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FACTORS AFFECTING PROCUREMENT IN CONSTRUCTION PROJECTS OF LOCAL ADMINISTRATIVE ORGANIZATION

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ABSTRACT

The objective of this study was to study the factors affecting the procurement in construction projects of local administrative organizations. This quantitative research was conducted using the Analytic Hierarchy Process (AHP). The results showed that the most important factor was Contract administration and material inspection with a weight of 60.20%, followed by the Procurement operation with a weight of 21.17%, Budget proposal preparation with a weight of 12.61%, and Procurement preparation with a weight of 6.02%. Based on the results, the recommendations for the Procurement in construction projects of local administrative organizations are as follows: The practitioners must have knowledge and understanding of procurement, survey, design, supervision, inspection, and defect inspection in the construction projects. They must perform their duties in a strict manner and with due care to ensure that the construction is carried out in accordance with the specified objectives. As for the appointment of supervisors and inspection committee, they are expected to have expertise in such construction works. In addition, the content of the construction contract, drawings and specifications should be read and understood before starting construction to ensure efficiency and effectiveness of the construction projects of the local administrative organizations in accordance with the project objectives.

Keywords: Procurement in construction projects; Construction; Local administrative organizations

1. Introduction

[1] The procurement in construction projects of local administrative organizations in Thailand is based on government policies, national strategic plans, agency strategic plans, and agency missions and duties. Currently, the Public Procurement and Supplies Administration Act, B.E. 2560 (2017) and the Ministry of Finance's Regulations on Public Procurement and Supplies Administration, B.E. 2560 (2017), as well as other laws relating to procurement in construction projects, have been promulgated to be used together. This is to ensure the same standard procurement practice for construction projects, focus on public participation, and greater public disclosure. In addition, the procurement in construction projects also takes into account the

intended use, as well as cost-effectiveness, efficiency, effectiveness, transparency, and accountability. [2] However, according to the State Audit Office of the Kingdom of Thailand's audit report of the local administrative organizations for fiscal year 2023, in which a total of 818 contracts and 450 agencies were audited, 252 contracts (30.80%) showed non-compliance with laws, regulations, rules, Cabinet resolutions, or government action plans

[3] In addition, the following procurement problems and challenge in construction projects of local administrative organizations were found: determination of reference prices for construction works, internal audit, external audit, and support from individuals or other agencies, the procurement process in construction projects within local administrative organizations plays a crucial role in ensuring efficiency, cost-effectiveness, and compliance with legal regulations. [4] However, previous studies have highlighted persistent challenges, including non-compliance with procurement regulations, [5] inconsistencies in construction specifications, [6] and delays caused by procurement mismanagement. Furthermore, research on procurement factors in local administrative organizations has been fragmented, [7] often focusing on isolated issues such as budget estimation or regulatory constraints, without providing a comprehensive analysis of the interdependencies between key procurement elements. coordination with government agencies, coordination with private agencies, [8] and lack of coordination with local people. [9] In addition, road construction, which is part of the high-budget construction work and is an infrastructure project, also encounters physical problems that can cause accidents.

For the above reasons, it is necessary to study the Factors Affecting Procurement in Construction Projects of Local Administrative Organizations. The results will lead to analysis to find solutions and increase the efficiency of construction contracting operations of local government organizations, as well as help reduce damages to government agencies. This will help to make Procurement in Construction Projects of Local Administrative Organizations more efficient and effective, responding to the country's further development. To study the importance level (preference level) of factors affecting the procurement in construction projects of local administrative organizations.

This study aims to address these gaps by applying the Analytic Hierarchy Process (AHP) to systematically evaluate and prioritize procurement factors, providing a holistic perspective on the procurement challenges faced by local administrative organizations. Unlike previous studies that focused on general procurement practices, this research specifically examines the relative importance of budget preparation, procurement planning, procurement implementation, and contract administration within the context of local governance. The findings will contribute to the development of data driven strategies for improving procurement efficiency and policy compliance, ensuring more effective construction project execution in local administrative organizations.

2. Materials and Methods

2.1 Materials

The research instrument used in this study was a questionnaire and the AHP was used in an analysis of the weights (factor loadings) of factors affecting the procurement in construction projects of local administrative organizations. [10] AHP is a

multiple criteria decision-making tool that has been used worldwide in almost all diagnosis or analysis related with decision-making as it is one of the best and most efficient decision-making tools. AHP was developed in the late 1970s by Professor Thomas Saaty, a professor who earned his PhD in mathematics from Yale University, the United States. This process classifies the factors into a hierarchical structure in the form of a hierarchical chart and the relative importance of each factor is then determined. The weights of factors are determined using these relative importances in order to determine which factor and alternative has the highest priority. AHP involves data representative collection from a population and data analysis in order to determine the weights and priorities of the criteria and sub-criteria using a 9-point scale of pairwise comparisons as shown in Table 1.

Table 1 9-Point Scale of Pairwise Comparisons

Preference Level	Numerical Value
Equally preferred	1
Equally to moderately preferred	2
Moderately preferred	3
Moderately to strongly preferred	4
Strongly preferred	5
Strongly to very strongly preferred	6
Very strongly preferred	7
Very strongly to extremely preferred	8
Extremely preferred	9

(Source: Saaty, T.L. (1980). The Analytic Hierarchy. New York: McGraw-Hill.)

[11] The consistency of pairwise comparisons was evaluated using the Consistency Index (CI), a fundamental metric in the Analytic Hierarchy Process (AHP) used to assess the logical coherence of decision-makers' judgments. A CI value below 0.10 is widely regarded as acceptable, indicating sufficient internal consistency in the comparisons (Alonso & Lamata, 2006). In this study, all pairwise comparison matrices were tested for consistency, and the CI values were confirmed to fall within the acceptable threshold. This ensures the reliability of the derived priority weights and supports the overall validity of the AHP analysis. Therefore, consistency evaluation plays a crucial role in verifying the methodological soundness of the decision-making framework.

2.2 Methods

In this quantitative research, a field survey was conducted using a questionnaire and AHP method was also applied. The data were summarized and presented using descriptive statistics. The conceptual framework of the factors affecting the procurement in construction projects of local administrative organizations was defined as follows. The independent variables

were budget proposal preparation (consisting of 3 steps: study, survey and design process; preparation of drawings or specifications; and cost estimation), procurement preparation (consisting of 3 steps: preparation of procurement plans; determination of reference prices; and preparation of specifications, draft terms of reference (TOR), and procurement documents), procurement operation (consisting of 3 steps: preparation of procurement proposal reports; invitation announcement; and proposal submission and consideration and winner announcement), and contract administration and material inspection (consisting of 3 steps: entering into a contract or agreement; material delivery and inspection; and defect warranty and return of performance security). The dependent variable was the procurement in construction projects of local administrative organizations as shown in Figure 1.

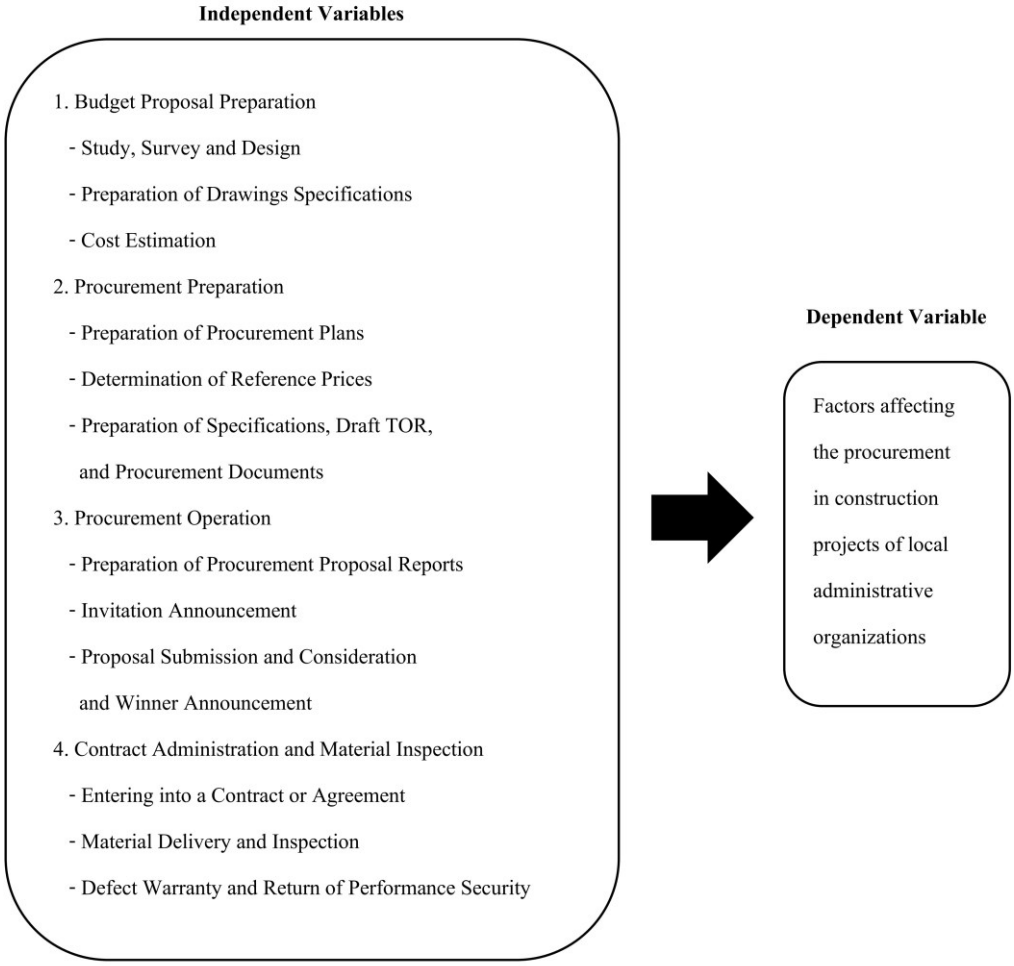

Figure 1 Conceptual framework of factors affecting the procurement in construction projects of local administrative organizations

The analysis of the factors affecting the procurement in construction projects of local administrative organizations was conducted by applying the AHP method through pairwise comparisons of 6 pairs of factors as follows: budget proposal preparation (A) vs. procurement preparation (B); budget proposal preparation (A) vs. procurement operation (C); budget proposal preparation (A) vs. contract administration and material inspection (D); procurement preparation (B) vs. procurement operation (C); procurement preparation (B) vs. contract administration and material inspection (D); and procurement operation (C) vs. contract administration and material inspection (D).

The analysis of sub-factors affecting the procurement in construction projects of local administrative organizations was conducted using pairwise comparisons of 12 pairs of sub-factors as follows: study, survey and design (A1) vs. preparation of drawings or specifications (A2); study, survey and design (A1) vs. cost estimation (A3); preparation of drawings or specifications (A2) vs. cost estimation (A3); preparation of procurement plans (B1) vs. determination of reference prices (B2); preparation of procurement plans (B1) vs. preparation of specifications, draft TOR, and procurement documents (B3); determination of reference prices (B2) vs. preparation of specifications, draft TOR, and procurement documents (B3); preparation of procurement proposal reports (C1) vs. invitation announcement (C2); preparation of procurement proposal reports (C1) vs. proposal submission and consideration and winner announcement (C3); invitation announcement (C2) vs. proposal submission and consideration and winner announcement (C3); entering into a contract or agreement (D1) vs. material delivery and inspection (D2); entering into a contract or agreement (D1) vs. defect warranty and return of performance security (D3); and material delivery and inspection (D2) vs. defect warranty and return of performance security (D3).

[12] The sample size was determined based on Krejcie and Morgan's formula, allowing a 5% margin of error, resulting in a final sample of 52 respondents from a total population of 60 construction procurement experts in Prachinburi Province, Thailand. [13] A structured questionnaire was developed and validated using the Index of Item Objective Congruence (IOC), assessed by three experts, with only items scoring $\geq$0.80 retained. The AHP methodology was applied to prioritize procurement factors using pairwise comparisons, and data analysis was conducted following standard AHP procedures.

3. RESULTS

The results of the analysis of factors and sub-factors affecting the procurement in construction projects of local administrative organizations are as follows:

3.1 The factors affecting the procurement in construction projects of local administrative organizations analyzed in this study included budget proposal preparation, procurement preparation, procurement operation, and contract administration and material inspection. The analysis of mean weights of the survey data was performed through prioritization of the factors and a normalized pairwise comparison matrix was created using AHP method. The results showed that the normalized relative weight of budget proposal preparation (A) was 3.00 higher than that of procurement preparation (B); the normalized relative weight of budget proposal preparation (A) was 0.33 higher than that of procurement operation (C); the normalized relative weight of budget proposal preparation (A) was 4.67 less than that of contract administration and material inspection (D); the normalized relative

weight of procurement preparation (B) was 3.17 less than that of procurement operation (C); the normalized relative weight of procurement preparation (B) was 7.50 less than that of contract administration and material inspection (D); and the normalized relative weight of procurement operation (C) was 4.67 less than that of contract administration and material inspection (D). The mean relative weights of factors are shown in a matrix, as shown in Table 2, in order to be used in an analysis of weights of the factors affecting the procurement in construction projects of local administrative organizations.

Table 2 Weighted geometric means comparison matrix of factors affecting the procurement in construction projects

Factors	A	B	C	D
A	1.00	3.00	0.33	1/4.67
B	1/3.00	1.00	1/3.17	1/7.50
C	1/0.33	3.17	1.00	1/4.67
D	4.67	7.50	4.67	1.00

The analysis of weights and inconsistency index of the factors affecting the procurement in construction projects of local administrative organizations revealed that the most important factor was contract administration and material inspection (D) with a weight of 60.20% this highlights the importance of effective contract management to prevent procurement delays and compliance issues, followed by procurement operation (C) with a weight of 21.17%, budget proposal preparation (A) with a weight of 12.61%, and procurement preparation (B) with a weight of 6.02%, respectively. The inconsistency index was 0.077, which does not exceed 0.100, indicating high accuracy of the analysis results as shown in Table 3.

Table 3 Weights and inconsistency index of factors affecting the procurement in construction projects.

Factors	Weight	Inconsistency Index
A	12.61%	0.077
B	6.02%	
C	21.17%	
D	60.20%	

3.2 The results of an analysis of the sub-factors affecting the procurement in construction projects of local administrative organizations, consisting of budget proposal preparation, procurement preparation, procurement operation, contract administration and material inspection are as follows:

3.2.1 The sub-factors relating to budget proposal preparation affecting the procurement in construction projects of local administrative organizations analyzed in this study included study, survey and design; preparation of drawings or specifications;

and cost estimation. The mean weights of the survey data were analyzed through prioritization of budget proposal preparation sub-factors affecting the procurement in construction projects of local administrative organizations and a normalized pairwise comparison matrix was created. The results showed that the normalized relative weight of the study, survey and design process (A1) was 3.50 higher than that of preparation of drawings or specifications (A2); the normalized relative weight of the study, survey and design process (A1) was 1.17 higher than that of cost estimation (A3); and the normalized relative weight of preparation of drawings or specifications (A2) was 2.17 less than that of cost estimation (A3). The mean relative weights of sub-factors are shown in a matrix, as shown in Table 4, in order to be used in an analysis of weights of the sub-factors relating to budget proposal preparation affecting the procurement in construction projects of local administrative organizations.

Table 4 Weighted geometric means comparison matrix of sub-factors relating to budget proposal preparation**.**

Factors	A1	A2	A3
A1	1.00	3.50	1.17
A2	1/3.50	1.00	1/2.17
A3	11.17	2.17	1.00

Results of an analysis of weights of budget proposal preparation sub-factors affecting the procurement in construction projects of local administrative organizations. The means obtained from comparisons were used to determine relative weights using a software. The results showed that the most important sub-factor was the study, survey and design process (A1) with a weight of 47.89%, followed by preparation of drawings or specifications (A2) with a weight of 36.82%, and cost estimation (A3) with a weight of 15.29%, respectively. The inconsistency index was 0.009, which does not exceed 0.100, indicating high accuracy of the analysis results as shown in Table 5.

Table 5 Weights and inconsistency index of sub-factors relating to budget proposal preparation.

Sub-Factors	Weight	Inconsistency Index
A1	47.89%	0.009
A2	36.82%	
A3	15.29%	

3.2.2 Results of analysis of procurement preparation sub-factors affecting the procurement in construction projects of local administrative organizations. The mean weights were determined through prioritization of procurement preparation sub-factors affecting the procurement in construction projects of local administrative organizations and a normalized pairwise comparison

matrix was created. The results showed that the normalized relative weight of preparation of procurement plans (B1) was 1.67 less than that of determination of reference prices (B2); the normalized relative weight of preparation of procurement plans (B1) was 1.67 less than that of preparation of specifications, draft TOR, and procurement documents (B3); and the normalized relative weight of determination of reference prices (B2) was 1.00 equal to that of preparation of specifications, draft TOR, and procurement documents (B3). The mean relative weights of procurement preparation sub-factors are shown in a matrix, as shown in Table 6, in order to be used in an analysis of weights of the procurement preparation sub-factors affecting the procurement in construction projects of local administrative organizations.

Table 6 Weighted geometric means comparison matrix of sub-factors relating to procurement preparation**.**

Sub-Factors	B1	B2	B3
B1	1.00	1/1.67	1/1.67
B2	1.67	1.00	1.00
B3	1.67	1.00	1.00

The analysis of weights of procurement preparation sub-factors revealed that the most important sub-factors were determination of reference prices (B2) and preparation of specifications, draft TOR, and procurement documents (B3) with the same weights of 38.48%, followed by preparation of procurement plans with a weight of 23.04%. The inconsistency index was 0.000, which does not exceed 0.100, indicating high accuracy of the analysis results as shown in Table 7.

Table 7 Weights and inconsistency index of sub-factors relating to procurement preparation.

Sub-Factors	Weight	Inconsistency Index
B1	23.04%	0.000
B2	38.48%	
B3	38.48%	

3.2.3 Results of analysis of procurement operation sub-factors affecting the procurement in construction projects of local administrative organizations. The mean weights were determined through prioritization of procurement operation sub-factors affecting the procurement in construction projects of local administrative organizations and a normalized pairwise comparison matrix was created. The results showed that the normalized relative weight of preparation of procurement proposal reports (C1) was 0.50 higher than that of invitation announcement (C2); the normalized relative weight of preparation of procurement proposal reports (C1) was 1.33 less than that of proposal submission and consideration and winner announcement (C3); and the

normalized relative weight of invitation announcement (C2) was 0.83 less than that of proposal submission and consideration and winner announcement (C3). The mean relative weights of procurement operation sub-factors are shown in a matrix, as shown in Table 8, in order to be used in the determination of weights of the procurement implementation sub-factors affecting the procurement in construction projects of local administrative organizations.

Table 8 Weighted geometric means comparison matrix of sub-factors relating to procurement operation**.**

Sub-Factors	C1	C2	C3
C1	1.00	0.50	1/1.33
C2	1/0.50	1.00	1/0.83
C3	1.33	0.83	1.00

The analysis of weights of procurement operation sub-factors affecting the procurement in construction projects of local administrative organizations revealed that the most important procurement implementation sub-factor was invitation announcement (C2) with a weight of 43.29%, followed by proposal submission and consideration and winner announcement (C3) with a weight of 33.39%, and preparation of procurement proposal reports (C1) with a weight of 23.32%, respectively. The inconsistency index was 0.004, which does not exceed 0.100, indicating high accuracy of the analysis results as shown in Table 9.

Table 9 Weights and inconsistency index of sub-factors relating to procurement operation**.**

Sub-Factors	Weight	Inconsistency Index
C1	23.32%	0.004
C2	43.29%	
C3	33.39%	

3.2.4 Results of analysis of contract administration and material inspection sub-factors affecting the procurement in construction projects of local administrative organizations. The prioritization of contract administration and material inspection sub-factors was conducted using pairwise comparisons. The weights of sub-factors were used to determine the means and a normalized pairwise comparison matrix was created. The results showed that the normalized relative weight of entering into a contract or agreement (D1) was 4.50 less than that of material delivery and inspection (D2); the normalized relative weight of entering into a contract or agreement (D1) was 2.17 less than that of defect warranty and return of performance security (D3); and the normalized relative weight of material delivery and inspection (D2) was 2.33 higher than that of defect warranty and return of performance security (D3), as shown in Table 10.

Table 10 Weighted geometric means comparison matrix of sub-factors relating to contract administration and material inspection.

Sub-Factors	D1	D2	D3
D1	1.00	1/4.50	1/2.17
D2	4.50	1.00	2.33
D3	2.17	1/2.33	1.00

The analysis of weights of contract administration and material inspection sub-factors affecting the procurement in construction projects of local administrative organizations using AHP method revealed that the most important sub-factor was material delivery and inspection (D2) with a weight of 60.23%, followed by defect warranty and return of performance security (D3) with a weight of 26.89% and entering into a contract or agreement (D1) with a weight of 12.88%, respectively. The inconsistency index was 0.001, which does not exceed 0.100, indicating high accuracy of analysis results as shown in Table 11.

Table 11 Weights and inconsistency index of sub-factors relating to contract administration and material inspection.

Sub-Factors	Weight	Inconsistency Index
D1	12.88%	0.001
D2	60.23%	
D3	26.89%	

4. DISCUSSION

According to the analysis of factors affecting the procurement in construction projects of local administrative organizations, the discussion is as follows: 1) The weight of contract administration and material inspection was 60.20%. For its sub-factors, the most important sub-factor was material delivery and inspection with a weight of 60.23%, followed by defect warranty and return of performance security with a weight of 26.89%, and entering into a contract or agreement with a weight of 12.88%, respectively. 2) The weight of procurement operation was 21.17%. For its sub-factors, the most important sub-factor was invitation announcement with a weight of 43.29%, followed by proposal submission and consideration and winner announcement with a weight of 33.39%, and preparation of procurement proposal reports with a weight of 23.32%, respectively. 3) The weight of budget proposal preparation was 12.61%. For its sub-factors, the most important sub-factor was study, survey and design process with a weight of 47.89%, followed by preparation of drawings or specifications with a weight of 36.82%, and cost estimation with a weight of 15.29%, respectively. 4) The weight of procurement preparation was 6.02%. For its sub-factors, the most important sub-factors were determination of reference prices and preparation of specifications, draft TOR, and procurement documents with the same weights of 38.48%, followed by preparation of procurement plans with a weight of 23.04%, respectively, as shown in Figure 2.

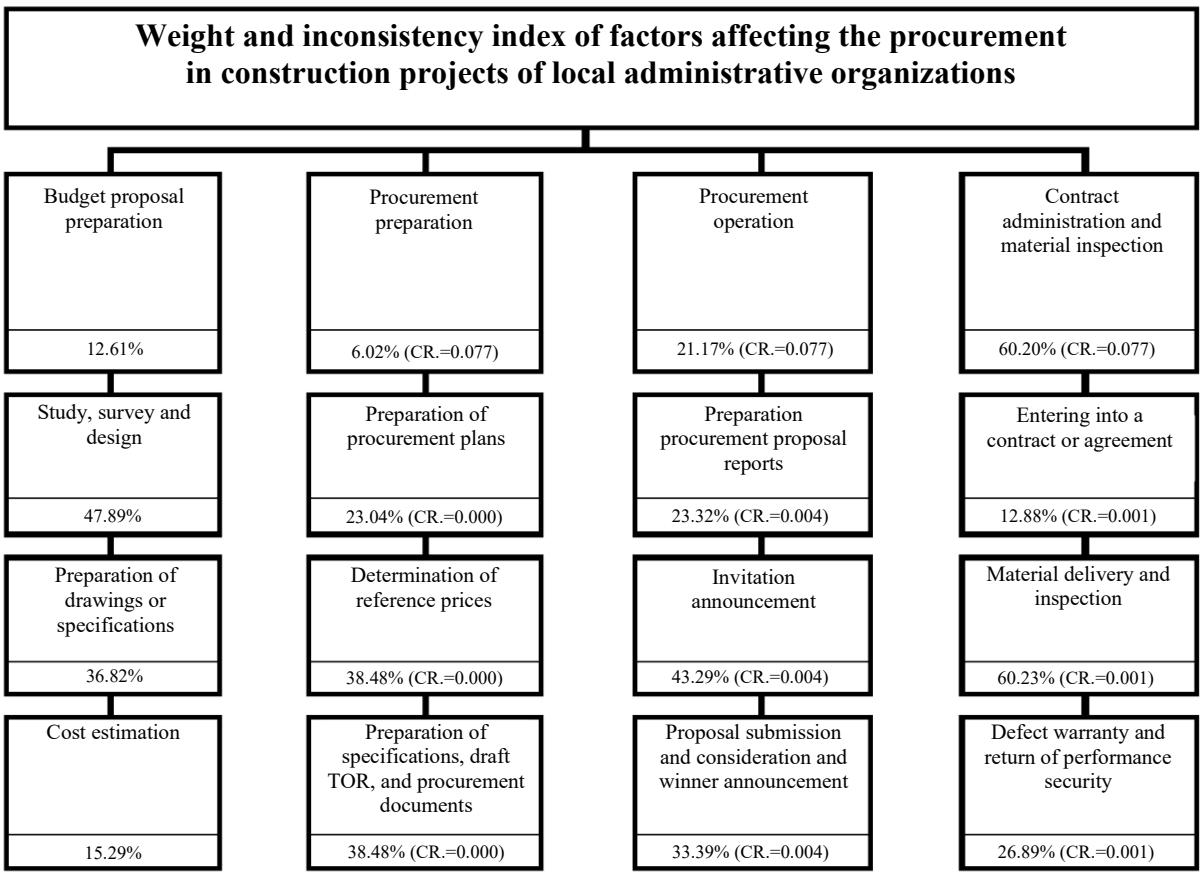

Figure 2 Summary of the analysis of the weights and the inconsistency index of the factors affecting the procurement in construction projects of local administrative organizations.

5. CONCLUSION

The conclusions from the study of factors affecting the procurement and compliance with the law in construction projects of local administrative organizations according to the objectives of this study are as follows:

5.1 Budget proposal preparation analyzed in this study included three sub-factors: (1) study, survey, and design; (2) preparation of drawings or specifications; and (3) cost estimation. Each of these sub-factors plays a vital role in influencing the accuracy of cost estimation and the overall validity of budget proposals. The “study, survey, and design” sub-factor lays the technical foundation for estimating construction needs, material quantities, and spatial requirements. Inadequate or superficial studies often result in underestimated budgets or project scope mismatches. Similarly, the “preparation of drawings or specifications” ensures that construction details are clearly defined; vague or inconsistent specifications can lead to misinterpretation during implementation and inaccurate cost forecasting. The “cost estimation” sub-factor itself relies on the quality of prior technical inputs and is essential for aligning project costs with realistic market values. These findings correspond with the study by Wiboongosol and Ussavadilokrit (2021), who emphasized that inconsistencies in technical documentation, such as contradictory drawings or ambiguous terms of reference (TOR), frequently cause delays, budget overruns, and disputes in

public construction. Inaccuracies in budget preparation can undermine cost control and reduce the financial credibility of the project. Therefore, managing the budget preparation process with technical precision and clarity is essential. Accurate budgeting not only strengthens cost estimation and funding decisions but also ensures legal compliance and contributes to procurement efficiency.

5.2 Procurement preparation analyzed in this study included 3 sub-factors: preparation of procurement plans; determination of reference prices; and preparation of specifications, draft TOR, and procurement documents. [14] This is in line with a study by which found that determination of reference prices for government construction projects is of utmost importance in the procurement process. This is due to the fact that procurement involves the acquisition of materials, buildings or services as required. If the specifications, quantities, or prices of building construction or other contract works do not comply with the specified criteria or regulations, the construction may not be completed as scheduled or problems may arise during the construction. [15] According to Jampakhao, Kongsong and Pooworakulchai (2023), inaccurate reference prices often lead to bid rejections, cost overruns, or legal disputes, while vague or inconsistent TORs create confusion and increase the risk of contractor underperformance. Although procurement planning was rated lowest in weight, it plays a key role in aligning procurement activities with budget timelines and minimizing internal delays. Thus, procurement preparation—particularly accurate pricing and clear documentation—lays a foundation that reduces procurement risks and enhances project success.

5.3 Procurement operation for construction projects analyzed in this study included 3 sub-factors: preparation of procurement proposal reports; invitation announcement; and proposal submission and consideration and winner announcement. This is in line with the Public Procurement and Supplies Administration Act, B.E. 2560 (2017), which emphasizes that the procurement in the government constructions projects must be carried out in a reasonable, transparent, and fair manner, both in the invitation announcement and proposal submission and consideration and winner announcement, to ensure efficiency and effectiveness of procurement. If the qualifications of the contractors are specified in accordance with the nature of the work, the objectives of the construction project can be achieved. In addition, the supervisors and the inspection committee should be appointed and selected from among those with expertise in the specific area. Procurement implementation is a critical phase that directly influences the transparency and efficiency of public construction projects. (According to Jampakhao, Kongsong and Pooworakulchai (2023), the clarity and fairness of key sub-processes such as invitation announcements, proposal submissions, and contractor selection play a major role in ensuring transparency. When these procedures are conducted openly and according to standardized criteria, it not only promotes fair competition but also reduces opportunities for corruption and delays. Additionally, structured and timely proposal evaluation enhances procurement efficiency by ensuring that qualified contractors are selected in alignment with legal and technical requirements. Therefore, procurement implementation is not merely procedural, but strategic in driving good governance in public sector projects.

5.4 Contract administration and material inspection analyzed in this study included 3 sub-factors: entering into a contract or agreement, material delivery and inspection, and defect warranty and return of performance security. This is in line with the State Audit Office of the Kingdom of Thailand's annual performance report for fiscal year 2023, in which non-compliance with

specified drawings, incomplete construction as specified in the contracts, defects during the warranty period, non-compliance with relevant regulations and laws on parts of the procurement committees, etc., were found. Supervision is crucial for contract administration. The objectives of construction projects may not be met if supervision responsibilities are performed within sufficient experience, strictness, and attentiveness. Therefore, the construction and material inspection must be closely supervised. The content of the construction contract, drawings and specifications should be read and understood prior the construction. In addition, prior to return of performance security, the construction works should be inspected for any defects. Contract administration and material inspection are critical in ensuring cost control, legal compliance, and quality assurance in public construction projects. The sub-factor “material delivery and inspection” directly contributes to risk reduction, as it helps detect non-compliant materials and construction errors early, preventing future structural issues or financial losses. The “defect warranty and return of performance security” supports cost efficiency by holding contractors responsible for post-completion quality, thereby reducing additional government spending. The “contract agreement” sub-factor ensures legal compliance, as it serves as the basis for formal enforcement of construction terms and conditions. These findings are consistent with the 2023 audit report of the State Audit Office of Thailand, which highlighted that a significant number of project deficiencies stemmed from non-compliance with contractual requirements and inadequate inspection processes (State Audit Office of Thailand, 2023).

6. Recommendations

From the study of Factors Affecting Procurement in Construction Projects of Local Administrative Organizations, the researcher has the following recommendations for future research:

6.1 Study of factors affecting the procurement operations and compliance with construction laws of other government agencies.

6.2 Study the factors affecting the performance and compliance with the law in other types of work such as consulting work, purchasing work, rental work and other work to cover government procurement and material management according to the Government Procurement and Material Management Act B.E. 2560 which is currently in force.

6.3 Study the factors affecting the performance and compliance with the law in construction work by using other types of statistical analysis to obtain clearer analysis results and to obtain analysis results from various methods.

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