Consumer Confidence in Earthquake-resistant High-Rise Buildings in Bangkok

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Abstract

The purpose of this study was to investigate how consumer confidence in corporate brand trust in Bangkok's high-rise building construction was impacted by confidence in earthquake-resistant high-rise buildings. The samples consisted of 381 residents of high-rise buildings in Bangkok. The stratified random sampling was used, with the type of building Construction Company as the stratification criterion. The instrument used in the study was a questionnaire developed by the researchers. The statistics used were mean, S.D., and one-way ANOVA,The study results found that 1) Consumer confidence of residents in high-rise buildings was at a high level.2) There were no differences in the level of corporate brand trust among residents of high-rise buildings built by construction companies with joint ventures with Thai-East, Thai-Thai, and thai-East joint ventures. 3) High-rise building residents had a high level of confidence in the earthquake-resistant high-rise buildings.4) There were no differences in the level of confidence that high-rise building residents had in earthquake-resistant high-rise buildings built by construction companies with Thai-East, Thai-Thai, or Thai - West joint ventures.5) Customer confidence in earthquake-resistant high-rise buildings was impacted by six features, with regression coefficients of .221, .149, .132, .104, .089, and .059, respectively, but one communication, information sharing, and incident management had no effect.

Keywords: Confidence in Earthquake-resistant High-Rise Buildings, Consumer Confidence, Corporate Brand Trust PA Q3

1. Introduction

Due in part to the growing population and in part to the development of rail transportation systems in urban areas (Klinchuanchun, 2018; Puncreobutr et al., 2019a; Vaisiriroj and Ussavadilokrit, 2022), residential real estate businesses are thought to account for two thirds of the value of the Thai real estate market. As a result, more housing is being developed close to rail transportation stations (Mihoko et al., 2020). Specifically, the desire for condominiums is thought to be driving the expansion of new housing enterprises in major cities across several nations (Gillad & Alen, 2013; Puncreobutr et al., 2019a)

Bangkok is home to several high rise buildings. An analysis of Bangkok's building permit data from 1990 to 2019 revealed a steady rise in the number of tall structures that were approved for construction. The Huai Khwang area, in particular, has the most potential for growth due to its central location and several transportation hubs (Policy and Planning Division, 2019; Puncreobutr et al., 2020; Sunthoraopas and Wongyuen, 2021). The importance of construction quality control is growing as the number of tall buildings rises. To ensure that the construction work is both of high quality and satisfies safety regulations, it is imperative to control a number of aspects (Sunthoraopas and Wongyuen, 2021)

Safety standards play a crucial role in quality control when developing high-rise structures (Jimmie & Charles, 1981; Policy and Planning Division, 2019; Puncreobutr et al., 2019b; Choosakul et al., 2024). The Ministry of Interior Announcement on the Design and Calculation of Building Structures to Resist Earthquake Vibrations B.E. 2564 (Ratchakitcha, 2021b), the Ministerial Regulation on the Load Bearing, Resistance, Durability of Buildings and Soil Supporting Buildings to Resist Earthquake Vibrations B.E. 2564 (Ratchakitcha, 2021a), and other regulations cover earthquake safety and earthquake-resistant high-rise building safety in Thailand (Ratchakitcha, 2021b), etc.

According to Puncreobutr and Kin (2017), consumer confidence is another factor contributing to Bangkok's high-rise development boom. Being aware of earthquakes and having prepared for them is another factor in the decision of those who want to live in high-rise buildings.

Consumer confidence in residential real estate is crucial (Ismail, 2021), and this trust extends to the construction company's brand (Munaier et al., 2022) and earthquake-resistant structures (Giusto et al., 2023). Based on data regarding previous requests for permission to build high rise buildings in Bangkok, it was discovered that the companies making these requests can be categorized into three groups: Thai - East, Thai - Thai, and Thai- West joint ventures (Policy and Planning Division, 2019).

On March 28, 2025, however, an earthquake with a magnitude of 8.2 struck central Myanmar, sending tremors to Thailand and other nations. The earthquake damaged numerous buildings, particularly in the Bangkok area. It was thought to be the worst earthquake damage Thailand had ever seen, with numerous large buildings being damaged and tall buildings under construction collapsing, leaving many people injured and dead (SCB EIC, 2025).

These earthquake-damaged buildings have caused real estate professionals to worry that business may slow down for a number of reasons, including a lack of trust in companies asking for permission to build tall buildings, a lack of trust in the construction company's brand, and a lack of trust in earthquake-resistant buildings.

Thus, as part of the academic services offered by the university, the research team thinks that a study on consumer confidence in earthquake-resistant high-rise buildings in Bangkok should be conducted. This study will be helpful to stakeholders in the construction of high-rise buildings, company executives or high-rise building project executives to use it as a guide for developing high-rise residential real estate businesses, and consumers and those who are considering making a future purchase decision.

2. Research Objectives

2.1 To analyze residents' level of consumer confidence in the corporate brand trust of high-rise buildings in Bangkok, Thailand

2.2 To compare residents' level of consumer confidence towards corporate brand trust of high-rise buildings in Bangkok, categorized by the type of high-rise building construction company

2.3 To find out the level of confidence in earthquake-resistant high-rise buildings among residents of high-rise buildings in Bangkok, Thailand

2.4 To compare the level of confidence in earthquake-resistant high-rise buildings among residents of high-rise buildings in Bangkok, classified by the types of high-rise building construction companies

2.5 To analyze the impact of confidence in earthquake-resistant high-rise buildings on consumer confidence in corporate brand trust in high-rise building construction in Bangkok, Thailand

3. Research Methodology

Fifty thousand people who lived in Bangkok, Thailand's high-rise buildings made up the researcher's population. According to data from the National Statistical Office (NSO) and the Bangkok Metropolitan Administration. The sample size was obtained from the Krejci and Morgan table, resulting in a total sample of 381 people. The type of building Construction Company was employed as the stratification criterion in stratified random sampling. These include high-rise buildings constructed by domestic companies, high-rise buildings constructed by joint ventures with Eastern countries, and high-rise buildings constructed by joint ventures with Western countries.

The variables studied are:

3.1 Consumer confidence is the confidence of residents in the corporate brand trust that builds high-rise buildings, consisting of 3 aspects:

1) Creditability refers to issues related to meeting consumer needs, delivering on promises, providing services as promised, and assuring quality.

2) Benevolence refers to issues related to consumer-benefit practices, consumer care, consumer problem-solving, and consumer-beneficial assistance.

3) Integrity refers to issues related to sincerity in building quality buildings, construction is carried out correctly, fairly, and with care at every stage (Munaier et al., 2022).

3.2 Confidence in earthquake-resistant high-rise buildings is the residents' confidence in high-rise buildings that they can withstand an earthquake. It consists of 7 components:

1) building design
2) use of construction materials
3) construction control,
4) safety equipment installation
5) earthquake resistance
6) accountability for “limited damage and safe building structures”, and
7) communication, information sharing, and incident management (Giusto et al., 2023)

The research instrument used was a questionnaire created by the researchers with a discrimination power of .43-.93 and a reliability of .92. The statistics used in the research were mean, S.D., one-way ANOVA, and multiple regression.

4. Research Results

From the study “Consumer Confidence in Earthquake-resistant High-rise Buildings in Bangkok”, the results of the study are as follows:

The following are the findings of the study "Consumer confidence in earthquake-resistant high-rise buildings in Bangkok":

4.1 Basic information

Basic information gathered from the questionnaire is displayed in Tables 1–2 according to the type of high-rise building construction company and resident's age:

Table 1 Basic information obtained from the questionnaire (N=381)

	Group	Number	Percentage
Type of high-rise building construction company	Thai - East joint venture	83	22.3
	Thai-Thai joint venture	186	48.8
	Thai - West joint venture	110	28.9
Age of resident	<30 years	269	70.6
	30-50 years	88	23.1
	>50 years	24	6.3

According to Table 1, most respondents (48.8%) resided in high-rise buildings built by Thai - Thai joint ventures, with high-rise buildings built by Thai-West joint ventures coming in second. The majority of respondents living in high-rise buildings were under 30 years old (70.6%), with those between the ages of 30 and 50 coming in second (23.1%).

Table 2 Relationship between the type of high-rise building construction company and respondents' age (N=381)

Type of high-rise building construction company	Age of resident			Total
	<30 years	30-50 years	>50 years	
Thai-East joint venture	40	41	4	85
Thai - Thai joint venture	142	35	9	186
Thai - West joint venture	87	12	11	110
Total	269	88	24	381

According to Table 2, most respondents (142, 37.3%) were under 30 years old and resided in high-rise buildings built by Thai- Thai joint ventures, followed by those under 30 years old (87, 22.8%) residing in high-rise buildings built by Thai- West joint ventures. Additionally, the fewest respondents were above 50 (4, .01%) residing in high-rise buildings built by Thai - East joint ventures.

4.2 Consumer confidence study

The findings on residents' consumer confidence in high-rise building construction companies in Bangkok, Thailand, are as follows:

4.2.1 Level of consumer confidence

Consumer confidence of residents towards the brand of high-rise building construction companies in Bangkok with Thai - East, Thai - Thai, and Thai - West joint ventures is shown in Table 3.

Table 3 Consumer confidence level of high-rise building residents classified by company type (N=381)

Aspect	Type of construction company	N	mean	S.D.	Confidence level
Creditability	Thai-East joint venture	85	3.6000	.48469	High
	Thai - Thai joint venture	186	3.5538	.60013	High
	Thai-West joint venture	110	3.5970	.53060	High
	Total	381	3.5766	.55545	High
Benevolence	Thai-East joint venture	85	3.6706	.57158	High
	Thai - Thai joint venture	186	3.7007	.69536	High
	Thai-West joint venture	110	3.7515	.70593	High
	Total	381	3.7087	.67190	High
Integrity	Thai-East joint venture	85	3.7373	.66685	High
	Thai - Thai joint venture	186	3.7957	.71707	High
	Thai-West joint venture	110	3.8788	.73047	High
	Total	381	3.8066	.71016	High
Overall consumer confidence		381	3.6973	.46628	High

According to Table 3, the high-rise building residents' overall consumer confidence was at a high level (mean 3.69). When considering each aspect, the consumer confidence in all three aspects was also at a high level, with confidence in integrity ranked highest (mean 3.81), followed by benevolence (mean 3.70) and creditability (mean 3.57), respectively.

4.2.2 Comparison of consumer confidence

The study compared the confidence levels of residents in high-rise buildings constructed by three types of companies: Thai -East, Thai-Thai, and Thai- West joint ventures by employing a one-way ANOVA. Table 4 displays the comparison's findings.

Table 4 Comparison of consumer confidence categorized by company type

Aspect	Source	df	Sum of Squares	Mean Square	F	p
Creditability	Between groups	2	.189	.095	.305	.737
	Within groups	378	117.050	.310		
	Total	380	117.239			
Benevolence	Between groups	2	.337	.168	.372	.690
	Within groups	378	171.213	.453		
	Total	380	171.550			
Integrity	Between groups	2	1.004	.502	.995	.371
	Within groups	378	190.641	.504		
	Total	380	191.645			

Overall consumer confidence	Between groups	2	.327	.163	.750	.473
	Within groups	378	82.291	.218		
	Total	380	82.618			

From Table 4, the results of the comparison of consumer confidence levels classified by the types of companies constructing tall buildings found that residents had confidence in the brands of companies constructing tall buildings in Bangkok overall, in all three types, but it was not statistically significant. Likewise, when the three aspects creditability, benevolence, and integrity—were taken into account independently, it was discovered that residents' levels of corporate brand trust were non-significantly different.

4.3 Confidence in earthquake-resistant high-rise buildings

Results of analysis of confidence in earthquake-resistant high-rise buildings in Bangkok, Thailand, as follows:

4. 3.1 Results of analysis of confidence in earthquake-resistant high-rise buildings in Bangkok, Thailand, as follows:

As shown in Table 5, the residents' confidence in earthquake-resistant high-rise buildings in Bangkok was analyzed according to 7 features as follows:

1) Building design
2) Construction material use
3) Construction control
4) Safety equipment installation
5) Earthquake resistance
6) Accountability for "limited damage and safe building structures," and
7) Communication, information sharing, and incident management

Table 5 Confidence level of earthquake-resistant high-rise buildings, classified by company type (N=381)

Feature	Type of construction company	N	mean	S.D.	Confidence level
Building design	Thai-East joint venture	85	3.5255	.53049	High
	Thai - Thai joint venture	186	3.5430	.59194	High
	Thai - West joint venture	110	3.6182	.59874	High
	Total	381	3.5608	.58053	High
Construction material use	Thai-East joint venture	85	3.6039	.56693	High
	Thai - Thai joint venture	186	3.6631	.57890	High
	Thai - West joint venture	110	3.7636	.62458	High
	Total	381	3.6789	.59123	High
Construction control	Thai-East joint venture	85	3.5569	.53548	High
	Thai - Thai joint venture	186	3.6487	.66009	High
	Thai - West joint venture	110	3.6394	.63556	High
	Total	381	3.6255	.62670	High
Safety equipment installation	Thai-East joint venture	85	3.6353	.65389	High
	Thai - Thai joint venture	186	3.6308	.62088	High
	Thai - West joint venture	110	3.6485	.77135	High

Feature	Type of construction company	N	mean	S.D.	Confidence level
	Total	381	3.6369	.67299	High
Earthquake resistance	Thai-East joint venture	85	3.6549	.68322	High
	Thai - Thai joint venture	186	3.6344	.54923	High
	Thai - West joint venture	110	3.6939	.72121	High
	Total	381	3.6562	.63237	High
Accountability for "limited damage and safe building structures"	Thai-East joint venture	85	3.5333	.58237	High
	Thai - Thai joint venture	186	3.5269	.63402	High
	Thai - West joint venture	110	3.5364	.59576	High
	Total	381	3.5311	.61033	High
Communication, information sharing, and incident management	Thai-East joint venture	85	3.4980	.60776	Moderate
	Thai - Thai joint venture	186	3.5233	.63321	High
	Thai - West joint venture	110	3.5182	.61179	High
	Total	381	3.5162	.61993	High
Overall confidence in earthquake-resistant high-rise buildings		381	3.6008	.35280	High

Table 5 revealed that, overall the residents had a high level of confidence in earthquake-resistant high-rise buildings (mean 3.60). When considering each feature separately, it was found that the confidence level was also at a high level. The three highest confidence levels in the building were construction material use (mean 3.67), followed by earthquake resistance (mean 3.65), and safety equipment installation (mean 3.63), respectively. The last three confidence levels were communication, information sharing and incident management (mean 3.51), building design (mean 3.56), and accountability for "limited damage, and safe building structures" (mean 3.53), respectively.

4.3.2 Comparison of residents' level of confidence in earthquake-resistant high-rise buildings

According to the study's findings, residents of high-rise buildings built by three different kinds of construction companies Thai-East, Thai - Thai, and Thai-West joint ventures had varying degrees of confidence in earthquake-resistant high-rise buildings. The buildings had a different degree of trust. One-way ANOVA was used to compare the data. Table 6 displays the findings of the comparison between the overall confidence in the buildings and each of the seven features.

Table 6 Comparison of confidence in earthquake-resistant high-rise buildings, classified by company type

Feature	Source	df	Sum of Squares	Mean Square	F	p
Building design	Between groups	2	.527	.264	.781	.459
	Within groups	378	127.537	.337		
	Total	380	128.064			
Construction material use	Between groups	2	1.314	.657	1.889	.153

Feature	Source	df	Sum of Squares	Mean Square	F	p
	Within groups	378	131.518	.348		
	Total	380	132.832			
Construction control	Between groups	2	.522	.261	.664	.516
	Within groups	378	148.722	.393		
	Total	380	149.245			
Safety equipment installation	Between groups	2	.022	.011	.024	.976
	Within groups	378	172.085	.455		
	Total	380	172.107			
Earthquake resistance	Between groups	2	.245	.123	.305	.737
	Within groups	378	151.713	.401		
	Total	380	151.958			
Accountability for "limited damage and safe building structures"	Between groups	2	.007	.003	.009	.991
	Within groups	378	141.542	.374		
	Total	380	141.549			
Communication, information sharing, and incident management	Between groups	2	.038	.019	.049	.952
	Within groups	378	146.001	.386		
	Total	380	146.039			
Overall confidence in earthquake-resistant high-rise buildings	Between groups	2	.174	.087	.698	.498
	Within groups	378	47.123	.125		
	Total	380	47.297			

Table 6 reveals that the residents had confidence in the overall high-rise buildings constructed by the three types of companies that were not statistically significant.

Furthermore, when considering each of the 7 features, namely building design, construction material use, construction control, safety equipment installation, earthquake resistance, accountability for "limited damage and safe building structures," and communication, information sharing, and incident management, it was found that residents had confidence in high-rise buildings constructed by the 3 types of companies that differed without statistical significance as well.

4.3.3 Impact of confidence in earthquake-resistant high-rise buildings on consumer confidence

The study examined residents' confidence in earthquake-resistant high-rise buildings based on seven features in order to determine which features had an effect on their confidence

in Bangkok's high-rise building construction companies. The results of the study, which used multiple regression, are displayed in Table 7.

Table 7 Testing the effect of earthquake-resistant high-rise buildings on consumer confidence in Bangkok's corporate brand for high-rise building construction using multiple regression analysis

Confidence in earthquake-resistant high-rise buildings	β	Std. Error	Beta	t	p	Test results
Building design	.149	.035	.186	4.231**	.000	affecting
Construction material use	.104	.035	.131	2.981**	.003	affecting
Construction control	.132	.033	.178	3.968**	.000	affecting
Safety equipment installation	.059	.030	.085	1.998*	.046	affecting
Earthquake resistance	.089	.031	.121	2.829**	.005	affecting
Accountability for “limited damage and safe building structures”	.221	.036	.289	6.165**	.000	affecting
Communication, information sharing, and incident management	-.011	.031	-.014	-.346	.730	non-affecting
R Square .409, Adjust R Square .400, Std. Error .361, F= 43.192**, p= .000						

* p< .05 ** p< .01

According to data in Table 7, there were five features that significantly affected consumer confidence in the corporate brand of high-rise building construction in Bangkok at a statistical level of .01: earthquake-resistance, building design, construction control, construction material use, and responsibility for "limited damage and safe building structure." These features had regression coefficients of .221, .149, .132, .104, and .089, respectively. In addition, it was found that there was 1 feature of confidence in earthquake-resistant high-rise buildings that significantly affected consumer confidence in the corporate brand of high-rise building construction companies in Bangkok at a statistical level of .05, which was the feature of safety equipment installation, with a regression coefficient of .059 and a constant value of .985, statistically significant at a level of .01.

There was one feature of confidence in earthquake-resistant high-rise buildings that did not have effect on consumer confidence in corporate brand of high-rise building construction in Bangkok, namely communication, information sharing, and incident management.

Furthermore, the confidence in earthquake-resistant high-rise buildings in 6 features had an effect on the residents' confidence in the brands of high-rise building construction companies in Bangkok by 40.90%.

5. Findings

5.1 Residents' consumer confidence in corporate brand trust of high-rise building construction in Bangkok, Thailand

Consumer confidence of residents in high-rise buildings, overall and in all three aspects, was at a high level, with confidence in integrity ranked highest, followed by benevolence and creditability, respectively.

5.2 A comparison of residents'
consumer confidence in corporate brand trust of high-rise building construction in Bangkok, classified by the type of high-rise building construction company, found that residents of high-rise buildings constructed by three types of construction companies, namely Thai- East, Thai-Thai, and Thai - West joint ventures had confidence as follows:

5.2.1 Residents of high-rise buildings constructed by the three types of construction companies had no different overall confidence in the corporate brand trust.

5.2.2 Residents of high-rise buildings constructed by the three types of construction companies had no difference in confidence in the corporate brand trust in all three aspects: creditability, benevolence, and integrity.

5.2.3 Confidence in earthquake-resistant high-rise buildings of high-rise building residents in Bangkok, Thailand

Confidence in earthquake-resistant high-rise buildings among residents of high-rise buildings overall and in each of the seven features showed high confidence in the buildings. The three highest levels of confidence were construction material use, earthquake resistance, and installation of safety equipment.

The last three levels of building confidence include communication, information sharing, and incident management, building design, and accountability for "limited damage and safe building structure".

5.3 A comparison of residents' confidence in earthquake-resistant high-rise buildings in Bangkok categorised by type of Construction Company revealed that residents of high-rise buildings built by all three types of construction companies had the following levels of confidence:

5.3.1 The residents of high-rise buildings constructed by the three types of construction companies had no different overall confidence in earthquake-resistant high-rise buildings.

5.3.2 Residents of high-rise buildings constructed by the three types of construction companies had no difference in their confidence in the earthquake-resistant high-rise buildings in all seven features, which are building design, construction material use, construction control, safety equipment installation, earthquake resistance, accountability for “limited damage and safe structure," and communication, information sharing, and incident management.

5.3.3 Results of analysis of the impact of consumer confidence in earthquake-resistant high-rise buildings on corporate brand trust in high-rise building construction in Bangkok, Thailand, are as follows:

5.4 There were 6 features of confidence in earthquake-resistant high-rise buildings that affected consumer confidence in the corporate brands of high-rise building construction in Bangkok: accountability for "limited damage and safe building structure," building design, construction control, construction material use, earthquake resistance, and safety equipment installation, with the regression coefficients of. 221, .149, .132 104.089, and .059, respectively. The features of communication, information sharing, and incident management did not have any effect, however.

5.5 Confidence in earthquake-resistant high-rise buildings in 6 features affected consumer confidence in the corporate brand trust in high-rise building construction in Bangkok by 40.90%.

The study revealed that consumer confidence in high-rise buildings designed to withstand earthquakes is influenced by several factors related to building safety. Consumer

confidence can be enhanced through high-quality design, the use of standard-compliant construction materials, and strict construction supervision. Improving clear and transparent communication, along with providing safety-related information, can further strengthen consumer confidence. Building developers and high-rise building managers should use the findings of this study as a guideline for developing high-rise building projects in the future.

6. Discussion

From the study, it was found that the confidence in earthquake-resistant high-rise buildings, consisting of 6 aspects, namely, responsibility for "limited damage and safe building structure," building design, construction control, construction material use, earthquake resistance, and safety equipment installation, had an effect on consumer confidence in the corporate brands in high-rise building construction in Bangkok. This shows that consumers who live in high-rise buildings have studied various details related to high-rise buildings to ensure that they are safe according to high-rise building construction standards before making a decision. This is consistent with the results of the studies by Tultrairatana and Hengpraprom (2019) and Srichai and Netsuwan (2021).

7. Recommendations

7.1 Recommendations for the application of the study results

The study found that residents of high-rise buildings constructed by three types of construction companies, namely Thai - East, Thai - Thai, and Thai West joint ventures, had no difference in their confidence in the corporate brand trust overall and in each aspect.
Therefore, the high-rise building construction project management can be confident that if the company operates in a way that consumers trust in the corporate brand, the high-rise building business in Thailand will continue to have opportunities for growth.

The study found that residents of high-rise buildings constructed by all three types of construction companies had no different confidence in earthquake-resistant high-rise buildings, both overall and in each aspect. This shows that the severe earthquake in Bangkok did not have a significant impact on the high-rise building business. Therefore, it is expected that there will be little impact on stakeholders involved in the high rise building construction.

From the study, it was found that there were 6 features of confidence in earthquake-resistant high-rise buildings that affected consumer confidence in the corporate brand of high-rise building construction in Bangkok. The first 3 factors with the highest regression coefficients were building design, construction control, and construction material use. Therefore, company executives or high-rise building construction project management should provide consumers with important detailed information to increase their purchasing decisions.

7.2 Recommendations for future research

From the study, it was found that the confidence in earthquake-resistant high-rise buildings in 6 aspects affected the consumer confidence in the corporate brands of high-rise building construction in Bangkok by 40.90%. This suggests that there are still additional factors related to earthquake-resistant high-rise buildings that influence consumer confidence.

The study's findings indicated that the consumer confidence in the corporate brands of high-rise building construction in Bangkok was influenced by six features of earthquake-resistant high-rise buildings. Therefore, a literature review should be conducted on both the context of earthquake-resistant high-rise buildings and consumer expectations to cover all groups in a wide range of issues for further study.

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