

-RESEARCH ARTICLE-

INFORMATION TECHNOLOGY GOVERNANCE ROLE ON THE BUSINESS CAPABILITIES AND MANAGEMENT IN PUBLIC SECTOR ORGANIZATIONS IN THAILAND

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—Abstract—

Due to the enormous impact on organisational management, e-governance has received the attention of modern literature and regulators. Thus, this study aims to determine the effect of e-governance characteristics such as process, structure, and relationship mechanism on the successful administration of government organisations in Thailand. Additionally, this study examines the mediating impact of organisational capacities in the relationships between information technology (IT) governance characteristics such as process, structure, relationship mechanism, and effective business management in Thai public sector companies. Questionnaires were used to collect data, and smart-PLS was used to conduct analyses. The findings reveal that e-governance elements such as process, structure, and relationship mechanism all positively correlate with effective business management in Thai government organisations. Additionally, the results indicated that organisational capacities play a crucial role in mediating between the nexus of e-governance dimensions and effective business management in Thai government enterprises. This research aided policymakers in creating policies on e-governance and business management adoption.

Keywords: e-governance, IT governance process, IT governance relation mechanism, effective business management, government organizations.

1. INTRODUCTION

Business management, alternatively referred to as business administration, is the administration of a commercial enterprise. It encompasses all facets of supervising or monitoring corporate activities (Raut et al., 2019). It also contains office building administration, finance, accounting, design, development, quality assurance, project management, sales, data analysis, information management, research and development, and marketing from a leadership and management perspective. Effective business management entails the effective administration of all of the aforementioned areas to achieve competitive advantages and continue to grow in the market. Effective management simplifies a difficult process by preventing resource wasting. Effective management results in an increase in the standard of living. It increases profitability for businesses, enabling the general public to achieve maximum productivity through the provision of work opportunities, allowing them to have revenue in their hands (Allen, 2020).

In many firms, information technology (IT) has become crucial for business support, sustainable performance, and growth (Rittiboonchai et al., 2021; Tirastittam et al., 2020). As a result of the extensive adoption of technology, there is now a critical reliance on information technology, needing further attention to IT governance. IT governance is a term that refers to the leadership, organisational structures, and processes in place to ensure that an organization's information technology supports and

expands upon its strategy and goals. IT governance is a trendy topic these days, and many businesses have integrated IT governance policies into their daily operations (Patón-Romero et al., 2018). Once a specific IT governance model is established and implemented, it should enable IT to sustain and extend the business aim, or in other words, it should allow IT to be aligned with business requirements (business/IT alignment), as defined above. This study aims to determine the impact of IT Governance processes, structure, and related mechanisms on achieving effective business management (Caluwe & Haes, 2019). Additionally, this study examines the effects of the IT Governance procedures, structure, and related mechanisms that contribute to the development of organisational competencies and aid in achieving effective business management.

The study focuses on the public sector in Thailand's economy. It is a developing economy with an upper-middle-income. In 2020, it will have a gross domestic product of \$509.200 billion. As of October 2017, the Thai government-owned a majority share in 56 state-owned enterprises. 46 non-financial SOEs operate in critical economic sectors like communications, transportation, energy generation and distribution, and water management. Several of them are among Thailand's largest publicly traded companies (Chaloemvivatkit & Jaikengkit, 2020). The ten financial SOEs are a government pawnshop, a state-owned bank, and 80 specialised financial institutions (SFIs) that perform high-profile policy functions. Following the 2014 military coup, there has been a notable increase in the number of active-duty military officers serving on the boards of directors of state-owned enterprises. As of 2018, 42 of 56 publicly traded companies have military directors (Dodge, 2020). Almost all state-owned enterprises reported increased profitability in 2017. According to the State Enterprise Policy Office (SEPO), the Government Lottery Office (GLO) contributed 30.9 billion baht to the Thai government coffers in 2017, followed by PTT Public Company Limited (PTT) with 26.3 billion, the Electricity Generating Authority of Thailand (EGAT) with 21.7 billion, the Government Savings Bank with 13.1 billion, and the Provincial Electricity Authority (PEA) with 11.4 billion baht (Thongsri, Shen, & Bao, 2019).

Thailand's public sector organisations each have their information system for gathering, sorting, analysing, storing, utilising, and recalling information on various resources, techniques, data, events, occurrences, etc. Certain public organisations are advancing rapidly; others are progressing normally; and still, others are lagging (Withisuphakorn, 2018). Our study focuses on the effectiveness of information technology systems and company management. Our study's objective is to examine the impact of IT Governance processes, structure, and relationship mechanisms on achieving effective business management. Additionally, one of its aims is to study the effects of the IT Governance processes, structure, and relational mechanisms on organisational capacities and the ability to run businesses effectively. This study fills in holes in the literature by providing a full explanation of IT governance, including

process, structure, and relational mechanisms, and an analysis of business effectiveness. The study examines organisational capacities as a link between information technology governance processes, structures, relationship mechanisms and effective business management. This is the first time that an analysis of the effects of IT Governance procedures, structure, and relationship mechanisms on effective business management in Thailand's economy has been conducted.

Following an introduction to the study, the paper discusses the impact of IT Governance procedures, structure, and relational mechanisms on organisational capacities and the attainment of effective business management to provide study hypotheses. Following a review of the literature, the methodology section of the paper details how data on the impact of IT Governance processes, structure, and relationship mechanisms on organisational capabilities and the achievement of effective business management were collected from public sector organisations in Thailand. The publication then supports the study's findings by comparing them to those of previous studies. Finally, the study's conclusion, consequences, and limitations are discussed.

2. REVIEW OF THE LITERATURE

For a firm to succeed in the market, its operations must run smoothly and efficiently. Company management is accountable for effectively overseeing, supervising, and managing business processes to achieve business objectives. IT, which has become a vital component of business in the modern period, affects the operations of the business, its reputation, and its ability to achieve goals. It may have unfavourable consequences. It is not effectively handled (Al-Hila et al., 2017). To address this issue, our study examines the impact of information technology governance processes, structures, and relationships on organisational capacities and the attainment of effective business management. The study examines the ideas offered by previous authors to propose appropriate hypotheses in this regard.

Al-Hila et al. (2017) research the role of information technology governance policies in effective business management. The analysis used data from 362 public entities across Canada. According to this study, effective implementation of IT governance policies improves business management because effective decisions regarding IT applications, components, and usage provide quality information and foster an organisational commitment to safeguarding employee security, which aids in the efficient operation of business processes. According to Henriques et al. (2021), institutionalising IT operations enables the detection of negative effects of IT components such as hardware, software, telecommunications, databases, and data warehouses on the execution of business processes. As a result, IT governance enables business managers to exert greater control over business operations by mitigating the risks associated with IT decision-making. Based on the above discussion, the following can be hypothesised:

H1: IT governance process has a positive association with effective business management.

[Tonelli et al. \(2017\)](#) define IT governance as an organisational competency for IT strategic alignment and business operations via IT. The data were gathered via a survey of 146 Brazilian state enterprises. This study explores the relationship between IT governance structure and business effectiveness. Implementing the IT governance framework effectively promotes engagement with stakeholders and enhances the organization's reputation. [Abdollahbeigi and Salehi \(2020\)](#) study links the IT governance framework and company effectiveness. The IT governance framework connects and communicates between IT management activities and business strategy and execution, ensuring that IT management is aligned with the business's goals and objectives. The data shows a positive correlation between an efficient IT governance relationship system and effective company performance. Based on the above discussion, the following hypothesis can be made:

H2: IT governance structure has a positive association with effective business management.

There is a connection and a communication network between the chief executive, IT management, and business administration under IT governance. There is alignment between the functions of information technology management, the chief executive's decisions, and the business management plans. This alignment helps management do business effectively while safeguarding the information system and its services ([Turel, Liu, & Bart, 2019](#)). [Mikalef, Pateli, and Wetering \(2021\)](#) conducted empirical research to ascertain how an information technology governance structure helps corporate management. A systematic research paradigm was used, and the study concepts were validated using survey data acquired from the workers of 322 international organisations. The report asserts that collaboration between the chief executive, information technology management and business administration enhances their awareness and facilitates successful decision-making. This results in effective corporate management. Thus, it can be stated:

H3: IT relational governance mechanism positively affects effective business management.

[Alkhaldi, Hammami, and Uddin \(2017\)](#) investigated the relationship between information technology governance practices, organisational competencies, and business management. The authors gathered data by distributing questionnaires to 179 strategic and tactical managers in 40 commercial enterprises in the Middle East. To address research issues, EQS 60.3 and SPSS 21 were used. The paper explores how the information technology governance process enables organisational staff to assess and improve the contribution of information technology to business processes such as research and development, operations, production, and marketing. Thus, IT governance

develops organisational capacities in employees, enabling them to manage various organisational divisions. [Aziza, Meriyem, and Andry \(2020\)](#) argue that by including IT governance structure policies, IT evaluation, and IT monitoring procedures into formal business processes, IT efficiency may be easily measured and maintained at various levels of company operations. Thus, it develops essential organisational capacities in business workers in multiple departments, which may be cognitive or physical. This work environment enables corporate managers to manage their operations more successfully.

[Yudatama et al. \(2019\)](#) performed a literature review to examine the impact of successfully implementing an IT governance system on company administration and performance. To collect data, questionnaires were delivered to respondents in various regions of Indonesia who were familiar with IT governance and its importance in corporate management. PLS V3 was used to analyse and present structural equation modelling (PLS) with Smart. According to the report, an IT governance framework that integrates business and IT management strengthen the development capabilities required for effective business administration. Similarly, according to [Shokouhyar, Zarrin, and Shokoohyar \(2020\)](#), the IT governance structure fosters the development of relationships and connections between IT managers and other business professionals. This bonding results in developing dynamic skills in company workers and aids in business operations management.

[Gier \(2018\)](#) does a literary analysis to determine the influence of the IT governance relationship mechanism, organisational competencies, and business management. This report is based on a case study of internal organisations within Dutch municipalities selected through selective sampling and had varying digital document information management levels. One of these municipalities is more successful than the other. The study's findings reveal that the first municipality's success is due to the effective application of the IT governance relationship mechanism within the companies. This study, along with others such as [Haes et al. \(2019\)](#), implies that through the development of connections and communication between the chief executive, IT management personnel, and business managers, dynamic organisational capabilities such as observation, analytical skills, decision-making, and problem-solving skills are generated, enabling business managers to manage the business's reputation and marketing. The following theories were formulated:

H4: Organizational capabilities mediate IT governance processes and effective business management.

H5: Organizational capabilities mediate IT governance structure and effective business management.

H6: Organizational capabilities mediate IT relational governance mechanisms and effective business management.

3. RESEARCH METHODS

The research examines the impact of IT governance processes, IT governance structures, and IT governance relationship mechanisms on effective business management in government organisations in Thailand, as well as the mediating role of organisational capabilities in the relationships between IT governance processes, IT governance structures, IT governance relationship mechanisms, and effective business management. This study used three e-governance dimensions as predictors: IT governance process (ITGP), which has eleven items, IT governance structure (ITGS), which contains twelve items, and IT governance relation mechanism (ITGRM), which includes ten things (Haes & Grembergen, 2009). Additionally, the researchers used organisational capacities (OC) as the mediating variable, consisting of five items, and effective business management (EBM) as the dependent variable, composed of eight items. These variables are discussed in greater detail in Figure 1.

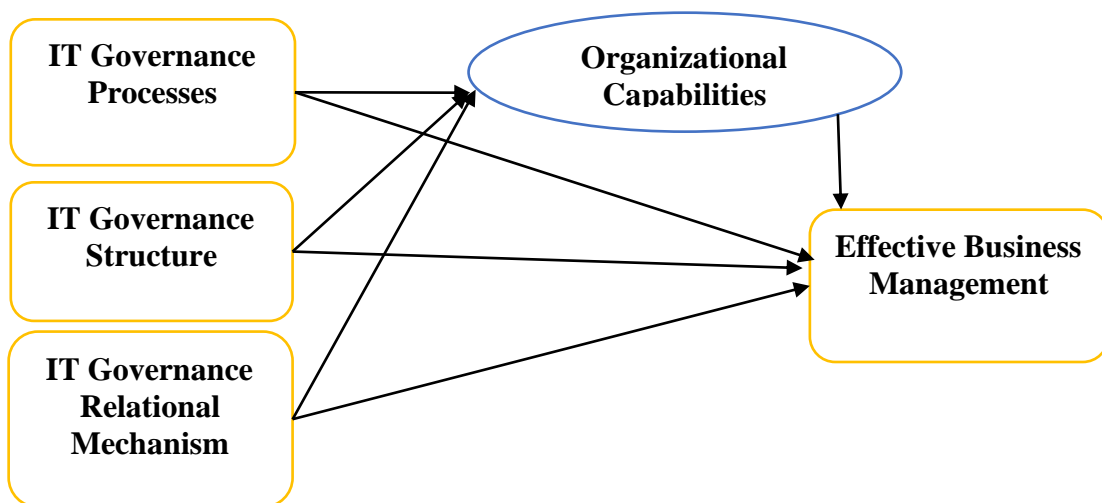


Figure 1. Theoretical Model

The researchers collected data using survey questions based on a five-point Licker scale. Simple random selection was used to choose responders from government enterprises' information technology departments. 610 surveys were distributed, but only 374 were returned, representing a response rate of approximately 61.31 percent. Additionally, the researchers analysed smart-PLS since it produces excellent results despite the study's greater sample size and sophisticated structure (Hair et al., 2017).

4. FINDINGS

To begin, factor loading displays the results section, which details the items' validity. The statistics demonstrate that all values are greater than 0.50, indicating a high correlation between the items. The factor loadings are shown in Table 1.

Table 1. Factor Loadings

Variables	EBM	ITGP	ITGRM	ITGS	OC
EBM1	0.676				
EBM2	0.708				
EBM3	0.755				
EBM4	0.858				
EBM5	0.841				
EBM6	0.813				
EBM7	0.725				
EBM8	0.705				
ITGP1		0.764			
ITGP11		0.789			
ITGP2		0.786			
ITGP4		0.720			
ITGP6		0.827			
ITGP7		0.729			
ITGP9		0.758			
ITGRM1			0.672		
ITGRM10			0.797		
ITGRM2			0.686		
ITGRM3			0.738		
ITGRM4			0.837		
ITGRM5			0.820		
ITGRM6			0.774		
ITGRM9			0.777		

Table 1. Continued

ITGS1				0.600	
ITGS10				0.808	
ITGS11				0.792	
ITGS12				0.860	
ITGS2				0.851	
ITGS3				0.741	
ITGS4				0.781	
ITGS5				0.782	
ITGS6				0.635	
ITGS7				0.494	
ITGS8				0.699	
ITGS9				0.839	
OC1					0.831
OC2					0.817
OC3					0.705
OC4					0.773
OC5					0.746

Secondly, convergent validity shows the results section, which also shows the items' validity. The figures indicated that AVE values are more than 0.50, composite reliability (CR) values are higher than 0.70, and Alpha values are bigger than 0.70. These figures indicated a high correlation between items. [Table 2](#) given below shows the convergent validity.

Table 2. Convergent Validity

Variables	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
EBM	0.896	0.917	0.582
ITGP	0.885	0.910	0.590
ITGRM	0.898	0.918	0.585
ITGS	0.925	0.937	0.559
OC	0.834	0.883	0.602

Thirdly, discriminant validity illustrates the findings section, demonstrating the variables' validity. According to the numbers, the Heterotrait Monotrait (HTMT) ratios are less than 0.90. These graphs show that there was little association between factors. The discriminant validity is shown in [Table 3](#).

Table 3. Heterotrait Monotrait Ratio

	EBM	ITGP	ITGRM	ITGS	OC
EBM					
ITGP	0.721				
ITGRM	0.689	0.533			
ITGS	0.791	0.673	0.627		
OC	0.657	0.570	0.480	0.553	

The direct route analysis revealed that e-governance aspects such as process, structure, and relationship mechanism all positively correlate with the successful administration of government organisations in Thailand, implying that H1, H2, and H3 are true. The direct relationships are shown in [Table 4](#).

Additionally, the findings indicate that organisational capacities strongly mediate between the nexus of e-governance dimensions and effective business management in Thai government organisations, supporting H4, H5, and H6. The indirect correlations are depicted in [Table 5](#).

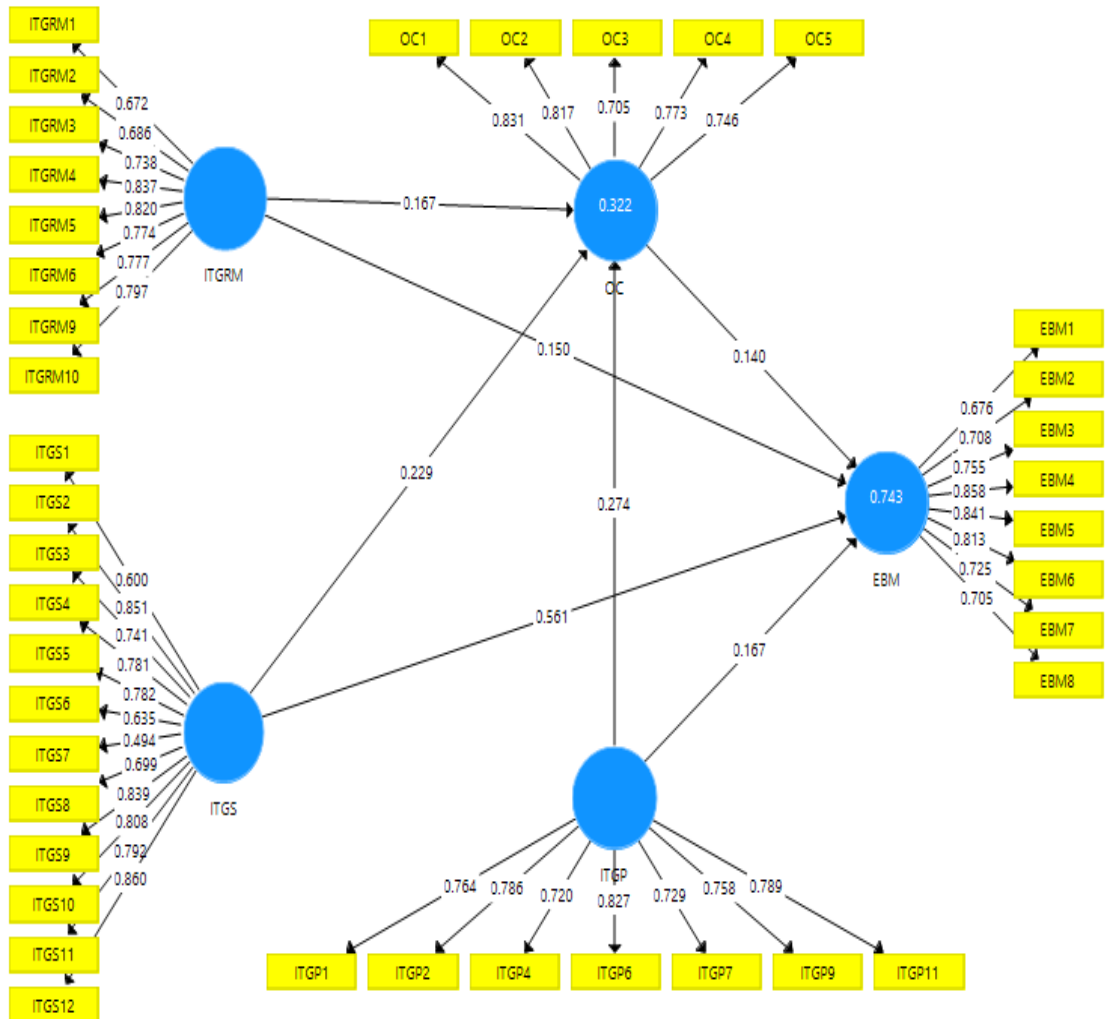


Figure 2. Measurement Model Assessment

Table 4. Direct Relationships

Relationships	Beta	S.D.	T Statistics	P Values
ITGP -> EBM	0.167	0.049	3.429	0.001
ITGRM -> EBM	0.150	0.036	4.116	0.000
ITGS -> EBM	0.561	0.038	14.800	0.000
OC -> EBM	0.140	0.035	3.948	0.000

Table 5. Indirect Relationships

Relationships	Beta	S.D.	T Statistics	P Values
ITGP -> OC -> EBM	0.038	0.015	2.472	0.014
ITGS -> OC -> EBM	0.032	0.013	2.433	0.015
ITGRM -> OC -> EBM	0.023	0.009	2.566	0.011

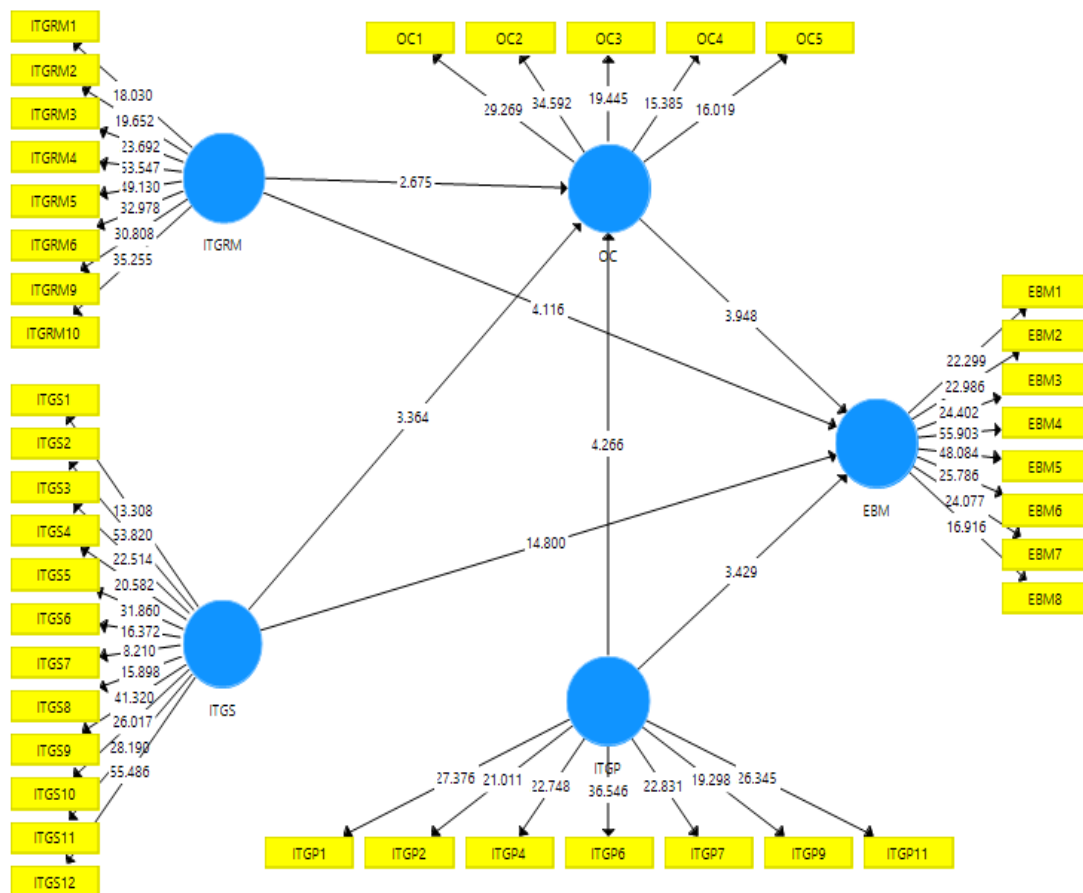


Figure 3. Structural Model Assessment

5. DISCUSSION AND IMPLICATION

The study's findings reveal that effective IT governance processes correlate positively with effective company performance. These findings corroborate a previous study by [Raymond et al. \(2019\)](#), which proposes that when IT regulation or governance is formalised within the business, it aids in identifying the negative effects of IT components such as computer hardware, software, telecommunications, databases, and data warehouses on the performance of business processes. Thus, IT governance

strengthens business managers' ability to control business processes by mitigating the risks associated with IT decision-making. The study's findings indicate that efficient IT governance structures correlate positively with effective business performance. These findings corroborate Shokouhyar et al. (2020) earlier investigation. This study examines the importance of information technology governance in achieving business effectiveness. Under IT governance, contacts and communication are established between IT management functions and business management plans and their implications, ensuring that IT management is aligned with business purposes and objectives.

Additionally, the study's findings imply that the relationship between IT governance and effective company performance is good. These findings corroborate Rubino (2018) previous work, which indicates that the chief executive, IT management, and business management form relationships through the IT relational governance mechanism. Both the chief executive, who approves the application of IT components based on the associated costs, and the business managers, who oversee all organisational departments, are aware of IT usage, ownership, operation, and acceptance inside the company. As a result, they make more informed business judgments.

The findings indicate that organisational competencies link information technology governance practices and effective business management. These findings corroborate Magnusson, Koutsikouri, and Päivärinta (2020) prior study, which concluded that IT governance practices help business management to analyse and improve the contribution of IT to business processes such as research, operation, production, and marketing. Thus, IT governance fosters the development of dynamic abilities in personnel and enhances corporate management. The findings indicate that organisational competencies link IT administration and an effective business management framework. Riemer et al. (2020) previous investigation corroborates these findings. This study focuses on how IT governance is implemented in an organisational structure, how it develops dynamic capacities in organisational personnel, and how it assists in carrying out business activities to achieve business advantages. The findings demonstrate that organisational capabilities bridge information technology relationship governance frameworks and effective business management. These findings corroborate a previous study by Sirisomboonsuk et al. (2018), which found that when the chief executive, IT management, and business management work cooperatively, analytical, problem-solving, and decision-making skills develop, which are critical for achieving effective business management.

The current study has significant theoretical implications for the business literature. The importance of IT governance in the business world has been demonstrated in this study. This study explores the effects of information technology governance methods, structure, and relationship mechanisms on achieving effective business management. In this study, organisational capabilities were used to bridge the gap between IT

Governance processes, structures, relationship mechanisms and effective business management. Few studies have examined organisational skills as a mediator between IT Governance processes, design, relational mechanisms and effective business management. Thus, our study contributes to the existing body of knowledge.

Similarly, the choice of Thailand's economy as the focal point for analysing the influence of IT Governance procedures, structure, and relational mechanisms on the achievement of effective business management adds to the body of knowledge. The current study has the potential to advance the business world by elaborating on strategies to improve business administration. This study demonstrates how effective corporate management may be enhanced by paying close attention to IT Governance processes, structure, and relationship mechanisms.

6. CONCLUSION AND CONSTRAINTS

The current study presented management ideas to organisations operating in growing economies such as Thailand. Its purpose is to assess the extent to which IT Governance processes, structures, and relational mechanisms contribute to effective business management and how IT Governance processes, structures, and relational mechanisms develop organisational capabilities and contribute to effective business management. The authors examined the effects of IT Governance processes, structure, and relationship mechanisms on organisational capacities and the ability to govern businesses effectively. The findings indicated that the IT governance application enhances business process effectiveness by mitigating IT risk and fostering positive relationships with suppliers, investors, employees, and consumers. By establishing relationships and interactions between business workers and IT management, IT risks can be minimised, and business benefits such as increased productivity, improved product quality, increased reputation, and customer retention can be realised. The study concluded that the application of IT governance procedures, structure, and relationship mechanisms contribute to the creation and development of organisational competencies and aid in achieving effective business management.

As with other studies, this one has significant limitations that the researchers expect to address when they replicate it. This study examined the effects of IT Governance, including its processes, structure, and relational mechanism, on effective business management. Simultaneously, business management is a broad corporate function that is influenced by various issues, except IT governance. As a result, it is inappropriate to discuss the function of IT governance in achieving effective business management. Thus, while evaluating the success of business management, research should be conducted on aspects other than IT governance. Through the distribution of a questionnaire, this study collects quantitative data about IT Governance procedures, structure, relational mechanisms, and the attainment of effective business management.

The use of a single source constrained the study's scope. Thus, scholars are advised to collect data from a variety of sources.

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