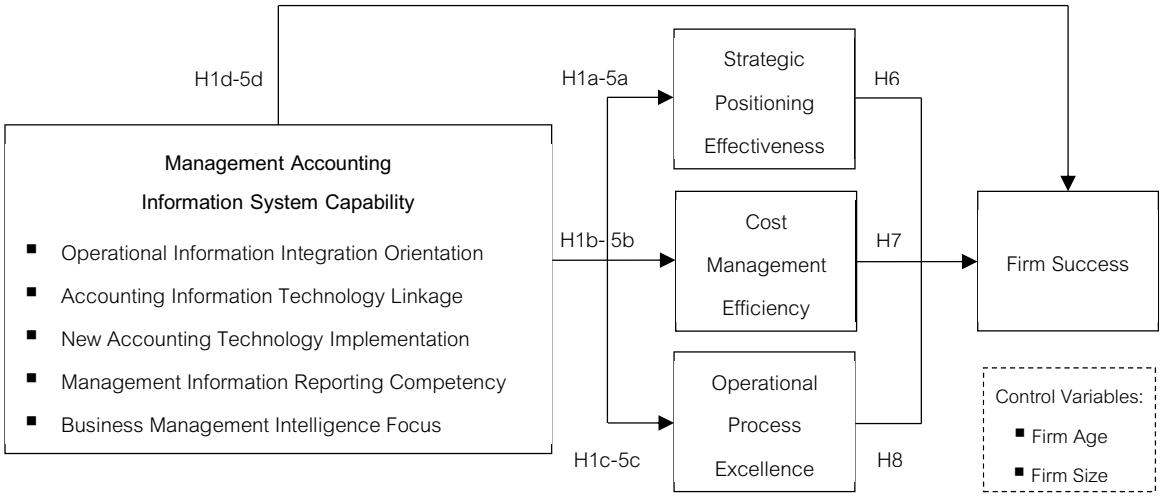

Figure 1: A Conceptual Model

Management Accounting Information System Capability (MAISC)

Management accounting information system is a specification which can be integrated into an organization by utilizing resources to provide relevant, both financial and non-financial information for decision-making in achieving objectives, specifically in the organization (Napitupulu, Mahyuni & Sibarani, 2016). The term "capability" refers to the ability of an organization to operate by using organizational resources to achieve the goals. (Helfat & Peteraf, 2003). In this research, management accounting information system and capability are integrated into the definition of management accounting information system capability (MAISC). It defines MIASC as the ability of organizations to use technology to manage operational and financial data, including collecting, processing, storing, analyzing, and reporting; and provides information needed to satisfy specific management objectives (Hansen & Mowen, 2007; Napitupulu, 2015). Based on a review of the literature, the construct of MAISC and its measurement is developed from the study of Chenhall & Morris (1986); Napitupulu (2015); Roodposhti, Nikoomaram & Mahmoodi (2012). The five dimensions are used to measure MAISC, which consist of operational information integration orientation, accounting information technology linkage, new accounting technology implementation, management information reporting competency, and business management intelligence focus. A more detailed discussion of the five dimensions of MAISC is presented as follows.

Operational Information Integration Orientation (OIIO)

Operational information integration orientation refers to the ability of a firm to gather whole organizational operations data by linking, merging, transferring and sharing information within and across departments (Chenhall & Morris, 1986). The information system connects sub-systems, both physical and nonphysical, to work together harmoniously to achieve a goal of processing data into useful information (O'Brien & Marakas, 2010). According to Georgantzas & Katsamakas (2010), the lack of integration of information systems has had a negative impact on business performance as it increases the dynamic complexity of the system under management. Consistent with Chapman & Kihn (2009), it was found that the level of integration of information systems supports the four design characteristics (repair, internal transparency, global transparency, and flexibility) that creates a guideline for management control, and involves perceiving system success and business unit efficiency. Moreover, from the study of Singjanusong, Tangpinyoputtikhun & Nachairit (2016), it was found that strategy accounting information system in the aspects of data controlling and information generation has a positive effect on organizational success. Similarly, Chatsuwan, Sudsomboon & Konthong (2017) found that accounting information system integration has positive relationship and affected on the strategic management efficiency. Thus, this research proposes the hypothesis as follows:

Hypothesis 1: Operational information integration orientation is positively related to (a) strategic positioning effectiveness, (b) cost management efficiency, (c) operational process excellence, and (d) firm success.

Accounting Information Technology Linkage (AITL)

Accounting information technology linkage is defined as the ability of a firm to manage and utilize existing information technology to work together efficiently, as well as to connect information systems within the organization to coordinate systematically (Napitupulu, 2015). In view of this fact, it is generally accepted that IT plays an important role in accounting. The biggest impact of IT on accounting is that organizations can develop and use computer systems to track and record financial transactions. Some IT tools commonly used in accounting information systems include spreadsheets, relational databases, and general ledger systems (Hurt, 2008). This is consistent with the study of Wier, Hunton & Hassab (2007), maintaining that using enterprise resource planning systems (ERPs) helps process improvement by linking business processes and IT, which covers the internal and inter-organizational boundaries. Thus, this research proposes the hypothesis as follows:

Hypothesis 2: Accounting information technology linkage is positively related to (a) strategic positioning effectiveness, (b) cost management efficiency, (c) operational process excellence, and (d) firm success.

New Accounting Technology Implementation (NATI)

New accounting technology implementation refers to the ability of a firm to apply accounting technology, including the learning and understanding of modern technology, enabling the accounting process and accounting practice to be efficient (Napitupulu, 2015). Technology is a computer network consisting of a variety of data processing components that use different types of hardware, software, data management, and information network technology (O' Brien, 2004). Technological developments have led to changes in accounting practices related to accounting activities and transactions conducted through electronic media (Güney, 2014). This change has implications for the use of accounting applications, such as the transaction record, preparing financial statements, and auditing activities (Salehi, Rostami & Mogadam, 2010). Pilat (2004) found that firms use IT in regards to software, hardware, and communication technology, which affect performance, even if the impact of software is less than the hardware and the communications technology. However, when combined with IT, it will positively affect performance. Thus, this research proposes the hypothesis as follows:

Hypothesis 3: New accounting technology implementation is positively related to (a) strategic positioning effectiveness, (b) cost management efficiency, (c) operational process excellence, and (d) firm success.

Management Information Reporting Competency (MIRC)

Management information reporting competency refers to the ability of a firm to identify and analyze accounting data for reporting on business operations in real-world situations, as well as for accurate and timely reporting (Chenhall & Morris, 1986). Management reporting is the process of providing management information and communicating the information needed to make a decision for the each manager. Management reports cover all activities related to events, analysis, performance measurement,

and other information to support decision-making (Axson, 2010). Nita (2015) describes that when the report is properly designed, it is very valuable in management because it will help managers obtain the right information to make the right decision. Moreover, Pananto, Sudsomboon & Ninlaphay (2014) found that the accounting information preparation quality, convert information processing have positively effects on the overall of decision making efficiency. Thus, this research proposes the hypothesis as follows:

Hypothesis 4: Management information reporting competency is positively related to (a) strategic positioning effectiveness, (b) cost management efficiency, (c) operational process excellence, and (d) firm success.

Business Management Intelligence Focus (BMIF)

Business management intelligence focus is defined as the ability of a firm to analyze all relevant data together and present information that illustrates relationships and predictive information for useful decision-support purposes (Roodposhti, Nikoomaram & Mahmoodi, 2012). Business Intelligence is now widely used as a term for application technology and the process of gathering, storing, accessing, and analyzing data to help users make better decisions (Wixom & Watson, 2010). The role of Business Intelligence is to create an informational environment in which operational data collected from the transactional system and external sources can be analyzed to present a strategic business dimension (Petrini & Pozzebon, 2009). This information supports the organization in responding to critical business issues, predicting, and executing real-time data to improve the quality and speed of decision-making. Roodposhti, Nikoomaram & Mahmoodi (2012) found that business intelligence affects the profitability of the firms. Thus, this research proposes the hypothesis as follows:

Hypothesis 5: Business management intelligence focus is positively related to (a) strategic positioning effectiveness, (b) cost management efficiency, (c) operational process excellence, and (d) firm success.

Strategic Positioning Effectiveness (SPE)

Strategic positioning effectiveness refers to the success of creating a unique industry position that aligns with goals when faced with change, resulting in competitive advantage, success, and sustainable growth (Chew, 2003). Strategic positioning is a management process to develop an organizational level positioning strategy that aims to distinguish the organization from other competitors. From the study of Kim, Song & Koo (2008), it was found that strategic positioning (Innovative differentiation strategies together with technological resources) strongly affects firm performance. Consistent with the study of Suzuki (2000), positioning has a significant influence on profit. Thus, this research proposes the hypothesis as follows:

Hypothesis 6: Strategic positioning effectiveness is positively related to firm success.

Cost Management Efficiency (CMF)

Cost management efficiency is defined as the success of planning, cost control, and cost-effective management that leads to organizational success (Robert, 2006). According to Malmi & Brown (2008), cost management is a management accounting technique for planning and controlling which is

one aspect of management control systems for enhanced firm success. In a rapidly changing business environment and increasing pressure on cost and profit management, many businesses look for a way to manage and find that accounting information, especially cost data, which is very important to decision-making. This is consistent with the study of Tontiset & Ussahawanitchakit (2009) who found that cost management effectiveness has an impact on corporate competitiveness. Moreover, Ponklang, Pratoom & Raksong (2014) found that cost management efficiency has positive relationships with decision-making success and superior operational excellence. Thus, this research proposes the hypothesis as follows:

Hypothesis 7: Cost management efficiency is positively related to firm success.

Operational Process Excellence (OPE)

Operational process excellence is defined as the efficiency of operational increases with goals set by successful operations, using resources efficiently, reducing operational procedures, and having timelines for quick response and superior coordination (Leong & Jarmoszko, 2010). In view of the study on the operation, operations are often used as a routine-based approach that are patterns of current practices, activities or work processes. In prior research, Mary, Enyinna & Franca (2015) found that operations management has a significant relationship with logistics control, which describes the design and planning systems or processes that create products or provide services, adequately enhancing logistics capabilities and organizational performance. Moreover, excellence in operations is beneficial in global competition because the best organizations are efficient and committed to developing faster than their competitors (Bigelow, 2002). Thus, this research proposes the hypothesis as follows:

Hypothesis 8: Operational process excellence is positively related to firm success.

Firm Success (FSC)

Firm success is related to strategies, a capability which needs to be managed for firm performance. In order to achieve the desired success, the organization must plan, control, and make decisions regarding many divisions and for employees at different levels to survive. Firm success shows the importance of factors that affect the ability of the organization to retain existing customers and new customers. In addition, employees and customers' satisfaction help the manager to forecast profitability in the future (Banker & Mashruwala, 2007). In this research, firm success refers to an organizational perception of the success of performance with stability and continuous increase (Mohrman, Finegold & Mohrman, 2003).

3. Research Methodology

The population of this research is the beverage businesses in Thailand, a total of 675 firms from the online database of the Department of Industrial Works, Ministry of Industry of the Thai government (June, 2017). The unit of analysis is at the firm level; thus, the key informants are the accounting executives of each beverage firm. A questionnaire is used as the research instrument for collecting data. There were 141 complete questionnaires that were usable for analysis. The effective response rate was 21.79 %, which

is adequate (Aaker, Kumer & Day, 2001). In this research, the non-response bias was tested by comparing the early and late respondents using the extrapolation method (Armstrong & Overton, 1977). The t-test for statistics was applied to compare the differences in means of the firm characteristics between the early response group and the late response group. The results of the tests did not reveal any statistical differences between the two groups on the measures used, at a 95% confidence level. Thus, this research is free from possible non-response bias.

For validity and reliability of the questionnaire, the factor loadings are ranged .607 - .960. All factor loadings are greater than the 0.40 cut-off score (Nunnally & Bernstein, 1994) which indicate acceptable construct validity. Moreover, Cronbach's alpha coefficients are in the range of .811 – .955, which is greater than 0.70 (Hair et al., 2010). The reliability scale of all measures appeared to confirm to the internal consistency of the measures which are used in this research. Multiple regression analysis was used to test all proposed hypotheses in this study. The basic assumptions of checking all the raw data for regression analysis (outlier, normality, linearity, autocorrelation, and homoscedasticity) were tested by the plotting of data including scatterplot, histogram, and normal P-P plot of regression standardized residual and the results were acceptable. All of these plots presented the evidence to support the appropriateness of the regression model for the data. The equation model for statistical analysis was presented as follows:

Equation 1: $SPE = \alpha_1 + \beta_1 OIIO + \beta_2 AITL + \beta_3 NATI + \beta_4 MIRC + \beta_5 BMIF + \beta_6 FA + \beta_7 FS + \varepsilon$

Equation 2: $CME = \alpha_2 + \beta_8 OIIO + \beta_9 AITL + \beta_{10} NATI + \beta_{11} MIRC + \beta_{12} BMIF + \beta_{13} FA + \beta_{14} FS + \varepsilon$

Equation 3: $OPE = \alpha_3 + \beta_{15} OIIO + \beta_{16} AITL + \beta_{17} NATI + \beta_{18} MIRC + \beta_{19} BMIF + \beta_{20} FA + \beta_{21} FS + \varepsilon$

Equation 4: $FSC = \alpha_4 + \beta_{22} OIIO + \beta_{23} AITL + \beta_{24} NATI + \beta_{25} MIRC + \beta_{26} BMIF + \beta_{27} FA + \beta_{28} FS + \varepsilon$

Equation 5: $FSC = \alpha_5 + \beta_{29} SPE + \beta_{30} CME + \beta_{31} OPE + \beta_{32} FA + \beta_{33} FS + \varepsilon$

4. Results and Discussion

Table 1 shows the results of the correlation analysis of all variables in that there are significant relationships among variables in the range of .514 - .818, $p < 0.01$. Although some correlations between the five dimensions of MAISC (independent variables) are quite high. Multicollinearity problems may occur in this research. However, most of the correlations are less than 0.80 (Berry & Feldman, 1985). With regard to potential problems relating to multicollinearity, variance inflation factors (VIFs) are used to test the intercorrelations among the independent variables. In this case, the maximum value of VIF is 6.522, well below the cut-off value of 10 (Hair et al., 2010), meaning that the independent variables are not seriously correlated with each other. Consequently, multicollinearity is not a problem in this research.

Table 2 shows the results of multiple regression analysis. First, the results show that operational information integration orientation has a significant, positive relationship to firm success ($\beta 22 = .387$, $p < .01$). This result is consistent with Chapman & Kihn (2009). **Thus, hypotheses 1d and 1e are supported.** However, the results also found that operational information integration orientation has no significant effects

on strategic positioning effectiveness (β1 = .058, p > .10), cost management efficiency (β8 = .134, p > .10), and operational process excellence (β15 = -.038, p > .10). In practice, there is a possibility that there are many problems with the integration of information and the efficiency of information systems that do not meet the set goals (Napitupulu, 2015), This is consistent with Winch & Carr (2001) suggested that the proper modification is the use of process mapping, which focuses on the actual flow of information within the organization. **Thus, hypotheses 1a - 1c are not supported.**

Table 1: Descriptive Statistics and Correlation Matrix

Variables	OIIO	AITL	NATI	MIRC	BMIF	SPE	CME	OPE	FSC
Mean	4.153	4.061	4.136	4.152	4.082	3.959	4.125	3.968	4.113
S.D.	.641	.651	.642	.657	.633	.487	.377	.512	.373
AITL	.802***								
NATI	.741***	.803***							
MIRC	.772***	.783***	.818***						
BMIF	.746***	.736***	.796***	.813***					
SPE	.528***	.524***	.521***	.522***	.571***				
CME	.583***	.517***	.565***	.672***	.676***	.594***			
OPE	.523***	.597***	.581***	.591***	.617***	.625***	.644***		
FSC	.587***	.521***	.543***	.570***	.570***	.514***	.579***	.637***	
FA	.106	.090	.139	.102	.104	.099	.144	.045	-.002
FS	.393***	.201**	.314***	.362***	.294***	.306***	.339***	.094	.203**

*** p < 0.01, ** p < 0.05

Second, the results show that accounting information technology linkage has a significant, positive relationship to operational process excellence (β16 = .321, p < .05). This empirical result is consistent with perspective of Wier, Hunton & Hassab (2007). Thus, hypothesis 2c is supported. Nevertheless, accounting information technology linkage has no significant effects on strategic positioning effectiveness (β2 = .227, p > .10), cost management efficiency (β9 = -.068, p > .10), and firm success (β23 = -.105, p > .10). It may be explained that the use of technology in organizations has failed because of the adoption of new technologies that are not proper for the firm's strategy and structure, resulting in reduced operational efficiencies (Schroeder, Congden & Gopinath, 1995). Similar to the previous research of Ho & Mallick (2010), the use of information technology can lead to lower costs but bank profitability declines due to the adoption and spread of IT investment, which reflects this negative impact on the industry. Thus, hypotheses 2a, 2b, 2d, and 2e are not supported.

Third, the results show that new accounting technology implementation has no significant effects on strategic positioning effectiveness (β3 = .049, p > .10), cost management efficiency (β10 = -.135, p >

.10), operational process excellence (β17 = .054, p > .10), and firm success (β24 = .126, p > .10). There is a possibility that in the context of the beverage business, the sample of this research is mostly small. Thus, the use of accounting technology (for example, accounting software, that is available and supports the current operations) is sufficient, and it may not be as important to deploy new technologies at all times with limited investment. Thus, hypotheses 3a - 3e are not supported.

Fourth, the result shows that management information reporting competency has a significant, positive relationship to cost management efficiency (β11 = .407, p < .05). This finding was supported by the study of Nita (2015). Thus, hypothesis 4b is supported. In contrast, the results show that management information reporting competency has no significant effects on strategic positioning effectiveness (β4 = -.117, p > .10), operational process excellence (β18 = .098, p > .10), and firm success (β25 = .064, p > .10). It may possible that in the context of the beverage business in Thailand, there are alcoholic and non-alcoholic businesses. The differences in business types make organizations use different strategies, which may necessitate the use of different management information. Thus, hypotheses 4a, 4c, 4d, and 4e are not supported.

Fifth, the results show that business management intelligence focus has a significant, positive relationship with strategic positioning effectiveness (β5 = .347, p < .05), cost management efficiency (β12 = .355, p < .01), operational process excellence (β19 = .323, p < .05), and firm success (β26 = .244, p < .10). The results of Elbashir et al. (2013)'s study supported these findings. Thus, hypotheses 5a – 5e are supported.

Sixth, the results show that strategic positioning effectiveness has no significant effects on firm success (β29 = .115, p > .10). It is possible that the beverage business in Thailand has a wide consumer base, covering all ages. Consequently, there are many different types of products available in the market to accommodate different consumption behaviors, whether alcoholic or non-alcoholic beverages. This diversity has resulted in the substitution of products among manufacturers, which are owners of brands, suppliers, and importers. As a result, the beverage industry has fierce competition among entrepreneurs, so there may be several ways to survive (Kasikorn Research Center, 2015). Thus, hypothesis 6 is not supported.

Seventh, the result shows that cost management efficiency has a significant, positive relationship to firm success (β30 = .249, p < .01). This result is consistent with Ponklang, Pratoom & Raksong (2014); and Tontiset & Ussahawanitchakit (2009). Thus, hypothesis 7 is supported. Finally, the result shows that operational process excellence has a significant, positive relationship to firm success (β31 = .407, p < .01). This empirical result is consistent with perspective of Mary, Enyinna & Franca (2015). Thus, hypothesis 8 is supported.

Table 2: Results of Regression Analysis

Independent Variables	Dependent Variables				
	SPE	CME	OPE	FSC	FCS
	(Eq.1)	(Eq.2)	(Eq.3)	(Eq.4)	(Eq.5)
OIIO	.058	.134	-.038	.387***	
H1-5a	(.144)	(.126)	(.132)	(.138)	
AITL	.227	-.068	.321**	-.105	
H1-5b	(.161)	(.142)	(.149)	(.155)	
NATI	.049	-.135	.054	.126	
H1-5c	(.162)	(.143)	(.150)	(.156)	
MIRC	-.117	.407**	.098	.064	
H1-5d	(.176)	(.155)	(.162)	(.169)	
BMIF	.374**	.355***	.323**	.244*	
H1-5d	(.147)	(.129)	(.135)	(.141)	
SPE					.115
H6					(.086)
CME					.249***
H7					(.089)
OPE					.407***
H8					(.091)
Firm Age	.013	.100	-.085	-.174	-.144
	(.140)	(.124)	(.130)	(.153)	(.126)
Firm Size	.321*	.190	-.141	-.074	.106
	(.162)	(.143)	(.149)	(.156)	(.138)
Adjusted R^2	.341	.494	.439	.387	.465
Maximum VIF	6.522	6.522	6.522	6.522	2.193

***p < 0.01, **p < 0.05, *p < 0.10

5. Conclusion and Contributions

The overall purpose of this research is to attempt a detailed and comprehensive view of the relationships among management accounting information system capability and its consequents, including strategic positioning effectiveness, cost management efficiency, operational process excellence, and firm success. The research samples are 141 beverage businesses in Thailand. Multiple regression analysis is employed to test the hypotheses.

The results have a beneficial contribution for practitioners. The highlighted findings reveal that business management intelligence focus is a key element of management accounting information system

capability which positively impacts all of the consequences. Therefore, managers should focus on the use of the business intelligence system which promotes appropriate use in the context of the organization, such as investment in the use of such systems, as well as the development of knowledge and abilities of employees. Moreover, the results also found that operational information integration orientation positively impacts firm success, and accounting information technology linkage positively impacts operational process excellence. The findings suggest that the integration of operational data and the linkage between information systems within the organization enables each division to share information effectively. Further, the results also show that management information reporting competency has an impact on effective cost management. Cost management efficiency and operational process excellence have a positive effect on firm success. Thus, managers should focus on setting policies that encourage work practices and collaboration. For example, manager may set up a proper operating system, follow rules and procedures, or create a collaborative environment. Moreover, managers should support the use of technology across all divisions, as well as monitoring and evaluating performance.

For the limitations of this research, the population of this research is scoped as only beverage business firms. Therefore, the generalization of the findings is limited to only explain a private sector. These results may have been varied if a broader range of firms had been selected. Thus, the findings of this research may be narrow as lacking a generalization concept of other industries. Hence, future research should attempt to be analyzed by using other populations. It would be interesting to conduct further studies, examining the effect of management accounting information system capability in other industry sectors to see if differences exist.

References

Aaker, D. A., Kumar, V. & Day, G. S. (2001). *Marketing research* (7th ed.). New York: John Wiley and Sons.

Agbim, K. C. (2013). The relative contribution of management skills to entrepreneurial success: A survey of small and medium enterprises (SMEs) in the trade sector. *International Organization of Scientific Research Journal of Business and management*, 7(1), 08-16.

Armstrong, J. S. & Overton, T. S. (1977). Estimating non-response bias in mail surveys. *Journal of Marketing Research*, 14(3), 396-402.

Axson, D. (2010). *Best Practices in Planning and Performance Management, Radically Rethinking Management for a Volatile World* (3rd ed.). New Jersey: John Wiley and Sons.

Banker, R. V. & Mashruwala, R. (2007). The moderating role of competition in the relationship between nonfinancial measures and future financial performance. *Contemporary Accounting Research*, 24(3), 763-793.

Berry, W. D. & Feldman, S. (1985). *Multiple Regressions in Practice*. Newbury Park (CA): Sage Publications.

Bigelow, M. (2002). How to achieve operational excellence. *Quality Progress*, 35(10), 70-75.

Chapman, C. C. & Kihn, L. A. (2009). Information system integration, enabling control and performance. *Accounting, Organizations and Society*, 34, 151-169.

Chatsuwan, N., Sudsomboon, S & Konthong, K. (2017). Effect of Excellent Accounting Information System Integration on Strategic Management Efficiency of Electrical and Electronics Businesses in Thailand. *Journal of Accountancy and Management*, 9(1), 135-145.

Chenhall, R. H. & Morris, D. (1986). The impact of structure, environment, and interdpendence on the perceived usefulness of management accounting systems. *The Accounting Review*, 61, 16-35.

Chew, C. (2003). What factors influence the positioning strategies in Voluntary Non-Profit Organizations? Towards a conceptual framework. *Local Governance*, 29(4), 288-323.

Elbashir, M. Z., Collier, P. A., Sutton, S. G., Davern, M. J. & Leech, S. A. (2013). Enhancing the business value of business intelligence: The role of shared knowledge and assimilation. *Journal of Information Systems*, 27(2), 87-105.

Ferguson, C. & Seow, P. S. (2011). Accounting information systems research over the past decade: Past and future trends. *Accounting and Finance*, 51(1), 235.

Georgantzas, N. C. & Katsamakas, E. G. (2010). Performance effects of information systems integration: A system dynamics study in a media firm. *Business Process Management Journal*, 16(5), 822-846.

Grande, E. U., Estebanez, R. P. & Colomina, C. M. (2011). The impact of Accounting Information Systems (AIS) on performance measures: empirical evidence in Spanish SMEs. *The International Journal of Digital accounting Research*, 11(1), 25-43.

GSB Research. (2017). Industry Monitor: Food and Beverage Industry. Retrieved May 12, 2017, from https://www.gsb.or.th/getattachment/42789d52-1960-4b4a-ac4b-4f0e93d21fb9/IN_food_3_60_detail.aspx.

Güney, A. (2014). Role of technology in accounting and e-accounting. *Procedia - Social and Behavioral Sciences*, 152, 852-855.

Hair, J. F., Black, W. C., Babin, B. J. & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Upper Saddle River, New Jersey: Pearson Education International.

Hansen, D. R. & Mowen, M.M. (2007). *Managerial Accounting* (8th ed.). USA: Thomson.

Helfat, C. E. & Peterraf, M. A. (2003). The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal*, 24, 997-1010.

Ho, S. J. & Mallick, S. K. (2010). The impact of information technology on the banking industry. *Journal of the Operational Research Society*, 61(2), 211-221.

Hurt, R. L. (2008). *Accounting information system: Basic concepts and current issues*. Boston: McGraw-Hill,

Kasikorn Research Center. (2015). Foods and Beverages. *KResearch*, 1-23.

Kim, Y. J., Song, J. & Koo, C. (2008). Exploring the effect of strategic positioning on firm performance in the e-business context. *International Journal of Information Management*, 28, 203-214.

Leong, L. & Jarmoszko, A. T. (2010). Analyzing capabilities and enterprises Strategy: a value proposition framework. *International Journal of Management and Information Systems*, 14, 53-59.

Malmi, T. & Brown, D A. (2008). Management control systems as a package opportunities, challenges and research directions. *Management Accounting Research*, 19, 287-300.

Mary, O. E., Enyinna, U. K. & Franca, N. C. (2015). Evaluation of operations management and its impact on improved logistics control. *International Journal of Economics, Commerce and Management*, 3(5), 590-604.

Mohrman, S. A., Finegold, D. & Mohrman, A. M. (2003). An empirical model of the organization knowledge system in new product development firms. *Journal of Engineering and Technology Management*, 20(1-2), 7-38.

Napitupulu, I. H. (2015). Antecedence of user satisfaction in management accounting information systems quality: user involvement and user competency (survey of Indonesia manufacture company managers). *International Journal of Applied Business and Economic Research*, 13(2), 561-577.

Napitupulu, I. H., Mahyuni, S. & Sibarani, J. L. (2016). The impact of internal control effectiveness to the quality of management accounting information system: the survey on state-owned enterprises (SOEs). *Journal of Theoretical and Applied Information Technology*, 88(2), 358-366.

Nita, B. (2015). Methodological issues of management reporting systems design. *Quantitative Methods in Accounting and Finance*, 105-116.

Nnenna, O. M., (2012). The Use accounting information as an aid to management in decision making. *British Journal of Science*, 5(1), 52-62.

Nunnally, J. C. & Bernstein, I. H. (1994). *Theory* (3rd ed.). New York: McGraw-Hill.

O'Brien, J. A. (2004). *Management Information System: Managing Information Technology in the Business Enterprise* (6th ed.). New York. Mc: Graw-Hill.

O'Brien, J. A. & Marakas G. M. (2010). *Management information systems: Managing information technology in the business enterprise* (15th ed.). New York: McGraw-Hill.

Pananto, S., Sudsomboon, S. & Ninlaphay, S. (2014). Relationships between Accounting Information Preparation Quality and Decision Making Efficiency of Electrical Appliances and Electronics Businesses in Thailand. *Journal of Accountancy and Management,* 6(3), 22-33.

Petrini M. & Pozzebon, M. (2009). Managing sustainability with the support of business intelligence: Integrating socio-environmental, indicators and organizational context. *Journal of Strategic Information Systems*, 18, 178-191.

Pilat, D. (2004). The ICT productivity paradox: Insights from micro data. *OECD Economic Studies*, 38, 37-65.

Ponklang, P., Pratoom, K. & Raksong, S. (2014). *Cost allocation effectiveness and organizational survival: An empirical assessment of textile manufacturing businesses in Thailand.* Ph.D. Dissertation, Mahasarakham Business School, Mahasarakham University. Thailand.

Robert, T. L. (2006). Effective cost management: Back to basics. *Cost Engineering*, 48(3), 27-33.

Roodposhti, F. R., Nikoomaram, H. & Mahmoodi, M. (2012). Management accounting information system based on decision support and business intelligence on ROI and ROE. *International Journal of Asian Social Science*, 2(5), 730-738.

Salehi M., Rostami V. & Mogadam, A. (2010). A usefulness of accounting information system in emerging economy: Empirical evidence of Iran. *International Journal of Economics and Finance*, 2(2), 186-195.

Schroeder, D. M., Congden, S. W. & Gopinath, C. (1995). Linking Competitive Strategy and Manufacturing Process Technology. *Journal of Management Studies*, 32(29), 163-189.

Singjanusong, J., Tangpinyoputtikhun, Y. & Nachairit, I. (2016). Effects of Strategic Accounting Information System on Organizational Success of Beverage Businesses in Thailand. *Journal of Accountancy and Management,* 8(4), 170-180.

Suzuki Y. (2000). The effect of airline positioning on profit. *Transportation Journal*, 39(3), 44–54.

Tontiset, N. & Ussahawanitchakit, P. (2009). Effects of cost management effectiveness on cost information usefulness, corporate competitiveness, and firm success: An empirical study of Thai manufacturing firms. *Journal of Academy of Business and Economics*, 9(2), 91-102.

Wier, B., Hunton, J. & Hassab, E.H.R. (2007). Enterprise resource planning systems and non-financial performance incentives: The joint impact on corporate performance. *International Journal of Accounting Information Systems*, 8(3), 165-90.

Winch, G. & Carr, B. (2001). Process, maps and protocols: Understanding the shape of the construction process. *Journal of Construction Management and Economics*, 19, 519-531.

Wixom, B. H. & Watson, H. J. (2010). The BI-based organization. *International Journal of Business Intelligence Research*, 1(1), 13-28.