

The Effect of Corporate Digital Transformation on Real Earnings Management : An
Empirical Evidence form Listed Companies in The Stock Exchange of Thailand

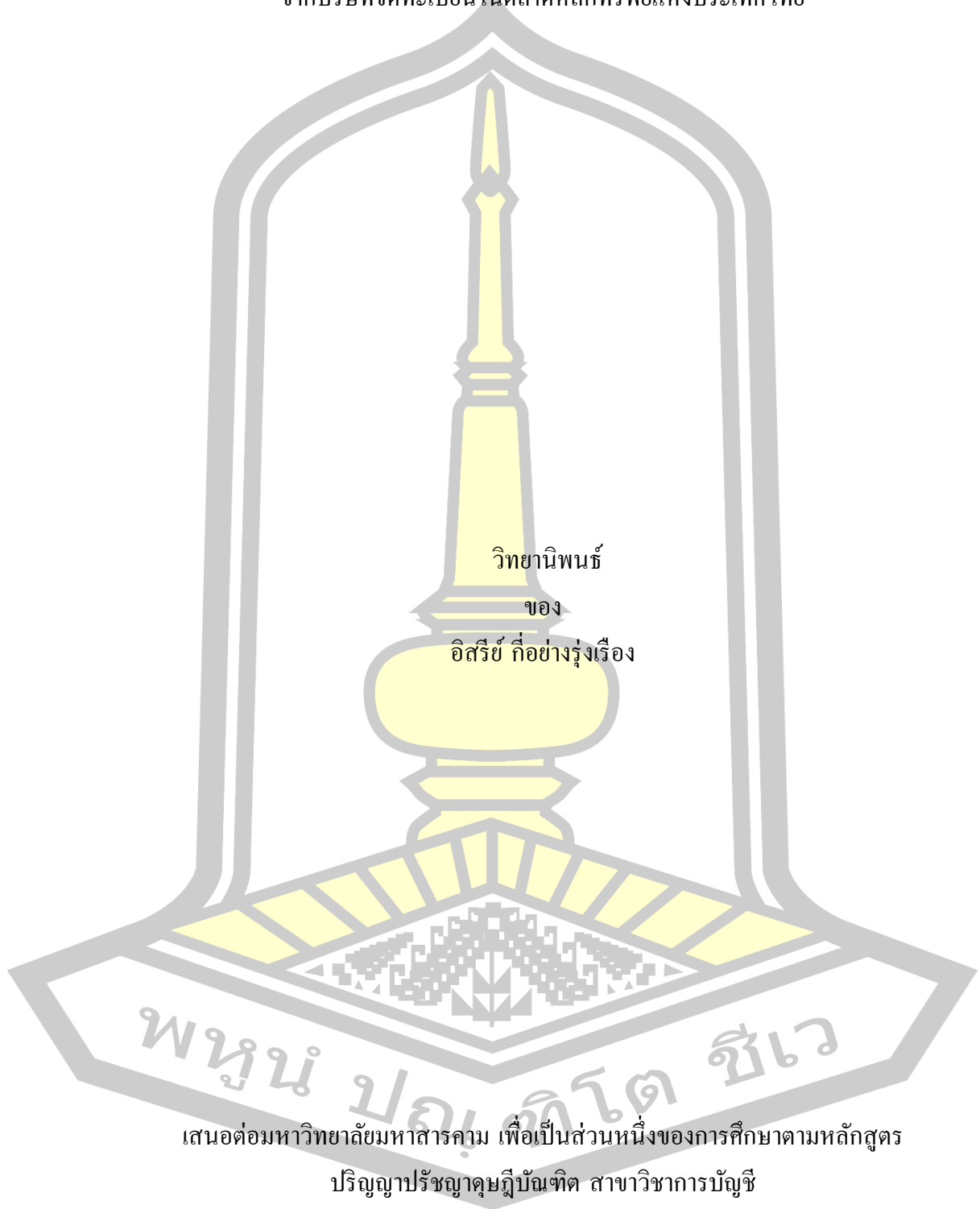
Isari Keeyangrungrueang

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Doctor of Philosophy in Accounting

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ABSTRACT

With the expansion of the digital economy and the development of digital technology, organizations have applied digital technology in production, customer behavior analysis, and data analysis to obtain real-time information. The process of connecting digital technology with the organization's operational processes is called corporate digital transformation, which leads to quality information. However, the acquisition of information depends on the behavior of managers in setting operational policies. Therefore, this study is a study of whether CDT can obtain quality information by reducing the profit management of executives. The objectives of the study are as follows: First, to examine whether the corporate digital transformation has a negative effect on the real earnings management. Second, to examine whether the corporate digital transformation has a negative effect on information asymmetry. Third, to examine whether the information asymmetry has a positive effect on real earnings management. Fourth, to examine whether the information asymmetry negatively mediated the associated corporate digital transformation between real earnings management. And fifth, to examine whether the board-level information technology governance negatively moderates the associated corporate digital transformation between real earnings management. The sample group used in this study was 1,158 companies listed on the stock exchange of Thailand, excluding companies that were listed in the financial industry, which consists of finance and securities, banking, and insurance. Including other industrial groups that carry on fund and trust business. This study uses secondary data to obtain the data based on the 56-1 One Report, annual report, notes to financial statements, the SET Market Analysis and Reporting Tool (SETSMART), and the websites of various companies. Then, the data were analyzed using descriptive statistics and Fixed effect model.

The results of the study found that first, the corporate digital transformation has a positive effect on the real earnings management but not significance. Second, the corporate digital transformation has a negative effect on information asymmetry. Third, the information asymmetry has a positive effect on real earnings management but not significance. Fourth, the information asymmetry negatively mediated the associated corporate digital transformation between real

earnings management but not significance. And fifth, the board-level information technology governance negatively moderates the associated corporate digital transformation between real earnings management.

Keyword : real earnings management, corporate digital transformation, information asymmetry, board-level information technology governance



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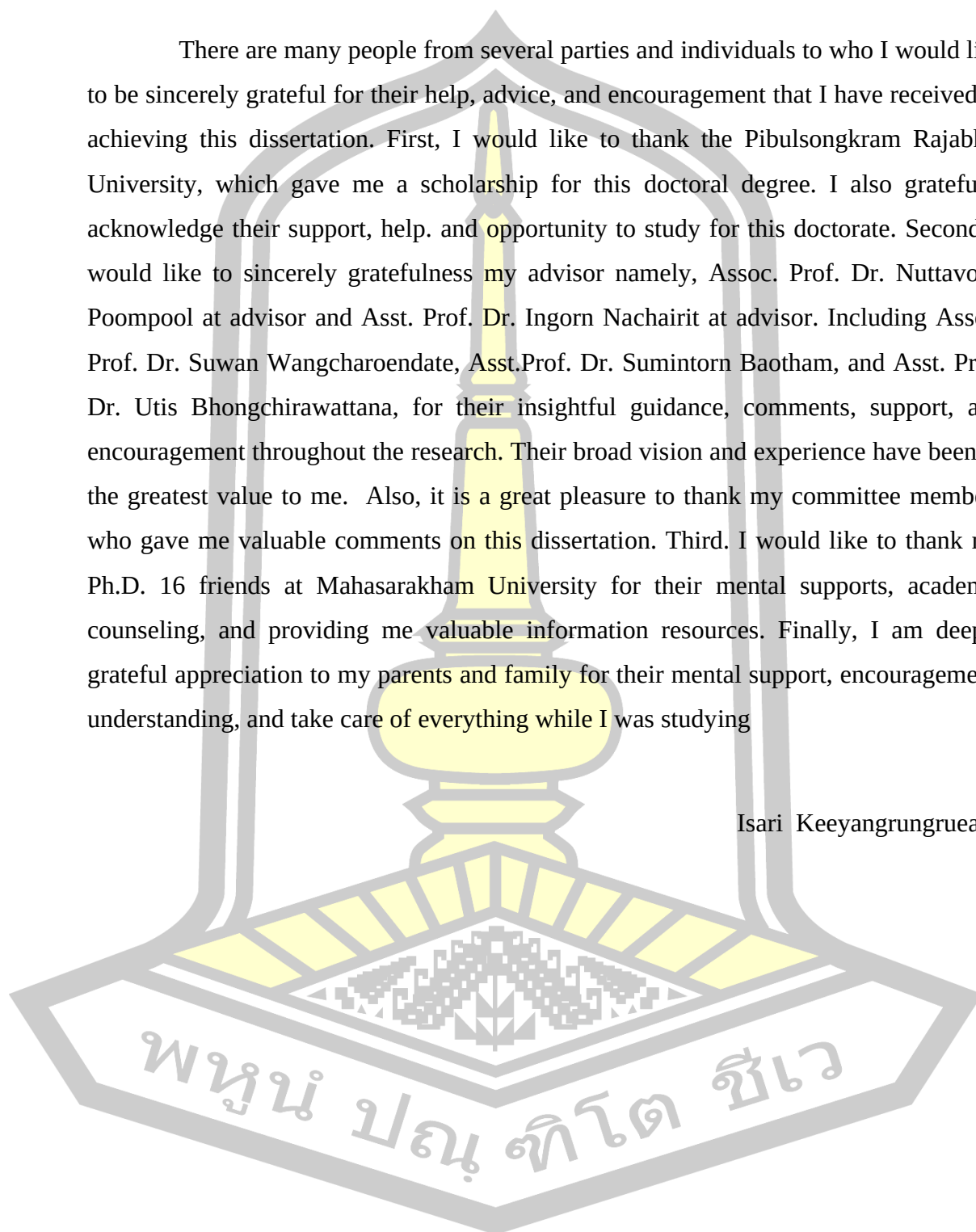


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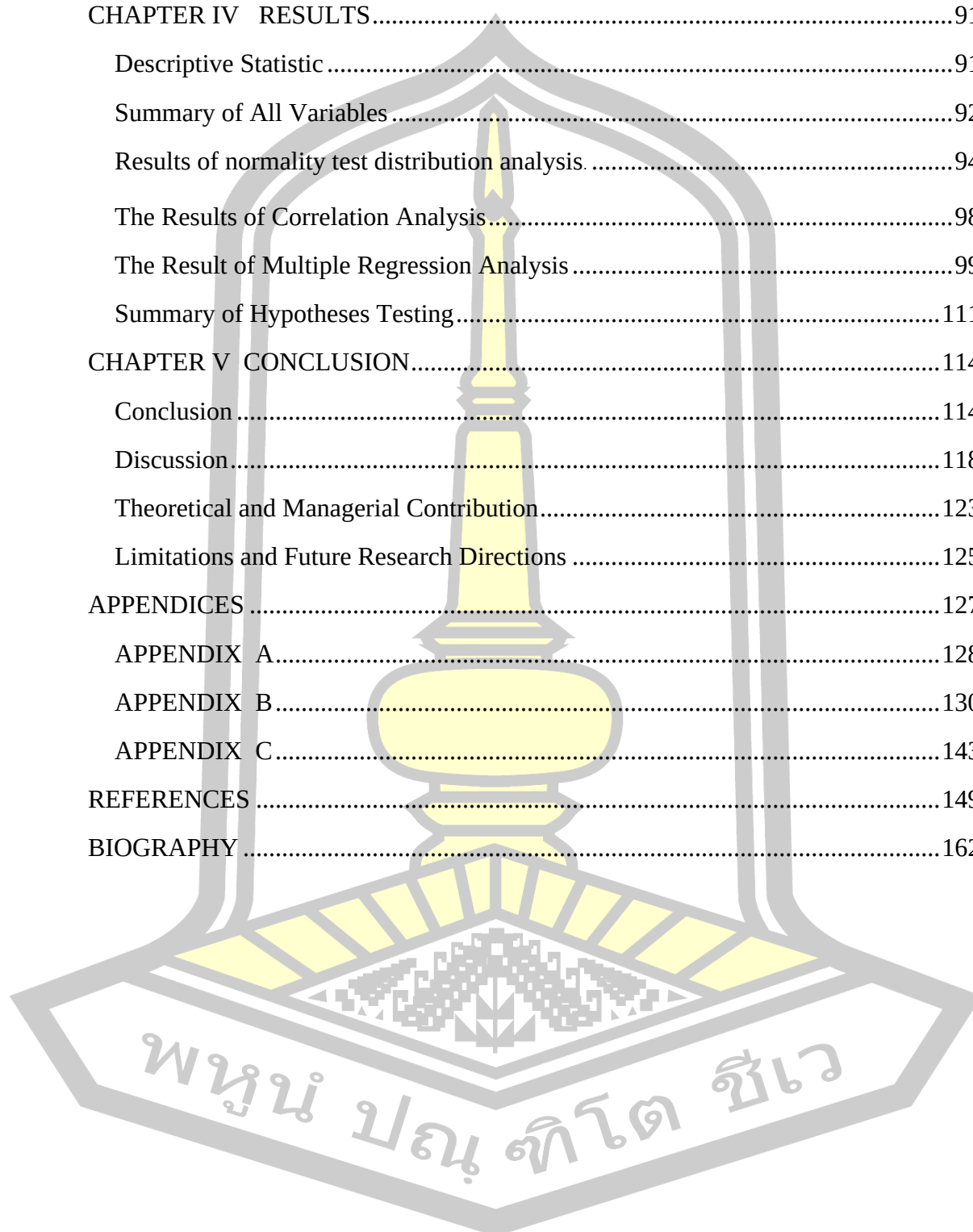
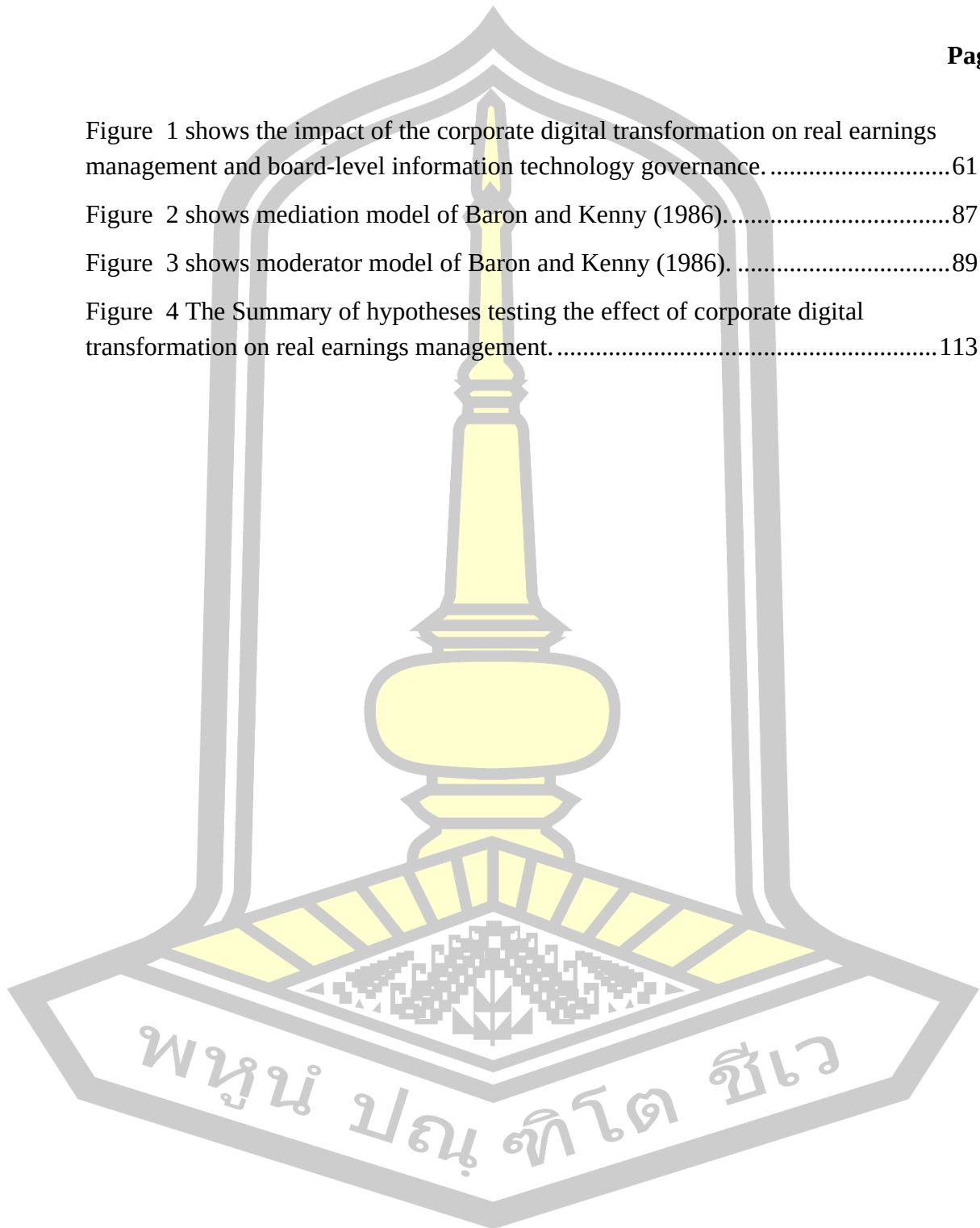


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CHAPTER I

INTRODUCTION

Overview

With the expansion of the digital economy and the maturity of digital technology, the business environment in which enterprises operate is undergoing radical change, data have become a key production factor. Accordingly, digital transformation is now a vital necessity. In response to the digital economy trend, enterprises are actively engaged in digital transformation to digitally empower all of their operations.(Liu & Wang, 2023). Nonetheless, each enterprise exhibits a varying degree of digital technology adoption. Verhoef et al. (2021) categorized corporate technology adoption into three stages. Firstly, the digitization is the conversion of analog data or media into digital form. This allows for the storing, processing, and transfer of computer data, enabling the use of digital data to produce more value., such as converting physical documents into PDF files, without altering the activities that generate value (Parviainen et al., 2017; Plekhanov et al., 2023; Verhoef et al., 2021). Secondly, digitization as the process of turning existing tasks into digital data to optimize the allocation of resources. This may be achieved by utilizing digital forms for order processing and digital apps for internal financial reporting (Huang et al., 2023) and third digitalization as the transforming existing business processes, such as reducing customer communication costs by creating online web platforms, using the cloud systems for data storage and replacing old payment methods with online payment systems and improving finished product rates by collecting data through industrial robots and other equipment. (Parviainen et al., 2017; Verhoef et al., 2021). The technologies used include: 5G mobile networks, sensors, 3D printing, and blockchain, artificial intelligence, cloud, and the Internet of things (IoT) technologies (Warner & Wäger, 2019; Zhai et al., 2022). Digital transformation also involves the implementation of innovative business models and digital strategies to generate value for the company, such as the transition from brick-and-mortar storefronts to digital platforms, the utilization of artificial intelligence to analyze data and forecast

customer behavior, and the implementation of internet of things technology to enable real-time connectivity and control devices in real time. This results in the implementation of “corporate digital transformation (hereinafter CDT)” (Huang et al., 2023). The digital transformation of firms has become an important guarantee for the construction of digital economic systems. Digital transformation can be simply defined as organizational change triggered by digital technologies which are viewed as combinations of information, computing, communication, and connectivity technologies (Hess et al., 2016). It can improve data analysis ability and resource allocation efficiency (Nwankpa & Datta, 2017). Meanwhile digital transformation may seem beneficial, it can also complicate the balancing act between innovation and traditional financial approaches, potentially leading to new forms of profit management that require further scrutiny.

From the phenomenon of the collapse of major American corporations such as Enron and WorldCom, and financial crisis in 2008 was attributed to the poor quality of their accounting data (Akhigbe et al., 2005; Crotty, 2009; Stewart, 2006). Likewise stark corporation public company limited in Thailand that occurred most recently in 2023, which was caused by the manager's process of creating purchases and sales transactions that did not occur in 2021, affecting the quality of accounting data that is Irregularities in income accounts, cost of sales, trade receivables and other related expenses thus leading to bankruptcy (The securities and exchange commission Thailand, 2023b). Based on the aforementioned incidents, it can be concluded that the quality of accounting information inside a firm holds significant importance, especially the earnings aspect is particularly regarded as a significant advancement in the capital market (Bereskin et al., 2018). Therefore, effective accounting information must be accuracy, transparency, faithful presentation, use decision-making and useful usefulness in predicting future operational results. (Zhang et al., 2023). This can be observed from the downfall of Silicon Valley Bank (SVB) in 2022 in the United States is evident. Attributable to the utilization of unqualified information by executives when formulating management decisions, besides that the presence of information asymmetries between the firm and its stakeholders can lead to decisions that cause losses for both parties (Aharon et al., 2023).

Nevertheless, it has been previously discovered that the quality of accounting data has caused in earnings management, manipulation of performance or maybe even instances of financial fraud. This may be readily observed within the roster of publicly listed corporations and significantly undermines the lawful rights and interests of investors and hampers the robust growth of the country (Zhang et al., 2023). Chen et al. (2024) commented that the mechanism of CDT can increase the quality of accounting data. In recent times, overseas stock exchange companies such as Indonesia, Malaysia, Philippines, Singapore, and Vietnam. They have adopted CDT in organizations such as big data cloud, blockchain, artificial intelligence (AI), and fintech (Chen et al., 2024; Zheng et al., 2022) in order to enhance operational efficiency (Warner & Wäger, 2019) bolster competitiveness among managers, those suggested by Ferreira et al. (2019). Therefore, CDT is the process of organizational transformation through the integration of information, technology, communication, and connectivity in the organization. This results in changes in business processes and company capabilities (Chen et al., 2024). Furthermore, implementing CDT has a positive beneficial influence on financial performance, strengthening the organization's management by minimizing earnings management. (Abou-Foul et al., 2021; Chen et al., 2024; Manita et al., 2020). According to Yermack (2017), implementing real-time accounting on the blockchain will significantly diminish the possibility for executives to engage in accounting tricks to earnings management. Moreover, Ding et al. (2020) and Bertomeu et al. (2021) have asserted that the application of machine learnings technology may enhance the accurate and efficiency of accounting information, hence reducing misstatements in financial reports. Nevertheless, some scholars have discovered that CDT may even harm corporate performance. This phenomena is referred as "digital paradox" refers to the scenario where firms invest large amounts of money financial resources towards digital transformation (CDT) with the aim of attaining anticipated income from the capabilities of advanced digital technology. Consequently, the use of CDT will expedite the expenses related to production and research and development expenses in the real earnings management, also known as REM (Roychowdhury, 2006)

Moreover, Ang et al. (2000) found that CDT also alleviates agency problems that arise between managers and shareholders. This process reduces the asymmetry of accounting information within the company by CDT starting when there is an accounting transaction until the reporting stage (Manita et al., 2020) and there is sufficient information for use (Vial, 2019), both stakeholders and managers stakeholders can search for information without paying costs and receive information that must go through management before sending to shareholders (Zhan & Jing, 2022). Based on the provided information, the agency theory explains that the agency problem occurs when executives and shareholders have uneven access to information. However, CDT is capable of effectively transmitting high-quality information to both executives and shareholders. Consequently, there is a decrease in earnings management. (Jensen & Meckling, 1976). These findings align with the research conducted by Zhan and Jing (2022) about the utilization of digital fintech technology in corporate activities. It has a negative impact on the earnings management and creates an imbalance of information. Moreover, according to Knudsen (2020), firms employ social media as a means to communicate with stakeholders and information vacuum to be utilized for querying up-to-the-minute news data throughout the network, aiding in the mitigation of information asymmetry. In contrast to prior research, which shown a positive correlation between information asymmetry and earnings management. This statement asserts that firms that possess significant disparities in information asymmetry between manager and stakeholders are company high earnings management (Abad et al., 2018; Makhoul et al., 2022; Sokhiaw et al., 2018; Zhan & Jing, 2022). Nevertheless, Zhan and Jing (2022) validated that the implementation of CDT adjustment by firms leads to a decrease in both information asymmetry and earnings management. This explains that CDT mitigates information asymmetry, providing executives and stakeholders with more decision-making knowledge, hence diminishing the incentives earnings management of manager (Zhan & Jing, 2022). In addition, CDT has the potential to enhance processing efficiency, establish operational transparency (Hope & Thomas, 2008; Zhou et al., 2018), and enable information tracking (Krahl & Titera, 2015). Executives can obtain precise accounting information, executives therefore receive accurate accounting information, thus reducing their incentive to earnings management (Wang

& Wang, 2019). This is founded on the concepts of agency theory. According to reports, the principal has created a governance mechanism. In order to diminish the motivations of manager to earnings management. By establishing a committee to oversee the activities of the executives and guarantee their alignment with the company's objectives. (Jensen & Meckling, 1976).

Thus, Singh and Alhulail (2023) examined the board-level information technology governance (BLITG) system in Saudi Arabia, a developing country. The study concluded that the board-level information technology governance (BLITG) does not hinder earnings management, but rather enhances the corporate governance environment in the field of information technology (IT), namely in terms of control, administrative and inspection procedures by including IT-qualified independent directors. Besides that, research by of Hamdan et al. (2019); Jewer and McKay (2012) found that characteristics of executive directors in terms of size, number of members, and independence not enough to risk legal issues Sarbanes-Oxley. The addition of the board's IT qualifications will transfer to earnings management. This study differs from the research conducted Li et al. (2007). Additionally, it is shown that organizations with limited IT skills not enough for corporate governance. Therefore, the IT committee should incorporate a committee with authority over administration and auditing functions. Consistent with the resource's dependence theory, the executive board is fundamentally a valuable resource. This must have knowledge and experience (Andriole, 2009; Anuwat Phakdee, 2018), another characteristic that the IT governance committee must have is that ownership (Singh & Alhulail, 2023) , which is based on stewardship theory, views managers function as stewards, safeguarding the interests of the company and its owners (Donaldson & Davis, 1991).

In Thailand, the corporate digital transition (CDT) of large enterprises in the country has begun in genuinely. During the year 2012, starting with businesses in the information and communications technology group. These are the first industries that are most affected by changes in digital technology and followed by the financial industry run by fintech startups. Presently, digital transformation is occurring throughout a wide range of industries, encompassing energy, real estate, and retail.

There are several actions or manifestations of digital transformation, beginning with the utilization of digital technology to enhance work operations (Promsa-ad, 2022). The government has promoted the use of digital more by establishing the Ministry of digital economy and society. To develop communication infrastructure, support the use of technology and digital innovation including human resource development to increase the country's competitiveness raise the quality of life of the people to lead to the digital era 4.0 on September 19, 2016 (Ministry of Digital Economy and Society, 2023). In a similar vein, the Stock Exchange of Thailand has promoted the use of digital technology by requiring companies on the stock exchange to follow require listed companies to comply with the principles of good corporate governance in section five regarding promoting innovation and responsible business operations, principles of practice, Section 5.4 the board should establish a framework for supervision and management of information technology at the international level, an organization that is consistent with the needs of the business and ensures that information technology is used to increase business opportunities and the main goals of the company in 2017 (The Securities and Exchange Commission Thailand, 2023).

In 2016 - 2020, listed companies in the stock exchange of Thailand carried out digital transformation and reported their activities to investors in the company's annual report. The number of disclosures indicates that digital activity has continued to increase across industries. The industry with the highest penetration of CDT is the financial industry, construction and real estate industries and service industry specifically, the industry with the highest level of data reporting is the financial services industry. This is consistent with the phenomenon that has occurred in the financial industry, especially banks are one of the businesses most affected by the change in changed by digital technology (Digital Disruption). The information or words that are found to be reported the most will be It is not high-end digital technology. The first three words that appear most frequently are digitization, online, and E-commerce. In which CDT information is disclosed to the market and investors. It creates a positive perspective that affects the value of the business (Promsa-ad, 2022). However, protecting the legitimate interests of retail investors is still a common problem in emerging markets (Thailand) (Chen et al., 2022). Despite the

firm's efforts to enhance its management and sustain its operational performance via CDT, both theoretical and practical perspectives deem the quality of accounting data inadequate for effective company management and the ultimate goal of the company (Gebauer et al., 2020). Executives are motivated to earnings management due to this rationale. In order to meet the contractual commitments with the firm, manager is seize the opportunism to select accounting policies in three distinct scenarios of positive accounting theory, namely of incentives for specific returns refers to the bonus plan, benefits in accordance with the conditions outlined in loan agreements between owners and creditors (The Debt Covenant) and political costs when executives generate earnings that distort the facts, aiming to minimize their tax payments to the government (Watts & Zimmerman, 1990). Improving the quality of accounting information is therefore an important topic (Lin et al., 2018). Hence, the implementation of CDT listed companies in the stock exchange of Thailand will alter the conduct of executives manipulating accounting data, establish data symmetry, mitigate conflicts of interest between executives and stakeholders. Results in the solving of agent problems. This includes the existence of board level - IT governance mechanisms lead to a decrease in earnings management. How can it be in the Thai context?

This research therefore selected the context of listed companies in the stock exchange of Thailand from 2017 - 2022 in order to collect the use of digital technology to enter CDT in accordance with the policy of the Ministry of Digital and Technology that promotes the use of digital technology and principles of good corporate governance of the Stock Exchange that came into effect in 2017. The aim of this research is one of the few, conducted both domestically and internationally, that provides insight into the viewpoint that supports the existing literature on the impact of CDT on real earnings management through to information asymmetry and implementing the board level - IT governance mechanisms to mitigate real earnings management.

Research Questions

1. How does the corporate digital transformation has a negative effect on the real earnings management of listed companies in the stock exchange of Thailand?
2. How does the corporate digital transformation has a negative effect on information asymmetry of listed companies in the stock exchange of Thailand?
3. How does the information asymmetry has a positive effect on real earnings management of listed companies in the stock exchange of Thailand?
4. How does the information asymmetry negatively mediated the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand?
5. How does the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand?

Purposes of the Research

1. To examine whether the corporate digital transformation has a negative effect on the real earnings management of listed companies in the stock exchange of Thailand.
2. To examine whether the corporate digital transformation has a negative effect on information asymmetry of listed companies in the stock exchange of Thailand.
3. To examine whether the information asymmetry has a positive effect on real earnings management of listed companies in the stock exchange of Thailand.
4. To examine whether the information asymmetry negatively mediated the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand.
5. To examine whether does the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand.

Scope of the Research

This research aims to examine whether the corporate digital transformation has a negative effect on the real earnings management of listed companies in the stock exchange of Thailand, whether the corporate digital transformation has a negative effect on information asymmetry of listed companies in the stock exchange of Thailand, whether the information asymmetry has a positive effect on real earnings management of listed companies in the stock exchange of Thailand, whether the information asymmetry negatively mediated the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand and examine whether does the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand.

This research is empirical research using secondary data in the study. In addition, the population is all listed companies in the listed companies in the stock exchanges of Thailand (SET), across eight industries as follows: Financials, Agro & Food, Consumer products, Industrials, Property & Construction, Resource, Service, and Technology. The population is 4,087 firm-year observations (on December 31, 2022), during the year 2017-2022 for a total of six years. However, the aforementioned industries were selected to provide complete CDT dimensions (Promsa-ad, 2022) . The period used in the research was when the government announced the Thailand Digital Government Plan 2017-2022. (Ministry of Digital Economy and Society, 2023; Sagarik et al., 2018) and the Securities and Exchange Commission has revised the principles of good corporate governance for listed companies in 2017 (Anuwat Phakdee, 2018; The securities and exchange commission Thailand, 2023a; Wangcharoendate, 2023). This study resulted in a sample of 193 companies and 1,158 observations, as numerous firms in the population did not satisfy the study criteria.

This study collected data as follows. corporate digital transformation is collected from the annual report through Python with the text analysis method. Moreover, the data used to measure the Information asymmetry, earnings

management, board-level information technology governance attributes and firm size, leverage, growth and covid-19, as well as financial accounting data for control variable are collected from the SET market analysis and reporting tool (SETSMART) database, the stock exchange of Thailand's website and annual report (The securities and exchange commission Thailand, 2023b)

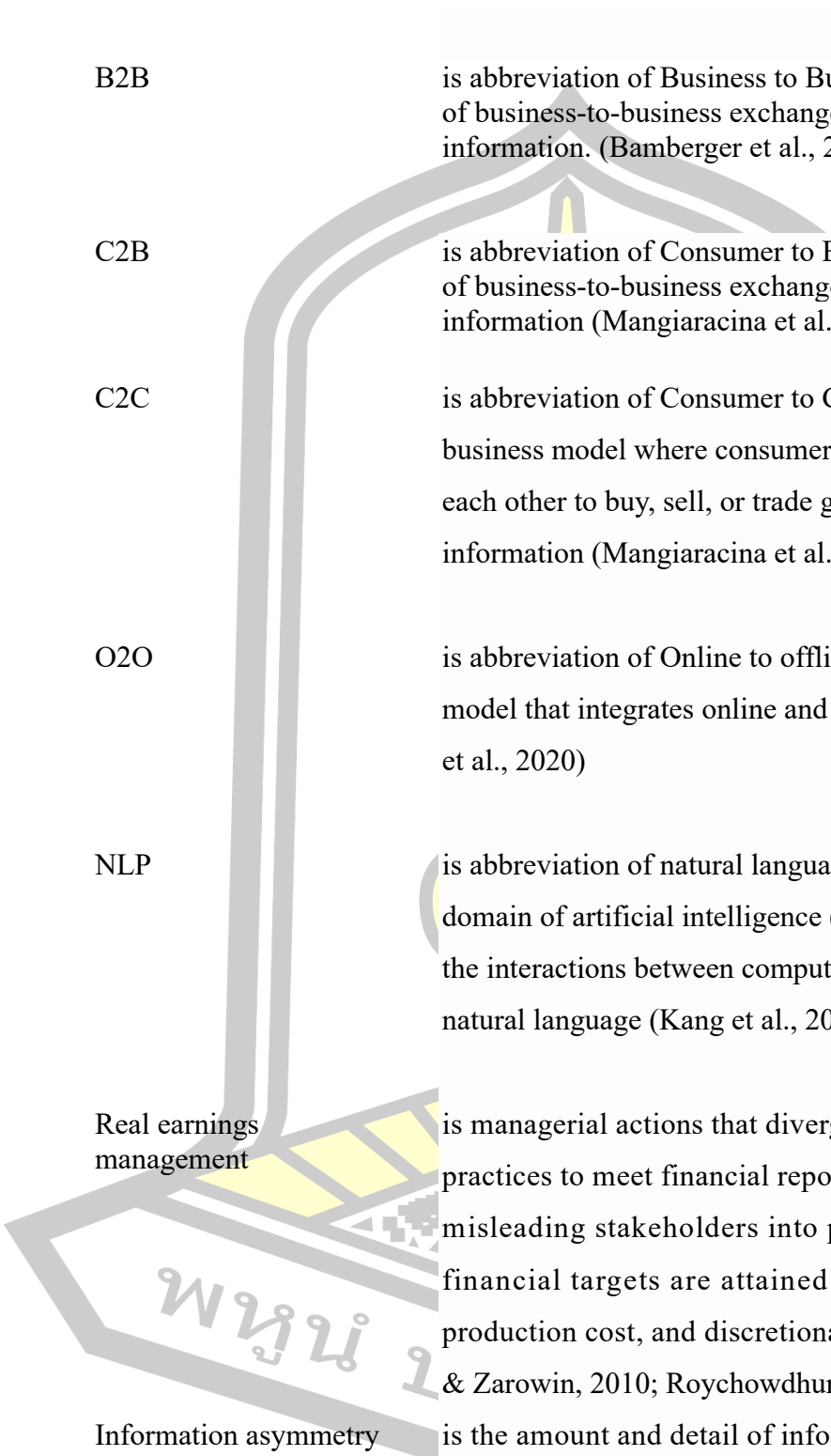
Key Words and Definitions

Corporate digital transformation

is process in which firms apply digital technologies to their products, processes and organizations. Through the search process, 167 CDT keywords were retrieved as follows: 3d print, 5g, application, artificial intelligence, artificial reality, augmented reality, authentication, auto pilot, automation, autonomous driving, autonomous technology, b2b, big data, billion-level concurrency, biometric, biometric technology, biometrics, bitcoin, blockchain, bots, brain like computing, business intelligence, c2b, c2c, click-through rate, cloud, cloud collaboration, cloud computing, cognitive computing, converged infrastructure, credit investigation, cryptocurrency, data analytics, data architecture, data capturing, data integration, data lake, data mining, data monetization, data processing system, data science, data visualization, data visualizations, decentralized finance, deep learning, deep learnings, devops, differential privacy, differential privacy technology, digital, digital currency, digital finance, digital marketing, digital twin, digitalization, digitally, digitization, distributed computing, eb level storage, ebusiness, e-business, E-catalog, Ecatalogue, Ecommerce, E-commerce, Edge Computing, Elearning, E-learning, Electric Commerce, Emobility, E-mobility, E-procurement, Epublishing,



E-publishing, Eservice, E-service, face recognition, figure calculation, financial technology, fintech, flow calculation, fusion architecture, green computing, heterogeneous data, hightech, high-tech, human cloud, image recognition, image understanding, industrial internet, industry 4.0, influencer, information physical system, in-memory computing, intelligent cultural tourism, intelligent customer, intelligent data analysis, intelligent environmental protection, intelligent investment adviser, intelligent marketing, intelligent medicine, intelligent robot, robotics, robots, intelligent systems, intelligent transportation, internet, internet connection, internet medicine, internet of things, IoT, investment decision support system, machine learning, memory calculation, metaverse, mixed reality, mobile internet, mobile payment, natural language processing, NEC payment, neural network, new economy, newsfeed, NFC payment, NLP, O2O, office automation, online, online finance, open bank, open banking, open source, organizational capital, platform, quantitative finance, quantum computing, secure multi-party computation, selfdriving car, semantic search, sentiment analysis, serverless computing, sharing economy, smart agriculture, smart content, smart contracts, smart devices, smart energy, smart factory, smart financial contracts, smart grid, smart healthcare, smart home, smartphone, smart investment, smart transportation, smart wear, social media, software, speech recognition, text mining, third party payment, unmanned, unmanned retail, virtual reality, voice recognition, web 3.0, and web based (Zareie et al., 2024; Zhou & Li, 2023).



B2B	is abbreviation of Business to Business refers to a form of business-to-business exchange of goods, services and information. (Bamberger et al., 2025; Tanner Jr, 2021).
C2B	is abbreviation of Consumer to Business refers to a form of business-to-business exchange of goods, services and information (Mangiaracina et al., 2015; Tanner Jr, 2021).
C2C	is abbreviation of Consumer to Consumer refers to a business model where consumers directly interact with each other to buy, sell, or trade goods, services, and information (Mangiaracina et al., 2015)
O2O	is abbreviation of Online to offline refers to a business model that integrates online and offline channels. (Yang et al., 2020)
NLP	is abbreviation of natural language processing, is a domain of artificial intelligence (AI) that concentrates on the interactions between computers and humans using natural language (Kang et al., 2020).
Real earnings management	is managerial actions that diverge from normal business practices to meet financial reporting objectives, thereby misleading stakeholders into perceiving that specific financial targets are attained through regular sales, production cost, and discretionary expenditures (Cohen & Zarowin, 2010; Roychowdhury, 2006).
Information asymmetry	is the amount and detail of information contained in the company, with managers receiving more information than shareholders because they have authority to access information (Turel et al., 2017)

Board-level information technology governance	is governance, control, and audit procedures executed by the organization's senior management board, incorporating IT competencies and other governance-related attributes. (Benaroch & Chernobai, 2017; Singh & Alhulail, 2023).
Firm size	is the natural log of total assets (Al-Haddad & Whittington, 2019; Chen et al., 2024; Marei et al., 2023).
Leverage	is the effect of potential financial problems that show as the total debt divided total assets. (Al-Haddad & Whittington, 2019; Chen et al., 2024; Yang et al., 2022).

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, corporate digital transformation, real earnings management, Information asymmetry and board-level information technology governance, 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

This chapter describes the content of the literature review related to this research. Therefore, this chapter is divided into five sections. The section first describes theoretical perspectives employed to explain the research phenomenon include the, institutional theory, agency theory, stewardship theory and resource dependency theory. The second section describes the concept of corporate digital transformation, real earnings management, information asymmetry and board-level information technology governance. The third component is formulating assumptions. The text starts by elucidating the correlation between the variables. In order to derive conclusions and lead to assumptions and summarize the results of all assumptions. The final part covers the study's conceptual framework, which aims to provide a comprehensive understanding of the study as a whole.

Theoretical Foundation

This study employs four main theories: firstly, institutional theory which explains corporate digital transformation. Secondly, the agency theory used to explain the corporate digital transformation has a negative effect on the real earnings management, the information asymmetry has a positive effect on real earnings management, information asymmetry negatively mediated the associated corporate digital transformation between real earnings management, and board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management. Third, the stewardship theory used to explain the board-level information technology governance for the structural characteristics of the board of directors in terms of board size, directors' ownership and board independence. Finally, the resource dependency theory is applied to explain board-level information technology governance for the structural characteristics of board IT Capital, the executive committee has a CIO or CTO and IT Committee or other IT. Each applied theory is detailed as follows.

Institutional theory

Institutional theory focuses on elucidating how organizational behavior is shaped by the norms, symbols, and social structures that govern the organization. This theory posits that organizational success relies not only on performance but also on the capacity to adapt to the expectations of its social and cultural milieu. In line with Carpenter and Feroz (2001), institutional theory plays an important role in explaining organizational behavior, especially in contexts where organizations must adapt to external pressures and expectations, be it rules, social norms, or those of professional groups. This theory posits that organizations frequently embrace structures or management practices deemed "legitimate." In addition, Scott (1987) also said that institutional theory says that an organization's behavior and structure are affected not only by how efficient or competitive it is but also by adapting to social pressures, expectations, and pressures in order to be created as legitimate and improve its chances of survival in the long term.

Therefore, based on the above definitions, it can be concluded that the main mechanisms leading to institutional theory are five aspects (Carpenter & Feroz, 2001; Scott, 1987), namely: The initial aspect pertains to the formation of organizational behavior and structure influenced by the social environment, encompassing its rules, norms, and expectations. The second aspect involves the creation of legitimacy, wherein the firm modifies its actions to align with societal perceptions of appropriateness to secure acceptance and support from stakeholders, including investors, customers, and regulators. The third part is the institutionalization process, which starts with dealing with social pressures, setting up and changing organizational structures to fit those norms, and creating behavior patterns or structures that are typical for the organization. The fourth principal mechanism in institutional theory is coercive isomorphism, stemming from governmental and regulatory mandates that organizations are obligated to adhere to; mimetic isomorphism, which occurs when organizations replicate the successful practices of others in uncertain contexts; and normative isomorphism, which is influenced by professional standards established by professional organizations or accounting associations that dictate guidelines for organizational conduct. The fifth feature pertains to the objective of institutional

theory: organizations must adjust to evolving surroundings by adopting analogous practices.

Carpenter and Feroz (2001) utilizes institutional theory to analyze the influence of coercive institutional pressures on governmental decisions in four US states (New York, Michigan, Ohio, Delaware) concerning the acceptance or rejection of generally accepted accounting principles (GAAP) for external financial reporting. The results demonstrate that New York and Michigan adopted a "compromise" strategy in response to external pressure. Ohio has adopted a "defy" strategy. Delaware first utilized a "manipulation" approach and successfully adopted GAAP with the rise of supportive political figures in the 1990s. The conclusion is that coercive pressures: resource allocation was a significant force driving some states' early adoption of GAAP. Besides, (Bansal, 2023) studied the impact of institutional equivalents on the earnings management practices of firms. Drawing the tenets from the institutional theory, the study posits that firms having a common industry and region are strongly imitating each other. Based on a sample of 18,744 firm years spanning over 12 financial years (March 2010–March 2021) of Indian firms, results show that the earnings management practices of a firm's institutional equivalents and the firm's own earnings management are positively associated, implying that firms closely follow their institutional equivalents. The association is found to be more pronounced when the difference between the earnings management levels of industry and local peers is greater, implying uncertainty increases the likelihood of imitation among firms. In line with Brahmana et al. (2018), that studied the application of institutional theory to explain the relationship between corporate environmental disclosure and earning management. The main focus was on 238 public listed companies, in three different industries, namely construction, technology and trading industries. The study was conducted from 2008 to 2014. The study results found that the corporate environmental disclosure is positively related to the earning management, implying the presence of earning management increases corporate environmental disclosure. Meanwhile, this study's result had different industries are subjected to different norms, organizational structure and rules. Firms from the same

industry are expected to show similar disclosure. Therefore, it is consistent with institutional theory.

Past research concluded that (Bansal, 2023; Brahmana et al., 2018; Carpenter & Feroz, 2001) companies that are influenced by the norms, rules, and practices prevalent in the same institutional environment will have the same approach to earnings management, such as using GAAP according to the coercive institutional pressure from the accounting profession to follow the same accounting practices, including companies in the same industry or located in the same locality that are pressured to learn. In addition, companies with the same norms and practices in using social and corporate governance (ESG) in their management have the same practices.

This research uses institutional theory to illustrate that the corporate digital transformation. Because in 2017, the Thai government urged all corporate sectors to embrace digital innovation technologies to propel the economy into the digital era 4.0 (Ministry of Digital Economy and Society, 2023). Furthermore, in 2018, the Stock Exchange of Thailand promulgated corporate governance requirements to encourage listed companies to use CDT to increase business opportunities (The securities and exchange commission Thailand, 2023a). This is grounded in institutional theory, which posits a mechanism of coercive and normative pressures compelling companies to adhere to rules. Including, the covid crisis in 2019-2021 prompted all industry groups to implement CDT, which improved the quality of accounting data and led to a decrease in real earning management. In a setting with the covid crisis and CDT management at that time, managers may have less actually manage profits as well. This fits with the institutional theory of mimetic isomorphism mechanisms (Chen et al., 2024; Promsa-ad, 2022; Wangcharoendate, 2023). Therefore, this research substantiates institutional theory by employing coercive and normative isomorphism, alongside environmental, regulatory, and institutional elements, including and mimetic isomorphism to elucidate how firm utilization of CDT affects managers' real earnings management methods.

Agency theory

Jensen and Meckling (1976) explain that agency theory refers to the relationship of two parties. According to an agreement made by one or more persons. This is referred to as the employer or principals. They are engaged a different party to perform some service on the principal's behalf. The other person is referred to as the contractor or agent. The agent acquires a power of attorney from the principal to manage and decision-making authority of the company on behalf of the principal. Additionally, the agent will be compensated on management from the principals. Nevertheless, the principle has the belief that the agent's management of the tasks will not result in the principal attaining optimal utility. The agent's inappropriate behavior may be attributed to the misuse of their delegated power, wherein they prioritize personal gain rather than adhering to the contractual obligations associated with their role. The occurrence being referred to is commonly known as a "conflict of interest" between the agent and the principal, which therefore gives rise to what is known as "agency problem". Consequently, the principal implements several measures, including the establishment of limitations and incentives, to mitigate the occurrence of incorrect actions by agents, such as mechanisms for overseeing the operations of administrators. This requires compensation to be paid to the monitoring committee (Davidson et al., 2005). Furthermore, in some circumstances, a potential resolution might involve the implementation of incentives, namely in the form of equity-based remuneration, to motivate agents and foster a sense of ownership in the organization (Harris et al., 2019).

Jensen and Meckling (1976) proposed the concept of agency costs, which encompass three distinct expenses that arise in certain situations. Firstly, there is the cost associated with monitoring the agent by the principal. Secondly, there are the bonding expenditures by the agent to ensure adherence to the contractual agreement. Lastly, the issue of unresolved agency cost or residual loss. Residual loss represents the pertains to the decrease in the overall well-being of the principle due to the discrepancy between the decisions made by the agent and the actions that would have maximized the principal's well-being. Hence, it is noteworthy that the occurrence of agency costs in each scenario entails the involvement of two or more people. Despite

the absence of a distinct principle or agent. Conclude, considering all of the aforementioned points The study revealed that agency theory pertains to the examination of the interplay between two entities. The necessary authorization has been granted to carry out the task on his behalf. and maintain a strong association in connection to agency contracts, monitoring, and agency costs. This particular scenario is commonly observed in the context of relationships between shareholders, who assume the role of principals, and managers, who function as agents, inside the operational framework of a corporation.

Previous scholarly investigations have employed agency theory as a framework to elucidate the dynamics between shareholders, who act as principals, and managers, who serve as agents, within the context of earnings management research In the corporate context, shareholders, who assume the roles of owners or principals, engage in the practice of appointing agents to serve as managers, with the expectation that these managers would diligently work towards the objective of maximizing value for the firm . In contrast, executives are motivated by self-interest. The objective is to identify accounting methods that maximize the company's benefits while simultaneously yielding personal advantages (Boachie & Mensah, 2022; Makhoul et al., 2022; Orazalin & Akhmetzhanov, 2019). Thus, executives have opted for various strategies of earnings management to serve their personal interests. which can be divided into two methods as follows: accrual earnings management refers to the manipulation of financial results through discretionary adjustments to accounting entries and real earnings management refers to the manipulation of reported earnings through actual business activities or processes (Cohen et al., 2008) Nonetheless, management's behavior in real earnings management has increased. Due to the possibility of detection by auditors and regulatory bodies (Cohen & Zarowin, 2010). Consistent with Phakdee and Srijunpetc (2021), earnings management techniques are an important part of agency theory, wherein executives select these techniques to exploit chances for personal gain (Jensen & Meckling, 1976). Consequently, the concept of earnings management emerged, creating potential information asymmetry conflicts of interest between shareholders and managers. (Jensen & Meckling, 1976; Nimpi & Jantarakolica, 2021; Orazalin & Akhmetzhanov, 2019). Based on the

principles of agent theory the issue of information asymmetry is a significant factor that impacts the disclosure of accounting information. Nevertheless, this might be attributed to the limited accessibility of certain information to certain parties. However, certain parties do not have access to it. The lack of comprehensive information may potentially give rise to skepticism and transparency of financial statements (Makhlouf et al., 2022). Al-Haddad and Whittington (2019); Singh and Alhulail (2023) asserted that the board serves as a corporate governance mechanism that mitigates executives' opportunistic behavior and agency costs, while also alleviating conflicts of interest between shareholders and executives, in accordance with agency theory (Jensen & Meckling, 1976). In line with Shah et al. (2024) statement, agency theory considers corporate government as an internal audit mechanism to reduce conflicts between shareholders and managers. Corporate governance mechanisms sometimes manifest as board features, including board size, board independence, chief executive officer duality, and managerial ownership (Abdou et al., 2021; Al-Haddad & Whittington, 2019; Saleh et al., 2023). However, in the digital age, boards must possess enhanced IT competency traits to diminish earnings management (Singh & Alhulail, 2023). Additionally, there exists another type of corporate governance mechanism, which consists of the criteria and regulations that companies must adhere to to maintain good corporate governance. For example, in Thailand, there is the Thai Institute of Directors Association that assesses the good corporate governance of companies by giving a score called Corporate Governance Score, based on the principle that companies with high scores will have fair management and honesty in disclosing information to shareholders correctly (Wangcharoendate, 2023). Moreover, Boachie and Mensah (2022) discovered that optimal corporate governance quality measurements were among the strategies that led to less earning management and enhanced performance in African nations.

In summary, the agency theory is applied to explain the corporate digital transformation has a negative effect on the real earnings management, the corporate digital transformation has a negative effect on information asymmetry, the information asymmetry has a positive effect on real earnings management, the

information asymmetry negatively mediated the associated corporate digital transformation between real earnings management, and the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management. According to the agency theory, the principal (shareholder) authorizes the agent (manager) to manage the business to maximize profit for the principal and receive compensation based on the performance. Consequently, the management opts to use the technique of real earning management of actual profits to present the financials to shareholders in a manner consistent with the manager's approach. This leads to shareholders making erroneous judgments and obtaining diminished benefits. Consequently, a conflict of interest exists between the two parties. The cause is the information asymmetry, wherein stockholders possess less information than the manager, who is the operator. However, the implementation of corporate digital transformation in the organization results in the information being presented in real time, accurately, allowing managers and shareholders to have equal information, reducing information asymmetry, resulting in both parties receiving fair benefits, thus reducing earning management. In addition, this research uses agency theory to elucidate BLITG, which pertains to organizations possessing board characteristics that align with the 2017 Corporate Governance Principles and exhibit IT expertise and experience. The combination of the two board features and company digital transformation will reduce behavior in manipulating the real earnings of managers (Chen et al., 2024; Singh & Alhulail, 2023).

Stewardship theory

The foundation of stewardship theory lies in the fields of psychology and sociology. The study purpose is to enable academics to analyze scenarios where administrators, acting as stewards, are motivated to act in the best interests of the principal (shareholders). According to the stewardship theory, executive who do not have conflicts of interest will behave in a way that protects the interests of the company more than their own interests. Despite the misalignment of interests between the stewards and the principal, stewards will collaborate and focus the efficiency and success of the organization (Donaldson & Davis, 1991). Consistent with this, Muth and Donaldson (1998) maintain that the collaborative behavior of the steward will

yield contentment to the principal. Furthermore, the steward protects and enhance the value of shares for shareholders by consistently delivering wealth through long-term stable performance. Therefore, Davis et al. (1997) are of the view that stewards excel as role actors, when utilizing the resources of an organization it is of value. This role brings provides gratification both personal and objective aims are aligned inside the company, leading to a boost in the organization's operating results. The steward believes that the interests of the steward are congruent with the interests of the firm and its owners. The aim is to align with the firm owner's objectives and operate in the same direction (Davis et al., 1997). Including, stewards provide services to the organization with supplementary incentives that exceed their financial compensation. The steward theory presupposes that possess a strong dedication to the organization (Singh & Alhulail, 2023) and aspire to become an exemplary figure who is perceived as competent and esteemed by colleagues and superiors (Donaldson & Davis, 1991). In essence, the theory of stewards posits that stewards are those who develop themselves and serve others rather than those who are interested in themselves and serve themselves. They will combine their personal interests and goals with those of the owner or organization (Chrisman, 2019).

However, Davis et al. (1997) posits that the stewardship theory the successful performance of stewards is influenced by the company's governance structure, which enables the executives to carry out their responsibilities effectively. Autonomous in administration results in decreased expenses for agents. This is congruent with the findings of Elghuweel et al. (2017) which claimed that the Islamic governance committee there is a significant negative association with earnings management. This implies that companies under the purview of the Islamic governance committee will have considerably less participation in earnings management. In order to safeguard the company's interests and enhance the efficacy of legitimacy techniques to mitigate earnings management and generate earnings for stakeholders. it aligns with the stewardship theory. Furthermore, Shah et al. (2024) asserted that good corporate governance mechanisms must possess an independent framework and enable managers to resolve inter-unit conflicts while maximizing profits for shareholders. Meanwhile, the small size of the board facilitates good governance, as stewardship

theory fosters trust and accountability, which may be efficiently managed in a small board through direct oversight and personal relationships among members (Keay, 2017). Furthermore, stewardship theory fosters a sense of commitment and psychological ownership among directors, thus benefiting the organization. Alignment of Director Share Ownership and Interests When directors possess shares, their financial interests coincide with those of shareholders, fostering long-term value-enhancing decision-making (Donaldson & Davis, 1991). Psychological ownership suggests that board participation in decision-making fosters a sense of ownership, which is essential for effective management (Nordberg, 2022).

This research uses the stewardship theory to discuss the IT governance board level of the company. The board structure has the characteristics of the board size, independence, and the number of shares held by the directors. According to the stewardship theory, these three board characteristics will help strengthen the effective corporate governance mechanism by increasing the management power of the managers to reduce profit management and enhance the participation, loyalty, and interests of themselves and the organization or shareholders in the same direction.

Resource dependency theory

Pfeffer and Salancik (1978) addressed resource dependency theory, resources being that "when an organization appoints an individual to a board, it expects the individual will come to support the organization, offer guidance on resolving issues within the company." In the perspective of Zahra and Pearce (1989), resource dependence theory posits that the board of directors is a crucial component of corporate governance. Directors have the ability to safeguard shareholders' interests by effectively controlling managerial activities. Additionally, they may value able services contributions to the organization by establishing its strategic position. Similarly, Benaroch and Chernobai (2017)) stated that the service duties of the IT committee follow the principles of resource dependency theory. A committee is a mechanism that provides a company with environmental links and access to resources that helps limit the company's reliance on external agencies, to reduce uncertainty for the company, and to reduce transaction costs associated with that dependency, each

other environmentally. The board of directors is responsible for providing services to the management, including offering advice and counsel. Recruiting executives possessing specialized talents and offering financial support and other resources. The committee must possess proficiency in the following domains in order to provide these services: knowledge, expertise, experience, skills, relationships, and reputation (Hillman & Dalziel, 2003).

Prior studies have substantiated the notion that leveraging the skills and capabilities of the board of directors leads to enhanced company performance. For instance, Benaroch and Chernobai (2017) conducted research demonstrating that companies experiencing IT failures have managed to enhance the level of IT expertise among their boards of directors, consequently leading to an improvement in market value. In contrast to the findings of Agrawal and Cooper (2017), it has been observed that corporations failing to enhance the skills and abilities of their boards of directors tend to engage in earnings management. Thus, in order to mitigate the decline in earnings management. Resource dependence hypothesis, the board of directors is anticipated to be a valuable resource in implementing effective governance principles, hence functioning as a vehicle to ensure sound corporate governance and mitigate earnings manipulation (Elghuweel et al., 2017). Based on the above information, Resource dependency theory may be summarized as the notion that a company's valuable resources are represented by a committee that is appointed to offer guidance and support to managers in order to align their work with the company's objectives. Nevertheless, the working committee must possess the requisite capabilities, competence, experience, knowledge, and reputation.

This research employs resource dependence theory to examine the governance of information technology at the board level in companies. It posits that an effective board structure and good governance, comprising directors with knowledge, experience, and expertise in IT, is essential for advising and consulting managers to align their activities with corporate objectives. Because directors leverage these IT-specific competencies to safeguard shareholders' interests by effectively overseeing management practices, thereby mitigating the risk of profit manipulation.

Corporate Digital transformation

The industrial world is evolving into a digital one (Kraus et al., 2022). When firms use digital technologies to create new or modify existing business models and processes or to support the transformation of organizational structures, resources, or relationships with internal and external actors, scholars refer to this as digital transformation (Sagarik et al., 2018). This aligns with recent research indicating that digital transformation is but one component of a multifaceted challenge that firms must address to remain competitive in the digital landscape. The evolution comprises three phases: digitization, digitalization, and digital transformation. (Verhoef et al., 2021). Which Before reaching digital transformation, digital evolution has gone through three digital processes. The first process, digitization, focuses on the operation or process of converting data into digital form, namely the transformation of analog data. In order to facilitate the storage, processing, and transmission of computer data, hence allowing the utilization of digital data to generate more value, such as converting physical documents into PDF files. Digitization largely involves the conversion of internal and external document processes into digital formats, without altering the activities that generate value (Parviainen et al., 2017; Plekhanov et al., 2023; Verhoef et al., 2021). The second evolution is digitalization, which involves utilizing IT or digital technology to transform corporate processes, organizations, individuals, and all facets of human society, such as using the cloud systems for data storage and replacing old payment methods with online payment systems and use of robots in production (Parviainen et al., 2017; Verhoef et al., 2021), and finally, the third evolution is digital transformation is digital transformation as the utilization of digital technology to enhance or advance the business in several areas, such as enhancing customer experience, developing work processes, or generating new business models (Promsa-ad, 2022). The key aspect of digital transformation emphasizes strategy above technology, interdisciplinary science that combines several fields such as business, technology and information systems. Thus, the introduction of new digital technology is the process of "corporate digital transformation (CDT)" (Zhou & Li, 2023).

Corporate digital transformation is a significant phenomenon in strategic research and professional development, involving the use of digital technologies to drive significant changes in industry and society (Piccinini et al., 2015). Businesses need to develop strategies that embrace the implications of DT and drive better operational performance to innovate with new technologies (Vial, 2019). Corporate digital transformation involves converting manual labor duties into digital data to allocate resources more economically, changing current company procedures, and introducing new value-creation processes into a company's basic business model through the company-wide adoption of digital technology. The transition from digitalization to digital transformation requires a long process, improving corporate management capabilities in several areas. Firstly, businesses can use new digitization to better handle massive, non-standardized, and unstructured data generated by their daily operations. This data can be coded and output into structured, standardized information, improving decision-making efficiency and quality. Second, transaction costs associated with information gathering, transmission, and control operations are significantly decreased by more digitalization. Lastly, digital transformation promotes management change in crucial business units, divisions, and operations, quickening the development of new business models and improving adaptability and sensitivity to market changes (Loebbecke & Picot, 2015; Verhoef et al., 2021). From the literature review, it can be concluded that the corporate digital transformation (CDT) is a multi-faceted process that significantly impacts the performance of an organization. It involves the integration of digital technologies in all areas of the business, which truly changes the way the company operates and delivers value to the customer.

Earnings management

The topic of earnings management has attracted significant attention from researchers, investors, and regulatory bodies over an extended period of time. This review critically analyzes the fundamental and contemporary literature concerning earnings management. It comprehensively explores the many definitions, methodologies, motivations, impacts, and techniques employed for detecting earnings management.

Earnings management Concept

Most studies of earnings management research have focused on the distortion of accrual practices over the past century (Greusard, 2022; Habib et al., 2022). There are executives in managing earnings to provide maximum benefit to shareholders. Therefore, it is necessary to create an understanding of earnings management. Which researchers have defined the meaning of earnings management as follows:

Schipper (1989) Earnings management is the process by which managers create financial reports while exercising judgment in structuring transactions and financial reporting. Intentionally misleading certain stakeholders about the company's financial performance. This is done in the manager's own interest. Below are some additional points on which this definition could be developed Healy and Wahlen (1999). First, there financial reporting managers' judgment must be used when estimating future economic events. Liabilities for deferred taxes impairment of property and pension benefits. However, in order to calculate depreciation correctly for each kind of asset, managers must use the right accounting principles, or deciding between utilizing the FIFO, LOFO, or average bean weight approach to value inventories. Additionally, managers must choose to make or postpone spending including development and research, such as research and advertising or property maintenance. Finally, they have to choose the business transaction structure. For example, lease arrangements may be configured to contain obligations that are either off- statement of financial position or on-statement of financial position.

The finally goal is to mislead some stakeholders on the financial success of the firm. For instance, the management exercises discretion while determining the estimate of net receivables to ensure the accuracy of the operational results. An empirical study by Zha Giedt (2018) found that combining revenue recognition items that include changes in accounts receivable and deferred revenue creates less understanding for shareholders.

From the above definition of earnings management, it follows that agency theory describes the relationship between two parties. One party is called the principal and the other is called the agent. The principal is the shareholder, and the agent is the manager The principal gives authority to the agent to manage in order to maximize earnings and will pay compensation to the agent. Sometimes compensation may be

paid based on performance. As a result, agents are motivated to manage earnings in order to maximize their own earnings (Jensen & Meckling, 1976). Nevertheless, there are other justifications for implementing earnings management incentives, which will be elaborated upon in the subsequent section.

Earnings Management Motivations

While manager in firms have the authority to make choices in company, shareholders are aware that these decisions may not always be in their best interests. Managers and stockholders both operate in ways that advance their personal interests (Yang et al., 2022). In addition, Manager fraudulently manipulate results by moving income and costs between times of reporting in order to advantage themselves. (Almaharmeh et al., 2021). Similarly, Healy (1985) revealed that managers manipulated their earnings to benefit themselves. Watts and Zimmerman (1990) has suggested that because manager have the option of disclosing confidential data with fellow stakeholders and investors, earnings administration may be advantageous owing to its historical value. This research therefore presents the motivation for earnings management from previous research as follows.

Compensations and payout

Managers may get bonuses, wages, limited stock, and equity options as forms of payment for their services rendered during particular. Healy (1985) found that manager is involved in earnings management to Increase pay with compensation based on net income levels each year, and if the performance presentation is effective, additional bonuses will be given. In accordance with Dechow et al. (1995) association between results management and executives' stock incentives have shown that manager with large remuneration are likely to disclose results that either match or surpass analysts' expectations, however they are not always favorable. Cheng and Warfield (2005) also looked at businesses during the stock market crash of the 1990s. According to the study report, managers at companies that offered stock options controlled earnings ability. Bergstresser and Philippon (2006) it shows that when using stocks as a form of compensation Managers use the accrual basis to manage earnings. Zhou et al. (2018) study changes in compensation for managers and earnings management. Using a sample of Chinese state-owned enterprises to examine

earnings management by means of accruals and real activities. The study found that managers did not earnings management and compensation. This is because the auditor has more influence on the company. Therefore, Chinese companies use real activities instead of accruals earnings management.

Contracting

According to Healy (1985), another kind of contract that drives earnings management is a debt covenant. Positive accounting theory's debt covenant hypothesis states that earnings management may be used for covenant purposes. DeAngelo et al. (1994) record cautious conduct in financially distressed firms, they discover that corporations who breach debt covenants have reduced control over their earnings. By use reduced profitability as a means to lead to contracts. Dyreng et al. (2022) examined comprises initial debt covenant violations reported in 10-Qs and 10-Ks for all Comprises firms during the 1996–2008 sample period violation. The research have three main findings. First, that covenant violations are costly events for shareholders as lenders appear to use their control rights in ways that increase the likelihood of loan repayment but impose costs for shareholders. Second, there is covenant-related accrual-earnings management activities impose significant costs on shareholders, but the research find shareholders are worse off following unsuccessful real earnings management. Third, the shareholders at high violation risk firms are better off when their firms successfully engage in accruals earnings management to avoid a violation compared to shareholders at firms that violate a covenant but do not earnings management. Thus, covenant related earnings management may be in the best interests of shareholders and is not necessarily evidence of shareholder-manager agency conflicts.

Techniques employed for detecting earnings management

The models used earnings management can be divided according to the profit management methods as follows:

Accruals Earnings management (AEM) method

Total accruals model according to Schipper (1989), determining the model for earnings management requires calculating the total accruals (TA) from the financial statements first and then separating the components of discretionary accrual (DA) and non-discretionary accrual (NDA). This is a model used to measure total accrual with the following details:

$$TA_{it} = NDA_{it} + DA_{it}$$

Where

TA_{it} is total accruals to current period.

NDA_{it} is non-discretionary to current period.

DA_{it} is discretionary accruals. to current period.

Hribar and Collins (2002) classified a consolidated accrual model. It is a measure of total accruals from the statement of financial position and cash flow statement as follows, first model a model used to measure total accruals using the total outstanding balance using the statement of financial position. It is a method of estimating from data in the balance sheet, details of which are as shown in the following formula:

$$TA_{it} = \frac{\Delta CA_{it} - \Delta CASH_{it} - \Delta CL_{it} - \Delta DAL_{it} - \Delta DEP_{it}}{A_{it-1}}$$

Where

TA_{it} is total accruals to current period

ΔCA_{it} is change in working assets to current period

$\Delta CASH_{it}$ is changes in cash and cash equivalents to current period

ΔCL_{it} is change in long-term liabilities to current period

ΔDAL_{it} is changes in long-term liabilities due in year and the change in other working liabilities of total current liabilities at year i and year t.

ΔDEP_{it} is the perceived depreciation being the term expenditure in the current year as of year

TA_{it-1} is total accrual to current period is total assets at the beginning of the period. all items in the regression are lagged by one period
 it is index i means company and t means year.

Second model a model used to measure total accruals using a financial cash flow statement. It is a method of estimating from the data in the cash flow approach, details of which are as shown in the following formula:

$$TA_{it} = \frac{NIBE_{it} - \Delta CFO_{it}}{A_{it-1}}$$

where

TA_{it} is total accruals to current period
 $NIBE_{it}$ is net earnings before special deduction to current period
 ΔCFO_{it} is net cash flow from operations to current period
 TA_{it-1} is total assets at the beginning of the period. All items in the regression are lagged by one period
 it is Index (i means company and t means year)

However, all of the Total accruals models misclassified non-discretionary accruals as discretionary accruals (Dechow et al., 2003). Therefore, the models used to measure non-discretion are as follow:

Model non-discretionary accruals

DeAngelo Model

DeAngelo (1986) studied the deliberate actions of management to purchase public trade common shares companies to the non-public firms based on the valued price, which does not reflect the actual fair value price, in order to understate the earned income and increase their future payouts over public stockholders, in order to determine the fair worth. According to DeAngelo (1986) analytical findings, there was no evidence of accrual accounting being used to understate earnings prior to moving the public company private.

DeAngelo (1986) based the model on three suppositions, firstly regulators and industry participants embrace the notion that executives may manipulate reports on finances to understate compensations by lowering earnings. Second, executive of security exchanges declare that executives must reduce the firm's stocks, particularly

prior to payouts; and third the information asymmetry and disagreement between competing interests were employed to lower earnings.

DeAngelo (1986) examined the choices made by executives in 64 publicly listed businesses on the New York and American shares Exchanges. These executives took use of information symmetry, or insider knowledge, to purchase firms' shares after choosing accounting techniques that would inflate the company's earnings ability. The stocks did not represent the true values of the common shares as a result. Furthermore, foreign bids may be rejected by executives who had the majority of the shares.

Executives were able to choose from a variety of accounting strategies to lower earnings, including upwardly biased expense estimates, deferred revenue, accelerated expenses, write-offs, expenditures rather than capitalized, and delaying the recognition of earnings on funding until the merger or acquisition is completed. The accounting accrual reflects the executive's decisions (NDA) and the impact of accounting estimates changes in accounting methods (DA). Consequently, the analysis found no connection between the payout and the actions made by CEOs regarding accrual accounts. This result is in contrast to Healy (1985) assessment that the accrual technique is ineffective at removing systematic income manipulations; accounting earnings realization is a minor aspect of union negotiations, and executive payout may have resulted in conflicts of interest for the executives.

This particular investigation non-discretionary accruals from past periods are considered to be equal to non-discretionary accruals from the current period. Consequently, any alteration in accruals indicates the manipulation by the management. DeAngelo (1986) used the same method as Healy (1985) to compute discretionary accruals. Dechow et al. (1995) state that if the non-discretionary accruals are calculated consistently across time, the non-discretionary accruals measurement in both models (DeAngelo, 1986; Healy, 1985) will be error-free. Otherwise, when assessing non-discretionary accruals, both models will provide an inaccuracy.

To extract earnings management, DeAngelo (1986) used three models. The average value of an aberrant accrual was measured using the equation four, while non-discretionary accruals were measured using the equation five. The three models are detailed as follows.

$$TA_{i,t} = NDA_{i,t} + DA_{i,t}$$

Where

$TA_{i,t}$ is total accruals to current period.

$NDA_{i,t}$ is non-discretionary to current period.

$DA_{i,t}$ is discretionary accruals. to current period.

$$(ACC_1 - ACC_0) = (NDA_1 - NDA_0) + (DA_1 - DA_0)$$

Where

$ACC_1 - ACC_0$ is average decrease in total accruals.

$(NDA_1 - NDA_0)$ is average change in non-discretionary accruals.

$(DA_1 - DA_0)$ is average change in discretionary accruals.

$$NDA_1 = ACC_{it-1}$$

Where

ACC_{t-1} is total accrual for the last period.

NDA_1 is the measurement of non-discretionary accruals.

Jone Model

The Jones model examined international trade systems because chief executive officer have a motive to work toward enhancing import safeguards since doing so will directly benefit importers. Based on the presumption that non-discretionary accruals are constant, the study's findings showed that executives made income-decreases in discretionary accrual accounts during the significance rescue investigations (Jones, 1991). Understandably, increased earnings will enhance the executives' compensations and debt covenants. Executives would somewhat reduce

the income in investigation periods as this will grant a future increase in earnings and, therefore, produce higher reimbursements. Also, not all domestic producers intend to manage earnings since the earnings override the import relief incentive (Dechow & Sloan, 1991).

Since changes in revenue directly affect working capital, such as accounts payable, inventories, and receivable, the Jones model took into account the non-discretionary accruals function of revenue. If sales are made in cash and purchases are made on credit, then β_1 should be negative; otherwise, it should be positive. It was shown that non-discretionary accruals will be impacted by the revenue drop (Dechow & Sloan, 1991). Additionally, β_2 need to be negative because higher property, plant and equipment (PP&E) leads to higher depreciation (Barth et al., 2005). Manager that reduces earnings in order to receive relief might alter accounting practices in order to increase earnings later on, either to better pay out remuneration or to stay in compliance with the covenant. In order to avoid the anticipated export settling up by the regulators or to request for relief again in the near future, executives typically reverse accrual accounts over a period of time more than a year (Marei et al., 2023).

Furthermore, some of the discretionary accruals at some of the businesses that were subtracted under the Jones model may not have been the result of earnings management but rather of business and economic circumstances, such as the purchase and sale of assets with a long lifespan.

Thus, in order to calculate elements that are not at the manager discretion according to the Jone Model can be used as follows:

$$NDA_{i,t} = \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{\Delta SEAL_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \dots\dots\dots(7)$$

Where

$NDA_{i,t}$	is absolute change in total accruals using the cash flow approach defined as the difference between net income of the period and operating cash flow.
$A_{i,t-1}$	is total assets at the beginning of the period. All items in the regression are lagged by one period.
$\varepsilon_{i,t}\Delta PPE_{i,t}$	is absolute change in the sales in the current period.
$\Delta SEAL_{i,t}$	is absolute change in property, plant and equipment in the current period.
$\varepsilon_{i,t}$	is error term.

Modified Jones

Dechow et al. (1995) looked at the industrial model as well as a number of earlier discretionary models (DeAngelo, 1986; Dechow & Sloan, 1991; Healy, 1985). Numerous studies were been out to address the shortcomings of the Jones model. While some used distinct analysts, others left out variables. According to Dechow et al. (1995), the Jones model functions on the presumption that modifications in revenue are not included in discretionary accruals. As a result, the impact of sales deception on revenue is regarded as non-discretionary accruals.

Dechow et al. (1995) applied a model that was the same as Jones' but changed the non-discretionary accruals, which are predicted during the earnings management period, to account for the change in credit sales brought about by earnings management or the change in income has been modified for the modifications in accounts payable in the event period.

Dechow et al. (1995) recognized the need for novel approaches that look at earnings management from several angles. Stated differently, this model differs from others and adds value to the field of accounting since it takes into consideration the possibility that variations in the amount of sales on file are the result of functions related to earnings management (Curuk & Yasar, 2014). Since the modified Jones model is the first to use time-series data and has lower standard error findings than other models.

Thus, in order to calculate elements that are not at the manager discretion according to the Modified Jones as follows:

$$NDA_{i,t} = \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{\Delta SALE_{i,t} - \Delta AR_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t}$$

Where

$NDA_{i,t}$ is non-discretionary to current period.

$A_{i,t-1}$ is total assets at the beginning of the period. All items in the regression are lagged by one period.

$\Delta SALE_{i,t}$ is absolute change in the sales in the current period.

$\Delta AR_{i,t}$ is absolute change in accounts receivables to the current period.

$\Delta PPE_{i,t}$ is absolute change in Gross property plant and equipment in the current period.

$\varepsilon_{i,t}$ is error term.

The Performance-Matching Model

In an effort to improve the Jones and Modified Jones models, Kothari et al. (2005) proposed the performance matching models in 2005. He made the case that enterprises exposed to extraordinary performance changes should anticipate accruals over zero. Kothari et al. (2005) proposed adding current year ROA as an independent variable in the regression models to address the performance problem. According to Kothari, applying modified Jones and regular Jones to high-performing enterprises presents a serious issue.

According to Kothari, when diverse models are used, the results might lead to inaccurate conclusions and are thus untrustworthy. The earnings, cash flow, and economies related to the previous performance of the organization are the cause of the inaccurate outcome. Data from Kothari analysis suggests that industrial practices led to misspecification, which had the effect of producing negative accruals, and that modified Jones and Jones findings were obtained without performance adjustment.

Thus, in order to calculate elements that are not at the manager discretion according to the performance-matching model as follows:

$$NDA_{i,t} = \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{\Delta SALE_{i,t} - \Delta AR_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta PPE_{i,t}}{A_{i,t-1}} + ROA + \varepsilon_{i,t}$$

Where

$NDA_{i,t}$ is non-discretionary to current period.

$A_{i,t-1}$ is total assets at the beginning of the period. All items in the regression are lagged by one period

$\Delta SALE_{i,t}$ is absolute change in the sales in the current period.

is absolute change in accounts receivables to the current period.

$\Delta PPE_{i,t}$ is absolute change in Gross property plant and equipment in the current period.

ROA is net income divided by return of assets to the current period

Yoon Model

The Yoon model is a model designed to examine profit management methods focused on emerging and developed economies (Thunputtadom et al., 2018; Yoon et al., 2006). The Yoon model was derived from the research conducted by Yoon et al. (2006) in order to examine the tools employed by Korean corporations for profit management. The sample was chosen throughout the period from 1995 to 2001. Accounting Standards required cash flow statements starting in 1995. The sample was partitioned into sub according to low, medium, and high discretionary outstanding items. The company's low discretionary outstanding items, it means that the company's income has decreased. While companies with high incomes are considered to be companies with increasing incomes. The accounting earnings are divided into two components: cash flow from operations and accruals. Next, analyze the various sorts of accruals employed by a corporation to either augment or diminish its operational earnings. The study's empirical findings reveal distinct disparities in the methods employed by firm to manipulate their earnings, depending on the directions

of earnings management. To be more precise, firms that aim to increase their revenues of ten utilize non-cash sources, such as gains from selling assets. Firms that experience a decrease in income utilize non-cash charges such as bad-debt expenses and asset-disposal losses. The corporation also employs current accruals, albeit in a restricted manner. The reason for this is that the present amount directly affects the cash flow in subsequent years.

Hasan and Rahman (2019) provide more clarification on the Yoon model in the following manner, this model explains that the total accruals normally depend on the changes in cash sales revenue which is derived from the adjustment of the changes in revenue with the changes in receivables, changes in cash expenses which is resulted from the adjustment of the changes in expenses with the changes in payables, and non-cash expenses counting depreciation expenses and retirement benefits expenses. Discretionary accruals is determined after adjusting non-discretionary accruals with total accruals derived from the adjustment of accounting income with cash flow from operation.

However, researchers in Thailand have employed the Yoon Model to examine the variables that influence motivation in earnings management, as such as, Thunputtadom et al. (2018) found that operating cash flow factors had a negative effect. while the ability to make a profit has a positive effect significantly affecting profit management Including the growth and size of the company has a positive effect. While financial risks have a negative impact, but it was not significant and it was found that Yoon Model was the best able to explain profit management.

Thus, in order to calculate elements that are not at the manager discretion according to the Yoon Model as follows:

$$\frac{TA_{i,t}}{SAEL_{i,t}} = \beta_1 \frac{\Delta SAEL_{i,t} - \Delta AR_{i,t}}{SAEL_{i,t}} + \beta_2 \frac{\Delta EXP_{i,t} - \Delta PAY_{i,t}}{SAEL_{i,t}} + \beta_3 \frac{DEP_{i,t} + \Delta PET_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t}$$

Where

$TA_{i,t}$	is total accruals using the cash flow approach defined as the difference between net income of the period and operating cash flow.
$SAEL_{i,t}$	is absolute change in sale to current period.
$\Delta SAEL_{i,t}$	is absolute change in accounts receivables to the current period.
$\Delta AR_{i,t}$	is absolute change in accounts receivables to the current period.
$\Delta EXP_{i,t}$	is absolute change in cost of goods sold and selling and general administrative expenses excluding non- cash expenses to the current period.
$\Delta PAY_{i,t}$	is absolute change in trade payables: to the current period.
$DEP_{i,t}$	is depreciation expenses in the current period.
$\Delta PET_{i,t}$	is depreciation expenses in the current period.

Real Earnings management (REM) method

Congress created the Sarbanes-Oxley Act (SOX, the Act) in 2002 as a reaction to a series of expensive accounting scandals involving US publicly listed firms. Many elements in the act are intended to enhance reporting transparency, corporate governance, and auditor independence. The advantages and disadvantages of SOX have been hotly contested topics of discussion for a long time. Numerous studies have been conducted on the impact of SOX on the corporate environment, and over two decades after the law's implementation, academics are still doing fresh studies on the subject (Crews & Wilson, 2021). Therefore, managers have turned to earnings management services with real earnings management (REM) method. This aligns with the findings of Cohen et al. (2008), studies have found that after the announcement of the Sarbanes Oxley Act, companies have turned to more real Earnings management. Because it will be difficult to detect by the supervisor and auditor. Therefore, profit management is through real activities. It is another type of profit management in which executives manage profits during the year in order to achieve specified profit targets Roychowdhury (2006).

Roychowdhury (2006) defined real earnings management as the deliberate manipulation of actual activities away from regular operations. Managers are incentivized to deceive particular stakeholders by making them believe that specific financial reporting objectives are being met during regular operations. This will be

through the activities of utilizing management's discretion to expedite sales, modifications to the shipping timetable and postponement of research and development expenditures (Dechow & Skinner, 2000; Fudenberg & Tirole, 1995; Healy & Wahlen, 1999). Furthermore, Graham et al. (2005) provides a definition of real earnings management as the deliberate actions taken by executives to attain certain earnings objectives, such as zero earnings, earnings from the previous year, and projections made by analysts through business activities. However, this meaning can be expanded to say that management will manipulate current period activities for earnings that will negatively impact future cash flows, such as firstly, debt rebate is given to increase sales volume to achieve short-term goals. This is a technique that makes customers hope for a discount in the future. This will cause earnings margins to decrease in the future. Second, excessive manufacturing of goods leads to the accumulation of substantial inventories, leading to substantial earnings in the current year but diminished earnings in the subsequent year.

Consequently, prior researchers have suggested a novel strategy for real earnings management utilizing the latest advanced theory and an auditing method to efficiently regulate income through real-time transactions, accompanied by a study that identifies three management methods. (Cohen et al., 2008; Roychowdhury, 2006; Zang, 2012).

The first is the production method: earnings can be managed through the production level. Generally, a higher production level reduces the fixed costs per unit (Roychowdhury, 2006). In this case, the cost of goods sold (COGS) is unusually low, and the operating margin rises accordingly. The production costs (PROD) are defined as the sum of COGS and changes in inventory during the period. Therefore, abnormal production costs (Ab_Prod) are calculated by subtracting the normal production costs calculated using the following estimation model.

Equation abnormal production costs (Ab_Prod)

$$\frac{Prod_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{SAEL}{A_{i,t-1}} + \beta_3 \frac{\Delta SAEL_{i,t}}{A_{i,t-1}} + \beta_4 \frac{\Delta SAEL_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t} \quad \dots\dots\dots(1)$$

where

$Prod_{i,t}$ is production costs defined as cost of goods sold in the current period plus the change in inventories.

$A_{i,t-1}$ is total assets at the beginning of the period. All items in the regression are lagged by one period.

$SAEL$ is revenue in the current period.

$\Delta SAEL_{i,t}$ is absolute change in revenues to the current period.

$\Delta SAEL_{i,t-1}$ is absolute change in revenues to the previous period.

$\varepsilon_{i,t}$ is error term.

The second is the discretionary expenditure method: production method: management can boost reported earnings by cutting discretionary expenditures, such as expenditures on research and development, advertising and general administration. However, if there is no data on advertising or research and development costs, only SG&A will be used, with advertising and research and development costs equal to zero. This unusual reduction in spending can be detected by the abnormal discretionary expenditure's metric (Ab_Disexp) that is, the difference between an abnormally low level of discretionary expenses and the normal discretionary expenses estimated from the following model. Estimation of production costs as shown in the following formula:

Equation abnormal discretionary expense (Ab_Disexp)

$$\frac{Discexp_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{SAEL_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \quad \dots\dots\dots(2)$$

where

$Discexp_{i,t}$ is the discretionary expenses including selling, general and administrative expenses, research and development expenses, and advertising for firm i in year t , the current period
 $A_{i,t-1}$ is total assets at the beginning of the period. all items in the regression are lagged by one period
 $SAEL_{i,t}$ is revenue in the current period
 $\varepsilon_{i,t}$ is error term

The third is the sales method: earnings can inflate its sales income by providing more lenient credit terms or price discounts. This typically results in an unusually low cash flow from operations (CFO). The gap between the normal level of CFO and the actual CFO can be captured by abnormal CFO (Ab_CFO). The normal levels of CFO are calculated as follows:

Equation abnormal cash flow from operations (Ab_CFO)

$$\frac{CFO_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{SAEL_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta SAEL_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \quad \dots\dots\dots(3)$$

$CFO_{i,t}$ is cash flow from operations in the current period.
 $A_{i,t-1}$ is total assets at the beginning of the period. all items in the regression are lagged by one period.
 $SAEL_{i,t}$ is revenue in the current period.
 $\Delta SAEL_{i,t}$ is absolute change in revenues to the current period.
 $\varepsilon_{i,t}$ is error term.

Following and Cohen and Zarowin (2010) and Wen et al. (2023) total REM is calculated as below.

$$REM = Ab_Prod - Ab_Disexp - Ab_CFO$$

where

REM	is total of abnormal production costs, discretionary expenses, and operating cash flow.
Ab_CFO	is abnormal cash flow. measured as deviations from the predicted values from the corresponding industry-year regression from equation 1.
Ab_Prod	is abnormal production, measured as deviations from the predicted values from the corresponding industry-year regression from equation 2.
Ab_Disexp	is abnormal discretionary expense, measured as deviations from the predicted values from the corresponding industry year regression from equation 3.

This REM represents the firm's overall real activity-based earnings management level.

Information asymmetry

The asymmetric information was mentioned in the study of Akerlof (1970), defined information asymmetry as the situation where the quantity of information possessed differs depending on the specific type of information. Information asymmetry arises when one side has more information than the other. Then further developed by Spence (1978) existence of information asymmetry occurs when one party has less information than the other or has incorrect information. This leads to the less information party decisions erroneous judgments during a transaction, while the more information person may also engage in actions that harm the other party's transactional obligations. The consequence of asymmetric information leads to a disadvantage when information is concealed before to contract signing and a moral hazard after contract signing. Within the corporate setting, the presence of asymmetric information arises in the relationship between managers and shareholders.

Meanwhile, Mishra et al. (1998) defined information asymmetry as a condition where one side possesses greater access. or superior information compared to the other side Information asymmetry results in an unequal distribution of power between managers and shareholders who create information and those that utilize data. Turel et al. (2017) explain asymmetric information arises within the corporate setting in the interactions between managers and shareholders, as well as between enterprises and investors. Companies who fail to transmit signals or transmit

inaccurate signals will have a negative impact on investors, or the administrator responsible for direct management have knowledge of the company information but deliberately conceals it, resulting in detrimental decisions for shareholders and the moral hazard of the manager. The dearth of information provided by these firm will result in investors lacking a comprehensive understanding of the business and production status of firms, securities trading activities, and market trends, so leading to erroneous investment decisions. The concerns of impacted investors have the potential to precipitate a stock market meltdown. The information asymmetric is utilized to elucidate the process of signaling to the market or improving the dissemination of valuable information in order to assist investors in discerning between high-quality and low-quality securities of publicly traded corporations. Furthermore, information asymmetry is elucidating the correlation between information status.

From the meaning and further explanation of academics regarding information asymmetry. Information asymmetry pertains to the quantity and level of detail of information present within a firm. Each party may obtain disparate information as a result of their respective authorities and responsibilities. Managers will own a greater amount of information compared to shareholders due to their authorized access to information.

Board-level information technology governance

Agency theory explains that governance mechanisms serve to mitigate agency problems. The issue stems from conflicts of interest between shareholders and managers (Jensen & Meckling, 1976) Consequently, the shareholders therefore appointed a knowledgeable committee, expertise to carry out the monitoring of the manager's performance. The specific qualifications of the committee are based on the theory of resource dependency, however, the committee is an invaluable resource, unable to duplicate (Pfeffer & Salancik, 1978). The board of directors serves as a crucial internal corporate governance tool for overseeing and ensuring the accuracy and integrity of financial reports. Several notable researchers, including Fama (1980); Fama and Jensen (1983); Jensen and Meckling (1976) perceive the board as an effective monitoring mechanism reducing agency conflicts between ownership and

management. They contend that the board has the legal authority to protect shareholder interests by ratifying and monitoring managerial activities as well as evaluating and rewarding managers. According to Kyere and Ausloos (2021), Corporate governance focuses on the procedures and frameworks by which individuals involved in a company actively safeguard the interests of stakeholders. In addition, (Prapcho et al., 2022) provided a definition of corporate governance. It is effective, transparent, and verifiable company management that helps build trust and confidence among shareholders. and taking into account all stakeholders.

Past research has empirically examined whether corporate governance serves as a tool for overseeing and overseeing the performance of managers in their operational activities (Bhagat & Bolton, 2019; Kyere & Ausloos, 2021) determining compensation (Arayakarnkul et al., 2022) earnings management (Abad et al., 2018; Al-Haddad & Whittington, 2019; Pugatekaew et al., 2020) and employed as an moderator variable bridging earnings management and operating performance (Boachie & Mensah, 2022). From this research, the characteristics of the committee (independent directors, board size, CEO duality executive director, directors with expertise in finance and accounting) and ownership structure (managerial ownership, institutional ownership, foreign ownership) use the corporate governance measurement. This aligns with the 2017 Corporate Governance Code of the Stock Exchange of Thailand. This outlines the criteria for selecting committees with diverse committee attributes. For listed firms to effectively adjust and generate value for their businesses and stakeholders in society, they have the responsibility of supervising both innovation and ethical business practices. There is a committee responsible for delivering corporate information technology services that align with the business requirements. Ensuring the utilization of information technology to enhance company prospects and streamline operations. Implementing risk management strategies is crucial for the firm to successfully attain its primary objectives and goals (The securities and exchange commission Thailand, 2023a; Wangcharoendate, 2023).

According to Ali and Green (2012), information technology (IT) has emerged as a crucial instrument for firms to achieve a competitive edge. Maximize the organization's financial wealth until it reaches the level of CDT, a groundbreaking enterprise-level information technology phenomenon. These factors impact

enhancements in business models (Klos et al., 2021), alterations in organizational structures (Vial, 2019), and modifications in governance methods (Benaroch & Chernobai, 2017). Benaroch and Chernobai (2017), conducted a study on changes in governance at the board level, specifically focusing on IT governance (ITG). They definition IT governance as the role of the executive committee within the framework of corporate governance, encompassing leadership, organizational structure, and processes. This ensures that the organization's IT upholds and expands the organization's strategy and objectives.

Hence, it can be inferred that the functions of the IT oversight committee are categorized into two distinct types, monitoring and services consistent with the governance rules established by Fama and Jensen (1983), which advocate for the separation of governance from administrative decision-making. This research will examine the functions of the committee from the viewpoint of Benaroch and Chernobai (2017). Comparable to the study conducted by Jewer and McKay (2012) examined the attributes of IT oversight committees. The study revealed that the committee's IT expertise, age, and IT role had an impact on the board's engagement in IT governance. The IT governance implemented by the board has a beneficial positive impact on the company's performance. Furthermore, Singh and Alhulail (2023) examined the mechanism of board level information technology governance (BLITG), divided into board IT competency (board IT capital, IT-specific competency which is that the board must have a chairperson chief information officer : CIO and chief technology officer : CTO, IT committee) and other board attributes (board size, director ownership, independent directors). The study results found that board-level IT governance competence and other governance attributes do not deter earnings management practices.

Hypotheses Development

Corporate digital transformation on real earnings management

Earnings management is the behavior by which managers create financial reports in accordance with established accounting standards and using standardized accounting methods that allow for the exercise of discriminatory judgment to achieve accounting earnings in financial reporting. In using its judgment, it was intended to cause stakeholders to misunderstand the financial performance of the company. This is in order to maximize the benefits for executives (Healy, 1985; Zhan & Jing, 2022). However, in earnings management, it depends on expenses. Roychowdhury (2006) found that expenses that come from operating cash flow research and development expenses and production costs. The same thing has been found by other researchers as well (Habib et al., 2022; Li et al., 2022; Potharla, 2022). Therefore, while determining its earnings management level, the company must weigh the costs and benefits. Existing research indicates that the introduction of CDT has a favorable impact on the management of corporations (Zhan & Jing, 2022).

CDT can increase the real time availability of data (Vial, 2019) and reduce information asymmetry, thus reducing the earnings management space. An important reason why managers can execute real earnings management is that the internal management activities information is asymmetric, such as R&D (Lakhal & Dedaj, 2020) and marketing (Commerford et al., 2018). By adjusting R&D expenditure and reducing advertising expenditure, managers can reduce the cost and adjust earnings during the current period. Those methods are relatively more subtle and difficult to detect and easier to escape external supervision (Park, 2017). However, after the digital transformation, information is absolute and real-time data sharing is realized. The production, operation, and management have become more transparent (Goldfarb & Tucker, 2019).

Previous studies indicate that CDT has a negative impact on real earnings management (Jia et al., 2022; Wen et al., 2023); Zhan and Jing (2022) demonstrated that CDT enhances the management of information, knowledge, and decision support systems, thereby rendering information less susceptible to distortion and loss, potentially improving the quality of physical control images. Furthermore, CDT

mitigates internal and external information barriers, enhances information transmission routes, and optimizes the company's internal control environment to a degree. Digital technology offers the benefits of automated supervision and monitoring, enabling the easy identification and control of associated risks (Jia et al., 2022). Therefore, the transparent information environment causes managers to distance themselves from earnings management (Zhan & Jing, 2022). Nevertheless, no international studies have identified positive or negligible impacts. Moreover, there exists a limited amount of research on this matter in Thailand. However, researchers are keen to investigate the Thai environment, which may produce distinct research outcomes and enhance the value of the study. Consequently, this leads to the subsequent hypothesis.

H1 Corporate digital transformation has a negative effect on the real earnings management.

Corporate digital transformation and information asymmetry

Jensen and Meckling (1976) according to agent theory are said that information asymmetry is caused by principal (owner) and agency (manager) have different information to use in making decisions, resulting in conflict of interest. Therefore, the company brings Corporate digital transformation reduces information asymmetry. which is consistent with the study of Zhan and Jing (2022) It was studied that the company's adoption of Fintech in the organization significantly reduces information asymmetry. In addition, Chen et al. (2024) study finds that CDT enhances accounting information quality by alleviating the agency problem.

Previous research studies have discussed information asymmetry as a source of earning management by corporate management. (Schipper, 1989). Since resolving communication friction and reducing information asymmetry increases the cost of adopting earnings management, this approach can be considered supervision, which lessens the management of earnings. CDT development has the potential to reduce information asymmetry in the principal-agent relationship during the information release, transmission, and reception processes. This can enhance the quality of

enterprise information disclosure and restrain the practices of corporate earnings management (Zhan & Jing, 2022).

First through mechanisms of incentives and limitations, CDT development can, from the standpoint of information release, lessen the private ownership of company earnings information and lessen managers' ability and motivation to conceal private information. CDT robust data search and analysis capabilities enable it to access a wide range of hard and soft enterprise data, which limits management's capacity to conceal confidential earnings information and restrains corporate earnings management. CDT growth has also increased total factor productivity and encouraged company innovation, which has heightened rivalry across businesses. The management intends to impart the competitive advantages of product quality and company value through willingly improving the quality of information disclosure (Lin et al., 2018), and they become less inclined to conceal personal information. In this sense, incentives have the effect of lessening corporate earnings management.

Second, CDT development, viewed through the lens of information transmission, can assist external stakeholders in gathering more enterprise soft information, as well as "harden" soft information, minimize manual information collection and decision-making procedures, and enhance information transmissibility (Cenni et al., 2015). CDT has simultaneously reduced the loss and delay of earnings information during transmission and disclosure, expedited the spread of information, and successfully prevented insider information from forming in the conventional transmission channel. These developments have been made possible by the Internet and social media platforms. Furthermore, because they can now interact with one other and exchange feedback via online comments, external stakeholders are also in a better position to monitor and control how businesses handle their earnings. Eventually CDT benefits external firm stakeholders by lowering the cost of looking for earnings information and enhancing their capacity for information analysis from the standpoint of information reception. CDT uses big data to create enormous database resources that can extract both the quantitative and qualitative soft information about businesses, as well as hard information like transaction and operation data and corporate finance. In the meantime, it lowers the cost of

information acquisition, broadens the scope of information sharing, and significantly improves the sources and kinds of earnings information.

Prior research has examined the influence of fintech (fintech is a type of CDT) on information asymmetry inside China's banking sector. The findings indicate that fintech has a significant negative impact on real earnings management, suggesting that financial technology might markedly reduce information asymmetry (Wen et al., 2023; Zhan & Jing, 2022). Specifically, it diminishes the knowledge asymmetry between executives and external shareholders (Wen et al., 2023). Furthermore, fintech is effective in external corporate governance and functions as a method to enhance the quality of corporate information disclosure (Zhan & Jing, 2022). Nevertheless, no international studies have identified positive or negligible impacts, including the study of CDT overall with information asymmetry. Moreover, there exists a limited amount of research on this matter in Thailand. However, researchers are keen to investigate the Thai environment, which may produce distinct research outcomes and enhance the value of the study. Consequently, this leads to the subsequent hypothesis.

H2 Corporate digital transformation has a negative effect on the information asymmetry

Information asymmetry on real earnings management

The extent of information asymmetry plays an important role in earnings management activities. Information asymmetry refers to the situation where one party has access to more or better information than the other party. Information asymmetry causes an imbalance of power between managers and shareholders, information producers and information users (Mishra et al., 1998) Information asymmetry between management and shareholders contributes to engagement in earnings management (Dye, 1988). When the information asymmetry is severe, it is difficult and costly for shareholders to monitor the manager's behavior.

Sokhiaw et al. (2018) mention earnings data is used by shareholders to make key decisions. Information from accounting is commonly understood to be reliable financial information for market players. This information might potentially assist investors comprehend the firm's operational processes and lessen information

asymmetry amongst stakeholders and management, if information is not disclosed sufficiently, this may result in asymmetric information among the firm and the shareholder. According to Richardson (2000), information asymmetry on earnings management in a setting where incentives exist for managers to opportunistically manipulate earnings in a positive direction. Consistent with Sokhiaw et al. (2018) indicate that information asymmetry had a positive and significant effect on earnings management. The finding in line with agency theory indicated that information asymmetry positively affected earnings management because agents may use their authority to their benefit. In other words, Zhan and Jing (2022) discovered that information asymmetry positively influences earnings management, indicating that greater information asymmetry enhances earnings management practices. The larger the disparity in information asymmetry between shareholders and executives, the higher the probability that executives will engage in earnings management (Harahap, 2018). In addition, many other studies have found a positive impact between earnings management asymmetry (Harahap, 2018; Makhoul et al., 2022). Especially earnings management through real activities because executives in companies with asymmetric information can take advantage of internal information to manage sales and revenue to meet targets, rendering it difficult for external investors to accurately evaluate the genuine financial condition (Nuanpradit, 2018).

Conversely, Azhar and Islahuddin (2018); Nasution et al. (2020) contended that information asymmetry does not affect earnings management in manufacturing firms that underwent initial public offerings (IPOs) post-2010 in Indonesia, as executives do not exploit superior information over shareholders for opportunistic earnings management, likely due to external oversight or other limitations that mitigate self-serving conduct. Simultaneously, Puspitasari (2019) discovered that information asymmetry does not affect real earnings management. However, no negative relationship between data asymmetry and real earnings management was found in both foreign countries and Thailand in the context of this study. This study hopes to find different research results from past research. In this context, previous research examining the beneficial effects of information asymmetry on real earnings

management can be encapsulated in Table 1. Consequently, this leads to the subsequent hypothesis.

H3: Information asymmetry has positive effect on the real earnings management.

Table 1 Summary of key literature reviews Information asymmetry on real earnings management.

Authors	Country	Information asymmetry		Earnings management	
		ASY	AEM	REM	
Harahap (2018)	Indonesia	****	✓		
Sokhiaw et al. (2018)	Thailand	+	✓		
Nuanpradit (2018)	Thailand	****			✓
Abad et al. (2018)	Span	+			✓
Zhan and Jing (2022)	Chania	****	✓		
Makhlouf et al. (2022)	Jordan	+	✓		
Azhar and Islahuddin (2018)	Indonesia	N/A	✓		
Nasution et al. (2020)	Indonesia	N/A	✓		
Puspitasari (2019)	Indonesia	N/A			✓

Note(s): 1) *, ** and *** indicates statistical significance at the 10, 5 and 1% level, 2) respectively. + indicates indicate x has a positive impact on y, 3) - indicates X has a negative impact on Y. 4 N/A is not significance.

Corporate digital transformation has a mediating effect between Information asymmetry and real earnings management

CDT could assist with eliminating agency issues between executives and shareholders, hence increasing the accuracy of fiscal data. Because of information asymmetry, managers might pursue personal benefit at the expense of shareholder concerns in their internal surroundings. (Ang et al., 2000). As a result, executives can change financial data to disguise this type of behavior (Hope & Thomas, 2008).

However, digital transformation can optimize the information processing of an enterprise, restore and reproduce its entire production and operation process digitally and improve its information transparency (Zhou et al., 2018). Furthermore, CDT aids

in the recording of accounts and the ability to track them back (Krahel & Titera, 2015). When there are trade transactions in the digital environment, data may be recorded, approved, and examined more precisely (Manita et al., 2020) transactions and papers may be tracked and transmitted with greater authenticity. (Phornlaphatrachakorn & Kalasindhu, 2021) and statements of finances may be created more effectively (Krahel & Titera, 2015). Digital technology may limit executives' judgment in daily oversight actions, reducing opportunities for manipulation and agency issues between shareholders and executives, and ultimately improving accounting information authenticity (Wang & Wang, 2019).

Hope and Thomas (2008) revealed that digital technology, businesses may efficiently optimize resource allocation, boost production, and improve operational effectiveness. As a result, it has the ability to provide new value to the organization, improve business efficiency, and inspire management to make maximum use of resources. As a result, CDT minimizes managers' desire for egocentric conduct and prevents company resources from being wasted. Accounting information quality rises when a manager's motive for controlling real earnings management declines. This is in line with Zhan and Jing's (2022) study that Fintech development in A-share companies from 2011 to 2020 reduces the incentives for earnings management by mitigating information asymmetry. However, Zhan and Jing (2022) conducted the study examined fintech as a mediator of the adverse impact between information asymmetry and earnings management. The findings indicate that information asymmetry can mediate the relationship between fintech and earnings management, aligning with the criteria for mediating variables established in the study. Firstly, fintech has a significant negative impact on information asymmetry. Secondly, fintech has a significant negative impact on earnings management. Finally, the detrimental effect of fintech on earnings management diminishes considerably when information asymmetry lessens. In summary, the advancement of financial technology can diminish earnings management in companies by mitigating information asymmetry. In addition, related research on the test of the mediating variable, information asymmetry, was mentioned in the test of hypotheses H₁, H₂ and H₃ to support this hypothesis.

Therefore, it can be concluded that CDT will help disseminate accurate, complete and timely accounting information so that shareholders and executives receive effective information. and reduce information asymmetry That will cause conflict between executives and stakeholders. along with reducing the incentives of executives to manage earnings. Therefore, we proposed competing hypotheses to explore these issues.

H4 The information asymmetry negatively mediated the associated corporate digital transformation between real earnings management.

Board-level information technology governance (BLITG) have a moderate effect between Corporate digital transformations on real earnings management

The corporate digital transformation of corporations has profoundly influenced IT governance at the board level, enhancing the organization's governance framework and decision-making procedures. As firms adopt digital technology, the board's role has transformed to guarantee effective governance and alignment with digital activities. This transition enhances performance while fostering sustainable practices and innovation. Furthermore, digital tools facilitate boards in making expedited, data-informed choices, hence enhancing overall governance efficacy (Kajaria & Kumar, 2023). Including higher levels of digital transformation associated with better governance, promoting sustainable strategies and reducing information asymmetries (Yang et al., 2024). Consequently, companies increasingly need board members to have digital skills to effectively oversee their digital transformation initiatives. However, the digital age brings with it risks such as data breaches and cyber threats, and a robust governance framework is required to mitigate the challenges, particularly regulatory compliance. Boards need to adapt to the changing regulatory landscape surrounding digital governance, ensuring regulatory compliance while capitalizing on digital opportunities (Vuppuluri & Pandey, 2024).

Researchers have therefore become increasingly interested in board-level information technology governance (BLITG), defining board-level information technology governance (BLITG) as IT governance is a responsibility of the board and management, an essential part of corporate governance, and includes the leadership and organizational structures and processes that ensure that an organization's IT maintains and furthers its strategy and objectives (Jewer & McKay, 2012). This governance measure separates the characteristics of the board of directors into two characteristics: the first characteristic, the IT capability of the board, consisting of the board's IT capital, specific IT capabilities, and the company's IT committee; the second characteristic, the management aspect of the board, which is appointed by shareholders to control management decisions in various areas, including IT (Jewer & McKay, 2012). Then, Benaroch and Chernobai (2017) study of changes that firms implement in their board-level IT governance upon experiencing operational IT failures. Consistent with the separation of oversight from management decisions, board-level ITG is responsible for monitoring managerial IT decisions and policies for controlling IT resources. This study found that companies have board compositions that include directors' IT capital, CIO/CTO on the board, and board IT committees. These board compositions help in understanding the significance of IT failures in IT governance practices. Therefore, in good corporate governance in the digital age that must be carried out in the CDT system, having a board as a part will promote corporate governance potential. Past research has studied that the characteristics of a good board have three components: board size, board shareholding, and board independence. Therefore, the composition of an effective board of directors to supervise the business to reduce profit management consists of 6 elements. (Singh & Alhulail, 2023), with details as follows:

First, board IT capital is the knowledge, expertise, education, and past experience of the board related to IT (Benaroch & Chernobai, 2017), which according to resource dependency theory. Directors' IT expertise will be used to provide services, such as providing advice. Consulting with executives and recruiting knowledgeable IT managers (Wilkin & Chenhall, 2010). Accordingly Li et al. (2007), found that organizations with an adequate amount of IT-savvy members of the board

sustain strong IT governance and experience less problems. Besides, Haislip et al. (2016) found that firm with more experienced IT members on the board of director usually achieve optimal IT demands and budget alignment. Including, Benaroch and Chernobai (2017) asserted that the IT capabilities of the board and its IT governance procedures both affect business performance via the board's service and monitoring duties. Moreover, the competencies of the audit committee are crucial, necessitating finance and accounting expertise to assess the genuine management of earnings via sales operations, production costs, and expenses associated with sales and administrative activities (Phakdee & Srijunpetch, 2023). Conforms to the recommendations of the SEC Office, which requires at least one member of the audit committee to have knowledge in financial accounting (The securities and exchange commission Thailand, 2023a).

Second, broad IT-specific competency is the presence have executives who work in IT (CIO/CTO) as bord of directors (Juiz et al., 2022). The CIO/CTO is frequently tasked with creating and carrying out a distinctive IT vision that may generate wealth for the business (Li et al., 2007) . The inclusion of the CIO/CTO on the bord directors is viewed as a monitoring mechanism that assists in professional service delivery by agency theories to ensure that IT resources are used correctly in order to provide quality financial reports (Khamees, 2023) and resource dependence theories By relying on the knowledge and abilities of the CIO/CTO that may provide value to the company (Parent & Reich, 2009). In addition, Héroux and Fortin (2017) found that an IT director as a resource enhances company performance due to their effective and efficient use of resources and services While, Wong and Bajuri (2013), The risk of a corporation having IT material defects, vulnerabilities, or difficulties is reduced when there are sufficient managers with expertise in IT and a CIO/CTO on the board. However, Singh and Alhulail (2023) found a positive relationship between CIO/CTO on earnings management but not at a significant level.

Third, IT Committee is the board IT committee appointed by the company's bord of directors (Singh & Alhulail, 2023). In addition, Karimi et al. (2000), while the ITG's board of directors is in charge of setting overall strategy, the IT committee concentrates on horizontal cooperation among organizational units. It is often made

up of members of the internal IT department as well as high-level executives from other relevant business divisions. However, according to agency theory, the view is that board supervision can reduce managers' earnings manipulation (Fama & Jensen, 1983). Therefore, the establishment of an audit committee that is responsible for independent supervision and monitoring (The securities and exchange commission Thailand, 2023a). It may help reduce the agency problem (Qamhan et al., 2018) and contribute to the protection of shareholders in protecting their own interests (Al-Absy et al., 2019).

Fourth, board size is a governance mechanism that affects operations. The board of directors should be of the appropriate size. Have sufficient experience to perform duties with honesty Coordination and cooperation in solving organizational problems to achieve goals for the business. How many committee members must be included depends on the size. Type and complexity of business When it is sufficient, the business can be effectively governed (Wangcharoendate, 2023). As per Fama and Jensen (1983) corporate board size should be determined by the complexity of a company. Directors' managers' ownership of shares (equity) is also a part of the internal monitoring mechanism of a firm. Thus, board size as a significant aspect, might impact the board's monitoring capabilities. There is no consensus on the influence of board size. While bigger boards bring greater diversity and knowledge, which may help the monitoring function and improve board effectiveness (Abdelfattah & Elfeky, 2021). Previous studies provide mixed evidence of the effect of board size on earnings management. There is evidence of a positive association between board size and earnings management in Egypt (Abdelfattah & Elfeky, 2021), suggesting that larger boards have fewer monitoring responsibilities than smaller boards. On the other hand, some studies show a negative relationship between board size and earnings management in chana (Alkebsee et al., 2022) and not evidence of association between board size and earnings management. in Thailand (Phakdee & Srijunetch, 2023). Abdou et al. (2021) the viewpoint of stewardship theory, larger and independent boards are preferable to mitigate agency problems. While Chatjuthamard et al. (2022) found that smaller boards constitute a more effective governance mechanism and therefore are expected to reduce agency costs.

Fifty, director share ownership (DOWN), Singh and Alhulail (2023) viewed executive director the ownership as a manner of connecting the interests of shareholders and management, but concluded that more research is needed to establish and quantify the true benefit. Previous studies have provided empirical evidence that director (executive) ownership (DOWN) is positive and has a statistically significant relationship with earning management (Singh & Alhulail, 2023).

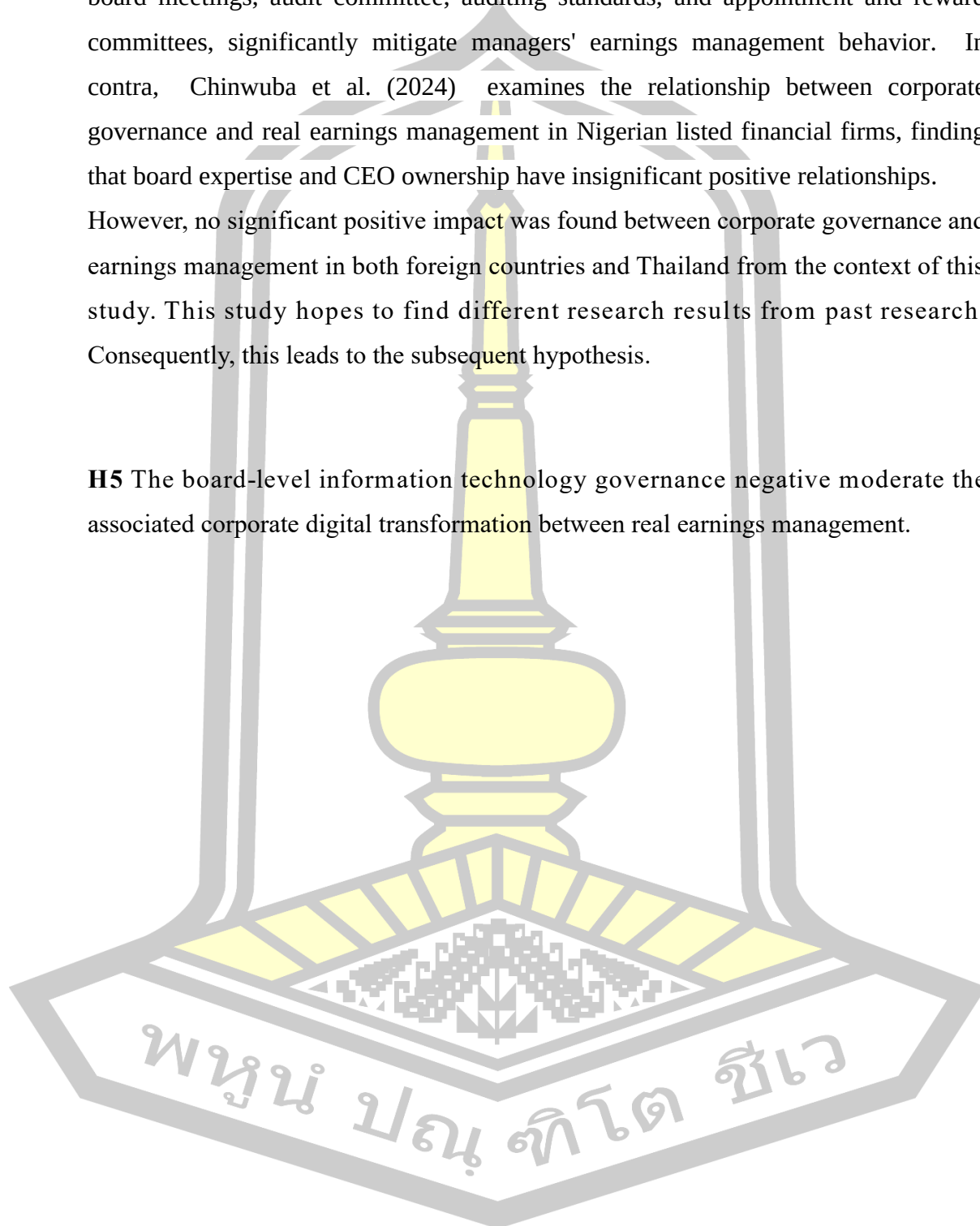
Finally, board independence according to agency theory, board independence play a better monitoring role compared to non- board independence (Abdelfattah & Elfeky, 2021). In addition, Chen and Zhang (2014) was found that the independence of the board has a positive effect on the efficiency of earnings management. This means that the high proportion of independent directors in China can limit increased discretionary accruals. This is because corporate governance regulatory reform plays an important role in hindering the use of earnings management. On the other hand, some studies show a negative relationship between Board independence and earnings management in chana (Alkebsee et al., 2022) and not evidence of association between Board independence and EM in Egypt (Abdelfattah & Elfeky, 2021)

Consequently, based on the literature review study, the researcher has developed a tool named BLITG, which serves as a corporate governance mechanism that categorizes governance characteristics into the IT capabilities of the board and features of IT governance. This study modifies BLITG based on previous research indicating that organizations utilizing CDT experience reduced incentives for executives to earnings management and improved accounting information (Hope & Thomas, 2008). While BLITG does not impede earnings management or fraudulent activities that may distort earnings, it leads to an alternative modification in corporate governance standards (Singh & Alhulail, 2023). Including, the Securities and Exchange Commission of Thailand has implemented an effective IT governance framework by encouraging companies to use technology and establishing an IT committee, or a similarly designated entity, focused on information technology(The securities and exchange commission Thailand, 2023a). Furthermore, corporate governance of a corporation is optimally assessed as a score on a specific index

derived from a collection of corporate governance indicators or attributes. Boachie and Mensah (2022) developed a corporate governance quality index comprising board structure, board meetings and oversight, disclosure, internal and external mechanisms, and compliance with best practices as moderating variables. The research revealed a significant positive correlation between the quality of corporate governance and earnings management concerning company performance, suggesting that organizations with robust governance frameworks are more likely to align earnings management with shareholder interests, resulting in improved financial outcomes. Moreover, empirical evidence indicates that the quality of corporate governance significantly influences this relationship, as an effective governance framework not only curtails opportunistic earnings management but also steers earnings management towards enhancing the profitability of companies in sub-Saharan Africa (Boachie & Mensah, 2022). In line with the study of Tulcanaza-Prieto et al. (2020) examined the correlation between corporate governance and real earnings management in the Korean market, utilizing corporate governance score as an indicator of corporate governance. If a higher corporate governance score signifies that the implementation of corporate governance within a firm leads to enhanced operational transparency, the findings suggest that corporate governance score is negatively correlated with real earnings management. This implies that corporate governance serves as a formidable obstacle to the execution of real earnings management reduction, as corporate governance enhances accounting transparency through rigorous oversight, which reduces the probability of day-to-day transactions to benefit managers. In addition, the study by Susanto and Pradipta (2016) revealed that corporate governance negatively affects real earnings management in industrial firms listed on the Indonesian Stock Exchange from 2011 to 2014. The study concludes that corporate governance significantly mitigates earnings management, particularly regarding board size and institutional holdings, whereas frequent audit committee meetings do not diminish earnings management. Moreover, factors such as independent directors and the accounting expertise of the audit committee do not influence real earnings management. Including, Abbadi et al. (2016) found that the quality of corporate governance significantly negatively impacts earnings management; specifically, a robust governance structure can mitigate earnings management practices within the

business. The primary governance components, including the board of directors, board meetings, audit committee, auditing standards, and appointment and reward committees, significantly mitigate managers' earnings management behavior. In contra, Chinwuba et al. (2024) examines the relationship between corporate governance and real earnings management in Nigerian listed financial firms, finding that board expertise and CEO ownership have insignificant positive relationships. However, no significant positive impact was found between corporate governance and earnings management in both foreign countries and Thailand from the context of this study. This study hopes to find different research results from past research. Consequently, this leads to the subsequent hypothesis.

H5 The board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management.



Conceptual Model

The conceptual model used to study the impact of corporate digital transformation on real earnings management is shown in Figure 1.

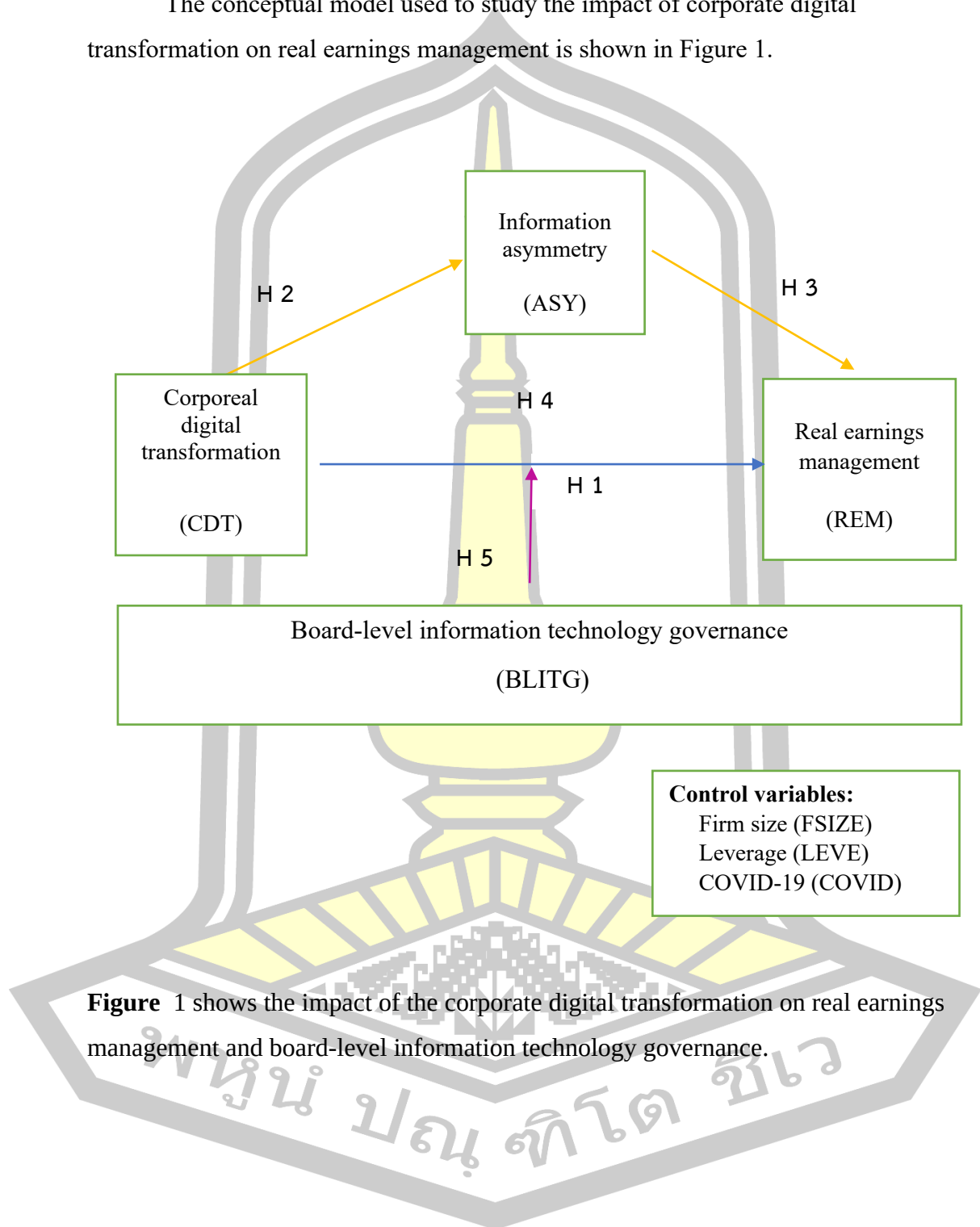


Figure 1 shows the impact of the corporate digital transformation on real earnings management and board-level information technology governance.

CHAPTER III

RESEARCH METHODS

The previous chapter describes the understanding of corporate digital transformation, real earnings management, information asymmetry, board-level information technology governance, hypotheses development with a theoretical foundation, literature review, conceptual framework, and hypotheses development. Consequently, this chapter illustrates the research methods which are organized as follows. First, the population and data collection, which includes the population and sample, the data collection. Second, the variable measurements, the method section includes the definitions and measuring the variables. Finally, the research model is analytical statistics and related to the analysis of the equations.

Population and Sample

This research includes all citizens who are listed Companies in the stock Exchange of Thailand across eight industries as follows: financials agro & food, consumer products, industrials, property & construction, resources, services, and technology. However, the aforementioned industries were selected to provide complete CDT dimensions (Promsa-ad, 2022) and in choosing the year 2017 as the starting year of the study, because in 2017 the government policy has promoted the use of information technology and according to the principles of good governance of the Stock Exchange of Thailand, companies must bring innovative technology (Ministry of Digital Economy and Society, 2023; The securities and exchange commission Thailand, 2023a). The population is 4,087 firm-year observations (on December 31, 2022), during the year 2017-2022 and obtained a sample group of 1,158 samples used in the study with the following sample selection conditions:

(1) Companies were listed in the financial industry to consist of the finance and securities, banking and insurance. Including other industrial groups that carries on fund and trust business. Due to different operations, both regulations and not accounting according to accrual basis, which affect the dependent variables (real earning management used in this study. (Chen et al., 2024; Saona et al., 2020; Singh & Alhulail, 2023).

(2) The Companies were unavailability data through the fiscal year-end 31ST December.

(3) The company is a rehabilitation.

(4) the company is incomplete data.

(5) The company unavailable in the English language the annual report. As shown in Table 2

Table 2, Panel A, the final sample for the study period 2017-2022 begins with a population of 4,087 firm-years, The sample was considered removing the financial industry to consist of the finance and securities, banking and insurance 839 firm years. The fiscal year-end of the company was not fiscal year-end 31ST December with 162 firm-years, and rehabilitation with 105 firm-year. This study eliminated the company's incomplete data with 1,127 firm-years. Further, this study eliminated the company unavailable in the English language of the annual report with 696 firm-years. Thus, the final sample with a balanced panel sample of 1,158 firm-years observations.

In addition, Table 2, Panel B, presents the sample by industry is 1,158 firm-year observations as follows: observation in property & construction is the highest number 270 firm-year observations, the next, services 240 firm-year observations, resources 168 firm-year observations, industrials 162 firm-year observations, technology 138 firm-year observations, argo & food 126 firm-year observations. Finally, observation in consumer products is the least number 54 firm-year observations.

Table 2 Detail of Sample Selection

Sample Selection Criteria from Listed Companies in the SET	2017	2018	2019	2019	2021	2022	Total
Panel A: Sample Selection Process							
Initial population from company listed	678	683	678	678	690	703	4,087
<u>Less</u> financial industry to consist of the finance and securities, banking, insurance, fund and trust.	(135)	(140)	(140)	(140)	(140)	(140)	(839)
Fiscal year are not 31 December	(27)	(27)	(27)	(27)	(27)	(27)	(162)
The company is a rehabilitation.	(26)	(26)	(23)	(16)	(9)	(5)	(105)
the company is incomplete data	(162)	(168)	(179)	(191)	(205)	(22)	(1,127)
The company unavailable in the English language the annual report	(116)	(116)	(116)	(116)	(116)	(116)	(696)
Final sample	<u>193</u>	<u>193</u>	<u>193</u>	<u>193</u>	<u>193</u>	<u>193</u>	<u>1,158</u>
Panel B: Number of Sample classify by industry							
Property & Construction	45	45	45	45	45	45	270
Services	40	40	40	40	40	40	240
Resources	28	28	28	28	28	28	168
Industrials	27	27	27	27	27	27	162
Technology	23	23	23	23	23	23	138
Argo & Food	21	21	21	21	21	21	126
Consumer products	9	9	9	9	9	9	54
Final sample	<u>193</u>	<u>193</u>	<u>193</u>	<u>193</u>	<u>193</u>	<u>193</u>	<u>1,158</u>

Methodology

This research is quantitative research. The data is studied from secondary sources. The research study steps are as follows:

1. The researcher performed a literature review concerning the theoretical frameworks employed to elucidate the research phenomenon, specifically institutional theory, agency theory, stewardship theory, and resource dependence theory, alongside the concepts of organizational digital transformation, real earnings management,

information asymmetry, board-level IT governance, and control variables such as firm size, firm leverage, and Covid-19. The metrics of each variable are delineated to lead the construction of hypotheses.

2. Design an instrument to collect data on the variables used in this study.
3. Human ethics request was processed, which was approved on April 9, 2024, Certificate of Approval number: 207-242/2567 (APPENDIX A). Data collection and analysis of research results.
4. Summary of research results.

Data Collection

This study uses the data during 2017-2022. For this study collected the population data from the websites of SET (www.set.or.th). This study uses secondary data to be obtained the data based on the 56-1 One Report, annual report, notes to financial statements, the SET Market Analysis and Reporting Tool (SETSMART), and the websites of various companies. This database is considered that the data sources are followed by The Stock Exchange of Thailand (SET) and The Securities and Exchange Commission of Thailand (SEC). These data sources can publicly available acceptant accurate and reliable. For this study use the variables such as corporate digital transformation, real earnings management, information asymmetry, board-level information technology governance and the control variables include firm size, firm leverage and covid 19. Additional data from 2015-2516 will be collected for real earnings management and information asymmetry. Therefore, the details of data collection can be explained as follows:

The corporate digital transformation will collect data from English annual reports and Form 56-1. Using Python with text analysis and it extract all text content using Pypdf2 library to extract text from pdf and easycor library to extract text from images to search for CDT keywords. The method of creating the keyword counting program is explained as follows: First, study related research to determine keywords and the desired output format. Second, have experts create a keyword counting program. Third, create a questionnaire to evaluate the efficiency of the keyword counting program (APPENDIX B) and submit it to the consultant for review and improvement. Fourth, prepare a letter from the Faculty of Accounting and

Management for experts to evaluate the efficiency of the keyword counting program. There are five experts in total: two in accounting (Assistant Professor Dr. Natnapa Nilanon and Dr. Thanai Sri-isan) and three in computer (Associate Professor Dr. Phanomkhwan Riyamongkol, Assistant Professor Dr. Maneerat Wongsim, and Assistant Professor Ratthaphum Waranusan) (APPENDIX C). Finally, use the experts' advice to improve the keyword counting program and collect data. The results of the keyword counting program were tested with the PDF program used for word counting. The results of the study found that the word counting program was effective in counting words in images, but the PDT program could not.

Real earning management contains information on abnormal production costs, abnormal cash flow from operations, and abnormal discretionary expenses by collecting data on assets from the previous year. Current year sales, previous year sales, cost of sales, current year and previous year inventories, selling and administrative expenses, depreciation and amortization, expenses related to long-term contracts, ongoing employee compensation, expenses related to litigation or disputes, interest expenses, and cash flow from operations. This information is collected from the SET SMART database, company menu, then go to company information, and finally go to financial statement. The researcher then calculated the above data using abnormal production costs, abnormal cash flow from operations, and abnormal discretionary expenses (equation 15 - equation 17) with regression statistics from the gretl program. The three dependent variables are then combined to create a model of real earnings management flow equation 18.

Information asymmetry is the collection of data of ask price and bid price by collecting from SET SMART database, Trading menu, then go to historical data, then historical trading, and finally go to financial statement. Then the researcher calculates the above data according to equation 17 using excel program.

Bord-level information technology governance collects data on board information technology capital, broad IT-specific competency (CIO or CTO on board), information technology committee, board size, director ownership and board independence. Data are collected from annual reports, and form 56-1 in the board history and good corporate governance.

Control variables include firm size, firm leverage and covid 19. Firm size is collected from total assets and firm leverage is collected from total assets and total liabilities. For Covid 19, it is based on the research of Aljughaiman et al. (2023); Garfatta et al. (2023); Yan et al. (2022). which set 2020-2021 as the year of Covid 19 occurrence.

Measurements

This study explains to measure variables that consist of the independent variable, dependent variable, mediator variables, moderator variables and control variables. The independent variable is the corporate digital transformation and mediator variables is the information asymmetry. The moderator variable is the board-level information technology governance. The dependent variable is the real earnings management. Moreover, the control variables are consisting of firm size, firm leverage and covid-19. The following definitions and methods of measurement apply to each type of variable in this study:

Independent Variable

The independent variables selected in this paper are corporate digital transformation (CDT). In this study we use the frequency of words to characterize corporate digitalization, In recent years, some studies have begun to use archival data to examine digital transformation of firms. Zhou and Li (2023) using Python with the text analysis method, and the study extract all of the text content using the Java PDFbox library. The study locates the words that characterize corporate digitalization strategies, five dimensions adopted from the previous research, The instrument contains 73 items include Artificial intelligence technology 15 items, big data technology 9 items, cloud computing technology 13 items, block chain technology 5 items, and application of digital technology 31 items. The study then collates word frequency statistics and summaries, thereby building an index measuring the degree of corporate digitalization. Due to the “rightward bias” of such data, the study applies the logarithmic processing method to obtain the overall index depicting the digital transformation. As a robustness test, The study conduct a dimension reduction decomposition of digital transformation in regard to the underlying technical and practical application levels. Xie and Wang (2023) using an index created from annual

report data to measure CDT of banks in China, the study constructs an index system to measure digital transformation of banks from three dimensions: strategy transformation, business transformation and management transformation. Finally, Huang et al. (2023) stated that measuring the frequency of CDT-related words in annual reports is possible because the process is scientific. Likewise, Zareie et al. (2024) applied textual analysis to a company's annual report to generate a digital transformation score by counting 120 digital-related words covering analytics, automation, artificial intelligence, cloud computing, machine learning, digitization, and big data. Then use Python to perform text analysis, counting the frequency of digital terms.

The literature study on CDT measurements concludes that: CDT is a process in which firms apply digital technologies to their products, processes, organizations, business models, and strategies. In this study, used the CDT measurement method of Zhou & Li (2023) using Python with the text analysis method, and extract all of the text content using the Java PDFbox library. The study locate the words that characterize corporate digitalization, namely automation, machine learning, digitization, artificial intelligence, big data, cloud computing, block chain and applications referencing Zareie et al. (2024); Zhou and Li (2023), yielding a total of 167 unique terms after the removal of duplicates (refer to Table 3 below). The study then collate word frequency statistics and summaries, there by building an index measuring the degree of corporate digitalization. Due to the “rightward bias” of such data, The study apply the natural logarithm of the number of keyword disclosures (plus 1) for corporate digital transformation (Wang et al., 2024; Zhou & Li, 2023).

Dependent Variable

The dependent variables selected in this paper are real earnings management (REM). The research use the real earnings management model of Roychowdhury (2006) to measure earnings management. Due to CDT can increase the real time availability of data (Vial, 2019). Therefore, CDT results in a reduction in managers' incentives to earnings management (Zhan & Jing, 2022) Therefore, calculating true profit management involves two steps.

Step 1: Calculate variables as proxies for real earnings management

The details are as follows.: studies stating three methods of manipulations. The first is the sales method: enhancing sales by providing increased sales discounts and providing lenient credit terms. The second is the production method: producing more goods than required to increase earnings. The third is the discretionary expenditure method: executives manipulate earnings by reducing the general admin and sales expenses and reducing research and development expenses (Cohen & Zarowin, 2010; Roychowdhury, 2006).

1. Abnormal production costs (Ab_Prod)

$$\frac{Prod_{i,t}}{A_{i,t-1}} = \beta_0 + \frac{1}{A_{i,t-1}} + \beta_2 \frac{SAEL_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta SAEL_{i,t}}{A_{i,t-1}} + \beta_4 \frac{\Delta SAEL_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t}^1 \quad \dots\dots\dots(4)$$

2. Abnormal discretionary expense (Ab_Disexp)

$$\frac{Discexp_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{SAEL_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t}^2 \quad \dots\dots\dots(5)$$

3. Abnormal cash flow from operations (Ab_CFO)

$$\frac{CFO_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{SAEL_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta SAEL_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t}^3 \quad \dots\dots\dots(6)$$

Step 2: Take the variables according to Step 1 and add them together to get Model real earnings management. Following Cohen and Zarowin (2010); Wen et al. (2023); Zhan and Jing (2022) REM is calculated as below.

$$REM = Ab_Prod - Ab_Disexp - Ab_CFO \quad \dots\dots\dots(7)$$

where

$Prod_{i,t}$	is production cost defined as cost of goods sold in the current period plus the change in inventories abnormal discretionary expense.
$Discexp_{i,t}$	is selling and administrative expenses less controllable expenses. (depreciation and amortization, expenses related to long-term contracts, ongoing employee compensation, expenses related to litigation or disputes, and interest expenses at all in the current period.
$CFO_{i,t}$	is cash flow from operations in the current period.
$A_{i,t-1}$	is total assets at the beginning of the period. all items in the regression are lagged by one period. Example $t-1$ is $2020 - 1 = 2019$.
$SAEL_{i,t}$	is revenue in the current period.
$\Delta SAEL_{i,t}$	is absolute change in revenues to the current period.
$\Delta SAEL_{i,t-1}$	is absolute change in revenues to the previous period.
REM	is total of abnormal production costs, discretionary expenses, and operating cash flow, and absolute value REM.
Ab_Disexp	is Abnormal discretionary expenses, measured as deviations from the predicted values from the corresponding industry year regression Equations (4).
Ab_Prod	is Measured as deviations from the predicted values from the corresponding industry-year regression Equations (5).
Ab_CFO	is Measured as deviations from the predicted values from the corresponding industry-year regression Equations (6).

Equation (7) integrates abnormal production costs, discretionary expenses, and operating cash flow to assess managers' real earnings management efforts to conceal losses (Cohen & Zarowin, 2010). Consider the absolute value of divergence from optimal company decisions to define real earnings management and analyze its varied impact on positive and negative real earnings management.

Table 3 List keywords for CDT

No	Keywords for CDT	No	Keywords for CDT
1	3D print	43	Data Visualizations
2	5G	44	Decentralized finance
3	Application	45	Deep learning
4	Artificial intelligence	46	Deep Learnings
5	Artificial reality	47	DevOps
6	Augmented reality	48	Differential privacy
7	Authentication	49	Differential Privacy technology
8	Auto Pilot	50	Digital
9	Automation	51	Digital currency
10	Autonomous driving	52	Digital Finance
11	Autonomous technology	53	Digital marketing
12	B2B	54	Digital twin
13	Big data	55	Digitalization
14	Billion-level Concurrency	56	Digitally
15	Biometric	57	Digitization
16	Biometric Technology	58	Distributed computing
17	Biometrics	59	EB Level Storage
18	Bitcoin	60	Ebusiness
19	Blockchain	61	E-business
20	Bots	62	E-catalog
21	Brain Like Computing	63	Ecatalogue
22	Business intelligence	64	Ecommerce
23	C2B	65	E-commerce
24	C2C	66	Edge Computing
25	Click-through rate	67	Elearning
26	Cloud	68	E-learning
27	Cloud collaboration	69	Electric Commerce
28	Cloud computing	70	Emobility
29	Cognitive computing	71	E-mobility
30	Converged infrastructure	72	E-procurement
31	Credit Investigation	73	Epublishing
32	Cryptocurrency	74	E-publishing
33	Data analytics	75	Eservice
34	Data architecture	76	E-service
35	Data capturing	77	Face recognition
36	Data integration	78	Figure Calculation
37	Data lake	79	Financial Technology
38	Data mining	80	Fintech
39	Data monetization	81	Flow Calculation
40	Data processing system	82	Fusion Architecture
41	Data science	83	Green computing
42	Data visualization	84	Heterogeneous data

Table 3 List keywords for CDT

No	Keywords for CDT	No	Keywords for CDT
85	Hightech	127	Office automation
86	High-tech	128	Online
87	Human cloud	129	Online Finance
88	Image recognition	130	Open Bank
89	Image understanding	131	Open banking
90	Industrial Internet	132	Open source
91	Industry 4.0	133	Organizational capital
92	Influencer	134	Platform
93	Information Physical System	135	Quantitative Finance
94	In-memory computing	136	Quantum computing
95	Intelligent Cultural Tourism	137	Secure Multi-party Computation
96	Intelligent Custome	138	Selfdriving car
97	Intelligent Data Analysis	139	Semantic search
98	Intelligent Environmental Protection	140	Sentiment analysis
99	Intelligent Investment Adviser	141	Serverless computing
100	Intelligent Marketing	142	Sharing economy
101	Intelligent Medicine	143	Smart agriculture
102	Intelligent Robot	144	Smart content
103	Robotics	145	Smart contracts
104	Robots	146	Smart devices
105	Intelligent systems	147	Smart Energy
106	Intelligent Transportation	148	Smart factory
107	Internet	149	Smart Financial Contracts
108	Internet Connection	150	Smart Grid
109	Internet Medicine	151	Smart healthcare
110	Internet of Things	152	Smart home
111	IoT	153	Smartphone
112	Investment Decision Support System	154	Smart investment
113	Machine learning	155	Smart transportation
114	Memory Calculation	156	Smart Wear
115	Metaverse	157	Social media
116	Mixed Reality	158	Software
117	Mobile internet	159	Speech recognition
118	Mobile payment	160	Text mining
119	Natural language processing	161	Third Party Payment
120	NEC Payment	162	Unmanned
121	Neural network	163	Unmanned Retail
122	New economy	164	Virtual reality
123	Newsfeed	165	Voice recognition
124	NFC payment	166	Web 3.0
125	NLP	167	Web based
126	O2O		

Mediating Variables

The mediating variables selected in this paper are information asymmetry (ASY) measured by the Effective Spread (Lee et al., 1993). It could be calculated from.

$$\text{Effective Spread} = \frac{2 \sum_{i=1}^n |P_i - (ASK_i + BID_i)/2| Q_i}{\sum_{i=1}^n Q_i}$$

Where

Effective Spread	is the price spread of securities trading in the market.
n	is the number of trades within a day.
P_i	The transaction price of the i -th trade.
Q_i	The number of shares traded in the i -th transaction (trade volume).
ASK	is the ask price, the price at which the seller is ready to buy securities from the buyer, for the i -th trade.
BID	is the bid price, the price a buyer is prepared to pay to purchase a security, for the i -th trade.
$(ASK_i + BID_i)/2$	is the midpoint price, calculated as the average of the ask and bid prices.

In using the price using the average price of beans before and after 2 days prior to the disclosure date of the annual report because before the disclosure date of the annual report some shareholders will receive inside information and after two days there is a delay in trading of the stock (Lee et al., 1993).

Moderator Variables

The moderator variable in this study is board-level information technology governance (BLITG). The researchers developed the BLITG score by reviewing the literature and studies conducted by Benaroch and Chernobai (2017); Singh and Alhulail (2023), in conjunction with the sound corporate governance principles established by The Securities and Exchange Commission Thailand (2023a), which indicate that the presence of a board in IT operations enhances transparent corporate governance. The BLITG variable was quantified by the cumulative score of each sub-variable, yielding a maximum total of 7 points. The score particulars are as follows:

The first board IT Capital (BITC), which measure of the proportion of the board with IT capital IT capital. The criteria for this are derived from one's practical experience, educational qualifications, and IT certifications. For example, the director once occupied the role of IT director. The committee members have obtained degrees in IT and are certified in IT training. If the director has any IT capital which is considered to be in the condition, but it does excluding the CIO or CTO (Benaroch & Chernobai, 2017; Jewer & McKay, 2012; Singh & Alhulail, 2023). The proportion value is expressed in decimal form, with a full score of 1 point (Benaroch & Chernobai, 2017).

The second the function-specific roles IT capabilities of board. The requirement is that the committee must be composed of either the CIO or CTO, both of whom hold positions with specific abilities IT in the company (Benaroch & Chernobai, 2017; Singh & Alhulail, 2023). In this research, the measures were determined as follows. If the board has directors with the position of CIO or CTO and 0 otherwise (Singh & Alhulail, 2023). Information can be gathered from the annual report. Therefore, if the board has a CIO or CTO, set the score to 1 point, otherwise set it to 0 points.

The third is that the IT committee evaluates the existence of an IT committee or any other committees associated with IT inside the firm, measured by assigning a dummy. If the firm has an IT committee or other IT-related committees, assign a value of 1. However, if the company does not have such committees, assign a value of 0. (Singh & Alhulail, 2023) Then set the score value. If the company has an IT committee or other IT-related committees, give 1 point. If not, set it to 0 points (Benaroch & Chernobai, 2017).

The four the board size refers to the number of directors on the firm board. The specification of the number of directors is a fundamental aspect of effective corporate governance, as per the principles of good corporate governance (The securities and exchange commission Thailand, 2023a). However, the number of board members depends on the complexity of the company, and smaller boards of less than 8 members tend to have better management results than larger boards. (Fama & Jensen, 1983). Prior research has commonly employed the board size as an indicator

of effective corporate governance concerning earning management (Abdou et al., 2021; Singh & Alhulail, 2023). Therefore, in this study, the measure was defined as follows: companies with a board size of less than 8 people were given 2 points and companies with a board size of 8 people or more were given 1 point, thus the full score for this item was 2 points (Benaroch & Chernobai, 2017).

The fifth the director ownership refers to the proportion of shares held by the directors (Singh & Alhulay, 2023). Director ownership It is regarded as an integral component of the company's internal audit procedure (Jacoby et al., 2019) and this is a connection to the interests and preferences of shareholders and executives. This aligns with the principle of stewardship theory of interest directors serve as protectors. The directors have the responsibility to guarantee that the Company's objectives align with the established goals and are geared towards maximizing shareholder benefits, ultimately leading to a decrease in earning management (Davis et al., 1997; Singh & Alhulay, 2023). Prior research has commonly employed the director ownership as an indicator of effective corporate governance concerning earning management (Singh & Alhulay, 2023). Therefore, in this study, the measure of director ownership is the proportion of the number of shares owned by the directors in decimal form, by assigning a score according to the proportion of directors' ownership. However, before calculating, the number of shares and paid-up capital must be log first, with a full score of 1 point.

The sixth the independent directors refer to directors who do not possess any affiliations or circumstances that might potentially influence their decision-making and is completely un-relationship to the firm (Elage & Mard, 2018). Prior studies have employed the metric of the proportion of independent directors serving on the board. The measure pertains to independent directors and is employed for the examination of corporate governance relationships and earning management (Abad et al., 2018; Al-Haddad & Whittington, 2019; Singh & Alhulay, 2023). Therefore, in this study, the independent directors were measured by the proportion of independent directors on the board of directors. The proportion was measured as a score in the form of a decimal proportion, with a full score of 1 point.

The board level information technology governance (BLITG) scores used in this study are summarized in Table 4

Table 4 Board-level information technology governance (BLITG) score.

Characteristics of BLITG	Definition and References	Source	Score
Board IT Capital	- Proportion of the board of directors with IT expertise or have a certificate. - Set to one point from the proportion and convert to a decimal. - References : Benaroch and Chernobai (2017); Jewer and McKay (2012); (Singh & Alhulail, 2023)	56-1 One report, From 56-1 and 56-2	1
The function-specific roles IT capabilities of (board.CIO/CTO on board.)	- The executive committee has a CIO or CTO. 1 if CIO/CTO is an executive member of the board, 0 otherwise. - Set to one point. - References : Benaroch and Chernobai (2017); Singh and Alhulail (2023)	56-1 One report, From 56-1 and 56-2	1
IT Committee	-The firm has ITCM or other IT related committees 1 if the board ITCM or other IT-related committees exists, 0 otherwise. -Set to one point . - References : Benaroch and Chernobai (2017); Singh and Alhulail (2023); (The securities and exchange commission Thailand, 2023a)	56-1 One report, From 56-1 and 56-2	1

Table 4 Board-level information technology governance (BLITG) score (continue).

Characteristics of BLITG	Definition and References	Source	Score
Board size	- The companies with a board size of less than 8 people were given 2 points. - The companies with a board size of 8 people or more were given 1 point -The full score for this item was 2 points. - References : Abdou et al. (2021); Al-Haddad and Whittington (2019); (Benaroch & Chernobai, 2017); Singh and Alhulail (2023)	56-1 One report, From 56-1 and 56-2	2
Director ownership	- Proportion of shareholding of the owner directors who are on the executive committee. - Set to one point from the proportion and convert to a decimal. - References : Benaroch and Chernobai (2017); Singh and Alhulail (2023)	56-1 One report, From 56-1 and 56-2	1
Board independence	- Proportion of independent committee - Set to one point from the proportion and convert to a decimal. - References : Abdou et al. (2021); Al-Haddad and Whittington (2019); Singh and Alhulail (2023) (Abad et al., 2018; Singh & Alhulail, 2023)	56-1 One report, From 56-1 and 56-2	1
Total Board-level information technology governance (BLITG) score.			7

Control Variables

This study identifies the control variables to consist of firm size, firm leverage ratio, and covid-19 which relate with the variables of the earnings management as follows:

Firm size (FSIZE) is the size of the business that is quantified by the total assets. Firm size is measured by the natural logarithm of total assets. In their study, Chen et al. (2024) conducted research and discovered that, the firm size is relationships negative with the earnings management. Consistent with Marei et al. (2023) reported that a size results were negative and significant, the difference is due to not classifying the firms by size, as earnings management for firms is enhanced because large firms typically have strong internal controls and governance mechanisms, and care about their reputations. Moreover Al-Haddad and Whittington (2019) result firm size is significant and negative, indicating that larger firms in Jordan are less likely to manage earnings through sales manipulations and discretionary accruals.

Firm leverage (LEV) is financial leverage. Firm leverage measured by the ratio of total debt to total assets Chen et al. (2024). Highly leveraged firms could be expected to engage more in upward earnings management to avoid debt covenant violations (Watts and Zimmerman, 1990). In particular, highly leveraged firms have a greater incentive to engage in managing the discretionary accruals to avoid debt covenants violation, this may suggest a positive relationship between leverage and earnings management, on the contrary, some studies proved that the increase of debt can constrain the opportunistic behavior of managers. (Yasser & Soliman, 2018). Consistent, Al-Haddad and Whittington (2019) result firm leverage positive relationship with actual earnings management in terms of operating activities and discretionary profit management, perhaps indicating that high leverage may lead to earning management to avoid debt covenant violation.

Covid-19 had first case of this particular coronavirus disease occurred at the end of December 2019 in China, and the disease spread widely to various nations around the world in a very short period Azizah (2021). The confirmation of the first case by the World Health Organization (WHO) took place on 31 December 2019, The beginning of the pandemic period in Europe was in January 2020 (Aljughaiman et al.,

2023). In Thailand, the initial case of Covid-19 was detected on January 13, 2020, marking the start of the outbreak that persisted until 2022 (Potharla, 2022). The Ministry of Public Health has officially designated Covid-19 as an endemic illness (Wonglacorn & Am-ugsormi, 2023). The actions are categorized into four distinct phases, with Phase 1 (12 March - early April) referred to as combatting, representing the active phase of combating the situation to minimize the spread of the epidemic mitigate the intensity of the illness various strategies will be implemented to mitigate the spread of the pandemic. Furthermore, the enforcement of quarantine measures is diminished. Phase 2 (April-May) is referred to as plateau, during which the objective is to sustain the number of infected individuals at a constant level, preventing any further growth. To remain at a constant level before progressively diminishing. The period from the end of May to 30 June, known as phase 3, aims to decrease the number of infected individuals to a range of 1,000-2,000 persons and phase 4 will commence on 1 July 2022, post-pandemic refers to the period after the epidemic, when the focus shifts from a widespread disease to endemic (Thairath online, 2023). Until the Ministry of Public Health issued an announcement from 1 October 2022 onwards to cancel COVID-19 from being a dangerous communicable disease and designated it as a communicable disease that requires surveillance (Potharla, 2022). As a phenomenon of the outbreak of Covid-19, the corporation has had difficulties in its continued operations. As a result of financial limitations, operational limits, supply chain interruptions, and lockdown measures, several firms have announced closure and insolvency (Wonglacorn & Am-ugsormi, 2023). There is also empirical evidence that the Covid-19 situation is related to executives' earnings management behavior, as such sa Garfatta et al. (2023) in the context of the Tunisian state, Aljughaiman et al. (2023) and (Yan et al., 2022) in the Chine context. Yan et al. (2022) result covid-19 positive relationship with actual earnings management, the COVID-19 intensifies earnings management, which is reflected in the increasing accrual-based earnings management and real earnings management, where COVID-19 is more severe are more affected by the suspension of work and production caused by the epidemic prevention policies. Consistent Aljughaiman et al. (2023) result covid-19 positive relationship with earnings management, Inconsistent Garfatta et al. (2023) result

covid-19 relationship negative with earnings management, during the pandemic period, tunisian firms use decreasing income discretionary accruals.

Covid-19 (COVID) measured by the dummy variable that takes 1 if the observation is from the year of 2020 to the fourth quarter of 2020, and 0 otherwise (Aljughaiman et al., 2023; Garfatta et al., 2023; Yan et al., 2022). Previous study pointed out 2020 as a variable that proxy covid (Aljughaiman et al., 2023; Garfatta et al., 2023; Yan et al., 2022). However, for the purposes of this study, the years 2020-2021 were designated as proxy variables for Covid-19. This decision was based on the fact that 2020 marked the start of the Covid epidemic in Thailand, and in 2022, Thailand officially proclaimed Covid-19 as an endemic illness. Thus, Covid-19 is designated as a control variable, assessed using a Dummy variable. The Dummy variable is assigned a value of 1 to indicate the period from 2020 to 2021, and a value of 0 for other years.

Table 5 Variable definition

Variable	Measurement	References	Source
Independent Variable			
Corporate Digital transformation (CDT)	Natural logarithm of the number of keyword disclosures (plus 1) for corporate digital transformation.	Wang et al., (2024); Zhou and Li (2023)	56-1 One report, From 56-1 and 56-2
Dependent Variable			
Real Earnings management (REM)	Natural logarithm of the total of abnormal production costs, discretionary expenses, and operating cash flow, and absolute value REM (REM = Ab_Disexp - Abn_Prod - Ab_CFO)	Cohen and Zarowin (2010); Wen et al. (2023)	56-1 One report, From 56-1 and 56-2, SETSMART
Mediator Variable			
Information asymmetry (ASY)	Natural logarithm of the price spread of securities trading in the market	Lee et al. (1993)	SETSMART

Table 5 Variable definition (continue).

Variable	Measurement	References	Source
Moderator Variable			
Board-level information technology governance (BLITG)	Sum of board IT capital, the function-specific roles IT capabilities of (board. CIO/CTO on board.) IT committee, board size, director ownership and board independence.	Applied of Benaroch and Chernobai (2017) and Constructed by authors	56-1 One report, From 56-1 and 56-2, SETSMART
Control variable			
Firm size (FSIZE)	Natural logarithm of the enterprise's total asset	Al-Haddad and Whittington (2019); Chen et al. (2024); Marei et al. (2023)	SETSMART
Firm Leverage (LEV)	Natural logarithm of the ratio of total debt to total assets	Al-Haddad and Whittington (2019); Chen et al. (2024); Yang et al. (2022)	SETSMART
Covid-19 (COVID)	Covid-19 which takes the value of 1 if the observation is from the pandemic period of 2020-2021, and 0 otherwise.	Aljughaiman et al. (2023); Garfatta et al. (2023); Yan et al. (2022)	56-1 One report, From 56-1 and 56-2

Data Analysis Method

This study employed Gretl, a statistical and econometric analysis software that utilizes empirical research and examines panel data (Tarassow, 2019). This study used several statistical techniques consist of:

1. Initial data analysis using descriptive statistics

The descriptive statistics were used in preliminary data analysis to describe basic characteristics of the variables: mean, maximum, minimum, frequency (Chirakool et al., 2022; Sriersan et al., 2024; Zadeh et al., 2023) and percentage and the descriptive statistics used in data analysis using central indexes such as standard deviation, skewness, and kurtosis. The mean serves as a focal measure, representing the average of the data. Consequently, when the data are aligned along a common central axis, the mean will precisely represent the equilibrium point or centroid of the distribution (Zadeh et al., 2023). The standard deviation is one of the dispersion parameters and shows the amount of data dispersion (Mishra et al., 2019; Zadeh et al., 2023). Moreover, skewness is regarded as a metric for assessing deviation from symmetry and serves as an indicator of data symmetry (Zadeh et al., 2023).

2. Inferential statistics analysis

For inference statistics used in the analysis to test the research hypothesis, the effect of independent variables and dependent variables, the effect of mediator on independent variables and dependent variables and the effect of moderator on independent variables and dependent variables. For this research, the balanced panel data regression tool will be used because the property of the data in this research is the data collected for a period of six years from 2017 to 2022. Panel data or cross-sectional time-series data is a dataset in which the behavior of entities is observed across time. That is data used as a variable from 1,158 firm-year observations.

Statistical Techniques

The data analysis of this research is examined through the panel data regression model. For this research estimate the panel data regression model which the total number of observations is 1,158 firm-years in an unbalanced panel. Unbalanced panel data contain cross-sectional observations and time-series for three years. This technique analyzes both cross-sectional and time-series merging. Generally divided into three techniques (Gujarati & Porter, 2022).

1. Pooled OLS Regression

The pooled OLS method is a regression analysis method that ignores whether the cross-section unit is affected by external factors or unobserved variables that are unique or not and have long time data records that are any different. This method has the assumption that the constants and coefficients of variables are equal every year in the equation. The equation can explain as follows.

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

Where y_i is the dependent variable of company (i); α is the intercept; β is the slope of coefficient; X_i is the independent variable of the company i in the period t; ε_i 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 (Fixed effect model or Random effect model) to deal with these problems.

2. Fixed effect model (FE)

This method examines an intercept that varies across groups or time-period. The fixed-effect model examines individual differences in intercepts, assuming the same slopes and constant variance across individuals or entities instead of many dummies. The data of estimation remove all time-invariant variables (Park, 2011). In addition, the key parameter is that the unobserved variable can change over time, such as the business practices of a company. The fixed effect characteristic has the unobserved variables (u_i) to be correlated with the independent variables. It means that the fixed effect models have the effect of time-invariant variables and time-variant effects (Williams, 2018). The parameter estimation uses the deviation of each variable from the average value then used to estimate the parameters in the OLS equation. The equation can explain as follows.

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

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

3. Random effect model (RE)

The random effect regression model is estimated by Generalized Least Squares (GLS). The random effect differs from the fixed effect because this method contains the unobserved variables (u_i) which are not correlated with all the observed variables (Park, 2011). The random effect allows the time-invariant variables to act as explanatory variables. This method has the regression equation which comprise of the error values from cross-sectional (u_i) and the error from time-series (ε_{it}). The equation can estimate as follows.

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

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_{it} is the unobserved effect of company i ; v_{it} is the error term of company i in the period t are independent identically

For this research, 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).

Hausman test

H_0 : FE / RE

H_1 : FE

If accepting H_0 means may use fixed effect model or random effect model, but, if accepting H_1 : means may use fixed effect model

Breusch-Pagan Lagrange Multiplier test.

The statistics used for testing by the hypothesis that:

H_0 : Not RE

H_1 : RE

If accepting H_0 means may use random effect model but, if accepting H_1 means may use RE

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

Variance Inflation Factors (VIF's)

Hair et al. (2010) found that the Variance Inflation Factor (VIF) test is a crucial process in data analysis used to measure the level of Multicollinearity (linear correlation among independent variables) in Regression Analysis. The VIF indicates how strongly the independent variables are correlated with each other, which may affect the reliability of the model. In addition, Hair et al. (2010) added that if the value of VIF exceeds 10, there will be a problem with Multicollinearity. This research uses the value of VIF is higher than 10 to insist on the multicollinearity problem.

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 the estimation of regression coefficients. However, the correlation coefficient must not exceed 0.8 for the criteria for investigating the problem (Hair et al., 2010).

Mediator Variable Distinction Test

Mediator variable refers to a variable that serves to explain the mechanism or process by which an independent variable influences a dependent variable. Multiple regression statistical analysis is used to test the relationship between these variables. There are four steps stages of mediator variable test with first stage test establish a significant relationship between the independent variable and the dependent variable. Second stage test demonstrate a significant relationship between the independent variable and the mediator variable. This is known as path the independent variable must significantly influence the mediator. Third stage test how that the mediator significantly predicts the dependent variable. Perform a regression analysis to show that the independent variable significantly predicts the dependent variable. This establishes the initial total effect (c). Fourth stage test the effect of the independent variable on the independent variable when the mediator is included in the model. In this step, include both the independent variable and the mediator in the regression analysis predicting the dependent variable. The direct effect of the IV (c') should be smaller than the total effect (c). If the effect of the independent variable on the dependent variable becomes nonsignificant when the mediator is included, full mediation is present or if the effect is reduced but remains significant, partial mediation exists. However, the mediator variable analysis condition requires that in steps one through three, all test results must be statistically significant before they can be tested in step four (Baron & Kenny, 1986). Past research in Thailand has also applied the concept of Baron and Kenny (1986) variable analysis in secondary data

research of samples of listed companies in the stock exchange of Thailand (Phanchaeng et al., 2024). The mediation model is often represented as figure 2:

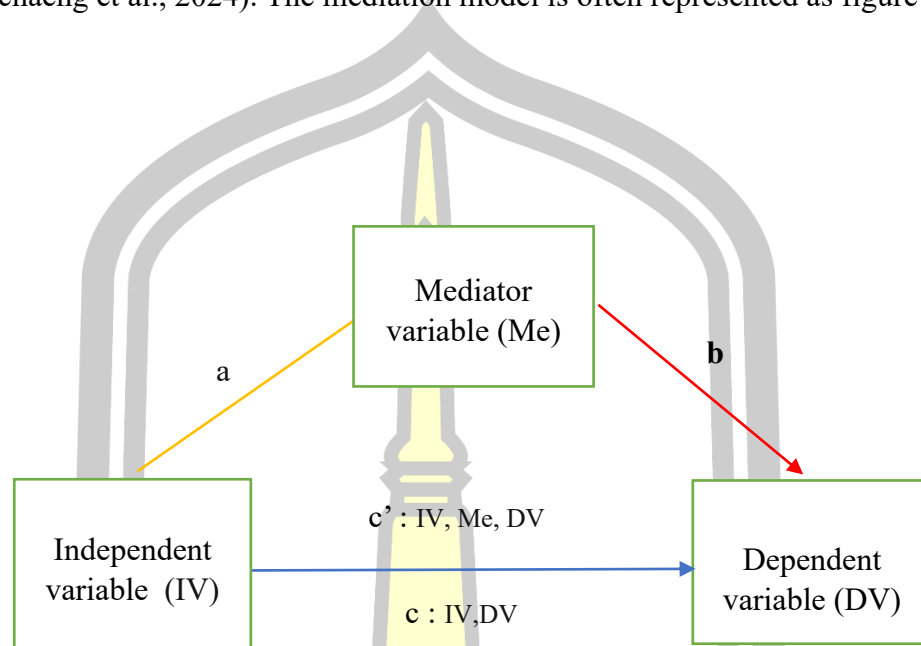


Figure 2 shows mediation model of Baron and Kenny (1986).

Moderator variable Test

Moderator variable (Mo) is a variable that adjusts the strength or direction of the relationship between an independent variable (IV) and a dependent variable (DV). However, the moderator variable can be either a qualitative variable (gender, race) or a quantitative variable (reward level). In addition, it must act as a moderator between the independent variable and the dependent variable, increasing or decreasing the strength of the relationship or changing the direction of the relationship, and it must not be directly related to the independent variable and the dependent variable. Furthermore, the moderator variable must operate through the interaction effect between the independent variable and the moderator variable (Baron & Kenny, 1986).

In addition, the explanation can be further from figure 3. Three causal paths that feed into the outcome variable of task performance: the impact of the noise intensity as a independent variable (Path a), the impact of controllability as a

moderator (Path b), and the interaction or product of these two (Path c). The moderator hypothesis is supported if the interaction (Path c) is significant. There may also be significant main effects for the predictor and the moderator (Paths a and b), but these are not directly relevant conceptually to testing the moderator hypothesis. In addition to these basic considerations, it is desirable that the moderator variable be uncorrelated with both the predictor and the criterion (the dependent variable) to provide a clearly interpretable interaction term. Another property of the moderator variable apparent from Figure 3 is that, unlike the mediator- predictor relation (where the predictor is causally antecedent to the mediator), moderators and predictors are at the same level in regard to their role as causal variables antecedent or exogenous to certain criterion effects (Baron & Kenny, 1986).

Therefore, there are three steps involved in testing a moderator: First stage test state the hypothesis related to the moderator variable. Formulate a hypothesis that the relationship between the independent variable and dependent variable will vary depending on the level of the moderator. Second stage test, use an interaction analysis model. The most suitable statistical models for testing a moderator are linear regression or ANOVA and use a path diagram to visualize the causal paths where the Moderator influences the relationship between the independent variable and dependent variable after that create an interaction Term (independent variable x Moderator) and include it in the analysis equation. Test the interaction term Between independent variable and moderator to determine if it is significant. Third stage test analyze and interpret results, If the moderator has a significant interaction effect, it means that the relationship between the independent variable and dependent variable changes based on the level of the moderator (Baron & Kenny, 1986).

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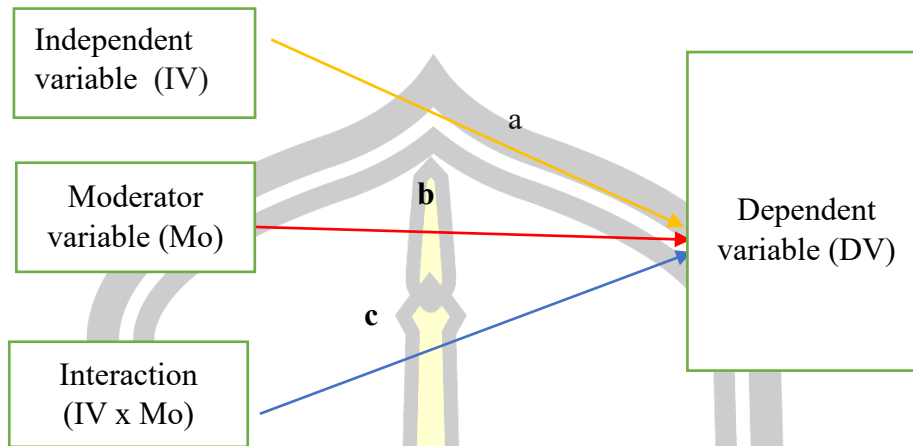


Figure 3 shows moderator model of Baron and Kenny (1986).

Research Model

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

Corporate digital transformation and real earnings management

To analyze the corporate digital transformation has a negative effect on the real earnings management, based on the previous theoretical analysis and research hypothesis H1, this research sets the following panel econometric model 1 :

Model 1

$$REM_{it} = \alpha_0 + \alpha_1 CDT_{it} + \alpha_2 FSIZE_{it} + \alpha_3 LEV_{it} + \alpha_4 COVID_{it} + \varepsilon_{i,t}$$

Corporate digital transformation and information asymmetry

To analyze the corporate digital transformation has a negative effect on information asymmetry, based on the previous theoretical analysis and research hypothesis H2, this research sets the following panel econometric model 2 :

Model 2

$$ASY_{it} = \alpha_0 + \alpha_1 CDT_{it} + \alpha_2 FSIZE_{it} + \alpha_3 LEV_{it} + \alpha_4 COVID_{it} + \varepsilon_{i,t}$$

Information asymmetry and real earnings management

To analyze the the information asymmetry has a positive effect on real earnings management, based on the previous theoretical analysis and research hypothesis H3, this research sets the following panel econometric model 3 :

Model 3

$$REM_{it} = \alpha_0 + \alpha_1 ASY_{it} + \alpha_2 FSIZE_{it} + \alpha_3 LEV_{it} + \alpha_4 COVID_{it} + \varepsilon_{i,t}$$

Information asymmetry negatively moderate the associated corporate digital transformation between real earnings management

To analyze the information asymmetry negatively moderate the associated corporate digital transformation between real earnings management, based on the previous theoretical analysis and research hypothesis H4, this research sets the following panel econometric model 4 :

Model 4

$$REM_{it} = \alpha_0 + \alpha_1 CDT_{it} + \alpha_2 ASY_{it} + \alpha_3 FSIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 COVID_{it} + \varepsilon_{i,t}$$

Board-level information technology governance positive moderate the associated corporate digital transformation between real earnings management

To analyze the board-level information technology governance positive moderate the associated corporate digital transformation between real earnings management, based on the previous theoretical analysis and research hypothesis H5 this research sets the following panel econometric model 5:

Model 5

$$REM_{it} = \alpha_0 + \alpha_1 CDT_{it} + BLITG_{it} + \alpha_2 CDT_{it} \times BLITG_{it} + \alpha_3 FSIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 COVID_{it} + \varepsilon_{i,t}$$

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, corporate digital transformations, 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 the listed companies in the stock exchanges of Thailand, during the year 2017 to 2022 for a total of six years. The final samples by industry of this study are 1,158 firm-year observations which met the study's criteria, are given below:

Table 6 Number of Companies Classify by Industry

Industry	Firms	n	%
Property & Construction	45	270	23.32
Services	40	240	20.73
Resources	28	168	14.51
Industrials	27	162	13.99
Technology	23	138	11.92
Argo & Food	21	126	10.88
Consumer products	9	54	4.66
Total	193	1,158	100

Table 6 demonstrates a summary of the number of listed companies classified by industry is 193 firms or 1,158 firm-year observations as follows. Firstly, observation in services and property& construction are the highest number 45

companies or 270 firm-year observations, representing 23.32 percentage, respectively. Secondly, the Services 40 companies or 240 firm-year observations. Thirdly, resources 28 companies or 168 firm-year observations. Fourthly, Industrials 27 companies or 162 firm-year observations. Fifthly, technology 23 companies or 138 firm-year observations. sixth, argo & food 21 companies or 126 firm-year, representing 20.73, 14.51, 13.99, 11.92, and 10.88 percentage, respectively. Finally, observation in consumers products is the least number 9 companies 54 firm-year observations, representing 4.66 percentage.

Summary of All Variables

The analysis of descriptive statistics describes the basic characteristics of variables in this study including mean, median, standard deviation, minimum, and maximum. The descriptive statistics of all variables are demonstrated as follow Table 7.

Table 7 Descriptive Statistics of Variables

Panel A : Dependent Variable, Independent Variable, Mediator Variable, Moderator Variable, and Control Variable							
Variables	Mean	Med.	SD.	Min.	Max.	Skewness	kurtosis
REM	0.2720	0.1805	0.3517	2.0000E-05	3.6215	3.9635	21.7140
CDT	81.0800	37.0000	115.2700	0.0000	923.0000	2.9850	11.6410
ASY	0.1046	0.0500	0.2032	0.0026	3.5600	7.5659	92.005
BLITG	3.2158	3.2967	0.81105	1.3333	5.7786	0.39866	-0.0872
FSIZE	6.28E+07	8.72E+06	2.27E+08	3.26E+05	3.42E+09	9.2502	106.30
LEV	0.4752	0.4925	0.1926	0.0261	0.9861	-0.14492	-0.5583
Panel B : Dummy Variable (COVID)							
Company: (measurement)				Frequency		Valid Percentage	
Covid-19: (1)				386		33.33	
Non Covid-19: (0)				772		66.67	

Note: The sample is 1158

Table 7 shows the descriptive statistics including the means, median, standard deviation, minimum, and maximum of dependent, independent, and mediate variables used in model. The mean and standard deviation of real earnings management (REM) as dependent variable has mean 0.2720, median 0.1805, standard

deviation 0.3517, which are ranging from $2.00E-05$ to 3.6215 and skewness 3.9635, kurtosis 21.7140. Consequently, the descriptive statistics indicated that the mean of real earnings management was 0.270, which is not regarded as significantly high. Nevertheless, in several instances, the figure reached 3.62, indicating that the organizations exhibited a rather low level of earnings management. While the corporate digital transformation (CDT) as independent variable has mean 81.0800, median 37.0000, standard deviation 115.2700 which are ranging from 0 to 923.000 and skewness 2.9850, kurtosis 11.6410. Thus, the digital transformation of enterprises had a mean of 81.08, but exhibited significant variability (Std. dev. 115.28), indicating that some companies had very high CDT while others had a CDT of 0. The information asymmetry (ASY) as mediate variable has mean 0.1046, median 0.05000, standard deviation 0.20316 which are ranging from 0.0026 to 3.5600 and skewness 7.5659, kurtosis 92.005. Therefore, from the average value of information asymmetry, it is quite low, but some companies have the highest value of 3.56. The conclusion is that the companies as a whole have low average information asymmetry. In terms of board-level information technology governance (BLITG) moderate as mediate variable has mean 3.2158, median 3.2967, standard deviation 0.81105 which are ranging from 1.3333 to 5.7786 and skewness 0.39867, kurtosis -0.0872. BLITG 's descriptive statistics show a moderate dispersion overall, with most scores hovering near the mean of 3.2, reflecting a moderate view of IT governance. The varying highs and lows across the wide score range may reflect some diversity of opinion or response, but there is still a tendency to cluster near the mean.

In terms of control variables are size, leverage and COVID-19 situation. Firm size (FSIZE) mean $6.28E+07$, median $8.72E+06$, standard deviation $2.27E+08$, which are ranging from $3.26E+05$ to $3.42E+09$ and skewness 9.2502, kurtosis 106.30. The size data indicates that a few numbers of huge corporations inflate the average, while the majority of firm are small to medium-sized, as evidenced by the median being below the average. While the leverage (LEV) as independent variable has mean 0.4752, median 0.4925, standard deviation 0.1926 which are ranging from 0.0261 to 0.9861 and skewness -0.1449, kurtosis -0.5583. Nevertheless, the descriptive statistics revealed that the majority of enterprises had a medium debt structure, approximating

the average of 47.52%, while a few displayed either very low or very high debt levels. Finally, the COVID-19 situation has a control variable of COVID-19 as a dummy variable. The number of companies affected by COVID is 386 companies, accounting for 0.33 percent, and the number of companies that are not affected by COVID is 772 companies, accounting for 66.67 percent.

Results of normality test distribution analysis.

In formulating the estimator within the regression equation, adherence to regression conditions is essential to prevent distortion of study data and avoid erroneous conclusions. The study requires that the data normality distribution (Piriyakul, 2014). Furthermore, statistics reveal that a Skewness between ± 1.96 and a Kurtosis between ± 3 suggest that the variable follows a normality distribution (Alabdullah et al., 2014). Consequently, the variables' data presented in Table 7 can be characterized as normality distribution distributed as follows:

Real earnings management (REM) in the context of normality distribution analysis is elucidated by the median is 0.1805, which is less than the mean of 0.2720, suggesting a rightward bias in the distribution. The standard deviation is 0.3517, signifying that the data is significantly dispersed relative to the mean. The minimum value of 0.00002 and the greatest value of 3.6215 signify a broad data range, with the maximum substantially exceeding the mean. The skewness value is 3.9635, indicating a significant positive skew in the distribution. The kurtosis value is 21.7140, signifying a pronounced peak and an extensive tail in the data distribution. The skewness exceeds 1.96, while the kurtosis is quite elevated, above 3. In conclusion, real earnings management (REM) exhibits a non-normally distributed dataset, evidenced by a skewness value beyond 1.96 and the kurtosis is very high, with a value of more than 3.

Corporate digital transformation (CDT) in the study of normal distribution is characterized by a median of 37.0000, which is less than the mean of 81.0800. The mean indicates that the distribution is positively skewed. The standard deviation is 115.2700, indicating significant data dispersion. The minimum value is 0.0000 and the greatest value is 923.0000, indicating a broad range of data. skewness is 2.9850,

indicating a significant positive skew, so the distribution is right-skewed kurtosis 11.6410, indicating a pronounced peak in the data distribution. Consequently, corporate digital transformation (CDT) does not follow a normal distribution, exhibiting a rightward skew in the data. Skewness exceeds 1.96, and Kurtosis is very elevated, surpassing 3.

Information asymmetry (ASY) in the study of normal distribution is characterized by the median. 0.0500 is below the mean of 0.1046, signifying a right-skewed distribution. The standard deviation is 0.2032, signifying a rather low level of dispersion. The minimum is 0.0026 and the maximum is 3.5600, signifying a broad data range. Skewness is 7.5659, signifying a markedly positive score as it exceeds 1.96, showing pronounced right skew. Kurtosis is 92.005, signifying a markedly high value, which suggests a pronounced peak and a significantly thick tail, since it exceeds 3. Conclusion: Information asymmetry (ASY) has a non-normal distribution characterized by right.

Board-level information technology governance (BLITG) in the context of normal distribution analysis is elucidated by the mean value is 3.2158 and the median value is 3.2967, which are close to each other, suggesting that the data is symmetrical. The standard deviation is 0.81105, signifying a modest distribution of the data. The minimum value is 1.3333 and the largest value is 5.7786, suggesting that the data range is relatively narrow. The skewness is 0.3987, approximating 0, signifying that the data is symmetrically distributed. The Kurtosis score is -0.0872, which is below 3, signifying that the data approximates a normality distribution. In conclusion, board-level information technology governance (BLITG) exhibits symmetrical data distribution and approximates a normal distribution.

The firm size (FSIZE) in normal distribution analysis is characterized by a median of $8.72E + 06$, significantly lower than the mean of $6.28E+07$, suggesting a pronounced right skew in the normality distribution. The standard deviation is $2.27E + 08$, signifying considerable variability. The maximum is $3.42E+09$ and the minimum is $3.26E+05$ suggesting a broad data range. Skewness is 9.2502, signifying a markedly positive number as it exceeds the normality distribution threshold of 1.96, hence showing a right-skewed distribution. Kurtosis is 106.30, exceeding the usual value of

3, signifying a pronounced peak and an exceptionally thick tail in the data distribution. In conclusion, firm size (FSIZE) has a non-normal data distribution with a significant number of outliers, resulting in the mean exceeding the median.

In the study of normality distribution, leverage (LEV) is characterized by a mean of 0.4752 and a median of 0.4925, both of which are close to each other, signifying a symmetrical distribution. The standard deviation is 0.1926, signifying modest data dispersion; the minimum is 0.0261 and the maximum is 0.9861, reflecting a narrow data range. Skewness is -0.1449, nearing 0, suggesting symmetry, while Kurtosis is -0.5583, approaching 3, indicating resemblance to a normal distribution. In conclusion, leverage (LEV) exhibits characteristics associated with normally distributed data.

Overview of the examination of normality distribution. The variables exhibiting the closest approximation to a normality distribution are board-level information technology governance (BLITG) and leverage (LEV), characterized by means that closely align with the median and exhibit low skewness. Furthermore, the variables exhibiting the greatest deviation from normality distribution are real earnings management (REM), corporate digital transformation (CDT), information asymmetry (ASY), and firm size (FSIZE), as evidenced by their pronounced skewness and kurtosis, along with abnormal distribution characterized by a mean significantly exceeding the median. The data exhibits right skewness, with most variables demonstrating elevated skewness and kurtosis, signifying a non-normality distribution and the presence of outliers.

Consequently, the study data exhibiting a non-normal distribution and right skew were rectified through data transformation to achieve normal distribution via logarithmic transformation for right-skewed data, incorporating an addition of 1 prior to executing the natural logarithm (Christensen & Prabhala, 1998; Sriersan et al., 2024; Vikberg & Björkman, 2020; Zhou et al., 2018), as illustrated in Table 8.

Table 8 indicates that the variables exhibiting non-normally distributed data: real earnings management (REM), information asymmetry (ASY), corporate digital transformation (CDT), board-level information technology governance (BLITG), firm size (FSIZE), and leverage (LEV) have been adjusted using the natural logarithm.

Alabdullah et al. (2014) established that a skewness value not surpassing ± 1.96 and a kurtosis value not surpassing ± 3 the variable data is normally distributed. The study's results indicated that real earnings management (log_REM) exhibited a skewness of 2.3540 and kurtosis of 7.5721, while information asymmetry (ASY) demonstrated a skewness of 4.0928 and kurtosis of 25.3990. Both variables exhibit skewness above ± 1.96 and kurtosis surpassing ± 3 , indicating that their data are non-normally distributed. In contra, the variables corporate digital transformation (CDT), firm size (FSIZE), and leverage (LEV) exhibited a distribution approximating normality, as shown by skewness values ranging from ± 1.9 and kurtosis values between -3 and +3.

Table 8 Descriptive statistics of variables in the case of natural logarithm variables.

Panel A: Dependent Variable, Independent Variable, Mediator Variable, Moderator Variable, and Control Variable							
Variables	Mean	Med.	SD.	Min.	Max.	Skewness	kurtosis
REM	0.2152	0.1659	0.2064	2.0000E-005	1.5307	2.3540	7.5721
CDT	3.6607	3.6376	1.2784	0.0000	6.8287	-0.1711	0.0975
ASY	0.0891	0.0488	0.1307	-0.0026	1.5173	4.0928	25.3990
BLITG	3.2158	3.2967	0.8111	1.3333	5.7786	0.3987	-0.0872
FSIZE	16.291	15.981	1.6440	12.6940	21.952	0.63825	0.1000
LEV	-0.8586	-0.7082	0.5361	-3.6472	-0.01397	-1.3759	2.0565

Panel B: Dummy Variable		
Company: (measurement)	Frequency	Percentage
Covid-19	386	33.33
Non Covid-19	772	66.67

Note: The sample is 1158

Therefore, the results in the picture of the correction of the variable data with non-normal distribution are summarized. This study uses the natural logarithm to achieve a normal distribution of the data. The study's results indicated that real earnings management (REM) exhibited skewness of 2.3540, kurtosis of 7.5721 information asymmetry (ASY) have the data distribution is non-normality. Therefore, in order for the data to be close to normal distribution, this study uses the robust standard errors technique to alleviate the non-normal distribution and to deal with the problem of non-constant variance (heteroskedasticity) and time correlation

(autocorrelation) in all models used in testing the hypothesis. In order for the study results to be reliable and not skewed (Francis et al., 2016).

The Results of Correlation Analysis

Correlation Analysis

One of the purposes of bivariate correlation analysis of Pearson correlation is to explore the relationships among variables. Another purpose is to detect multicollinearity in multiple regression assumptions. According to Hair et al. (2014), multicollinearity might exist when the intercorrelation of each predictor variable is more than 0.80, which assumes a high relationship. In this research, the bivariate correlation analysis is scaled to a two-tailed test with statistical significance at $p < 0.01$ and $p < 0.10$. This research employs a bivariate correlation analysis of Pearson correlation with all variables for two purposes: exploring the relationships among variables and examining multicollinearity problems. Table 9 shows the results of the correlation analyses of all variables. The results indicate that none of correlations exceed 0.80, which may not be concerned about multicollinearity problems. The details are as follows.

The result of the pearson correlation coefficient between dependent variables and control variables, it is found that there was a significant and positive relationship as follows. Leverage and real earning management have a significant and positive relationship ($r = 0.0172$, $p > 0.05$).

In parts of the correlation between independent variables, mediate variables, moderate variable, control variables, they are found that there were a significant and positive relationship as follows. Corporate digital transformation and information asymmetry, broad level information technology and control variables (firm size, leverage, Covid-19 have a significant and positive relationship ($r = 0.1371-0.4161$, $p > 0.01$).

In parts of the correlation between mediator variables and mediator variables and moderator variable, control variables. They are found that there were a significant and negative, positive relationship as follows. Information asymmetry and broad level information technology has a significant and negative e relationship ($r = - 0.1371-$

0.1403, $p > 0.01$). Additionally, The study found that information asymmetry and firm size have a significant and positive relationship ($r = 0.4634$, $p > 0.01$).

The result of the pearson correlation coefficient between moderator variable and control variables, it is found that there was a significant and negative, positive relationship as follows. Board-level information technology governance and firm size have a significant and negative relationship ($r = -0.112$, $p > 0.01$). Also, it found that broad level information technology and leverage have a significant and positive relationship ($r = 0.1120$, $p > 0.01$).

The result of the pearson correlation coefficient between control variables and control variables, it is found that there was a significant and positive relationship as follows. Firm size and leverage have a significant and positive relationship ($r = 0.3571$, $p > 0.01$).

Table 9 The Correlation Analysis

Variables	REM	CDT	ASY	BLITG	FSIZE	LEV	COVID
REM	1	0.0172	0.0193	0.0378	-0.0293	0.0720*	-0.0574
CDT		1	0.2376**	0.1446**	0.4161**	0.2729**	0.1371**
ASY			1	-0.1403**	0.4634**	-0.0091	-0.0159
BLITG				1	-0.1112**	0.1120**	0.0216
FSIZE					1	0.3571**	0.0181
LEV						1	0.0197
COVID							1

Note: (1) Sample 1158, (2) *. Correlation is significant at the 0.05 level (2-tailed), (3)** Correlation is significant at the 0.01 level (2-tailed).

The Result of Multiple Regression Analysis

Model Selection

This study constructs a sample that initially contains all companies listed in both the SET over a six-year during the period from 2017 to 2022. After collected the data, this study has a balance panel sample of 1,158 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).

In hypothesis testing, the data modeling is tested the reliability of the data, in order to be accurately estimated the model. Determining an appropriate model for panel data, having to perform statistical tests to confirm the selection of the estimation model. The model is estimated initially by fixed effect or a random effect model. For the criteria determining all models, in order to ensure valid statistical inference for a Breusch - Pagan test. If accepting the null hypothesis, no random effect in model will be appropriate. If rejecting the null assumption, the RE Model (Breusch & Pagan, 1980). Although, If accepting the null hypothesis. This study is not suitable to use a pooled OLS model because it has not considered that the survey units (Cross Section Unit) may be affected by external factors that are different or not and relate to collect the time series data. Moreover, the different survey units may be influenced by variables lurking outside the regression equation (Unobserved Heterogeneity) or if rejecting the null assumption use the RE model, However, to confirm the RE model, it is tested with Hausman Specification test (Park, 2011; Phiriyakun, 2016). Hausman Specification test. The null hypothesis is the effects of each variable are not related to other variables. If accepting the null hypothesis, the RE or FE model will be appropriate. If rejecting the null assumption, the FE estimate is appropriate (Hausman, 1978; Phiriyakun, 2016).

Table 10 Statistic Model Selection

Model	Breusch-Pagan test Chi-Square (χ^2 - test)	Hausman test Chi-Square (χ^2 - test)	Model Selection
Model 1: CDT >REM	1424.90***	10.9294***	FE
Model 2: CDT >ASY	1402.90***	19.0303***	FE
Model 3: ASY >REM	1414.65***	12.6346***	FE
Model 4: CDT >ASY>REM	1417.85***	12.2783**	FE
Model 5: CDT >BLITG>REM	1429.14***	12.1768**	FE

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

Table 10 present the statistic model selection, this study found that the statistics of Breusch-Pagan test of model 1 -5 shows the chi-squared test value (Chi2) with significance at 0.01 level ($p < 0.01$). This study found that the model 1-5 with the

chi-squared test value is 1424.90, 1402.90, 1414.65, 1417.85, and 1429.14, respectively. The assumption of the null hypothesis is rejected. The Model 1-5 with a RE model effect model is favored.

Therefore, to confirm the appropriateness of the RE model selection, the Hausman Specification test was examined. The results of the study found that: Model 1-3 with the chi-squared test with significance at 0.10 level ($p < 0.01$) and model 4-5 with the chi-squared test with significance at 0.05 level ($p < 0.05$). This study found that the model 1-5 with the chi-squared test value is 10.92494, 19.0303, 12.6346, 12.2783 and 12.1768 respectively. The assumption of the null hypothesis is rejected. The Model 1-5 with a FE model effect model is favored.

Consequently, in this research, we employed the FE model to evaluate the hypotheses from Mole 1–5, as the FE model is more appropriate than the RE model (Piriyakul, 2015). Previous studies have eused FE to study the variables as in this research. (Boachie & Mensah, 2022; Wen et al., 2023; Zhan & Jing, 2022).

Testing Hypothesis

This study detected the heteroskedasticity and the autocorrelation for all models. This study performed heteroskedasticity-consistent standard errors in terms of the robust standard errors option to get an effective regression (Cameron & Trivedi, 2005). Therefore, all regression shows the robust standard errors results from the fixed effect regression.

Testing Hypothesis 1

The hypotheses testing of corporate digital transformation has negative effect with real earnings management.

Table 11 demonstrates the results of a fixed effect regression analysis with real earning management as the dependent variable, corporate digital transformation as the independent variable. Three control variables (firm size, leverage, and covid) that were used to test the negatively affect between corporate digital transformation, control variables, and real earning management, which are followed by Hypothesis 1.

Table 11 Results of the corporate digital transformation has negative effect with real earnings management.

Panel A: Independent Variables	Model 1		
	REM		
	Coef.	t-test	p-value
Intercept	1.305**	2.549	0.011
CDT	0.013**	2.263	0.024
FSIZE	-0.071**	-2.269	0.023
LEV	-0.302	-1.182	0.237
COVID	-0.247***	-3.406	0.001
Panel B: Model Summary			
Within R-squared		0.764	
F-value		6.523***	
p-value		6.0762e-05	
Wald Chi-square (Heteroskedasticity Test)		50491.7***	
p-value		0.000	
Durbin-Watson		1.451	
Maximum VIF		1.313	
n		1158	

Note: 1) This table shows the regression fixed effects. 2) Symbols mean significance at: *** $p < 0.01$, ** $p < 0.05$. 3) n is sample group used in the study.

In addition, Table 11 the panel A in a presents the fixed effect model results that corporate digital transformation (CDT) has a positive significant effect with real earnings management (REM) ($H1: \beta = 1.305$; $p < 0.05$). **Therefore, hypothesis 1 is rejected.** This study found the result of the control variables: firm size (FSIZE) ($\beta = -0.071$; $p < 0.05$), leverage (LEV) ($\beta = -0.302$; $p > 0.10$), and COVID ($\beta = -0.247$; $p < 0.01$). Therefore, the firm size and covid-19 pandemic have a negative significance with real earnings management. The leverage has a negative significantly not with real earnings management.

Panel B presents the model predicts the relationship between independent variables and the dependent variables and the model analysis conducted to evaluate hypothesis 1, which shows within R-squared as 0.764, indicating that the within-unit variance of real earning management is approximately 76.4%, which is commendable in the context of panel data analysis. Additionally, the F-value is highly statistically

significant ($F = 2.096$, $p < 0.05$), suggesting that the overall model is robust and at least one independent variable influences real earning management. The Wald Chi-square (Heteroskedasticity Test) yielded a result of 50491.7 ($p\text{-value} = 0.000$), signifying the presence of heteroskedasticity in the data, as the null hypothesis (homoskedasticity) is rejected (White, 1980) and The Durbin-Watson test was conducted to assess autocorrelation issues, yielding a value of 1.451, which suggests that Model 1 may exhibit minor autocorrelation because values near 2 signify the absence of autocorrelation. This was mitigated by employing robust standard errors to address heteroskedasticity and autocorrelation. The variance inflation factors (VIFs) of real earning management and corporate digital transformation, which are used to test multicollinearity among the two categories of corporate digital transformation, together with the three control variables. In this case, the maximum VIF values of corporate digital transformation between real earning management is 1.313. 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 12 demonstrates the results of a fixed effect regression analysis to with information asymmetry as the dependent variable, corporate digital transformation as the independent variable. Three control variables (firm size, leverage, and covid) that were used to test the relationship between corporate digital transformation, control variables, and variables, information asymmetry which are followed by Hypothesis 2.

In addition, Table 12 the panel A in a presents the fixed effect model results that the corporate digital transformation (CDT) has a negative significant effect with information asymmetry (ASY) ($H2: \beta = -0.008$, $p < 0.10$). **Therefore, hypothesis 2 is accepted.** This study found the result of the control variables: firm size (FSIZE) ($\beta = 0.013$; $p < 0.10$), leverage (LEV) ($\beta = -0.015$; $p < 0.05$), and COVID ($\beta = -0.002$; $p > 0.10$). Therefore, the firm size has a positive significance with information asymmetry, leverage has a negative significantly with information asymmetry and covid-19 pandemic has a negative significantly not with information asymmetry.

Testing Hypothesis 2

The hypotheses testing of corporate digital transformation has a negatively affect with information asymmetry.

Table 12 Results of the corporate digital transformation has negatively effect with information asymmetry.

Panel A : Independent Variables	Model 2 ASY		
	Coef.	t-test	p-value
Intercept	-0.103	-0.880	0.379
CDT	-0.008*	-1.927	0.054
FSIZE	0.013*	1.870	0.061
LEV	-0.015**	-2.332	0.020
COVID	-0.002	-0.685	0.494
Panel B : Model Summary			
Within R-squared	0.010		
F-value	3.431***		
p-value	0.001		
Wald Chi-square (Heteroskedasticity Test)	75.366***		
p-value	9.23753e-199		
Durbin-Watson	1.950		
Maximum VIF	1.313		
n	1158		

Note: 1) This table shows the regression fixed effects. 2) Symbols mean significance at: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. (3) n is sample group used in the study.

Panel B presents the model predicts the relationship between independent variables and the dependent variables and the model analysis conducted to evaluate hypothesis 2, which shows within R-squared as 0.010, indicating that the within-unit variance of information asymmetry is approximately 1.00 %, demonstrating its restricted explanatory capacity for the dependent variable inside the units. However, the F-value is statistically significant ($F = 3.431$, $p < 0.01$), refer that some independent variables influence information asymmetry. The Wald Chi-square (Heteroskedasticity Test) yielded a result of 50491.7 and highly significant ($p\text{-value} = 9.23753e-199$), signifying the presence of heteroskedasticity in the data, as the null hypothesis (homoskedasticity) is rejected (White, 1980) and this was mitigated by employing

robust standard errors to address heteroskedasticity. The Durbin-Watson test was conducted to assess autocorrelation issues, yielding a value of 1.950, which suggests that Model 2 exhibit no issue of autocorrelation in this model, because the Durbin-Watson value is close to 2. The variance inflation factors (VIFs) of information asymmetry and corporate digital transformation, which are used to test multicollinearity among the two categories of corporate digital transformation, together with the three control variables. In this case, the maximum VIF values of corporate digital transformation between information asymmetry is 1.313. 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 demonstrates the results of a fixed effect regression analysis to with real earning management as the dependent variable, information asymmetry as the independent variable. Three control variables (firm size, leverage, and covid) that were used to test the relationship between information asymmetry control variables, real earning management variables which are followed by Hypothesis 3.

In addition, Table 13 the panel A in a presents the fixed effect model results that information asymmetry has positive effect with real earnings management. (H3: $\beta = -0.007$, $p > 0.10$). **Therefore, hypothesis 3 is rejected.** This study found the result of the control variables: firm size (FSIZE) ($\beta = -0.060$; $p < 0.05$), leverage (LEV) ($\beta = -0.034$; $p > 0.10$) and COVID ($\beta = -0.021$; $p < 0.01$). Therefore, the firm size has a negative significance with real earnings management, the covid-19 pandemic has a negative significantly with real earnings management and leverage has a negative significantly not with real earnings management.

Panel B presents the model predicts the relationship between independent variables and the dependent variables and the model analysis conducted to evaluate hypothesis 3, which shows within R-squared as 0.036 refer the model explains only 3.6% of the within-unit variance of real earnings management, indicating that the model has a low explanatory power for the dependent variable. However, the F-value is statistically significant ($F = 3.828$, $p < 0.01$), refer that some independent variables influence real earnings management. The Wald Chi-square (Heteroskedasticity Test)

Testing Hypothesis 3

The hypotheses testing of information asymmetry has positive effect with real earnings management.

Table 13 Results of the information asymmetry has positive effect with real earnings management.

Panel A: Independent Variables	Model 3 REM		
	Coef.	t-test	p-value
Intercept	1.171**	2.341	0.019
ASY	0.007	0.255	0.799
FSIZE	-0.060**	-1.988	0.046
LEV	-0.034	-1.258	0.209
COVID	-0.021***	-2.686	0.007
Panel B : Model Summary			
Within R-squared	0.036		
F-value	3.828***		
p-value	0.005		
Wald Chi-square (Heteroskedasticity Test)	30900.70 ***		
p-value	0.000		
Durbin-Watson	1.447		
Maximum VIF	1.528		
n	1158		

Note: 1) This table shows the regression fixed effects. 2) Symbols mean significance at: *** $p < 0.01$, ** $p < 0.05$. 3) n is sample group used in the study.

yielded a result of 30900.70 and highly significant ($p\text{-value} < 0.01$), signifying the presence of heteroskedasticity in the data, as the null hypothesis (homoskedasticity) is rejected (White, 1980) and this was mitigated by employing robust standard errors to address heteroskedasticity. The Durbin-Watson test was conducted to assess autocorrelation issues, yielding a value of 1.447, which suggests that Model 3 exhibit no issue of autocorrelation in this model, because the Durbin-Watson value is close to 1.50. The variance inflation factors (VIFs) of information asymmetry and real earnings management, which are used to test multicollinearity among the two categories of information asymmetry, together with the three control variables. In this

case, the maximum VIF values of information asymmetry between real earnings management is 1.528. 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.

Testing Hypothesis 4

The hypotheses testing of the information asymmetry negatively mediated the associated corporate digital transformation between real earnings management.

Table 14 Results of the information asymmetry negatively mediated the associated corporate digital transformation between real earnings management.

Panel A: Independent variables	Step 1		Step 2		Step 3		Step 4	
	Model 1		Model 2		Model 3		Model 4	
	REM		ASY		REM		REM	
	Coef.	t-test	Coef.	t-test	Coef.	t-test	Coef.	t-test
Intercept	1.305**	2.549	-0.103	-0.880	1.171**	2.341	1.306 **	2.555
CDT	0.013**	2.263	-0.008*	-1.927			0.013**	2.284
ASY					0.007	0.255	0.018	0.564
FSIZE	-0.071**	-2.269	0.013*	1.870	-0.060**	-1.988	-0.071**	-2.278
LEV	-0.302	-1.182	-0.015**	-2.332	-0.034	-1.258	-0.032	-1.171
COVID	-0.247***	-3.406	-0.002	-0.685	-0.021***	-2.686	-0.025 ***	-3.403
Panel B:								
Results hypotheses	Yes		Yes		No		No	
Panel C: Model Summary								
Within R-squared	0.764		0.010		0.036		0.041	
F-value	6.523***		3.431***		3.828***		5.248***	
p-value	6.0762e-05		0.001		0.005		0.000	
Wald Chi-square	50491.7***		75.366***		30900.70 ***		49675.5***	
p-value	0.000		9.23753e-19		0.000		0.000	
Durbin-Watson	1.451		1.950		1.447		1.450	
Maximum VIF	1.313		1.313		1.528		1.652	
n	1158		1158		1158		1158	

Note: 1) This table shows the regression fixed effects. 2) Symbols mean significance at: *** $p < 0.01$, ** $p < 0.05$ and $p < 0.10$. 3) Yes, is accepted hypotheses, No is rejected hypotheses. 4) n is sample group used in the study

Table 14 section model 4 demonstrates the results of a fixed effect regression analysis with real earning management as the dependent variable, information asymmetry as the mediate variable and corporate digital transformation as the independent variable. Three control variables (firm size, leverage, and covid) that

were used to test the relationship between corporate digital transformation, control variables, and real earning management, which are followed by hypothesis 4.

Therefore, table 14 section model 4, panel A investigation of information asymmetry adversely influenced the corporate digital transformation linked to real earnings management, serving as a test for hypothesis 4, using the analytical framework established by Baron and Kenny (1986). The test outcomes of model 4 revealed that there are four steps stages of mediator variable test with first stage test establish a significant relationship between the independent variable and the dependent variable. This is known as path c The study results indicated that corporate digital transformation positive significantly affected real earnings management (0.013; $p < 0.05$). Second stage test demonstrate a significant relationship between the independent variable and the mediator variable. This is known as path a or indirect effect. The study results indicated that corporate digital transformation negative significantly affected information asymmetry (-0.008*; $p < 0.05$). Third stage test how that the mediator significantly predicts the dependent variable. This is known as path b or indirect effect. The study results indicated that corporate digital transformation not positive significantly affected real earnings management (0.007; $p < 0.10$). However, the mediator variable analysis condition requires that in steps one through three, all test results must be statistically significant before they can be tested in step four (Baron & Kenny, 1986). The results of the study found that the first and second steps had a significant level, but the third step did not have a significant. Consequently, no examination is necessary. Fourth stage test the effect of the independent variable on the independent variable when the mediator is included in the model. This is known as path c' or direct effect. As a result, the analysis showed that this study's findings did not fit into the framework Baron and Kenny (1986) established. Therefore, information asymmetry cannot serve as a mediating variable; thus, hypothesis 4 is rejected.

Panel C section model 4 the model can predict the relationship between independent variables, mediate variable and dependent variable and the model analysis conducted to evaluate hypothesis 4, which shows within R-squared as 0.041 refer the model explains only 4.10% of the within-unit variance of real earnings

management, indicating that the model has a low explanatory power for the dependent variable. However, the F-value is statistically significant ($F = 5.248$, $p < 0.01$), refer that some independent variables influence real earnings management. The Wald Chi-square (Heteroskedasticity Test) yielded a result of 49675.5 and highly significant ($p\text{-value} < 0.01$), signifying the presence of heteroskedasticity in the data, as the null hypothesis (homoskedasticity) is rejected (White, 1980) and this was mitigated by employing robust standard errors to address heteroskedasticity. The Durbin-Watson test was conducted to assess autocorrelation issues, yielding a value of 1.450 which suggests that Model 4 exhibit no issue of autocorrelation in this model, because the Durbin-Watson value is close to 1.50. The variance inflation factors (VIFs) of corporate digital transformation and information asymmetry between real earning management, which are used to test multicollinearity among the two categories of corporate digital transformation and information asymmetry, together with the three control variables. In this case, the maximum VIF values of corporate digital transformation and information asymmetry between real earning management is 1.652. 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.

Testing Hypothesis 5

The hypotheses testing of the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management.

Table 15 demonstrates the results of a fixed effect regression analysis with real earning management as the dependent variable, board-level information technology governance as the moderator variable and corporate digital transformation as the independent variable. Three control variables (firm size, leverage, and covid) that were used to test the relationship between corporate digital transformation, control variables, and real earning management, which are followed by Hypothesis 5.

In addition, table 15 the panel A presents the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management (H5: $\beta = -0.021^{**}$; $p < 0.05$). **Therefore, hypothesis 5 is accepted.**

This study found the result of the control variables: firm size (FSIZE) ($\beta = -0.067$; $p < 0.05$), leverage (LEV) ($\beta = -0.030$; $p > 0.10$) and COVID ($\beta = -0.040$; $p < 0.01$). Therefore, the firm size has a negative significance with real earnings management, the covid-19 pandemic has a negative significantly with real earnings management and leverage has a negative significantly not with real earnings management.

Table 15 Results of the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management.

Panel A : Independent Variables	Model 5 REM		
	Coef.	t-test	p-value
Intercept	1.036**	2.078	0.038
CDT	0.801***	2.772	0.005
BLITG	0.634**	2.154	0.031
CDT*BLITG	-0.021**	-2.377	0.018
FSIZE	-0.067**	-2.229	0.026
LEV	-0.030	-1.167	0.243
COVID	-0.040***	-3.288	0.001
Panel B : Model Summary			
Within R-squared	0.056		
F-value	4.510***		
p-value	0.000266865		
Wald Chi-square (Heteroskedasticity Test)	74892.5 ***		
p-value	0.000		
Durbin-Watson	1.467		
Maximum VIF	29.906		
n	1158		

Note: 1) This table shows the regression fixed effects. 2) Symbols mean significance at: *** $p < 0.01$ and ** $p < 0.05$. 3). 4) n is sample group used in the study. 3) n is sample group used in the study.

Panel B presents the model predicts relationship between independent variables, mediate variable and dependent variable and the model analysis conducted to evaluate hypothesis 5, which shows within R-squared as 0.056 refer the independent variables can explain approximately 5.6% of the variation in the dependent variable. However, the F-value is statistically significant ($F = 4.510$, $p < 0.01$), refer that the model is overall statistically significant at the 1% level. The Wald Chi-square (Heteroskedasticity Test) yielded a result of 74892.50 and highly significant ($p\text{-value} < 0.01$), signifying the presence of heteroskedasticity in the data, as the null hypothesis (homoskedasticity) is rejected (White, 1980) and this was mitigated by employing robust standard errors to address heteroskedasticity. The Durbin-Watson test was conducted to assess autocorrelation issues, yielding a value of 1.467, which suggests that Model 5 exhibit no issue of autocorrelation in this model, because the Durbin-Watson value is close to 1.50. The variance inflation factors (VIFs) of corporate digital transformation, bord-level information technology governance and real earnings management, which are used to test multicollinearity among the three categories of corporate digital transformation, bord-level information technology governance with the three control variables. In this case, the maximum VIF values of information asymmetry between real earnings management is 29.91. The VIF values are very high exceeding 10 (Gujarati & Porter, 2009), indicating the presence of multicollinearity among the independent variables. And this was mitigated by employing robust standard errors to address multicollinearity.

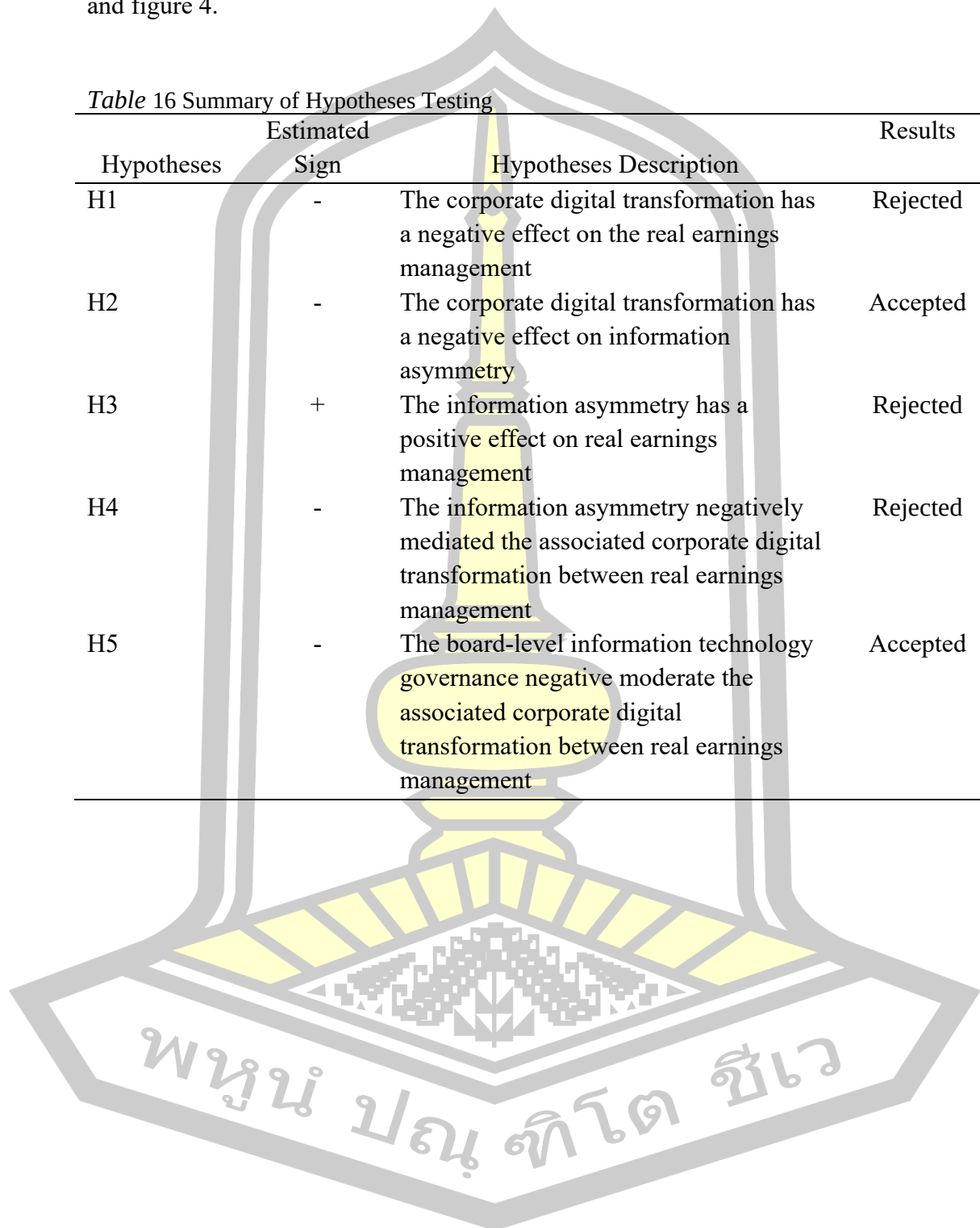
Summary of Hypotheses Testing

In conclusion, this chapter's essence is to present multiple regression analysis results using balanced panel data with fixed effect model results that are more suitable for estimation than other hypothesis testing methods. The above hypothesis test concluded the results of is fixed effect regression analysis with real earning management as dependent variable, corporate digital transformation as the independent variable, information asymmetry as the mediate variable, bord-level information technology governance as the moderator variable, and three control variables that were used to test the relationship between real earning management,

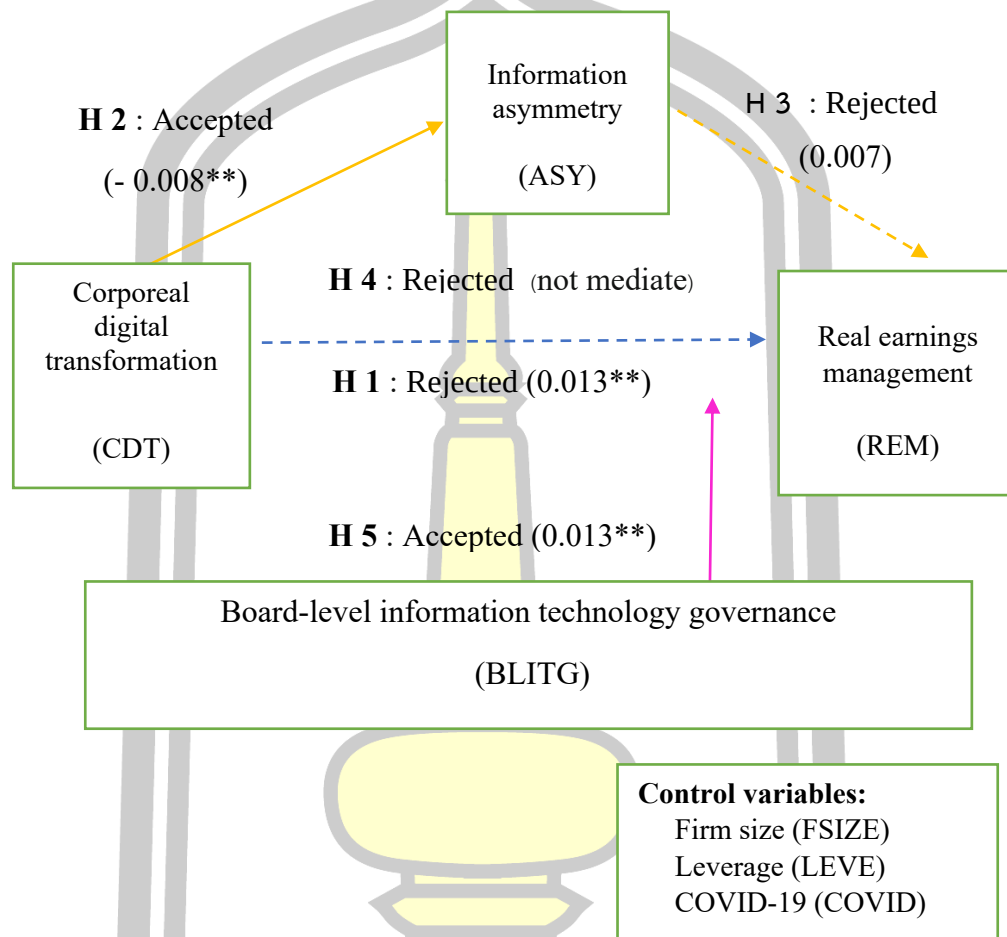
control variables. Finally, the summary of hypotheses testing is provided in table 16 and figure 4.

Table 16 Summary of Hypotheses Testing

Hypotheses	Estimated Sign	Hypotheses Description	Results
H1	-	The corporate digital transformation has a negative effect on the real earnings management	Rejected
H2	-	The corporate digital transformation has a negative effect on information asymmetry	Accepted
H3	+	The information asymmetry has a positive effect on real earnings management	Rejected
H4	-	The information asymmetry negatively mediated the associated corporate digital transformation between real earnings management	Rejected
H5	-	The board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management	Accepted



The Summary of hypotheses testing the effect of corporate digital transformation on real earnings management is shown in Figure 4



Note: 1) This table shows the regression fixed effects. 2) Symbols mean significance at: *** $p < 0.01$ and ** $p < 0.05$. 3). 4) n is sample group used in the study.

2) → is accepted hypothesis. --→ is rejected hypothesis.

Figure 4 The Summary of hypotheses testing the effect of corporate digital transformation on real earnings management.

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 corporate digital transformations of companies listed in the Stock Exchanges of Thailand, during the periods from 2017 to 2022 for a total of six years. This study started from the year 2017 since it was the year when the government policy has promoted the use of information technology and according to the principles of good governance of the Stock Exchange of Thailand, companies must bring innovative technology (Ministry of Digital Economy and Society, 2023; The securities and exchange commission Thailand, 2023a)

This study has five research questions including (1) How does the corporate digital transformation has a negative effect on the real earnings management of listed companies in the stock exchange of Thailand? (2) How does the corporate digital transformation has a negative effect on information asymmetry of listed companies in the stock exchange of Thailand? (3) How does the information asymmetry has a positive effect on real earnings management of listed companies in the stock exchange of Thailand? (4) How does the information asymmetry negatively mediate the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand? (5) How does the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand?

The objective test includes (1) To examine whether the corporate digital transformation has a negative effect on the real earnings management of listed companies in the stock exchange of Thailand. (2) To examine whether the corporate digital transformation has a negative effect on information asymmetry of listed companies in the stock exchange of Thailand. (3) To examine whether the information asymmetry has a positive effect on real earnings management of listed companies in the stock exchange of Thailand. (4) To examine whether the information asymmetry negatively mediated the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand. (5) To examine whether does the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management of listed companies in the stock exchange of Thailand.

The contents of the literature review are divided in to four sections as follows. The first section describes four theoretical perspectives employed to explain the research phenomenon. There is institutional theory, agency theory, stewardship theory, and resource dependency theory. The second section describes the concept of corporate digital transformation, earnings management, information asymmetry and board-level information technology governance. The third section describes the hypotheses development. In order to derive conclusions and lead to assumptions and summarize the results of all assumptions. This research identifies 5 hypothesis such as hypothesis 1 corporate digital transformation has a negative effect on the real earnings management. Hypothesis 2 corporate digital transformation has a negative effect on the information asymmetry. Hypothesis 2 Information asymmetry has positive effect on the real earnings management. Hypothesis 4 the information asymmetry negatively mediated the associated corporate digital transformation between real earnings management and hypothesis 5 the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management. This research develops conceptual modal used to study the impact of corporate digital transformation on earnings management.

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 firstly, companies were listed in the financial industry to consist of the finance and securities, banking and insurance. Secondly, the companies were unavailability data through the fiscal year-end 31ST December. Thirdly, the company is a rehabilitation. Fourth the company is incomplete data. Finally, the company unavailable in the English language the annual report. Therefore, the final sample group consisted of firm-year, there are 1,158 firm-year observations.

The sample studied, observation by industry is 193 firms or 1,158 firm-year observations as follows. Firstly, observation in services and property& construction are the highest number 45 companies or 270 firm-year observations, representing 23.32 percentage, respectively. Secondly, the Services 40 companies or 240 firm-year observations. Thirdly, resources 28 companies or 168 firm-year observations. Fourthly, Industrials 27 companies or 162 firm-year observations. Fifthly, technology 23 companies or 138 firm-year observations. sixth, argo & food 21 companies or 126 firm-year, representing 20.73, 14.51, 13.99, 11.92, and 10.88 percentage, respectively. Finally, observation in consumers products is the least number 9 companies 54 firm-year observations, representing 4.66 percentage.

This study has a balanced 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 fixed effect (FE) and random effect (RE) model. After the testing, the fixed effected model (FE) 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 fixed effected estimators. Consequently, in order to offer the corrected inference, this study used robust standard errors command to enhance the efficiency of the fixed effected model (Francis et al., 2016).

One of the purposes of bivariate correlation analysis of Pearson's Correlation is to explore the relationships among variables. This research employs a bivariate correlation analysis of Pearson correlation with all variables for two purposes: exploring the relationships among variables and examining multicollinearity problems. Table 9 shows the results of the correlation analyses of all variables. Correlation Analysis indicate that none of correlations exceed 0.80, which may not be concerned about multicollinearity problems.

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 random effect and tested the fixed effect model based on the chi-square. If accepting the null hypothesis, no random effect in model will be appropriate. If rejecting the null assumption, the RE Model (Breusch & Pagan, 1980). Although, If accepting the null hypothesis. This study is not suitable to use a pooled OLS model because it has not considered that the survey units (Cross Section Unit) may be affected by external factors that are different or not and relate to collect the time series data. Moreover, the different survey units may be influenced by variables lurking outside the regression equation (Unobserved Heterogeneity) or if rejecting the null assumption use the RE model, However, to confirm the RE model, it is tested with Hausman Specification test (Park, 2011; Phiriyakun, 2016). Hausman Specification test. The null hypothesis is the effects of each variable are not related to other variables. If accepting the null hypothesis, the RE model will be appropriate. If rejecting the null assumption, the FE estimate is appropriate (Hausman, 1978; Phiriyakun, 2016). The results of hypothesis testing are summarized as follows:

The fixed effect results that corporate digital transformation (CDT) has a positive significant effect with real earnings management (REM) ($H1: \beta = 1.305; p < 0.05$). **Therefore, hypothesis 1 is rejected.**

The fixed effect results that the corporate digital transformation (CDT) has a negative significant effect with information asymmetry (ASY) ($H2: \beta = -0.008, p < 0.10$). **Therefore, hypothesis 2 is accepted.**

The fixed effect results that the information asymmetry has positive effect with real earnings management. ($H3: \beta = -0.007, p > 0.10$). **Therefore, hypothesis 3 is rejected.**

The fixed effect results that the information asymmetry negatively mediated the associated corporate digital transformation between real earnings management. As a result, the analysis showed that this study's findings did not fit into the framework Baron and Kenny (1986) established. Therefore, information asymmetry cannot serve as a mediating variable; **thus, hypothesis 4 is rejected.**

The fixed effect regression results present the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management (H5: $\beta = -0.021^{**}$; $p < 0.05$). **Therefore, hypothesis 5 is accepted.**

Discussion

This research develops conceptual modal used to study the impact of corporate digital transformation on earnings management with information asymmetry as mediate variable and board-level information technology governance as moderator variable. Corporate digital transformation uses the frequency of words to characterize corporate digitalization, which is divided into automation, machine learning, digitization, artificial intelligence, big data, cloud computing, block chain and applications to represent corporate digital transformation. In recent years, some studies have begun to use archival data to examine digital transformation of firms (Zareie et al., 2024; Zhou & Li, 2023) using Python with the text analysis method, and the research extract all of the text content using the Java PDF box library. The research locates the words that characterize corporate digitalization strategies, namely automation, machine learning, digitization, artificial intelligence, big data, cloud computing, block chain and applications. However, information asymmetry measures the price spread of securities trading in the market (Kennedy, 2008). According to the study of Makhoul et al. (2022); Sokhiaw et al. (2018), is defined as specific knowledge of some investors that affects share value and increases earnings, but lacking such information makes a difference in earnings for other investors. Moreover, real earning management as dependent variable measure total abnormal production costs, abnormal discretionary expenses, and abnormal operating cash flows. Cohen and Zarowin (2010); Wen et al. (2023); Zhan and Jing (2022) found that real earnings management using abnormal production costs, abnormal

discretionary expenses, and abnormal operating cash flows. Further, this research identifies board information technology governance as moderate variable measure board of director capital, CIO/CTO on board of director capital, and board IT committee, board size, directors, share ownership, and board independence. Singh & Alhulail, 2023 found that This indicates that a higher proportion of members with IT experience and the presence of a board-level IT professional as chief information officer/chief technology officer and an IT committee positively impact operational performance. Finally, board-level IT governance competence and other governance attributes do not deter earnings management practices.

This research test 5 hypothesizes and there is result as following: (1) corporate digital transformation (CDT) has a positive significant effect with real earnings management (REM) ($H1: \beta = 1.305; p < 0.05$). **Therefore, hypothesis 1 is rejected.** This outcome contradicts earlier research suggesting that CDT diminishes REM by enhancing transparency, mitigating information asymmetry, and augmenting the quality of internal control (Zhan & Jing, 2022; Jia et al., 2022; Wen et al., 2023). These studies demonstrate that CDT improves transparency by utilizing real-time information and minimizing information gaps that could enable REM. Nevertheless, CDT ought to be employed in a manner that bolsters REM: executives may utilize CDT to modify operations, including as diminishing R&D or marketing expenditures, to recalibrate short-term profit metrics (Park, 2017; Commerford et al., 2018). While CDT enhances openness, if executives remain driven by self-interest, it may result in the manipulation of profit figures in the absence of board monitoring or an adequate information management system. Executives may exploit CDT (Goldfarb & Tucker, 2019). Furthermore, the data acquired via CDT may assist in diminishing the knowledge asymmetry between shareholders and executives (Makhlouf et al., 2022). Nevertheless, if executives remain driven by self-interest, they may continue to employ REM to present the desired profit, consistent with agency theory. Consequently, the adoption of CDT within an organization may not focus on diminishing REM, but rather on establishing an image or legitimacy in response to industry pressures or external circumstances which is in line with the institutional theory (Carpenter & Feroz, 2001).

(2) the corporate digital transformation (CDT) has a negative significant effect with information asymmetry (ASY) (H2: $\beta = -0.008$, $p < 0.10$). **Therefore, hypothesis 2 is accepted.** In alignment with the research conducted by Wen et al. (2023) and Zhan & Jing (2022), which demonstrated that CDT adversely affects information asymmetry, it is evident that CDT facilitates the disclosure of information in a more transparent and accessible manner, thereby hindering executives from withholding information from shareholders. Furthermore, CDT's capacity to gather, evaluate, and disseminate information instantaneously diminishes the expenses and duration associated with obtaining critical data, while ensuring that stakeholders possess uniform knowledge (Lin et al., 2018). Furthermore, the investigation conducted by Chen et al. (2022) revealed that CDT enhances the quality of accounting information by mitigating agency issues. This aligns with agency theory, which elucidates the issue of knowledge asymmetry between shareholders (principals) and executives (agents), leading to a conflict of interest (Jensen & Meckling, 1976). The findings of this study align with agency theory, which posits that CDT mitigates the information asymmetry by facilitating real-time information and transparent disclosure (Chen et al., 2024; Zhan & Jing, 2022), and with institutional theory, which underscores the influence of institutional pressures on organizational conduct (Carpenter & Feroz, 2001). When organizations employ corporate disclosure transparency (CDT) to address regulatory requirements, such as corporate governance, it enhances credibility and diminishes information asymmetry (Brahmana et al., 2018).

(3) the information asymmetry has positive effect with real earnings management. (H3: $\beta = -0.007$, $p > 0.10$). **Therefore, hypothesis 3 is rejected.** This outcome suggests that ASY is not a significant determinant influencing actual earnings management in the study situation. The findings are inconsistent with previous studies. Prior studies, including Dye (1988), Zhan and Jing (2022), and Harahap (2018), demonstrated that information asymmetry (ASY) positively influences real earnings management (REM), suggesting that the disparity of knowledge between executives and shareholders heightens the likelihood of executives exploiting REM for personal benefit. This study, however, did not identify

such a relationship, possibly due to the stringent external oversight in the Thai context or the specific industry examined, the decrease in ASY attributed to Corporate Digital Transformation (CDT), or the enhancement of a more transparent information disclosure system. Furthermore, the absence of ASY's impact on REM may indicate enhancements in corporate governance or external auditing that diminish the utilization of REM, despite the continued presence of ASY to a certain degree (Nasution et al., 2020). Furthermore, the significance of CDT in diminishing the information disparity and enhancing transparency may contribute to a reduction in the involvement of ASY in REM. The reliability of the findings of this study can be associated with agency theory. Jensen and Meckling (1976) asserted that ASY constitutes a significant issue in shareholder-management dynamics. Nevertheless, enhanced governance or the application of CDT to augment information sharing may mitigate the impact of ASY on REM. Institutional theory posits that organizational adaptation to institutional factors, including transparency rules, may mitigate the impact of ASY on REM (Carpenter & Feroz, 2001).

(4) information asymmetry negatively mediated the associated corporate digital transformation between real earnings management. As a result, the analysis showed that this study's findings did not fit into the framework Baron and Kenny (1986) established. Therefore, information asymmetry cannot serve as a mediating variable; **thus, hypothesis 4 is rejected**. The results suggest that while CDT diminishes ASY and ASY influences REM, the mediating function of ASY in this setting is not significant. This outcome defies the theoretical framework and prior studies. Baron and Kenny's (1986) analytical paradigm posits that the mediating variable is crucial in connecting CDT and REM by mitigating ASY's impact on REM. Nonetheless, the findings of this study indicate that ASY does not fulfill such a function. Potential explanations encompass: CDT's involvement is more significant than ASY because CDT may exert a more direct influence on REM than ASY, aligning with studies indicating that CDT might directly diminish profit management incentives by enhancing transparency and operational efficiency (Zhan & Jing, 2022; Wang & Wang, 2019). Despite the reduction in ASY, it does not substantially influence REM in this scenario, potentially due to particular circumstances, such as

stringent corporate governance. The findings of this study are associated with the agency theory proposed by Jensen and Meckling (1976), which posits that asymmetric information (ASY) generates issues between shareholders and management and that mitigating ASY should diminish the potential for real earnings management (REM). Nevertheless, if external governance mechanisms, such as legislation or the application of CDT, exert a more significant influence than ASY, it may diminish the function of ASY as a mediating variable. This outcome is also associated with institutional theory. The implementation of CDT in enterprises may stem from institutional pressures, such as transparency rules, which diminish the necessity for ASY as a mediating variable (Carpenter & Feroz, 2001; Bansal, 2023).

(5) the board-level information technology governance negative moderate the associated corporate digital transformation between real earnings management (H5: $\beta = -0.021^{**}$; $p < 0.05$). **Therefore, hypothesis 5 is accepted.** Which corresponds with the study of Singh and Alhulail (2023) board-level IT governance competence and other governance attributes do not deter earnings management practices. This outcome aligns with the study, as BLITG serves as a proxy to mitigate the risk associated with CDT adoption (Wang & Wang, 2019). Consequently, board-level IT governance facilitates the implementation of CDT to enhance transparency in operational procedures and diminish CEOs' motivations to engage in REM (Singh & Alhulail, 2023). The findings corroborate the agency theory framework, highlighting the necessity of suitable governance structures to mitigate conflicts between shareholders (principals) and executives (agents) (Jensen & Meckling, 1976). Furthermore, BLITG functions to oversee and regulate executives' technological choices, particularly the deployment of CDT within the firm, hence diminishing the potential for executives to exploit REM for personal benefit (Singh & Alhulail, 2023). Moreover, it aligns with resource dependency theory, which posits that BLITG enhances organizational value by incorporating IT experts on the board, thereby facilitating advisory support and augmenting the efficacy of governance decision-making processes (Benaroch & Chernobai, 2017).

Theoretical and Managerial Contribution

Theoretical Contribution

This study applies agency theory to explain the real earning management, corporate digital transformation, Information asymmetry, and board level information technology governance applies the stewardship theory and resource dependency theory to examine the corporate digital transformation.

Firstly, this study uses agency theory to shed light on the progress the actions of the executive (agent) who is authorized by the principal shareholders to maximize the benefits for the principal. The executives have changed their work to corporate digital transformation and it is a strategy that uses communication of information to stakeholders to ensure equal information and reduce the management's real profit management (Wen et al., 2023). The results of this study broader application the use of corporate digital transformation (CDT), by companies to reduce real earnings management and information asymmetry.

Secondly, the result of this study found that stewardship theory and resource dependency theory used to describe variables board level information technology governance. The stewardship theory posits that the successful performance of stewards (executives) is influenced by the company's governance structure, which enables the executives to carry out their responsibilities effectively. Autonomous in administration results in decreased expenses for agents (Davis et al., 1997), and board is knowledge, expertise, experience, skills, relationships, and reputation (Hillman & Dalziel, 2003) (Hillman & Dalziel, 2003) protect the company's interests, which is in line with the resource dependence theory stated Zahra and Pearce (1989), Therefore, the results of this study found that directors with information technology knowledge, expertise and experience when the organization uses corporate digital transformation will have a greater ability to reduce real profit management.

Managerial Contribution

This research's findings significantly impact executive practices, highlighting the importance of corporate digital transformation (CDT), information asymmetry (ASY), and board-level IT Governance (BLITG) in overseeing real earnings

management (REM). The findings are categorized into six items, summarized as follows: First, the application of digital technologies to enhance transparency. This research underscores the necessity of using CDT to enhance operational transparency and disseminate real-time information, thereby mitigating information asymmetry and the potential for profit manipulation (Zhan & Jing, 2022; Wen et al., 2023). Executives ought to invest in digital technologies, like AI, blockchain, and sophisticated data analytics, to guarantee precise, timely, and transparent information dissemination, hence fostering trust among stakeholders. Secondly, mitigating actual profit manipulation with effective governance. The study's findings suggest that BLITG can diminish REM by implementing a robust governance framework for the utilization of digital technology within businesses (Singh & Alhulail, 2023). Consequently, firms ought to form a committee including IT specialists, including CIOs or CTOs, and create a technology governance structure to enhance decision-making efficiency and mitigate the potential for profit manipulation. Third, mitigating conflicts between shareholders and executives. The introduction of CDT mitigates agency conflicts between executives and shareholders by diminishing information asymmetry and enhancing the quality of financial reporting (Jensen & Meckling, 1976; Chen et al., 2024). Consequently, executives ought to employ CDT in conjunction with suitable governance frameworks to avert the misuse of technology. Fourth, adjusting to regulatory and institutional demands. The study's findings suggest that CDT aids firms in adhering to transparency mandates and enhancing trust, hence mitigating the risk of earnings manipulation (Carpenter & Feroz, 2001; Bansal, 2023). Consequently, CEOs ought to employ CDT to comply with regulatory mandates and cultivate a positive corporate reputation. Fifth, advocating for long-term strategic planning. The synergistic effect of CDT and BLITG establishes a robust management framework for long-term strategic planning, allowing firms to adapt to market fluctuations and technological advancements (Singh & Alhulail, 2023; Wang & Wang, 2019). Consequently, executives ought to incorporate CDT into long-term strategic frameworks while instituting governance structures to guarantee the sustainable and ethical utilization of technology within firms.

Concluded, this research underscores the significance of CDT and BLITG in diminishing REM and enhancing financial transparency. Executives must emphasize the integration of digital technology alongside robust governance to improve sustainability and company trust.

Limitations and Future Research Directions

Limitations

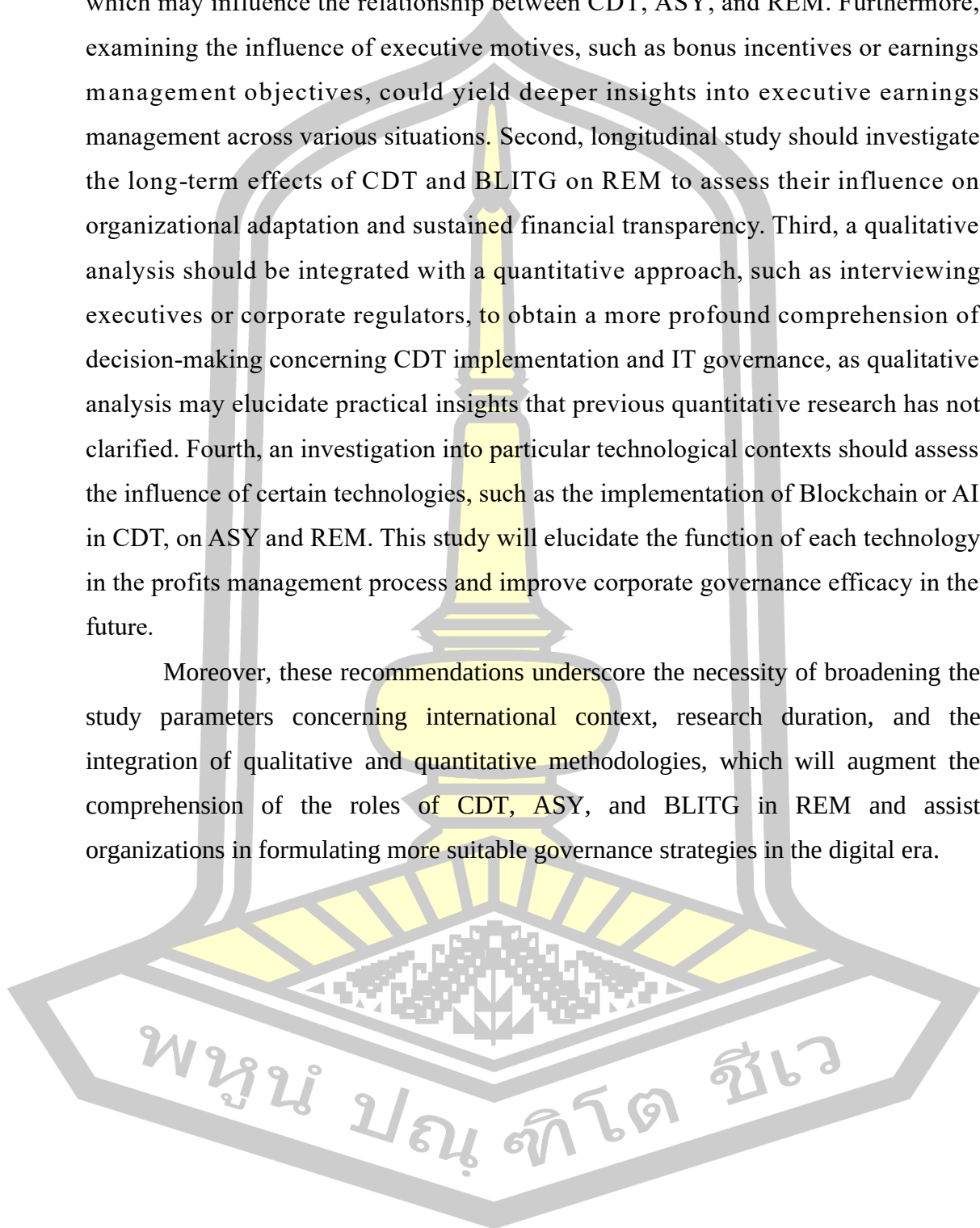
The limitations of this study can be categorized into four problems. First, this study concentrates on the implementation of Corporate Digital Transformation (CDT) and Board-Level IT Governance (BLITG) within companies in Thailand, potentially constraining the applicability of the findings to international contexts characterized by diverse governance frameworks or organizational architectures, such as those in the United States or Europe. Regulatory frameworks and technological preparedness in other nations may influence the application of CDT and BLITG distinctively compared to Thailand. Secondly, the assessment of constrained variables, such as information asymmetry (ASY) and real earnings management (REM), may lack precision due to their dependence on indicators from databases that may not accurately represent the true attributes of the data or organizational conduct (Nasution et al., 2020; Chen et al., 2024). The analysis of this research is on the short-term timeframe, which may not accurately represent the long-term effects of CDT on REM or organizational adaptability. A longitudinal investigation may yield more extensive insights into the long-term impacts (Wang & Wang, 2019). Fourth, the omission of confounding variables. This research has not thoroughly examined other elements, such as the quality of corporate governance or the experience of the IT board, which may influence the presented outcomes (Singh & Alhulail, 2023).

Future Research Directions

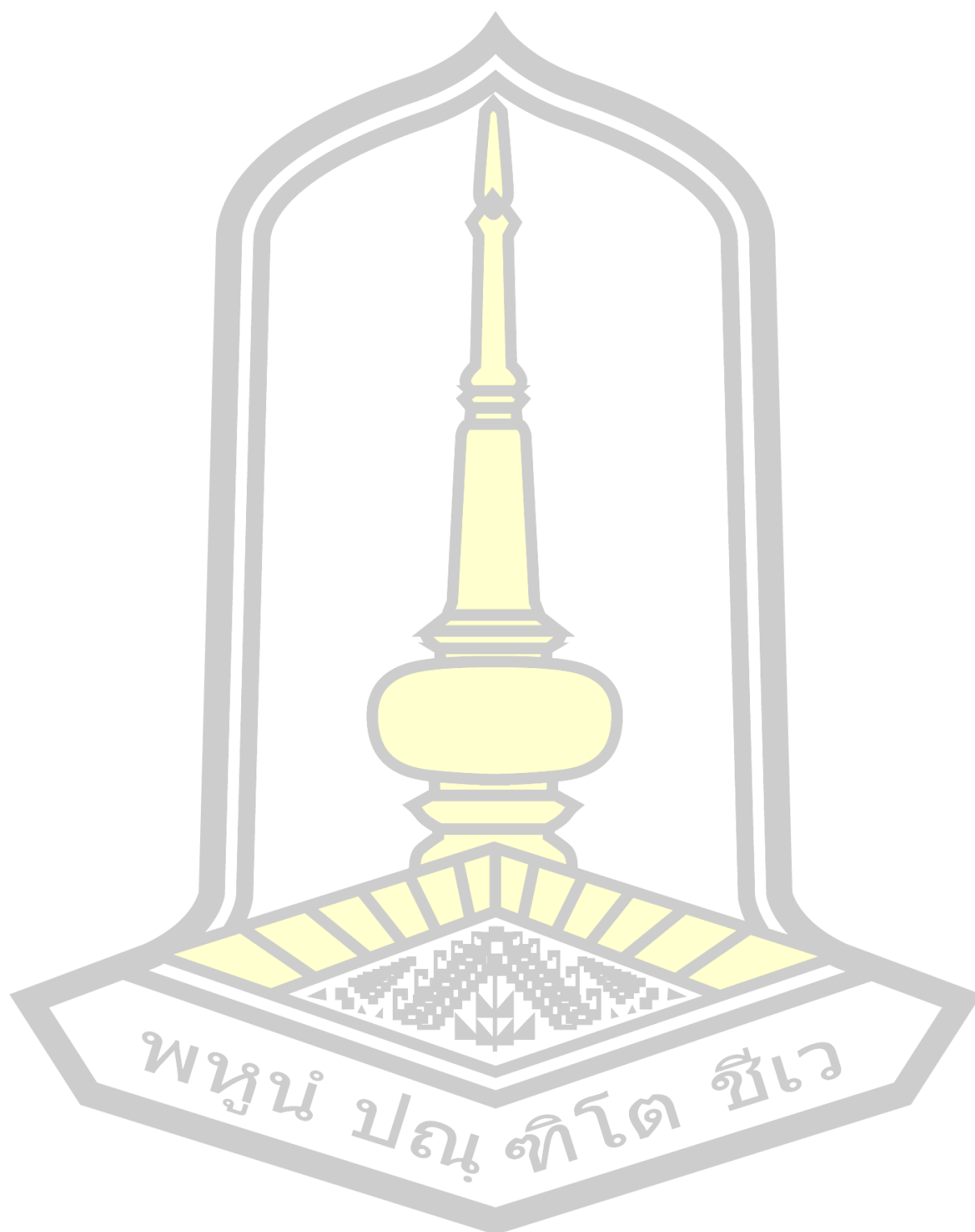
Drawing from the research findings about the effect of corporate digital transformation (CDT), information asymmetry (ASY), and board-Level IT governance (BLITG) on Real Earnings Management (REM), four recommendations for subsequent research are presented as follows: first, the research across various industry and national contexts should be broadened to encompass specific sectors such as finance, technology, and manufacturing, as well as additional factors like the

quality of corporate governance and the readiness of IT-related human resources, which may influence the relationship between CDT, ASY, and REM. Furthermore, examining the influence of executive motives, such as bonus incentives or earnings management objectives, could yield deeper insights into executive earnings management across various situations. Second, longitudinal study should investigate the long-term effects of CDT and BLITG on REM to assess their influence on organizational adaptation and sustained financial transparency. Third, a qualitative analysis should be integrated with a quantitative approach, such as interviewing executives or corporate regulators, to obtain a more profound comprehension of decision-making concerning CDT implementation and IT governance, as qualitative analysis may elucidate practical insights that previous quantitative research has not clarified. Fourth, an investigation into particular technological contexts should assess the influence of certain technologies, such as the implementation of Blockchain or AI in CDT, on ASY and REM. This study will elucidate the function of each technology in the profits management process and improve corporate governance efficacy in the future.

Moreover, these recommendations underscore the necessity of broadening the study parameters concerning international context, research duration, and the integration of qualitative and quantitative methodologies, which will augment the comprehension of the roles of CDT, ASY, and BLITG in REM and assist organizations in formulating more suitable governance strategies in the digital era.



APPENDICES



APPENDIX A

Certificate of Approval form Mahasarakham University Ethics Committee for Research Involving Human Subject and Certificate Center for Ethics in Human Research



MAHASARAKHAM UNIVERSITY ETHICS COMMITTEE FOR RESEARCH INVOLVING HUMAN SUBJECTS

Certificate of Approval

Approval number: 207-242/2024

Title : The Effect of Corporate Digital Transformation on Real Earnings Management : An Empirical Evidence form Listed Companies in The Stock Exchange of Thailand.

Principal Investigator : Miss. Isari Keeyangrungreoung

Responsible Department : Faculty of Accountancy and Management

Research site : Faculty of Accountancy and Management

Review Method : Exemption Review

Date of Manufacture : 9 April 2024

expire : 8 April 2025

This research application has been reviewed and approved by the Ethics Committee for Research Involving Human Subjects, Mahasarakham University, Thailand. Approval is dependent on local ethical approval having been received. Any subsequent changes to the consent form must be re-submitted to the Committee.

Ratree S.

(Assistant Professor Ratree Sawangjit)

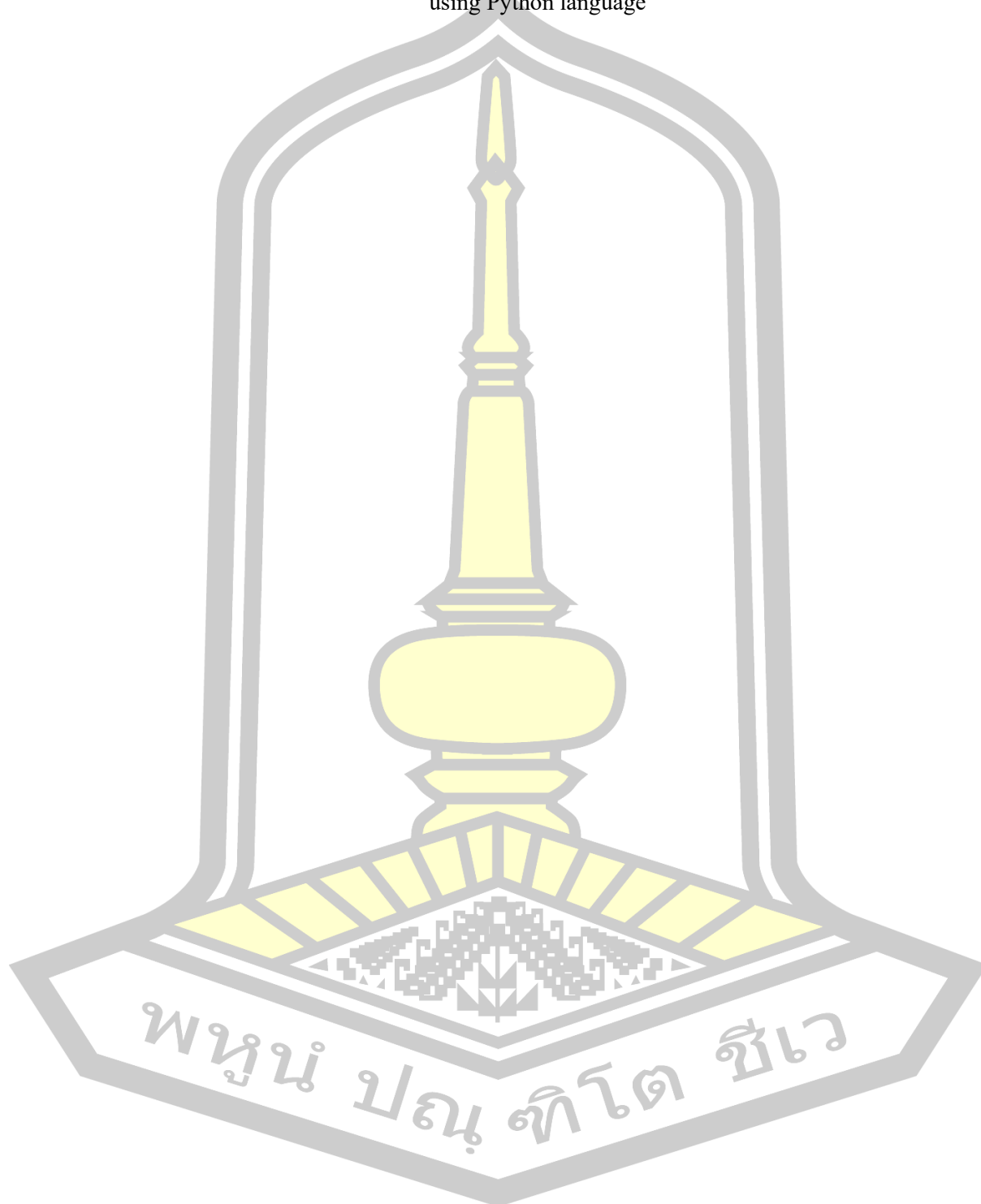
Chairman

Approval is granted subject to the following conditions: (see back of this Certificate)



APPENDIX B

Performance evaluation of word counting program in English annual report in PDF format
using Python language



**CDT word count program evaluation form in English annual reports in pdf
format
with Python (for experts)**

Instructions

This questionnaire is an evaluation form for the efficiency of the CDT word count program in the annual report in PDF format to count the specified keywords correctly and completely. The results of your evaluation will be useful for the overall analysis of research data and as a guideline for improving and developing the tool further.

Please mark [/] in the blank that corresponds to your opinion.

Valuation steps

1. Study the CDT program evaluation overview in order of Folder 0-7.
2. Install the CDT word count program according to the program installation manual (Folder No. 3).
3. Evaluate the CDT word count program according to the CDT program user manual (Folder No. 3).
4. Evaluate the efficiency of the CDT word count program.
5. Check the CDT word count results (Folder No. 7).
6. Check the CDT word count results with the PDF word count program searched by the researcher.

Respectfully,

Ms. Issari Keeyangrungruang

PhD student in accounting

Faculty of Accounting and Management, Maharakham University

**CDT word count program evaluation form in English annual reports in pdf
format
with Python (for experts)**

Part 1: Basic information about experts.

Please fill in your basic information

1. Name-Surname::

2. Position:

3. Specialization: _____
4. Experience in software development/data analysis: _____ years.
5. Contact Information (E-mail or Phone): _____

Part 2: Evaluation of the program's accuracy and reliability (additional)

1. Completeness of data retrieval

Can the program collect all relevant data according to the specified words in the annual report?

- ☐ Complete data every time
- ☐ Missing some data
- ☐ Incomplete data

Additional advice (if any):

2. **Accuracy of keyword-based data extraction**

How accurately can the program extract text that matches the words specified in the annual report?

- ☐ Data is extracted accurately every time
- ☐ There are errors in data extraction sometimes
- ☐ There are inaccurate extracted texts

Additional advice (if any):

3. **Handling of Various file formats.**

Can the program extract data from annual report files with various formats (e.g. PDF, Word, Excel)?

- ☐ Data can be extracted correctly from all file formats.
- ☐ Data can be extracted only from some file formats.
- ☐ Data cannot be extracted from some file formats.

Additional advice (if any):

4. **Data reliability.**

Is the data collected by the program reliable and can be used?

- ☐ Highly reliable
- ☐ Moderately reliable
- ☐ Some errors in the data
- ☐ Unreliable

Additional advice (if any):

5. **Efficiency in Fast Data Retrieval.**

Can the program retrieve data quickly without compromising accuracy?

- ☐ Fast and accurate data retrieval
- ☐ Moderate speed but accurate
- ☐ Slow in some cases but still accurate
- ☐ Slow and error-prone

Additional advice (if any):

6. Consistency of Operation

Can the program operate stably and consistently every time it is used?

- ☐ Stable all the time
- ☐ Sometimes it stops working
- ☐ It stops working frequently
- ☐ It stops working all the time

Additional instructions (if any):

7. Error Handling

Can the program detect and handle errors well? (If no errors occur, please select "No errors occur")

- ☐ Error handling is complete.
- ☐ Error handling is possible in some cases.
- ☐ There are unhandled errors.
- ☐ There is no good error handling.
- ☐ No errors occurred during the test.

Additional instructions (if any):

Section 3: Evaluation of usability.

1. Handling Large Data Files.

Can the program handle large annual report files well?

- ☐ Handles well, no problems
- ☐ Handles moderately
- ☐ There are problems in handling large files

Additional instructions (if any):

2. Ease of Use

Is the program easy to use for general users?

- ☐ Easy to use and understand immediately
- ☐ Needs a little guidance
- ☐ Difficult to use for inexperienced users
- ☐ Very difficult to use

Additional instructions (if any);

3. Processing Speed.

Can the program process and retrieve data quickly?

- ☐ Fast and efficient
- ☐ Moderate speed
- ☐ Slow in some cases
- ☐ Very slow

Additional instructions (if any):

Section 4: Additional Suggestions and Comments

1. Do you have any suggestions for further improvement or development of the program?

2. Do you have any additional comments on the reliability of the program?

Signature.....Expert

(.....)

แบบประเมินประสิทธิภาพของโปรแกรมนับคำ CDT ในรายงานประจำปีภาษาอังกฤษ รูปแบบ PDF

ด้วยภาษา Python (สำหรับผู้เชี่ยวชาญ)

คำชี้แจง

แบบสอบถามฉบับนี้ เป็นแบบประเมินประสิทธิภาพของโปรแกรมนับคำสำคัญในรายงานประจำปี รูปแบบ PDF เพื่อให้เน้นคำสำคัญตามที่กำหนดได้ถูกต้องครบถ้วน ซึ่งผลจากการตอบแบบประเมินของท่านจะเป็นประโยชน์ ต่อการวิเคราะห์ข้อมูลการวิจัยโดยรวม และเป็นแนวทางในการปรับปรุงพัฒนาเครื่องมือให้ดียิ่งขึ้นต่อไป

โปรดทำเครื่องหมาย [✓] ในช่องว่าง ที่ตรงกับความเห็นของท่าน

ขั้นตอนการประเมิน

1. ให้ศึกษาภาพรวมของการประเมินโปรแกรม CDT ตามลำดับของ Folder ลำดับที่ 0-7
2. ติดตั้งโปรแกรมนับคำ CDT ตามคู่มือการติดตั้งโปรแกรม (Folder หมายเลข 3)
3. ดำเนินการประเมินโปรแกรมนับคำ CDT ตามคู่มือการใช้งานโปรแกรม CDT (Folder หมายเลข 3)
4. ดำเนินการประเมินประสิทธิภาพของโปรแกรมนับคำ CDT
5. ตรวจสอบผลการการนับคำของโปรแกรมนับคำ CDT (Folder หมายเลข 7)
6. ตรวจสอบผลการนับคำของโปรแกรมนับคำ CDT กับโปรแกรมการนับคำด้วย PDF ที่ค้นโดยนักวิจัย

ขอแสดงความนับถือ

นางสาวอิสริยา ก้อย่างรุ่งเรือง

นิสิตปริญญาเอก สาขาการบัญชี

คณะบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม

พจนานุกรม ศัพท์ ชีว

แบบประเมินประสิทธิภาพของโปรแกรมนับคำ CDT ในรายงานประจำปีภาษาอังกฤษ รูปแบบ PDF

ด้วยภาษา Python (สำหรับผู้เชี่ยวชาญ)

ส่วนที่ 1: ข้อมูลเบื้องต้นเกี่ยวกับผู้เชี่ยวชาญ

กรุณากรอกข้อมูลเบื้องต้นของท่าน

6. ชื่อ-สกุล: _____
7. ตำแหน่ง: _____
8. ความเชี่ยวชาญเฉพาะด้าน: _____
9. ประสบการณ์ในการพัฒนาซอฟต์แวร์/การวิเคราะห์ข้อมูล: _____ ปี
10. ข้อมูลติดต่อ (อีเมลหรือเบอร์โทรศัพท์): _____

ส่วนที่ 2: การประเมินความถูกต้องและน่าเชื่อถือของโปรแกรม (เพิ่มเติม)

4. ความครบถ้วนในการดึงข้อมูล (Completeness of Data Retrieval)

โปรแกรมสามารถเก็บข้อมูลที่เกี่ยวข้องทั้งหมดตามคำที่กำหนดในรายงานประจำปีได้ครบถ้วนหรือไม่

- ☐ ข้อมูลครบถ้วนทุกครั้ง
- ☐ ข้อมูลขาดหายไปบางส่วน
- ☐ ข้อมูลไม่ครบถ้วน

คำแนะนำเพิ่มเติม (ถ้ามี):

พูน ปณ จิต ชีวะ

5. ความแม่นยำในการดึงข้อมูลตามคำที่กำหนด (Accuracy of Keyword-Based Data Extraction)

โปรแกรมสามารถดึงข้อมูลที่ตรงตามคำที่กำหนดในรายงานประจำปีได้แม่นยำเพียงใด

- ☐ ดึงข้อมูลได้แม่นยำทุกครั้ง
- ☐ มีข้อผิดพลาดในการดึงข้อมูลบางครั้ง
- ☐ มีข้อความที่ดึงมาไม่แม่นยำ

คำแนะนำเพิ่มเติม (ถ้ามี):

6. การจัดการรูปแบบข้อมูลที่หลากหลาย (Handling of Various File Formats)

โปรแกรมสามารถดึงข้อมูลจากไฟล์รายงานประจำปีที่มีรูปแบบต่าง ๆ ได้หรือไม่ (เช่น PDF, Word, Excel)

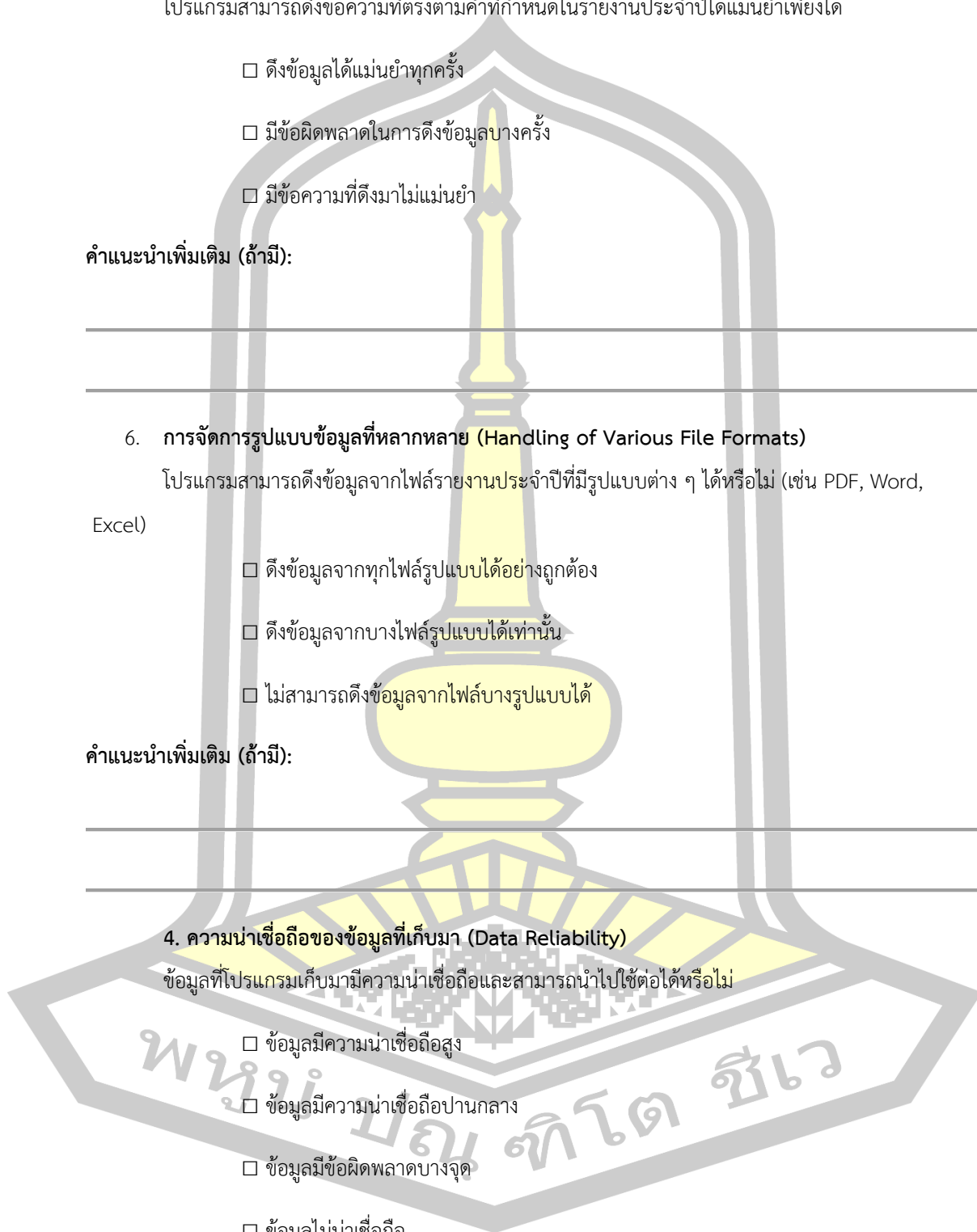
- ☐ ดึงข้อมูลจากทุกไฟล์รูปแบบได้อย่างถูกต้อง
- ☐ ดึงข้อมูลจากบางไฟล์รูปแบบได้เท่านั้น
- ☐ ไม่สามารถดึงข้อมูลจากไฟล์บางรูปแบบได้

คำแนะนำเพิ่มเติม (ถ้ามี):

4. ความน่าเชื่อถือของข้อมูลที่เก็บมา (Data Reliability)

ข้อมูลที่โปรแกรมเก็บมามีความน่าเชื่อถือและสามารถนำไปใช้ได้หรือไม่

- ☐ ข้อมูลมีความน่าเชื่อถือสูง
- ☐ ข้อมูลมีความน่าเชื่อถือปานกลาง
- ☐ ข้อมูลมีข้อผิดพลาดบางจุด
- ☐ ข้อมูลไม่น่าเชื่อถือ



คำแนะนำเพิ่มเติม (ถ้ามี):

5. ประสิทธิภาพในการดึงข้อมูลแบบรวดเร็ว (Efficiency in Fast Data Retrieval)

โปรแกรมสามารถดึงข้อมูลได้อย่างรวดเร็วหรือไม่ โดยไม่กระทบต่อความถูกต้อง

- ☐ ดึงข้อมูลได้รวดเร็วและถูกต้อง
- ☐ ความเร็วปานกลาง แต่ถูกต้อง
- ☐ ช้าในบางกรณี แต่ยังคงความถูกต้อง
- ☐ ช้าและเกิดข้อผิดพลาด

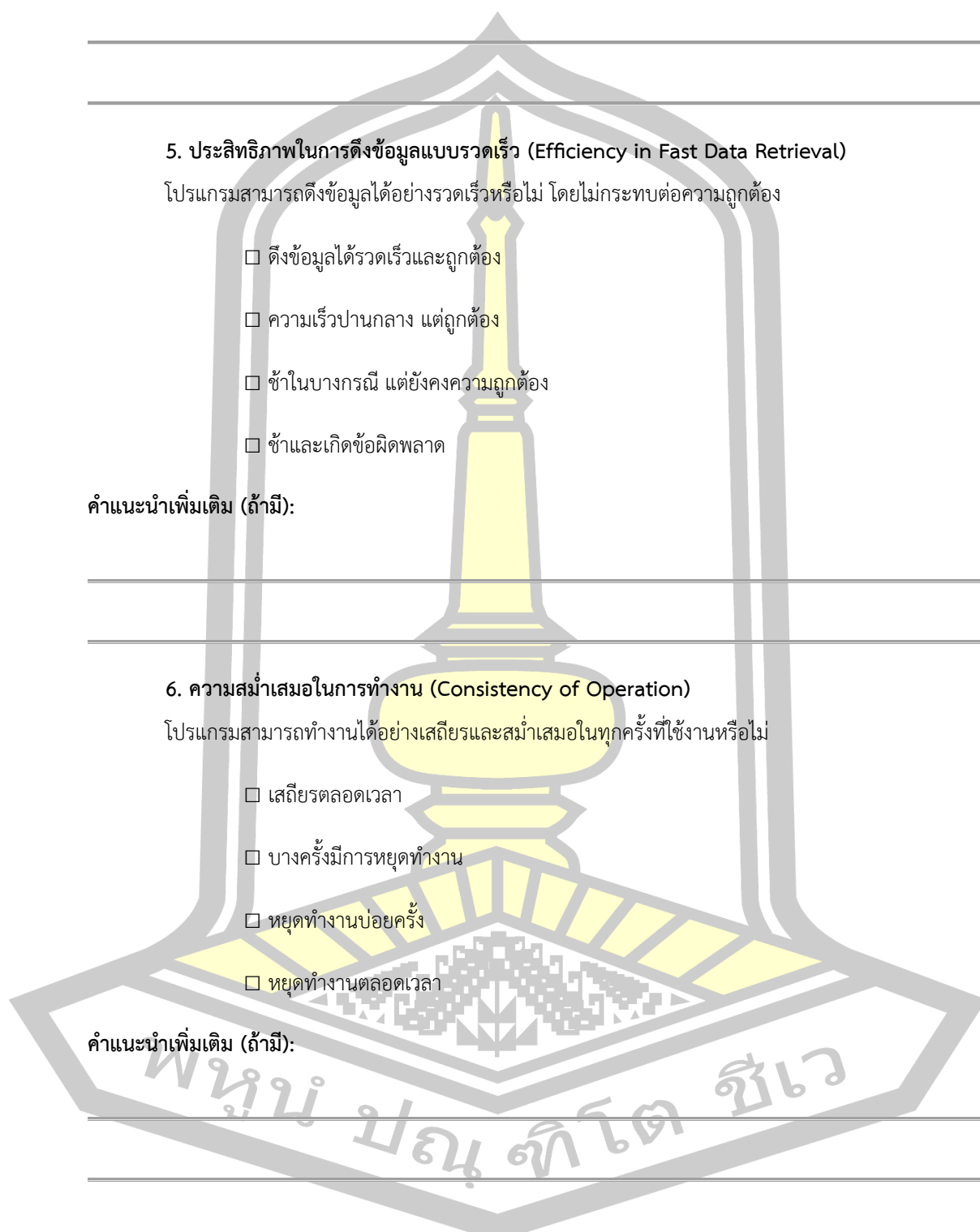
คำแนะนำเพิ่มเติม (ถ้ามี):

6. ความสม่ำเสมอในการทำงาน (Consistency of Operation)

โปรแกรมสามารถทำงานได้อย่างเสถียรและสม่ำเสมอในทุกครั้งที่ใช้งานหรือไม่

- ☐ เสถียรตลอดเวลา
- ☐ บางครั้งมีการหยุดทำงาน
- ☐ หยุดทำงานบ่อยครั้ง
- ☐ หยุดทำงานตลอดเวลา

คำแนะนำเพิ่มเติม (ถ้ามี):



7. การจัดการข้อผิดพลาด (Error Handling)

โปรแกรมสามารถตรวจจับและจัดการข้อผิดพลาดได้ดีหรือไม่ (หากไม่มีข้อผิดพลาดเกิดขึ้น กรุณาเลือก "ไม่มีข้อผิดพลาดเกิดขึ้น")

- ☐ จัดการข้อผิดพลาดได้อย่างสมบูรณ์
- ☐ จัดการข้อผิดพลาดได้ในบางกรณี
- ☐ มีข้อผิดพลาดที่ไม่สามารถจัดการได้
- ☐ ไม่มีการจัดการข้อผิดพลาดที่ดี
- ☐ ไม่มีข้อผิดพลาดเกิดขึ้นระหว่างการทดสอบ

คำแนะนำเพิ่มเติม (ถ้ามี):

ส่วนที่ 3: การประเมินประสิทธิภาพการใช้งาน

2. การรองรับการดึงข้อมูลที่มีขนาดใหญ่ (Handling Large Data Files)

โปรแกรมสามารถจัดการกับไฟล์รายงานประจำปีที่มีขนาดใหญ่ได้ดีหรือไม่

- ☐ จัดการได้ดีไม่มีปัญหา
- ☐ จัดการได้ในระดับปานกลาง
- ☐ เกิดปัญหาในการจัดการไฟล์ขนาดใหญ่

คำแนะนำเพิ่มเติม (ถ้ามี):

2. ความง่ายในการใช้งานโปรแกรม (Ease of Use)

โปรแกรมมีความง่ายต่อการใช้งานสำหรับผู้ใช้อย่างไรหรือไม่

- ☐ ใช้งานง่ายและเข้าใจได้ทันที
- ☐ ต้องการคำแนะนำเล็กน้อย
- ☐ ใช้งานยากสำหรับผู้ที่ไม่มีความรู้
- ☐ ใช้งานยากมาก

คำแนะนำเพิ่มเติม (ถ้ามี):

3. ความรวดเร็วในการประมวลผล (Processing Speed)

โปรแกรมสามารถประมวลผลและดึงข้อมูลได้อย่างรวดเร็วหรือไม่

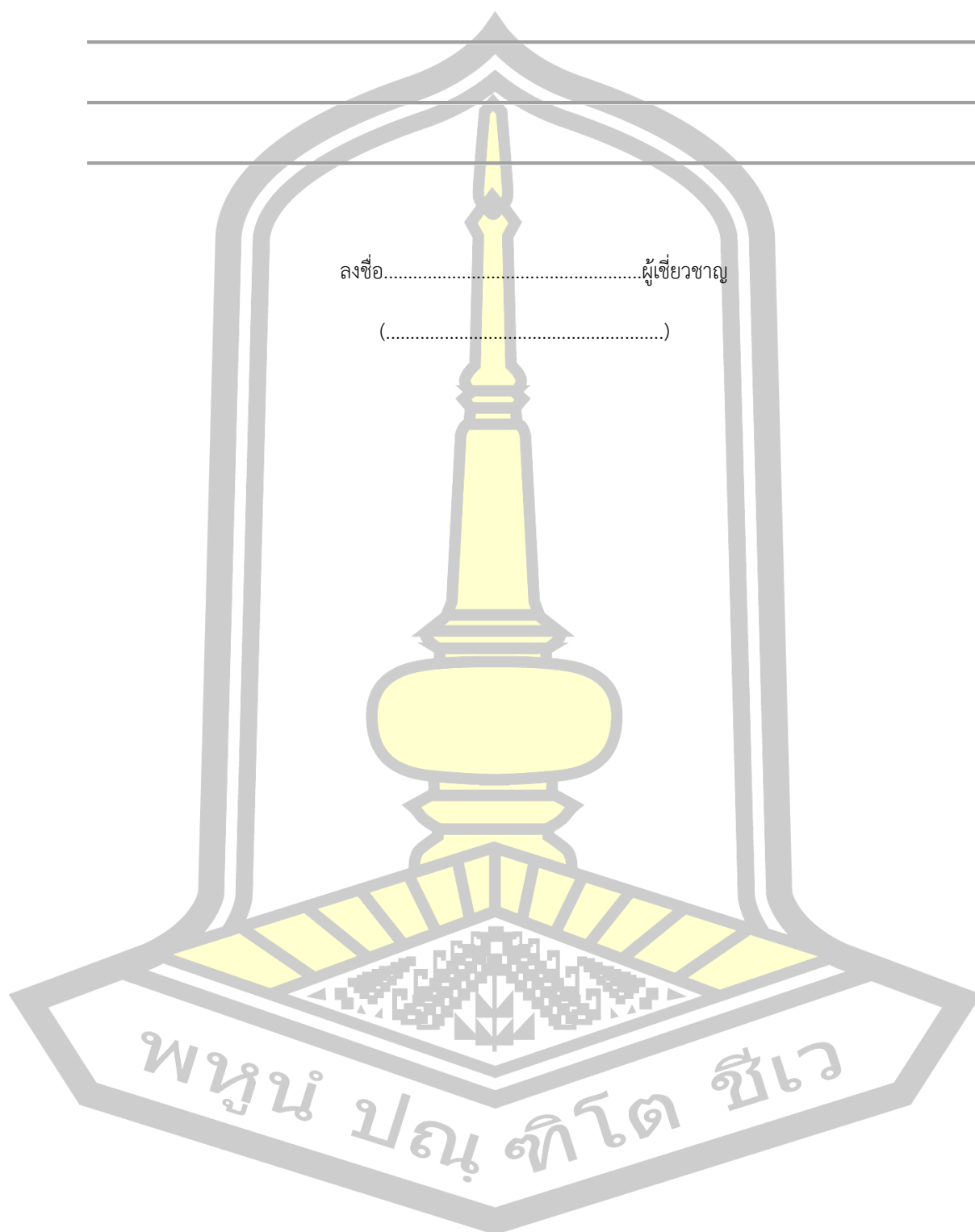
- ☐ รวดเร็วและมีประสิทธิภาพ
- ☐ ความเร็วปานกลาง
- ☐ ช้าในบางกรณี
- ☐ ช้ามาก

คำแนะนำเพิ่มเติม (ถ้ามี):

ส่วนที่ 4: ข้อเสนอแนะและความคิดเห็นเพิ่มเติม

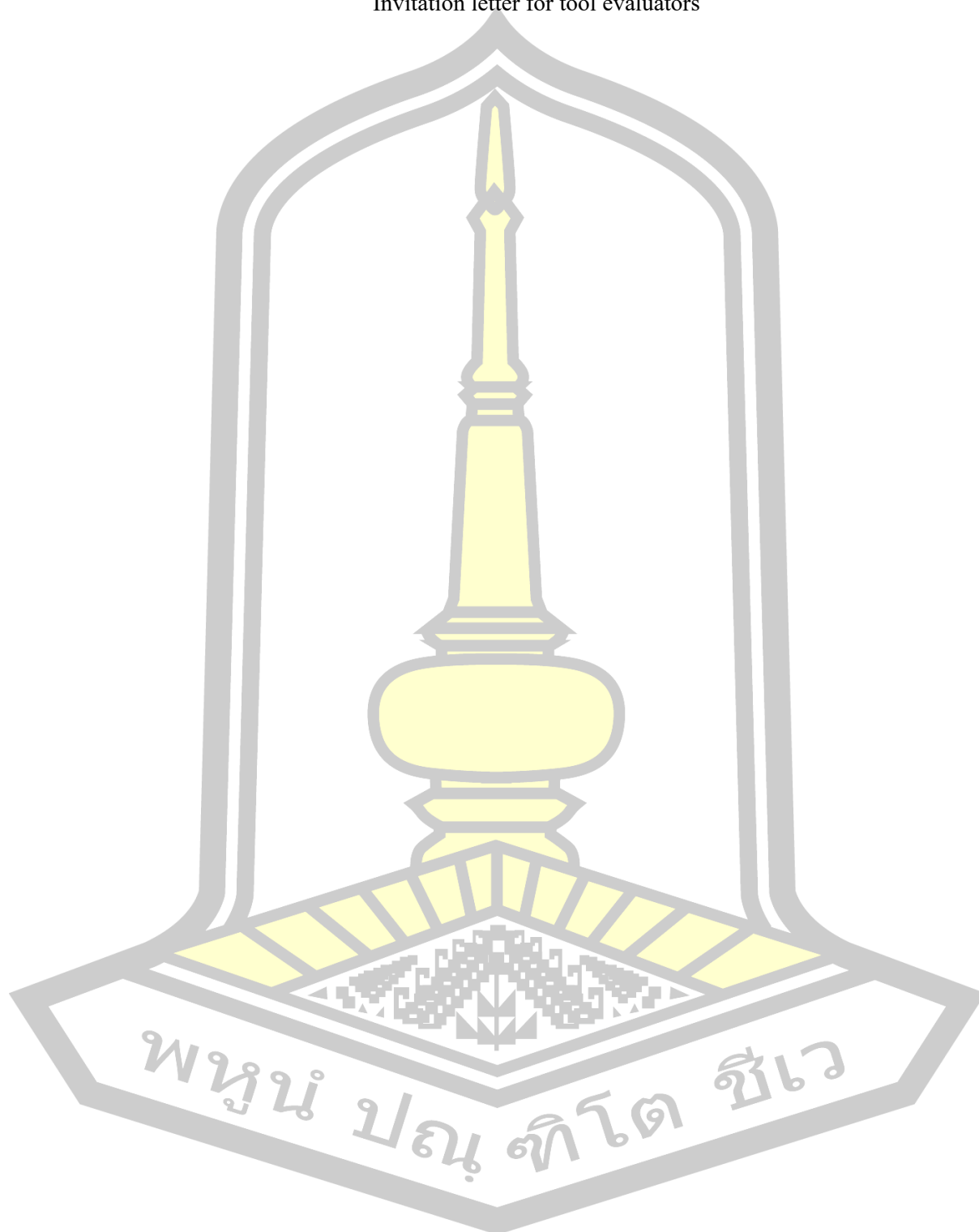
1. ท่านมีข้อเสนอแนะในการปรับปรุงหรือพัฒนาโปรแกรมเพิ่มเติมหรือไม่

2. ท่านมีความคิดเห็นเพิ่มเติมเกี่ยวกับความน่าเชื่อถือของโปรแกรมหรือไม่



APPENDIX C

Invitation letter for tool evaluators





ที่ อว 0605.10/ ๑2295

คณะกรรมการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม
ตำบลขามเรียง อำเภอกันทรวิชัย
จังหวัดมหาสารคาม
44150

19 กันยายน 2567

เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน คณบดีคณะวิศวกรรมศาสตร์ มหาวิทยาลัยนเรศวร

ด้วย นางสาวอิสริยา ก้อย่างรุ่งเรือง รหัสนิต 65010961002 นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการบัญชี ระบบนอกเวลาราชการ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง “ผลกระทบของการเปลี่ยนผ่านดิจิทัลต่อการจัดการกำไรที่แท้จริง : หลักฐานเชิงประจักษ์จากบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย” ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงขอความอนุเคราะห์ รองศาสตราจารย์ ดร.พนมขวัญ ริยะมงคล เป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย และขอเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

คณะฯ หวังเป็นอย่างยิ่งว่า คงจะได้รับความอนุเคราะห์จากท่านด้วยดี และขอขอบคุณมา ณ โอกาสนี้

ขอแสดงความนับถือ

(อาจารย์ ดร.ชัชชาติ ธรรมวิญญู)

คณบดีคณะกรรมการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม

งานบริหารหลักสูตรและการจัดการเรียนการสอนระดับบัณฑิตศึกษา
คณะกรรมการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม
โทรศัพท์ 0-4375-4333 ต่อ 5630



ที่ อว 0605.10/๐๒๒๖๕

คณะกรรมการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม
ตำบลขามเรียง อำเภอกันทรวิชัย
จังหวัดมหาสารคาม
44150

19 กันยายน 2567

เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน คณบดีคณะวิศวกรรมศาสตร์ มหาวิทยาลัยนเรศวร

ด้วย นางสาวอิสริยา ก้อย่างรุ่งเรือง รหัสนิต 65010961002 นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการบัญชี ระบบนอกเวลาราชการ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง “ผลกระทบของการเปลี่ยนผ่านดิจิทัลต่อการจัดการกำไรที่แท้จริง : หลักฐานเชิงประจักษ์จากบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย” ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงขอความอนุเคราะห์ ผู้ช่วยศาสตราจารย์ รัฐภูมิ วรรณสาสน์ เป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

คณะฯ หวังเป็นอย่างยิ่งว่า คงจะได้รับความอนุเคราะห์จากท่านด้วยดี และขอขอบคุณมา ณ โอกาสนี้

ขอแสดงความนับถือ

(อาจารย์ ดร.ชลธิชา ธรรมวิญญู)
คณบดีคณะกรรมการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม

งานบริหารหลักสูตรและการจัดการเรียนการสอนระดับบัณฑิตศึกษา
คณะกรรมการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม
โทรศัพท์ 0-4375-4333 ต่อ 5630

มหาวิทยาลัยมหาสารคาม



ที่ อว 0605.10/ก 2275

คณะกรรมการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม
ตำบลขามเรียง อำเภอกันทรวิชัย
จังหวัดมหาสารคาม
44150

19 กันยายน 2567

เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน คณบดีคณะบริหารธุรกิจและเทคโนโลยีสารสนเทศ มหาวิทยาลัยเทคโนโลยีราชมงคล วิทยาเขตขอนแก่น

ด้วย นางสาวอสิริย์ ก้อย่างรุ่งเรือง รหัสนิต 65010961002 นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการบัญชี ระบบนอกเวลาราชการ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง “ผลกระทบของการเปลี่ยนผ่านดิจิทัลต่อการจัดการกำไรที่แท้จริง : หลักฐานเชิงประจักษ์จากบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย” ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงขอความอนุเคราะห์ อาจารย์ ดร.ธนิย ศรีอีสาน เป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

คณะฯ หวังเป็นอย่างยิ่งว่า คงจะได้รับความอนุเคราะห์จากท่านด้วยดี และขอขอบคุณมา ณ โอกาสนี้

ขอแสดงความนับถือ

(อาจารย์ ดร.ชลธิชา ธรรมวิญญู)
คณบดีคณะกรรมการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม

งานบริหารหลักสูตรและการจัดการเรียนการสอนระดับบัณฑิตศึกษา
คณะกรรมการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม
โทรศัพท์ 0-4375-4333 ต่อ 5630

บันทึก



บันทึกข้อความ

ส่วนราชการ งานบริหารหลักสูตรฯ ระดับบัณฑิตศึกษา คณะการบัญชีและการจัดการ โทรภายใน 5630

ที่ อว 0605.10/๕๕๖๖

วันที่ 17 กันยายน 2567

เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.นาถนภา นิลนิยม

ด้วย นางสาวอิสริยา ก้อย่างรุ่งเรือง รหัสนิสิต 65010961002 นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการบัญชี ระบบนอกเวลาราชการ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง “ผลกระทบของการเปลี่ยนผ่านดิจิทัลต่อการจัดการกำไรที่แท้จริง : หลักฐานเชิงประจักษ์จากบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย” ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงขอความอนุเคราะห์ท่านเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

จึงเรียนมาเพื่อโปรดพิจารณา

(อาจารย์ ดร.ชลธิชา ธรรมวิญญู)
คณบดีคณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม





บันทึกข้อความ

ส่วนราชการ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม โทรศัพท์ 043-754333 ต่อ 5630

ที่ อว 0605.10/ ๒๒๕

วันที่ 17 กันยายน 2567

เรื่อง ขอเรียนเชิญเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.มนรัตน์ วงษ์ขี้ม

ด้วย นางสาวอสิริย์ ก้อย่างรุ่งเรือง รหัสนิต 65010961002 นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต (ปร.ด.) สาขาวิชาการบัญชี ระบบนอกเวลาราชการ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม กำลังศึกษาวิทยานิพนธ์ เรื่อง “ผลกระทบของการเปลี่ยนผ่านดิจิทัลต่อการจัดการกำไรที่แท้จริง : หลักฐานเชิงประจักษ์จากบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย” ซึ่งเป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปรัชญาดุษฎีบัณฑิต ดังนั้น เพื่อให้การดำเนินการเป็นไปด้วยความเรียบร้อยและบรรลุตามวัตถุประสงค์ คณะการบัญชีและการจัดการ มหาวิทยาลัยมหาสารคาม จึงขอความอนุเคราะห์ท่านเป็นผู้เชี่ยวชาญตรวจสอบเครื่องมือวิจัยและข้อเสนอแนะเพื่อนำข้อมูลที่ได้ไปดำเนินการทำวิทยานิพนธ์ต่อไป ตามแบบสอบถามที่แนบมาพร้อมนี้

จึงเรียนมาเพื่อโปรดพิจารณา

(อาจารย์ ดร.ชลธิชา ธรรมวิญญู)
คณบดีคณะการบัญชีและการจัดการ
มหาวิทยาลัยมหาสารคาม



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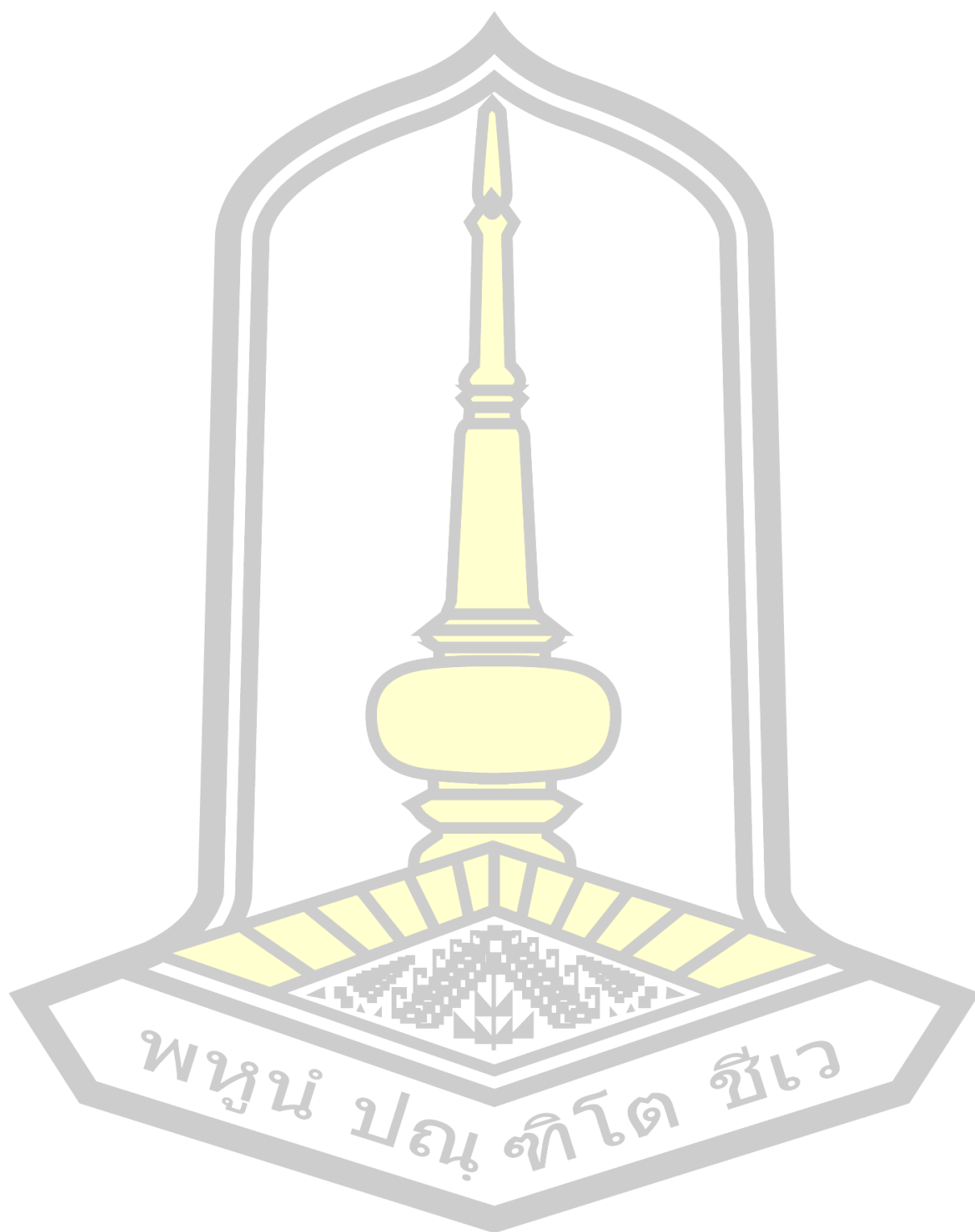
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