

Print ISSN: 2288-4637 / Online ISSN 2288-4645
doi:10.13106/jafeb.2021.vol8.no7.0457

Fraud Management Accounting and Organizational Value Creation: Evidence from Listed Firms in Thailand

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Received: March 30, 2021 Revised: June 07, 2021 Accepted: June 17, 2021

Abstract

This study seeks to examine the effects of fraud management accounting on organizational value creation of listed firms in Thailand through internal audit function and internal audit effectiveness as the mediators of the study. In addition, governance culture and digital capability are hypothesized to affect fraud management accounting, internal audit function, and internal audit effectiveness. The 297 listed firms in Thailand are the samples of the study. The structural equation model is applied to test the research relationships. The results of the study indicate that, firstly, fraud management accounting has an effect on internal audit function, internal audit effectiveness, and organizational value creation. Secondly, internal audit function affects both internal audit effectiveness and organizational value creation. It also mediates the fraud management accounting-organizational value creation relationships. Thirdly, internal audit effectiveness affects organizational value creation and it mediates the fraud management accounting-organizational value creation relationships. Finally, governance culture affects fraud management accounting, internal audit function and internal audit effectiveness. Accordingly, executives can support, promote and enhance the applications of fraud management accounting in an organization, and utilize its concepts as the valuable tools in order to create best organizational practices and achieve their business goals in the current and future operations.

Keywords: Fraud Management Accounting, Internal Audit Function, Organizational Value Creation, Governance Culture, Digital Capability

JEL Classification Code: M41, M42, M49

1. Introduction

Nowadays, the COVID-19 pandemic has become a critical issue and an obstacle to businesses, economies and societies. The pandemic has had potential effects on the gross domestic product (GDP) at the global and national level (Salterio, 2020). COVID-19 has already had considerable economic and financial impacts worldwide. It can cause significant economic and social losses, close businesses and affect to direct and indirect unemployment (Parker, 2020). In this situation, the pandemic leads to uncertain markets, affects investors' confidence to firms' financial performance

and results in financial distresses. Accordingly, firms during the COVID-19 pandemic must utilize their capabilities and strategies for creating success, survival and sustainability. Likewise, in the COVID-19 pandemic, firms may possibly engage in unusual operations and practices through managerial misconducts and misappropriation of assets that can lead to corruption, bribery and fraud. The results of this situation have also had a strong relationship with poor performance, potential financial risk, and dissatisfied shareholders.

Fraud can be a result of the uncertain environments and unusual situations and it refers to wrongful or criminal deception intended to result in misleading financial statements that injure investors and creditors (Edge & Falcone Sampaio, 2012). Moreover, fraud is the presentation with the intent of deceiving others, including activities, such as theft and corruption and an unlawful intention between two parties with the intent of deceiving one party (Zahari, Said, & Arshad, 2020). It is considered a cause, which can lead to the highest financial losses and internal control failures. To damp fraud in an organization, fraud management accounting is considered as an effective

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approach and it is defined as the process of undertaking regular fraud assessment to identify, evaluate and respond to fraud faced by an organization and developing a fraud control plan to create anti-fraud activity in the organization (Kabuye, Nkundabanyanga, Opiso, & Nakabuye, 2017). It refers to the method of accounting that have functioned as the deterrence, prevention, detection, investigation, sanction, redress, mitigation, analysis, prosecution, measurement, monitoring, protection, and polity of fraud activities in the organization (Amasiatu & Shah, 2018; 2019). Fraud management accounting can help reduce undesirable consequences and safeguard shareholders' investment and protect the organization's reputation from fraudsters. It contributes to offsetting the weakness of operational processes and promotes internal control effectiveness (Yang & Lee, 2020). Likewise, fraud management accounting plays a significant role in reducing firms' financial losses, increasing the successes of internal control and internal audit and enhancing their organizational value.

In this study, internal audit function is defined as an independent, objective assurance and consulting activity of firms that is designed to add value and improve their operations, practices and businesses (Naheem, 2016). It assists the firm with accomplishing its goals by bringing a systematic, disciplined approach to monitor and evaluate the effectiveness of risk management, control and governance processes. In addition, internal audit effectiveness refers to the accomplishment of firms' internal audit activities in achieving their objectives by fulfilling the compliance with the regulations and policies, increasing the potentiality of internal control system and succeeding the means of protecting the assets (Alqudah, Amran, & Hassan, 2019). It also produces reliable and accurate information, earns compliance with policies, regulations and good business practices, safeguards assets, and operates efficiently and effectively. It enhances the productivity of labor, increases the return on capital employed, creates the value for the organization, and promotes the reputation of the organization. Finally, organizational value creation is the achievement of firms' outstanding performance through organizational infrastructure, organizational credibility, and organizational outcome (Zanjirchi, Jalilian, & Mehrjardi, 2019). It can be divided into improving the quality of the offered products and services and introducing innovative services that are created with various stakeholders (Lenart-Gansiniec & Sulkowski, 2020).

As for governance culture, it refers to a set of common beliefs and expectations based on shared values, assumptions, artefacts, and norms, and that shared beliefs and expectations result in implicit organizational attitudes, conducts, practices, policies, and rules of ensuring appropriate stewardship over firms' assets and resources (Nitkin, 2012). It also ensures compliance with mandated financial

reporting requirements and ensures that financial statements present fairly the financial affairs of the firms (Nalukenge, Nkundabanyanga, & Ntayi, 2018). Great governance culture is likely to positively enhance success of fraud management accounting, internal controls and internal audit practices. In addition, digital capability is defined as a firm's skills, talent and expertise in managing technologies for formulating and developing new business operations and practices (Khin & Ho, 2019). It consists of a well-developed information management capability and a flexible IT infrastructure. Here, digital capability is likely to encourage firms to apply fraud management accounting, improve internal audit function and achieve internal audit effectiveness.

This study aims at testing the effects of fraud management accounting on organizational value creation through the mediators of internal audit function and internal audit effectiveness. It also examines the effects of governance culture and digital capability on fraud management accounting, internal audit function and internal audit effectiveness. Listed firms in Thailand are the appropriate samples of the study. These firms are both large-sized enterprises and considerable public businesses that have a great impact on Thailand's economy, society and the environment. They are legally required from the stock exchange of Thailand (SET) and the Securities and Exchange Commission (SEC) to provide and set good corporate governance system through appointing and implementing audit committee since year 1999 to present. They need to follow best business practices, operations and functions in their businesses through many regulations and laws related to corporate social responsibility, corporate governance and business ethics. While this study focuses on how firms have dealt with fraud and corruption in the organization, the implementation of their fraud management accounting becomes an important instrument of detecting and preventing fraud activities.

The study is structured as follows. Section 2 presents the literature review and hypotheses development. Section 3 provides the research methods of the study. Section 4 presents the research results and discussions. Section 5 provides contributions and directions for future research. Finally, Section 6 provides concluding remarks.

2. Literature Review and Hypothesis Development

In this study, corporate social responsibility as a specific theory insists that firms are entities with economic, legal, ethical, and philanthropic obligations (Adel, Hussain, Mohamed, & Basuony, 2019). Firms are responsible for a triple bottom line seeking sustainability in the economic, social, and environmental realms. Interestingly, firms have implemented best business practices, such as corporate

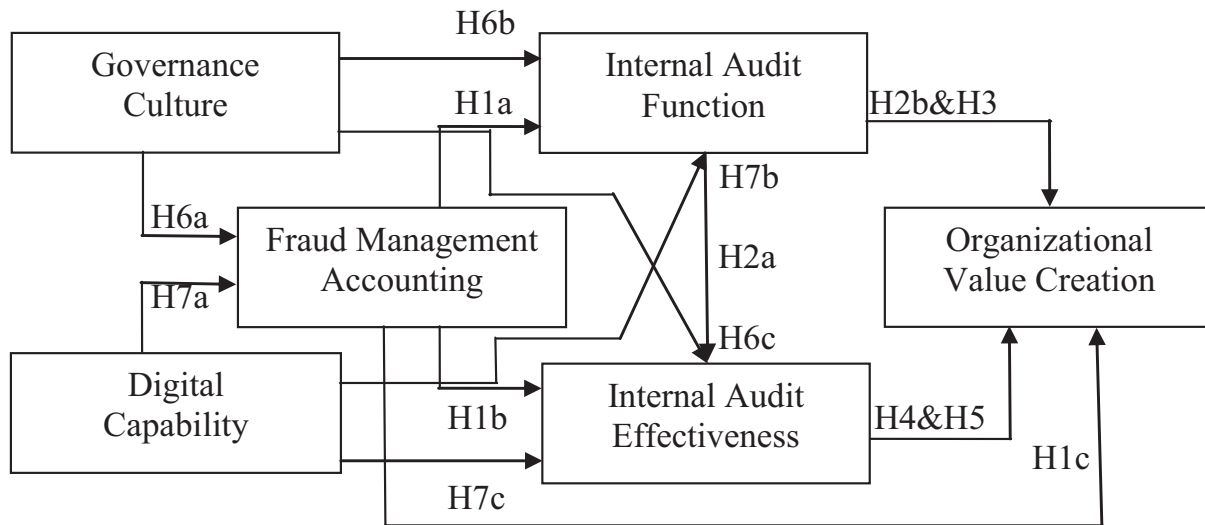


Figure 1: Conceptual Model

governance and business ethics for meeting their own needs without compromising the ability of future generations to meet their own needs. They are becoming more adoptive of the concept of being socially responsible entities and are increasingly working on integrating the strategies and practices of responsibility into the core of their practices. In this study, fraud management accounting as one of firms' the best business practices is implemented to help promote corporate social sustainability in an organization. Thus, the research relationships of these variables are discussed and hypothesized. The conceptual model presents the aforementioned relationships, as shown in Figure 1.

2.1. Organizational Value Creation

Value creation in an organization is an important goal of firms' business operations under competitive environments (Zoni & Pippo, 2017). It can influence them to achieve best decision-making processes, prevent losses and assure long-term sustainability. Great organizational value creation can enhance firms to continuously succeed, survive and sustain. They can initiate a process that innovates, produces and delivers best products, services, practices, and operations to stakeholders. As a consequence, firms have attempted to implement several useful strategies in order to gain potential outcomes that are congruent with the development of sustainable competitive advantage and enhancement of outstanding performance. Here, organizational value creation is defined as the achievement of firms' outstanding performance (Zanjirchi, Jalilian, & Mehrjardi, 2019). It comprises of organizational infrastructure (value-added business models and continuous development), organizational credibility (customer acceptance and stakeholder reliability)

and organizational outcome (profitability and long-term growth and sustainability). Both direct value creation as improving quality of the offered products and services and indirect value creation as introducing innovative services that are created with various stakeholders are main components of organizational value creation (Lenart-Gansiniec & Sulkowski, 2020). Firms must utilize their resources and capabilities for creating organizational value which helps increase profitability by enhancing their capabilities and outstanding performance. In this study, fraud management accounting, internal audit function and internal audit effectiveness serve as valuable strategic methods that are applied for achieving organizational value creation in current and future environments.

2.2. Fraud Management Accounting

In business environments, fraud in an organization can occur from considerable triangles, including perceived pressure, perceived opportunity and some way to rationalize the fraud as acceptable and consistent with one's personal codes of ethics (Albrecht, Albrecht, & Albrecht, 2008). Firstly, perceived pressure refers to firms' business environments in uncertain and unusual situations that involve their pressures for achieving financial needs as the needs to report results better actual performance and non-financial needs as the needs to reduce frustration with works and create a challenge to beat the systems. Secondly, perceived opportunity is defined as firms' business scopes are committed and concealed to weak board of directors, inadequate internal controls and uncovered and irregular laws and regulations in business operations that link to fraud motivation. Finally, some way to rationalize firms'

actions as acceptable refers to firms' needs to successfully achieve their practices and always present best outstanding outcomes by doing appropriate actions with ponderous goals according to their wants, such as keeping the stock price high, using aggressive accounting practices and creating good performance of financial statement and reports. All considerable triangles have become reasonable sources of motivating and building fraud. In this study, fraud is defined as the wrongful or criminal deception intended to result in misappropriation of assets and misleading financial statements that injure investors and creditors (Edge & Falcone Sampaio, 2012). It is the presentation with the intent of deceiving others, including activities, such as theft and corruption and an unlawful intention between two parties with the intent of deceiving one party (Zahari, Said, & Arshad, 2020). More fraud in an organization can directly destroy business growth and expansion, potentially reduce real economic performance and widely make fake and counterfeit development in the world.

Fraud management accounting is considered as a potential business practice of firms that can be applied for damping fraud in an organization and it refers to the process of undertaking regular fraud assessment to evaluate and respond to fraud faced by an organization and develop a fraud control plan to create anti-fraud activity in the organization (Kabuye, Nkundabanyanga, Opiso, & Nakabuye, 2017). It can help reduce undesirable consequences, safeguard shareholders' investment and protect the organization's reputation from fraudsters. It contributes to offsetting the weakness of operational processes and promotes internal control effectiveness (Yang & Lee, 2020). Thus, it plays a significant role in reducing firms' financial losses, increasing the successes of internal control and internal audit and enhancing their organizational value. In addition, fraud management accounting is the method of accounting that have functioned the deterrence, prevention, detection, investigation, sanction, redress, mitigation, analysis, prosecution, measurement, monitoring, protection, and polity of fraud activities in the organization (Amasiatu & Shah, 2018; 2019). It is the proactive identification, removal of the causal and enabling factors of fraud. It attacks the root causes and enablers that underline the factors that contribute to fraud.

Likewise, fraud management accounting is a comprehensive fraud management program and guideline, including fraud governance, fraud assessment, fraud control activity, fraud investigation and corrective action, and fraud management monitoring activities (McNeal, 2017). Firstly, fraud governance refers to the establishment and communication of a fraud management program that demonstrates the expectations of the board of directors and senior management and their commitment to high integrity and ethical values regarding managing fraud.

Secondly, fraud assessment refers to the comprehensive accomplishment that identifies specific fraud schemes, assesses their likelihood and significance, evaluates existing fraud control activities, and implements actions to mitigate residual fraud. Thirdly, fraud control activity refers to the selection, development and deployment of preventive and detective fraud control activities to mitigate the fraud events occurring or not being detected in a timely manner. Fourthly, fraud investigation and corrective action refers to the establishment of a communicative process to obtain information about potential fraud and the deployment of a coordinated approach to investigation and corrective action to address fraud in an appropriately and timely manner. Finally, fraud management monitoring activities refer to the selection, development and accomplishment of ongoing evaluations to ascertain whether each of the five principles of fraud management is present and functions. They communicate fraud management program deficiencies in a timely manner to parties responsible for taking corrective action, including senior management and the board of directors.

Accordingly, effective fraud management accounting can enhance successful practices of internal audit function through internal audit organizational status, internal audit competence and internal audit activities (Dinh, Pham, & Nguyen, 2021). It helps provide the achievement of internal audit practices, including financial reporting quality, compliance with laws and regulations and fraud detection. It assists firms to increase effectiveness of internal audit system, succeed means of protecting the assets and improve their operations economically, efficiently and effectively. Likewise, the last outcome of implementing fraud management accounting in this study is organizational value creation. It has become a source of firms' outstanding performance, profitability, business growth, and organizational survival and sustainability. Hence, it is possible that fraud management accounting has a positive effect on organizational value creation. It can enhance internal audit function, internal audit effectiveness and organizational value creation in current, future and long-term environments. Therefore,

H1: *Fraud management accounting positively affects (a) internal audit function, (b) internal audit effectiveness, and (c) organizational value creation.*

2.3. Internal Audit Function

Internal audit function refers to an independent, objective assurance and consulting activity of firms that is designed to add value and improve their operations, practices and businesses (Naheem, 2016). It is required to develop and adjust their internal audit planning in relation

to changes occurring in their business environments and to changing risks. A high quality of internal audit function is a result from a high degree of realization of the internal audit planning, engagement in a quality of assessment and improvement program, undertaking external independent assessments of internal audit quality, and compliance with laws, regulations and procedures (Zaman & Sarens, 2013). Thus, internal audit function can enhance firms to have an accomplishment of their objectives, goals, aims, and purposes by bringing a systematic, disciplined approach to monitor, evaluate and improve the effectiveness of risk management, control and governance processes.

Additionally, internal audit function has recently been shifted from compliance assurance and assets safeguarding to value-added assurance and consulting services through its roles in monitoring, evaluating and improving risk management, control and governance process with are critical to preserving and enhancing stakeholder values (Ebaid, 2011). It plays an essential role in ensuring the reliability of the financial reporting process. It has potential to complement existing governance disclosures and increases stakeholders' confidence in governance quality and financial reporting reliability. As a consequence, internal audit function tends to utilize their strategic initiatives and postures and outstandingly creates their efficiency, effectiveness and performance. Accordingly, internal audit function can enhance firms to have the achievement of internal audit effectiveness and the accomplishment of organizational value creation. For the mediating effects, internal audit function is a potential outcome of firms' fraud management accounting while directly affects an increase of organizational value creation. Great internal audit function can mediate the strong relationships between internal audit function and organizational value creation. Therefore,

H2: *Internal audit function positively affects (a) internal audit effectiveness and (b) organizational value creation.*

H3: *Internal audit function mediates the fraud management accounting-organizational value creation relationships.*

2.4. Internal Audit Effectiveness

Here, internal audit effectiveness is defined as the accomplishment of firms' internal audit activities in achieving their objectives by fulfilling the compliance with the regulations and policies, increasing the potentiality and achievement of internal control system and succeeding the means of protecting the assets and resources (Alqudah, Amran, & Hassan, 2019). Likewise, internal audit effectiveness contributes to accomplishment of organizational objectives by consulting the management and conducting operations audits through providing useful recommendations for necessary improvements (Mihret,

James, & Mula, 2010). It is instrumental in successfully fighting mismanagement and inappropriate risk-taking. It is an important mechanism, which ensures the quality of financial reporting and guarantees the goals of firms' business operations that are achieved excellently. Accordingly, internal audit effectiveness is hypothesized to have a positive effect on organizational value creation. Moreover, internal audit effectiveness is proposed to become a mediator of the fraud management accounting-organizational value creation relationships. It can definitely link fraud management accounting to organizational value creation. Therefore,

H4: *Internal audit effectiveness positively affects organizational value creation.*

H5: *Internal audit effectiveness mediates the fraud management accounting-organizational value creation relationships.*

2.5. Governance Culture

Governance is a mechanism of firms' business operations that reflects their awareness of corporate social responsibility and best business practices (Rahman & Masum, 2021). It refers to the ways in which firms are governed through the system by which they are directed and controlled in the best interest of shareholders and other stakeholders (Agyei-Mensah, 2017). Thus, governance relating to culture in an organization is a manifestation of organizational culture. In this study, governance culture is defined as a set of common beliefs and expectations based on shared values, assumptions, artefacts, and norms and these shared beliefs and expectations result in implicit organizational attitudes, practices and policies of ensuring appropriate stewardship over firms' assets and resources (Nitkin, 2012). Likewise, governance culture underlays corporate leadership and organizational culture that impact on the design of control systems through visible artefacts, espoused values and best decision-making. Firms with strong governance culture are free of conflict of interest, misrepresenting facts and subordinating one's judgment to others. They can detect fraud and corruption in an organization, avoid subsequent financial statement irregularities, prevent earnings management, and encourage compliance practices. Moreover, firms ensure compliance with mandated financial reporting requirements and ensure that financial statements present fairly the financial affairs of the firms (Nalukenge, Nkundabanyanga, & Ntayi, 2018). Here, governance culture can influence firms to implement best business practices for valuable outcomes through detecting fraud and corruption in an organization and providing internal controls and internal audit practices in the organization. Great governance culture tends to enhance fraud management accounting, internal audit function and internal audit effectiveness. Therefore,

H6: Governance culture positively affects (a) fraud management accounting, (b) internal audit function, and (c) internal audit effectiveness.

2.6. Digital Capability

At present, digitalization is an emerging phenomenon in a business environment (Ritter & Pedersen, 2020). It is enhanced by new technologies, such as the Internet of Things, big data, data analytics, blockchain, artificial intelligence, and cloud computing. It can affect major business improvements, including promoting business-to-business marketing, enhancing customer experience and engagement, streamlining operations and actions, and creating new business models. Therefore, digital capability is defined as technological and organizational abilities of firms to implement decision-making through advanced algorithms (Fürstenau, Cleophas, & Klierer, 2020). It combines organizational expertise and technological resources that support their decisions through using emergent technologies, matching technologies with economic opportunities, implementing business innovations for growth, and assessing business value (Sapta, Muafi, & Setini, 2021). Moreover, digital capability refers to firms' skills, talent and expertise to manage technologies for formulating and developing new business operations and practices (Khin & Ho, 2019). It consists of a well-developed information management capability and a flexible IT infrastructure. It is an important requirement which helps firms achieve innovation, continuous development and excellent outcomes through acquiring the technologies and developing new solutions. While digital capability is important, it can encourage firms to enhance fraud management accounting, internal audit function and internal audit effectiveness. Great digital capability tends to enhance a success of fraud management accounting, an achievement of internal audit function and an accomplishment of internal audit effectiveness. Therefore,

H7: Digital capability positively affects (a) fraud management accounting, (b) internal audit function, and (c) internal audit effectiveness.

3. Research Methods

3.1. Sample Selection Procedure and Data Collection

In this study, a questionnaire was mailed to the listed firms in Thailand. The key informants of the study were the executives of internal auditing department of Thai listed firms, namely, chief internal auditing officers, internal auditing directors, or internal auditing managers because they have the highest duties and responsibilities of internal auditing

practices and other related activities in an organization. These responsibilities included enhancing financial reporting quality, ensuring compliance with laws and regulations, and providing fraud detection and prevention. With regard to the questionnaire mailing, the valid mailing was 768 surveys, from which 319 responses were received. Of the surveys completed and returned, 297 were usable. The effective response rate was approximately 38.67%. According to Aaker, Kuma, and Day (2001), with an appropriate follow-up procedure, the response rate for a mail survey as being greater than 20 is considered acceptable. To prove potential non-response bias and to detect possible problems with non-response errors, a comparison of the first and the second wave data as recommended by Armstrong and Overton (1977) is considered. In this regard, neither procedure showed significant differences because there were no statistically significant differences between first and second groups at a 95% confidence level as firm size ($t = 0.23, p > 0.05$), firm age ($t = 0.28, p > 0.05$) and firm capital ($t = 0.19, p > 0.05$). Thus, this study had no response bias problems.

3.2. Measures

All constructs were measured using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), except for control variables as firm size, firm age and firm capital. In this study, measurements of fraud management accounting, internal audit function, internal audit effectiveness, organizational value creation, governance culture, and digital capability are empirically developed. Hence, sources of these measurement contents are described in Table 1 as follows. To verify the research results, control variables were empirically examined and they consist of firm size, firm age and firm capital. Firm age was measured by the number of years a firm has been in existence by using a dummy variable as less than 15 years = 0 and equal to or greater than 15 years = 1. In addition, firm size was measured by the number of employees in a firm by using a dummy variable as less than 500 employees = 0 and equal to or greater than 500 employees = 1. Lastly, firm capital was measured by the amount of money a firm has invested in doing business by using a dummy variable as less than 10,000 million baht = 0 and equal to or greater than 10,000 million baht = 1.

3.3. Tests of Instrument Quality

To prove the quality of the research instrument, confirmatory factor analysis was applied to evaluate the underlying relationships of a large number of items and to determine whether they can be reduced to a smaller set of factors. Thus, all factor loadings as values of 0.59–0.91 are greater than the 0.40 cut-off and are statistically significant (Nunnally & Bernstein, 1994). Next, discriminant power

Table 1: Sources of all Variable Measurements

Variables	Definition	Items	References
Fraud management accounting (FMA)	The process of undertaking regular fraud assessment in evaluating and responding to fraud faced by an organization and developing a fraud control plan to create anti-fraud activity in the organization	19	Kabuye, Nkundabanyanga, Opiso, & Nakabuye (2017); McNeal (2017)
Internal audit function (IAF)	An independent, objective assurance, and consulting activity of firms that is designed to add value and improve their operations	7	Chen, Lin, Lu, & Zhou (2020); Naheem (2016)
Internal audit effectiveness (IAE)	The accomplishment of firms' internal audit activities in achieving their objectives by assessing the compliance with the laws and regulations, increasing the potentiality and achievement of internal control system and succeeding the means of protecting the assets and resources	6	Alqudah, Amran, & Hassan (2019); Mihret, James, & Mula (2010)
Organizational value creation (OVC)	The achievement of firms' outstanding performance	6	Lenart-Gansiniec & Sulkowski (2020); Zanjirchi, Jalilian, & Mehrjardi (2019)
Governance culture (GNC)	A set of common beliefs and expectations based on shared values, assumptions, artefacts, and norms and these shared beliefs and expectations result in implicit organizational attitudes and practices of ensuring appropriate stewardship over firms' assets and resources	6	Nalukenge, Nkundabanyanga, & Ntayi (2018); Nitkin (2012)
Digital capability (DGC)	Skills, talent and expertise of firms in managing technologies for formulating and developing new business operations and practices	7	Fürstenau, Cleophas, & Kliewer (2020); Khin & Ho (2019)

Table 2: Results of Measure Validation

Items	Factor Loadings	Item-Total Correlation	Cronbach's Alpha
Fraud management accounting (FMA)	0.59–0.87	0.60–0.83	0.87
Internal audit function (IAF)	0.59–0.87	0.61–0.79	0.86
Internal audit effectiveness (IAE)	0.62–0.88	0.64–0.88	0.81
Organizational value creation (OVC)	0.68–0.85	0.67–0.86	0.93
Governance culture (GNC)	0.74–0.91	0.75–0.91	0.86
Digital capability (DGC)	0.64–0.88	0.68–0.89	0.82

was considered to assess the validity of the measurements by item-total correlation. In the scale validity, item-total correlations as values of 0.60–0.91 are greater than 0.30 (Churchill, 1979). Finally, the reliability of the measurements was gauged by Cronbach's alpha coefficients. In the scale reliability, Cronbach's alpha coefficients as values of 0.81–0.93 are greater than 0.70 (Nunnally & Bernstein, 1994). Therefore, an accepted validity and reliability in this study for the scales of all measures was expressed and verified. The results of measure validation are showed in Table 2.

To test the hypothesized relationships in this study, structural equation model is applied for investigating the research relationships because it was used as an appropriate statistical method because it fit the composite approach previously discussed and was the safest option when estimating data from an unknown population (Sarstedt, Hair, Ringle, Thiele, & Gudergan, 2016). In addition, it examines the relationships among governance culture, digital capability, fraud management accounting, internal audit function, and internal audit effectiveness.

4. Results and Discussion

The descriptive statistics and correlation matrix for all variables are presented in Table 3. According to Hair, Black, Babin, and Anderson (2010), multicollinearity might occur when inter-correlation in each predict variable is more than 0.80, which is a high relationship. The correlations ranging from 0.24 to 0.73 at the $p < 0.05$ level, which means that the possible relationships of the variables in the conceptual model could be tested. In addition, variance inflation factors (VIFs) were used to provide information on the extent to which non-orthogonality among independent variables inflated standard errors. In this study, VIFs range from 1.03 to 2.29, which is below the cut-off value of 10 as recommended by Neter, Wasserman, and Kutner (1985). Thus, there are no substantial multicollinearity problems encountered in this study.

To verify the conceptual model of the relationships, the goodness of fit of the models, including the comparative fit index (CFI), the goodness of fit index (GFI), the

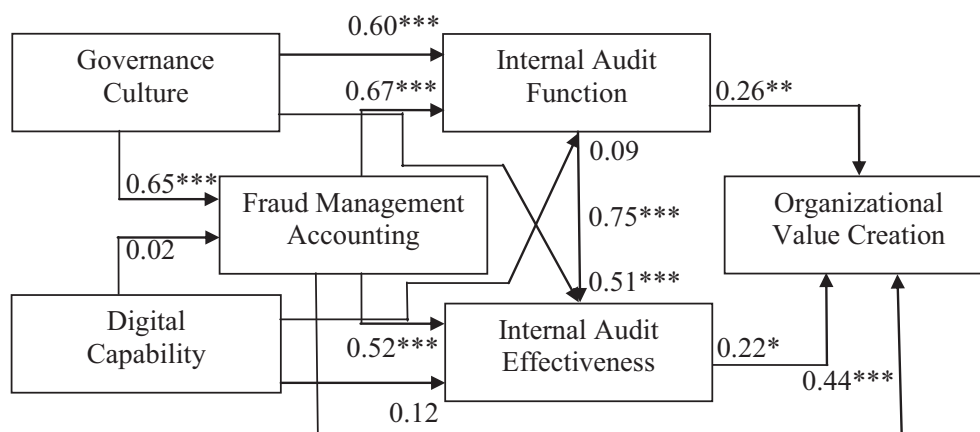
incremental fit index (IFI), and the root mean square error of approximation (RMSEA) are considered in the study (Herda & Lavelle, 2012). Firstly, CFI values always lie between 0 and 1, with value over 0.90 indicating a relatively good fit (Bentler, 1990). Secondly, GFI value is an index that ranges from 0 to 1, with value over 0.90 indicating a relatively good fit (Byrne, 1998). Thirdly, IFI values exceeding 0.90 indicate a relatively good fit (Kline, 1998). Finally, a RMSEA value of less than 0.05 indicates a close fit and less than 0.08 suggests a marginal fit (Bollen & Long, 1993). Thus, this study shows that the initial test of the measurement model resulted in a good fit to the data as shown in Figure 2.

Table 4 presents the results of path coefficients and hypotheses testing of the research relationships. Interestingly, fraud management accounting has a positive effect on internal audit function ($b = 0.67, p < 0.01$), internal audit effectiveness ($b = 0.52, p < 0.01$) and organizational value creation ($b = 0.44, p < 0.01$). In existing literature, fraud management accounting is the process of undertaking

Table 3: Descriptive Statistics and Correlation Matrix

Variables	OVC	FMA	IAF	IAE	GNC	DGC
Mean	4.00	4.12	4.36	4.47	4.30	4.30
Standard deviation	0.51	0.52	0.45	0.84	0.47	0.46
Organizational value creation (OVC)						
Fraud management accounting (FMA)	0.46***					
Internal audit function (IAF)	0.47***	0.73***				
Internal audit effectiveness (IAE)	0.32***	0.32***	0.50***			
Governance culture (GNC)	0.60***	0.68***	0.67***	0.36***		
Digital capability (DGC)	0.57***	0.36***	0.41***	0.24**	0.51***	

Note: ** $p < 0.05$, *** $p < 0.01$.



Note: * $p < .10$, ** $p < .05$, *** $p < .01$, CFI = 0.92, GFI = 0.94, IFI = 0.91, RMSEA = 0.04

Figure 2: A Summary of the Fraud Management Accounting-Organizational Value Creation Relationships

Table 4: Results of Path Coefficients and Hypotheses Testing

Hypotheses	Relationships	Coefficients	Standard Error	t-value
H1a	FMA → IAF	0.67***	0.08	8.91
H1b	FMA → IAE	0.52***	0.08	6.17
H1c	FMA → OVC	0.44***	0.09	5.00
H2a	IAF → IAE	0.75***	0.07	11.16
H2b	IAF → OVC	0.26**	0.13	2.01
H3	FMA → IAF	0.67***	0.08	8.91
	IAF → OVC	0.26**	0.13	2.01
H4	IAE → OVC	0.22*	0.13	1.64
H5	FMA → IAE	0.52***	0.08	6.17
	IAE → OVC	0.22*	0.13	1.64
H6a	GNC → FMA	0.65***	0.09	7.56
H6b	GNC → IAF	0.60***	0.09	6.81
H6c	GNC → IAE	0.51***	0.09	5.56
H7a	DGC → FMA	0.02	0.09	0.25
H7b	DGC → IAF	0.09	0.09	0.99
H7c	DGC → IAE	0.12	0.09	1.31

Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

regular fraud assessment to evaluate and respond to fraud faced by an organization and develop a fraud control plan to create anti-fraud activity in the organization (Kabuye, Nkundabanyanga, Opiso, & Nakabuye, 2017). Great fraud management accounting can reduce firms' financial losses, offset the weakness of operational processes and promotes internal control effectiveness. Firms with best fraud management accounting can create the deterrence, prevention, detection, investigation, sanction, redress, mitigation, analysis, prosecution, measurement, monitoring, protection, and polity of fraud activities in the organization (Amasiatu & Shah, 2018; 2019). Accordingly, they can succeed, survive and sustain in their business operations through having the proactive identification and removal of the causal and enabling factors of *fraud* and attacking the root causes and enablers that underline the factors that contribute to fraud. Moreover, fraud management accounting has had a significant role in succeeding internal auditing activities, enhancing best business practices, increasing value creation in an organization, and promoting growth, survival and sustainability in operations. It has become a key mechanism for driving firms' operations under rigorous competitive environments to have goal achievement and continuous accomplishment. Therefore, Hypotheses 1a to 1c are supported.

Next, internal audit function has a significant positive effect on internal audit effectiveness ($b = 0.75$, $p < 0.01$)

and organizational value creation ($b = 0.26$, $p < 0.04$). According to the existing literature, firms with high internal audit function quality can have high realization degree of the internal audit planning, potential engage assessment and improvement program quality. They can undertake external independent assessments of internal audit quality and comply with laws and regulations (Zaman & Sarens, 2013). They can monitor the controls, evaluate the effectiveness of management strategies, utilize their strategic initiatives, and create their performance (Chen, Lin, Lu, & Zhou, 2020). Thus, great internal audit function can enhance firms to have the achievement of internal audit effectiveness and the accomplishment of organizational value creation. Therefore, Hypotheses 2a–2b are supported.

Finally, internal audit effectiveness has a significant effect on organizational value creation ($b = 0.22$, $p < 0.09$). To achieve firms' business goals, internal control effectiveness has become a main determinant of their strategies in competitive environments and it is the accomplishment of firms' internal audit activities in achieving their objectives by fulfilling the compliance with the laws and regulations, increasing the potentiality and achievement of internal control system and succeeding the means of protecting the assets (Alqudah, Amran, & Hassan, 2019). It provides valuable financial and operating information and useful recommendations to improve their operations, enhance the productivity of labor, increase the return on capital employed,

create the value to the organization, and promote a reputation in the organization. They can create their corporate values and achieve their outstanding performance, survival and sustainability. Therefore, Hypothesis 4 is supported.

According to Baron and Kenny (1986), internal audit function is the mediator of the fraud management accounting-organizational value creation relationships. Interestingly, internal audit function is the key outcome of fraud management accounting implementation ($b = 0.67, p < 0.01$) while at the same time, it is a main factor that affects organizational value creation ($b = 0.26, p < 0.04$). Thus, internal audit function positively mediates the afore mentioned relationships. Therefore, Hypothesis 3 is supported. Similarly, internal audit effectiveness is the mediating variable of the fraud management accounting-organizational value creation relationships. It has become the critical consequence of fraud management accounting ($b = 0.52, p < 0.01$). Great internal audit effectiveness is also a main driver of outstanding organizational value creation ($b = 0.22, p < 0.09$). Accordingly, internal audit effectiveness definitely enhances firms' great fraud management accounting to have a potential linkage with organizational value creation. Therefore, Hypothesis 5 is supported.

In this study, governance culture positively affects fraud management accounting ($b = 0.65, p < 0.01$), internal audit function ($b = 0.60, p < 0.01$) and internal audit effectiveness ($b = 0.51, p < 0.01$). Generally, governance culture is a set of common beliefs and expectations based on shared values, assumptions, artefacts, and norms and these shared beliefs and expectations result in implicit organizational attitudes, conducts, practices, policies, and rules of ensuring appropriate stewardship over firms' assets and resources (Nalukenge, Nkundabanyanga, & Ntayi, 2018; Nitkin, 2012). It assists firms to be free of conflict of interest, misrepresenting facts and subordinating one's judgment to others, detect fraud and corruption in an organization, avoid subsequent financial statement irregularities, prevent earnings management, and encourage compliance practices. Thus, governance culture can motivate and influence firms in implementing best business practices for valuable outcomes through detecting fraud and corruption in an organization and providing internal controls and internal audit practices in the organization. Therefore, Hypotheses 6a–6c are supported.

Surprisingly, only digital capability has no effects on the research outcomes. It does not affect fraud management accounting ($b = 0.02, p < 0.81$), internal control function ($b = 0.09, p < 0.33$), and internal audit effectiveness ($b = 0.12, p < 0.20$). In the existing literature, digital capability is the skills, talent and expertise of firms to manage technologies for formulating and developing new business operations and practices (Khin & Ho, 2019). It can help firms combine organizational expertise and technological

resources through well-developed information management capability and flexible IT infrastructure that support their decisions through using emergent technologies, matching technologies with economic opportunities, implementing business innovations for growth, and assessing business value. It enhances firms to utilize new technologies to perform repeatedly productive tasks, which relate either directly or indirectly to their capacities for creating values through affecting the transformation of existing resources and competencies into achievements of goals and aims. However, digital capability does not play any role in driving fraud management accounting, internal audit function and internal audit effectiveness in this study.

To reasonably consider the research results, this study collected data from listed firms in Thailand. These firms are large-sized enterprises that have more resources and capabilities in business operations and activities. They have attempted to fulfill all requirements, such as corporate social responsibility, business ethics, best business practices, and compliance with laws and regulations. For the digital technologies in an organization, all listed firms have greatly utilized their digital resources and capabilities for business operations through providing the Internet of Things, big data, data analytics, blockchain, artificial intelligence, cloud computing, and others. Accordingly, these firms' digital capabilities are not different. Thus, great digital capability may not affect the achievement of fraud management accounting, internal audit function and internal audit effectiveness. Therefore, Hypotheses 6a–6c are not supported.

In summary, the fraud management accounting-organizational value creation relationships are showed in Figure 2.

5. Contributions and Directions for Future Research

5.1. Theoretical Contribution and Directions for Future Research

This study aims at integrating the antecedents and consequences of fraud management accounting and put them in the same conceptual model. It empirically examines the effects of fraud management accounting and the factors that affect this construct. In addition, this study confirms the theory of corporate social responsibility because fraud management accounting is the representative of how firms have been aware of economic, legal, ethical, and philanthropic obligations. It has become a valuable mechanism for driving firms' business operations, actions, practices, and activities. To verify the current study, future research may search for other components of fraud management accounting and apply them as independent variables of the study.

Moreover, future research may need to evaluate the current literature related to digital capability and its contributions and conceptualize anew the research model. Next, future research may collect data from smaller-sized enterprises and other samples in order to confirm the current research results and generalize the current study. Likewise, a comparative study of two samples or more may be empirically investigated in future research. Finally, future research may utilize methods of multiple regression analysis and partial least squares regression to investigate the aforementioned relationships.

5.2. Managerial Contribution

This study presents the importance of fraud management accounting relating to the corporate social responsibility as it can help firms achieve outstanding performance and gain sustainability in the organization. Firms need to understand the concept of fraud management accounting in depth and utilize this concept as a valuable approach for enhancing their survival and sustainable business operations in long-term and future aspects. Additionally, firms need to be aware of the losses and disadvantages of fraud and the negative effects of fraud on business operations in past, present and future environments. Thus, they need to promote fraud management activities through providing fraud detection, prevention, policy, and governance. While fraud management accounting is important, firms need to invest resources and capabilities in order to create best business practices through the implementation of fraud management accounting. More success of fraud management accounting can encourage firms to gain better acceptability and confidence from stakeholders and promote them to continuously grow, and sustain in both long-term and future business operations. Finally, firms can identify fraud management accounting as a valuable strategic approach and a capable competitive weapon in doing businesses within diversified environments in order to enhance their strengths, competencies and successes of business operations. To achieve their goals, firms need to utilize fraud management accounting efficiently and effectively.

6. Conclusion

Interestingly, fraud management accounting is a key mechanism, which enhances firms' successful business operations, actions, and activities in the current, future and long-term aspects. This study aims at testing the effects of fraud management accounting on organizational value creation of listed firms in Thailand. Mediating effects of both internal audit function and internal audit effectiveness are hypothesized. Moreover, governance culture and digital capability are considered as the effects of fraud

management accounting, internal audit function and internal audit effectiveness. The 297 listed firms in Thailand are the samples of the study. The structural equation model is applied to test the research relationships. The results of this study suggest that fraud management accounting has a significant effect on internal audit function, internal audit effectiveness and organizational value creation. In addition, internal audit function affects both internal audit effectiveness and organizational value creation while internal audit effectiveness leads to organizational value creation. Likewise, both internal audit function and internal audit effectiveness significantly mediate the fraud management accounting-organizational value creation relationships. Finally, governance culture has a significant effect on fraud management, internal audit function and internal audit effectiveness.

Accordingly, fraud management accounting helps firms achieve survival and sustainable business operations in current, future and long-term aspects. Executives of the firms can invest their resources and capabilities for creating fraud management accounting and improve its concepts as best business practices in order to enhance outstanding performance and sustainability in business operations. To verify the research results, future research needs to search for other components of fraud management accounting, examine the current literature pertaining to digital capability, collect data from smaller-sized enterprises and other samples, test two samples or more in the study, and utilize methods of multiple regression analysis and partial least squares regression.

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