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# A study on BIS readiness among Thai SMEs focusing BIS enablers and inhibitors

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## Abstract

*The business intelligence system (BIS) is one of the emphasized innovations that has attracted the interest of industry analysts and policymakers. BIS, a decision support tool, can acquire, store, retrieve, and analyze massive volumes of data and help make smart decisions. Small and medium enterprises (SMEs) struggle with data overload, information deficiency, and knowledge. Thus, SME managers rely on their experience to make timely judgments, which is risky. However, BIS benefits firms in numerous ways. Previous studies on BIS adoption in global SMEs are limited, and BIS adoption in the majority of Thai SMEs is still at an initial stage. To fill this gap, the present study sheds light on the enablers and inhibitors to reflect technological readiness insight for BIS adoption among 148 Thai SMEs. The study aims to reflect a better understanding of BIS readiness among SMEs to ease the substantial change required for the adoption process. The findings show a profound perception of BIS, demonstrating that SMEs are technologically readier for adoption. Also, findings reveal that SMEs have positive BIS readiness, although SME owner-managers are still uncertain, expecting some BIS inhibitors. Therefore, BIS adoption is principally contingent on perceiving enablers and eliminating any inhibitors comprising BIS technological readiness. The research contributes to the advance of concepts and dimensions for BIS from SMEs' standpoint and grants practical verification to defend the innovation in SMEs. Based on the findings, this paper will present a set of recommendations for managers and suggests several future research opportunities around the management of openness in the context of SMEs from emerging markets. Overall, this study will highlight the importance of understanding enablers and inhibitors in technology adoption research. It will offer strategies to stakeholders to help SMEs overcome barriers to BIS adoption.*

**Keywords:** Enablers, inhibitors, technological readiness, TRI, BIS adoption, SMEs, business intelligence, small and medium-sized enterprises, Thailand.

## 1. Introduction

Firms in today's highly competitive business climate must respond swiftly to suit the needs of their customers and implement novel strategies. By helping businesses make better use of information like client tastes and product sales, business intelligence systems (BIS) can spur numerous developments. With the help of BIS, businesses may learn about their current and future environments, as well as how to adapt to any difficulties they may face (Perdana et al., 2022). Business Intelligence System (BIS) is a piece of software that helps businesses make the most of their data. In order to summarize and aggregate information, BIS technologies enable aggregation, analytics, and reporting on the data of the company. Still, the absence of enablers might undermine the benefits (Elbashir et al., 2008). According

to Okar et al. (2012), the concept of BIS can be decomposed into three parts; data capture/acquisition, data storage, and data access and analysis.

In recent years, market enthusiasm toward BIS has been overwhelming (El Haddad, 2017). BI spending rose 16 percent in 2012 to hit \$12.9 billion (Qussem, Zeki, & Abubakar, 2017). Meanwhile, a CIO survey of 251 IT leaders revealed that more than 56 percent of organizations are considering expanding their usage of BIS (Boonsiritomachai et al., 2016). However, the question is raised that big companies are going ahead while SMEs are left behind and are incapable of keeping pace with their big jaunt (Chaudhuri et al., 2011). This fact is that most companies know the benefits of using BIS, which can handle huge amounts of unstructured data to develop, identify and innovate new strategic opportunities for business (El Haddad, 2017). BIS aid in the identification of users and the resolution of issues, the detection of business risks and opportunities, the forecasting of market processes, the estimation of competitor operation, a clearer understanding of business needs, and the management of clients and supplier relationships (Ranasinghe & Madushanka, 2021). Efficient BI has become a potentially valuable method of securing a competitive advantage and improving a firm's performance (Fedouaki et al., 2013). BIS's main goal is to allow for the easy interpretation of these large volumes of data. Identifying new opportunities and implementing an effective strategy based on data insights can provide competitive market advantage and long-term stability for businesses to flourish. Nevertheless, BIS delivers historical and predictive views of business operations (English, 2018).

Frequently used functions of business intelligence technologies include online analytical processing, data mining, reporting, analytics, process mining, business performance management, complex event processing, text mining, benchmarking, prescriptive analytics, and predictive analytics (Qussem, Zeki, & Abubakar, 2017). Indeed, although SMEs have as much need for BIS as large companies (Ranasinghe & Madushanka, 2021), their adoption rates still lag. This low adoption rate could reduce SMEs' ability to compete with larger organizations and cause a loss of competitive advantage (Puklavec et al., 2018). SMEs may differ from larger companies by several key characteristics, e.g., resource and knowledge limitations, lack of money, reliance on a small number of customers and need for multi-skilled employees. These features strain SMEs, inducing that the successful implementation of BIS may be more challenging in this context (Fedouaki et al., 2013). SMEs have variously perceived the aspect of business intelligence and the support of management decisions. Their owners manage most SMEs and use less elaborated information systems to conduct performance analyses for their business activities (Ranasinghe & Madushanka, 2021).

There is a greater need for small and medium-sized enterprises (SMEs) to improve their knowledge skills due to the volatile markets in which they compete. Managers are now better able to exploit opportunities and counter dangers as a result of their improved access to timely, accurate information. Because of the BIS, small and medium-sized enterprises (SMEs) can use data for analysis, monitoring, and acquiring key performance indicators for marketing (Perdana et al., 2022).

In addition, SaaS helps small and medium-sized enterprises have access to cloud-based technologies that were previously reserved for giant corporations. Consequently, small and medium-sized enterprises (SMEs) will be able to upgrade their information systems, acquire access to cutting-edge computer technologies, and redirect resources to other parts of their operations (English, 2018). Opportunities for SMEs to use BIS have arisen with the rise of cloud computing, SaaS, and open source BIS. In spite of this, it requires a lot of time and money and comes with a significant risk of failure (Okar et al., 2012; Perdana et al., 2022).

Moreover, it's possible that BIS in SMEs will have an important effect on the economy. It accounts for between 70% and 95% of a company's revenue in various nations (Perdana et al., 2022). Despite the potential, overcoming the remaining obstacles to strategically utilizing BIS in SMEs remains a problem. Despite having less resources than larger businesses and operating in an uncertain environment (Raymond et al., 2019), SMEs are often more adaptable. This quality may make it easy for them to reorganize their business procedures with minimal red tape (Chan et al., 2019). The lack of BIS

awareness and reluctance to change among SME owners and staff, the lack of commitment to BIS adoption, and limited financial resources are all potential obstacles that SMEs may face (Krieger et al., 2021). The final difficulty may force SMEs to weigh the pros and cons of sacrificing one set of features for another.

However, despite the benefits of adopting BIS by SMEs are known and attempts made to provide commercially relevant BIS, many Thai SMEs remain reluctant to use this technology (Boonsiritomachai et al., 2016). Furthermore, as research in this area remains sparse, there is insufficient knowledge in understanding the adoption of BIS by SMEs. Additionally, the majority of such studies have been conducted in specific countries such as Australia (Elbashir et al., 2008), Northern Ireland (Hill & Scott, 2004) and the United States (Ramamurthy et al., 2008), with very few exploring the situation of BIS in Thailand—despite the rapid growth of IT spending in this country. Brown and Kaewkitipong (2009) indicated that Thai SMEs remains less advanced in utilizing technology in their operations. The International Data Corporation (IDC) reported that Thailand in 2015 was estimated to increase IT spending by 10.6% to US\$13.4 billion, whereas IT spending in Europe would increase by less than 1%. These spending trends make it crucial to further understand IT and BI implementation in Thailand (Boonsiritomachai et al., 2016).

Three constraints in the BIS context have been uncovered as a result of this investigation. To begin, there is a lack of sufficient research on BIS adoption in the Thai SME setting. Second, there is a deficiency in our understanding of BIS's components, technological readiness, and impacts. Insight into BIS factors and bottlenecks gained from studies of technology readiness are still limited and immature. As a result, this study has attempted to investigate BIS enablers and inhibitors of Thai SMEs to help them evaluate their technological readiness level and identify aspects that are still considered weak. Considering the significant effort in encouraging adoption and investment in BIS, investigating the potential enablers and inhibitors is essential (Perdana et al., 2022).

Our research contributions are four-fold. The first objective is to investigate the current state of BIS adoption among Thai SMEs, including manufacturing, service, wholesale, and retail. The second objective is to identify the enablers and inhibitors of BIS from the SME standpoint. Rather than viewing BI adoption as a dichotomous decision to adopt or not adopt, this study has developed a technological readiness model to depict BIS enablers and inhibitors. To facilitate the massive transformation necessitated by the adoption process, it seeks to accurately depict the level of BIS preparedness among SMEs. According to Colby and Parasuraman (2001), organizations that retain a high level of enablers and low levels of inhibitors are readier to employ new technologies. Third, To explore the important factors that influence the technological readiness of BIS, this study is based on the technology readiness index (TRI) theory (Parasuraman, 2000). Recognizing the factors that influence SME readiness for BIS adoption will be useful in suggesting strategies to overcome the constraints that inhibit adoption, establishing the necessity for a company and its staff to be BIS-ready establishing the necessity for a company and its staff to be BIS-ready. Finally, we offer a practical contribution for both researchers and practitioners. Since SMEs aren't well-represented in the current literature on BIS, our findings could have real-world implications for this sector.

## **2. Literature Research**

Extensive data supports a number of crucial conclusions drawn from these astute reviews. To examine the literature and spot the roadblocks to BIS implementation in government agencies, Heeks (2002) developed a reality gap model. BIS implementation maturity typically exists prior to determining BIS effectiveness. Thus, before launching BIS initiatives, it is important to take into account the organization's information maturity level and how it can effect BIS technology (Crossland, 2010). Studies in various areas of information systems could benefit from a more in-depth examination of the literature surrounding critical success factors (CSFs) for effective BIS (Yeoh et al., 2006). The BIS success factor, however, has been the subject of extensive research (Scholz et al., 2010).

In their 2017 study, Qusheh, Zeki, Abubakar, et al. (2017) reported on data from 308 IT industry leaders, managers, and users with various titles and responsibilities. In a survey, 86% of respondents said that their company's BIS use was still in its infancy due to a lack of understanding and application of more sophisticated BIS features. Existing business intelligence models typically center on concerns related to the utilization of IT resources and the execution of standard business procedures. However, many companies are not at the point in their BIS implementation where they need to draw attention and develop since they are focused on other, less important things, such as organization (Boonsiritomachai et al., 2016).

Moreover, according to the reviews, tech preparedness is a key factor in determining whether or not an organization would embrace a new system. The TOE framework was utilized by Aboelimged (2014) to look into the state of e-maintenance in Egypt's industrial sector. In their analysis of ERP implementation in Taiwan's telecommunications sector, Pan and Jang (2008) cited technological preparedness as a key factor. Online shopping's technological preparedness was explained by Vize et al. (2013). Research by Richey et al. (2008) looked at the effect of technical preparedness on retail-supplier collaborations. Using empirical data, Kwahk and Lee (2008) confirmed the need of adaptability in making ERP work. Empirical research into the technological preparedness of Greek hospital employees was conducted by Melas et al. (2014). However, identifying both facilitators and roadblocks is rarely discussed in literature. Previous studies fail to explain how BIS technological readiness's significant enablers and inhibitors affect BIS adoption. This insight shows evidence that the BIS is yet to be perceived by SMEs as an emerging innovation capability for improving their competitiveness and service efficiency (Boonsiritomachai et al., 2016; Okar et al., 2012; Perdana et al., 2022). BIS adoption among SMEs is still low due to this limiting belief.

In conclusion, although BIS is slightly new in the SME sector, sustainable SMEs need BIS. Thus, BIS readiness insights in SMEs can help Thai SMEs embrace BIS by identifying enablers and impediments. The research on important influences of BIS technology preparedness in SMEs can accelerate BIS adoption.

### **3. Theoretical Background**

Numerous technological hypotheses have been found to exist and are used as analytical lenses for researching BIS's technological preparedness in previous research. Davis (1985) established the Technology Acceptance Model (TAM) in an effort to find more accurate measurements of how widely technologies will be used in the future. In spite of this, TAM is used to define and anticipate users' acceptance of information systems, which is not appropriate for the purpose of this investigation. The purpose of this research is to examine the organizational factors that promote and hinder BIS adoption by SMEs. By bringing together eight separate models of technology adoption theory, Venkatesh et al. (2003) proposed the unified theory of acceptance and use of technology (UTAUT). UTAUT, on the other hand, is typically employed to characterize and foretell users' acceptance of information systems; this is not the case here. Environmental context is ignored in Rogers (2003) Diffusion of Innovation Theory (DOI). However, Tornatzky et al. (1990)'s technology, organization, and environment (TOE) architecture does not specify the part that individuals' unique traits play (e.g., top management support). However, the current research uses the technology readiness index (TRI) theory to verify that organizations and their personnel need to be prepared to deploy BIS. To be technologically ready, as described by Parasuraman (2000), is that a company is open to and willing to implement new technology. Both Glenn Richey Jr and Autry (2009) and Vize et al. (2013) define technological readiness as an organization's propensity to accept and deploy new technologies in pursuit of its objectives. These factors include a propensity to be an inventive technology leader as well as those that indicate a positive view of technology (greater control, flexibility, and efficiency).

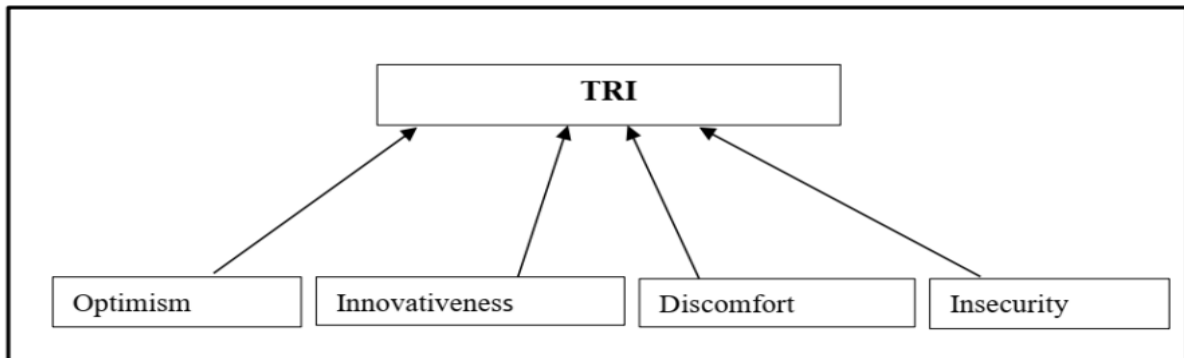


Figure 1: Dimensions of TRI theory. Source: adapted from Parasuraman (2000)

However, it has inhibitors/detractors who believe technology is uncontrollable and unreliable. SMEs must be willing and able to use BIS systems. BIS needs technological preparedness. It strongly influences Singaporean SMEs' BIS adoption (Perdana et al., 2022). Firm resource capability is technology readiness (Richey et al., 2007). Erosa (2013) revealed that firms with high technology readiness are willing to use e-Invoice. Technological preparedness boosts SME e-business value development, according to Wen and Chen (2010). Vize et al. (2013) found that technology readiness affects B2B online sellers' service quality and satisfaction.

## 4. Methodology

### 4.1 Participants

The current study used employee numbers and small business research principles to define SMEs. Consequently, according to the Thailand Ministry of Industry, these SMEs were defined as businesses with less than 200 employees (Boonsiritomachai et al., 2016). This study was conducted using a quantitative research method using a survey to collect data. Initially, to investigate the Thai SMEs' perception of their readiness for BIS, a study of a sample of 148 SMEs was conducted. The targeted respondents of this study were selected through the purposive sampling method. Thailand's Southern Border Provinces (i.e., Pattani, Yala, Narathiwat) were selected as our sampling location. In this case, the owner or manager of a small or medium-sized enterprise served as the unit of analysis. That is because SME owner-mangers are fully aware of their strategies, needs, and challenges that can determine their BIS perception. Also, they are aware of their businesses' technical resources and the expected benefits and potential of implementing new systems (Zhu et al., 2010). Therefore, they are more likely to show their institutions' readiness to employ BIS (Boonstra, 2013). The researchers used a self-administered questionnaire to gather information, so the participants could fill it out whenever it was convenient for them. Interaction between the researcher and respondents also helps pique their interest in filling out the questionnaire (Sekaran & Bougie, 2020). Out of the total of 200 surveys sent out, 148 were returned with responses, for a response rate of 74%.

### 4.2 Research Instrument

In its original form, the study's questionnaire was back-translated to the Thai language to be more clear and fully understood by likely respondents (Brislin, 1970). Furthermore, a panel of specialists pretested these instruments extensively to verify preliminary scale reliability and validity and evaluate the potential issues with the unidimensional constructs (Cooper & Schindler, 2003). It was largely agreed upon by responders that the questionnaire was straightforward and simple to do. All of the responses were positive, so we kept on collecting data. None of the responses in this pre-test was used in the study reported analysis.

The BIS Enablers' optimism is more likely to be at the forefront of technological innovation because of their positive outlook on technology. A total of eight things on a scale derived from the work of Glenn Richey Jr and Autry (2009) make up their inventory. The BIS inhibitor items, on the other hand,



are based on those used by Vize et al. (2013) and are evaluated using an eight-item scale. These precautions were taken because many people lacked faith in technology and felt helpless in its hands. In order to learn how prepared small and medium-sized enterprise (SME) owner-managers are for BIS technology, a questionnaire was developed. The survey, which had multiple questions, was given to them to complete. We started by creating a 7-point Likert scale with 16 statements to gauge how they felt about BIS. Similar studies used the Likert scale to assess respondents' perceptions of different technologies' readiness (Dwivedi et al., 2009; Pan & Jang, 2008; Puklavec et al., 2018; Soliman & Karia, 2022).

Table 1: Demographic Information

i.	Respondent's Profile	Frequency	Percentage
<b>SME type</b>			
	Manufacturing	6	4.10
	Service	60	40.5
	Wholesale	63	42.6
	Retail	19	12.8
<b>Number of employees</b>			
	Sole proprietor	71	48
	2 – 9	65	44
	10 – 50	8	5.3
	51 – 100	4	2.7
	101 - 200	0	0
<b>Position</b>			
	Owner-manager	126	85.1
	Manager	22	14.9
	Others	0	0
<b>Gender</b>			
	Male	99	66.9
	Female	49	33.1
<b>Age</b>			
	18–20	3	2.02
	21–30	21	19.1
	31–40	84	30.9
	41–50	36	44.5
	More than 50 years old	4	2.7
<b>Educational level</b>			
	High school or equivalent	13	8.8
	Vocational or diploma	55	37.2
	Bachelor degree	78	52.7
	Master's degree or higher	2	1.3
<b>Number of years in SME</b>			
	< 1 years	36	24.3
	1 - 5	62	41.9
	6 - 10	46	31.1
	>10	4	2.7

One way to determine a scale's reliability is with the help of the Cronbach alpha statistic. Cronbach's alpha is considered reliable beyond a threshold of 0.70 (Tavakol & Dennick, 2011). Table 2 displays the outcomes of the reliability analysis. It is reasonable to rely on questionnaire constructs as valid assessment tools.

Table 2: Reliability of Measurements

Factor	Number of items	Cronbach's alpha
BIS Enablers	8	0.797
BIS Inhibitors	8	0.837

## 5. Results

SPSS version 28 was used to categorize and analyze the study's data.

### 5.1 Results from Likert scale questions

Thai SMEs are BIS technologically ready, as shown in descriptive statistics of SMEs' views on BIS enablers versus BIS inhibitors are presented in Table 3. In order to gather information, this study uses a seven-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7), with "neither agree nor disagree" (4) in between (Eutsler & Lang, 2015).

Table 3: Descriptive Statistics Percentages

Items	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree	Total
<b>BIS Enablers</b>								
BIS will give our business more control over daily operations.	0 0.0%	0 0.0%	4 2.7%	31 20.9%	58 39.2%	33 22.3%	22 14.9%	148 100%
BIS will be much more convenient for us to use.	0 0.0%	0 0.0%	7 23%	34 45.9%	68 40.2%	35 23.6%	4 2.7%	148 100%
We prefer to use the most advanced technology.	0 0.0%	0 0.0%	2 1.4%	14 9.5%	67 45.3%	1 0.7%	64 43.2%	148 100%
We use technology that is tailored to fit our needs.	0 0.0%	0 0.0%	1 0.7%	4 2.7%	44 29.7%	75 50.7%	24 16.2%	148 100%
Technology makes task completion more efficient for us.	0 0.0%	0 0.0%	2 1.4%	3 2.0%	26 17.6%	70 47.3%	47 31.8%	148 100%
Our business partners and competitors seem to be learning less about the newest technologies than we are.	6 4.1%	18 12.2%	69 46.6%	30 20.3%	3 2.0%	21 14.2%	1 0.7%	148 100%
In general, we will be among the leading SMEs to acquire BIS.	0 0.0%	17 11.5%	45 30.4%	1 0.7%	62 41.9%	22 14.9%	1 0.7%	148 100%
We can usually figure out how to use new technology without much outside help.	0 0.0%	5 3.4%	25 16.9%	24 16.2%	54 36.5%	38 25.7%	2 1.4%	148 100%

BIS Inhibitors								
We consider it safe to do any type of financial transaction on BIS.	0 0.0%	9 6.1%	49 33.1%	1 0.7%	46 31.1%	38 25.78%	5 3.4%	148 100%
We do not worry that competitors will see information sent over the BIS.	0 0.0%	11 7.4%	49 33.1%	1 0.7%	56 37.8%	29 19.6%	2 1.4%	148 100%
If we transmit information within BIS, someone cannot use that information against us.	0 0.0%	18 12.2%	50 33.8%	3 2.0%	43 29.1%	33 22.3%	1 0.7%	148 100%
We feel confident working with business units that can only be reached by BIS.	0 0.0%	0 0%	11 7.4%	50 33.8%	51 34.5%	27 18.2%	9 6.1%	148 100%
If we transmit any information using BIS, we can be sure it will get to the right place.	1 0.7%	11 7.4%	49 33.1%	1 0.7%	52 35.1%	31 20.9%	3 2%	148 100%
Getting outside technical support is like being taken advantage of someone who knows more than we do.	0 0.0%	4 2.7%	15 10.1%	67 45.3%	4 2.7%	33 22.3%	25 16.9%	148 100%
With a new BIS, I never risk paying much money for something that may not be worth much.	0 0.0%	1 0.7%	14 9.5%	46 31.1%	50 33.8%	31 20.9%	6 4.1%	148 100%
The hassle of getting new BIS usually makes it worthwhile.	0 0.0%	19 12.8%	41 27.7%	2 1.4%	48 32.4%	36 24.3%	2 1.4%	148 100%

The data's standard deviation is displayed in Table 4. A statistical measure, the standard deviation shows how the data is spread out relative to the mean. Data that is more dispersed around the mean, as seen by a high standard deviation, indicates that there is considerable variety in the responses. However, a smaller standard deviation indicates that the data are clustered closely around the mean, suggesting that the responses are comparable. When all of the answers are the same, the standard deviation is equal to zero (Fielding et al., 2006). Table 4's standard deviation values sit between 0.69 and 1.22, suggesting that answers are comparable.

Table 4: Mean and Standard Deviation of the Questionnaire Items

Items	N		Mean	Std. Deviation
	Valid	Missing		
<b>BIS Enablers</b>				
Q1. BIS will give our business more control over daily operations.	148	0	5.26	1.038
Q2. BIS will be much more convenient for us to use.	148	0	4.97	.876
Q3. We prefer to use the most advanced technology.	148	0	6.31	.698
Q4. We use technology that is tailored to fit our needs.	148	0	5.79	.767
Q5. Technology makes task completion more efficient for us.	148	0	6.06	.835
Q6. Our business partners and competitors seem to be learning less about the newest technologies than we are.	148	0	4.33	1.021
Q7. In general, we will be among the leading SMEs to acquire BIS.	148	0	4.63	.898
Q8. We can usually figure out how to use new technology without much outside help.	148	0	4.68	1.167



BIS Inhibitors				
Q9.We consider it safe to do any type of financial transaction on BIS.	148	0	4.87	.978
Q10.We do not worry that competitors will see information sent over the BIS.	148	0	4.74	.904
Q11.If we transmit information within BIS, someone cannot use that information against us.	148	0	4.65	.980
Q12.We feel confident working with business units that can only be reached by BIS.	148	0	4.82	1.017
Q13.If we transmit any information using BIS, we can be sure it will get to the right place.	148	0	4.75	.961
Q14.Getting outside technical support is like being taken advantage of someone who knows more than we do.	148	0	4.41	.972
Q15.With a new BIS, I never risk paying much money for something that may not be worth much.	148	0	4.77	1.037
Q16.The hassle of getting new BIS usually makes it worthwhile.	148	0	4.73	1.012

The views of SMEs on the BIS enablers were outlined by eight questions. Response mean values are more favorable, suggesting a favorable BIS impression. Based on these results, SMEs are more prepared to adopt new technologies. Significant results with mean scores above 5 virtually agreeing can be shown for the first question and the third, fourth, and fifth questions. Moreover, with mean scores greater than 6, SMEs reveal their BIS preparedness on the third and fifth questions. The majority of respondents have not made up their minds as of the final three questions.

Thus, it is safe to say that BIS enablers have been recognized by SME management. Since BIS will provide greater discretion over day-to-day operations (mean= 5.26), making things more convenient (mean= 4.97), Thai SMEs elaborate on their BIS preparation. They favor cutting-edge gadgets (mean= 6.31). In addition, SMEs explain that they use technology in a way that best suits their demands (mean= 5.79), and that technology helps them get their work done faster (mean= 6.06). However, opinions on how inventive they tend to be among their partners and rivals are divided (mean= 4.33). Similarly, they will be among the most successful SMEs in terms of purchasing BIS (mean=4.63) and utilizing IT support (mean=4.68) to learn how to implement cutting-edge innovations. The averages of their responses are thus quite encouraging, suggesting a high degree of technological preparedness on the part of BIS. The majority of their responses show strong agreement, with mean scores over 5.

Conversely, eight questions were formulated to characterize barriers to SMEs' BIS technology readiness. Because the average scores were in the range of 4.41 to 4.87, it's safe to assume that this is an area of perception where greater clarity would be welcome. Safety in BIS financial transactions is referred to as BIS inhibitors. Information transmitted over the BIS can be intercepted by rival businesses (mean= 4.87) and is therefore not private (mean= 4.74). Similar results were found for the belief that BIS data may be put to good use (mean= 4.65), trust in cooperating with business units that rely solely on BIS (mean= 4.82), and the correct distribution of BIS data (mean= 4.75). In addition, SMEs express unease with seeking external technical support (mean= 4.41), investment risk with a new BIS (mean= 4.77) and whether or not the difficulty of acquiring a new BIS is justified (mean= 4.73). Based on these results, it can be deduced that SME owner-managers are still unsure, expecting certain BIS inhibitors from implementing BIS, and nearly having mild reservations.

## 6. Discussion

The purpose of this research is to help organizations of all sizes cope with the massive upheaval associated with adopting BIS. As a result, the ability to implement BIS by SMEs depends on the extent

to which they are technologically prepared and capable of overcoming any barriers to adoption. When SMEs are aware of the benefits and drawbacks of BIS technology, they are more likely to use it. This agrees with the findings of Soliman and Karia (2021). The vast majority of Thai MSMEs are very prepared in terms of BIS technology. With BIS, they'll have easier access to more power over daily operations. They openly express a desire to acquire and employ cutting-edge technology that meets their specific requirements and expedites their work processes (Puklavec et al., 2018). In addition, their propensity to purchase BIS in an effort to be innovative and their IT support of employing new technology reflect a serious attitude toward being BIS-ready. According to these results, SMEs have a comprehensive understanding of BIS, and they are prepared to implement new technologies.

In contrast, many of them have voiced worries about factors that hinder BIS readiness, such as the security of financial transactions, the accuracy of information, the appropriateness of information use, and trust in BIS. Furthermore, SMEs display reluctance to acquire external technical support, financial risk, and the inconvenience of acquiring a valuable BIS. This agrees with the findings of Soliman and Karia (2021). These results suggest that SME owner-managers are still unsure, anticipating some BIS inhibitors that imply a very hazy perception in this regard. Sellers of BIS systems must evaluate these concerns. To gain the confidence of SMEs, they must design and implement BIS with a solid security framework. If they want to keep customers happy, BIS companies should also offer permanent technical support for their products.

In addition, the findings show that the BIS adoption rate among Thai SMEs is low, despite the fact that the system is ready for use. That could be because users in other circumstances have reported similar failure to meet their goals after adopting the technology. Evidence is lacking in the BIS technical preparedness literature when applied to the context of SMEs. This is why many SMEs in Taipei are not on board with BIS. This discovery explains why they are so sluggish to accept BIS. For this reason, researchers need to take into account a number of factors affecting BIS readiness and adoption.

## **7. Conclusion and Future Recommendation**

The role of small and medium-sized enterprises (SMEs) in Thailand's economy is crucial. With the help of BIS, small and medium-sized enterprises (SMEs) can make better decisions in a dynamic and competitive business environment. The current state of Thai SMEs' BIS adoption was investigated in this study. Most Thai SMEs were categorized as having the lowest level of BIS adoption, according to the statistics. Thai SMEs have a lot of room to grow if they dedicate themselves to learning about the characteristics that make BIS effective. Therefore, the study focuses on determining the enabling factors affecting BIS adoption among SMEs in Thailand's Southern Border Provinces.

As stated, this study's major goal was to examine BIS enablers and inhibitors among Thai SMEs to provide a more accurate reflection of the level of readiness among SMEs to implement the significant changes necessary for BIS adoption. In order to illustrate the drivers and brakes for SMEs adopting BIS, this research created a technology readiness model. According to the results of this study, it is crucial to investigate both the factors that promote and hinder technological readiness. In order for SMEs to realize the benefits of implementing BIS, we provide actionable recommendations to the key stakeholders on how to develop strategies to reduce the impact of various barriers to adoption.

There are, however, significant caveats to our study's findings. Only a technological readiness perspective is taken into account in the explanations, which may leave out important factors. Additional organizational resources, such as leadership or management support, may be examined in future research. Inadequate sample size also limits the study's ability to draw broad conclusions. To achieve a more representative sample, this study might be repeated in the future using alternative probability sampling methods. Our examination of BIS's enabling, and constraining factors was based on the SMEs' inadequate understanding of the technology. Because of this, more study may deepen the evaluation to include financial measures such as firm profitability, perception-based performance, organizational performance, competitive advantages, and business value.

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