

Risk Perceptions among SME Developers: A Case Study of Thailand's Real Estate Development Industry

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Article history: Received: 22 February 2020 Received in revised form: 4 May 2020

Accepted: 15 May 2020 Published online: 2 June 2020

Abstract

Risks may be perceived as a multidimensional probability that impacts different people in different ways. Risks appear in most aspects of everyday life and in every type of business organisation. In the Thai real estate development domain, small and medium enterprise (SMEs) developers lacking appropriate specialist knowledge, competitive strategies and resources often have their projects greater exposed to a variety of risks. This paper aims to examine the SME developers' perceptions towards risks internally originated within their organisations, and to assess the consequences and likelihood of such risks. In order to successfully achieve this objective, the authors distributed questionnaires to SME developers in the Bangkok Metropolitan Area and analysed the data received from 200 SME respondents to that call. It can be suggested from the results obtained that SMEs consider the following as high impact risks: work not being finished as specified; use of wrong planning strategies; staff corruption or conflicts of interest; lack of financial liquidity; employees lacking appropriate work experience and skills; and project delays. Thus, this paper suggests that SME owners should respond to the aforementioned risks by reducing these key risk factors and/or finding new techniques to control and mitigate them to an acceptable level.

Keywords: Perception towards risks, internal risks, small and medium enterprise (SME) developers, real estate development, Thailand

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1.0 INTRODUCTION

The real estate industry within Thailand presently contributes around 6% to its GDP. More than 80% of residential units within the Bangkok Metropolitan Region are built by housing developers. The majority of these are built by large-scale property developers, with it being predicted that Small and Medium Enterprises (SMEs) property developers will face increasing difficulties to operate and expand within this marketplace (Klinchuanchun, 2019).

It is proposed that letting SME property developers obtain a clearer picture of the kinds of risks they can face, and how key risk factors may be addressed, can give them a better chance to reduce their risks, and increase their competitiveness and market share. Such measures if correctly undertaken may also help revitalise Thailand's real estate market by making it more attractive to invest in.

1.1 Small and Medium Enterprises (SME Developers) in Thailand

Globally, there are a number of definitions of SMEs, which can have upper limits in number of employees ranging from 30 to 499 (Berisha & Pula, 2015; OECD, 2005). There is no definitive definition specified for SMEs in Thailand. In terms of assets and employee numbers, the Office of Small and Medium Enterprises Promotion defines them as companies that have less than 2 million Baht in assets and employ less than 200 individuals (OSMEP, 2012), whilst The Bank of Thailand and Thailand's Ministry of Finance present a different set of criteria that have to be met for businesses to be recognised as SMEs (Lee, 2019; The Bank of Thailand, 2018).

The Bank of Thailand and the Ministry of Finance categorise SMEs into four distinct industry sectors, each of which has its own distinct upper fixed limit for tangible fixed assets and employee numbers (Lee, 2019, The Bank of Thailand, 2018), as shown on Table 1.

Table 1 The SME developers categorised by the size of tangible fixed assets (Baht) and employee numbers

Industry Sector	Tangible Fixed Assets* (Baht)	Employee (No.)
Manufacturing	< 200 million (US\$ 6.62 million)	< 200
Service	< 200 million (US\$ 6.62 million)	< 200
Wholesale	< 100 million (< US\$ 3.31 million)	< 50
Retail	< 60 million (< US\$ 1.99 million)	< 30

SME developers of real estate in Thailand are categorised as being part of the service industry sector (SET, 2020). They mostly have low operational expenditures and employ a small number of staff. SME developers help distribute income from the entrepreneurs to the customers and enhance economic and social structures by boosting the national employment ratio and increasing the household/ personal incomes, thus it can be summarised that SME developers are the foundation that large-scale entrepreneurs grow from (Jamieson et al., 2012).

The Office of SME Promotion uses the following criteria to define SME businesses within in Thailand:

- 1) Low selling volume: SME developers mostly receive income from locals/familiar customers. Despite having low selling volumes, they can survive because they also have little in the way of competition.
- 2) SME developers employ their skills and experience to serve their customers based on customised services, with the effectiveness of these depending on the capacity of the developers themselves. Additionally, to save themselves increased costs from salaries and welfare, most of them hire their families, friends, or neighbors to be their workforce members.
- 3) SME developers are able to enter into competition with larger developers and entrepreneurs by often offering more convenient processes when dealing with their customers.
- 4) SME developers have more flexibility to adapt themselves to suit the customers' demands and changes in the trading environment. They also typically have closer relationships with the local customers than the large-scale developers do. Furthermore, they often have higher levels of personal motivation as they have to dedicate their own resources and time to their businesses (Jamieson et al., 2012).

Interestingly, that opinion related to flexibility is in contrast to the later observations of Klinchuanchun (2019) which suggest that SME developers are finding their market share drop as a result of being less flexible than larger developers with regards to being able to adjust their business activities, thereby negatively affecting their competitiveness.

■2.0 DEFINITION OF RISKS IN REAL ESTATE DEVELOPMENT

Risks can be classified by the perceptions of decision-makers and stakeholders (Jamieson & Briggs, 2009), and also can be described as multidimensional, with distinct meanings to different people and for different things in different contexts (Khumpaisal, 2015). Generally, speaking, risks are associated with every investment vehicle, including the real estate development domain.

In real estate development, risks have been found related to new project developments, particularly, on decision-making process; the entire project development process, regarding schedule delays cost overruns, and quality of products (Gehner et al., 2006; Khalafallah, 2002). Hargitay and Yu (1993) cited in Khumpaisal (2015) defined risk as the unpredictability of the financial consequences of actions and decisions. Likewise, Baum and Crosby (2008) stated that risk is the uncertainty of an expected rate of return from an investment. The actual returns can be greater or smaller than the expected returns. The degree to which the actual return exceeds the expected return is called upside potential whilst the possibility of achieving a lower return than expected is often referred to as downside risk (Kenton, 2019). It is the downside risk that investors are most concerned with, especially, when an investment is funded by borrowed money (Khumpaisal et al., 2010; Meechai et al., 2017).

In this paper, risk in the term of real estate development projects, therefore, can be referred to as a concept that denotes a potential negative impact on an asset, project or some characteristic of value that may arise from some current processes or future events (Khumpaisal, 2011b).

To comprehensively classify the risks in the real estate development industry, these risks can be divided into 2 main categories as 1) internal risks, and 2) external risks, as illustrated in Figure 1 (COSO, 2019; Khumpaisal, 2011a; Morrison, 2007).

The work in this present paper focuses specifically on the consequences of the four main internal risks identified by those authors, as those risks generally have more impact on business processes, particularly for SME developers (Kenton, 2019).

Financial risks, the first of these four internal risks, can affect the organisation's financial status and can hinder the achievement of its objectives. These include risks associated with financial management, which may be caused by both internal factors, such as liquidity management, credit, investment, and external factors such as changes in interest rates or exchange rates. In this regard, financial risks in this paper are further sub-categorised as liquidity risk; reputation risk; and risk of high debts.



Figure 1 Risks associated in the real estate projects
(Source: Adapted from COSO, 2019; Khumpaisal, 2011a; Morrison, 2007)

Liquidity risk occurs when the organisation has insufficient funds to pay for short-term financial demands. It can cause many problems such as delayed work due to lack of money for purchasing materials and tools, delay in repayment of debts, or the organisation itself losing credit (Kolhatkar & Dutta, 2013).

Reputation risk is the risk that a company loses its reputation, which is a corporate intangible asset that can otherwise provide tremendous value to business operations. Even if this risk happens only once over a short period of time it can create enormous damage. Reputation risk is considered a risk with a low chance (equal to 1) that can have a maximum impact. It almost occurred while the management of each developer has the improper financial management skills (Chongsuanoi, 2016; Eccles et al., 2007).

Risk of high debts can severely affect the overall performance of the organisation up to the stage of creating losses. Appropriate decision making towards debt risk management and developing good corporate assets help a business to make more profit. Debt and asset risk management processes, therefore, need to start from the policy level, including the process of reviewing liabilities and corporate assets (Meechai et al., 2017).

Strategy/business risks are the second type of internal risk that can affect SME developers. These are risks that can affect the vision and missions of the organisation and hinder the achievement of its objectives. In addition, strategic risks also include changes from external factors and internal factors, which affects strategy formulations or operations processes to achieve the main objectives, and goals. In this paper, the following strategy/ business risks are assessed: policy risk; contractual risk; and human resource management risk.

Policy risk is associated with the policies and strategies of the organisation, including executive decisions towards the organisational direction that actually obstruct, rather than promote, the organisation's policies and strategic plans (Saardchom, 2010).

Contractual risk is a risk Thai SME developers often suffer from because their contractors' work performances are frequently at high risk of not conforming with the specified contract, in the manner of delays, or budget overrun and expected quality (Khalafallah, 2002; Khumpaisal, 2011a).

Human resource management risk is another strategy/business risk that SME developers are often confronted with because they typically believe they cannot afford to pay higher wages to motivate their employees, or even recruit skilled workers (Chongsuanoi, 2016).

Operational risks are the third kind of internal risk that SME developers can face. These are the risks associated with the operational processes that also hinder the achievement of the organisation's operational objectives. The operational risks can be defined as: risk in human resources development: technology risk; internal operations risk; constructional risk; and risks with regards to under/over estimation of cost.

Risk in human resources development can in part arise due to the small size of Thai SME developers, and the fact that they typically face the challenge that their employees lack knowledge and understanding, expertise, experience and/or skills in assigned tasks (Chongsuanoi, 2016).

Technology risk can occur because Thai SME developers often lack adequate knowledge of manufacturing and construction techniques. The lack of such knowledge may deter the overall construction processes and burden the SME developers in term of higher costs, a large amount of knowledge transfer expense (Changchatr, 2004; Pinijsarakarn, 2013). Lack of technical knowledge can also hinder Thai SME developers in adapting to rapid change.

Internal operations risk relates to the internal operating system not being suitably planned, and/or inappropriate for use in real business cases. It can result in fragmentation in an organisation's integration and management system, and also covers unclear scopes of works and services (Huffman, 2007; OIC, 2020).

Constructional risks are related to delays in projects, cost overruns, and the quality of works not matching with the owners’ requirements (Khumpaisal & Ratanawitton, 2015).

Risks in under/overestimation of cost can in part be due to the size of SME developers, as there is often no person solely responsible for estimating project construction costs. As a result of this, the actual cost often differs from the expected budget (Khalafallah, 2002; DPT, 2019).

The fourth kind of internal risk that SME developers can face are compliance risks. These risks occur when the employees/stakeholders do not perform any issue in accordance with the legal matters, or their organisation’s regulations. When these risks occur, they can affect the reputation and image of the organisation (COSO, 2019). There are 2 sub-risks associated with this compliance risks category, which are: violation of organisation regulation risk; and wrong and dishonest management.

Violation of organisation regulation risk is the violation or failure to comply with laws, regulations, or adherence to laws or regulations that are not suitable for the operation (COSO, 2019).

Wrong and dishonest management is the risk caused by intentional actions by any individuals in the organisation, in order to seek benefits for themselves which cause damage to the organisation. Godard (2020) also indicates that compliance risks can be originated by risks in information security, labor management and vendor (supplier) negotiations.

The discussed internal risks in relation to SME real estate developers are summarised in Table 2.

Table 2 Summary of the internal real estate development risks for SME developers

Category of Risk	Internal Risks		References
1. Financial	1.1	SME developers lack financial liquidity.	Chongsuanoi (2016); Kolhatkar and Dutta (2013)
	1.2	SME developers lack good reputation and reliability.	Eccles et al. (2007)
	1.3	The organisation lacks a quality debt management plan.	Meechai et al. (2017)
2. Strategy/Business	2.1	SME developers commit to the wrong planning strategy.	Chongsuanoi (2016); Saardchom (2010)
	2.2	SME developers do not have good methods to assess their service quality.	Khumpaisal (2011a)
	2.3	The compensation for employees provided by the organisation is higher or lower than the business standards.	Chongsuanoi (2016)
3. Operational	3.1	SME developers’ employees lack work experience and skills.	Chongsuanoi (2016)
	3.2	SME developers employ outdated or non-reliable technologies.	Changchatr (2004)
	3.3	SME developers lack good internal operational systems.	OIC (2020); Huffman (2007)
	3.4	Projects are delayed, do not meet with agreed schedules.	Khumpaisal and Ratanawitton (2015); Chongsuanoi (2016)
	3.5	Faults in organisation’s cost management.	Khalafallah (2002); DPT (2019)
	3.6	The contractors/vendors do not complete the work as specified in the contract.	Khalafallah (2002); Khumpaisal (2011a)
4. Compliance	4.1	Employees do not comply with the organisation’s rules and policies.	Tyler and Blader (2005)
	4.2	Employees commit corruption or have conflicts of interests.	Chongsuanoi (2016); Godard (2020)

3.0 RESEARCH METHOD

Typically, the risk assessment process should start with the decision-makers using information from the risk identification process and the judgements of experts to rank the degree of each project’s risks (Aven, 2016; Smith, 2002). This process includes setting the highest impact risk as the first priority in order to better respond to or mitigate its consequences. Moreover, the outcomes of the risk assessment process generally reveal the magnitude of risks’ consequences and the likelihood of occurrences (Jutte, 2020; Smith, 2002). Khumpaisal (2011b) concluded that this assessment process helps in evaluating both the probability of risk occurrence and the consequence of the risks.

According to PERSEUS (2012), risk assessment in relation to the degree of potential consequences (levels of impacts) and the likelihood (levels of probability) of the potential consequences to occur can be calculated from Equation 1.

$$R = C \times L \dots\dots\dots(1)$$

Where R = Risk
 C = Consequence (levels of impacts)
 L = Likelihood (levels of probability)

As the main purpose of this paper is to understand and highlight Thai SME developers’ perceptions towards the internal risks they face associated with their real estate projects, the internal risks (as summarised in Table 2) were primarily included as the risk variables for the assessment. On top of that, these selected variables are factored together with the concept of risk assessment in Equation 1. Therefore,

the initial 14 risk variables in Table 2 are further expanded to each include its consequence and its likelihood into the risk assessment in this study.

The questionnaire survey technique was adopted as the data collection tool. It was used due to time and accessibility constraints related to the informants, as well as the fact that the research aim was only to acknowledge the SME developers' perceptions towards risks in their project. A questionnaire was designed and issued to the survey's participants who were randomly selected from an established sampling frame. The questionnaire itself, which measured the perception on consequence and likelihood of different risks, was divided into 2 sections, which are 1) the respondents' demographic data, and 2) the assessment criteria of internal risks, comprising the proposed 28 variables.

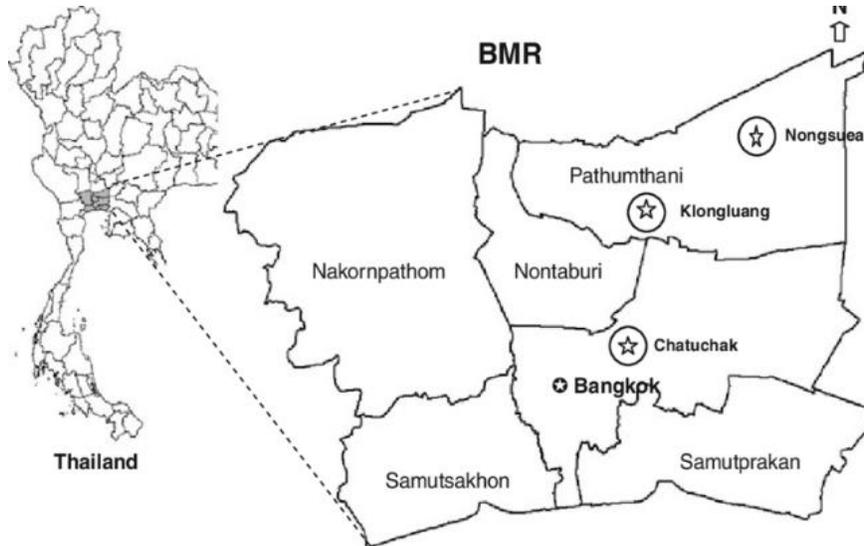


Figure 1 Studied area

In Section 1 on the questionnaire, the SME developers' demographic data is used to classify the characteristics of respondents containing: type of organisation, registered capital and years of respondents' work experience.

Meanwhile, Section 2 of that specifically addressed the SME developers' perceptions of different risks. The Likert Scale (1 = Strongly Disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly Agree) was provided to the respondents to indicate their perceptions towards risks. An example of the questionnaire to illustrate the scale measurement deployed regarding the consequence and frequency of each internal risk is shown in Table 3.

Table 3 Example of Likert scale questions used in the questionnaire to form the risk assessment matrix

Please indicate your perceptions towards the following risks in terms of consequences and frequency (Please mark the relevant number for each factor)		
Criteria	Please rate the consequences of this risk affecting your projects	Please rate the frequency of this risk occurring in your projects
	1 = Strongly Disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly Agree	1 = Strongly Disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly Agree
Financial risks	Consequences	Frequency
Your company lacks financial liquidity.	1 2 3 4 5	1 2 3 4 5
Your company lacks reputation and reliability	1 2 3 4 5	1 2 3 4 5
Your company lacks a quality debt management plan	1 2 3 4 5	1 2 3 4 5

Before launching the field survey, the questionnaire's reliability and validity were verified both by experts' judgement and statistical techniques. The pilot test for this was conducted on 1-16 November 2017. With 30 non-random sets being distributed to non-related respondents, there were 77% (23 out of 30) of these were returned. Then, corrections were correspondingly made to check the translation of words to the Thai language. The return rate indicated that the potential respondents were interested in this research area and consequently, indicated that the main survey was feasible. In order to test the reliability of the scale questions, the Cronbach's Alpha measure of internal consistency (Field, 2005), was employed to test 28 variables of the proposed assessment criteria, and the results indicate the high reliability (0.86) of this questionnaire set.

For the field survey, SME developers with their projects developed in Bangkok Metropolitan Region (BMR) were chosen for this study. This is partially due to BMR's population density with a significant number of housing projects that are rapidly increasing in

number almost every year (CBRE, 2018). BMR also contributes to most of Thai economy as it is the heart of Thailand's economic and political-administrative activities, in where SME developers undertake a majority of their projects (NESDB, 2016). Moreover, it is the area where both public and private investment continues to pour into a greater level than elsewhere in the nation.

With regard to population of SME developers, Krungsri Research (2018) reported that the whole population of SME developers, who settled their business in the studied area were approximately 1,200 companies of which 500 companies have their development projects located in BMR. In the present study, 280 developers were randomly selected as the respondents which the sample size is ca. 56% of the targeted population. The size of the samples was calculated based on the number of SME developers in the said area, with the confidence level of 95%, and margin of error at 5%. The ideal sample size was derived at 218 observations (Kadam & Bhalerao, 2010; Qualtrix, 2020).

Consequently, 280 sets of online questionnaires were distributed to SME developers who undertake real estate development projects in BMR during the field survey period (1 December 2017 – 15 March 2018). A digital format for the questionnaire was adopted for this survey with the return of completed questionnaires was monitored and followed up further if necessary. The reasons in doing so were threefold: to optimise time usage; to increase efficiency; and to avoid unnecessary expenditure on postal costs.

After receiving the completed questionnaires from the respondents, the simple statistic tests such as frequency, arithmetic mean, percentage were used to demonstrate the perceptions of respondents regarding risks caused by the designated internal factors.

For the data acquired from each SME developer, the 'risk evaluation map' (Welch, 2020) was employed as it is often used to indicate the magnitude of risk, due to its simplicity in using, reporting, and monitoring by the practitioners. The risk map is based on the comparison of analyzed risk consequence and acceptable risk level (risk appetite) and is based on the aforesaid risk concept (Equation 1), where the X-axis = Consequence (impact), and the Y-axis = Likelihood (frequency), respectively (Table 4).

Table 4 Cross tabulation of consequence and likelihood

Consequence	Likelihood					
	Very High (5)	M	M	H	VH	VH
High (4)	L	M	H	VH	VH	
Moderate (3)	L	L	M	H	H	
Low (2)	VL	VL	L	M	M	
Very Low (1)	VL	VL	VL	L	L	

Source: Adapted from Khumpaisal and Ratanawitoon (2015)

Where: VH is Very High Risk, H is High Risk, M is Moderate Risk, L is Low Risk, and VL is Very Low Risk

Subsequently, the scores for each variable in the risk assessment criteria obtained from 200 respondents were then averaged to derive its mean value for the consequence and that for the likelihood of each individual risk. The intervals of the Likert-scale scores previously calculated (Table 5) are used for interpreting those mean values.

The magnitudes of risks depend on the correlation between consequence and likelihood (Khumpaisal & Ratanawitoon, 2015), for example, the concurrence of high consequence and high likelihood indicates high risk. Conversely, the concurrence of low consequence and low likelihood indicates low risk. In order to estimate the magnitude of each risk variable in the assessment, Equation 1 was used in the calculation which led to the ranking and levelling of risks.

Table 5 Indicator of risk consequence and likelihood

Mean Value	Consequence (Impact)	Likelihood (Frequency)
4.21 – 5.00	Very High	Very High
3.41 – 4.20	High	High
2.61 – 3.40	Moderate	Moderate
1.81 – 2.60	Low	Low
1.00 – 1.80	Very low	Very low

Furthermore, in order to adjust the magnitude of each risk to be applicable to the Thai context, level of risk classified in the risk management plan issued by the National Research Council of Thailand (NRCT, 2012) was adopted. Hence, all SME developers' risk magnitude values were also organised into four categories as categorised by NRCT (2012) as shown in Table 6.

Table 6 The level of risks

Level of Risk	Risk Magnitude
Extreme	16.01 – 25.00
High	10.01 – 16.00
Medium	6.01 – 10.00
Low	1.00 – 6.00

Source: Adapted from NRCT (2012)

■4.0 RESULTS

4.1 Respondents' Profiles

During the survey period (1 December 2017 – 15 Mar 2018), out of 280 electronic questionnaires sent, there were 200 completed questionnaires returned. This represented 71% of the sample size, which was adequate to test by the aforementioned techniques. Even the ideal response rate shall be higher than 80% (Fincham, 2008), however this survey was purely external, thus the response rate of 71% is quite satisfied to undertake further tests (Lindemann, 2019). To report the results, details of the respondents' profiles have been listed in order to summarise the number and characteristics of those SME developers (see Table 7) in the BMR.

As can be seen from the results in Table 7, most of respondents owned single-person enterprises and the average registered capital for their business was less than 1 million Baht. The majority of respondents had 11-20 years working experience. These findings confirm that all of the surveyed respondents were categorised as SME developers due to their type of organisation, and registered capital which was less than 200 million baht, as described by the Bank of Thailand in 2018.

Given the size of their registered capital, they have more chance to be confronted with serious illiquidity of capital, and have inadequate cash to pay their workers, labor or vendors. This is because the size of registered capital can reflect the health of organisations' financial status to some extent: the less registered capital or fewer fixed assets, the higher the illiquidity risk (NBER, 2019). Moreover, the results imply that Thai SME developers typically use their own experiences to inform their judgment while making decisions. Sometimes they make a wrong decision, which can become the cause of risk in their project(s) (Khumpaisal, 2011a). Risks still exist, even when the right decisions are made to reduce the likelihood of them happening.

Table 7 Respondents' profiles

Description	Number	Percent
Type of organisation		
- Single-person enterprise	98	49.0
- Partnership Limited	14	7.0
- Company Limited	85	42.5
- Other	3	1.5
Total	200	100.0
Registered capital		
- Less than 1 million baht (<US\$ 0.03 million)	98	48.0
- 1 - 50 million baht (US\$ 0.03 - 1.66 million)	56	0.28
- >50 - 200 million baht (>US\$ 1.66 - 6.63 million)	46	0.23
Total	200	100.0
Respondents' work experience (years)		
- 1 - 10	52	26.0
- 11 - 20	109	54.5
- More than 20	39	19.5
Total	200	100.0

4.2 SME Developers' Perceptions of Risk

The outcome of this study is summarised in Table 8, providing the means value of the SME developers' regarding to the risks' consequences, and the likelihood of their occurrence, magnitude of risk, rank of risk and level of risk as perceived by the surveyed SME real estate developers in Thailand.

As can be seen from the results in Table 8, six risks were ranked as extreme risks, which can have a strong impact on the SME developers' projects and organisations. The top two extreme risks perceived belonged to the Operational risk category. The risk with regard to contractual liability (Risk variable no. 2.2), "The contractors/vendors do not complete the work as specified in the contract", was perceived as having the greatest impact with a score of 19.80. This was because the SME developers perceive that if their workers cannot

perform the works in accordance with the contract's requirements, the developers may lose people's trust in their business, their customers' confidences may become decayed, and the customers will not hire them anymore (Chongsuanoi, 2016).

The second greatest scoring risk was "SME developers commit to the wrong planning strategy" (Risk variable 2.1). Its score was 18.09, due to the developers' lack of knowledge and skills related to aspects of the real estate development business as well as the fact that they may plan strategies and implement them inappropriately. This risk factor also includes making decisions that may hinder the implementation of organisational strategic plans (Khumpaisal, 2015). The next extreme risk, which was from the Compliance category, was that the SME's "Employees committed corruption or had conflicts of interest" (Risk variable 4.2), which received a risk score of 16.39. This was predominately caused by employees asking for commissions, whether from the contractors or suppliers, because they lacked business ethics, and lacked loyalty to their organisations.

"SME developer's lack of financial liquidity" (Risk variable 1.1), from the Financial category, received a risk score of 16.14 and was the next risk that the SME developers were most concerned about. This was because they are small size organisations and find it hard to obtain sources of project funding since the financial institutions have stricter requirements towards lending them money than larger businesses with good financial liquidity (Khumpaisal, 2011a).

The last two extreme risks, which were from the 'operational risk' category, were "SME developer's employees lack work experiences and skills" and "Projects are delayed, do not meet with the schedule." Both of these obtained the same risk rating of 16.11, however, the SME developers perceived that these extreme risks can be mitigated by transferring them to the contractors to reduce the pressure on themselves of having tight project schedules (Khumpaisal, 2011a).

Seven of the remaining eight risks were viewed as high-level risks. The final one of these, which was "SME developers employ outdated or non-reliable technologies", was perceived as medium risk (with a score of 7.36). This was due to SME developers generally not relying on high-end technologies as their research and development (R&D) budgets are typically limited, as well as the nature of the construction and real estate industry they work in which often does not employ updated construction technologies.

According to the results above, it can be stated the Thai SME developers do take into consideration the impact of risks that can occur in their projects. However, they still lack the proper risk management tools or adequate knowledge on how to avoid/reduce many of these perceived risks.

■5.0 CONCLUSION, DISCUSSION, IMPLICATION AND FUTURE RECOMMENDATION

The SME developers are important players in the Thai real estate industry. The work they do, in addition to distributing income to workers and providing products for consumers to purchase, contributes income to Thailand's economy as a whole. The better they perform, the better the service they provide to the country and their end users.

As the SME developers are relatively small in size and often lack many of the resources of larger corporations, their capability to manage the risks relevant to their own business can be limited, with some not even being aware of the key risks they are encountering. This paper has shed some light on examining the SME developers' perceptions of risks that are internally originated within their organisations. This was done to assess the consequences and likelihood of risks using appropriate survey techniques and quantitative analysis so that suitable risk management methods could be recommended.

It can be concluded that the SME developers prioritise the risk of the contractors/vendors not completing the work as specified in the contract as the number one risk they face, second is the SME developers committing to the wrong strategic planning, while employees committing corruption or having conflicts of interest, the businesses' lack of financial liquidity, and employees lacking adequate working experience are also key risks considered by the SME developers.

Providing insights and guidance to help Thai SME developers address the extreme risks that have been identified in this paper is of paramount importance. It is definitely a topic worthy of a larger-scale study. This research can be extended in a number of ways. These include widening the focus area to obtain more robust results and help develop relevant solutions. Moreover, the survey subjects can also be sub-categorised into different types of SME developers to gain more insights on their perceptions of each type of risk as related to the specific type of development work they undertake and better understand what solutions may be available and/or customisable to their needs.

There is a strong need for further research to find out the appropriate risk management frameworks that suit the Thai SME real estate development context as well as the mindsets of Thai SME developers. To provide an indication of what could be done, a set of initial recommendations on how to address the six extreme risks identified in this study is presented below:

Recommendation 1: When it comes to the risks of contractual liability, it is necessary to determine the barriers that exist to more effective work practices being created to reduce such risks, and consider which barriers exist as a general rule and which are psychologically self-imposed. We also have to consider how to improve work practices and empowerment to address such situations.

In business, SME developers can seek to optimise the services they and those who work with them provide. It is important to see the bigger picture, and ideally create 'win-win' situations where everyone can grow and have a sense of purpose (McLeod, 2013). One way for SME developers to do this is by learning to work better together with others, including being open to the prospects of undertaking joint ventures and partnerships, and helping ensure that their own and their contractors' staff are properly trained (Klinchuanchnun, 2019).

Investing in people, both within a business itself and the contractors it uses can pay great dividends. Time spent looking at how to address the risks of works not being completed as specified in the contract, and how to introduce best practice measures to address this shortfall, can be a very good investment that benefits all.

Recommendation 2: Initiatives should also be expanded upon to help increase the likelihood of SME developers using the correct planning strategies instead of making mistakes. Having an in-depth knowledge of the potential planning strategy errors that can be made, and the psychological factors that can cause such risks (Bloch, 2019), can help address this problem.

A deeper investigation could be undertaken in the future to investigate the types of risks SME developers can experience and how these could be better, and often simply, addressed. It is further proposed that the short period of time spent ensuring that contractors' staff have been properly trained to address/avoid potential contractual issues could greatly increase cost-savings and work efficiency, reduce the need for remedial works, and increase end-user satisfaction.

While such a training initiative could - and should - be undertaken by individual SME developers, we propose it could be even more effectively undertaken as a government initiative so that the most efficient use of resources is made with little financial outgoings being required by the individual companies. Furthermore, where financial outlay is necessary, it would be beneficial to be able to indicate the likely return in investment made.

Recommendation 3: With regard to the risks of employees committing corruption or having conflicts of interest, having thorough vetting procedures of potential staff prior to employment, treating existing staff better and providing them with an opportunity to grow with the firm, can help build loyalty and reduce the likelihood of such issues. Providing staff training on ethical matters, and management leading by example as related to good moral conduct can further help address this situation (SAI Global, 2016). Monitoring units can also be put in place, to act as a safety measure as whistleblowers if unusual transactions occur. In addition, anti-corruption measures should be incorporated into the corporate policy and encoded as a part of culture to groom the staff mindset in this matter.

Recommendation 4: With regard to liquidity risks, the developers must plan to secure the funding on each milestone throughout individual projects at the earliest possible opportunity. There are numerous contributing factors to SME developers' lack of financial liquidity, one of which is 'satisficing', which can be defined as "the setting of suboptimal targets as a result of individuals' own bounded rationality". Mohamed (2006) notes that satisficing is common in the real estate industry because often "developers bracket projects one at a time, bracket each investment decision in isolation of others, create no fungible investment accounts, establish self-imposed liquidity constraints, and temporally space projects" (p. 28). Once the inefficiency of such practices is better brought to SME developers' attention, better solutions are more likely to be adopted by them to help improve the flow of finances between their projects and their overall financial liquidity". Apart from well planning to secure the liquidity by SME developers themselves, accessing government policies to facilitate the ease of capital and liquidity for SME would help alleviate this problem. These policies are, for example, the low interest rate loans encouraged through government-related financial institutions, and loan guarantee (Wasee, et al., 2019).

Recommendation 5: There is a strong need to address "SME developer's employees lack work experience and skills". This can again in part be tackled through seeking to build people up and make them feel like they belong and are contributing something of value. Various methods can be undertaken to help achieve this. As an example, mentoring can play a strong part in building psychological capital and increasing staff engagement. As noted by Ghosh et al. (2018), those are both major factors that can directly affect business profitability. Again, these are issues that can be addressed directly within the organisation, and through special initiatives by the government seeking to enhance the quality of workforces. Measures should also be taken to increase individuals' technical skills (Klinchuan Chun, 2019).

Recommendation 6: There is a strong requirement to better address project delay risks. As mentioned earlier, this risk to SME developers has in part been addressed by transferring their own responsibility for managing schedules to the building contractors instead. This presents only a partial solution and is far from ideal.

Further research could be undertaken to determine key problems that are likely to arise in projects so that appropriate cost-effective solutions can be undertaken in a timely manner. Again, as many of the issues that can occur are relatively commonplace the creation of a database of these and ways to easily avoid them would appear highly appropriate.

Table 8 The research results

Category of risk	Variable No.	Description	Consequence (Mean)	Likelihood (Mean)	Magnitude of risk (Consequence x Likelihood)	Rank of Risk	Level of risk
Financial	1.1	SME developer's lack of financial liquidity.	34.4	72.3	16.14	4	Extreme
	1.2	SME developer lacks reputation and reliability.	49.3	13.3	10.92	10	High
	1.3	The organisation lacks a quality debt management plan.	67.3	86.2	10.50	12	High
Strategy/ Business	2.1	SME developer's commit to the wrong planning strategy.	81.4	76.3	18.09	2	Extreme
	2.2	SME developer does not have good methods to assess its service quality.	57.3	30.3	11.78	7	High
	2.3	The compensation for employees provided by the organisation is higher or lower than the business-standard	52.3	03.3	10.67	11	High

Table 8 The research results (continued)

Category of risk	Variable No.	Description	Consequence (Mean)	Likelihood (Mean)	Magnitude of risk (Consequence x Likelihood)	Rank of Risk	Level of risk
Operational	3.1	SME developer's employees lack work experience and skills.	45.4	62.3	16.11	5	Extreme
	3.2	SME developer employs outdated or non-reliable technologies.	99.2	46.2	7.36	14	Medium
	3.3	SME developers lack good internal operational systems.	71.3	11.3	11.54	8	High
	3.4	Projects are delayed, do not meet with the schedule.	32.4	73.3	16.11	6	Extreme
	3.5	Faults in organisation's cost management.	98.3	87.2	11.42	9	High
	3.6	The contractors/vendors do not complete the work as specified in the contract.	83.4	10.4	19.80	1	Extreme
Compliance	4.1	Employees do not comply with the organisation's rules and policies.	39.3	98.2	10.10	13	High
	4.2	Employees committed corruption or had conflicts of interest.	43.4	70.3	16.39	3	Extreme

Acknowledgement

The authors would like to thank Ms. Titaree Chongsuanoi, who provided us the useful data to found this research. We also like to thank Faculty of Architecture and Planning, Thammasat University for its support throughout the research processes.

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