

# ELECTRONIC GOVERNMENT ROLE ON THE BUSINESS CAPABILITIES AND MANAGEMENT IN THAILAND PUBLIC ORGANIZATIONS SECTOR

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## ABSTRACT

E-government has become the global requirement due to its significant impact on organizational management and has gained the focus of recent literature and regulators. Therefore, this research objective is to study the impact of e-government scopes such as process, structure, and relation mechanism on the effective business management of government organizations in Thailand. This research also investigates an intermediary role of organizational capabilities among relations of information technology (IT) governance scopes such as process, structure and relation mechanism, and effective business management of government organizations in Thailand. Data were collected using questionnaires, and analyses were made using smart-PLS. The results indicated that e-governance dimensions such as process, structure, and relation mechanism have a positive association with effective business management of government organizations in Thailand. The results also showed that organizational capabilities significantly mediate among the nexus of e-governance dimensions and effective business management of government organizations in Thailand. This research has guided the policymakers while developing policies about the adoption of e-governance and business management.

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

## Introduction

Business management is also known as business administration, is the management of a commercial entity. It consists of all the aspects of supervising or overseeing business operations (Raut et al., 2019). From the perspective of leadership and management, it also covers fields including office building administration, finance, accounting, designing, development, quality evaluation, project management, sales, data analysis, information management, research and development, and marketing. Effective business management means the proper administration of all the above fields to get competitive advantages to stay and progress in the market. Good management makes a complex task easier, avoiding the wastage of limited resources. Effective management brings improvement in living standards. It enhances the profitability that is useful to business, and the general public may have maximum production with the creation of employment opportunities, and thus, they can have income in their hands (Allen, 2020).

Information technology (IT) has become vital and integral in many business plan, sustainable performance, and growth (Tirastittam, Jernsittiparsert, Waiyawuththanapoom, & Aunyawong, 2020; Rittiboonchai, Pinyokul, Na-Nakorn, & Jernsittiparsert, 2021). Because technology is wildly used, Now there is a significant dependency on IT, special attention is required in IT governance. IT governance refers to organizational structures, leadership, and processes to ensure that the organization's IT supports and expands its goals and strategy. IT governance is a hot topic these days in which many companies are incorporating IT governance policies into their day-to-day operations (Patón-Romero, Baldassarre, Rodríguez, & Piattini, 2018). When a specific IT governance model is designed and implemented, it should enable IT to sustain

and extend the business objective, or on the other hand, enable IT to be conformed to the business demands (business/IT alignment), as stated in the above definition. The current study purpose is to examine the influences of the IT Governance structure, processes and relationship mechanisms on the achievement of effective business management (Caluwe & De Haes, 2019). This study also analyzes the influences of the IT Governance structure, processes, and relationship mechanisms that develop organizational capabilities and help achieve effective business management.

The focus of the study is on the public sector in Thailand economy. It is an upper-middle-income developing economy. Its gross domestic product will be worth \$509.200 billion in 2020. The Thai government owns a majority stake in 56 state-owned businesses as of October 2017. There are 46 non-financial SOEs in major economic areas such as transportation, distribution, communications, power generation and water management. Several of them are among Thailand's largest publicly traded firms (Chaloemvivatkit & Jaikengkit, 2020). A government pawnshop, state-owned bank, and 80 specialized financial institutions (SFIs) that carry out high-profile policy duties are among the ten financial SOEs. There has been a significant increase in active-duty military officers serving on the boards of state-owned firms after the 2014 military coup. As of 2018, 42 of the 56 public firms have military directors (Dodge, 2020). In 2017, nearly all state-owned firms reported increasing profitability. According to the State Enterprise Policy Office (SEPO), the top five state enterprises in terms of contributions to Thai government coffers in 2017 were the Government Lottery Office (GLO) with 30.9 billion baht, PTT Public Company Limited (PTT) with 26.3 billion, the Electricity Generating Authority of Thailand (EGAT) with 21.7 billion, Government Savings Bank with 13.1 billion, and the Provincial Electricity Authority (PEA) with 11.4 billion baht (Thongsri, Shen, & Bao, 2019).

The public sector organizations in Thailand have a particular information system where information technology is being applied for acquiring, sorting out, analyzing, storing, using, and recalling information about different resources, techniques, data, events, and occurrences, etc. Some public organizations are making rapid progress; many organizations are making normal development, while some are making weak progress (Withisuphakorn, 2018). Our study pays attention to the effectiveness of IT systems and business management. The aim of our study is to analyze the influences of the IT Governance structure, processes and relationship mechanisms on the achievement of effective business management. One of its objectives is also to analyze the influences of the IT Governance structure, processes and relationship mechanisms on the achievement of effective business management. This study removes literary gaps by giving a detailed description of IT governance with categories of processes, structures, and relational mechanisms while analyzing the business effectiveness. The study initiates to address organizational capabilities as a mediator between the IT Governance structure, processes and relationship mechanisms on the achievement of effective business management. This is for the first time, and the current study analyzes the influences of the IT Governance structure, processes and relationship mechanisms on the achievement of effective business management in Thailand economy.

After the introduction of the study, the paper presents the arguments from the past study about IT Governance structure, processes and relationship mechanisms on the achievement of effective business management in order to present study hypotheses. After literature review, the methodology part of the paper shows how the data about the IT Governance structure, processes and relationship mechanisms on the achievement of effective business management has been acquired from public sector organizations in Thailand. Then, the paper supports the study results by comparing them with the past studies. In the end, the study conclusion, implications, and limitations have been described.

## Literature review

For the achievement of a successful business in the market, it is necessary for the business organization to carry its operations smoothly and efficiently. Business management is responsible for overseeing, supervising, and managing the business process in an effective manner so that the business goals can be achieved. IT, which has become an integral part of businesses in the modern age, has an impact on business operations, its reputation, and the achievement of goals. It may have negative impacts. Sometimes it is not properly managed (Al-Hila, Alhelou, Al Shobaki, & Abu Naser, 2017). To tackle this problem, our study introduces IT governance processes, structure, and relational mechanisms on organizational capabilities and the achievement of effective business management. For this proposition of suitable hypotheses in regard, the study looks at the ideas presented by past authors.

Research by Al-Hila et al. (2017) investigates the role of IT governance policies in effective business management. The analysis was based on the data collected from 362 public organizations in Canada. This study states that the effective implication of IT governance policies improves the business management as the effective decisions regarding the IT application, components, and usage not only provides quality information and also develop organizational commitment protecting the employee's securities which help operate the business processes effectively. The study conducted by Henriques, Pereira, Bianchi, Almeida, and da Silva (2020) elaborates that when formalizing IT procedures into the institution, it aids in detecting the adverse effects of IT components like hardware, software, telecommunications, databases, and data warehouses on the undertaking of business processes. As a result, IT governance improves business managers' ability to control business processes by reducing the risks associated with IT decision-making. Based on the above discussion, it can be hypothesized:

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

A study presented by Tonelli, de Souza Bermejo, Dos Santos, Zuppo, and Zambalde (2017), identify, defines the IT governance structure as an organizational capability for IT strategic alignment and the operation of the business through IT. Data were collected through a survey conducted in 146 Brazilian public enterprises. This study examines that IT governance structure is correlated with business effectiveness. The effective implementation of the IT governance structure improves the collaboration with the stakeholder and improves the organization's reputation. The study conducted by Abdollahbeigi and Salehi (2020) identifies the relationship between IT governance structure and business effectiveness. Conducted with the aim to have knowledge about the moderating role of ITC between BDAP and STSCP, between BDAI and STSCP, between BDAC and STSCP, and between BDAI and STSCP. Kerdpitak (2019) IT governance framework establishes connections and communication between IT management functions and business management strategies and execution, ensuring that IT management is aligned with the business's goals and objectives. According to the findings, the IT governance relationship system has a good relationship with effective business performance. On the basis of the above discussion, it can be hypothesized:

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

Under the IT governance, there is a connection, and a communication network is built among the chief executive, IT management, and business administration. There is made an alignment between the functions of IT management, the decisions of the chief executive, and the business management strategies. This alignment enables the management to carry the business activities effectively, ensuring the protection of the information system and its services (Turel, Liu, & Bart, 2019). Mikalef, Pateli, and van de Wetering (2020) did empirical research to determine the extent to which IT governance structure improves business management. A structured

research model was applied, which was tested by the survey data collected from the personnel of 322 international organizations to support the study concepts. The study proposes that the cooperative relationship among the chief executive, IT management, and business administration improves their awareness and supports effective decision-making. This leads to efficient business administration. So, it can be said:

H3: IT relational governance mechanism has a positive association with effective business management

In the study of Alkhalidi, Hammami, and Ahmar Uddin (2017), the inter-relationship among the IT governance processes, organizational capabilities, and business management. The authors collected data through questionnaire distribution among 40 private enterprises in the Middle East with a sample of 179 respondents of strategic and tactical managers. EQS 60.3 and SPSS 21 were applied to address research questions. The study examines that the IT governance process allows organizational personnel to assess and improve the contribution of IT to business processes such as research and development, operations, production, and marketing. In this way, IT governance creates organizational capabilities in the personnel, which enable them to administer different organizational departments. The research made by Chakir, Chergui, and Andry (2020) posits that the formation and effective implementation of IT governance structure policies, the IT evaluation, or IT monitoring procedures are made the formal part of business processes so that IT efficiency can be easily judged and maintained at different levels of business operations. Thus, it creates core organizational capabilities, which may be cognitive or physical in the business personnel in different departments. Such a working environment makes it easy for business managers to handle business matters more effectively. Literature work out was presented by Yudatama, Hidayanto, Nazief, and Phusavat (2019) to investigate the influence of the successful application of IT governance structure on the business administration and performance. For data collection, questionnaires were distributed among the respondents in different areas of Indonesia who had an awareness of IT governance and its significance in business management. For the analysis and presentation of Structural equation modeling (PLS) with Smart, PLS V3 was applied. The study states that IT governance structure, through the integration between business and IT management, enhances the development capabilities which are needed for effective business administration. Similarly, the study conducted by Shokouhyar, Zarrin, and Shokoohyar (2020) implies that under the IT governance structure, the relationship and connection are developed among IT managers and other business personnel. This bonding results in the development of dynamic skills in business personnel and helps in the management of business operations.

A literary investigation of de Gier (2018) tests the influences of IT governance relationship mechanism, organizational capabilities, and business management. This investigation is based on a case study on the internal organizations of Dutch municipalities which were chosen via strategic sampling, having a different level of digital document information management. One of these municipalities is more successful while the other has less amount of success. The study results indicate that the reason behind the success of the first municipality is the effective implementation of the IT governance relational mechanism in the organizations. This study, along with some others like De Haes, Huygh, Joshi, and Caluwe (2019) implies that IT relational governance mechanism, with the development of connection and communication among the chief executive, IT management personnel, and business managers, generate dynamic organizational capabilities like observation, analytical skills, decision making, and problem-solving skills, which enable business managers to maintain the business reputation and marketing by managing the business operations effectively. That is why we put the following hypotheses:

H4: Organizational capabilities are a mediator between IT governance processes and effective business management.

H5: Organizational capabilities are a mediator between IT governance structure and effective business management.

H6: Organizational capabilities are a mediator between IT relational governance mechanism and effective business management.

### Research methods

The research examines the impact of IT governance process, IT governance structure, and IT governance relation mechanism on the effective business management and also investigates the mediating role of organizational capabilities among the relations of IT governance process, IT governance structure, IT governance relation mechanism, and effective business management of government organizations in Thailand. This study has taken three dimensions of e-governance as the predictors such as IT governance process (ITGP) with eleven items, IT governance structure (ITGS) has twelve items, and IT governance relation mechanism (ITGRM) with ten items (De Haes & Van Grembergen, 2009). In addition, the researchers have adopted organizational capabilities (OC) as the mediating variable with five items, and effective business management (EBM) is taken as the dependent variable with eight items. These variables are mentioned in Figure 1.

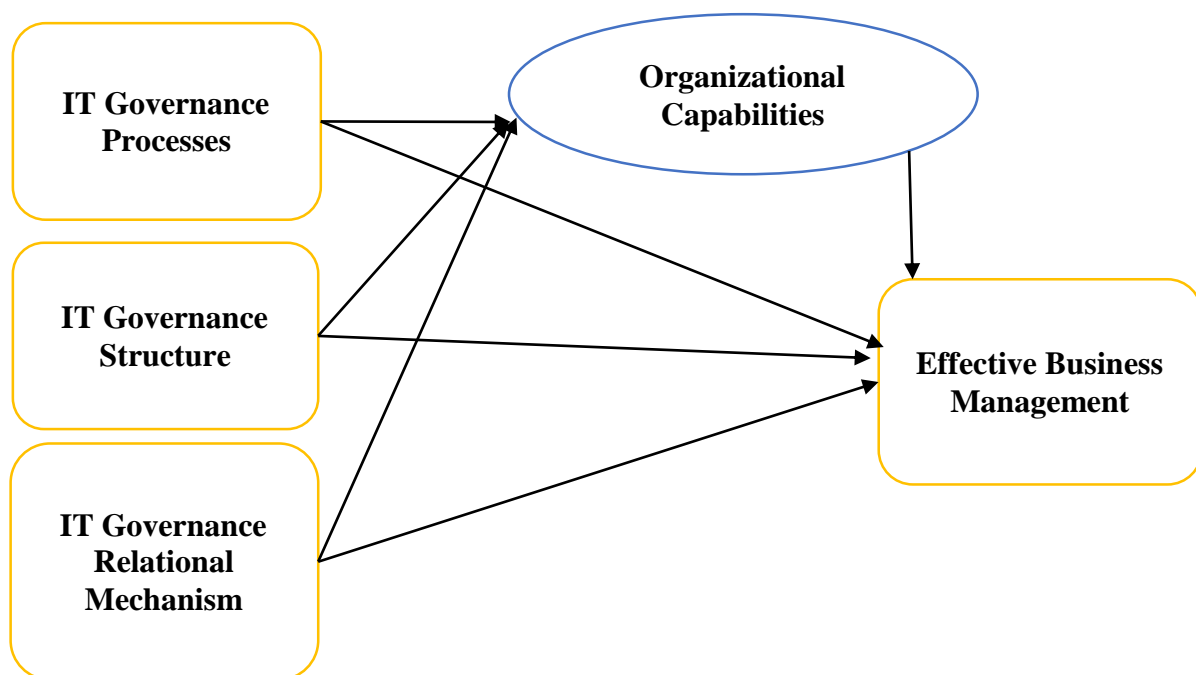


Figure 1. Theoretical model

The researchers have used the survey questionnaires for data collection, and these questionnaires are based on a five-point Licker scale. The information technology department employees of government organizations are the respondents selected based on simple random sampling. A total of 610 surveys were sent, but only 374 were returned, representing around 61.31 percent response rate. Moreover, the researchers made the analysis using smart-PLS because it provides effective results even if the larger sample size and complex framework were used by the study (Hair, Hollingsworth, Randolph, & Chong, 2017).

## Findings

Firstly, factor loading shows the results section that shows the validity of the items. The figures indicated that all the values are more than 0.50, which shows the high correlation between items. Table 1 given below shows the factor loadings.

**Table 1.** Factor loadings

<b>Variables</b>	<b>EBM</b>	<b>ITGP</b>	<b>ITGRM</b>	<b>ITGS</b>	<b>OC</b>
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		
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 that also shows the validity of the items. The figures indicated that AVE values are more than 0.50 and composite reliability (CR) values

are higher than 0.70, and Alpha values are also 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 shows the results section that shows the validity of the variables. The figures indicated that Heterotrait Monotrait (HTMT) ratios are lower than 0.90. These figures indicated a low correlation between variables. Table 3 given below shows the discriminant validity.

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	

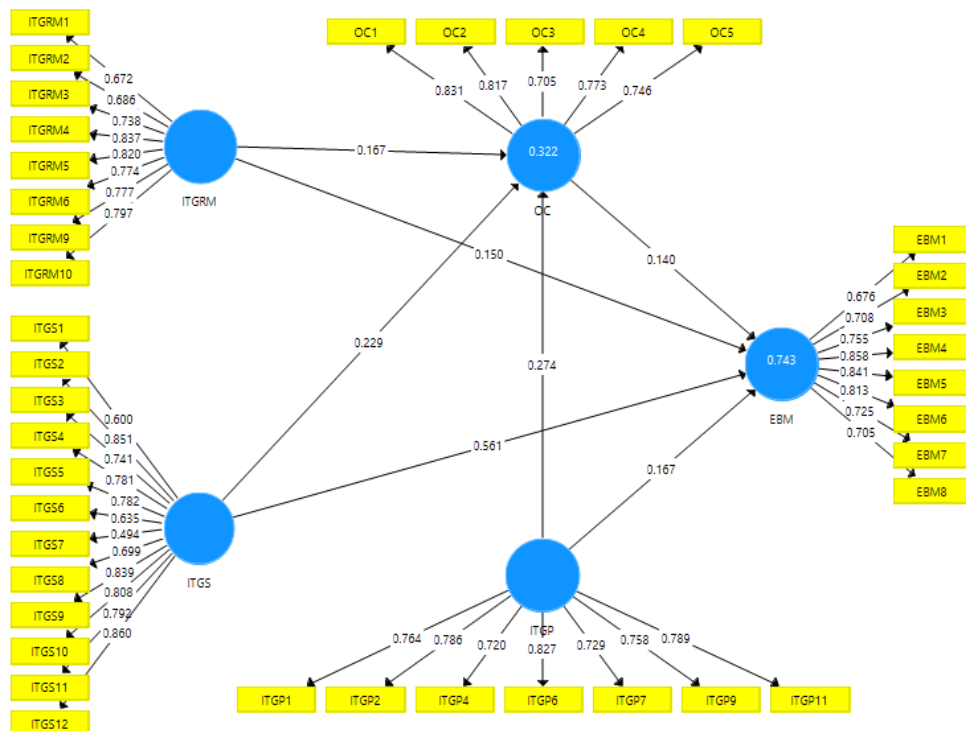


Figure 2. Measurement model assessment

The results of the direct path indicated that e-governance dimensions such as process, structure, and relation mechanism have a positive association with effective business management of

government organizations in Thailand and accepts H1, H2 and H3. Table 4 shows the direct relationships.

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

The results also revealed that those organizational capabilities significantly mediates among the nexus of e-governance dimensions and effective business management of government organizations in Thailand and accepts H4, H5 and H6. Table 5 shows the indirect relationships.

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

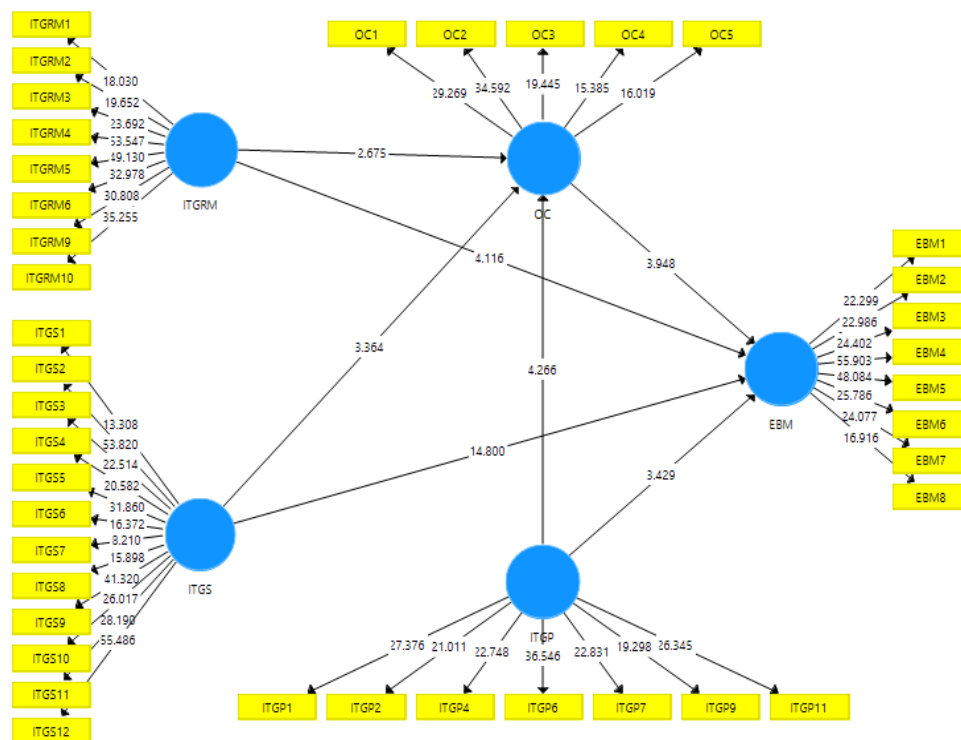


Figure 3. Structural model assessment

### Discussion and Implication

The study results have indicated that IT governance processes have a positive relationship with effective business performance. These results are approved by the previous study of Raymond, Bergeron, Croteau, and Uwizeyemungu (2019), which proposes that when the formalization of IT regulation or governance into the business is helpful in detecting the negative impacts of the components of the IT such as computer hardware, software, telecommunication, databases, and data warehouses, on the performance of business processes. Hence, IT governance enhances



the ability of business managers to administer the business process, removing the risks arising from IT decision-making. The study results have shown that IT governance structures have a positive relationship with effective business performance. These results are in line with the previous study of Shokouhyar et al. (2020). This study analyzes the IT governance role in getting business effectiveness. Under IT governance structure develops contacts and communication between IT management functions, and the business management strategies and their implications, and thus, assures the IT management is aligning to the business purposes and objectives. The study results have also indicated that the IT governance relational mechanism has a positive relationship with effective business performance. These results are approved by the past study of Rubino (2018), which suggests that under the IT relational governance mechanism, the relationship is built among the chief executive, IT management, and business management. Both the chief executive who gives permission about the application of IT component considering the expenditures that occurred, and the business managers who administer all the organizational departments are aware of the influences of usage, ownership, operation, and adoption of IT within the organization. Thus, they make better decisions to achieve the business goals.

The results have revealed that organizational capabilities are a mediator between IT governance processes and effective business management. These results are in line with the previous study of Magnusson, Koutsikouri, and Päivärinta (2020), which states that as IT governance processes enables the business management to evaluate and improve IT contribution to business process like research, operation, production, and marketing. In this way, IT governance develops dynamic skills in the employees and improves business management. The results have shown that organizational capabilities are a mediator between IT governance structure and effective business management. The past study of Riemer, Ciriello, Peter, and Schlagwein (2020) approves these results. This study focuses on the implementation of IT governance in the organizational structure, begets dynamic capabilities in the organizational personnel, and helps carry business activities to get business advantages. The results have indicated that organizational capabilities are a mediator between IT relational governance mechanisms and effective business management. These results are approved by the previous study of Sirisomboonsuk, Gu, Cao, and Burns (2018), which states that with the cooperative relationship among the chief executive, IT management, and business management, the analytical, problem solving, and decision-making skills develop, which play a key role in getting effective business management.

The present study has a great theoretical significance for contributing to the business literature. In this study, the importance of IT governance has been shown in the business world. This study examines the influences of IT governance processes, structure, and relational mechanisms on gaining effective business management. Here in this study, organizational capabilities have been taken as a mediator between IT Governance structure, processes and relationship mechanisms on the achievement of effective business management. A less number of studies have addressed the organizational capabilities as a mediator between IT Governance processes, structure, and relational mechanism and the achievement of effective business management. Thus, our study is a great contribution to the existing literature. Likewise, the selection of Thailand's economy as a focal point to analyze the IT Governance structure, processes and relationship mechanisms on the achievement of effective business management is an addition to the literature. The current study can bring progress in the business world as it elaborates on the ways how to improve business administration. This study tells that business management can be made effective by paying attention to IT Governance processes, structure, and relational mechanisms.

## **Conclusion and Limitations**

The current study was conducted with an aim to present the solutions to the management problems to the businesses operating in the emerging economy like Thailand. Its objective is to determine the influence of the IT Governance structure, processes and relationship mechanisms on the achievement of effective business management. The authors analyzed the influences of IT Governance processes, structure, and relational mechanisms on organizational capabilities and the achievement of effective business management. The results showed that the IT governance application improves the effectiveness of business processes removing the IT risk occurrences and developing a good relationship with stakeholders like suppliers, investors, employees, and customers. The relationship and contacts developed by the IT governance structure among business personnel and IT management, the chances of IT risks can be minimized, and business advantages like higher productivity, improved products quality, higher reputation, and retention of customers can be achieved. The study concluded that the application of IT governance processes, structure, and relational mechanism creates and develops organizational capabilities and help to gain effective business management. Like other studies, the research is exposed to several limitations, which are expected to be removed by the researchers when they replicate this study. Only the influences of IT Governance structure, processes and relationship mechanisms on the achievement of effective business management have been analyzed in this study. At the same time, business management is a broad business matter which is affected by a large number of factors except for IT governance. So, it is not appropriate to discuss only the IT governance role in getting effective business management. Thus, research should also be made on factors more than IT governance while analyzing the effectiveness of business management. This study collects quantitative data about IT Governance structure, processes and relationship mechanisms on the achievement of effective business management through the issuance of the questionnaire. The use of a single source has confined the scope of the study. So, the academics are recommended to apply multiple sources for data collection.

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