

Factors affecting public acceptance of large-scale residential development projects in the environmental impact assessment process

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ABSTRACT

Large-scale residential development projects (LRDPs) in Thailand require an environmental impact assessment, which includes public participation and hearings to inform stakeholders, gather feedback, and develop appropriate mitigation measures to enhance project acceptance. This study examined the factors affecting public acceptance of large-scale residential development projects in urban communities. A cross-sectional study was conducted from September to December 2024 with 1,161 residents living within a 1-kilometer radius of three proposed development sites in urban communities in Khon Kaen, Chonburi, and Bangkok provinces. Data were collected using a validated questionnaire and analyzed with a generalized linear mixed model to determine adjusted odds ratios (AORs) and 95% confidence intervals (CIs). The overall acceptance rate was 80.45%. Key factors associated with acceptance included being younger than 30 years (AOR = 1.91; 95% CI: 1.24–2.95), working in retail or merchant businesses (AOR = 2.58; 95% CI: 1.11–6.00), living in rental or welfare housing (AOR = 1.88; 95% CI: 1.30–2.71), using property solely for commercial purposes (AOR = 2.08; 95% CI: 1.15–3.76), residing over 500 meters from the site (AOR = 9.68; 95% CI: 3.38–27.78), having high information perception (AOR = 4.71; 95% CI: 1.51–14.67), and holding positive attitudes toward project impacts (AOR = 8.26; 95% CI: 5.47–12.48). The findings emphasize the need for targeted community engagement, transparent communication, participatory planning, and effective environmental mitigation strategies to enhance public acceptance of LRDPs.

Keywords:

large-scale residential development; public acceptance; environmental impact assessment

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INTRODUCTION

LRDPs have become a focal point in Thailand's urbanization and industrial growth. As population density rises, particularly in Bangkok and its metropolitan areas, these projects are seen as essential in addressing the housing crisis. The growing demand for suburban condominiums highlights the need for innovative solutions that balance socioeconomic disparities and environmental sustainability.^{1,2} LRDPs can significantly impact local communities, affecting social dynamics, economic stability, and environmental sustainability. While new developments may boost economic activity, they can also disrupt local businesses and alter the community's cultural fabric.³ During construction, activities such as machinery operation and transportation of construction materials increase environmental pollution, such as dust, noise, vibration, wastewater, garbage, and construction accidents. As the project becomes operational, the increase in population in the project area will result in significant environmental pollution, including wastewater and sewage discharge, garbage accumulation, higher energy consumption, traffic congestion, and increased parking space usage. Poorly managed impacts may lead to conflicts, reducing public acceptance. Despite preventive strategies, concerns over social integration, infrastructure capacity, and environmental degradation persist, potentially threatening local identities.⁴

Thailand has enacted the Enhancement and Conservation of National Environmental Quality Act to mitigate environmental impacts from large-scale construction projects. This legislation mandates that major residential development projects must conduct an Environmental Impact Assessment (EIA). The regulation specifically addresses two categories: hotels or recreational accommodations, and residential buildings comprising 80 or more units or with a total utility space of 4,000

square meters or greater. The assessment must comprehensively evaluate four environmental value dimensions: physical resources, biological resources, human utilization value, and quality of life value.⁵ Furthermore, the law requires public participation processes involving residents within a 1,000-meter radius of the project boundaries. This participatory approach facilitates the collection of concerns and recommendations from affected communities, thereby potentially minimizing future conflicts.⁶

Public acceptance is crucial for the success of LRDPs. Factors affecting acceptance include socioeconomic status, residential use, and proximity to the site, as nearby properties may face changes in sunlight and wind flow.⁷ Accessibility to public transport and essential services also plays a key role.⁸ Transparent communication and community engagement help reduce conflicts, while perceptions of construction disturbances and environmental impacts significantly shape acceptance.⁸⁻⁹ Moreover, public acceptance is crucial for the successful implementation of LRDPs, as it directly affects their feasibility and sustainability. However, there has been relatively little research examining how socioeconomic factors, property utilization, perceptions of project information, and attitudes toward potential disturbances shape public acceptance.

This study aimed to examine the factors affecting public acceptance of LRDPs in the EIA process, particularly as LRDPs continue to face increasing pressure from urbanization and development. Understanding these influences is essential not only to reduce conflicts and facilitate the proper integration of new developments into existing communities, but also to ensure that projects prioritize and meet both the needs of stakeholders and the goals of the project, thereby ensuring successful environmental and social sustainability. This study examined three development projects located in Khon Kaen, Chonburi,

and Bangkok that were in the pre-development phase with no construction activities. Each project was subject to Environmental Impact Assessment (EIA) reports prepared by Khon Kaen University. The selected sites represent diverse urban contexts in Thailand: Khon Kaen as a regional hub for transportation, education, and healthcare in the Northeast; Chonburi as a major industrial and tourism center; and Bangkok as the nation's capital and central node for administration, economy, and culture.

METHODS

Study Design and Location

This cross-sectional analytical study examined three development projects in the pre-development phase, with no construction activities, located in Khon Kaen, Chonburi, and Bangkok provinces. Data were collected from residents residing within a 1-kilometer radius of the proposed development sites between September and December 2024.

Population and Sample

This study employed a probability-based multistage random sampling method to select 1,161 household representatives from a total population residing within a one-kilometer radius of three large-scale residential development project sites undergoing Environmental Impact Assessment (EIA), with Khon Kaen University serving as the project consultant. The populations were distributed across Khon Kaen (4,596 individuals), Chonburi (1,212 individuals), and Bangkok (5,857 individuals). Each project area was stratified into four distance-based zones (immediate vicinity, 0–100 meters, 100–500 meters, and 500–1,000 meters). Samples were proportionally allocated and randomly drawn within each zone, resulting in 457

respondents from Khon Kaen, 121 from Chonburi, and 583 from Bangkok. The inclusion criteria were primary residence owners, heads of households, or individuals with household decision-making authority within the designated study area; adults and teenagers aged 18–60 years; Thai language literacy (reading and writing proficiency); a minimum residence duration of six months in the study area; and those who agreed to participate in the project by signing the consent form. The exclusion criteria were people unable to participate in scheduled research activities and those with severe medical conditions that could impede participation.

Study Outcome and Independent Variables

The outcome variable of this study was public acceptance of the development projects, categorized as either “non-acceptance” or “acceptance” (no/yes), as assessed through participant interviews using structured questionnaires.

The independent variables included demographic and socioeconomic characteristics such as gender, age, marital status, religion, education level, occupation, monthly income, duration of residence in the community, housing type, ownership status, and household utilization. Additionally, household-related factors such as the respondent's status within the household, number of household members, history of illness in the past year, and distance of the household from the project were considered. The analysis incorporated two levels of factors: individual-level and province-level.

Data Analysis

Demographic characteristics of the study sample were summarized using frequencies and percentages for categorical variables. Continuous variables were

described using mean, standard deviation (SD), and minimum and maximum values.

The percentage of acceptance was estimated based on a normal approximation to the binomial distribution. A generalized linear mixed model (GLMM) under the logistic regression framework was employed to account for the hierarchical structure of the data, with individuals (level 1) nested within provinces (level 2). The associations between each factor and acceptance, adjusted for all study factors (fixed effects), were reported as adjusted odds ratios (AORs) with corresponding 95% confidence intervals (CIs). Random effects were included to account for variations at both the individual and province levels. All statistical tests were two-tailed, with a p -value < 0.05 considered statistically significant. All data analyses were conducted using STATA version 18 (StataCorp, College Station, Texas, USA).

RESULTS

Characteristics of the Sample

A total of 1,161 participants were included in the study. The overall mean age

of participants was 40.37 years (SD = 13.52). More than half were female (56.07%), not single (52.45%), and under the age of 45 years (56.33%). The majority of the sample identified as Buddhist (97.67%) and had attained at least a primary education or higher (83.11%). Approximately two-thirds reported a monthly household income of 30,000 baht or less (69.42%) and had resided in their community or village for more than 10 years (62.62%), with a mean duration of residence of 20.96 years (SD = 18.78). Over half of the respondents lived in rental or welfare housing (53.83%).

Around two-thirds reported that their households were used solely for residential purposes (65.98%), with household sizes ranging from two to six members (65.36%). In terms of proximity to the project site, 61.15% of households were located more than 500 meters away. Regarding perceptions and attitudes, the majority of participants demonstrated a high level of project perception (68.30%), while 11% had a high level of knowledge about the project, and 38.42% reported a high level of concern regarding potential impacts (Table 1).

Table 1. Demographic characteristics of the sample (n = 1,161)

Characteristics	Frequency	Percentage
Gender		
Female	651	56.07
Male	510	43.93
Age group (years)		
≥ 45	507	43.67
30 - 44	306	26.36
< 30	348	29.97
Mean (Standard deviation)	40.37 (13.52)	
Median (Minimum : Maximum)	40 (18 : 60)	
Marital status		
Single	552	47.55
Married/cohabiting	530	45.65
Widowed/divorced/separated	79	6.80
Religion		
Buddhist	1,134	97.67
Christian	27	2.33

Characteristics	Frequency	Percentage
Highest educational attainment		
Diploma or equivalent, or higher	511	44.01
Secondary education	454	39.10
Primary education or lower	196	16.88
Occupation		
Civil servant/state enterprise employee	39	3.36
Homemaker/unemployed	231	19.90
Retail/merchant business	386	33.25
Others	505	43.50
Average monthly household income (Baht)		
> 50,000	165	14.21
40,001 - 50,000	88	7.58
30,001 - 40,000	102	8.79
20,001 - 30,000	228	19.64
10,001 - 20,000	481	41.43
< 10,000	97	8.35
Mean (Standard deviation)	33,612.4 (28,088.71)	
Median (Minimum : Maximum)	25,000 (5,000 : 200,000)	
Duration of residence in community/village (years)		
> 10	727	62.62
7 - 10	59	5.08
4 - 6	157	13.52
1 - 3	218	18.87
Mean (Standard Deviation)	20.96 (18.78)	
Median (Minimum : Maximum)	15 (1 : 87)	
Housing type		
Commercial building/shophouse	175	15.07
Temporary housing (shed)	132	11.37
Detached house/townhouse	508	43.76
Apartment/condominium	346	29.80
Ownership status		
Owner	536	46.17
Resident of rental/welfare housing	625	53.83
Property utilization		
Residential and commercial	216	18.60
Residential only	766	65.98
Commercial only	179	15.42
Respondent's status in household		
Designated household representative	194	16.71
Head of household	967	83.29
Number of household members		
1	258	28.10
2 - 6	600	65.36
> 6	60	6.54
Mean (Standard deviation)	3.35 (1.94)	
Median (Minimum : Maximum)	3 (1 : 10)	
Illness in the past year of household member		
Illness	852	73.39
No illness	309	26.61

Characteristics	Frequency	Percentage
Distance of household from project site (meters)		
≤ 100	22	1.89
101 - 500	429	36.95
501 - 1,000	710	61.15
Perception of project information levels		
Low	793	68.30
Moderate	316	27.22
High	52	4.48
Mean (Standard deviation)	9.13 (1.76)	
Median (Minimum : Maximum)	8 (8 : 16)	
Knowledge of project levels		
Low	631	54.35
Moderate	397	34.19
High	133	11.46
Mean (Standard deviation)	24.47 (4.89)	
Median (Minimum : Maximum)	21 (20 : 39)	
Attitudes regarding potential impacts		
Negative	291	25.06
Moderate	424	36.52
Positive	446	38.42
Mean (Standard deviation)	57.80 (13.87)	
Median (Minimum : Maximum)	58 (20 : 80)	

Others: This category includes general contractors, service workers, self-employed individuals, and laborers not classified elsewhere.

Percentage distribution of acceptance

Among the 1,161 participants, the overall acceptance rate was 80.45%. Higher acceptance rates were observed among individuals aged under 30 years (82.76%), homemakers or unemployed individuals (82.68%), residents of rental or welfare housing (82.40%), those whose properties were used solely for commercial purposes (83.24%), and those residing more than 500 meters from the project site (86.34%). Additionally, participants with a high level of perception regarding project information

(90.38%) and those with positive attitudes toward potential project impacts (89.91%) reported notably higher acceptance rates (Table 2).

Figure 1 presents the acceptance rates by gender, indicating no significant difference between females (80.03%) and males (80.98%). As shown in Figure 2, the highest acceptance rate was observed among participants aged under 30 years (82.76%), while the lowest was among those aged 45 years and older (79.09%).

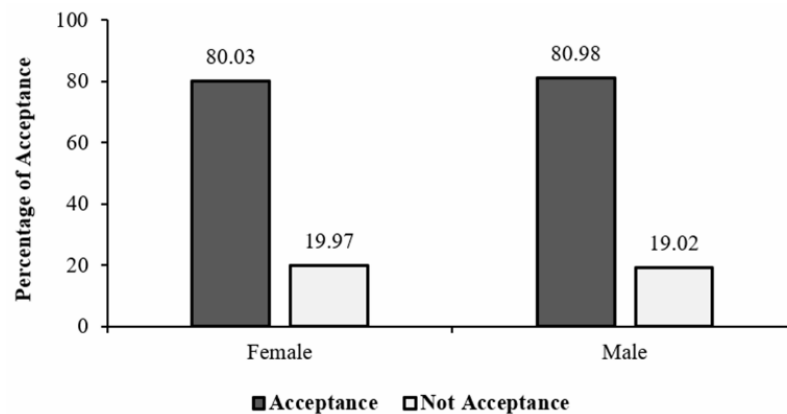


Figure 1. Percentage of acceptance by gender

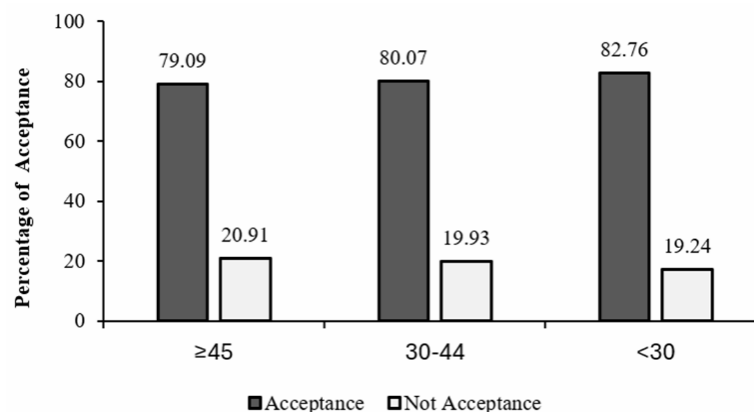


Figure 2. Percentage of acceptance by age group

Bivariate and multivariable analysis

To identify factors affecting public acceptance of LRDP projects, a bivariate analysis was conducted. Statistically significant associations ($p < 0.05$) were found for the distance of the household from the project site and attitudes regarding potential impacts. Variables with p -values < 0.25 in the bivariate analysis (as shown in Table 1) were included in the initial multivariable model. A generalized linear mixed model with a logistic regression framework was employed, incorporating province as a random effects variable to account for clustering and inter-provincial variability. The results of the study are as follows.

People under 30 were 1.91 times more likely to accept the project than those aged 45 and above (95% CI: 1.24–2.95), while the 30–44 age group showed no

significant difference. Workers engaged in retail or merchant businesses were also more accepting, with an AOR of 2.58 (95% CI: 1.11–6.00). Although homemakers, the unemployed, and other groups had higher odds of acceptance, the results were not statistically significant. Residents of rental or welfare housing were significantly more likely to accept the project than property owners (AOR = 1.88, 95% CI: 1.30–2.71). In terms of property use, residents in residential-only (AOR = 2.02, 95% CI: 1.28–3.18) and commercial-only (AOR = 2.08, 95% CI: 1.15–3.76) properties were more accepting compared to those in mixed-use properties. Distance from the project site was a strong predictor of acceptance. Households located 101–500 meters away had an AOR of 3.76 (95% CI: 1.32–10.71), while those 501–1,000 meters away had an AOR of 9.68 (95% CI: 3.38–

27.78), showing increased acceptance with distance. High levels of information perception were associated with greater acceptance (AOR = 4.71, 95% CI: 1.51–14.67), whereas moderate perception had no significant effect. Attitudes were the

strongest predictors: moderate attitudes (AOR = 6.13, 95% CI: 4.14–9.07) and positive attitudes (AOR = 8.26, 95% CI: 5.47–12.48) were both strongly associated with project acceptance.

Table 2. Bivariate and multivariable analysis of factors affecting public acceptance of the LRDP

Factors	Total sample	Number accepting (%)	COR	AOR	95% CI	p-value
Overall	1,161	934 (80.45)	NA	NA		
Age group (years)						0.014
≥ 45	507	401 (79.09)	Ref.	Ref.		
30 - 44	306	245 (80.07)	1.06	1.25	0.83–1.90	
< 30	348	288 (82.76)	1.27	1.91	1.24–2.95	
Occupation						0.035
Civil servant/state enterprise employee	39	27 (69.23)	Ref.	Ref.		
Homemaker/unemployed	231	191 (82.68)	2.12	1.72	0.73–4.05	
Retail/merchant business	386	315 (81.61)	1.97	2.58	1.11–6.00	
Others	505	401 (79.41)	1.71	1.51	0.66–3.46	
Ownership status						0.001
Owner	536	419 (78.17)	Ref.	Ref.		
Resident of rental/welfare housing	625	515 (82.40)	1.31	1.88	1.30–2.71	
Property utilization						0.007
Residential and commercial	216	164 (75.93)	Ref.	Ref.		
Residential only	766	621 (81.07)	1.36	2.02	1.28–3.18	
Commercial only	179	149 (83.24)	1.57	2.08	1.15–3.76	
Distance of household from project site (meters)						< 0.001
≤ 100	22	10 (45.45)	Ref.	Ref.		
101 - 500	429	311 (72.49)	3.16*	3.76	1.32–10.71	
501 - 1,000	710	613 (86.34)	7.58*	9.68	3.38–27.78	
Perception of project information levels						0.026
Low	793	627 (79.07)	Ref.	Ref.		
Moderate	316	260 (82.28)	1.23	1.13	0.77–1.65	
High	52	47 (90.38)	2.49	4.71	1.51–14.67	
Attitudes regarding potential impacts						< 0.001
Negative	291	160 (54.98)	Ref.	Ref.		
Moderate	424	373 (87.97)	5.99*	6.13	4.14 - 9.07	
Positive	446	401 (89.91)	7.30*	8.26	5.47 - 12.48	

*Statistically significant at p-value < 0.05 from crude analysis; COR: Crude odds ratio, calculated without adjusting for other variables; AOR: Adjusted odds ratio, accounting for gender, age group, highest educational attainment, occupation, housing type, ownership status, utilization of house or building, respondent's status in the household, illness in the past year (requiring hospitalization) of the respondent or a household member, distance from the project site, perception of project information levels, knowledge of project levels, and attitudes regarding potential impacts; NA: Not applicable

DISCUSSION

From the study results, it was found that there are seven factors that significantly affect public acceptance: age group, occupation, ownership status, property utilization, distance of household

from the project site, perception of project information levels, and attitudes regarding potential impacts. These can be analyzed as follows: Individuals aged under 30 years were 1.91 times more likely to accept the project compared to those aged 45 years and over (95% CI: 1.24–2.95). Younger

individuals may perceive development as a sign of progress that enhances public utilities and overall convenience. In contrast, participants aged 45 years and older may place greater value on stability and express concerns about potential disruptions, including noise, pollution, traffic congestion, and environmental changes, as well as possible health risks and negative past experiences. No significant association was observed between project acceptance and individuals aged 30–44 years. This age group, often focused on career and family responsibilities, may harbor concerns regarding increased commuting difficulties, reduced privacy, and rising living expenses, though they may also recognize the benefits of enhanced security associated with population growth. These findings are consistent with previous research conducted in China (2021), which tested a social-psychological model of public acceptance toward highway infrastructure projects and found that individuals over the age of 35 tended to exhibit higher risk perceptions and more complex benefit assessments, both of which influenced their acceptance of such developments¹⁰. Similarly, a study conducted in London, UK (2018), on age-related differences in prosocial influence, reported that younger individuals are generally more susceptible to external social influences, making them more likely than older adults to adapt their attitudes and behaviors in response to new developments.¹¹

Participants engaged in retail or merchant businesses were 2.58 times more likely to accept the project compared to civil servants or state enterprise employees (95% CI: 1.11–6.00). Civil servants and state enterprise employees often participate in professional training, seminars, and regulatory assessments, which may increase their awareness of potential negative impacts associated with

development projects. In contrast, individuals in the retail or merchant sector may view urban expansion as an opportunity to attract more residents and stimulate local economic activity. No significant association was observed among general contractors, service workers, self-employed individuals, or laborers not classified elsewhere, possibly due to their limited direct involvement or perceived impact from the project. These findings align with a previous study that examined public attitudes toward management in Thailand (2016). This study discovered that individuals in different occupations exhibited distinct personal attitudes.¹²

Individuals residing in rental or welfare housing were 1.88 times more likely to accept the project compared to property owners, with statistical significance (95% CI: 1.30–2.71). This difference may be attributed to renters' lower sense of territorial attachment and their potential to benefit from enhanced amenities associated with the development. In contrast, property owners tend to express greater concern over potential structural damage to their properties during construction, including vibrations from pile-driving equipment, soil subsidence from excavation, and dust or chemical contamination that may require costly repairs. These findings are consistent with a previous study conducted in Trang, Thailand (2021), which explored the relationship between psychological ownership and behavior, demonstrating that a strong sense of ownership significantly influences positive behavioral responses.¹³ Similarly, another study reported in Thailand (2014) examined housing repair prioritization, and it found that necessary residential maintenance is often overlooked due to budget constraints, leading to progressive structural

deterioration that may impact other components of the dwelling.¹⁴

Compared to people whose properties were used for both residential and commercial purposes, those with residential-only properties were 2.02 times more likely to accept the project (95% CI: 1.28–3.18), and those with commercial-only properties were 2.08 times more likely to accept it (95% CI: 1.15–3.76). These differences can be attributed to usage patterns: residential occupants primarily use their properties outside standard working hours, reducing their exposure to construction disturbances, while commercial property users may anticipate economic benefits from increased customer traffic. In contrast, mixed-use occupants experience continuous exposure to disruptions such as vibrations, air pollution, parking constraints, and increased traffic. These findings align with a previous study conducted in Thailand (2019) that examined the effects of urban expansion on communities, noting that while development improves infrastructure access, it can also lower the quality of life through congestion, pollution, and economic shifts.¹⁵ The study also highlighted occupational transitions from agriculture to commerce and services due to urbanization.

Compared to people whose households were located within 100 meters of the project site, people whose households were located 101–500 meters and 501–1,000 meters away were 3.76 times (95% CI: 1.32–10.71) and 9.68 times (95% CI: 3.38–27.78) more likely to accept the development, respectively. This proximity-acceptance gradient reflects varying exposure to negative impacts. Residents within 100 meters experience the most adverse effects, including noise and air pollution during construction and operation, traffic congestion, visual obstruction from high-rises, and potential strain on utilities such as water, electricity, and waste management. These findings are

consistent with previous studies conducted in Thailand (2015) that established a link between proximity to construction sites and increased community-level impacts from construction.¹⁶⁻¹⁷ These studies found that residents closest to construction sites expressed the highest levels of environmental concern. In contrast, positive impacts—such as property value appreciation, improved infrastructure (e.g., roads, public transit, recreational facilities), and increased commercial activity due to population growth—are more evenly distributed across all distances. Another study conducted in Thailand (2018) corroborates this, showing significant land value increases following condominium development.¹⁸ Ultimately, residents within 100 meters experience more negative effects than benefits, leading to lower acceptance rates, whereas those farther away encounter fewer disruptions while still benefiting from urban development.

Individuals with high perception levels were 4.71 times more likely to accept the development than those with low perception (95% CI: 1.51–4.67). This significant difference suggests that comprehensive information enhances understanding of project objectives, benefits, and potential impacts, enabling more rational risk-benefit assessments. Greater information access also fosters a sense of inclusion in the development process, whereas limited access often leads to uncertainty and resistance. Interestingly, a moderate level of perception showed no significant relationship with project acceptance, indicating that partial information may be insufficient for informed decision-making, leaving residents ambivalent. These findings align with previous studies. A study conducted in Thailand (2022) established links between public perception, participation, and reduced project-related concerns.¹⁹ Similarly, other studies conducted in Thailand (2017) confirmed that public perception influences project acceptance

and expectations.^{20, 21} Several factors may affect information perception, including project complexity, pre-existing biases, and economic interests, all of which can shape how information is received and interpreted. The lack of a significant relationship between moderate perception and project acceptance suggests that while the public may be somewhat aware of project details, insufficient information prevents a clear understanding, leading to uncertainty about whether to support the development project.

Attitudes toward anticipated impacts demonstrated the strongest association with project acceptance. Residents with moderate attitudes were 6.13 times more likely to accept the development (95% CI: 4.14–9.07), while those with positive attitudes were 8.26 times more likely to express acceptance (95% CI: 5.47–12.48), compared to those with negative attitudes. These findings highlight attitudes as a key factor in public acceptance of large-scale residential projects. As a previous study in Thailand (2022) noted, acceptance is shaped by multiple factors, particularly the perceived balance of benefits and drawbacks.⁴ This suggests that support increases when residents believe advantages outweigh negative impacts. These findings also align with a study conducted in Berlin, Chicago, London, Los Angeles, New York, and Paris (2022), which found that public attitudes significantly influence urban development acceptance, with factors like geographic proximity and planning tools improving acceptance when concerns are addressed.²² Similarly, previous studies conducted in 2020 and 2022 found that public participation in environmental impact assessments fosters trust and enhances acceptance. These studies consistently emphasized the strong link between attitudes and project acceptance, highlighting the importance of transparent

communication, balanced information, and active community engagement.¹⁻²³ Meanwhile, personal biases from past experiences with development projects can shape perceptions, with those who previously faced negative impacts more likely to expect adverse effects from new projects.

Given the factors affecting public acceptance, the study and implementation of the public participation process in the environmental impact assessment must prioritize and actively engage the local community. Project developers must foster understanding by providing accurate and truthful information, while also listening to public opinions, concerns and suggestions. Most importantly, the project must address problems intentionally and effectively. This approach encourages public acceptance, leading to the successful and sustainable implementation of the project.

CONCLUSION

The study identified seven key factors affecting acceptance of the LRDP: age, occupation, housing tenure, property ownership, proximity to the project, information perception, and attitudes toward expected impacts. Younger people (under 30) showed higher acceptance, possibly due to greater concern for health and environmental issues. Those working in business or residing in commercial properties were more supportive, likely due to anticipated economic benefits. Tenants expressed more acceptance than property owners, possibly because they are less permanently tied to the area. Acceptance also increased with greater distance from the project site. Access to complete and accurate information significantly boosted support, highlighting its importance in public participation. Attitudes toward the project had the strongest influence, shaped by personal experience, available

information, and concerns about safety and environmental impacts.

RECOMMENDATIONS

These findings provide useful guidance for improving public participation in the Environmental Impact Assessment (EIA) process to support the sustainable implementation of large-scale residential development projects. Key strategies include prioritizing engagement with nearby property owners, ensuring transparent and timely information sharing, encouraging community involvement throughout the development process, implementing strong environmental mitigation measures, and establishing community benefit agreements to address local needs. The study also highlights key determinants of public acceptance, offering insights that can inform the development of context-specific planning tools and engagement approaches. Project developers and designers can use these findings to refine project designs, respond effectively to community concerns, and reduce potential adverse effects on surrounding neighborhoods. Environmental consultants may apply this knowledge to improve participation techniques, ensuring they are well-suited to the demographic and social characteristics of the affected population. Finally, environmental regulatory bodies can use the study's results to revise and enhance public participation guidelines within the EIA framework, ensuring greater alignment with real-world conditions and the expectations of local communities.

AUTHOR CONTRIBUTIONS

SB: Conceptualization, Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data curation, Writing - original draft, Writing - review & editing, Visualization, Supervision, Project administration. PT: Conceptualization,

Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing - review & editing, Visualization, Supervision, Project administration. UI: Conceptualization, Validation, Formal analysis, Investigation, Writing - original draft, Writing - review & editing, Visualization. KT: Conceptualization, Validation, Formal analysis, Investigation, Writing - original draft, Writing - review & editing, Visualization.

ETHICAL CONSIDERATION

This study was approved by the Khon Kaen University Ethics Committee for Human Research, Thailand (HE672118), Date of Approval 5 August 2024. Participant autonomy was ensured, and written informed consent was obtained from all participants prior to data collection.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest relevant to this study.

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