The Impact of Key Audit Matters Disclosure on Investor Reaction: An Empirical Evidence from Thai Listed Companies

Wichuta Chirakool

A Thesis Submitted in Partial Fulfillment of Requirements for

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ABSTRACT

The objectives of this study are; Firstly, to investigate the KAMs issue, the number of KAMs issues, and the KAMs readability of Thai listed companies during the periods from 2016 to 2019. Secondly, to examine whether the KAMs disclosure (the number of KAMs issues and the KAMs readability) has effect on the investor reaction. Thirdly, to examine whether audit characteristics (audit firm size, audit industry expertise, audit tenure, and audit risk) has effect on the KAMs disclosure. Finally, to examine whether corporate characteristics (firm profitability, firm size, firm leverage, and firm age) has effect on the KAMs disclosure. The theories are used in this study consist of; Firstly, the communication theory is applied to explain the KAMs issue, the number of KAMs issues, and the KAMs readability that the auditors provide to investors through the auditor's reports. Secondly, the signaling theory is applied to explain the relationship between KAMs disclosure and investor reaction. Finally, the legitimacy theory is applied to explain the relationship between audit characteristics, corporate characteristics, and KAMs disclosure. The sample group is 1,874 firm-year observations companies on the Stock Exchange of Thailand (SET) and the Market of Alternative Investment (mai) from all industry groups except companies listed in banking, financial, and insurance during the periods from 2016 to 2019. The method of this study based on secondary data. Moreover, the statistical regression method was used with unbalanced panel data analysis by the data is collected in cross-section and time-series for testing the hypothesis.

The results of this study showed that; Firstly, the top three KAMs issues during the periods being studied were the same in each of the four years included revenue recognition, inventory and allowance, and investment and impairment of investment. Additionally, this study found that although the mean of the number of KAMs issues has tended to decrease, the level of KAMs readability has tended to increase. Secondly, the number of KAMs issues has no significant effect with both absolute cumulative abnormal return and abnormal trading volume around the announcement date of the auditor's report. On the other hand, the results showed the KAMs readability has positive significance with both absolute cumulative abnormal return and abnormal trading volume. Finally, the audit characteristics and corporate

characteristics which can affect KAMs disclosure found mixed result from evidence. The audit tenure and firm profitability have negative significance with the number of KAMs issues, while the firm size has positive significance with the number of KAMs issues. In addition, the audit firm size and audit tenure have positive significance with KAMs readability, while the firm leverage has negative significance with KAMs readability.

The theoretical contribution of this study included; Firstly, the communication theory was used to explain the solution of communication between auditors and investors that will demonstrate and explain the level and content of KAMs disclosure. This study extends the testing KAMs disclosure by adding KAMs readability and found that the level of KAMs readability has tended to increase. The result shed light on the KAMs readability that the auditors realized that the improvement in readability could enhance the usefulness and communication value of the KAMs disclosure to the investor (Smith, 2016). Secondly, the signaling theory can be used to explain the behavior of the investor when they received more understanding information that performed by the auditor. Therefore, this finding can conclude that more readable of KAMs disclosure in the auditor's report will reduce the information gap between the auditor and the investor. Finally, the legitimacy theory was used to explain that society expects more information from the auditors and the companies for their decision. In terms of audit characteristics, the result found that audit firm size has effect on the number of KAMs issues, and especially audit tenure has effects on both of KAMs disclosure. In terms of corporate characteristics, the result found that the firm profitability and firm size have effect on the number of KAMs issues and the firm leverage effect on KAMs readability. This theory can explain the reasons for the KAMs disclosure as being a quality communication between the auditor and the investors of listed companies in Thailand. The results shed light on these categories of audit characteristics and corporate characteristics are important for creating the format and content that contains in the KAMs disclosure section in the auditor's report.

Keyword : Key Audit Matters, Readability, Investor reaction

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Wichuta Chirakool

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER I

INTRODUCTION

Overview

An auditor's report is a communication tool that has the conclusions of the auditing process on the corporate operation and financial statement by the external auditor and provides an opinion to the various users of financial statements such as bankers, investment analysts, bondholders, insider's shareholders, as well as outside as a convey a message on the content and form of the information presented (Colbert & Jahera, Jr., 2011; Hay, 1998; Mock et al., 2013; Srijunpetch, 2017). They have an expectation in the auditor's report that will provide the accuracy of the financial statement's information by focusing on the specific characteristics of the company to make their decisions (Tangruenrat, 2015b). In addition, the auditor's report should send a signal of the auditor's opinions to the users when the audited financial statements have an abnormality. However, the traditional auditor's report did not convey enough information value and signal to the users for their decision-making (Suttipun, 2020b). For example, during the world financial crisis, the traditional auditor's reporting did not reveal enough financial risks as most of the failed financial institutions received unqualified opinions before failing (Doogar, Rowe, & Sivadasan, 2015; Sikka, 2009). Therefore, leading to propose many changes to improve the current format of the auditor's report to make it more insightful and transparent by the International Auditing and Assurance Standards Board (IAASB) in 2015.

The IAASB issued the revised version of International Standards on Auditing 700 (ISA 700) Forming an Opinion and Reporting on Financial Statements by including one more paragraph namely Key Audit Matters into the new auditor's report with the belief that the new auditor's report will enhance communicative value, increase attention by management and those charged with governance, and increase the professional skepticism of auditors, leading to the improved quality of financial reporting (International Auditing and Assurance Standards Board (IAASB), 2015) The main objective of the ISA 700 is to propose a new format of auditor's report which has significant changes from the present version and has impacts on the understanding of

the report by auditors and investors. The most important change is the presentation Key Audit Matters (KAMs) as a part of the new auditor's report. The detail of KAMs is specified in the International Standards on Auditing 701 (ISA 701) "Communicating Key Audit Matters in the Independent Auditor's Report". The main objective of the ISA 701 is to set the auditor's opinions on KAM disclosure including issue and content of communication in this paragraph for reporting such matters specifically (IFAC, 2017). The standards were issued in December 2014 (IFAC, 2015c, 2015d, 2015e, 2015f) and effective for audited financial statements ending on or after December 15, 2016. Several countries have already disclosed KAMs in their regulatory frameworks, including the United State, Canada, United Kingdom, European Union countries, New Zealand, China, Hong Kong, and Singapore (Christensen, Glover & Wolfe, 2014; Gutierrez, Minutti-Meza, Tatum & Vulcheva, 2018; Lennox, Schmidt & Thompson, 2018; Almulla and Bradbury, 2018; Bédard, Gonthier-Besacier & Schatt, 2015, 2019; Velte, 2018a, 2018b; Goh, Li & Wang, 2019; Sirois, Bédard & Bera, 2018). To comply with the ISA 700 and ISA 701, the Federation of Accounting Professions (FAP) of Thailand utilized the new auditing reporting model into its accounting standards, which came into effect for the period ended on or after December 31, 2016, but this only applied for listed companies (FAP, 2016a, 2016b).

KAMs provided information to investors to understand the most important matters for the audit of the current financial statements in accordance with the auditor's professional judgment (IFAC, 2015b). Furthermore, auditors select KAMs from matters communicated with those charged with governance such as significant risks, important matters that are difficult to investigate, and significant modification of the audit approach that is specific to the audited company (IAASB, 2013). These standards solve the information gap and bring about an increased communication value of the auditor's report (Tangruenrat, 2015c; Sirois et al., 2018). KAMs are used as a signal to send to any investors by auditor's opinions of corporate operation and financial statement, it can help the investors to understand the business and significant matters (Suttipun, 2020b). Moreover, KAMs disclosure can decrease information asymmetry between companies and users of financial statements (Velte & Issa, 2019; Velte, 2019). After the requirement for the KAMs disclosure in an auditor's report has been applied for audits of financial statements. Causing the mainstream of auditing research on

consequences of KAMs disclosure is increasingly known such as the impact on audit quality (e.g., Kitiwong & Sarapaivanich, 2020; Almulla & Bradbury, 2018; Bédard et al., 2015), audit delay (e.g., Almulla & Bradbury, 2018; Bédard et al., 2015), investor reaction (e.g., Suttipun, 2020b; Boonyanet & Promsen, 2019; Lennox et al., 2018; Srijunpetch, 2017; Smith, 2016; Bédard et al., 2015), and readability of auditor's report (e.g., Goh et al., 2019; Carver & Trinkle, 2017).

From prior research, there are few studies regarding KAMs disclosure in terms of readability that has effect on investor reaction (e.g., Smith, 2016; Carver & Trinkle, 2017). The reasons for the study of KAMs disclosure were interesting for several reasons: Firstly, KAMs are a part of the auditor's report that explains the characteristics of the specific information of each company, therefore, structure KAMs disclosure is flexible, and language used to explain KAMs may be difference in each company (Pratoomsuwan & Yolrabil, 2018; Velte, 2019). Consequently, the KAMs readability of this study is the ease that the investors can be read and understood the messages, which is an important consideration in the communication process between auditors and investors, and it may affect on the investor reaction. Secondly, on one hand, the study of Smith (2016) found that the investors can understand the new auditor's report with KAMs disclosure better than the traditional auditor's report without KAMs disclosure because the new report reveals more readable disclosure. On the other hand, there are some researchers who argue that KAMs readability have no effect on the investor reaction (Carver & Trinkle, 2017). This is because in the perspective of some investor, the auditor's report might not provide any important information or signals from the auditor (Tangruenrat, 2015b). Especially, unsophisticated investors may be not understanding in the difficult language that is used to explain the KAMs disclosure (Smith, 2016; Velte, 2018a, 2019). Therefore, this study would like to find the conclusion that whether using more understandable language, clear and concise wording in KAMs disclosure is the ways to reduce communication gaps between auditors and investors?

For the study in Thailand, although there are several prior studies that have investigated the relationship between audit KAM disclosure and investor reaction, there are some research problems that should be mentioned as follows. Firstly, most studies had focused on the only main capital market namely the Stock Exchange of Thailand

(SET) (e.g., Srijunpetch, 2017; Boonyanet & Promsen, 2019; Limaporn et al., 2019) or focused on the alternative capital market namely the Market for Alternative Investment (mai) (e.g., Suttipun, 2020b, 2021). There is no research conducted used the sample from both capital markets at the same time. Secondly, the investigation of the effect of KAMs disclosure on investor reaction often study in the term of issue and number of issues were studied by several researchers (e.g., Srijunpetch, 2017; Boonyanet & Promsen, 2019; Sengwan & Visedsun, 2019; Limaporn et al., 2019; Suttipun, 2020b, 2021). There is no research that studies the effect of KAMs disclosure in terms of readability in Thailand. However, only the number of KAMs issues maybe not enough for investor decisions. Thus, the KAMs readability was considered in this study.

The signaling theory is applied to explain the relationship between the KAMs disclosure and investor reaction. From the idea that investors need true and fair financial information, including significant risks of the business that investors should be aware. This theory can be used to explain the behavior of investors when they received more understanding information from the auditors as the signaler who would like to reduce information asymmetry between them (Asare & Wright, 2012; Pornupatham, 2016). The investor as a receiver of information must choose how to interpret the signal that they received (Connelly et al., 2011; Washburn, 2017). After implementing ISA 700, auditors now have a new mechanism to signaling significant financial risks of clients to the investor by reported KAMs (Sengwan & Visedsun, 2019). This auditor's action is the strategies of the signaling that affect the decisions of investors (Rezaei & Shahroodi, 2015). Therefore, the signaling through the KAMs disclosure in the new auditor's report may be sending the additional material information regarding the various events combined with the financial information relevant to the investor's decision-making (Dye, 1993). Moreover, to examine whether the KAMs disclosure has effect on the investor reaction, it could be observed as the change of stock price or stock volume.

The legitimacy theory is applied to explain the relationship between audit characteristics, corporate characteristics, and the KAMs disclosure. The auditor’s report helps the companies show their actions which legitimize social expectation. In terms of audit characteristics, it is important for creating the level and content that contains in KAMs which a section in the auditor’s report. This is because the auditors use the

KAMs disclosure to act to social expectations (Suttipun, 2021). Moreover, the audit characteristics are important for creating the level and content of KAMs disclosure. This study expected that the audit characteristics are different, this may also affect the level and content of KAMs disclosure. This study considerate the audit characters are included the audit firm size, audit industry expertise, audit tenure, and audit risk because these characteristics are directly relevant for the preparation of KAMs disclosures. Additionally, in terms of corporate characteristics, this theory is used to explain that society has different expectations of the actions and activities of corporate. Thus, the complex company has more intention in their actions and activities by social expectations than the less complex firms (Wei, Fargher & Carson, 2017; Suttipun, 2021). For this reason, the level and content of KAMs disclosure depend on how the expectations of society impinge on each company. This study expected that corporate characteristics were different, the impact on KAMs disclosure may be different. Therefore, the corporate characteristics are included the firm profitability, firm size, firm leverage, and firm age was considered because it is directly for preparing KAMs disclosures.

Research Questions

1. What are the KAMs issue, the number of KAMs issues, and the KAMs readability of Thai listed companies during the periods from 2016 to 2019?
2. How the KAMs disclosure (the number of KAMs issues and the KAMs readability) has effect on investor reaction?
3. How the audit characteristics (audit firm size, audit industry expertise, audit tenure, and audit risk) have effect on the KAMs disclosure?
4. How the corporate characteristics (firm profitability, firm size, firm , and firm age) have effect on the KAMs disclosure?

Purposes of the Research

1. To investigate the KAMs issue, the number of KAMs issues, and the KAMs readability of Thai listed companies during the periods from 2016 to 2019.
2. To examine whether the KAMs disclosure (the number of KAMs issues and the KAMs readability) has effect on the investor reaction.
3. To examine whether audit characteristics (audit firm size, audit industry expertise, audit tenure, and audit risk) has effect on the KAMs disclosure.
4. To examine whether corporate characteristics (firm profitability, firm size, firm leverage, and firm age) has effect on the KAMs disclosure.

Scope of the Research

This study aims to examine whether the KAMs disclosure has effect on investor reaction, examine whether the audit characteristics have effect on KAMs disclosure, and examine whether the corporate characteristics have effect on KAMs disclosure. An empirical research method based on secondary data was applied in this study. The population in the study comprised all the listed companies in the Stock Exchanges of Thailand (SET) and the Market of Alternative Investment (mai) during the periods from 2016 to 2019 for a total of four years. This study started from the year 2016 since it was the year when Thailand fully adopted the ISA 700. However, the sample of this study did not include companies that (1) were registered in financial service, insurance industries, and leasehold property funds, (2) were withdrawn from listing by the SET and the mai including companies under rehabilitation, (3) whose fiscal year-ends are not on the 31 December, (4) were registered as listed companies after 2016, (5) have been incomplete data for analysis, and (6) have outlier data of the main variable. Therefore, the final sample group consisted of 528 firm-year, there are 1,874 firm-year observations.

The data of KAMs disclosure and audit characteristics consist of audit firm size, audit industry expertise, audit tenure, and audit risk are manually collected from auditor’s report and listed companies' websites. Moreover, the data used to measure the investor reaction which is the closing price and stock daily trading volume to be used

to calculate cumulative abnormal returns and abnormal trading volume, and the corporate characteristics firm profitability, firm size, firm leverage, and firm age, as well as financial accounting data for control variable are collected from the SET Market Analysis and Reporting Tool (SETSMART) database and the Stock Exchange of Thailand's website (www.set.or.th).

Key Words and Definitions

Key audit matters are the most significant matter in the audited financial statements that the auditor considered through their professional judgment.

KAMs issue is the issues on which KAMs disclosure was performed. This study classifies them into 15 categories and creates one director variable for each category, taking the value of 1 if the company has a KAMs issue that falls in the category, and 0 otherwise. The measurement in 15 categories are as follows: 1) revenue recognition, 2) accounts receivable and allowance for doubtful debt, 3) inventory and allowance for inventory, 4) investment and impairment of investment, 5) asset impairment, 6) property plant and equipment (PPE) and impairment, 7) goodwill, 8) deferred tax assets, 9) business combination, 10) investment property, 11) provision, 12) biological assets, 13) debt covenant, 14) the contract of business, and 15) the critical accounting estimates and judgments by the management.

Number of KAMs issues is the number of issues on which KAMs disclosure in the auditor’s report.

KAMs readability is the ease level that the investors can be read and understood the KAMs disclosure. This study measure KAMs readability in the English version by using the

Fog Index, a higher Index means that the KAMs disclosure is less readable. However, this study multiplied by -1 so which means higher values imply KAMs more readable.

Investor reaction is a reaction of the investor that occurs because of an event (KAMs disclosure). The decision of investors depends on the analysis of the KAMs disclosure that they received.

Cumulative abnormal return is a reaction of the investor in terms of price aspect that occurred because of the event of the KAMs disclose around the announcement date of the auditor's report. This study uses the absolute value of the cumulative abnormal returns over three trading days, where day t is the auditor's report date (t0) and the two following days (t+2) (Bédard et al., 2019), calculated as follows for each firm in the sample.

Abnormal trading volumes is a reaction of the investor in terms of volume aspect that occurred because of the event of the KAMs disclose around the announcement date of the auditor's report. This study measure by the natural logarithm of the firm's average event-period volume divided by the firm's mean estimation-period volume.

Audit Firm Size is grouping by four internationally famous audit firms, also well-known as Big 4 includes Pricewaterhouse Coopers (PWC), Deloitte Touche Tohmatsu (DTT), EY and KPMG. This study measured by dummy 1 for the four international audit firms, and 0 otherwise.

Audit industry expertise is the auditing market leaders who have gotten their market share from the cut-off point. This study measured by dummy 1 for the company is audited by such audit firm with the cut-off point at 10 percent or more in each industry and each year when compared to all other audit firms, and 0 otherwise.

Audit tenure is the number of working years of audit partners has audited with their client.

Audit risk is reflected by the audit service fee that the auditor charges with their clients, the higher audit fees mean the client has higher business financial risks that led to the auditor must spend more time and resources to investigate these matters to their satisfaction. This study measured by the natural logarithm of total audit fee.

Firm profitability. is the ability of a business to earn a profit from their total assets. This study measured by return on asset (ROA).

Firm size is the size of business unit that the measurement can be group by the total assets. This study measured by natural logarithm of total assets.

Firm leverage is the effect of potential financial problems that show as the total debt divided total assets. This study measured by total debt divide by total assets.

Firm age is the period from the established date to the current date of the firm. This study measured by the natural logarithm of years since the date the firm is established.

Listed companies comprised all the listed companies in the SET and the mai. The SET include the listed companies whose paid-up capital exceeds three-hundred million Baht after the

initial public offerings. While the mai, these are small- and medium-sized companies with paid-up capital over two- hundred million Baht after the initial public offerings.

Organization of the Dissertation

This research is organized into five chapters. Chapter one represents an overview of the study, the research questions, the purposes of the research, the scope of the research, keywords and definitions, and the organization of the dissertation. Chapter two emphasizes the understanding of the theoretical foundation, key audit matters disclosure, investor reaction, the definition of all constructs, relevant literature review and research hypotheses, and conceptual framework and illustrates the related hypotheses for testing. Chapter three describes the research methods including population and sample, data collection, the variable measurements, research model, and the methodology. Chapter four describes the results including the descriptive statistics, the correlation analysis, hypotheses testing, and the summary of hypotheses testing. Finally, chapter five proposes the summary of this study including the conclusion, discussion, theoretical and managerial contributions, and limitations and future research direction.

CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

The previous chapter provides an overview of the situation with key audit matters disclosure and states the research questions, purposes of the research, the scope of the research, and key words and definitions. This chapter emphasizes the understanding of theoretical foundation, key audit matters disclosure, investor reaction, the definition of all constructs, relevant literature review and research hypotheses, and conceptual framework. Therefore, this chapter is divided into five sections. The first section shows the theoretical foundation consist of communication theory, signaling theory, and legitimacy theory. The second section discusses key audit matters disclosure to explain the background, objective, definition, and benefit of key audit matters. Moreover, this section shows the definition and measurement of key audit matters disclosure. The third section shows the definition and measurement of investor reaction. The fourth section shows empirical evidence on key audit matters disclosure and investor reaction, audit characteristics and key audit matters disclosure, and corporate characteristics and key audit matters disclosure. Further, this section illustrates the hypotheses relationships among key audit matters disclosure, its consequences, and antecedents. The final section shows a conceptual framework.

Theoretical Foundation

This study employs three main theories: firstly, the communication theory, which explains the key audit matters issue, the number of key audit matters issues, and the key audit matters readability. Secondly, the signaling theory used to explain the relationships between the key audit matters disclosure and investor reaction. Finally, the legitimacy theory is applied to explain the relationship between the antecedents (audit characteristics and corporate characteristics) key audit matters disclosure. Each applied theory is detailed as follows.

Communication Theory

Communication theory has been proposed as a way to better understand why a communication gap continues to occur in auditing (Hronsk, 1998). Communication is central to the assurance function, and it has been cited as one of the primary basis of auditing (Schandl, 1978). Assurance reporting is a communication process, with medium communication being the written text of the assurance report (Chong & Pflugrath, 2008). These reports are containing the definition, process, elements, and outcome, including the influence between senders and receivers (Smith & Smith, 1971). The sender starts the text and encodes it, translating it into a signal (the message), and was transmitted through a channel (the report) to a receiver who interprets the message (Nuntathanakan, Sarapaivanich, Kosaiyakanont & Suwanmongkol, 2020). These fundamental elements of communication underlie the reporting process (Maijoor et al., 2002). Communication theory may provide useful insights on how to create moderate assurance reports. The study in areas such as linguistics, information theory, psychology, and sociology bring to communication concepts. This concept is important to consider when examining how auditor (as a sender) improves their communication associated to the investor (as a receiver) with assurance reports and was considered in a report published by the International Federation of Accountants (IFAC) that evaluated how to communicate of a moderate level of assurance reports (Maijoor et al., 2002; Mock et al., 2013).

Effective communication may be accomplished by focusing on improving the potential of the sender to transmit information (Fiske, 2010; Maijoor et al., 2020). The audit function is an important mechanism for investors and exists to provide feedback to them (Colbert & Jahera Jr, 1988; Ittonen, 2010). That is because the audit provides information and monitors the activities of management for the investor that can help to ensure that the directors are to perform an action the company in the best interests of the shareholder (Colbert & Jahera Jr, 1988). Therefore, for investors to verify management's goal and financial information and be able to rely on the information, it is necessary to get assurance from an independent auditor (PWC, 2017). The investors need independent auditor to reduce errors in record keeping, misappropriation of assets, and fraud within business (Hayes, Wallage & Gortemaker, 2014). The Auditor will respond with the investor's needs by assess and communicate whether the financial

statements represent its fair view (Hayes et al., 2014). Furthermore, auditors should provide their opinion to the public, which is the only disclosure evidence indicating the audit process (Boonyanet & Promsen, 2019). Auditors communicate with the investors through the auditor's report (Hay, 1998; Quick, 2020). Therefore, it is important for understanding the development of the usefulness and purpose of audit which helps investors feel confident and reliable in the information in financial statements.

An auditor's report is a communication tool that has the conclusions of the auditing process and provides an opinion to investors as a convey message on the content and form of the information presented (Hay, 1998; Mock et al., 2013). The investors have an expectation in the auditor's report that will provide the accuracy of the financial statement's information (Tangruenrat, 2015b). This means the auditor's report might not reflect the purpose of auditing from the perspective of investors if content in the auditor's reports being difficult to understand (Hay, 1998). Therefore, to reduce the expectation gap of the investors, changing the auditor's report which led to more understanding is important in the context of increase the communication value (Chong & Pflugrath, 2008). One measure of appreciating the communication value is readability, which measures whether receivers could understand a message from a sender or not (Li, 2008). The communication value of the auditor's report will be increased when the investor understands the message as it was intended to be conveyed by the auditor (Coram et al., 2011). Particularly, KAMs which is part of the auditor's report, the primary objective of KAMs is the communication of those matters with company-specific information that explain the format and content of KAMs disclosure to investors (Chong & Pflugrath, 2008; Almulla & Bradbury, 2018) for the same understanding of the auditor's role and responsibility (Hay, 1998; Gold, Heilmann, Pott & Rematzki, 2020; Kitiwong, Ekasingh & Sarapaivanich, 2019).

In summary, the communication theory is applied to explain the solution of communication between auditors and investors through the auditor's reports in terms of their definition, process, elements, and outcome that will demonstrate and explain the level and content of KAMs disclosure. The key to communication is to allow investors to understand as far as possible the messages from the auditors. Therefore, the auditor's reports including KAMs disclosure constitute messages that auditors communicate to investors. To understand the communication value, this study focused

on three measurements of KAMs disclosure: firstly, the KAMs issue which depend on the characteristics of the business including the industry in which the business is operating. Secondly, the number of KAMs issue that disclosure in auditor's report. Finally, the KAMs readability, which measures whether the investors can properly understand a message from the auditors or not.

Signaling Theory

The signaling theory, which was proposed by Spence (1973) help to explain the behavior of two parties when they have access to different information. The one party as the sender must choose whether and how to communicate that information, while the other party as the receiver must choose how to interpret the signal that they received (Connelly, Certo, Ireland & Reutzel, 2011; Washburn, 2017). This information may be positive or negative in context, however, somehow it will benefit the receiver if it can be received (Connelly et al., 2011). Therefore, the primary disclosure of an opinion can be used to signal the company's superior quality while also reduces the information asymmetry (Morris, 1987). Therefore, the strategic of the signaling means to actions taken by a signaler to influence decisions of receivers (Rezaei & Shahroodi, 2015). The signaling theory has been widely used in accounting and auditing studies which proposed that management may signal something about the firm through various aspects of financial information disclosure, which can be viewed as a signal by users of financial report (Connelly et al., 2011).

To invest in the stock market, information is an important factor and affects investors' investment decisions. However, when the company is growing, accounting and financial statement preparation are more complex financial statements and more overload financial disclosure. Therefore, the financial statement interpretation also requires an in-depth understanding of accounting practices, reporting practices and business governance issues (Ittonen, 2010). But because investors do not have special privileges to access the insights company's information. Also, the ability to process investors' limited information requires investors to careful in their attention to consider the financial statement information (Sirois et al., 2018). Which the investors find it more difficult to assess the quality of the information received and interpret the signal of the disclosures (Salehi, 2007). As a result, the investor cannot assess the quality of

the information by themselves. Therefore, the auditor who has ability and expertise to understand the nature of business, transactions, and accounting systems, is hired to signal the company's performance to the investors (Liao, Minutti-Meza, Zhang & Zou, 2019). In which the auditor's intention to make this asymmetry more equality, auditor signals investors by providing relevant information to them that, if interpreted correctly, causes the investors to adapt their investing behavior (Connelly et al., 2011).

The result of the auditing is auditor's report which especially important for third parties because the auditors have access to firm information and can disclose the information that needs to be disclosed (Varici, 2013). As the result, the auditors can provide the conclusions of the auditing process, and the audit opinion on whether the financial statements represent a true and fair view of the financial performance and position of the company (Hay, 1998; Ittonen, 2010; Mock et al., 2013; Pricewaterhouse Coopers (PWC), 2017). Christensen et al. (2014) showed that investors want to get more specific information than it has been specified in the traditional auditor's report. The examples of such information are 1) the significant risks in the audit of the financial statements and the assessment of the auditors regarding accounting policies, significant accounting estimates, and management discretion in such matter 2) the information on problems encountered during the auditing (Porter, hÓgartaigh & Baskerville, 2009), including the important matters that the auditor communicates with the management (Baskerville, Hogartaigh & Porter, 2010). From the above, the investors believe that the auditor's report should give them the enough information from the audit process (Boonyanet & Promsen, 2019). They expect in the auditor's report that will give signal warning to the investors if the audited financial statements have an abnormality (Tangruenrat, 2015b). They interested in the auditor's report by focusing on the specific characteristics of the company to make their decisions. It is clearly that KAMs are part of the auditor's report that explains the characteristics of the specific information of each company (Almulla & Bradbury, 2018).

KAMs play as a signaling role to attract the investor to pay more attention to content, when the investors analyze a financial statement and need to highlight some parts of the financial statements, (Sirois et al., 2018). And in another aspect, investors may rely on KAMs because it is more concise and credible than financial statements disclosures (Christensen et al., 2014). Prior experimental and archival research,

investors have been found to react to KAMs disclosure whether the number of KAMs or even KAMs readability (Christensen et al., 2014; Srijunpetch, 2017; Sirois et al., 2018; Almulla & Bradbury, 2018; Reid, Carcello, Neal & Francis, 2019; Liao et al., 2019; Goh et al., 2019; Boonyanet & Promsen, 2019; Köhler, Ratzinger-Sakel & Theis, 2020; Suttipun, 2020b). The trend of research suggests that investors prefer KAMs disclosure. Accordingly, when KAMs disclosure refers to financial statement disclosure, this study expects investors will access more speedily and pay greater attention to the related disclosure. However, the auditor's report may lose its usefulness if investors misunderstand it, and KAMs disclosure may have the opposite effect (Quick, 2020). Therefore, this study aims to investigate the KAMs disclosure in the auditor's report that affect investor reaction.

In summary, the signaling theory is in line with this study that focuses on the impact of KAMs disclosure on the investor reaction. From the idea that investors need information related to the financial performance, financial position, changes in shareholders' equity, cash flows, including significant risks that investors should be aware. Therefore, the information that investors require should be audited by an auditor who operates in generally accepted auditing standards. When investors are informed of true and fair financial and significant risks of the business. It will affect their decision that whether to invest in the company's securities or not.

Legitimacy theory

The legitimacy theory by Suchman (1995) explains that corporate actions and activities occur due to social expectations. This is because the company receives rights and powers from society to use natural resources and human resources under the condition that the management of the company must operate their business according to social expectations, this is like a corporate commitment to society (Gray, Kouhy & Lavers, 1995). The companies that consider themselves as a portion of society will look to serve social expectations with the belief that If the company cannot meet social expectations, they will be rejected by society which led the companies cannot succeed (Suttipun, 2021). Therefore, in order for the company to succeed, the management must focus on the social expectations checking whether the business is still responding to the social expectations or not.

However, the expectations of society are changing over time, thus, the corporations have to provide more information about their actions and activities including information disclosures in their annual reports (Islam & Deegan, 2010). Hence, the legitimacy theory uses to explain why companies are willing to allow the auditors to disclose the KAMs information, this is because they have to execute society in an acceptable feature of society, which can enhance and maintain the success of the companies (Deegan, 2002). Disclosing the information on the report helps the companies show their compliance which means company actions legitimize social expectation (Branco & Rodrigues, 2008). Therefore, the auditors are allowed by the companies to disclose KAMs in the auditor's report which is a part of the annual report because the top management accepts that such reporting is requested by society at large (De Villiers & Van Staden, 2006).

Therefore, legitimacy theory can be used to explain the relationship between audit characteristics, corporate characteristics, and the KAMs disclosure in the auditor's reports of listed companies in both the SET and the mai. Firstly, this is because KAMs disclosure is used by auditors to act to social expectations. Moreover, the opinion of auditors showed in the auditor's reports will help to meet social expectations by providing a true and fair view of the financial performance and position of the company. For example, the level of auditor's report readability depends on the Big 4 audit firm and industrial expertise audit (Smith, 2016) because they intend to maintain their reputation to provide a better quality of auditor's report to compete with another auditor (Becker et al., 1998). Secondly, if audit characteristics are different, this may also affect the level and content of KAMs disclosure. Third, the influence on KAMs disclosure may be different because of corporate characteristics differences (Suttipun, 2021). For example, the number of KAMs issues depends on the complexity of the audited company (Ferreira & Morais, 2020) because the complex company has more intention in their actions and activities by social expectations than the less complex firms (Wei, Fargher & Carson, 2017; Suttipun, 2021). Therefore, although the auditing standards now require auditors to enhance more information through KAMs disclosure that includes in their auditors' reports where appropriate, the that explain the level and content of KAMs disclosure will depend on how the expectations of society impinge on each company.

In summary, the legitimacy theory is applied to explain the relationship between audit characteristics, corporate characteristics, and the KAMs disclosure. The auditor's report helps the companies show their actions which legitimize social expectation. Therefore, the characteristic of the auditor is important for creating the level and content that contains in KAMs which a section in the auditor's report. This study considers the audit characters which include; audit firm size, audit industry expertise, audit tenure, and audit risk. In addition, the corporate characteristics regarded as a source of financial information. Thus, this study expects that the corporate characteristics are included; firm profitability, firm size, firm leverage, and firm age may also affect to KAMs disclosure.

Key Audit Matters Disclosure

The idea of adding specific description for each business in the auditor's report has for a long time. Since the global financial crisis in 2008, the investors who want more understand the business that they invest disappointed with the auditing profession and saw that the auditor's report should provide more information than it was, causing information gap (IAASB, 2015; IFAC, 2015a). The information gap refers to the gap between information that investors believe is necessary to decide and the information that investors can find from financial statements or other public information may be one of the important factors in causing such problems (IFAC, 2011). There are several researchers shows that during the financial crisis, the traditional auditor's reporting did not convey financial risks as most of the failed financial institutions received unqualified opinions before failing (Doogar et al., 2015; Sikka, 2009). For studying in Thailand, Srijunpetch (2017) found that the traditional auditor's reporting did not make that content and communication value of the auditor's reports of listed companies were different, therefore, the investors did not pay attention to the auditor's report for their decision (Tangruenrat, 2015c).

Moreover, there are many studies show that the investors want to get more specific information of the businesses from the auditor's report which are as follows. The first section related with the key risks in the audit of the financial statements and the auditor's assessment of accounting policies, significant accounting estimates, and

the management's discretion in accounting policies and accounting estimates (Vanstraelen, Schelleman, Meuwissen & Hofmann, 2012). The second section related with the problems encountered during the auditing process (Porter et al., 2009). The third section related with the matter communication between the auditors and the manager of the companies (Baskerville et al., 2010). The final section related with the weaknesses of the important internal controls that the auditor reports to the management (Gray, Turner, Coram & Mock, 2011). Therefore, the organizations in many developed countries (e.g. the International Audit and Assurance Standards Board (IAASB), the Public Company Accounting Oversight Board (PCAOB), and the Financial Reporting Council (FRC) have returned their attention to the revised auditing standards to enhance the communication value of the auditor's report (Simnett & Huggins, 2014; Almulla & Bradbury, 2018).

The IAASB issued the revised version of ISA 700 Forming an Opinion and Reporting on Financial Statements with the belief that the new auditor's report will enhance communicative value, increase attention by management and those charged with governance, and increase the professional skepticism of auditors, leading to the improved quality of financial reporting. The standards were issued in December 2014 (IFAC, 2015c, 2015d, 2015e, 2015f) and effective for audited financial statements ending on or after December 15, 2016. To comply with the international auditing standard, the Federation of Accounting Professions of Thailand utilized the new auditing reporting model, which came into effect for the period ended on or after December 31, 2016, but this only applied to listed companies (FAP, 2016a, 2016b).

The new auditor's report suggested by the ISA 700 has significant changes from the traditional auditor's report. One of the many significant changes is the creation of the new section called "Key Audit Matters" (EY, 2015). KAMs will highlight those issues in the auditor's professional judgment, were of most significance in the audit which was strongly supported by public hearing by IAASB in 2014 (IFAC, 2015b). Because many investors believe that adding KAMs by the auditor not only increase the transparency of auditor's report and increase more understanding of the business information but also reduce the expectations gap of investors in the auditor (Tangruenrat, 2015a). In order to set guidelines for reporting such matters specifically,

the details of KAMs are specified in the ISA 701 "Communicating Key Audit Matters in the Independent Auditor's Report".

According to ISA 701, KAMs are defined as

"those matters that were the most significant in the audit of financial statements of the current period. KAMs was selected from various matters communicated with those charged with governance" (IFAC, 2015d).

There are details of the KAMs characteristics in ISA 700 and ISA 701 as follows. The first, KAMs are mandatory for an auditor's report for companies listed in the stock exchange. The second, when presenting KAMs, start with present of what the matter is, explain why the matter is important, explain how it was corrected, and then references for disclosing relevant financial statement. Although the auditor finds that there are no significant matters to the audit, they still must report this matter on the auditor's report. The third, the number of KAMs issues are depended on the auditor's professional judgment, however having KAMs too much will make those matters less important. Finally, KAMs are about the audit current financial statement. Although the financial statements show comparative figures related to KAMs in the previous year, it is unnecessary to report the progress of the KAMs disclosed in the previous year in the current auditor's report.

Most KAMs relate to significant risks from the results of the risk assessment by the auditor, problems encountered by the auditor during the audit, situations that cause the auditor to change their opinion, weaknesses that are significant in the internal control of the client business, auditors, significantly related parties' transactions and the auditor is unable to obtain sufficient appropriate audit evidence, and management has imposed a limitation on the scope of the audit of the group financial statements (Velte, 2018a, 2019; Almulla & Bradbury, 2018). FRC surveyed 153 UK auditor's reports published in March 2015. They found the top five most reported risks were: impairment of assets, tax, goodwill impairment, management override of controls, and fraud in revenue recognition (FRC, 2015). For observation KAMs in Thailand, Tangruenrat (2017) observed 515 auditor's reports of Thai listed companies traded on the Stock Exchange of Thailand (SET) in 2016. The author found that the top five most KAMs

reported were revenue recognition, asset measurement, impairment of assets, provision for obsolete stock, and provision for doubtful debt.

The consideration of whether the matter chosen to be KAMs, this matter must require special attention from the auditor because of its complex and its occurrence through a significant judgment of the management. Moreover, these matters are often difficult and risky to audit, causing the auditor must spend more time and resources to investigate these matters to their satisfaction (Boonlert-U-Thai, Srijunpetch & Phakdee, 2019). The reason for the KAMs issue varies according to the characteristics of the business such as size, complexity, nature, and the specific event of business (IAASB, 2015), including the industry in which the business is operating (EY, 2016). The PCAOB and IAASB advocate implementation of KAMs sections for emphasizing the value of KAMs for investors, because of greater transparency in the audit process (PCAOB, 2013).

The primary objective of KAMs is communication of those matters that contains specific information in auditor's reports to investors (Chong & Pflugrath, 2008) for the same understanding of the auditor's role and responsibility (Hay, 1998; Gold et al., 2020; Kitiwong et al., 2019). ISA 701 requires auditor must increase the intention to audit the financial report by more professional judgment for higher assessed risk of material misstatement to financial statements of the company which exist from significant management's judgment, and the impact on the audit of significant events or transactions (EY, 2015; IAASB, 2016). And then, the standard requires the auditors to use their professional judgment in the audits to determine the most important matters, format, and content that should communicate to the investor (Gold et al., 2020). The auditor will inform the investors of important matters that the auditor found in the audits.

Key audit matters are part of the auditor's report that explains the characteristics of the specific information of each company (Cordoş & Fülöp, 2015). The content of KAMs varies between businesses which makes investors have more interested in the message that the auditor conveys (Christensen et al., 2014). KAMs that including specific audit procedures for each business so that investors to pay more attention to the auditor's report (KPMG, 2016). Due to if the report format is totally similar, it will make readers not pay attention to the details that the auditor has shown

because it is expected to be the same causing the information gap (KPMG, 2016; Porter et al., 2009). Pornupatham and Vichitsarawong (2014) describe the investor's confidence in auditor's reports that investors may trust and use the information showed on key audit matters instead of reading the financial statements. However, if the auditor must explain significant risks, significant matters, and changes to important audit procedures that make the report more several pages, more informative, and more difficult to read (Tangruenrat, 2015a), the other investor may be disinterested in the information in the auditor's reports but will focus only on the information in the financial statements. The auditor should consider that the important matter will not make the investors become less confident in the financial statements when receiving the information from KAMs regardless of the auditor's opinion type (EY, 2015). Therefore, KAMs should be "clear, concise, understandable and entity-specific" (IFAC, 2015b). The auditor should explain why the matter was considered to be significant in the audit and how it was addressed. Thus, the KAMs description should be fact-based, specific to each company, concise, free of jargon, and detailed enough (KPMG, 2015).

After implementing the ISA 701 that effective for audited financial statements, there has been an increase in the study of KAMs disclosure that divided into two groups. The first group investigated the effect of KAMs disclose on investor reaction (Christensen et al., 2014; Li, 2017; Carver & Trinkle, 2017; Srijunpetch, 2017; Bédard et al., 2019; Lennox et al., 2018; Almulla & Bradbury, 2018; Gutierrez et al., 2018; Liao et al., 2019; Zhou, 2019; Boonyanet & Promsen, 2019; Yomchinda, Tangruenrat, Kosonboon & Wangprasertkul, 2019).

The second group investigated the effect of KAMs disclose on external auditor's behavior (Gimbar, Hansen & Ozlanski, 2016; Brasel et al., 2016; Almulla & Bradbury, 2018; Bédard et al., 2019; Backof, Bowlin & Goodson, 2014; Gutierrez et al., 2018; Ratzinger-Sakel & Theis, 2017; Kachelmeier, Schmidt & Valentine, 2017; Reid et al., 2019; Li, Hay and Lau, 2019; Boonlert-U-Thai et al., 2019).

Definition of Key Audit Matters Disclosure

KAMs are the most significant matter in the audit of the financial statements that the auditor considered through their professional judgment. It is the auditor's

responsibility to communicate the KAMs that have been previously discussed with those charged with governance and inform in the final auditor's report (Sierra-García, Gambetta, García-Benau & Orta-Pérez, 2019). The benefit of KAMs on the investors is it can provide more specific information of the business than traditional audit format to the investor (Christensen et al., 2014). Because adding KAMs are increase the transparency of auditor's reports and more understanding of the business information, in addition, reduce the expectations gap between investors and the auditor (Tangruenrat, 2015a). The auditor should explain why the matter was considered being significant in the auditing and how it was addressed. Therefore, KAMs should be fact-based, clear, concise, understandable, and specific to each company, free of jargon, and detailed enough to the investor. This study considers KAMs disclosure in three dimensions comprise the KAMs issue, the number of KAMs issues, and the KAMs readability which is described as follows.

Key Audit Matters Issue

The KAMs issue is disclosed through the auditor's professional judgment. Identification of issues will depend on the qualitative characteristics, which may be common KAMs in an industry in which companies in the same industry share similar things (EY, 2016) or entity-specific and audit-specific KAMs (IFAC, 2015a) which are specific to the company (EY, 2016). According to the KAMs definition defined by the ISA 701, the specific KAMs tend to be more useful for investors than common KAMs, as they provide more specific information on auditing. Most KAMs issue during the period 2016 – 2018 that contains in auditor's report such as revenue recognition, accounts receivable and allowance for doubtful debt, inventory and allowance for inventory, investment and impairment of investment, asset impairment, property plant and equipment (PPE) and impairment, goodwill, deferred tax assets, business combination, investment property, provision, biological assets, debt covenant, the contract of business, and the critical accounting estimates and judgments by the management (Kitiwong & Srijunpetch, 2019; Suttipun, 2020b).

Number of Key Audit Matters Issues

The number of KAMs issues represents their quantitative characteristic of KAMs that was defined by the auditors. They define how many KAMs shall be disclosed in the auditor's report depended on the business's complexity, the nature of the entity's business and environment, the facts and circumstances of the audit engagement, including their professional judgment (IFAC, 2015a). For instance, the KAMs disclosure related to long-term contracts may involve their professional judgment on revenue recognition, litigation, and/or critical accounting estimates and judgments by the management. Therefore, they select the significant KAMs from all matters communicated with those charged with governance (IAASB, 2013), it may make each issue more significant (KPMG, 2017). However, disclosing the low number of KAMs issues cannot convey the role of the new standards in enhancing the transparency of audit procedures and improving the relevance of auditor's report content. On the other hand, disclosing the high number of KAMs issues may make that matter is less useful in the auditor's communication of KAMs (IFAC, 2015c, 2015d) because it cannot reflect the most significant matters. Therefore, if the auditor considers having a high number of disclosed KAMs issues, they shall reconsider whether each of them is really KAMs as defined by ISA 701. There are prior studies that examine the effect of KAMs disclosure by the focus of the number of KAMs issues (e.g., Bédard et al., 2015, 2019; Liao et al., 2019; Sirois et al., 2018; Srijunpetch, 2017; Lennox et al., 2018).

Key Audit Matters Readability

KAMs readability means the ease level that the reader can be read and understood the messages that contain in the KAMs section in the auditor's report which a principal requirement of the investor for their decision (Velte, 2018a, 2019). Readability is a communication measure that focuses on whether the receiver can understand the message delivered by the sender, if the receiver understands the message, that means the message is useful to the receiver (Smith, 2016; Fakhfakh, 2015). However, a written message does not always fulfill their information duties. Several texts are inaccessible to many readers and stakeholders (Fakhfakh, 2016b). Less readability means the information disclose more difficult to explain and manage by

investors because investors may spend more time and effort to identify and extract relevant information that they interested (Bloomfield, 2002; Lehavy, Li & Merkley, 2011).

The study of linguistics offers a variety of readability meanings. Several authors continuously work and made different definitions on the theme of understanding. According, Hargis et al. (2004) demonstrated that the readability on the general is the ease of reading words and sentences, and also is an attribute of information clarity. Mc Laughlin (1969) defines readability as the degree to which people finds certain reading matter compelling and understanding. DuBay (2004) defined readability is what makes some information easier to read than another. Loughran and McDonald (2014) define readability as effective communication of a firm's valuation-relevant information to the market. Klare (1963) defines readability as ease of understanding due to the writing style. This definition focuses on the writing style separate from issues such as content, linking, and organization. Moreover, it focuses on the interaction between the information and a readers-group of known characteristics such as reading skills, prior knowledge, and motivation.

In addition, there are studies that related the readability of the financial report. Gist, McClain and Shastri (2004) defined readability of audit internal control report as the perception of auditors and investors about the understandability of the general message that communicated in the report, and their perception of how clear the audit purpose is communicated. Boritz, Hayes and Timoshenko (2016) define readability as the complexity of the text in a report based on applying textual analysis algorithms and metrics by reasoning that using textual analysis has the advantage of being scalable and easily replicated. Fakhfakh (2016b) define readability is a primary criterion for financial reporting quality is all stakeholders need clear and readable information for their understanding. Understanding is a criterion that determines the sufficiency of the informational needs of the reader. Fakhfakh (2016a) defines the readability of auditor's report is the ease that the reader can be read and understood the messages that contain the report. Sukhomlyn (2018) defined the readability of the auditor's report is the ease with which a reader can understand the message contained in an auditor report. de Souza, Rissatti, Rover and Borba (2019) defined readability of narrative accounting

disclosures is an element related to the written text, about measuring how difficult it is to understand a text by considering the use of frequent and complex syntactic structures.

Accounting research into the readability of annual reports was first published in 1952. Over the past 40 years or so annual report readability has been investigated (e.g. Poshalian & Crissy, 1952; Soper & Dolphin, 1964; Pound, 1981; Lewis, Parker, Pound & Sutcliffe, 1986; Schroeder & Gibson, 1990; Li, 2008; Biddle, Hilary & Verdi, 2009; You & Zhang, 2009; Miller, 2010; Loughran & McDonald, 2010; Lehavy et al., 2011), also including some subsets studies such as the footnotes (e.g. Smith & Smith, 1971; Healy, 1977; Courtis, 1986), chairman's statement (e.g. Jones, 1988; Smith & Taffler, 1992; Baker & Kare, 1992; Courtis, 1998). Findings have continuously announced at a reading level of annual report passages to be of difficult to very difficult and beyond the fluent understanding skills. In other words, those responsible for narrative sections of the annual report typically are writing corporate messages at a reading level beyond the educational skills of their target reader.

In addition, there are researches into readability of auditor's reports (e.g. Barnett & Leoffler, 1979; Pound, 1981, Hay, 1998; Zeghal, Maingot & Tassé, 2000; Gist et al., 2004; Fakhfakh, 2015; 2016a; 2016b; 2016c; Boritz et al., 2016; Velte, 2018a, 2019). The example of readability of auditor's report and KAMs such as Barnett and Leoffler (1979) examined auditor's report published by independent auditors in the United States of America measured by Flesch reading ease. The result showed the auditor's reports are unreadable and the information reading extreme difficult. Pound (1981) investigated readability of auditor's reports published in Australia that measured by Flesch formula (Flesch reading ease). The result showed that the reading of the auditor's reports is difficult. Hay (1998) examined audit information published by the independent auditors in New Zealand Measured by Flesch formula. The result showed that investors face many difficulties in the interpretation of the audit results. Zeghal et al. (2000) examined the readability of 90 auditor's reports published in nine countries from the Anglo-American model represented by Australia, Canada, the USA, and UK, and the continental model represented by Germany, Belgium, France, Italy, and Japan. The readability measured by word length, sentence length, and paragraph length. They found the Anglo-American reports are more uniform in terms of their organization than those related to the continental model. Velte (2018a) examined the effect between the

percentage of women on audit committees in UK firms and KAMs readability from 2014 to 2015. The results show that firms with a higher percentage of WOAC have higher KAMs readability. Velte (2019) examined the effect between audit committee's financial and industry expertise in UK firms and KAMs readability from 2014 to 2017. The results show that firms with a higher audit committee's financial and industry expertise have higher KAMs readability.

In summary, most prior studies focus on the readability of both annual reports and auditor's reports. These studies related to linguistics provides several principles such as clarity, conciseness, simplicity, consistency, and coherence that suggest auditors revise their written communication in auditor's reports (Fakhfakh, 2015). Based on these studies, it is evident that the readability of these reports was an impact on the investor (Miller, 2010; You & Zhang, 2009; Loughran & McDonald, 2010; Smith, 2016). As guided by Smith (2016), changes in readability are consistent with the UK practitioners' views that the new standard was the impulsion for generating financial reports to understand easier. There was strong evidence that showed KAMs disclosure in auditor's report after implementing ISA 700 is more readable to users. As can be seen that achieving the intended purpose of ISA 700 of improving the communication value of the auditor's report. It is well-known that KAMs disclosure is a part of the auditor's report that the investor should know that KAMs are specific business information that auditors convey to them (Goh et al., 2019). Moreover, it is important that the auditor must explain what KAMs are and what the purpose of KAMs are. Consequently, the KAMs should be written in plain language, simple, and accessible. These qualitative characteristics require compliance with linguistic principles to reduce ambiguous interpretations of KAMs disclosure. It will be a significant risk if the investor reads and misinterprets KAMs (Segal, 2019). Thus, the written complexity of auditor disclosures should be considerate through KAMs readability level that means the ease that the reader can be read and understood the messages that contain in the KAMs section in the auditor's report which a principal requirement of the investor for their decision. However, the empirical studies regarding disclosing KAMs implications on the KAMs readability remain lacking.

Measurement of Key Audit Matters Disclosure

Key Audit Matters Issue

There are prior studies used KAMs issue to provide an informative value to investors such the study of Liao et al. (2019) investigated whether KAMs issue provide incremental information to investors in Hong Kong. They classified KAMs issues in eleven categories including impairment of loans and receivables (20. 02 percent), impairment of goodwill and intangible assets (16.53 percent), property valuation and impairment (16.48 percent), inventories (11.27 percent), revenue recognition (10.74 percent), acquisitions or disposals (4.99 percent), financial instruments (4.02 percent), interests in other entities (3.76 percent), taxation (2.87 percent), development cost (0.75 percent), and other matters (8.57 percent). While the study of Bédard et al. (2019) classified issue of JOAs in seventeen categories (4 categories in accounting principles and 13 categories in accounting estimates). They found the most frequent categories of JOAs (a concept similar to KAMs) are depreciation or impairments of fixed assets (71.6 percent), choice of accounting methods (38.8 percent), provisions for risks and charges (31.2 percent), deferred income tax (21.0 percent), pension liabilities (20.30 percent), and intangible assets (17.6 percent).

Moreover, there are several studies in Thailand such as the study of Tangruenrat (2017) found that the top five most KAMs issues were revenue recognition (25.3 percent), asset measurement (22.2 percent), impairment of assets (14.3 percent), provision for obsolete stock (13.7 percent), and provision for doubtful debt (10.3 percent) of Thai listed companies traded on the SET in 2016. While the study of Boonyanet and Promsen (2019) classified the KAMs issue of the top 100 Thai listed companies (SET 100) in year 2016 consists of six categories including property, plant and equipment (PPE) and investment impairment (Frequency = 61, 26.99 percent), improper liability provisions (Frequency = 55, 24.34 percent) and revenue recognition (Frequency = 49, 21.68 percent), Provision for obsolete Stock (Frequency = 24, 10.62 percent), Provision for doubtful Debt (Frequency = 22, 9.73 percent), and Goodwill impairment (Frequency = 15, 6.64 percent). Additionally, the study of Suttipun (2020b) found the listed companies on the mai during the periods from 2016 to 2018 have KAMs issue in five categories including revenue recognition was the most common KAMs issue (Frequency = 37, 29.13 percent) following by impairment of assets

(Frequency = 20, 15.74 percent), inventory valuation (Frequency = 16, 12.60 percent), allowance for doubtful account (Frequency = 13, 10.24 percent), and investment valuation (Frequency = 6, 4.72 percent).

Number of Key Audit Matters Issues

There are prior studies that used the number of KAMs issues to provide an informative value to the investors. The study of Sirois et al. (2018) examined the influence of KAMs disclosure measured by the number of KAMs issues. While some studies use other measures define to the number of KAMs issues such as Liao et al. (2019) creates an indicator variable KAMCOUNT taking the value of 1 if the company's number of KAMs issues are higher than the sample's median, and zero otherwise. By reasoning that if a high number of KAMs issues indicates high audit and financial reporting risks. Further, the study of Bédard et al. (2019) measure the number of new JOAs issues (a concept similar as KAMs) as a proportion of the total number of JOAs issues, by reasoning that the effect of the number of new JOAs issues may differ depending on the total number of JOAs issues (e.g., having two new issues out of four issues are not the same as having two new issues out of two issues).

Moreover, there are several studies in Thailand such as the study of Srijunpetch (2017) investigated the impact of KAMs disclosure measured by the number of KAMs issues of listed companies in the SET in the year 2016. While the study of Limaporn et al. (2019) examines the impact of KAMs disclosure measured by the average number of KAMs issues of the top 100 listed companies during the periods from 2016 to 2017. Additionally, the study of Kitiwong and Srijunpetch (2019) use a proportion of the number of common KAMs issues to a total number of KAMs issues in each industry.

Key Audit Matters Readability

Readability formulas are established for the purpose of objectively evaluating the ease or difficulty of narrative discloses (Jones, 1996). The appropriate readability formula can use to define whether the comprehension level is appropriate for the reader, therefore, the reader generates common conclusion and provides immediate feedback on what the writer wrote (Smith & Smith, 1971; Smith & Taffler 1992).

Consistent with readability studies (Courtis, 1995; Li, 2008; Velte, 2018a, 2019; De Franco, Hope, Vyas & Zhou, 2015; Smith, 2016; Aymen, Sourour & Badreddine, 2018). Most studies use readability formulas based on two features include word length and sentence length measurements. Word length or semantic indicate word choice for the writer and recognition speed of word's meaning for the reader, while sentence length or syntactic indicates to sentence construction that the writer and related to a recall of words in the immediate memory for the reader (Schroeder & Gibson 1990; Smith & Taffler 1992; Ezat, 2019).

In developing the formulas, there are three goals.

"... the discovery of those factors that validly distinguish easy from hard materials, a reliable means of measuring such factors, and an expression of some combination of them in terms of the reading ability essential to comprehension" (Smith & Smith, 1971).

Due to objectivity of readability formulas in assessing text without human subjectivity, the readability formulas are therefore popular (Efretuei, 2013). Most researchers show the reasonable reason for the use of readability formulas because it was successfully applied in other similar accounting research and its popular implement as a standard for assessing the readability of reading passage such as newspapers, manuals and scientific journals (Subramanian, Insley & Blackwell, 1993). There are many numbers of readability formulas follow as:

1) The Flesch Reading Ease Index was devised by Rudolf Flesch in 1948 (Flesch, 1948). After an attempt many times to simplify (Farr, Jenkins & Paterson, 1951; Kincaid, Fishburne, Rogers & Chissom, 1975). This index uses sentence length and syllable count to determine the difficulty of the passage. This index has rates text on a 100 points scale, the higher test indicates the easier passage to read and the lower test indicates the harder passage to read. This is the resulting formula:

Flesh = 206.835 - (1.015 x total words per total sentence) –

(84.6 x total syllables per total word)

2) The Gunning Fog index or simply Fog Index developed by Robert Gunning (Gunning, 1952). This index well-known as a simple formula for measuring readability and be especially popular because of easy calculation (DuBay, 2004). Assuming that the text is a function of two variables include, it captures the words per sentence as a measure sentence difficulty, and the percentage of words with three or more syllables as a measure of word difficulty (Li, 2008; Miller, 2010; Fang-Klingler, 2019; Velte, 2018a, 2019; Gómez & Lafuente, 2019). As with most prior study, readability measures created to distinguish school textbooks level by using the Fog Index. This index whose score corresponds to the level of U.S. grade, its equation evaluates the number of years of education needed to understand the text in the first reading and understand that section of writing with its word sentence workload (Li, 2008; Loughran & McDonald, 2016). A higher number of words difficulties or a higher number of sentences difficult makes a passage harder to read (Li, 2008). This is the resulting formula:

Fog = (total words per total sentence + percent of complex words) × 0.4

3) The Flesch–Kincaid Index was developed for use by US Navy enlisted personnel (Kincaid et al., 1975). The score derived from the Flesch–Kincaid formula gives an indication of the grade level, enabling the translation from the 0–100 score to a U.S. grade level. A reader must be to comfortably read and comprehend the material under consideration. As can be seen that this index uses the same core measures as the Flesch Reading Ease Index, namely, to use sentence length and word length to measure. However, the difference is weighting factors, and the results of the two tests hence correlate inversely. In this way, a passage with a relatively high score on the Flesch Reading Ease test normally achieves a lower score on the Flesch–Kincaid test (Gómez & Lafuente, 2019). The Kincaid Index calculated as:

Flesch–Kincaid = (0.39 x total words per total sentence) +
(11.8 x total syllables per total word) - 15.59

4) The Automated Readability Index (ARI) was worked out by Smith and Senter (1967) for the U.S. Army, and the validity of technical materials in this index

was proved by Smith and Kincaid (1970). ARI takes into the number of account characters per word instead of syllables per word which unlike most readability formulas. This is because the advantages of the measure by characters are more readily and accurately counted by computer programs (Gómez & Lafuente, 2019). The formula uses average word length and average sentence length; the resulting formula is:

Automated Readability = (4.71 x total characters per total words) +
(0.5 x total words per total sentences) – 21.43

5) The Simple Measure of Gobbledygook (SMOG Index) was created by Mc Laughlin (1969) through an article, SMOG grading in an effort to make the calculation of the Gunning Fog Index easier. It is based upon the conviction that total words with three or more syllables as complex words, and sentence length are to be multiplied rather than added. The resulting test corresponds to the year of education needed to carefully understand a given writing piece (Gómez & Lafuente, 2019). The formula used at present is the following:

$$\text{SMOG} = \sqrt{30\ x\ \left(\frac{Total\ complex\ words}{Total\ sentences}\right)} + 3$$

6) The Coleman-Liau Index (CLI) was devised by Coleman and Liau (1975) to estimate the understandability of a text. Similar to the ARI, this index relies on characters instead of syllables per word. The CLI score stands for U.S. grade level needed to understand the text which is the same as Flesch–Kincaid grade level, Gunning fog index, SMOG index, and ARI. The CLI is calculated with the following formula:

CLI = (5.89 x total characters per total words) +
(29.5 x total sentences per total words) – 15.8

7) The Dale-Chall index was motivated by the Flesch–Kincaid readability test. This index was first published by Edgar Dale and Jeanne Chall (1948) and later updated in 1995. The formula defines an emphasis on the difficult words and average sentence length in words to estimate passage difficulty. The difficult words are words not appearing on the Dale-Chall list of 3000 familiar words (Smith & Smith, 1971).

The list of familiar words those groups of fourth-grade American students could reliably understand, determining any word not on that list to be difficult. Therefore, an increase in the words in the passage which does not appear on their list will interpret to an increase in the reading difficulty of the passage (Jones & Shoemaker, 1994). The formula is as follows:

Dale-Chall = (0.1579 x percentage of difficult words) +
(0.0496 x total words per total sentence) if the percentage of difficult words is less than 5 %, otherwise compute,
= (0.1579 x percentage of difficult words) +
(0.0496 x total words per total sentence) + 3.6365

8) The LIX formula was developed by Swedish scholar Carl-Hugo Björnsson in 1968 (Lewis et al., 1986). The advantage of a specified word length is that it makes the calculation faster and more reliable. There are two factors operated to calculate the readability level by LIX: these are, namely, word length; and sentence length (Ezat, 2019). A low Lix score is consistent with high levels of readability. A Lix score of 20 represents very easy, whereas a score of 60 represents very difficult. The formula is as follows:

Lix = total words per total sentence +
the percentage of words of seven or more letters

From the above, most formulas consider the number of factors like total syllables per total word or total characters per total words, total words per total sentence, an average number of sentences, and percent of the complex words (Fakhfakh, 2016a; 2016b). In Table 1 shows calculating of all readability formulas that the most used in accounting and financial research. Accordingly, readability formulas are objective and quantifiable methods of whether or not the prose texts are likely to be readable by readers (Courtis, 1986; Ezat, 2019). Consequently, many readability formulas, such as the Gunning Fog index, the Flesch formula, and the Flesch-Kincaid formula, are used widely in the accounting literature.

Table 1 Overview of The Readability Formulas

Readability formulas	Calculating	Authors that measured in the annual report	Authors that measured in the auditor's report/KAMs disclosure
1) Flesch Reading Ease	= 206.835 - (1.015 x WPS) – (84.6 x SPW)	Poshalian and Crissy (1952), Soper and Dolphin (1964), Courtis (1986), Subramanian et al. (1993), Courtis (1995), Li (2008), Richards and van Staden (2015), Aymen et al. (2018)	Barnett and Leoffler (1979), Pound (1981), Hay (1998), Velte (2018a), (2018b), (2019), Fakhfakh (2015), (2016a), (2016b), (2016c)
2) Gunning Fog	= (WPS + percent of complex words) × 0.4	Courtis (1986), Subramanian et al. (1993), Courtis (1995), Li (2008), Miller (2010) Lehavy et al. (2011), Richards and van Staden (2015), Ajina, Laouiti and Msolli (2016), Aymen et al. (2018)	Smith (2016), Velte (2018a), (2018b), (2019), Fakhfakh (2015), (2016a), (2016b), (2016c), Boritz et al. (2016)
3) Flesch–Kincaid	= (0.39 x WPS) + (11.8 x SPW) - 15.59	Schroeder and Gibson (1990), Subramanian et al. (1993), Richards and van Staden (2015)	Fakhfakh (2016a)
4) Simple Measure of Gobbledygook (SMOG)	$= \sqrt{30\ x\ \left(\frac{Total\ complex\ words}{Total\ sentences}\right)}$ + 3		

Notes: WPS = total words per total sentence, SPW = total syllables per total word, CPW = total characters per total words.

In addition, there are prior studies used other measures of readability to provide a better measure of readability. These measures include variability in Plain English readability index (Loughran & McDonald, 2010; Miller, 2010), reading ease (Courtis 2004; Linsley & Lawrence 2007; Clarke, Hrasky & Tan 2009), use of passive words (Clarke et al., 2009), word count (You & Zhang 2009; Bédard et al., 2015; Liao et al., 2019; Goh et al., 2019), word or sentence or paragraph length (Zeghal et al., 2000) and text classification algorithms based on support vector machines (Balakrishnan, Qiu & Srinivasan, 2010). The aim of these measures was to focus on the properties of readability that make obvious the difficulties in the process of information communication in reports. Most researchers explain that the formulas are interpreted as a measure of readability (Rutherford, 2003; Lehavy et al., 2011).

In summary, for all formula that consistent with prior studies in readability aspect (Li, 2008; De Franco et al., 2015; Smith, 2016; Smith & Smith, 1971), This study found that Fog index is widely used readability statistic for captures the written complexity of passage as a function of the number of words in a sentence and the percentage of complex words to estimate the number of formal years of education an average person would need to read and comprehend the text (Li, 2008). Additionally, the Fog index presents several important strengths (Lehavy et al., 2011). First, this index allows studying a large and diverse group of companies. Second, this index can be calculated for any narrative disclosure, since it is an objective measure, not based on the surveys or opinions of the respondents. This study analyzed the KAMs readability, which includes clear and concise wording that will contribute to the investor's needs (Velte, 2019). Therefore, this study uses FOG_KAMs as the measurement of KAMs readability.

Investor Reaction

Definition of Investor Reaction

The reaction of investor is an activity that occurs because of an event. Tarmidi, Fitria and Ahmad (2019) state that the investors react depends on three things. The first, the ability of the investor to analyze information, when the investor has excellent analytical skills, any information received from the writer will be responded quickly both positively and negatively. The second, the ability of the writer to provide information, when a writer has the ability to provide important information to the investor, the published information can be easily absorbed by investors and used as an analytical tool in investing in the company. The finally, information published, when the information published has reliable quality both in content and publication time, investors will react faster to that information. The decision of investors depends on the analysis of the information that they received which different ways.

The investor reaction is showed in the trading of stocks caused by different factors. Prior research shows that quantitative and qualitative information can affect investors' decisions such as Czerney, Schmidt and Thompson (2014) find significantly higher abnormal trading volumes for unqualified auditor's reports with explanatory language on prior restatements, other consistency matters, or on the "emphasis of a matter". Similarly, Herbohn, Ragunathan and Garsden (2007) and Menon and Williams (2010) described that going concern specified in an auditor's report affects the investors' decisions. Meanwhile, Christensen et al. (2014) demonstrated that information about key audit matters in the auditor's report affected investors' decisions.

Investor reaction has an impact to information disclosure such as the dividend announcement (Amihud & Murgia, 1997; Bessler & Nohel, 2000; Felimban, Floros & Nguyen, 2018), corporate event announcements (Kadiyala & Rau, 2004), the good (bad) news public information about a firm (Barberis, Shleifer & Vishny, 1998). In addition, investor reaction has an impact to the information provided by KAMs (Bédard et al., 2014, 2015, 2019; Gimbar et al., 2016; Goh et al., 2019; Li, 2017; Gutierrez et al., 2018; Lennox et al., 2018) such as Bédard et al. (2014) investigated investor reactions in France to the disclosure of Justifications of Assessments (JOAs) (a concept similar with KAMs) and report that JOAs reduces information asymmetry for small

companies. In this respect, Lennox et al. (2018) point out that investors do not believe that the new information provided by the Risks of Material Misstatement (RMMs) (a concept similar with KAMs) increases informative content. Christensen et al. (2014) examine how non-professional investors react to CAM disclosed in the auditor's report and conclude that investors aware of CAM are more likely to change their investment decision than those who read a traditional auditor's report.

Moreover, there are the other side of the research investigates the investor reaction to report complexity. You and Zhang (2009) state that the investor stronger under reaction to longer 10-K filings. Other linguistics research on financial disclosures investigates the investor reaction to positive and negative tone in media (Tetlock, 2007) and earnings press releases (Davis, Piger & Sedor, 2006). Overall, research on length, readability, and tonality focuses on investor reaction.

In summary, the additional auditor disclosures are associated with a significant reduction in information asymmetry (Reid, 2015). If investors increase their reliance on information disclosures, then those disclosures should also lead to stronger reactions to the message contained in those disclosures (Rennekamp, 2012). This study believes that enhancing the auditor's report will deliver new and useful information to investors by providing insights into the valuable perspective that these external monitors have on companies and increasing investors' trust in the work performed by auditors (Reid, 2015).

Measurement of Investor Reaction

From prior studies measure investor reaction several models, which arguably captures information content, information asymmetry, and investor disagreement regarding new information as 1) the cumulative average abnormal returns in the period surrounding the report filing date and 2) the abnormal trading volume around the report filing date.

1) The Cumulative Average Abnormal Returns

To initially test the investor reaction to information announcements as described in Campbell, Lo and MacKinlay (1997) and McCluskey, Burton, Power and Sinclair (2006). Using the market model for calculate the abnormal return (AR) and cumulative abnormal return (CAR) for different window periods. ARs is defined as the

excess in prices that has occurred as a result of the event to test the normal distribution of cumulative average abnormal returns (CAAR) during the event. If there is a significant impact of the information announcement, there should be a significant CAAR around the announcement. If the CAARs are normally distributed, it can conclude that the announcement does not significantly affect the ARs that shows the investors parse the information announcements logically (Felimban et al., 2018).

1.1) Abnormal return (AR)

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}$$

where

R_{it} = the actual return on share i in year t

P_{it} = the price of share i in year t

P_{it-1} = the price of share i in year t -1

Then calculate the AR by using the market adjusted model. The market adjusted model is commonly used in empirical research on the subject and defined by Brown and Warner (1985):

$$AR_{it} = R_{it} - \hat{R}_{it}$$

where

AR_{it} = the abnormal return of share i in year t

R_{it} = the actual return of share i on day t

$\hat{R}_{it}$ = the expected return of the share i in year t which can by Capital Asset Pricing Model (CAPM).

$$\hat{R}_{it} = \hat{\alpha} + \hat{\beta}R_{mt}$$

where

$\hat{\alpha}$ = the Y-intercept

R_{mt} = the return of the market on day t

$\hat{\beta}$ = coefficient from the linear equation that shows the relationship between R_{Mt} and $\hat{R}_t$ when those securities that are traded normally

1.2) Cumulative abnormal return (CAR)

$$\text{CAR}_{it} = \sum_{t=0}^{t=2} AR_{it}$$

where

CAR_{it} = the cumulative abnormal return of the share i on year t

1.3) Cumulative average abnormal returns (CAAR) are calculated for the event window and sub-windows

$$\text{CAAR}_{it} = \frac{1}{n}\sum \text{CAR}_{it}$$

where

CAAR_{it} = the cumulative average abnormal return of the share i on day t

n = the total number of information announcements

Following the prior study, there are several studies that investigated the investor reaction measured by abnormal return to information disclosure such as the improvements in readability of 10-K reports during a similar time frame (You & Zhang, 2009; Loughran & McDonald, 2010; Miller, 2010), the dividend announcement (Bessler & Nohel, 2000; Hotchkiss & Lawrence, 2007; Felimban et al., 2018), corporate event announcements (Kadiyala & Rau, 2004), going concern specified in an auditor's report (Herbohn et al., 2007), key audit matters disclosure (Bédard et al., 2015, 2019; Li, 2017; Lennox et al., 2018; Gutierrez et al., 2018; Liao et al., 2019; Goh et al., 2019)

2) The Abnormal Trading Volume (ATV)

The ATV was calculating by using the difference between trading volume and the expected trading volume for that date divided by the standard deviation of trading volume during the estimation period (Dasilas & Leventis, 2011). The examination of the trading volume (TV) around information announcements helps to explain whether there is correlation between information released by information announcements and buying or selling pressure on stocks traded. TVs are defined as the excess in volumes that have occurred as a result of the event to test the normal distribution of cumulative abnormal trading volume (CATV) during the event. If there is a significant impact of the information announcement, there should be a significant CATV around the announcement. If the CATVs is normally distributed, it can conclude that the

announcement does not significantly affect the TVs as this shows the investors parse the information announcements logically (Felimban et al., 2018). The model examines the investor reaction of the financial market by measuring changes in trading volume. This analysis is important because investors can trade more stocks, with any effect on the stock price (abnormal return) if the additional information disclosed increases the disagreement between investors (e.g. Bamber, Barron & Stevens, 2010). The calculation is as:

$$ATV_{it} = \frac{TV_{it} - E(TV)_{it}}{\sigma_i}$$

where

ATV_{it} = the abnormal trading volume for firm i in year t

TV_{it} = the trading volume for firm i in year t

$E(TV_{it})$ = the mean in daily TV for firm i in year t in the estimation window

σ_i = the standard deviation in daily TV for firm i in the estimation window

According to the prior studies, there are several studies that investigated the investor reaction measured by ATV to information disclosure such as the good (bad) news public information about a firm (Barberis et al., 1998), the profitability of price and earnings momentum strategies (Hou, Xiong & Peng, 2009), dividend announcement (Amihud & Murgia, 1997; Al-Yahyaee, Pham & Walter, 2011; Felimban et al., 2018), the improvements in readability of 10-K reports during a similar time frame (You & Zhang, 2009; Miller, 2010), audit committee report changes (Reid, 2015), auditor disclosures (Reid, 2015; Bédard et al., 2015; Goh et al., 2019; Gutierrez et al., 2018).

In summary, based on the idea that believe the investors may react to a KAMs disclosure, if it reduces the information asymmetry between companies and investors. Previous research on the auditor's report shows that the investor reacts when explanatory language is added in the unqualified auditor's report and provides new information to investors (Menon & Williams, 2010; Czerney et al., 2014). Therefore, the appropriate proxy for investor reaction of the KAMs disclosure is measured by

cumulative abnormal return and abnormal trading volume around the announcement of the auditor's report (following Gutierrez et al., 2018; Liao et al., 2019).

The reason for this study measures the investor reaction by using cumulative abnormal return and abnormal trading volumes, because these proxies allow this study to capture information asymmetry among companies and changes in expectations of investors (Causholli, De Martinis, Hay & Knechel, 2010; Bamber et al., 2010; Bédard et al., 2015; Gutierrez et al., 2018). Abnormal returns reflect the average change in investor's belief due to an announcement event (Miller, 2010; Goh et al., 2019; Liao et al., 2019). Abnormal trading volume is often a more powerful indicator of information content (Chen & Sami, 2008; Czerney, Schmidt & Thompson, 2019). Moreover, trading volume reactions capture the sum of all changes in the expectations of individual investors to public disclosures, while price reactions reflect the average change in the expectations of the market as a whole (Czerney et al., 2019; Liao et al., 2019).

Greater usefulness of KAMs disclosure will be reflected in positive price reactions and an increase in abnormal trading volume on the report filing date (Reid, 2015). Consistent with prior evidence that abnormal return and trading volume are the most visible indicator of investor reaction to public disclosures (Miller 2010; Bédard et al., 2015; Li, 2017; Lennox et al., 2018; Gutierrez et al., 2018; Liao et al., 2019; Bédard et al., 2019; Goh et al., 2019). This study interprets positive coefficients for KAMs disclosure in the price and volume regression as indicating that investors respond to KAMs disclosure. Because price reactions reflect the average change in the expectations of the whole market and trading volume reflects the sum of all investors' trades, high price and volume are often interpreted to indicate that an information release prompted investors to revise their beliefs about a KAMs disclosure.

Empirical Evidence

The theoretical foundations of signaling theory and legitimacy theory are a valuable guide to develop the conceptual model of this study. To comprehend the conceptual model, all variables of this study are consistent with theoretical concepts. KAMs disclosure is the main variable and the center of this study. As described the main purpose of this study, the relationship between the KAMs disclosure and investor

reaction, and the relationship between audit characteristics, corporate characteristics, and the KAMs disclosure are investigated.

Key Audit Matters Disclosure and Investor Reaction

KAMs disclosure is based on the professional judgment of auditors who are responsible for auditing a company's financial statement and through the KAMs disclosure in the auditor's report that they communicate financial information to investors who rely on the audited financial statements about issues that may increase corporate risk (IFAC, 2015b, 2015c; PWC, 2017). KAMs disclosure helps them to be aware and understanding of various events that relate to the significant financial statements and reflective of the audit quality (Goh et al., 2019). Therefore, investors can consider the KAMs disclosed in the auditor's report to understand the corporate's risks clearly for their decision (Suttipun, 2020b).

The prior studies recommend that investors would get more information by reading more specific information (Gray et al., 2011), and then they react when KAMs are added in the auditor's report. There are experimental and archival studies suggest that the KAMs enhances the informational value to investor because KAMs are expected to mitigate the information asymmetry problem between companies and investors (Almulla & Bradbury, 2018). The details were showed in Table 2.

The experimental study of Christensen et al. (2014) to investigate the impact of CAM disclosed on investor decisions. They conducted an experiment among 141 U.S. business school graduates representing nonprofessional investors. They found that nonprofessional investors react to the disclosure of CAMs regarding the uncertainty of management estimates by stop investing in the company. Thus, investors who receive a report with CAMs are more likely to change their investment decision than investors who receive a standard auditor's report or the same information in management's footnotes. This result demonstrate that CAM disclosures have the potential of influencing the decisions of investors. In addition, there is an eye-tracking experimental study of Sirois et al. (2018) to examine the influence of number of KAMs on investors' attention to financial statement information by using innovative eye-tracking technology. They provide interesting insights into how investors' information search strategies are affected. They asked 98 graduate accounting students in Canada to play

the role of bank loan officer. They found that number of KAMs has an attention-directing effect, such that KAMs increase investors' attention to KAM-related information in the financial statement disclosures. Moreover, they found that KAMs disclosure leads to a reduction of the level of their attention to parts of the financial statements not covered by the KAMs, which indicate that KAMs have the potential of helping investors focus their attention on relevant issues within the financial report. Moreover, the experimental study of Köhler et al. (2020) to examine whether the new KAMs section in the auditor's report is associate with the communicative value for investment professionals by using a sample among 89 professional investors and 69 non-professional investors in German. They found that KAMs have no communicative value for non-professional investors, as they may have difficulties to process the new information revealed by KAMs. However, for professional investors, variations in the KAMs disclosures may significantly influence the company's economic situation.

Although most research is based on experiments, there is preliminary evidence from archival studies. Almulla and Bradbury (2018) examined the effect of KAMs disclosures in the auditor's report on investor reaction. Using a sample of 128 New Zealand listed issuers. They found that the investor already valued the information in KAMs through the stock price. Likewise, Liao et al. (2019) investigated whether KAMs provide incremental information to investors by sing a sample of 1,245 Non-financial Hong Kong-listed companies. Although they found that post-KAM has significant investor reaction, the number of KAMs has no significance to investor reaction.

Moreover, the study in French of Bédard et al. (2015) analyzed investor reaction measured by absolute value of cumulative abnormal return and abnormal trading volume to justifications of assessment (JOAs) which are like KAMs, when JOAs were first introduced, and in subsequent years by using a sample of 1,967 firm-year observations of French public companies from 2003 to 2011. They found that first-time JOAs associate with reduced information asymmetry for smaller firms that have a weaker information environment. Another French study of Bédard et al. (2019) investigate the effects of JOAs on investor reaction measured by absolute value of cumulative abnormal return and abnormal trading volume in both the first-year, in year 2003, and subsequent year, between 2004 and 2011 by using a sample of 948 auditor's reports on French companies. They found no significant investor reaction to the

disclosure of JOAs in first year. However, disclosure of new JOAs was significantly associated with larger abnormal trading volume in subsequent year.

In Thailand, there are several prior studies which have investigated the relationship between audit KAMs disclosure and investor reaction (Srijunpetch, 2017; Boonyanet & Promsen, 2019; Limaporn et al., 2019; Suttipun, 2020b). The study of Srijunpetch (2017) investigated the impact of KAMs, as measured by number of KAMs issues on the investor reaction in the first year to adopt KAMs on the auditor report. Using a sample of 334 companies listed in the Stock Exchange of Thailand during the periods from 2015 to 2016. The author found that the number of KAMs issues does not have effect on the investor reaction in a price aspect. This may be the number of KAMs issues are not consistent with the performance of the business. However, the author found that number KAMs has a positive relationship with the investor reaction in quantity aspect. This is due to the fact that investors receive more important information for verification, making trading decisions easier. Another Thai study of Boonyanet and Promsen (2019) investigated whether KAMs provide informative value to investors in 2016. Using a sample of top 100 Thai listed companies because they are volatile, and investors are more likely to react when new information is publicly announced by examined the impact of KAMs on the stock price in three periods of analysis: the average seven days before the event date (auditor's report date), at the event date, and the average seven days after the event date. They found that KAMs have little informative value to investors. The study of Limaporn et al. (2019) investigated a relationship between number of KAMs and common share price. Using a sample of SET 100 companies from the Stock Exchange of Thailand during 2016 to 2017. They found a positive relationship between both variables because although KAMs disclosure can provide better information value than the traditional auditor's reporting, auditors did not report a negative information. Aligns with the findings of Sengwan and Visedsun (2019) examined the relationship between the KAMs disclosure were concerned about five categories including assets, liabilities, revenues, expenses, and significant uncertainties associated with ongoing operations and stock price of 11 days as of the date around the auditor signed date. Using a sample of 365 listed companies in the Stock Exchange of Thailand in 2016. They found the KAMs about revenues was another factor that positively correlated with the stock price. Which shows that KAMs

disclosure, especially the matters about revenues provided more useful information for investment decision making. However, the study of Suttipun (2020b) found a significant negative relationship between KAMs reporting and stock price. Using a sample of 127 listed companies from the Market of Alternative Investment (mai), the alternative capital market in Thailand during 2016 to 2018.

On the other hand, there are experimental and archival studies suggest that the KAMs disclosure did not enhances the informational value to investor. The details were showed in Table 2. The experimental study of Boolaky and Quick (2016) conducted an experiment on another financial statement user group of 105 German bank directors. The authors examine the effect of KAMs disclosure on bank director's perceptions of quality of financial report and credit approval. They found KAMs disclosure does not affect the perceptions and decisions of bank directors. Another experimental study of Carver and Trinkle (2017) conducted an experiment among 150 U.S. non-professional investors recruited by Qualtrics, LLC to investigate whether the KAMs disclosure would affect nonprofessional investor's perceptions. They found that KAMs disclosures did not result in incremental changes of investors' valuation judgments.

There is evidence from archival studies of Li (2017) perform an archival study to investigate investor reaction (measured by absolute value of cumulative abnormal returns) to KAMs disclosures in China by using 84 A+H listed companies disclosing KAMs and 154 A-share listed companies that did not disclose KAMs. This study found that KAMs has no significant effect on the investor reaction. In London, the study of Lennox et al. (2018) examined investor reaction to the RMMs disclosures in auditor's report. Using a sample of 488 auditor's reporting applies to companies with a premium listing on the London Stock Exchange (LSE) by sing cumulative abnormal return as a proxy of the short-window test and stock price as a proxy of the long-window tests. They suggest that the new disclosures lack incremental information content that cause investors to do not find the report's risk disclosures informative. Because the significant risks were disclosed by management in the previous year's annual report. Thus, investors were already informed about these risks before these risks were disclosed by auditors in the expanded auditor's reports. Align with the findings of Gutierrez et al. (2018) examined whether the RMMs disclosure would affect investor reaction measured by abnormal returns and abnormal trading volume. Using a sample of 338

nonfinancial companies traded on the LSE Main Market and 525 companies listed in the LSE Alternative Investment Market (AIM) . They found no evidence for an incremental short investor reaction.

From the above, the results of relationship between KAMs disclosure (pre or post KAMs and number of KAMs issues) and investor reaction were mixed. Some result shows that investors are less or more likely to invest in a company. On one hand, when using signaling theory to explain the reason of positive relationship between KAMs disclosure and investor reaction because even though the KAMs disclosure can provide better information value of communication between auditor's opinions and investors than traditional auditor's reports, the auditors do not present the negative information in KAMs disclosure (Suttipun, 2020b). On the other hand, to explain the reason of the negative relationship between both variables because although KAMs disclosure can increase the information value and reduce information asymmetry between companies and investors, KAMs disclosure normally provides risk information so that it is used as a signal to send to any investors, therefore, investors use the contents of the KAMs disclosure to make their decisions (Brown et al., 2009). This study expects that the investor demand KAMs disclosure which is a basic requirement for their decision usefulness. Thus, leading to the following hypothesis:

$H_{1.1a}$: The number of KAMs issues has effect on the investor reaction (stock price aspect).

$H_{1.1b}$: The number of KAMs issues has effect on the investor reaction (stock volume aspect).

Overall, the above studies provide mixed results regarding investor reaction to KAMs disclosure. Some experimental and archival studies suggest that there is KAMs disclosure (pre or post KAMs and number of KAMs issues) effect on investor reaction. This result shows that investors are less or more likely to invest in a company. And another study suggests that there is KAMs disclosure does not influence on investor reaction. In view of these mixed results, there is limited research that studies KAMs in the readability aspect. The language showed in the auditor's report might itself be complex and not easy to communicate, due to the complexity of modern business

transactions and their legal base may apply to business. Particularly, the language used to describe KAMs may be harder to read due to the KAMs section were written by the auditor's professional judgment (Velte, 2019). This information made the investor has more difficult to read, particularly unsophisticated investors (Smith, 2016). The important point in readability is careful consideration of what is the information contained in the report meant by the concept in the context that the writer wants to communicate (Loughran & McDonald, 2016). Therefore, Investors may react to KAMs readability if it reduces the information asymmetry between companies and investors.

Following Liao et al. (2019) found the KAMs readability that measured by the number of words in the section addressing KAMs would significantly effect on investor reaction measured by abnormal trading volumes. In line with, Goh et al. (2019) examined whether the KAMs disclosure would be informative to investor. They measured KAMs by number of words in the KAMs section, and the readability score. They measured investor reaction by the absolute cumulative abnormal return and abnormal trading volume. Using a sample of 358 firm-year observations from A+H share firms that are listed on both the China mainland stock exchange and Hong Kong stock exchange, and 10,062 firm-year observations from A share firms. They found the KAMs readability significant positive effect on abnormal trading volume. Moreover, Smith (2016) studies whether the readability of auditor's report that contains KAMs section, as measured by the Fog Index, is effect to analyst forecast dispersion. Using a sample of 700 firm-year observations of companies listed on the London Stock Exchange (LSE) and Irish Stock Exchange (ISE). The result shows that the auditor's reports more readable, analyst forecast dispersion decreases in the post-ISA 700 periods.

However, there are Bédard et al. (2015) measured readability of JOAs by the number of words, and the complexity index called Scolarius that was developed by Influence Communication for French texts. They found the readability of JOAs does not significantly effect on the investor reaction that measured by absolute value of cumulative abnormal return and abnormal trading volume. Similarly, Carver and Trinkle (2017) conduced experimental study that measured readability of auditor's report by participants measured on a 101-point (0 = "very difficult" and 100 = "very easy). They found that readability of the auditor's report did not result in incremental

changes of investor's valuation judgments. Moreover, the KAMs disclosure led to a less readable auditor's report which did not provide additional information to investors that would affect their valuation judgments. As this study believes that the investor demand KAMs more readable which is a basic requirement for their decision usefulness. Thus, leading to the following hypothesis:

$H_{1.2a}$: The KAMs readability has effect on the investor reaction (stock price aspect).

$H_{1.2b}$: The KAMs readability has effect on the investor reaction (stock volume aspect).

Table 2 Studies on the KAMs Disclosure to Investor Reaction

Authors	Country	Sample	Independent	Dependent	Finding
Christensen et al. (2014)	U.S.	Experimental, 141 business school graduates representing nonprofessional investors	Disclosure of CAMs	Investor decision	Non investors who received a disclosure of CAMs were more likely to stop investing in the company compared to investors who received a traditional auditor's report
Sirois et al. (2018)	Canada	Experimental, 98 graduate accounting students participated	Number of KAMs issues	Investor attention	Investors access information disclosures more rapidly and more attention to it when KAMs are communicated in the auditor's report
Köhler et al. (2020)	German	Experimental, 89 professional investor and 69 non-professional investors	Goodwill impairment related KAMs section (-/+)	The assessment of the economics of the company by investor	- For non-professional investors, KAMs have no communicative value - for professional investors, KAMs have higher communicative value

Table 2 Studies on the KAMs Disclosure to Investor Reaction (Continue)

Authors	Country	Sample	Independent	Dependent	Finding
Bédard et al. (2015)	French	Archival, 1,967 firm-year observations of French public companies	- Disclosure of JOAs (First year disclose JOAs = 1, Other = 0) - New JOAs (Number of New JOAs issues ÷ Total JOAs issues) - Complexity of JOAs (Number of words, and complexity index called Scolarius)	- Absolute value of cumulative abnormal return over three trading day (t0 to t+2) surrounding the annual report date - Abnormal trading volume (three trading day (t0 to t+2) minus market trading (t-5 to t-240)	- First-time JOAs associate with reduced information asymmetry for smaller firms - Readability of JOAs does not significantly affect the investor reaction.
Bédard et al. (2019)	France	Archival, 948 auditor's reports on French companies	- Disclosure of JOAs (First year disclose JOAs = 1, Other = 0) - New JOAs (Number of New JOAs issues ÷ Total JOAs issues)	- Absolute value of cumulative abnormal return over three trading day (t_0 to t_{+2}) surrounding the auditor's report date and firm's stock return is calculated using the market model estimated over the period 240 to 5 days (t_{-240} to t_{-5}) before the date of the auditor's report - Abnormal trading volume (three trading day (t_0 to t_{+2}) minus market trading (t_{-5} to t_{-240}))	- No significant investor reaction to the disclosure of JOAs in first year - However, disclosure of new JOAs was significantly associated with larger abnormal trading volume in subsequent year

Table 2 Studies on the KAMs Disclosure to Investor Reaction (Continue)

Authors	Country	Sample	Independent	Dependent	Finding
Srijunpetch (2017)	Thailand	Archival, 334 firms listed in the Stock Exchange of Thailand	Number of KAMs issues	- volume aspect (buying minus selling price of equity securities) - price aspect (buying minus selling volume of equity securities)	"Key Audit Matters" in a new auditor's report have a positive effect on response of SET in a volume aspect but have not effect in a price aspect.
Almulla and Bradbury (2018)	New Zealand	Archival, 128 New Zealand listed issuers	KAMs disclosure (Post = 1, Pre = 0)	Value relevance (Share prices)	The investor already valued the information in KAMs through the stock price
Reid et al. (2019)	UK	Archival, 884 firm-year observations listed on the London Stock Exchange	KAMs disclosure (Post = 1, Pre = 0)	- Cumulative market adjusted return for two days beginning on the earning announcement date	- Post-KAM have significant to investor reaction - KAMs provide useful information for investors' decisions

Table 2 Studies on the KAMs Disclosure to Investor Reaction (Continue)

Authors	Country	Sample	Independent	Dependent	Finding
Liao et al. (2019)	Hong Kong	Archival, 1,245 Non-financial HK listed firms	- KAMs disclosure (Post = 1, Pre = 0) - KAMs issues - Number of KAMs issues - Number of KAMs words	- Absolute value of cumulative abnormal return over three trading day (t0 to t+2) around the annual reporting filing date - Abnormal trading volume (the natural logarithm of the ratio of the company's mean event-period volume divided by its mean estimation-period volume). - SPREAD (the median of daily bid-ask spread for day spanning from the filling date to the end of that fiscal year	- Post-KAM have significant to investor reaction - There are three KAMs issues include financial instruments, development cost, and other matters have a significant effect on investor reaction - Both number of KAMs issues and words have no significant effect on investor reaction, however, when measure KAMs by the number of words in the section addressing KAMs would significantly effect on investor reaction

Table 2 Studies on the KAMs Disclosure to Investor Reaction (Continue)

Authors	Country	Sample	Independent	Dependent	Finding
Goh et al. (2019)	China and Hong Kong	Archival, 358 firm-year observations from A+H share firms, and 10,062 firm-years observations from A share firms	- More KAMs (Number of risks factors mentioned in the KAMs section - KAMs readability (number of words, and the readability score) - KAMs tone	- Absolute cumulative abnormal return - Abnormal trading volume (event window is (t_{-1} to t_{+1}) around the release of auditor's report and estimation window is (t_{-60} to t_{-11}))	- The number of risks factors mentioned in the KAM section has no has significant effect on absolute cumulative abnormal return and abnormal trading volume - KAMs readability has significant effect on abnormal trading volume
Smith (2016)	United Kingdom	Archival, 700 firm-year observations of companies listed on the London Stock Exchange and Irish Stock Exchange	- Readability of auditor's report that contains KAMs section (Fog Index)	analyst forecast dispersion	The auditor's reports more readable, analyst forecast dispersion decreases in the post-ISA 700 periods

Table 2 Studies on the KAMs Disclosure to Investor Reaction (Continue)

Authors	Country	Sample	Independent	Dependent	Finding
Boonyanet and Promsen (2019)	Thailand	Archival, 100 firms listed in the Stock Exchange of Thailand (SET 100)	KAMs issue	Stock prices cover three periods: - the average seven days before event date (auditor's report date), - at event date, - the average seven days after event date.	KAMs relating to a provision for doubtful debt have a positive and significant relationship to stock prices
Suttipun (2020b)	Thailand	Archival, 127 firms listed in alternative capital market in Thailand (mai)	KAMs disclosure (Number of words)	Stock prices cover three periods: average share price before and after seven days of annual report announcement date	A significant negative relationship between KAMs reporting and stock price
Kitiwong, Ekasingh & Sarapaivanich, 2019	Thailand	Archival, 399 firms listed in the Stock Exchange of Thailand (1,316 firm-year Observations)	KAMs disclosure (Post = 1, Pre = 0)	- Cumulative abnormal return - Cumulative abnormal trading volume (event date is (t_0 to t_{+1}) around the date that companies filed their financial information on the SEC's website	KAMs disclosure has no significant with Cumulative abnormal return and cumulative abnormal trading volume
Boolaky and Quick (2016)	German	Experimental, 105 bank directors	- KAMs disclosure	bank director's perceptions	KAMs disclosure does not affect the perceptions and decisions of bank directors

Table 2 Studies on the KAMs Disclosure to Investor Reaction (Continue)

Authors	Country	Sample	Independent	Dependent	Finding
Carver and Trinkle (2017)	U.S.	Experimental, 150 non-professionals investors recruited by Qualtrics, LLC.	- KAMs disclosure - Readability of auditor's report participants measured on a 101-point (0 = "very difficult" and 100 = "very easy)	The change in participants' valuation judgments	Both KAMs disclosures and the readability of the auditor's report did not result in incremental changes of investors' valuation judgments
Li (2017)	China	84 A+H listed companies disclosing KAMs, 154 A-share listed companies that did not disclose KAMs	KAMs disclosure (Disclose KAMs = 1, Do not disclose KAMs = 0)	- Absolute value of cumulative abnormal return over three trading day (t_0 to t_{+2}) surrounding the annual report date	KAMs have no significant effect on the investor reaction
Lennox et al. (2018)	United Kingdom	488 auditor's reporting applies to companies with a premium listing on the London Stock Exchange	Number of RMMs issues	- Cumulative abnormal return three-day after the annual report containing an auditor's report - Stock price	No significant change following the RMMs disclosures

Table 2 Studies on the KAMs Disclosure to Investor Reaction (Continue)

Authors	Country	Sample	Independent	Dependent	Finding
Gutierrez et al. (2018)	United Kingdom	338 companies incorporated in Great Britain that have ordinary stocks listed in the LSE premium category and 525 companies traded on the LSE Main Market	RMMs disclosure (Post = 1, Pre = 0)	- Absolute value of the abnormal return (the sum of the three-day surrounding the annual report date) - Abnormal volume (the natural logarithm of the ratio of the company's mean event-period volume divided by its mean estimation-period volume)	No significant investor reaction to RMMs disclosure

Audit Characteristics and Key Audit Matters Disclosure

The auditor is responsible for auditing and reporting the audited financial and non-financial information to the stakeholders through the auditor's report. The audit function operated under the International Standards on Auditing (ISA) and the International Standard on Quality Control (ISQC). Operation to provide greater audit quality, the auditor must have knowledge, capability, and independence to be able to work efficiently and effectively. The auditor reports the specific and important information in the KAMs which is a section in the auditor's report (Pornupatham & Vichitsarawong, 2014) which improves informative value to investors (Suttipun, 2021). In addition, to increase the level of understanding of the information provided in the auditor's report, auditors should also use writing techniques or a text analyzer to avoid common writing flaws such as long sentences, thought disorders, excessive repetition, lack of relevance, and unnecessary use of jargon (Chang & Stone, 2019).

From a theoretical perspective, this study uses the legitimacy theory to explain the relationship between audit characteristics and the KAMs disclosure in the auditor's reports of listed companies in both the SET and the mai. This is because the auditors use the KAMs disclosure to act to social expectation (Suttipun, 2021). Moreover, the audit characteristics are important for creating the level and content of KAMs disclosure. This study expected that the audit characteris32tics are different, this may also affect the level and content of KAMs disclosure. Therefore, the audit characteristics which consist of the audit firm size, audit industry expertise, audit tenure, and audit risk were considered because these characteristics are directly relevant for the preparation of KAMs disclosures.

Audit Firm Size

Previous studies have reviewed that larger audit firm performs higher audit quality than smaller audit firm (Francis & Yu, 2009; Choi, Kim, Kim & Zang, 2010; Francis, Michas & Yu, 2013) because larger audit firm has high independence and expertise to their clients, more than that the size is effect with higher audit quality (Smith, 2016). Therefore, the large audit firm may contribute to differential in KAMs disclosure. Currently, the grouping of four internationally famous audit companies, also well-known as Big 4 include Pricewaterhouse Coopers (PwC), Deloitte Touche

Tohmatsu (DTT), EY and KPMG, may impact on small audit firm size (non-Big 4). Because Big 4 firms have more resources and industry-specific knowledge compared to small and medium-sized audit firms (Velte, 2018a, 2019). Consistent with the auditing literature has shown that Big 4 firms exhibit higher audit quality than non-Big 4 firms because of their size and access to resources (Defond & Zhang, 2014; Choi et al., 2010; DeAngelo, 1981).

Regarding the relationship between the auditors and their clients, previous studies have verified that the Big 4 firms does not compromise their independence (Carcello, Hermanson & Huss, 2000). More than that, the companies audited by the Big 4 report financial information in a more conservative way (DeAngelo, 1981; Raghunandan & Rama, 1995). However, the results of the relationship between audit firm size and information reporting including number of KAMs issues were mixed. The study of Ferreira and Morais (2020) study the relationship between corporate characteristics from 447 Brazilian companies. The results show that companies audited by the Big 4 tend to present a greater number of KAMs issues. On the other hand, the KAMs disclosure can be understood as a way for auditors to communicate only the issues that they deem relevant such as the study of Boonlert-U-Thai et al. (2019) investigate the KAMs disclosure during 2016 and 2017 among 436 listed companies in the Stock Exchange of Thailand. They found that Big 4 audit discloses lesser number of KAMs issues. However, Shao (2020) found that the Big 4 firms have no relationship with number of KAMs issues. This study expected that the Big 4 are reported a greater number of KAMs issues. Thus, leading to the following hypothesis:

$H_{2.1a}$: The audit firm size has a positively effect on the number of KAMs issues.

There is a prior study showing that the audit firm size is used in studies analyzing the readability of standard auditor reports (Smith & Smith 1971; Barnett & Leoffler, 1979). Both studies use audit firm size in their analysis of the readability of auditor's report. Several studies demonstrate that the audit firm size influence auditors' written style to communicate, as measured by traditional readability metrics. For example, Barnett and Leoffler (1979) investigated auditor's reports of the first 50 companies on Fortune's 500 lists and summarize that the readability of auditor's reports significantly differs among audit firm size. Hay (1998) examined the readability of

auditor's reports in New Zealand. The author found evidence that unstructured audit firms are motivated to make their reports more readable as their clients mostly operate in unstable environments, so the investors are more likely to read the auditor's report. From a different perspective, the international audit firms may have software that integrates text analyzers and assists written communication, reduces the ambiguity of accounting reports, and check to spell used to improve the readability (Fakhfakh, 2016b). Smith (2016) discussed that larger audit firms that have higher audit quality would create auditor's reports more readable. As such, it is possible that the audit quality benefits embedded in large audit firm showed in the financial reporting setting will extend to the KAMs readability setting. Similarly, Rice and Weber (2012) suggest that the audit firm size has the potential to affect both the detection and disclosure of internal control weaknesses. Moreover, Velte (2018a), (2019) found the Big 4 audit firm contributed to more KAMs readability because Big 4 firms have more resources and specific knowledge of their client than a small and medium audit firm.

On the other hand, large audit firms may have more interference from various levels of review, leading to less readable reports. Like prior study, Boritz et al. (2016) investigated the determinants of the readability of auditor's reports. They found that large audit firms have less readable auditor's reports than small audit firms because the auditor may concern about compliance and legal reviews. Likewise, Deshmukh and Zhao (2020) found that the firms audited by auditor Big 4 have less readable annual reports. However, this study expects that the Big 4 firms tend to have the opportunity to use their available resources to audit the client's financial statement. In addition, they will reflect auditors' more effort and skill to the communications in auditor's reports that may influence the KAMs readability. Thus, leading to the following hypothesis:

$H_{2.1b}$: The audit firm size has a positively effect on the KAMs readability.

Audit Industry Expertise

Audit industry expertise means a specific industry understanding of the auditor which causes them to gain more extensive understanding of the industry's characteristics (Maletta & Wright, 1996; Owhoso, Messier & Lynch 2002; Abdillah, Mardijuwono & Habiburrochman, 2019). Salehi, Mahmoudi and Gah (2019) stated that

this expertise refers to the special skill of auditors that an audit firm has to support the client when they confront the financial crisis by offering guidelines to them such as regulations and taxes. In addition, the industrial expertise of auditors has a powerful impact on applying auditing methods in fraud detecting and increases the level of audit quality (Segal, 2019).

From prior research, there are several measurements for audit industry expertise mentioned to auditing market leadership who are getting an increase in their market share measured by such as higher audit fees in each industry (Salehi et al., 2019; Habib & Bhuiyan, 2011; Francis, Reichelt & Wang, 2005; Reichelt & Wang, 2010), the number of clients audited by the audit firm in each specific industry (Balsam, Krishnan & Yang, 2003; Smith, 2016), the total assets of the client audited by an audit firm in a particular industry (Gul, Fung & Jaggi, 2009; Abdillah et al., 2019), a proportion of total sales of client of audit firm to a particular industry (Gramling & Stone, 2001; Dunn & Mayhew, 2004; Krishnan, 2003).

The conception that auditors have expertise in a differential industry has long been there (Eichenseher & Danos, 1981). Prior literature shows that auditor that have industry expertise provide higher audit quality such as Reichelt and Wang (2010) demonstrated that both national-level specific and city-level specific industry experts provide higher quality audits. Moreover, Balsam et al. (2003) also find that clients of audit industry specialists have better earnings quality than clients of non-audit industry specialists. On the other hand, Shao (2020) who found that the audit firms that have expertise in each industry have no relationship with the number of KAMs issues. However, this study ensures that audit firms with industrial expertise must applied their audit skill with several audit clients in the same industry, and they can apply their audit skills to detect fraud and increases the level of audit quality. Thus, leading to the following hypothesis:

$H_{2.2a}$: The audit industry expertise has a positive effect on the number of KAM.

Auditors who have industry expertise with linguistic methods and tools can improve audit firms' communication success (Chang & Stone, 2019). The auditor may provide to operate high-quality services for the company group with similar needs, and should enhance their knowledge about specific client features for led to describe the

specific information (Dunn & Mayhew, 2004) that makes the differences in the KAMs readability. The auditor who has an industry expert may be well skillful in the industry and can communicate their understanding of the client's performance in an easy-to-read feature. On the other hand, industry experts may use industry jargon and terminology for KAMs disclosure, which may limit their ability to read auditor's reports, even if they provide higher quality audits (Smith, 2016). In addition, the study of Smith (2016) found that higher audit industry expertise is associate with higher readability of auditor's reports, providing support that a more readable. They concluded that the auditor who is an industry expert communicate their understanding of the client's business in auditor's reports more readable. On the other hand, Shao (2020) who found that the audit firms that have expertise in each industry have no relationship with the length of KAMs. Based on these studies, it is possible that the audit quality benefits embedded in audit industry expertise showed in the financial reporting setting will extend to the KAMs readability setting. Thus, leading to the following hypothesis:

$H_{2.2b}$: The audit industry expertise has a positive effect on the KAMs readability.

Audit Tenure

Audit tenure is the length of time auditor contacted their client for performs evaluation and auditing in the business unit or firm (Salehi et al., 2019). Chang and Stone (2019) interpreted audit tenure as the number of working years of audit partners in the audit practice with their client. Similarly, Johnson, Khurana and Reynolds (2002) explained audit tenure as the number of consecutive years that the audit firm (auditor) has audited its client. Other than, Carey and Simnett (2006) defined audit tenure as an engagement period between the audit firm with its client. Furthermore, Griffin, Lont & Sun (2009) defined audit tenure as the number of years an auditor is working within a contract with specific clients. Pinto and Morais (2019) defined audit tenure as the number of years of the actual duration of the current auditor tenure.

The auditors that have examined the company's financial statements for a long time, it causes in increasing their skill and has a better understanding of the nature client's business operations (Salehi et al., 2019). Moreover, they know what the

strengths and weaknesses in the accounting system of the client company. This will enable the auditor to identify high-risk and focus on the error-prone areas that were detected in previous years. In order to give special attention to such points and plan the audit process appropriately (Lennox, 1999). Ghosh and Moon (2005) found that long audit tenure can improve audit quality. In addition, Shao (2020) found that the firms in China with more than four-year audit tenure will issue more numbers of KAMs and will also issue more industry specific KAMs.

On the other hand, some studies suggested that auditors' tenure has generally supported a positive relationship between audit tenure and the quality of financial reporting (Johnson et al., 2002; Myers, Myers & Omer, 2003; Carcello & Nagy, 2004). These studies find that the longer audit tenure effect higher the financial reporting quality (Johnson et al., 2002; Myers et al., 2003). Moreover, the firms with long audit tenure between four to eight years were reduced likelihood of false financial reports (Carcello & Nagy, 2004). These two factors can decrease the number of KAMs issues. In additional, there are the studies show that long audit tenure positive significant relationship with the likelihood of unqualified auditor's report (Vanstraelen, 2000) and leads to fewer corrected misstatements (Singer & Zhang, 2018). Thus, leading to the following hypothesis:

$H_{2.3a}$: The audit tenure has a negative effect on the number of KAMs issues.

The longer experience will make the auditor have more knowledge and understanding of the client business, and able to better identify the risks as well. Naturally, the work experience of audit partners could improve the readability of audit proposals or auditor's reports through their competence in their job (Chang & Stone, 2019). Velte (2018a), (2019) found that the client that had changed auditor in the current fiscal year effect KAMs disclose less readable. It points out that if the client that had not changed auditor in the current fiscal year, KAMs discloses may be more readable.

On the other hand, there is a competing argument, in many countries desire audit firms and audit partners to be rotated off audits due to concerns that lengthy periods of audit tenure between auditors and their clients threaten auditor independence

(Knechel & Vanstraelen, 2007; Pinto & Morais, 2019). The longer auditor's work is cause to KAMs disclose less readable if the audit partner works with minimum effort in the audit process of financial statements (Velte, 2018a, 2019). Altass (2016) concluded that longer audit tenure has a negative relationship with the readability of annual reports. Given these opposing arguments, it is unclear whether auditor tenure would increase or reduce the KAMs readability. Thus, leading to the following hypothesis:

$H_{2.3b}$: The audit tenure has effect on the KAMs readability.

Audit Risk

Previous studies demonstrated that companies related to insufficiency in internal controls have significantly higher audit fees (Munsif, Raghunandan, Rama & Singhvi, 2011). The audit fee reflects what the auditor charges clients for audit services (Bédard et al., 2014; Hay, Knechel & Wong, 2006). This fee is the main source of income for auditors that may be positively associated with higher perceived risk which is considered higher audit risk (Lyon & Maher, 2005). Yang, Yu, Liu and Wu (2018) found that audit fees are positively related to firm's operational risks. Therefore, it is evident that operates out an internal audit contributes to reducing fees (Felix & Gramling & Maletta, 2001).

Prior literatures argue that the governance level affects the level of audit fees, as the auditor requires more effort of auditing and higher monitoring of the client, and then, audit fees to be executed according to the number of hours estimated for them to be carried out (Yatim, Kent & Clarkson, 2006). Consequently, auditors charge client higher fees when they verified that the clients have higher governance risks (Castro, Peleias & Silva, 2015). As explained by Li et al. (2019) preparation of the new auditor's report may lead to higher auditor's responsibility because of disclosing more information in KAMs. In fact, the auditor's decision to disclose a KAMs disclosure can be a choice between maintaining their reputation and maintaining a certain level of income (Pinto & Morais, 2019). KAMs disclosure should require additional audit effort for the determination, preparation, documentation, and reviewing of the KAMs section by the most senior members of the engagement team (Bédard et al., 2019). This

additional effort may lead to higher audit fees (DeFond & Zhang, 2014). Although the standard does not require an additional audit procedure, auditors may feel greater responsibility for matters reporting such as collecting more and better evidence to audit these items (Bédard et al., 2019). From the study of Pinto and Morais (2019) measure audit fee by using the ratio of audit fees to total assets, and found a positive association exists between the audit fee and the number of KAMs issues disclosed by described as that higher audit fees are associated with the client's higher risk and complexity. Sierra-García et al. (2019) found that auditors of firms that pay higher audit fee present more entity-level-risk KAMs and fewer account-level-risk KAMs. In Thailand, the study of Boonlert-U-Thai et al. (2019) found a positive relationship between audit fee and the number of KAMs issues. Moreover, Kitiwong et al. (2019) found positive relationship between KAMs disclosure and audit fee after the implementation ISA 700. On the other hand, Gutierrez et al. (2018) found no relationship between the risk disclosure in the auditor's report after implementing ISA 700 and audit fees. In this context, the association between audit fees and number of KAMs issues may be positive. This is consistent with Reid et al. (2019) found that there is not a significant change in audit fees from pre- and post-period (the two years before and the first two years after) implementing ISA 700. Thus, leading to the following hypothesis:

$H_{2.4a}$: The audit risk has a positive effect on the number of KAMs issues.

This variable is considered because the new-format auditor's report may result in additional costs; for example, the auditor may have to perform additional procedures in order to counter the increased reputation risk associated with KAMs disclosure. Thus, this study expects higher audit services fees to be charged to companies with more KAMs (Sierra-García et al., 2019). Thus, leading to the following hypothesis:

$H_{2.4b}$: The audit risk has a negative effect on the KAMs readability.

Corporate Characteristics and Key Audit Matters Disclosure

The appropriate format and content of KAMs disclosure not only based on the audit characteristics but also depend on the difference of the business, industry environment, and complexity of the audited client's firm (Li, 2020). As can be seen, the

corporate characteristics regarded as a source of financial information and important for creating the level and content of KAMs disclosure. From a theoretical perspective, this study uses the legitimacy theory to explain the relationship between corporate characteristics and the KAMs disclosure. This is because complex companies have more intention in their actions and activities by social expectations than the less complex firms (Wei, Fargher & Carson, 2017; Suttipun, 2021). For this reason, the level and content of KAMs disclosure depend on how the expectations of society impinge on each company. This study expected that corporate characteristics were different, the impact on KAMs disclosure may be different. Therefore, the corporate characteristics which consist of the firm profitability, firm size, firm leverage, and firm age was considered because it is directly for preparing KAMs disclosures.

Firm Profitability

Profitability is the ability of a company to earn a profit. An accounting-based performance such as return on assets (ROA), return on equity (ROE), earning per share (EPS), or earnings before interests and taxes to total assets (EBIT) are the measure of profitability. A company with a high level of profitability may want to announce good news or bad news faster, therefor they may perform the audit work as soon as possible (Daoud, Ku Ismail, and Lode, 2014). Moreover, these companies are associated with a better audit opinion because they do not need to manipulate their information to satisfy the market (Habib, 2013). Therefore, these companies tend to have reduced the conflict between the auditor and the management (Pinto & Morais, 2019; Ferreira & Morais, 2020). In addition, the auditors of less profitable companies which have more operational risk, feel more pressured to disclose more KAMs in order to ensure their independence (Ferreira & Morais, 2020). This is consistent with the previous research of Pinto and Morais (2019), Boonlert- U- Thai et al. (2019) , Shao (2020), Wuttichindanon and Issarawornrawanich (2020) and Suttipun (2021) found a negative relationship between profitability ratio and the number of KAMs issues, indicating that the risk issue is mitigated for highly profitable companies. Thus, leading to the following hypothesis:

$H_{3.1a}$: The firm profitability has negative effect on the number of KAMs issues.

As explained by Pinto and Morais (2019) and Ferreira and Morais (2020), in general, profitability is associated with the future viability of the business. These companies tend to have more probability of compliance for decreases the conflict between the auditor and the management, also, these companies tend to receive an unqualified audit opinion that has clear and readable information than a qualified audit opinion. Li (2008) found there are the positive relationship between firm performance and readability of annual report, MD&A section, and notes to the financial statements. This meant the firms that have an increase in earnings tend to write their annual report, MD&A section, and notes to the financial statements in a more readable. In addition, the previous research of Velte (2019) found that higher profitability of a firm has a positive significant impact on more readable of KAMs disclosure. Consistent with the study of Shao (2020) who found that ROA effect with the more readable of KAMs disclosure due to less KAMs length. Thus, leading to the following hypothesis:

$H_{3.1b}$: The firm profitability has a positive effect on the KAMs readability.

Firm Size

Firm size defined as the natural logarithm of total assets. Firms with similar operations may provide disclosures with varying volume levels because of the difference in firm size (Lehavy et al., 2011; De Franco et al., 2015). The larger firm gets more intention in their actions and activities than the smaller firms because of social expectations (Wei et al, 2017), which may be reflected in more accounting disclosures (Ajina et al., 2016; Li, 2008). This is the reason why the larger firms have more audit activities than smaller firms (Velte, 2018a; Suttipun (2021). Based on this reason, this is consistent with the study of Pinto and Morais (2019), Boonlert-U-Thai et al. (2019) and Suttipun (2021) found that positive relationship between firm size and the number of KAMs issues. Consequently, the larger firm led to higher attention from the auditors to disclose the greater number of KAMs issues. Thus, leading to the following hypothesis:

$H_{3.2a}$: The firm size has a positive effect on the number of KAMs issues.

The results of the relationship between firm size and KAMs readability were mixed. As the result of Lennox et al. (2018) describe that firm size led to more readable of KAMs because a large firm often suggests an increase in audit resources. On the other hand, there are prior studies of Ajina et al. (2016) and Boritz et al. (2016) found that firm size significant leading to a less readable annual report. However, Boonyanet and Promsen (2018) found that firm size has no relationship with KAMs disclosure of companies listed on the Stock Exchange of Thailand (SET100). Consistent with the previous research that found firm size has no relationship with KAMs readability (Velte, 2019) and has no relationship with auditor's report after implement ISA 700 (Smith, 2016). Thus, to test the hypothesis from mixed evidence, this study assumes that the larger firm size that has the complexity of the financial statements led to less KAMs readability. Thus, leading to the following hypothesis:

$H_{3.2b}$: The firm size has a negative effect on the KAMs readability.

Firm Leverage

Firm leverage is the ratio of total debt to total assets. This variable captures the effect of potential financial problems. In general, the higher leverage refers to a higher amount of debt that a firm uses to finance assets, it causes the firm might lead to financial risk in the future (Arkan, 2016). Based on this reason, the auditors tend to increase their effort to improve the audit procedures to review this firm more exhaustively (Nelson, Ronen & White, 1988; Chan & Walter, 1996). In addition, under the implement ISA 700, this risk is expected to report in KAMs (Suttipun, 2021). Therefore, the auditor may disclose more KAMs to reduce their liability and maintain their reputation, and these disclosures are particularly relevant for riskier firms (Pinto & Morais, 2019). In addition, Reynolds and Francis (2000) found that a higher proportion of external funds significantly decreases the likelihood of receiving an unqualified audit opinion. Moreover, the firm with higher leverage often has more difficulty in maintaining funding support from lenders. This difficulty increases their risk, and auditors need to be aware of the firms' potential failure by paying higher attention to auditing. The study assumes that highly leveraged companies will need to reveal a higher number of KAMs issues. Thus, leading to the following hypothesis:

$H_{3.3a}$: The firm leverage has a positive effect on the number of KAMs issues.

The leverage was assumed a positive impact of leverage on firm risks, leading to an increased degree of KAMs disclosures because the firms with a high level of debt may have to persuade capital providers to invest, thereby disclosing more complex information (Velte, 2018a, 2019). Moreover, Ajina et al. (2016) found that higher leverage leading to annual report less readable.

$H_{3.3b}$: The firm leverage has a negative effect on the KAMs readability.

Firm Age

Legitimacy theory implies that the older firms are interested in their activities and actions including disclosure by social expectations than the younger firms (Liu & Taylor, 2008). Moreover, the older firms tend to provide more corporate information disclosure than younger firms because the older firms have built a more effective reporting system than younger firms (Virginus, 2020). With more corporate information disclosure, the auditors tend to provide more audit disclosure including KAMs disclosure (Pratoomsuwan & Yolrabil, 2018). However, the results of the relationship between firm age and number of KAMs issues were mixed. It is evident of Cowen, Ferreri and Parker (1987) found a positive relationship between firm age and corporate social responsibility reporting, this is because social expect that the older firms to be make them more satisfied than younger firms. Contrary to the study of Shao (2020) who found a negative relationship between firm age and the number of KAMs issues in Chinese listed companies. On the other hand, the evident of Suttipun (2020a) found no relationship between firm age and level of KAMs reporting of companies listed on the SET. Consistent with Virginus (2020) found firm age has no significant relationship on the number of KAMs issues in post adoption of ISA 701 in Nigeria. This study predicts that auditors tend to disclose more KAMs for older firms which have more corporate information disclosure. In more information firms, there are more areas of risk that lead to an increase in the number of disclosed KAMs. Thus, this study tests the hypothesis:

$H_{3.4a}$: The firm age has a positive effect on the number of KAMs issues.

Doyle, Ge and McVay (2007) found that firm age is a determinant of internal control weaknesses, and Boritz et al. (2016) described that older firms are less likely to report weaknesses led to have more readable reports than younger firms. Consistent with the study of Laksmana, Tietz and Yang (2012) and Li (2008) found that readability of CD&A and annual reports, respectively, improves with firm age. It is possible to argue, therefore, that older firms should have more readable KAMs disclosure. Thus, this study tests the hypothesis:

$H_{3.4b}$: The firm age has a positive effect on the KAMs readability.

Conceptual Model

The relationships among KAMs disclosure, antecedents, and consequences variables are showed in Figure 1.

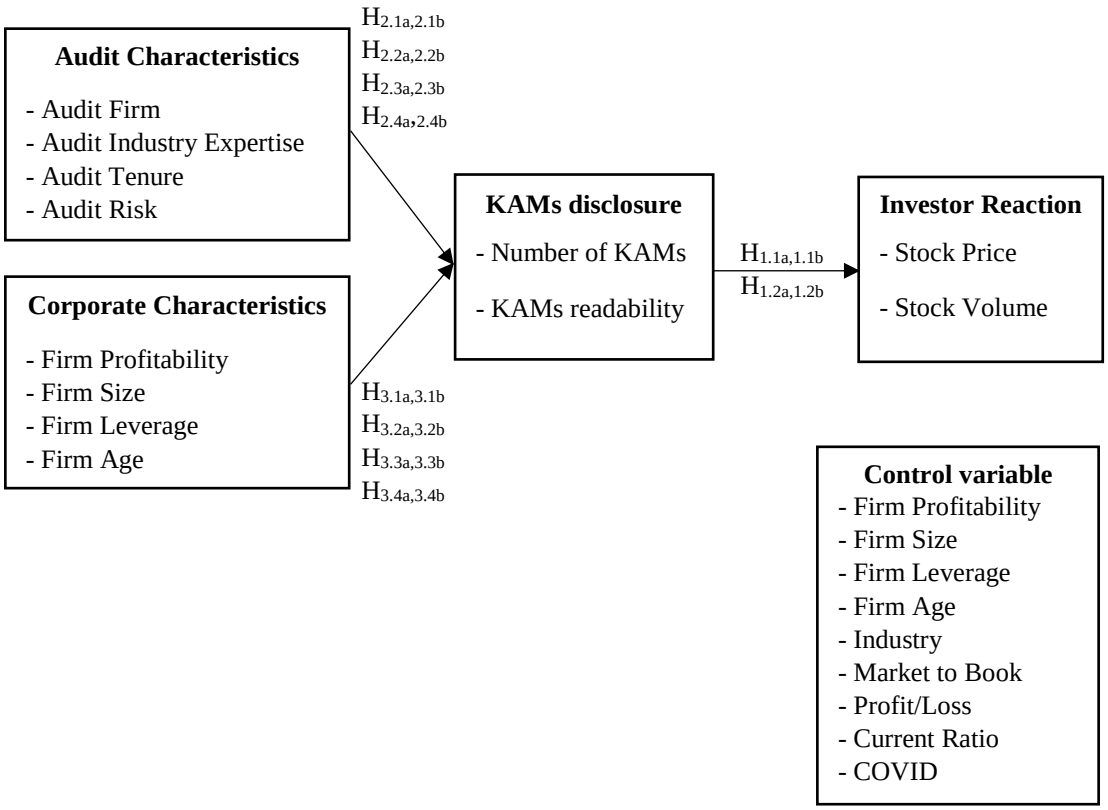

Figure 1 Conceptual Model of the Impact of KAMs Disclosure on Investor Reaction

CHAPTER III

RESEARCH METHODS

For intense understanding, the prior chapter describes key audit matters, theoretical foundation, literature review, conceptual framework, and hypotheses development. Consequently, research methods help to clearly answer with testable hypotheses. This chapter describes the research methods which are organized as follows. The first section shows the population and sample. The second section shows the variable measurements are developed. The final section shows the methodology, including statistical analysis.

Population and Data Collection

Population and Sample

An empirical research method based on secondary data was applied in this study. the objectives described of this study were to investigate the KAMs issue, the number of KAMs issues, and the KAMs readability of Thai listed companies during the periods from 2016 to 2019, to examine whether the KAMs disclosure has effect on the investor reaction, to examine whether audit characteristics has effect on the KAMs disclosure, and to examine whether corporate characteristics has effect on the KAMs disclosure. The population of this study comprised all the listed companies in the stock market in Thailand. There are two maim stock markets including of the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (mai). The SET is the major stock index of Thailand which consist of 624 listed companies, while the mai is a second stock market for new-established and small-size companies which consist of 176 listed companies in 2019 (data ended on December 31, 2019). Considering the differences between the SET and the mai on the source of funds, the SET is a valuable source of long-term fund for large companies with more than THB 300 million in paid-up capital after the initial public offerings (IPO). On the other hand, the mai is a source of funding for small and medium-sized companies having over 50 million Baht in paid-up capital after IPO. However, from the viewpoint of firms applying to the Securities

Exchange Commission (SEC) for an IPO, there are no regulatory differences (SET, 2020a).

The sample includes a wide range of industries; Agro & Food, Consumer Products, Industrials, Property & Construction, Resources, Services, and Technology, a total of 528 companies consists of 404 and 124companies listed on the SET and the mai, respectively. Since the year 2016 – 2019, the reason for studying in the period is according to the Federation of Accounting Professions (FAP) of Thailand applied KAMs disclosure in the new auditing reporting model which complies with the ISA and made it mandatory for the period ended on or after December 31, 2016, for companies listed on the SET and the mai (FAP, 2016a, 2016b). Therefore, this study started from the year 2016 since it was the year when Thailand fully adopted the ISA 700.

However, the sample of this study did not include companies that,

1) were registered in financial service, insurance industries, and leasehold property funds because their total asset base and financial structure are not comparable to those of the other companies,

2) were withdrawn from listing by the SET and the mai including companies under rehabilitation because they are subject to different financial reporting requirement and business condition,

3) have fiscal year-ends are not on the 3 1 December to ensure that the samples are subject to similar market condition,

4) were registered as listed companies after 2016,

5) have been incomplete data for analysis,

6) have outlier data of the main variable.

Table 3 Detail of Sample Selection

Sample Selection Criteria from Listed Companies in the SET and the mai		2016	2017	2018	2019	Total
Panel A: Sample Selection Process						
Initial sample from company listed		706	751	768	800	3,025
Less	Financial service, insurance industries, and leasehold property funds	(118)	(125)	(131)	(138)	(512)
	Withdrawn from listing by the market including companies under rehabilitation	(21)	(21)	(15)	(12)	(69)
	Fiscal year are not 31 December	(28)	(29)	(33)	(34)	(124)
	Registered as listed companies after 2016	-	(3)	(20)	(45)	(68)
	Incomplete data for analysis	(73)	(86)	(81)	(81)	(321)
	Outlier	(15)	(11)	(17)	(14)	(57)
	Final sample	451	476	471	476	1,874
Panel B: Number of Sample classify by industry						
	Agro & Food	47	49	51	51	198
	Consumer Products	32	37	34	35	138
	Industrial	92	97	95	92	376
	Property & Construction	91	93	93	90	367
	Resources	44	51	47	53	195
	Services	107	113	114	117	451
	Technology	38	36	37	38	149
	Final sample	451	476	471	476	1,874

Table 3, Panel A, presents the total population of 3,025 firm-year observations selected during periods from 2016 to 2019. After applying the conditions that the sample of this study did not include 512 firm-years were registered in financial service, insurance industries, and leasehold property funds, 69 firm-years were withdrawn from listing by the SET and the mai including companies under rehabilitation, 124 firm-years

whose fiscal year-ends are not on 31 December, 68 firm-years were registered as listed companies after 2016, 321 firm-years have been incomplete data for analysis, and 57 firm-year observations have outlier data of the main variable with a value below the 5th and above the 95th percentile was deleted (Detthamrong, Chancharat & Vithessonthi, 2017). Therefore, the totaling final sample is 1,874 firm-year observations.

In addition, Table 3, Panel B, presents the sample by industry is 1,874 firm-year observations as follows: observation in services is the highest number 451 firm-year observations, the next, industrial 376 firm-year observations, property & construction 367 firm-year observations, agro & food 198 firm-year observations, resources 195 firm-year observations, technology 149 firm-year observations. Finally, observation in consumers is the least number 138 firm-year observations, representing.

Data Collection

After receiving the sample group which focuses on listed companies from the SET and the mai in Thailand. The aim of the research objectives are as follows: Firstly, to examine whether the KAMs disclosure has effect on investor reaction. The independent variable of this study is KAMs disclosure consist of the number of KAMs issues, and KAMs readability. This study focused on only paragraphs containing KAMs in the auditor's reports of the sample of companies. Therefore, KAMs disclosure is manually collected from auditor's report and listed companies' websites. On the other hand, investor reaction was used as the dependent variable of this study. The closing price and stock daily trading volume in the period before and after the announcement of the auditor's report to be used to calculate cumulative abnormal returns and abnormal trading volume, which is used to measure the investor reaction, are collected from SETSMART and the Stock Exchange of Thailand's website (www.set.or.th).

Secondly, to examine whether the audit characteristics have effect on KAMs disclosure, and lastly, to examine whether the corporate characteristics have effect on KAMs disclosure. For the data of audit characteristics consist of audit firm size, audit industry expertise, audit tenure, and audit risk are manually collected from auditor's report, annual report (56-2) which is publicly available information that appears in the database of the SEC Office (www.sec.or.th) and from the listed companies' websites while the corporate characteristics firm profitability, firm size, firm leverage, and firm

age. Including financial accounting data for the control variables are collected from SETSMART and the Stock Exchange of Thailand's website (www.set.or.th).

Measurements

This study explains to measure variables that consist of the dependent variable, independent variable, antecedent variables, and control variables. The dependent variable is the investor reaction. The independent variable is the KAMs disclosure. The antecedent variables are audit characteristics and corporate characteristics. Moreover, the control variables are consisting of firm profitability, firm size, firm leverage, firm age, market to book ratio, profit/loss, current ratio, and covid-19 situation. Each type of variable is defined as the definition and method of measurement for this study as follows.

Dependent Variables

Based on the literature review of investor reaction, which have many models used in the study, the cumulative abnormal returns and the abnormal trading volume are preferred in investor reaction research. Because these proxies allow this study to capture information asymmetry between companies and changes in expectations of investors (Causholli et al., 2010; Bamber et al., 2010; Bédard et al., 2015; Gutierrez et al., 2018). Abnormal returns reflect the average change in investor's belief due to an announcement event (Miller, 2010; Goh et al., 2019; Liao et al., 2019). Abnormal trading volume is often a more powerful indicator of information content (Chen & Sami, 2008; Czerney et al., 2019). Moreover, trading volume reactions capture the sum of all changes in the expectations of individual investors to public disclosures, while price reactions reflect the average change in the expectations of the market as a whole (Czerney et al., 2019; Liao et al., 2019). Following Bédard et al. (2019), Gutierrez et al. (2018) and Liao et al. (2019), this study employs two main proxies for investor reaction as follow:

1) The cumulative abnormal returns (CAR), this study conducts an event study to measure the CAR around the announcement date of the auditor's report. This study uses the CAR over three days where day t is the auditor's report date (t_0), the one

following days (t_{+1}), and the two following days (t_{+2}), calculated as follows for each firm in the sample:

$$\text{CAR}_{it} = \sum_{t=0}^{t=2}(R_{it} - (\hat{\alpha} + \hat{\beta}R_{mt}))$$

where

CAR_{it} = the cumulative abnormal return of share i on day t

R_{it} = the actual return of share i on day t

R_{mt} = the return of the market on day t

$\hat{\alpha}$ = the Y-intercept

$\hat{\beta}$ = coefficient from the linear equation that shows the relationship between R_{mt} and the expected return of the share i on day t ($\hat{R}_{it}$) when those securities that are traded normally (using the market model estimated over the period ranging from 240 to 5 days before the date of the auditor's report)

t_0 = the auditor's report date

t_1 = the one following the auditor's report date

t_2 = the two following the auditor's report date

2) The abnormal trading volume (ATV), this study conducts an event study to measure the ATV around the announcement date of the auditor's report. This ATV is calculated as the natural logarithm of the firm's average event-period volume divided by the firm's mean estimation-period volume.

$$\text{ATV}_{it} = \text{Ln}\ \frac{1/t_1\ \sum_{-t_1}^{+t_1}\text{VOL}_{it1}}{1/t_2\ \sum_{-t_2}^{+t_2}\text{VOL}_{it2}}$$

where

ATV_{it} = the abnormal trading volume of share i on day t

t_1 = the daily volume over three-day event window

t_2 = the daily volume beginning -t days before the auditor's report date and ending +t days later

VOL_{it1} = the event-period volume is calculated as the daily volume over t_1 around the auditor's report date and is scaled by shares outstanding

VOL_{it2} = the estimation-period volume1 is measured over the trading period t2 beginning -60 days before auditor's report date and ending -40 days later (i.e., 21 days before the earnings release) (Reid, 2015; Gutierrez et al., 2018)

Independent Variables

This study applies the concept of measuring the key audit matters disclosure variables from the study of Srijunpetch (2017), Sirois et al. (2018) and Ferreira and Morais (2020). Additionally, the key audit matters readability was applied from the study of Velte (2018a), (2019).

Key Audit Matters issue (ISSUE_KAMs). This study classifies the KAMs issue following prior study in Thailand of Tangruenrat (2017), Boonyanet and Promsen (2019), and Suttipun, (2020b) that showed the KAMs issues were disclosed in the prior year and then, this study classifies them into 15 categories. This study creates one director variable for each category, taking the value of 1 if the company has a KAMs issue that falls in the category, and 0 otherwise. The measurement in 15 categories are as follows:

ISSUE1_KAM = revenue recognition,

ISSUE2_KAM = accounts receivable and allowance for doubtful debt,

ISSUE3_KAM = inventory and allowance for inventory,

ISSUE4_KAM = investment and impairment of investment,

ISSUE5_KAM = asset impairment,

ISSUE6_KAM = property plant and equipment (PPE) and impairment,

ISSUE7_KAM = goodwill,

ISSUE8_KAM = deferred tax assets,

ISSUE9_KAM = business combination,

1 The estimation-period is measured relative to the earnings announcement date when calculating ATV. This study conducts this to ensure that the estimation period for the annual report date does not include the filing of the earnings release.

ISSUE10_KAM = investment property,

ISSUE11_KAM = provision,

ISSUE12_KAM = biological assets,

ISSUE13_KAM = debt covenant,

ISSUE14_KAM = the contract of business,

ISSUE15_KAM = the critical accounting estimates and judgments by the management

Number of Key Audit Matters Issues (NUM_KAMs). This study measures the *NUM_KAMs* following Srijunpetch (2017) that measured by count the number of issues on which KAMs disclosure in the auditor's report.

Key Audit Matters Readability (FOG_KAMs). This study measure FOG_KAMs by using the Fog Index developed by Robert Gunning (Gunning, 1952) that calculated as for firm i in year t as follows: FOG_KAMs = (words per sentence + percent of complex words) $*$ 0.4. A higher Fog Index means that the text more complex, so it means KAMs discloses is less readable (Velte, 2018a, 2019). However, FOG_KAMs of this study multiplied by -1 so that higher values imply KAMs more readable. Thus, in this study, a positive link between both audit characteristics and corporate characteristics to KAMs readability shows that both characteristics lead to more readable KAMs disclosures. In addition, a positive link between the KAMs readability to investor reaction shows that the more readable KAMs disclosures lead to higher investor reaction.

To calculate FOG Index, this study gets all auditor's reports for the companies, extract the KAMs section from the auditor's report, and convert all documents to text files. Then, remove all header and pagination information from the text file to result in text only KAMs section. The last, calculate FOG index from computational linguistics based on syntactical textual features (such as words per sentence and syllables per word) (Li, 2008; Smith, 2016) for each firm-year observations.

This study uses Gunning Fog Index web-based application, the tool that helps to analyze and calculate the Fog Index of the KAMs disclosures in the auditor's report

files and calculate the Fog index. This tool calculates and shows the number of the sentence, the number of words, the number of words with three or more syllables, and eventually the Gunning Fog Index. To check the validity of the tool in calculating Fog, following Li (2008), this study compares it with manual calculation or other computer program using the same text, and randomly selects KAMs disclosures from 10 auditor's reports and counts the number of words per sentence and complex words manually. If the difference between the results from the manual calculation and the programs is smaller than 5% in most cases, it confirms that the validity of the program. To ensure robustness in the word identification process, it does not count symbols such as and as words and does not identify abbreviations as words. It defines a sentence as a group of words and non-words ended with a full stop, question mark, or exclamation. This study compares the result of the Perl program to manually calculated results and results from other studies to assess the validity of the Program (Efretuei, 2013).

Antecedent Variables

Audit Characteristics

Audit Firm Size (AU_BIG4). Grouping by four internationally famous audit companies, also well-known as Big 4 includes Pricewaterhouse Coopers (PWC), Deloitte Touche Tohmatsu (DTT), EY and KPMG, may have an impact on small audit firm size (non-Big 4). Thus, this study, measured audit firm variable by dummy 1 for the four international audit firms (PwC, KPMG, EY and Deloitte), and 0 otherwise.

Audit industry expertise (AU_IE). This study followed prior research of Balsam et al. (2003) and Smith (2016) that use market share concept, which is the number of clients audited by the audit firm in each specific industry, has been widely used to identify the audit industry expertise. This study defines as audit industry expertise if their market shares from the cut-off point or more. This study followed Ferguson and Stokes (2002) and Kitiwong et al. (2019) uses 10 percent of the market share as the cut-off point, because it is smallest cut-off point used by the study of audit industry expertise Thus, this study measured audit industry expertise by dummy 1 for the company is audited by an audit firm with the cut-off point at 10 percent or more in each industry and each year when compared to all other audit firms, and 0 otherwise.

Audit tenure (AU_TENURE). This study followed prior research that defined the audit tenure as the number of working years of audit partners has audited in their client (Chang & Stone, 2019; Johnson et al., 2002; Carey & Simnett, 2006; Griffin et al., 2009; Pinto & Morais, 2019). Thus, this study measured audit tenure by the number of years audit partners working with their client.

Audit risk (AU_RISK). This study followed prior research that measured the audit risk by the natural logarithm of total audit fee (Li et al., 2019).

Corporate Characteristics

Firm Profitability (ROA). This study uses return on assets as proxies of profitability, defined as the net income before interest expense and tax divided by average total assets and multiplied by 100, is an accounting-based performance measure. In terms of conceptual, ROA is the most important indicator of the profitability of total assets from the perspective of the company.

Firm size (SIZE). This study measured the SIZE by the natural logarithm of total assets. Firms with similar operations may provide disclosures with varying volume levels because of the difference in firm size (Lehavy et al., 2011; De Franco et al., 2015).

Firm leverage (LEV). This study measured the LEV by the total debt divided total assets.

Firm age (AGE). This study measured the AGE by as natural logarithm of years since the date the firm is established.

Control variables

The investor reaction can be affected by the complexity of the business. It is possible that corporate characteristics may relate to the investor reactions. To reduce the probability of omitted variable bias, this study includes significant control variables, that were adopted from the previous related studies (Tangruenrat, 2015; Smith, 2016; Suttipun, 2020b; Velte, 2018; Velte & Issa, 2019). Bartov, Gul, and Tsuib (2000) and Boonyanet and Promsen (2019) describe that the missing control variable may lead to

failure rejecting the hypothesis when actually should be accepted. Therefore, this study considered the corporate characteristics consisting of firm profitability, firm size, firm leverage, firm age, industry, market to book ratio, profit/loss, current ratio, and covid-19 situation as control variables between the KAMs disclosure and investor reaction with details as follows:

Firm profitability (ROA). Bédard et al. (2015) described that investor reaction to KAMs disclosure may vary depending on the information environment. Srijunpetch (2017) found that the firm performance measure by ROE has a positive effect on the response on SET in a price aspect in the first year to adopt KAMs. Liao et al. (2019), Goh et al. (2019) and Czerney et al. (2019) found higher ROA is significant increase in cumulative abnormal return and abnormal trading volumes. Gutierrez et al. (2018) found ROA have a positive relation with abnormal trading volumes. Suttipun (2020b) found profitability had positively correlated with stock price.

Firm size (SIZE). An important factor in explaining stock returns (Fama & French, 1993) and stock volume (Bamber, 1986). Czerney et al. (2019) found larger firms are associated with higher abnormal trading volume. Boonyanet and Promsen (2019) describe that firm size has effect on stock price because the investors consider that the bigger firms have investment opportunity and simultaneously generate more profit than smaller firms. Srijunpetch (2017) found that the size of the business has a negative effect on the response on SET in a price aspect in the first year to adopt KAMs. Bédard et al. (2015) found the small firm in the first-time disclosed KAMs are positive and marginally significant on abnormal trading volume. Reid (2015) found that large firms associated with less information asymmetry. In contrast to Goh et al. (2019) found smaller firms are associated with higher abnormal trading volume.

Firm Leverage (LEV). Boonyanet and Promsen (2019) explain that the debt-to-equity ratio focuses on the company's ability to meet long-term debt obligations. Focusing on long-term solutions in general, the more debt financing relative to equity financing, the owner faces then greater is the risk. Srijunpetch (2017) found that the level of debt created by the company has a positive effect on the response on SET in a volume aspect in the first year to adopt KAMs. Gutierrez et al. (2018) found leverage

have a positive relation with abnormal returns. Czerney et al. (2019) found leverage is associated with higher cumulative abnormal return.

Firm Age (AGE). Lin and Chang (2011) found a significant relationship between firm age and stock return in Taiwan. Similarly, the study of Custódio and Metzger (2014) examined the valuation effects use firm age as a determinant of stock return. They found evidence that firm age is a positive relationship stock return. Likewise, Matemilola, Bany-Ariffin, Nassir and Azman-Saini (2017) found that firm age has a direct positive effect on stock returns.

Industry (INDUS). The industries in which companies operate affect returns and are generally considered a major risk factor (Colombage, 2005; Matemilola et al., 2017). The study of Suttipun (2020b) found industry type and profitability had positively correlated with stock price. This study measured the INDUS by the industry according to the classification criteria of the Stock Exchange of Thailand, which consists of 8 industry groups including Agro & Food Industry, Consumer Products, Financials, Industrials, Property & Construction, Resources, Services, and Technology. However, this study did not include companies that were registered in financial service. Therefore, to measure the Industry is defined as a dummy variable, as shown in Table 4.

Table 4 Firm Industry

Industrial types	Dummy Variable					
	INDUS 1	INDUS 2	INDUS 3	INDUS 4	INDUS 5	INDUS 6
Consumer Products	1	0	0	0	0	0
Industrials	0	1	0	0	0	0
Property& Construction	0	0	1	0	0	0
Resources	0	0	0	1	0	0
Services	0	0	0	0	1	0
Technology	0	0	0	0	0	1

Where:

INDUS1: Consumer Products is 1 and 0 otherwise.

INDUS2: Industrials is 1 and 0 otherwise.

INDUS3: Property & Construction is 1 and 0 otherwise.

INDUS4: Resource is 1 and 0 otherwise.

INDUS5: Service is 1 and 0 otherwise.

INDUS6: Technology is 1 and 0 otherwise.

Market to book ratio (MTB). This study measured MTB by the equity market value divide book value. Following Li (2008) demonstrate that there are different between high and low market-to-book firms in many aspects, including the investment opportunity set and growth potential. Bédard et al. (2019) found market to book ratio has a positive relation with abnormal returns. Goh et al. (2019) found lower market to book ratio is associated with higher abnormal trading volume. Market to book ratio is included as a potential determinant of report readability. Growth firms may have more complex and uncertain business models and thus more complex reports.

Profit/Loss (PL). This study measured PL by dummy 1 for earnings before extraordinary items in the current more than 0, and 0 otherwise. Reid et al. (2019) found loss earning firms are associated with less information asymmetry, but for the firms with a high analyst, the author found that loss earning firms associated with more information asymmetry. Myers, Shipman, Swanquist and Whited (2018) found high earning firm is associate with investor reaction. Gutierrez et al. (2018) found that firm with loss has a negative relation with abnormal trading volumes.

Current ratio (CR). This study measured CR by current assets divided current liabilities. Boonyanet and Promsen (2019) describe that current ratio shows the firm's ability to pay its current obligation and expense. If the firm unable to maintain a short-term debt-paying ability, it cannot maintain a long-term debt-paying ability, nor will it be able to satisfy its investor. Moreover, there is the prior study of Rochim & Ghoniyah (2017) found the current ratio has a positive impact on stock returns. Consistent with the study of Kohansal, Dadrasmoghadam, Mahjori Karmozdi and

Mohseni (2013) present that there is a positive and significant between the current ratio and stock prices.

COVID-19 situation (COVID). This study measured COVID by dummy 1 for the firms that have auditor's report for audited financial statements ending on 31 December that issued in the year 2020, and 0 otherwise. The unusual situation of the outbreak of coronavirus severely affected the global economy. From the COVID-19 pandemic, it is expected that the level of information and sharing among capital markets may change, thus, generated significant volatility in the market during this time (Liu, Manzoor, Wang, Zhang & Manzoor, 2020). The risk among the market is assumed that to increase during the world economy is abnormal. Since the World Health Organization declared the COVID-19 outbreak as a pandemic in January 2020 (WHO, 2020), and Thailand was one of the countries that had a wide impact on all sectors during the same period. Additionally, the UK's Financial Reporting Council reports that the impact of Covid-19 led to the auditor revisits their risk assessment and response to identified risks for audits of the financial statements periods that end after December 31, 2019 (ACCA, 2020). Moreover, there are several studies showing that COVID-19 directly impacts stock markets worldwide (e.g., Liu, 2020; Wang & Xing, 2020; Wu, Yang & Zhao, 2020). The study of Liu et al. (2020) evaluates the short-term impact of the COVID-19 outbreak on 21 leading stock market indices in major affected countries including Japan, Korea, Singapore, the USA, Germany, Italy, the UK, and Thailand, etc. Using an event study method, their results showed that infectious diseases directly impact stock markets worldwide. Moreover, Asian countries experienced more negative abnormal returns as compared to other countries.

Table 5 show summaries of the variables used in this study is including variable name, variable code, variable measurement, and information source.

Table 5 The Variables Used in This Study

Variable	Measurement	Source
Dependent Variables		
Absolute cumulative abnormal returns (|CAR|)	An event study to measure the CAR around the announcement date of the auditor's report. This study uses the absolute value of the cumulative abnormal returns over three trading days, where day t is the the auditor's report date (t_0) and the two following days (t_{+2}) (Bédard et al., 2019), calculated as follows for each firm in the sample. $\|\text{CAR}_{it}\| = \sum_{t=0}^{t=2} \|(R_{it} - (\hat{\alpha} + \hat{\beta}R_{mt}))\|$ where R_{it} is the actual return of share i on day t, R_{mt} is the return on the SET and the mai market, $\hat{\alpha} + \hat{\beta}R_{mt}$ is calculated using the market model estimated over the period ranging from 240 to 5 days before the auditor's report date.	SETSMART
Abnormal trading volume (ATV)	The natural logarithm of the firm's average event-period volume divided by the firm's mean estimation-period volume (Gutierrez et al., 2018; Liao et al., 2019). $\text{ATV} = \text{Ln} \frac{1/t_1 \sum_{-t_1}^{=t_1} VOL}{1/t_2 \sum_{-t_2}^{=t_2} VOL}$ Event window (t_1) is [-1, +1] around the release of auditor's report and estimation window (t_2) is [-60, -21].	SETSMART

Table 5 The Variables Used in This Study (Continue)

Variable	Measurement	Source
Independent Variable		
KAMs issue (ISSUE1_KAM – ISSUE15_KAM)	A series of 15 indicator variables are as follows: 1) revenue recognition, 2) accounts receivable and allowance for doubtful debt, 3) inventory and allowance for inventory, 4) investment and impairment of investment, 5) asset impairment, 6) PPE and impairment, 7) goodwill, 8) deferred tax assets, 9) business combination, 10) investment property, 11) provision, 12) biological assets, 13) debt covenant, 14) the contract of business, and 15) the critical accounting estimates and judgments by the management. Each variable takes the value of 1 if the company has a KAMs that falls in the category, and 0 otherwise.	Auditor's report
Number of KAMs issues (NUM_KAMs)	The number of issues on which KAMs disclosure in the auditor's report.	Auditor's report
KAMs readability (FOG_KAMs)	(words per sentence + percent of complex words) x 0.4 (Li, 2008; Smith, 2016).	Auditor's report
Antecedent Variables		
Audit Firm (AU_BIG4)	Dummy 1 for the four international audit firms (PwC, KPMG, EY and Deloitte), and 0 otherwise	Auditor's report
Audit industry expertise (AU_IE)	Dummy 1 for the company is audited by an audit firm with the cut-off point at 10 percent or more in each industry and each year when compared to all other audit firms, and 0 otherwise (Ferguson & Stokes, 2002; Kitiwong et al., 2019)	Auditor's report
Audit Tenure (AU_TENURE)	The number of years audit partners working with their client	Auditor's report
Audit Risk (AU_RISK)	The natural logarithm of total audit fee (Li et al., 2019)	Annual report
Firm Profitability (ROA)	Return on asset = Net income before interest expense and tax x 100 / Average total assets	SETSMART
Firm Size (SIZE)	The natural logarithm of total assets	SETSMART
Firm Leverage (LEV)	Total debt / Total assets	SETSMART

Table 5 The Variables Used in This Study (Continue)

Variable	Measurement	Source
Firm Age (AGE)	The natural logarithm of years since the date the firm is established	SETSMART
Control Variable		
Industry (INDUS)	Dummy 1 for specific firm, and 0 otherwise (Consist of seven industries divided by six dummies: Agriculture & food, Consumer, Industrial, Property & construction, Resources, Service, and Technology)	SETSMART
Market- to- book ratio (MTB)	The equity market value divide book value.	SETSMART
Profit/Loss (PL)	Dummy 1 for earnings before extraordinary items in the current more than 0, and 0 otherwise.	SETSMART
Current ratio (CR)	Current assets divided current liabilities.	SETSMART
COVID- 19 situation (COVID)	Dummy 1 for the firms that have auditor's report for audited financial statements ending on 31 December that issued in the year 2020, and 0 otherwise.	Auditor's report

Research Model

This study uses three different models to test the hypotheses. Two models assess the impact of KAMs disclosure on investor reaction (proxied by absolute cumulative abnormal returns and abnormal trading volume) and another model assesses the impact of audit characteristics (measured with the audit firm size, audit industry expertise, audit tenure, and audit risk.) and corporate characteristics (measured with firm profitability, firm size, firm leverage, and firm age) on KAMs disclosure.

Data Analysis Method

This study used several statistical techniques consist of:

1. Initial data analysis using descriptive statistics

This type of statistical analysis is used to describe and narrative the properties of variables such as mean, maximum, minimum, median, frequency and proportion, standard deviation, and correlation analysis.

2. Inferential statistics analysis

For inference statistics used in the analysis to test the research hypothesis, the relationship of independent variables and dependent variables, and the relationship of antecedent variables and independent variables. For this study, the unbalanced panel data regression tool will be used because the property of the data in this study is the data collected for a period of four years from 2016 to 2019. Panel data or Cross-sectional time-series data is a dataset in which the behavior of entities is observed across time (Park, 2011). That is data used as a variable from 1,874 firm-year observations. The statistic is determined from the significance level of the regression coefficient at the confidence level of 95 percent.

Statistical Techniques

From the above mentioned, the data were used in this study is the unbalanced panel data regression model which contain a total sample of 1,874 firm-year observations selected during periods from 2016 to 2019. Panel data models examine group individual effects, time effects, or both to deal with heterogeneity or individual effect that may be observed, these effects are either fixed or random effect (Park, 2011). The panel data gives more informative data, more variability, less collinearity among the variables, and more degrees of freedom hence more efficiency (Hiestand, 2005). The panel data also requires analytical techniques that controlling for time-invariant variables that correlate to independent variables (Piriyakul, 2016). This study uses a two-way model that considers two sets of dummy variables (e.g., company1, company2, … and year1, year2, …). There are three types of panel analytic models were used in this study as follows.

1. Pooled Ordinary Least Squares (Pooled OLS) Regression

The pooled OLS method is a pooled linear regression analysis method without fixed and/or random effects. This method did not consider that the cross-section unit is affected by external factors that are different or not and has long time-series data records that are different or not (Piriyakul, 2016). This method has the assumption that all data in each equation is the same data set that has constant coefficients, referring to both intercepts and slopes regardless of group and time periods (Park, 2011). Therefore, there will be no estimation of the difference between companies during the study

period. This means the individual effect u_i (cross-sectional or time specific effect) does not exist ($ui = 0$). The form of pooled OLS model will use the ordinary least squares (OLS) to produce efficient and consistent parameter estimates without considering cross-section and time-series data but will consider the overall. In the sample panel data, the basic scheme is that the dependent variable (output) is determined by independent variables (input) (Park, 2011). The pooled OLS posits no difference in intercept and slopes across company and time periods. The equation can explain as follows.

$$y_i = \alpha + \beta X_i + \varepsilon_i \ (u_i = 0)$$

Where y_{it} is the dependent variable of company i; α is the intercept; β is the slope of coefficient; X_{it} is the independent variable of company i in the period t; ε_{it} is the error term of company i in the period t.

However, this method cannot be used to effectively analyze panel data. It may also cause heterogeneity (individual specific characteristics that are not captured in regression). If individual effect u_i is not zero ($u_i \neq 0$) in longitudinal data, heterogeneity may influence exogeneity and disturbance. Therefore, the pooled OLS model is no longer the best unbiased linear estimator. Then panel data models must provide other models (FE model or RE model) to deal with these problems.

2. Fixed Effect Model (FE model)

The FE model examines group differences in intercepts, assuming the same slopes and constant variance across group and/or time (Park, 2011). The FE models control for, or partial out, the effects of time-invariant variables with time-invariant effects (Williams, 2018). When many dummies are needed, the FE within-group model is useful because this model uses transformed variables without creating dummies (Park, 2011; Piriyakul, 2016). Thus, this model does not report individual dummy coefficients, but computing them together. As can be seen that a parameter estimation of dummy variables are a part of the intercept and slopes remain the same across group or time periods. The fixed effect characteristic is the errors u_i to be correlated with the independent variables. The parameter estimation uses the deviation of each variable from the average value then used to estimate the parameters in OLS equation. The functional forms of FE models as follow.

$$y_{it} = (\alpha + u_i) + \beta X_{it} + v_{it}$$

Where y_{it} is the dependent variable of company i in the period t; α is the intercept; u_i is the unobserved effect of company i; β is the slope of coefficient; X_{it} is the independent variable of company i in the period t; v_{it} is the error term of company i in the period t are independent identically distributed.

3. Random Effect Model (RE model)

The RE method examines differences in error variance components across group and/or time periods. This model has the assumption that in the regression equation is composed of error values from cross-section and time-series (Park, 2011). In a between group effects, the unit of analysis is not an individual observation, but entity. The error variances are reported randomly distributed across the cross-sectional units and/or time periods. In order to capture the between group effects, the regression model is specified with an intercept term representing an overall constant term (Seddighi, Lawler, Lawler & Katos, 2000). The main difference between FE or RE models is in the role of dummy variables. For a parameter estimation of a dummy variable, is a part of the intercept in a FE model, while as an error component in a RE model. However, the slopes remain the same across group or time period in either FE or RE model. The functional forms of RE models as follow.

$$y_{it} = \alpha + \beta X_{it} + (u_i + v_{it})$$

Where y_{it} is the dependent variable of company i in the period t; α is the intercept; β is the slope of coefficient; X_{it} is the independent variable of company i in the period t; u_i is the unobserved effect of company i; v_{it} is the error term of company i in the period t are independent identically distributed.

For this study, the model testing should be pooled OLS model, random effect, or fixed effect be done, can be tested by Hausman test (Hausman, 1978) or Breusch-Pagan Lagrange Multiplier test (Breusch & Pagan, 1980).

1. *Hausman test.* The test with this method is assumed that:

H_0: FEM = REM,

H_1: FEM or

H_0: w_{it} not related to independent variables time-invariant variable (REM),

H_1: w_{it} related to independent variables time-invariant (FEM).

If accepting H_0 means may use FEM or REM but, REM will have less than variance or H_0: difference in coefficients not systematic.

2. Breusch-Pagan Lagrange Multiplier test. The statistics used for testing by the hypothesis that:

H_0: $\sigma_u^2 \neq 0$,

H_1: $\sigma_u^2 = 0$ or

H_0: no random effect in model (using Pooled OLS),

H_1: random effect in model

If the null hypothesis is accepted in either test, the pooled OLS regression is favored.

In addition, the statistical techniques in this study are used for investigation, including:

Variance Inflation Factors (VIF's), The VIF's measure how much the variance for detection the multicollinearity problem for regression coefficients correlation between multiple independents. The problem is not a serious problem in regression equation, if the VIF was lower than 10 on the scales (Hair, Black, Babin & Anderson, 2010).

Correlation Analysis, Pearson's relationship technique is a common method for testing correlation between variables. In addition, the regression hypothesis does not require the problem of multi-value relationships. Pearson coefficient there is a range of values between +1 and -1 that lack accuracy with estimation of regression coefficients. However, the correlation coefficient must not exceed 0.8 for the criteria for investigation the problem (Hair et al., 2010).

Model

The proposed hypotheses are transformed into four equations as guidelines for the steps to do regression analysis. These equations are demonstrated as follows.

The Key Audit Matters Disclosure and Investor Reaction

This study first examines the investor reaction by measuring changes in the market value of the Thai companies when KAMs are disclosed. The main methods of data analysis that can potentially be applied to addressing research questions and testing hypotheses. This specifies the regression model below to examine whether KAMs disclosure has effect on investor reaction. More precisely, this study conducts an event study to measure the cumulative abnormal returns (CAR)and abnormal trading volume (ATV) around the announcement date of the auditor's report. This study unit analysis is the firm. To test Hypotheses 1 which predict the effect of KAMs disclosure on investor reaction, this study estimates a series of equation using the unbalanced panel data regression model is as follows:

Model 1

$$|CAR_{it}| = \beta_0 + \beta_1 NUM\_KAMs_{it} + \beta_2 FOG\_KAMs_{it} + \beta_3 ROA_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 AGE_{it} + \beta_7 INDUS1_{it} + \beta_8 INDUS2_{it} + \beta_9 INDUS3_{it} + \beta_{10} INDUS4_{it} + \beta_{11} INDUS5_{it} + \beta_{12} INDUS6_{it} + \beta_{13} MTB_{it} + \beta_{14} PL_{it} + \beta_{15} CR_{it} + \beta_{16} COVID_{it} + \varepsilon_i$$

Model 2

$$ATV_{it} = \beta_0 + \beta_1 NUM\_KAMs_{it} + \beta_2 FOG\_KAMs_{it} + \beta_3 ROA_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 AGE_{it} + \beta_7 INDUS1_{it} + \beta_8 INDUS2_{it} + \beta_9 INDUS3_{it} + \beta_{10} INDUS4_{it} + \beta_{11} INDUS5_{it} + \beta_{12} INDUS6_{it} + \beta_{13} MTB_{it} + \beta_{14} PL_{it} + \beta_{15} CR_{it} + \beta_{16} COVID_{it} + \varepsilon_i$$

where

$|CAR_{it}|$ = absolute value of Cumulative abnormal returns for firm i in year t

ATV_{it} = Abnormal trading volume for firm i in year t

NUM_KAMs_{it} = Number of KAM issues

FOG_KAMs_{it} = Fog index of key audit matters for firm i in year t

ROA_{it} = Return on assets f or firm i in year t

$SIZE_{it}$ = Firm size for firm i in year t

LEV_{it} = Firm leverage for firm i in year t

AGE_{it} = Firm age for firm i in year t

$INDUS1_{it}$ = Consumer industry for firm i in year t

$INDUS2_{it}$ = Industrials industry for firm i in year t

$INDUS3_{it}$ = Property & Construction industry for firm i in year t

$INDUS4_{it}$ = Resource industry for firm i in year t

$INDUS5_{it}$ = Service industry for firm i in year t

$INDUS6_{it}$ = Technology industry for firm i in year t

MTB_{it} = Market to book ratio for firm i in year t

PL_{it} = Profit/Loss for firm i in year t

CR_{it} = Current ratio for firm i in year t

$COVID_{it}$ = COVID-19 situation for firm i in year t

The Audit Characteristics, Corporate Characteristics, and the Key Audit Matters Disclosure

In this section, the main methods of data analysis that can potentially be applied to addressing research questions and testing hypotheses. This specifies the regression model below to examine whether audit characteristics and corporate characteristics have effect on KAMs disclosure. This study unit analysis is the firm. To test Hypotheses 2.1a to 2.4b and Hypotheses 3.1a to 3.4b which predict the effect of audit characteristics and corporate characteristics on KAMs disclosure, this study estimates a series of equation using the unbalanced panel data regression model is as follows:

Model 3

$$NUM\_KAMs_{it} = \beta_0 + \beta_1 AU\_BIG4_{it} + \beta_2 AU\_IE_{it} + \beta_3 AU\_TENURE_{it} + \beta_4 AU\_RISK_{it} + \beta_5 ROA_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 AGE_{it} + \beta_9 INDUS1_{it} + \beta_{10} INDUS2_{it} + \beta_{11} INDUS3_{it} + \beta_{12} INDUS4_{it} + \beta_{13} INDUS5_{it} + \beta_{14} INDUS6_{it} + \varepsilon_i$$

Model 4

$$FOG\_KAMs_{it} = \beta_0 + \beta_1 AU\_BIG4_{it} + \beta_2 AU\_IE_{it} + \beta_3 AU\_TENURE_{it} + \beta_4 AU\_RISK_{it} + \beta_5 ROA_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 AGE_{it} + \beta_9 INDUS1_{it} + \beta_{10} INDUS2_{it} + \beta_{11} INDUS3_{it} + \beta_{12} INDUS4_{it} + \beta_{13} INDUS5_{it} + \beta_{14} INDUS6_{it} + x\varepsilon_i$$

where

NUM_KAMs_{it}	= Number of KAMs issues
FOG_KAMs_{it}	= Fog index of key audit matters for firm i in year t
AU_BIG4_{it}	= Audit firm size for firm i in year t
AU_IE_{it}	= Audit industry expertise for firm i in year t
AU_TENURE_{it}	= Audit tenure for firm i in year t
AU_RISK_{it}	= Audit risk for firm i in year t
ROA_{it}	= Return on assets for firm i in year t
$SIZE_{it}$	= Firm size for firm i in year t
LEV_{it}	= Firm leverage for firm i in year t
AGE_{it}	= Firm age for firm i in year t
$INDUS1_{it}$	= Consumer industry for firm i in year t
$INDUS2_{it}$	= Industrials industry for firm i in year t
$INDUS3_{it}$	= Property & Construction industry for firm i in year t
$INDUS4_{it}$	= Resource industry for firm i in year t
$INDUS5_{it}$	= Service industry for firm i in year t
$INDUS6_{it}$	= Technology industry for firm i in year t

CHAPTER IV

RESULTS

The previous chapter describes research methods that provide to recognize the methods used in data collection, analysis, and hypothesis testing. This chapter describes the results of hypothesis testing which are organized as follows. Firstly, the descriptive statistics are expressed for increased understanding of sample characteristics, level and content of KAMs disclosure, and all variables. Secondly, the results of correlation analysis. Thirdly, the hypotheses testing result of multiple regression analysis techniques. Finally, a summary of hypotheses testing is also provided.

Descriptive Statistic

Summary of Sample Size

This study has collected data from listed companies in Thailand both the SET and the mai during the periods from 2016 to 2019. The final samples by industry of this study are 1,874 firm-year observations which met the study's criteria, are given below:

Table 6 Number of Companies Classify by Industry

Industry	Firms	n	%
Agro & Food	54	198	10.57
Consumers	40	138	7.36
Industrials	106	376	20.06
Property& Construction	102	367	19.58
Resources	54	195	10.41
Services	129	451	24.07
Technology	43	149	7.95
Total	528	1,874	100.00

Table 6 demonstrates a summary of the number of listed companies classified by industry is 528 firms or 1,874 firm-year observations as follows: observation in services is the highest number 129 companies or 451 firm-year observations, representing 24.07 percent, the next, industrial 106 companies or 376 firm-year observations, property & construction 102 companies or 367 firm-year observations, agro & food 54 companies or 198 firm-year observations, resources 54 companies or 195 firm-year observations, technology 43 companies or 149 firm-year observations, representing 20.06, 19.58, 10.57, 10.41, and 7.95 percent, respectively. Finally, observation in consumers is the least number 40 companies 138 firm-year observations, representing 7.36 percent.

Table 7 Number of Companies Classified by Type of Stock Exchange

Type of Market	Firms	n	%
SET	404	1450	77.37
mai	124	424	22.63
Total	528	1,874	100.00

Table 7 demonstrates the number of listed companies when classified by type of stock exchange, namely the SET and the mai, it is found that the number of the companies in the SET the largest number is 404 companies or 1,450 firm-year observations, representing 77.37 percent, while the mai is a total of 124 companies or 424 firm-year observations, representing 22.63 percent.

Summary of Key Audit Matters Disclosure

Based on the auditor's report issued by the sample of 528 companies listed on the SET and the mai that are used to answer research question: what are the KAMs issue, the number of KAMs issues, and the KAMs readability of Thai listed companies during the periods from 2016 to 2019? The descriptive statistics of KAMs Disclosure were showed as follows.

Table 8 Analysis of Key Audit Matters Issue

2016			2017			2018			2019		
KAMs issue	Frequency	(%)	KAMs issue	Frequency	(%)	KAMs issue	Frequency	(%)	KAMs issue	Frequency	(%)
Revenue recognition	241	27.93	Revenue recognition	263	28.90	Revenue recognition	268	30.59	Revenue recognition	265	30.74
Inventory and allowance	160	18.54	Inventory and allowance	170	18.68	Inventory and allowance	164	18.72	Inventory and allowance	152	17.63
Investment and impairment	82	9.50	Investment and impairment	89	9.78	Investment and impairment	84	9.59	Investment and impairment	99	11.49
Account receivable and allowance	64	7.42	PPE and impairment	64	7.03	Goodwill	61	6.96	Goodwill	74	8.59
PPE and impairment	53	6.14	Goodwill	60	6.59	Account receivable and allowance	55	6.28	Account receivable and allowance	54	6.26
Goodwill	53	6.14	Account receivable and allowance	58	6.37	Business combination	52	5.94	PPE and impairment	54	6.26
Deferred tax assets	43	4.98	Deferred tax assets	37	4.07	PPE and impairment	46	5.25	Business combination	37	4.29
Business combination	37	4.29	Business combination	36	3.96	Deferred tax assets	31	3.54	Deferred tax assets	26	3.02
Investment property	28	3.24	Investment property	30	3.30	Investment property	22	2.51	Investment property	21	2.44
Asset impairment	16	1.85	Provision	16	1.76	Provision	14	1.60	Asset impairment	12	1.39
Provision	15	1.74	Asset impairment	13	1.43	Asset impairment	11	1.26	Provision	11	1.28
Other	71	8.23	Other	74	8.13	Other	68	7.76	Other	57	6.61
Total	863	100.00	Total	910	100.00	Total	876	100.00	Total	862	100.00

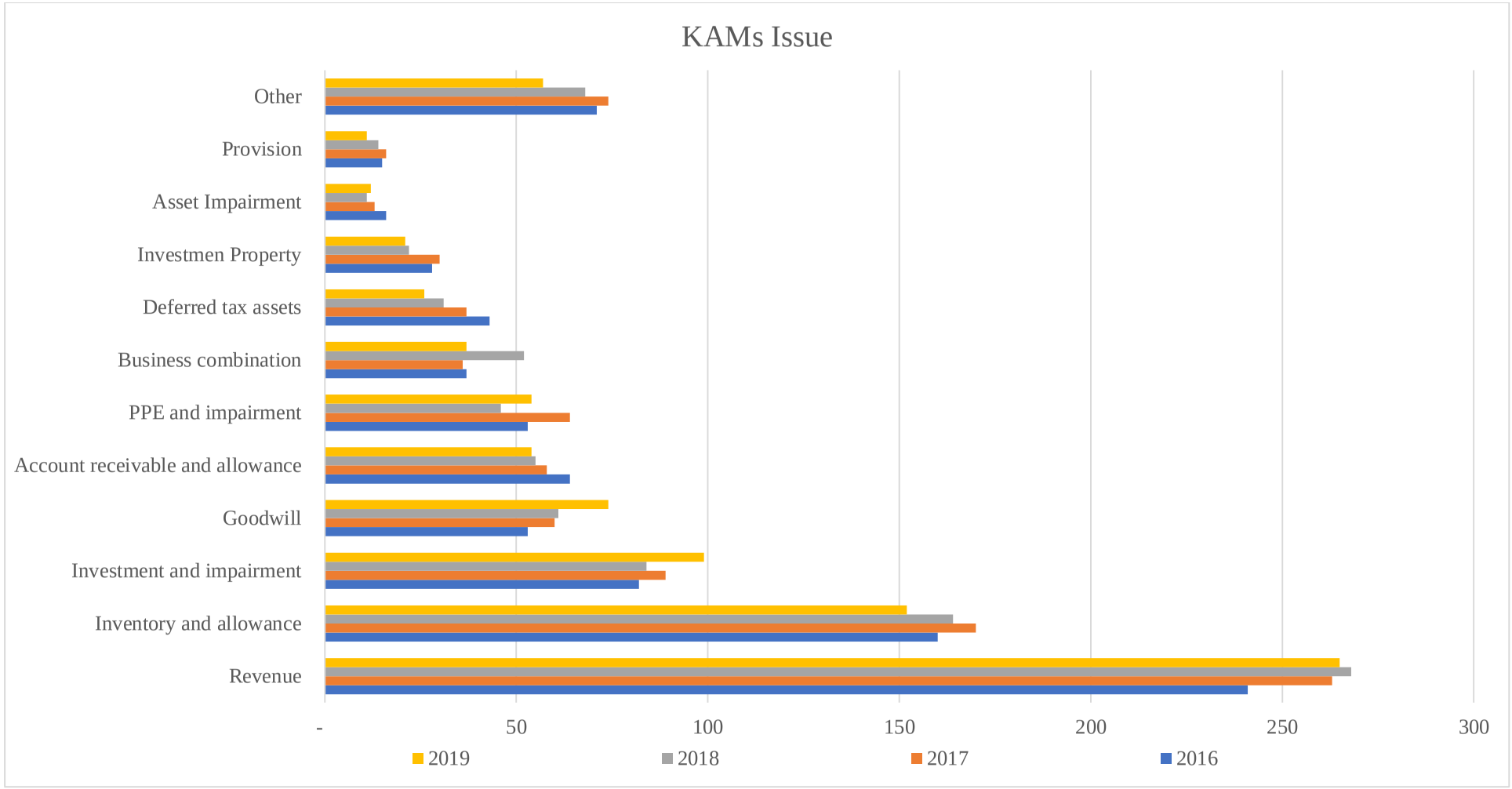

Figure 2 Key Audit Matters Issue

Table 8 and Figure 2 show the analysis of the KAMs issue. This study found the highest of KAMs issue disclosure in each year as follows: in 2016, the revenue recognition is the issue with the highest number (frequency = 241 or 27.93 percent), the next, inventory and allowance (frequency = 160 or 18.54 percent), investment and impairment of investment (frequency = 82 or 9.50 percent), account receivable and allowance (frequency = 64 or 7.42 percent), PPE and impairment of PPE (frequency = 53 or 6.14 percent), goodwill (frequency = 53 or 6.14 percent), deferred tax assets (frequency = 43 or 4.98 percent), business combination (frequency = 37 or 4.29 percent), investment property (frequency = 28 or 3.24 percent), asset impairment (frequency = 16 or 1.85 percent), provision (frequency = 15 or 1.74 percent), and other issue (frequency = 71 or 8.23 percent) which the auditors commented about the critical accounting estimates and judgments by the management, the contract of business, debt covenant, and biological assets.

In 2017, this study found the revenue recognition is the issue with the highest number (frequency = 263 or 28.90 percent), the next, inventory and allowance (frequency = 170 or 18.68 percent), investment and impairment of investment (frequency = 89 or 9.78 percent), PPE and impairment of PPE (frequency = 64 or 7.03 percent), goodwill (frequency = 60 or 6.59 percent), account receivable and allowance (frequency = 58 or 6.37 percent), deferred tax assets (frequency = 37 or 4.07 percent), business combination (frequency = 36 or 3.96 percent), investment property (frequency = 30 or 3.30 percent), provision (frequency = 16 or 1.76 percent), asset impairment (frequency = 13 or 1.43 percent), and other issue (frequency = 74 or 8.13 percent) which the auditors commented about the contract of business, the critical accounting estimates and judgments by the management, debt covenant, and biological assets.

In 2018, this study found the revenue recognition is the issue with the highest number (frequency = 268 or 30.59 percent), the next, inventory and allowance (frequency = 164 or 18.72 percent), investment and impairment of investment (frequency = 84 or 9.59 percent), goodwill (frequency = 61 or 6.96 percent), account receivable and allowance (frequency = 55 or 6.28 percent), business combination (frequency = 52 or 5.94 percent), PPE and impairment of PPE (frequency = 46 or 5.25 percent), deferred tax assets (frequency = 31 or 3.54 percent), investment property (frequency = 22 or 2.51 percent), provision (frequency = 14 or 1.60 percent), asset

impairment (frequency = 11 or 1.26 percent), and other issue (frequency = 68 or 7.76 percent) which the auditors commented about the critical accounting estimates and judgments by the management, debt covenant, biological assets, and the contract of business.

In 2019, this study found the revenue recognition is the issue with the highest number (frequency = 265 or 30.74 percent), the next, inventory and allowance (frequency = 152 or 17.63 percent), investment and impairment of investment (frequency = 99 or 11.49 percent), goodwill (frequency = 74 or 8.59 percent), account receivable and allowance (frequency = 54 or 6.26 percent), PPE and impairment of PPE (frequency = 54 or 6.26 percent), business combination (frequency = 37 or 4.29 percent), deferred tax assets (frequency = 26 or 3.02 percent), investment property (frequency = 21 or 2.44 percent), asset impairment (frequency = 12 or 1.39 percent), provision (frequency = 11 or 1.28 percent), and other issue (frequency = 57 or 6.61 percent) which the auditors defined about the critical accounting estimates and judgments by the management, biological assets, the contract of business, and debt covenant.

In summary, this study found that the top three KAMs issues during the periods being studied were the same in each of the four years concluding revenue recognition which are ranging from 27.93 to 30.74 percent, inventory and allowance which are ranging from 17.63 to 18.72 percent, and investment and impairment of investment which are ranging from 9.50 to 11.49 percent. The remaining topics in each year studied were different with including account receivable and allowance for doubtful debt, PPE and impairment, goodwill, deferred tax assets, business combination, investment property, asset impairment, and provision.

Additionally, considering more details about the top three KAMs issues concluding revenue recognition, inventory and allowance, and investment and impairment of investment. These KAMs issues are involved with the use of management judgments, therefore, unsurprisingly for these issues were reported as KAM by the auditors. Firstly, the revenue recognition is the most KAMs issue being disclosed, that the auditors commonly discussed in KAMs disclosure. Most auditors describe a very generically risk of revenue recognition. However, there are some auditors who report more specifically by described that revenue recognition has

complex nature of accounting treatment. They described involved with the criteria for recognizing revenue, type and volume of trade, and involved significant management judgment in addressing the amount of revenue recognized. Secondly, the inventory and allowance are the second KAMs issue being disclosed that the auditors highlighted the appropriateness of the allowance for the devaluation of inventories, involves a significant judgment by management for forecasting the net realization value of the current inventory. Finally, the investment and impairment are the third KAMs issue being disclosed that reported by the auditors in terms of the balance of investments which are depended on the management judgments and assumptions used in the impairment assessment. The reason why no change in the top three KAMs issues was probably because there are 388 of 528 listed companies (73.48%) did not change their auditors during the periods of this study. In addition, there are 250 of 528 listed companies (47.35%) no change in content or template and KAMs issue in the auditor's report during the period of this study. Therefore, the KAMs issue is on the same issue between 2016 to 2019.

Table 9 Descriptive Statistics of Key Audit Matters Disclosure

YEAR	Mean		Std. Deviation		Minimum		Maximum	
	NUM_ KAMs	FOG_ KAMs	NUM_ KAMs	FOG_ KAMs	NUM_ KAMs	FOG_ KAMs	NUM_ KAMs	FOG_ KAMs
2016	1.94	-21.583	.878	2.867	0	-38.440	5	-14.160
2017	1.93	-21.527	.867	2.711	1	-39.750	5	-13.950
2018	1.88	-21.499	.834	2.586	1	-36.100	4	-13.760
2019	1.83	-21.448	.841	2.490	1	-36.180	4	-13.760
Total	1.89	-21.514	.855	2.663	0	-39.750	5	-13.760

Table 9 indicate results from the descriptive analysis of the sample of both the SET and the mai during the period from 2016 to 2019. In terms of the number of KAMs issues (NUM_KAMs), the mean disclosure was 1.94, 1.93, 1.88, and 1.83, respectively, nearly two issues of KAMs for each company in each year. Consideration of the minimum number of KAMs issues, there is only one company in the year 2016 was identified that disclose the number of KAMs issues is zero. It may be because the auditors use their judgment and summarize that these nondisclosure matters have a negative impact on the entity or the public. However, KAMs could have exempted from the auditor's report if it is exempted by any law, or the costs of disclosing the KAMs are over its benefits (ISA 701).

While the KAMs readability (FOG_KAMs) was measured by using the Fog Index and was multiplied by -1, and thus this means that higher values imply KAMs more readable. The KAMs readability show value -21.583, -21.527, -21.499, and -21.448, respectively, indicates that the KAMs disclosure remains a complexity of the text. However, this study tested the different of both the number of KAMs issues and level of KAMs readability in each year by using one-way ANOVA, there was no significant difference in both amounts of number and level of readable in different years.

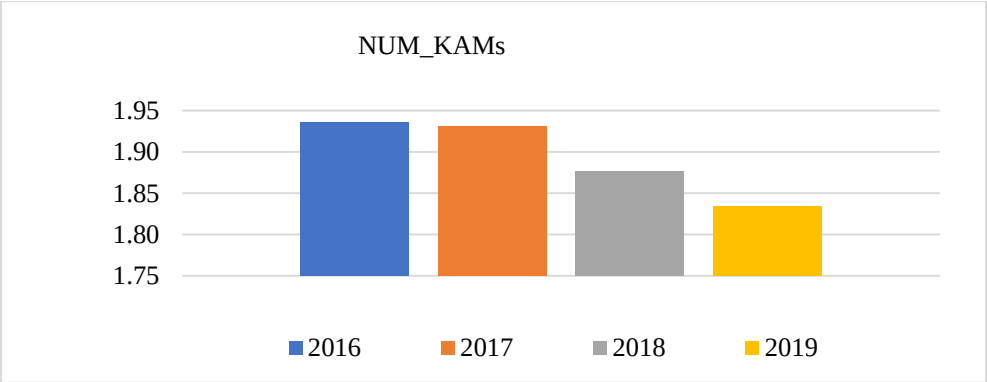

Figure 3 Mean of the Number of KAMs issues

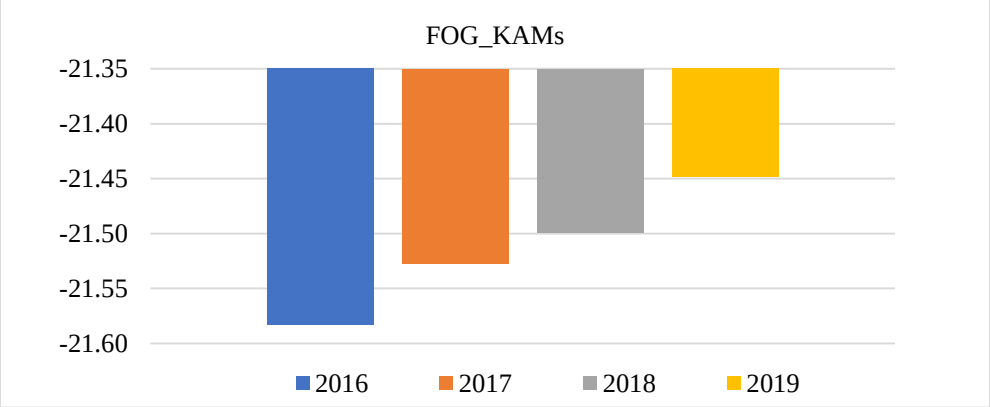

Figure 4 Mean of the KAMs readability

Figure 3 and 4, although the mean of the number of KAMs issues has tended to decrease, the level of KAMs readability has tended to increase. Considering in terms of the number of KAMs issues, from the year 2016 to 2019, the mean of the number of KAMs reported gradually decreases and quite similar. This was probably because most samples (73.48% of 528 listed companies) did not change their auditors, and then, some samples (47.35% of 528 listed companies) have no change in the KAMs issue in the auditor's report during the period of this study resulting in the number of KAMs issues being quite similar. Additionally, considering in terms of the KAMs readability, this may be because the auditors realized that the improvement in readability could enhance the usefulness and communication value of the KAMs disclosure to the investor (Smith, 2016). Thus, the auditors try to have proposed more understandable language for explaining the specific information of businesses in the auditor's report to the investor.

Summary of All Variables

The analysis of descriptive statistics describes the basic characteristics of variables in this study including mean, standard deviation, minimum, and maximum. The descriptive statistics of all variables are demonstrated as follow:

Table 10 Descriptive Statistics of Variables

Variables	Mean	Med.	SD.	Min.	Max.
|CAR|	6.541	4.794	5.688	0.101	41.797
ATV	0.038	0.073	1.297	-6.600	4.133
AU_BIG4	0.608	1	0.488	0	1
AU_IE	0.488	0	0.500	0	1
AU_TENURE	2.464	2	1.334	1	6
AU_RISK	14.818	14.668	0.853	13.199	19.030
ROA	5.791	6.135	10.061	-66.80	75.06
SIZE	15.376	15.129	1.605	11.463	21.633
LEV	0.425	0.426	0.206	0.003	1.043
AGE	3.338	3.401	0.538	0.693	4.970
MTB	2.430	1.500	3.633	0.120	89.270
PL	0.777	1	0.416	0	1
CR	2.738	1.570	5.909	0.090	216.060
COVID	0.254	0	0.435	0	1

Table 10 shows the descriptive statistics including the means, median, minimum, standard deviation, and maximum of variables used in model. The mean and standard deviation of investor reaction are absolute cumulative abnormal returns (|CAR|) has mean 6.541, median 4.794, standard deviation 5.688 which are ranging from 0.101 to 41.797. While the abnormal trading volume (ATV) has mean 0.038, median 0.073, standard deviation 1.297 which are ranging from -6.600 to 4.133.

In terms of audit characteristics, the four largest international accounting firms (AU_BIG4) audit 60.80 percent of the firm-year observations, median 1, standard deviation 0.488 which are dummy ranging from 0 to 1. The companies were audited by an industrial expertise auditor (AU_IE) is approximately 48.80 percent, median 0, standard deviation 0.5 which are dummy ranging from 0 to 1. The average number of years that audit partners work with their client (AU_TENURE) is approximately 2.5 years, median 2 years, standard deviation 1.334 which are ranging from 1 to 6 years. Finally, audit risk (AU_RISK) has average 14.818 or approximately 2.72 million Baht of audit fee, median 14.668 or approximately 2.35 million Baht, standard deviation 0.853 which are ranging from 13.199 to 19.030 or from 0.54 to 184 million Baht.

In terms of corporate characteristics are firm profitability (ROA) has mean 5.791 percent, median 6.135 percent, standard deviation 10.061 which are ranging from -66.80 to 75.06 percent. Firm size (SIZE) has mean 15.376 or approximately 4.76 million Baht of total asset, median 15.129 or approximately 3.72 million Baht, standard deviation 1.605 which are ranging from 11.463 to 21.633 or from 0.10 to 2,484.44 million Baht. The companies are approximately highly leveraged (LEV) with total debt to their total assets representing on average 0.425 times, median 0.426 times, standard deviation 0.206 which are ratio ranging from 0.033 to 1.043 times. Finally, firm age (AGE) has average 3.338 or approximately 28.16 years, median 3.401 or 30 years, standard deviation 0.538 which are ranging from 0.693 to 4.970 or from 2 to 144 years.

In terms of control variables are market-to-book ratio (MTB) has mean 2.430 times, median 1.5 times, standard deviation 3.633 which are ratio ranging from 0.12 to 89.27 times. There are the profitability companies by their performance approximately (Profit/Loss; PL) 77.7 percent of the total companies, median 1, standard deviation 0.416 which are dummy ranging from 0 to 1. Current ratio (CR) has mean 2.738 times, median 1.57 times, standard deviation 5.909 which are ratio ranging from 0.09 to 216.06 times. Finally, COVID-19 situation (COVID) has 25.40 percent of firms that have auditor's report for audited financial statements ending on 31 December that issued in the year 2020, median 0, standard deviation 0.435 which are dummy ranging from 0 to 1.

The Results of Correlation Analysis

Table 11 show the results of the correlation analysis of all constructs. The bivariate correlation procedure is subject to a two-tailed test of statistical significance at two levels as p-value< 0.01 and p-value< 0.05. The correlation coefficients of all constructs which are ranging from 0.060 to 0.783, p-value<0.01 and ranging from 0.045 to 0.059, p-value<0.05. The maximum correlation is 0.783, p-value<0.01), which is a positive significant between audit firm size (AU_BIG4) and audit industry expertise (AU_IE), while the least relationship is 0.045, p-value<0.05), which is a negative significant between firm profitability (ROA) and consumer products industry (INDUS1). The results indicate no multicollinearity problems in this study because the result is lower at 0.80 (Hair et al., 2010).

In addition, as for the correlation between audit characteristics and KAMs disclosure, which is significant at the 0.01 level (p-value<0.01), there is a positive significant correlation between audit risk (AU_RISK), audit industry expertise (AU_IE), audit firm size (AU_BIG4), and the number of KAMs issues (NUM_KAMs) that have the correlation coefficients 0.329, 0.111, and 0.104, respectively. Moreover, there is a positive significant correlation between audit firm size (AU_BIG4), audit industry expertise (AU_IE), and the KAMs readability (FOG_KAMs) that have the correlation coefficients 0.207 and 0.092, respectively.

In terms of the correlation between corporate characteristics and KAMs disclosure, which is significant at the 0.01 level (p-value<0.01), there is a positive significant correlation between firm size (SIZE), firm leverage (LEV), and the number of KAMs issues (NUM_KAMs) that have the correlation coefficients 0.245 and 0.193, respectively. There is a negative significant correlation between firm profitability (ROA) and the number of KAMs issues (NUM_KAMs) that have the correlation coefficients 0.096. Moreover, there is a positive significant correlation between firm profitability (ROA) and the KAMs readability (FOG_KAMs) that have the correlation coefficients 0.074. Finally, a significant at the 0.05 level (p-value<0.05), there is a positive significant correlation between firm age (AGE) and number of KAMs issues (NUM_KAMs) that have the correlation coefficients 0.054.

In terms of the correlation between control variable and investor reaction, which is significant at the 0.01 level (p-value<0.01), there is a positive significant correlation between COVID-19 situation (COVID), technology industry (INDUS6), and absolute cumulative abnormal returns (|CAR|) that have the correlation coefficients 0.228 and 0.143, respectively. There is a negative significant correlation between firm profitability (ROA), profit/loss (PL), firm size (SIZE), resource industry (INDUS4), property & construction industry (INDUS3), and absolute cumulative abnormal returns (|CAR|) that have the correlation coefficients 0.168, 0.138, 0.133, 0.071, and 0.067, respectively. Moreover, there is a positive significant correlation between profit/loss (PL), firm profitability (ROA), COVID-19 situation (COVID), technology industry (INDUS6), and abnormal trading volume (ATV) that have the correlation coefficients 0.144, 0.137, 0.067 and 0.066, respectively. There is a negative significant correlation between market-to-book ratio (MTB) and abnormal trading volume (ATV) that have the correlation coefficients 0.078. Finally, a significant at the 0.05 level (p-value<0.05), there is a positive significant correlation between current ratio (CR) and absolute cumulative abnormal returns (|CAR|) that have the correlation coefficients 0.050. There is a positive significant correlation between firm size (SIZE) and abnormal trading volume (ATV) that have the correlation coefficients 0.049, while there is a negative significant correlation between firm age (AGE) and abnormal trading volume (ATV) that have the correlation coefficients 0.059.

Table 11 Correlation

Variables	|CAR|	ATV	NUM_ KAMs	FOG_ KAMs	AU_ BIG4	AU_ IE	AU_ TENURE	AU_ RISK	ROA	SIZE	LEV	AGE	INDUS 1	INDUS 2	INDUS 3	INDUS 4	INDUS 5	INDUS 6	MTB	PL	CR	COVID
|CAR|	1																					
ATV	.267**	1																				
NUM_KAMs	.022	.005	1																			
FOG_KAMs	.006	-.036	-.052*	1																		
AU_BIG4	-.074**	.035	.104**	.207**	1																	
AU_IE	-.050*	.024	.111**	.092**	.783**	1																
AU_TENURE	.047*	.055*	-.035	.044	.018	.000	1															
AU_RISK	-.007	.032	.329**	.041	.313**	.179**	-.011	1														
ROA	-.168**	.137**	-.096**	.074**	.130**	.145**	.009	-.032	1													
SIZE	-.133**	.049*	.245**	.007	.319**	.212**	-.031	.699**	.141**	1												
LEV	.043	.036	.193**	-.029	.107**	.049*	-.024	.367**	-.238**	.372**	1											
AGE	-.020	-.059*	.054*	-.009	-.089**	-.119**	.029	.026	-.036	.041	-.024	1										
INDUS1	.045	-.042	.009	-.016	-.092**	-.128**	.040	-.136**	-.045*	-.180**	-.200**	.129**	1									
INDUS2	.041	.004	-.133**	.037	-.103**	-.070**	-.010	-.177**	.016	-.195**	-.111**	-.009	-.141**	1								
INDUS3	-.067**	.013	.057*	-.107**	-.048*	-.124**	-.017	.082**	-.048*	.175**	.175**	.003	-.139**	-.247**	1							
INDUS4	-.071**	-.016	-.005	.007	.098**	.132**	-.006	.187**	-.026	.254**	.110**	-.129**	-.096**	-.171**	-.168**	1						
INDUS5	-.043	-.001	-.005	.003	-.039	.018	.009	-.003	.044	-.074**	-.041	.010	-.159**	-.282**	-.278**	-.192**	1					
INDUS6	.143**	.066**	.117**	-.003	.123**	.060**	-.027	.035	-.006	.022	.109**	-.054*	-.083**	-.147**	-.145**	-.100**	-.165**	1				
MTB	-.001	-.078**	-.031	.042	.073**	.075**	-.047*	.012	.179**	-.042	.110**	-.083**	-.063**	-.104**	-.088**	-.022	.207**	.021	1			
PL	-.138**	.144**	-.065**	.065**	.157**	.163**	-.007	.046*	.655**	.206**	-.169**	-.058*	-.021	-.004	-.017	.023	.010	.015	.041	1		
CR	.050*	.008	-.081**	.046*	-.060**	-.052*	.003	-.131**	-.015	-.144**	-.357**	.027	.162**	.019	-.014	-.051*	-.049*	-.019	-.055*	-.019	1	
COVID	.228**	.067**	-.041	.014	-.006	-.049*	.160**	.063**	-.041	.020	.023	.059*	.000	-.011	-.010	.014	.007	.001	-.053*	-.039	.032	1

Symbols mean significance at: ** p<0.01, * p<0.05

The Result of Multiple Regression Analysis

This study constructs a sample that initially contains all companies listed in both the SET and the mai over a four-year during the period from 2016 to 2019. After collected the data, this study has an unbalance panel sample of 1,874 firm-year observation of all listed companies. In longitudinal data was determined for analysis because there are the same sample at different points in time (Kennedy, 2008).

To test the hypotheses, the researcher tested the reliability of the data to be able to estimate the model accurately. Because the data for this study is unbalanced panel data which could either use the pooled OLS, the fixed effect (FE) or the random effect (RE) model. The statistical testing must be performed to confirm the selection of the appropriate model for panel data between Pooled OLS, FE and RE model, as shown in Table 12.

Table 12 Statistic Model Selection

Model	Fixed Effect (F-test)	Hausman Test (χ2 - test)	Model Selection
Model 1	1.52***	25.33***	Fixed Effect
Model 2	1.41***	59.75***	Fixed Effect
Model 3	6.62***	40.62***	Fixed Effect
Model 4	8.23***	31.75***	Fixed Effect

Note: χ^2 represents the value of chi-squared in the Hausman test. It shows that the fixed effect is best methodology for four models. Symbols mean significance at: *** p<0.01.

Table 12 present the statistic model selection, to conduct appropriate formal tests to examine individual group and/or time effects with two steps as follow: the first step, this study tested initially by pooled OLS and tested the FE model based on the F-test. If the null hypothesis of the F-test is accepted, a pooled OLS model is favored over FE model (Park, 2011; Piriyakul, 2016). From testing, this study found

the F-test value with the significant at the 0.01 level (p-value<0.01) of model 1 to 4 are 1.52, 1.41, 6.62, and 8.23, respectively. It showed that the null hypothesis of the F-test is rejected, it meant the pooled OLS is not a suitable model due to it does not consider the variation of time and observation.

The next step, to conduct the Hausman Specification test (Hausman, 1978) for compare the suitable estimated regression model between the RE model and FE model. Under the null hypothesis that the effects of each variable are not related to other variables. If accepting the null hypothesis means the RE model is favored over FE model. If rejecting the null hypothesis means the FE model is appropriate (Park, 2011; Piriyakul, 2016). From the Hausman testing, this study found the chi-squared test value (χ^2 - test) with the significant at the 0.01 level (p-value<0.01) of model 1 to 4 are 25.33, 59.75, 40.62, and 31.75, respectively. It showed that the null hypothesis of the chi-squared test is rejected, it meant the FE model is an appropriate methodology for this study. As appropriate, all models of this study include industry fixed effect to control for omitted time-invariant.

Further, this study detected the problems of heteroskedasticity and autocorrelation that lead to invalidity of the variances of FE estimators, such as underestimated standard errors and over-estimated t-statistics (Baltagi, 2008). Consequently, in order to offer the corrected inference, this study used robust standard errors command to enhance the efficiency of the FE model (Cameron & Trivedi, 2005).

Test Hypothesis 1.1a to 1.2b

Table 13 demonstrates the results of an FE regression analysis including industry fixed effects to control for omitted time-invariant with investor reaction (|CAR| and ATV) as the dependent variable, KAMs disclosure (NUM_KAMs and FOG_KAMs) as the independent variable, and eight control variables (ROA, SIZE, LEV, AGE, MTB, PL, CR, and COVID) that were used to test the relationship between KAMs disclosure, control variables, and the investor reaction, which are followed by Hypothesis 1.1a, 1.1b, 1.2a, and 1.2b.

The model can predict the relationship between independent variables and both of dependent variables, which shows R^2 in model 1 and model 2 as 0.0964 and 0.0714, respectively. The F-value of the model 1 and model 2 can explained of the variance in the data approximately 12.47% ($p<0.01$) and 17.32 ($p<0.01$), respectively. The variance inflation factors (VIFs) of investor reaction and KAMs disclosure, which are used to test multicollinearity among the two categories of KAMs disclosure, together with the eight control variables. In this case, the maximum VIF values of KAMs disclosure between investor reaction both |CAR| and ATV is 1.967. The results are well below the cut-off value of 10 (Gujarati & Porter, 2009) meaning each variable is not correlated with each other. Therefore, there are no significant multicollinearity problems confronted in these models.

Table 13 Results of the Effects on Investor Reaction

Independent Variables	Model 1 |CAR|				Model 2 ATV			
	H_0	Coef.	t-test	p-value	H_0	Coef.	t-test	p-value
Intercept		30.1794**	2.29	0.022		-14.5990***	-4.83	0.000
NUM_KAMs	$H_{1.1a}$	0.1842	0.64	0.520	$H_{1.1b}$	0.0322	0.50	0.619
FOG_KAMs	$H_{1.2a}$	0.2083**	2.16	0.032	$H_{1.2b}$	0.0368*	1.66	0.097
ROA		-0.0368	-1.18	0.237		0.0111	1.62	0.105
SIZE		-1.5626	-1.60	0.109		0.3834*	1.96	0.051
LEV		7.1385**	2.14	0.033		1.5024**	2.48	0.013
AGE		0.0489	0.03	0.978		2.5678***	4.95	0.000
MTB		-0.0306	-0.53	0.599		-0.0464***	-4.29	0.000
PL		0.8496	1.44	0.151		0.3522**	2.56	0.011
CR		0.0747***	4.75	0.000		0.0190***	8.82	0.000
COVID		2.9338***	8.13	0.000		-0.0624	-0.79	0.428
Industry FE	Include				Include			
R^2	0.0964				0.0714			
F-Value	12.47***				17.32***			
p-value	0.0000				0.0000			
Hausman test	25.33***				59.75***			
p-value	0.0048				0.0000			
Maximum VIF	1.967				1.967			

Notes: This table shows the regression ordinary-least-squares with firm and year fixed- effects. All regressions are estimated with robust standard errors clustered at the firm level. Symbols mean significance at: *** p<0.01, ** p<0.05 * p<0.10.

In addition, the first evidence in Table 13 presents the regression results that NUM_KAMs has no significant effect with both |CAR| and ATV around the announcement date of the auditor's report (H1.1a: $\beta = 0.1842$; $p>0.10$, H1.1b: $\beta = 0.0322$; $p>0.10$). This indicates that the number KAMs issues lacks incremental information content to the investor in both stock price and volume. In terms of the effect on stock price aspect, this result is similar with the study of Lennox et al. (2018) and Srijunpetch (2017) who found the number of KAMs issues has no significance to investor reaction in stock price aspect. Additionally, the results of this study are supported by studies Gutierrez et al. (2018), Goh et al. (2019), and Liao et al. (2019) who found the number of KAMs issues has no significance to investor reaction in both stock price and volume aspect. Hence, Hypothesis ***1.1a and 1.1b are not supported***.

Second evidence presents the regression results that show the coefficient on FOG_KAMs has positive significance with |CAR| and ATV (H1.2a: $\beta = 0.2083$; $p<0.05$, H1.2b: $\beta = 0.0368$; $p<0.10$). This indicates that more readable KAMs disclosure is subject to more interpretation by the investor and contributes to higher investor reaction. Overall, the results show that the investors reacted to more readable KAMs disclosures, this meant that disclosure is beneficial to their decision. Consistent with the research of Goh et al. (2019) KAMs readability positive significant effect on abnormal trading volume. Moreover, the study of Smith (2016) found more readable auditor's reports decrease analyst forecast dispersion in the post-ISA 700 periods. Hence, Hypothesis ***1.2a and 1.2b are supported***.

This study found the result of the control variables, there are firm leverage (LEV) ($\beta = 7.1385$; $p<0.05$, $\beta = 1.5024$; $p<0.05$), and current ratio (CR) ($\beta = 0.0747$; $p<0.01$, $\beta = 0.0190$; $p<0.01$) have positive significant with |CAR| and ATV. In terms of firm leverage, the result is consistent with the research of Czerney et al. (2019) found more leverage has positive effect on cumulative abnormal return, while Srijunpetch (2017) who found that the level of debt has a positive effect on the trading volume. In terms of the current ratio demonstrated the firm's ability to pay its current obligation and expense. If the firm has a greater ability, the investor will have more reaction (Boonyanet & Promsen, 2019). Additionally, COVID-19 situation (COVID) ($\beta = 2.9338$; $p<0.01$) has positive significant with |CAR|. The results show that the investors more react to the COVID-19, which is the unusual situation of the outbreak of

coronavirus that severely affected the global economy. Moreover, the firm size (SIZE) (β = 0.3834; $p<0.10$), firm age (AGE) (β = 2.5678; $p<0.01$), and profit/loss (PL) (β = 0.3522; $p<0.05$) have positive significant with ATV. Looking for the firm size, firm age, and profit/loss are generally higher, indicating the opportunity of the bigger firms and longer experience to generate more profit than smaller or younger firms. Therefore, the investors take more consider investing in such firms. On the other hand, the market-to-book ratio (MTB) (β = -0.0464; $p<0.01$) has have negative significant with ATV. The result is consistent with the research of Goh et al. (2019) found lower market to book ratio is associated with higher abnormal trading volume. Finally, the five control variables (ROA, SIZE, AGE, MTB, and PL) do not significant with |CAR| and two control variables (ROA and COVID) do not significant with ATV.

Test Hypotheses 2.1a to 2.4b and Hypotheses 3.1a to 3.4b

Table 14 demonstrates the results of an FE regression analysis including industry fixed effects to control for omitted time-invariant with KAMs disclosure (NUM_KAMs and FOG_KAMs) as the dependent variable, four categories of audit characteristics (AU_BIG4, AU_IE, AU_TENURE, AU_RISK) and four categories of corporate characteristics (ROA, SIZE, LEV, AGE) as the independent variable that were used to test the relationship between audit characteristics, corporate characteristics, and the KAMs disclosure, which are followed by Hypotheses 2.1a to 2.4b and Hypotheses 3.1a to 3.4b.

The model can predict the relationship between independent variables and both of dependent variables, which shows R^2 in model 3 and model 4 as 0.0301 and 0.0615, respectively. The F-value of the model 3 and model 4 can explained of the variance in the data approximately 2.74% ($p<0.01$) and 4.18 ($p<0.01$), respectively. The variance inflation factors (VIFs) of KAMs disclosure, audit characteristics and corporate characteristics, which are used to test multicollinearity among the four categories of audit characteristics and four categories corporate characteristics. In this case, the maximum VIF values of KAMs disclosure between investor reaction both NUM_KAMs and FOG_KAMs is 2.917. The results are well below the cut-off value of 10 (Gujarati & Porter, 2009) meaning each variable is not correlated with each other.

Therefore, there are no significant multicollinearity problems confronted in these models.

Table 14 Results of the Effects on KAMs Disclosure

Independent Variables	Model 3 NUM_KAMs				Model 4 FOG_KAMs			
	H_0	Coef.	t-test	p-value	H_0	Coef.	t-test	p-value
Intercept		-2.0692	-1.13	0.258		-23.1054***	-4.76	0.000
AU_BIG4	$H_{2.1a}$	-0.0947	-0.63	0.530	$H_{2.1b}$	2.2640***	3.49	0.001
AU_IE	$H_{2.2a}$	0.0898	1.02	0.309	$H_{2.2b}$	-0.4202	-1.43	0.154
AU_TENURE	$H_{2.3a}$	-0.0229**	-1.97	0.049	$H_{2.3b}$	0.1018***	2.79	0.006
AU_RISK	$H_{2.4a}$	0.0796	1.00	0.316	$H_{2.4b}$	0.0944	0.38	0.704
ROA	$H_{3.1a}$	-0.0076**	-2.34	0.020	$H_{3.1b}$	-0.0146**	-2.10	0.036
SIZE	$H_{3.2a}$	0.3321***	3.27	0.001	$H_{3.2b}$	0.2347	1.02	0.310
LEV	$H_{3.3a}$	-0.2946	-1.15	0.251	$H_{3.3b}$	-1.6547**	-1.98	0.048
AGE	$H_{3.4a}$	-0.6239**	-1.99	0.047	$H_{3.4b}$	-1.2136	-1.42	0.155
Industry FE	Include				Include			
R^2	0.0301				0.0615			
F-Value	2.74***				4.18***			
p-value	0.0058				0.0001			
Hausman test	40.62***				31.75***			
p-value	0.0000				0.0001			
Maximum VIF	2.917				2.917			

Notes: This table shows the regression ordinary-least-squares with firm and year fixed- effects. All regressions are estimated with robust standard errors clustered at the firm level. Symbols mean significance at: *** p<0.01, ** p<0.05 * p<0.10.

In addition, Table 14 presents the regression results related to four categories of audit characteristics and the KAMs disclosure. The first evidence shows that the AU_BIG4 has no significant with NUM_KAMs (H2.1a: β = -0.0947; p>0.10). This result is consistent with the research of Shao (2020) who found that the Big 4 firms have no relationship with the number of KAMs issues. Hence, Hypothesis ***2.1a is not supported.*** On the other hand, the AU_BIG4 has positive significant with FOG_KAMs (H2.1b: β = 2.2640, p<0.01). This result consistent with the research of Velte (2018a), (2019) found the larger audit firm contributed to more KAMs readability because they have more resources and specific knowledge of their client than a small and medium audit firm. Hence, Hypothesis ***2.1b is supported.***

The second evidence presents the regression results that AU_IE has no significant with NUM_KAMs (H2.2a: β = 0.0898; p>0.10) and FOG_KAMs (H2.2b: β = -0.4202; p>0.10). These results are consistent with the research of Shao (2020) who found that the audit firms that have expertise in each industry have no relationship with the number and length of KAMs. Hence, Hypothesis ***2.2a and 2.2b are not supported***.

The third evidence presents the regression results that AU_TENURE has negative significant with NUM_KAMs (H2.3a: β = -0.0229, p<0.05). Based on the result, the longer audit tenure effect on fewer the number of KAMs issues. This may be because the auditors who have long experience can increase financial reporting quality (Johnson et al., 2002; Myers et al., 2003) and reduced likelihood of false financial reports (Carcello & Nagy, 2004), and it is known that these factors are the main factor that reduces the number of KAMs issues. Hence, Hypothesis ***2.3a is supported***. In additional, the result shows AU_TENURE has positive significant with FOG_KAMs (H2.3b: β = 0.1018, p<0.01). This result is consistent with the research of Velte (2018a), (2019) who found that the client who had not changed the new auditor in the current fiscal year, their KAMs disclose was more readable. Hence, Hypothesis ***2.3b is supported***.

The fourth evidence presents the regression results that AU_RISK has no significant with NUM_KAMs (H2.4a: β = 0.0796; p>0.10) and FOG_KAMs (H2.4b: β = 0.0944; p>0.10). This result is consistent with the research of Gutierrez et al. (2018) and Sierra-García et al. (2019) who found no relationship between the risk disclosure in the auditor's report after implementing ISA 700 and audit fees. Moreover, the study

of Reid et al. (2019) found that there is not a significant change in audit fees surrounding the implementation ISA 700. Additionally, Bédard et al. (2014) found that the fees paid to the auditor do not vary with the number of KAMs issues. Hence, Hypothesis ***2.4a and 2.4b are not supported***.

Moreover, Table 14 also showed the regression results related four categories of corporate characteristics and the KAMs disclosure are also reported in Tables 12. The first evidence shows that the ROA has negative significant with NUM_KAMs (H3.1a: β = -0.0076, $p<0.05$) and FOG_KAMs (H3.1b: β = -0.0146, $p<0.05$). Considering of the effect on NUM_KAMs, this is consistent with the study of Pinto and Morais (2019), Sierra-García et al. (2019), Boonlert-U-Thai et al. (2019), Shao (2020), Wuttichindanon and Issarawornrawanich (2020) and Suttipun (2021) who found a negative relationship between profitability ratio and the number of KAMs issues, indicating that the risk issue is mitigated for highly profitable companies. Hence, Hypothesis ***3.1a is supported***. In addition, when considering of the effect on FOG_KAMs, this result is interpreted as meaning that more performance of companies led to disclose KAMs less readable. However, this result shows contrary to this study's expectations, which predicts the more profitable companies during the year disclose more readable of KAMs. Hence, Hypothesis ***3.1b is not supported***.

The second evidence shows that the SIZE has positive significant with NUM_KAMs (H3.2a: β = 0.3321, $p<0.01$). This meant that the larger firm size led to more KAMs disclosure. This result is consistent with the research of Pinto and Morais (2019), Boonlert- U- Thai et al. (2019) and Suttipun (2021) found that positive relationship between firm size and number of KAMs issues. Hence, Hypothesis ***3.2a is supported***. On the other hand, there is no significant relationship between SIZE and FOG_KAMs (H3.2b: β = 0.2347; $p>0.10$). This result is consistent with the previous research that found firm size has no relationship with KAMs readability (Velte, 2019) and auditor's report after implement ISA 700 (Smith, 2016). Hence, Hypothesis ***3.2b is not supported***.

The third evidence shows that the LEV has no significant with NUM_KAMs (H3.3a: β = -0.2946; $p>0.10$). This result is consistent with Pinto and Morais (2019) who found firm leverage has no relationship with number of KAMs issues. However, this result is not consistent with this study's expectations. This may be because if the

sample in the study only includes large (small) firms that are slightly (highly) leveraged, and thus, there are no relationship between both variables (Pinto & Morais, 2019). Similarly, with this study that most sample has highly leveraged (mean = 42.5 percent). Hence, Hypothesis ***3.3a is not supported***. On the other hand, the LEV has negative significant with FOG_KAMs (H3.3b: $\beta = -1.6547$, $p<0.05$). This meant that the higher leverage led to less KAMs readability. This result is consistent with prior study that found firms with higher leverage ratios reduced the KAM readability (Wuttichindanon & Issarawornrawanich, 2020) and annual report (Ajina et al., 2016) Hence, Hypothesis ***3.3b is supported.***

The fourth evidence shows that the AGE has negative significant with NUM_KAMs (H3.4a: $\beta = -0.6239$, $p<0.05$) This result is consistent with the research of Shao (2020) who found a negative relationship between firm age and the number of KAMs issues. However, this result shows contrary to this study's expectations, which predicts the auditors tend to disclose a greater number of KAMs issues for older firms which have more corporate information disclosure. Hence, Hypothesis ***3.4a is not supported***. On the other hand, there is no significant relationship between AGE and FOG_KAMs (H3.4b: $\beta = -1.2136$; $p>0.10$). This result is consistent with Nuntathanakan et al., 2020) who found firm age has no relationship with KAMs readability. Moreover, the study of Choi (1999) who found no relationship between firm age and information reporting. Additionally, the research of Smith (2016) found that although there is the KAMs disclosure in the auditor's report under ISA 700 is more readable, there is no significant relationship between AGE and readability of auditor's report. Hence, Hypothesis ***3.4b is not supported.***

Summary of Hypotheses Testing

In conclusion, this chapter's essence is to present multiple regression analysis results using unbalanced panel data with FE model results that are more suitable for estimation than other hypothesis testing methods. The above hypothesis test concluded the results of an FE regression analysis including industry fixed effects to control for omitted time-invariant with investor reaction as dependent variable, KAMs disclosure as the independent variable, and eight control variables that were used to test the

relationship between KAMs disclosure, control variables, and the investor reaction. In addition, the above hypothesis test concluded the results of an FE regression analysis including industry fixed effects to control for omitted time-invariant with the KAMs disclosure as the dependent variable, audit characteristics and corporate characteristics as the independent variable. Finally, the summary of hypotheses testing is provided in Table 15.

Table 15 Summary of Hypotheses Testing

Hypotheses	Estimated Sign	Hypotheses Description	Results
H1.1a	+ / -	The number of KAMs issues has effect on the investor reaction (stock price aspect).	Not supported
H1.1b	+ / -	The number of KAMs issues has effect on the investor reaction (stock volume aspect).	Not supported
H1.2a	+ / -	The KAMs readability has effect on the investor reaction (stock price aspect).	Supported
H1.2b	+ / -	The KAMs readability has effect on the investor reaction (stock volume aspect).	Supported
H2.1a	+	The audit firm size has a positively effect on the number of KAMs issues.	Not supported
H2.1b	+	The audit firm size has a positively effect on the KAMs readability.	Supported
H2.2a	+	The audit industry expertise has a positive effect on the number of KAM.	Not supported
H2.2b	+	The audit industry expertise has a positive effect on the KAMs readability.	Not supported
H2.3a	-	The audit tenure has a negative effect on the number of KAMs issues.	Supported
H2.3b	+ / -	The audit tenure has effect on the KAMs readability.	Supported
H2.4a	+	The audit risk has a positive effect on the number of KAMs issues.	Not supported

Table 15 Summary of Hypotheses Testing (Continue)

Hypotheses	Estimated	Hypotheses Description	Results
H2.4b	-	The audit risk has a negative effect on the KAMs readability.	Not supported
H3.1a	-	The firm profitability has negative effect on the number of KAMs issues.	Supported
H3.1b	+	The firm profitability has a positive effect on the KAMs readability.	Not supported
H3.2a	+	The firm size has a positive effect on the number of KAMs issues.	Supported
H3.2b	-	The firm size has a negative effect on the KAMs readability.	Not supported
H3.3a	+	The firm leverage has a positive effect on the number of KAMs issues.	Not supported
H3.3b	-	The firm leverage has a negative effect on the KAMs readability.	Supported
H3.4a	+	The firm age has a positive effect on the number of KAMs issues.	Not supported
H3.4b	+	The firm age has a positive effect on the KAMs readability.	Not supported

CHAPTER V

CONCLUSION

This study investigates the effect between independent variables and dependent variables in the previous chapters by showing details such as descriptive statistics and hypotheses testing with regression analysis. Thus, this chapter summarizes the overview of study for conclusion, discussion, and the theoretical and managerial contributions. In addition, research limitations and recommendations for future study will also be presented.

Conclusion

An empirical research method based on secondary data was applied in this study. The data is longitudinal study of the KAMs disclosure of companies listed in the Stock Exchanges of Thailand (SET) and the Market of Alternative Investment (mai) during the periods from 2016 to 2019 for a total of four years. This study started from the year 2016 since it was the year when Thailand fully adopted the ISA 700. The sample includes a wide range of industries; Agro & Food, Consumer Products, Industrials, Property & Construction, Resources, Services, and Technology. The conditions that the sample of this study did not include the companies that (1) were registered in financial service, insurance industries, and leasehold property funds, (2) were withdrawn from listing by the SET and the mai including companies under rehabilitation, (3) whose fiscal year-ends are not on 31 December, (4) were registered as listed companies after 2016, (5) have been incomplete data for analysis, and (6) have outlier data of the main variable. Therefore, the final sample group consisted of 528 firm-year, there are 1,874 firm-year observations as follows: observation in services is the highest number 129 companies or 451 firm-year observations, the next, industrial approximate number 106 companies or 376 firm-year observations, property & construction 102 companies or 367 firm-year observations, agro & food 54 companies or 198 firm-year observations, resources 54 companies or 195 firm-year observations, technology 43 companies or 149 firm-year observations. Finally, observation in consumers is the least number 40 companies 138 firm-year observations.

This study has an unbalanced panel data regression model. In longitudinal data was determined for analysis because there are the same sample at different points in time (Kennedy, 2008). The statistical testing must be performed to confirm the selection of the appropriate model for panel data between Pooled OLS, Fixed Effect (FE) and Random Effect (RE) model. After the testing, the FE model is an appropriate methodology for all models of this study. Further, this study detected the problems of heteroskedasticity and autocorrelation that lead to invalidity of the variances of FE estimators, such as underestimated standard errors and over-estimated t-statistics (Baltagi, 2008). Consequently, in order to offer the corrected inference, this study used robust standard errors command to enhance the efficiency of the FE model (Cameron & Trivedi, 2005). Moreover, as appropriate, all models of this study include industry fixed effect to control for omitted time-invariant.

To answer four research questions, this study has four research objectives including. Firstly, to answer the question that is what are the KAMs issue, the number of KAMs issues, and the KAMs readability of Thai listed companies during the periods from 2016 to 2019? The objective is to investigate the KAMs issue, the number of KAMs issues, and the KAMs readability of Thai listed companies during the periods from 2016 to 2019. In addition, this objective relied on the communication theory that can be used to explain the solution of communication between auditors and investors through the auditor's reports that will demonstrate and explain the level and content of KAMs disclosure.

This study found that the top three KAMs issues during the periods being studied were the same in each of the four years concluding revenue recognition, inventory and allowance, investment and impairment. The remaining topics in each year studied were different with including account receivable and allowance for doubtful debt, PPE and impairment, goodwill, deferred tax assets, business combination, investment property, asset impairment, and provision.

In terms of the number of KAMs issues, although the mean disclosure has tended to decrease, nearly two issues of KAMs for each company in each year. Additionally, in term of the level of KAMs readability, the level has tended to increase, indicates that the KAMs disclosure are becoming more readable during the period 2016 to 2019.

Secondly, to answer the question that is how the KAMs disclosure (the number of KAMs issues and the KAMs readability) has effect on investor reaction? The objective test in model 1 that to examine whether the KAMs disclosure (the number of KAMs issues and the KAMs readability) has effect on the investor reaction. In addition, this objective relied on the signaling theory that can be used to explain the relationship between KAMs disclosure and investor reaction. All variables are including of investor reaction as the dependent variables consist of absolute cumulative abnormal return and abnormal trading volume. KAMs disclosure as the independent variable consist of number of KAMs issues and KAMs readability. Additionally, control variables consist of firm profitability, firm size, firm leverage, firm age, industry, market to book, profit/loss, current ratio, and COVID-19 situation that were used to test. The result showed that the number of KAMs issues has no significant effect with both absolute cumulative abnormal return and abnormal trading volume around the announcement date of the auditor's report. However, when considered in the KAMs readability, the result shows that KAMs readability has positive significance on both absolute cumulative abnormal return and abnormal trading volume.

Thirdly, to answer the question that is how the audit characteristics (audit firm size, audit industry expertise, audit tenure, and audit risk) have effect on the KAMs disclosure? The objective tests in model 2 that to examine whether audit characteristics (audit firm size, audit industry expertise, audit tenure, and audit risk) has effect on the KAMs disclosure. In addition, this objective relied on the legitimacy theory that can be used to explain the relationship between audit characteristics and KAMs disclosure. All variables are including of KAMs disclosure as the dependent variable consist of the same variable as model 1. Four categories of audit characteristics consist of audit firm size, audit industry expertise, audit tenure, and audit risk as the independent variable that were used to test. This study found the audit characteristics are a greater and wider impact on the KAMs disclosure, and audit tenure has negative significance with the number of KAMs issues. Moreover, the audit firm size and audit tenure have positive significance with KAMs readability. Indicating that three categories of audit characteristic are important for creating the level and content that contains in KAMs disclosure section in the auditor's report.

Finally, to answer the question that is how the corporate characteristics (firm profitability, firm size, firm leverage, and firm age) have effect on the KAMs disclosure? The objective tests in model 2 that to examine whether corporate characteristics (firm profitability, firm size, firm leverage, and firm age) has effect on the KAMs disclosure. In addition, this objective relied on the legitimacy theory that can be used to explain the relationship between corporate characteristics and KAMs disclosure. All variables are including of KAMs disclosure as the dependent variable consist of the same variable as model 1. Four categories of corporate characteristics consist of firm profitability, firm size, firm leverage, and firm age as the independent variable that were used to test. This study found the corporate characteristics also have a certain greater and wider impact on the KAMs disclosure, the firm profitability has negative significance with the number of KAMs issues, while the firm size has positive significance with the number of KAMs issues. Moreover, firm leverage has negative significance with KAMs readability. Indicating that three categories of corporate characteristic are important for creating the format and content that contains in KAMs disclosure section in the auditor's report.

Discussion

The Issue, Number of Issues, and Readability of Key Audit Matters

To answer the research question: what are the KAMs issue, the number of KAMs issues, and the KAMs readability of Thai listed companies during the periods from 2016 to 2019? This study found that the top three KAMs issues during the periods being studied were the same in each of the four years concluding; first, the revenue recognition that is a very generically risk thus it was commonly discussed in KAMs disclosure by the auditors. Secondly, the inventory and allowance are highlighted the appropriateness of the allowance for the devaluation of inventories, involves a significant judgment by management. Finally, the investment and impairment are depended on the judgments and assumptions used in the impairment assessment by management. The remaining topics in each year studied were different with including account receivable and allowance for doubtful debt, PPE and impairment, goodwill, deferred tax assets, business combination, investment property, asset impairment, and

provision. Additionally, the reason why no change in the top three KAMs issues was probably because most of listed companies did not change their auditors during the periods of this study. Moreover, there are almost half of the listed companies in this study have no change in content or template and KAMs issue during the period of this study.

In terms of the number of KAMs issues, although the mean disclosure has tended to decrease, nearly two issues of KAMs for each company in each year. This was probably because most samples did not change their auditors, and then, some samples have no change in the KAMs issue in the auditor's report during the period of this study resulting in the number of KAMs issues being quite similar.

In term of the level of KAMs readability, the level has tended to increase, indicates that the KAMs disclosure are becoming more readable during the period 2016 to 2019. This may be because the auditors try to have presented more understandable language for explaining the specific information of businesses in the auditor's report to the investor, since they realized that the readability of KAMs disclosure could enhance the usefulness and communication value to the investor (Smith, 2016).

Key Audit Matters Disclosure and Investor Reaction

To answer the research question: How the KAMs disclosure (the number of KAMs issues and the KAMs readability) has effect on investor reaction? As the first result showed that the number of KAMs issues has no significant effect with both absolute cumulative abnormal return and abnormal trading volume around the announcement date of the auditor’s report, not supporting with hypothesis 1.1a and 1.1b. As a result, it may be the number of KAMs issues lacks incremental information content because the significant risks were disclosed by management in the previous year’s annual report (Lennox et al., 2018). Moreover, the number of KAMs issues was disclosed based on the business's complexity, the nature of the entity’s business and environment, which most of the KAMs had already been disclosed in the previous year’s auditor report (Wei et al., 2017; Almulla & Bradbury, 2018). Thus, investors were already informed about the significance of the KAMs before the KAMs were disclosed by auditors in the present year's audit reports. This finding explains why prior experimental research of Christensen et al. (2014), which sends the auditor's report

separate from other information to the experiment participant, concludes that the expanded auditor's report has informative value, whereas this study does not.

When considering in terms of the quantity of KAMs disclosure, according to the study of Srijunpetch (2017), the result showed that the number of KAMs issues has a significant effect on investor reaction only in the stock volume aspect. However, when considering in terms of the quality of KAMs disclosure, this result showed that the KAMs readability has positive significance on both absolute cumulative abnormal return and abnormal trading volume, supporting with Hypothesis 1.2a and 1.2b. This indicates that the decision of investors on KAMs disclosure not focused only on the quantity of KAMs but also focused on the quality of KAMs in terms of the KAMs readability. It is known that KAMs disclosure demonstrates risks that companies are going to encounter under the auditor's professional judgment (Suttipun, 2020b). This is the reason why the language was used to describe KAMs by the auditor was different in each audited company, and then this disclosure will influence investor's decision-making if the disclosure was delivered new, insights and useful information to investors (Velte, 2018b; Reid, 2015). Then, when the investors received more understanding information and significant risks of the business through KAMs disclosure from the auditors, the investors must choose how to interpret the signal that they received (Connelly et al., 2011; Washburn, 2017). As can be seen, the KAMs disclosure helps them to be aware and understanding various events that relate to the significant financial risks (Goh et al., 2019). Using signaling theory to explain the reason of positive relationship between the KAMs readability and the investor reaction, KAMs readability can increase the information value of communication between the auditors and the investors, therefore, the investor uses the content of KAMs disclosure for their decision (Brown et al., 2009). In summary, if the auditor reported more readable of KAMs disclosure that is beneficial to the decision of investors and could reduce the information gap between the auditor and the investor, it will contribute to higher investor reaction (Velte, 2019) in aspect both the stock price and stock volume. This is because investors understand the KAMs disclosure that led to more likely to their investment.

Audit Characteristic and Key Audit Matters Disclosure

To answer the research question: How the audit characteristics (audit firm size, audit industry expertise, audit tenure, and audit risk) have effect on the KAMs disclosure? The results between four categories of audit characteristics and the KAMs disclosure are as follows.

Firstly, the audit firm size has no significant effect with number of KAMs issues, not supporting with hypothesis 2.1a. Based on the findings, it is possible no significant difference in terms of audit quality between the Big 4 international and non-international firms because both types of audit firms perform under the same auditing standards and regulatory (Louis, 2005). On the other hand, the audit firm size has positive significant with KAMs readability, supporting with hypothesis 2.1b. Based on this finding, this is because more readable KAMs disclosure requires more attention and resources by the auditor (Velte, 2018a, 2019). As know that the Big 4 firms have more opportunities to use their available resources to audit the client's financial statement than non-Big 4 firms. Therefore, the larger audit firms are likely to contribute more KAMs readability because they have more resources and specific knowledge of their client than a small and medium audit firm. The legitimacy theory is used to explain that the Big 4 firms intend to maintain their reputation to provide a better quality of auditor's report to compete with another auditor (Becker et al., 1998). Moreover, this disclosure helps the companies show their legitimizing actions which legitimize based on social expectation. Therefore, the Big 4 firms that have more opportunities and resources than other audit firms will create the more readable KAMs disclosure.

Secondly, the audit industry expertise has no significant with the number of KAMs issues and KAMs readability, not supporting with hypothesis 2.2a and 2.2b. This meant that the expertise in each industry of audit firms has no relationship with KAMs disclosure. This was probably because the number, disclosure length, and the number of industry-specific matters during the years after implementing the ISA 700 tend to be constant, which shows that the auditors have gradually adjusted the approach to the disclosure of key audit matters (Shao, 2020).

Thirdly, the audit tenure has negative significant with number of KAMs issues, supporting with hypothesis 2.3a. Based on the result, this was probably because longer experience of the auditor can increase financial reporting quality (Johnson et al., 2002;

Myers et al., 2003) and reduced likelihood of false financial reports (Carcello & Nagy, 2004), which are the main factor that reduces the number of KAMs issues. In additional, the audit tenure has positive significant with KAMs readability, supporting with hypothesis 2.3b. This meant that the firms were audited by the auditor who have longer audit tenure, their KAMs disclose was more readable (Velte, 2018a; 2019). The legitimacy theory is used to explain that the auditors who have long experience with their client intend to improve audit quality (Ghosh & Moon, 2005) which based on social expectation. They reduced the likelihood of false financial reports (Carcello & Nagy, 2004) which is the reason why the number of KAMs is decreased. Moreover, the auditors that have more experience than other audit firms, try to increase the level of understanding of KAMs disclosure that could improve the readability of disclosure through their competence in their job (Chang & Stone, 2019).

Finally, the audit risk has no significant with the number of KAMs issues and KAMs readability, not supporting with hypothesis 2.4a and 2.4b. This meant that the audit fee which depends on the audit risk has no relationship with KAMs disclosure. IAASB (2016) suggested that KAMs is a complex issue, the determination of KAMs involves auditor's professional judgment in the financial statements. Although the auditor encounters firms that have high audit risk, only the highest assessed risk of material misstatement was determined as KAMs (EY, 2015; IAASB, 2016). This is because the auditor considered that some risks should not be communicated because this may have a negative impact and is not worth the benefit of the investors.

Corporate Characteristic and Key Audit Matters Disclosure

To answer the research question: How the corporate characteristics (firm profitability, firm size, firm leverage, and firm age) have effect on the KAMs disclosure. The results between four categories of corporate characteristics and the KAMs disclosure are as follows.

Firstly, the firm profitability has negative significance with the number of KAMs issues, supporting with hypothesis 3.1a. This result is interpreted that more performance of companies led to disclose a smaller number of KAMs issues. The legitimacy theory is used to explain that the higher profit firms have more intention in their actions and activities based on social expectations than the lower profit firms (Wei,

Fargher & Carson, 2017). This is because when companies had a profit, they were at a lower risk that affects KAMs disclosure (Velte, 2018a). It means the auditors will provide less disclosure of their opinions regarding company risks. Moreover, if the performance of companies is lower profit, auditors will provide more disclosure of their opinions on the auditor's report (Suttipun, 2021). On the other hand, the firm profitability has negative significant with KAMs readability, not supporting with hypothesis 3.1b. Looking at the effect on KAMs readability, this result is interpreted as meaning that more performance of firm led to disclosing KAMs less readable. However, this result shows contrary to this study's expectations, which a positive relationship between both variables is expected. It may be because the firms with greater profitability intend to achieve their goal of growing businesses, therefore these firms have more complex information which tends to disclose KAMs less readable.

Secondly, the firm size has positive significant with the number of KAMs issues, supporting with hypothesis 3.2a. This meant that the larger firm size led to a greater number of KAMs issues. The legitimacy theory is used to explain that the larger firms get more intention in their actions and activities compared to the smaller firms because of social expectations (Wei et al., 2017), which may be reflected in more accounting disclosures (Ajina et al., 2016; Li, 2008). However, there is no significant relationship between firm size and KAMs readability, not supporting with hypothesis 3.2b. It may be because of compliance with ISA 700, some KAMs disclosure would be using standardized language and form and highlight the benefit of the auditor language selection (Smith, 2016).

Thirdly, the firm leverage has no significance with the number of KAMs issues, not supporting with hypothesis 3.3a. This result can be related to the fact that most samples in this study included many firms with highly leveraged (Pinto & Morais, 2019). The highly leveraged involves higher financial risk, consequently, as the financial risk increases, auditors tend to review these firms more clearly same as all firms. Thus, there is no relationship between both variables. On the other hand, the firm leverage has negative significant with KAMs readability, supporting with hypothesis 3.3b. This meant that the higher leverage led to lower KAMs readability. The legitimacy theory is used to explain that social expect more information from the higher leverage firms. This is the reason why the auditors need to provide more opinion, this

is because in the future these firms may be meet with financial problems (Suttipun, 2021), and thus, they would provide more information that led to lower KAMs readability.

Finally, the firm age has negative significance with the number of KAMs issues, not supporting with hypothesis 3.4a. This meant longer firm age effect to a smaller number of KAMs issues. However, this result shows contrary to this study's expectations, which predicts the auditors tend to disclose a greater number of KAMs issues for older firms which have more corporate information disclosure. On the other hand, there is no significant relationship between firm age and KAMs readability, not supporting with hypothesis 3.4b. This because both older and younger companies with the maturity stage may found with higher levels of reputational risk, thus, these firms try to engage in more actions and activities to present to society causing greater disclosure of information (Choi, 1999). Consequently, the auditors must encounter this similar information and presented it in KAMs disclosure.

Theoretical and Managerial Contribution

Theoretical Contribution

This study applies communication theory to explain the level and content of KAMs disclosure including the KAMs issue, the number of KAMs issues, and the KAMs readability, applies the signaling theory to provide a clearer understanding by examining the relationships between KAMs disclosure and investor reaction, and applies legitimacy theory to examine the relationship between the audit characteristics, corporate characteristics and KAMs disclosure.

Firstly, this study uses communication theory to shed light on the progress made in KAMs disclosure among the auditors of companies listed on the SET and the mai. This theory explains the solution of communication between auditors and investors through the auditor's reports that will demonstrate and explain the level and content of KAMs disclosure. This study extends the testing KAMs disclosure by adding KAMs readability and found that the level of KAMs readability has tended to increase. The result shed light on the KAMs readability that the auditors realized that the

improvement in readability could enhance the usefulness and communication value of the KAMs disclosure to the investor (Smith, 2016).

Secondly, the result of this study found that the number of KAMs issues do not effect to investor reaction, while more readable of KAMs effect on investor reaction both stock price and stock volume aspect. This is in line with the signaling theory, which can be used to explain the behavior of the investor when they received more understand information that performed by the auditor (Asare & Wright, 2012; Pornupatham, 2016). The results shed light on more readable KAMs disclosure that performed by the auditor which includes clear and concise wording, was delivered new insights and useful information to investors (Reid, 2015). Implying that the investors believe that adding KAMs by the auditor not only increases more understanding of the business information but also reduces the expectations gap of investors in the auditor (Tangruenrat, 2015a). Therefore, this finding can conclude that more readable of KAMs disclosure in the auditor's report will reduce the information gap between the auditor and the investor. This information was brought to making their decisions better. Thus, this study confirms the signaling theory that KAMs readability is a good signal for investors to use the information for decision making.

Thirdly, this study used the legitimacy theory to explain the relationship between audit characteristics and KAMs disclosure, and the relationship between corporate characteristics and KAMs disclosure. This theory is used to explain that social expect more information from the auditors and the companies for their decision. In terms of audit characteristics, the result found that audit firm size has effect on the number of KAMs issues, and especially audit tenure has effect on both of KAMs disclosure. In terms of corporate characteristics, the result found that the firm profitability and firm size have effect on the number of KAMs issues and the firm leverage has effect on KAMs readability. This theory can explain the reasons for the KAMs disclosure as being a quality communication between the auditor and the investors of listed companies in Thailand. The results shed light on these categories of audit characteristics and corporate characteristics are important for creating the format and content that contains in the KAMs disclosure section in the auditor's report.

Managerial Contribution

In terms of managerial contributions expected, firstly, this is the first longitudinal study by collecting data during the periods from 2016 to 2019 and aims to provide evidence of KAMs disclosure in both the main capital markets and the alternative capital market in Thailand which the result was used in the overview of all market, while the most prior literature has focused on either the main capital markets or the alternative capital market resulting these studies may be used in only the market that studied. Secondly, the results shed light on the level of KAMs disclosure both number and readability by the auditors in Thailand after implementing ISA 700 in the year 2016 which can be used to explain the level of communication between auditors and investors. Moreover, this study expands the literature on KAMs disclosure in emerging-economy countries, which adds to that concerning developed countries. Thirdly, this study will provide information regarding audit characteristics and corporate characteristics for investors who mainly use the auditor's reports to consider the risks involved in investing in Thai listed companies. The investors are able to acknowledge the relationship between auditor characteristics, corporate characteristics, and KAMs disclosure in their decision. The findings of this study can reflect the company's characteristics and Thai auditors' responsibility on the new auditor's report to monitor and review corporate information disclosure. Fourthly, according to the aim of ISA 700, the regulators and those responsible for setting auditing and reporting standards want to reduce the information gap between the auditor and investor. This study found that the auditor can be given more understandable language for explaining the specific information of businesses in the KAMs disclosure. Therefore, this result might be beneficial to the regulators and those responsible that they should find ways to help the investors understanding KAMs disclosure that occurs from the factors either audit characteristics or corporate characteristics. They can use the findings as important data when updating and improving the regulations related to the auditor's reports in the future. Their clearer understanding may help them establish a guideline for the auditors to have better communication of KAMs. Finally, this study could help auditors assess whether such additional information and assurance would improve their written communication materials of KAMs in the auditor's report. The result of this study

shows that using more understandable language is appropriate to explain the specific information of businesses in the KAMs disclosure to the investor.

Limitations and Future Research Directions

Limitation

There is a limitation to this study finding which should be stressed. To understand the quality of communication, there are two communication measurements: firstly, readability, which measures whether receivers can properly understand the message from a sender or not (Li, 2008). Secondly, tone, which measures the quality of communication contains either a positive, negative, or neutral tone (Loughran & McDonald, 2016). However, this study measures the quality of KAMs disclosure only KAMs readability. As a result, this study lacks the result of KAMs tone, which can be used to captures the "affect or feeling of a communication" (Henry 2008; Smith, 2016). Since, if the KAMs disclosure reflects the tone of the auditing, the receiver's understanding is improved thereby enhancing communication value.

Future Research Direction

According to the above limitation, it is suggested that a future study should extend the tone of KAMs disclosure of companies listed in the SET and the mai andtest relationships between KAMs tone and investor reaction

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