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ANALYSIS OF GOVERNMENT CONSTRUCTION TENDER PROCESS FAILURES (CASE STUDY: X REGENCY)

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ABSTRACT

Indonesia, as a developing archipelagic country, emphasizes infrastructure development to boost the economy and enhance inter-island connectivity. Significant state budget allocations for construction annually underscore the sector's importance. However, in X Regency, many construction tenders have failed, leading to unabsorbed budgets and wasted resources. This study aims to identify factors causing tender failures and develop strategies to minimize them. Utilizing quantitative methods, the research includes questionnaire surveys and secondary data analysis from literature studies. The Relative Importance Index (RII) is employed to identify tender failure factors, and Multiple Criteria Decision Analysis (MCDA) is used to develop strategy implementations. The findings reveal ten critical factors contributing to tender failures: insufficient time for bidding document preparation, incomplete documents, failure to upload documents, unawareness of schedules, bidders' technical specifications not meeting requirements, Service User setting HPS too low, personnel qualifications not matching selection criteria, non-compliance with legal requirements, insufficient information causing multiple interpretations, and delayed learning of bid announcements. Consequently, 46 strategic implementations are recommended. The top five strategies include: optimizing personnel rotation with appropriate qualifications for different projects, adding an article in the Regent Regulation regarding an Electronic Procurement Service hotline for system errors, recommending Service Providers re-examine auction activity requirements before registering, including an article in the Regent Regulation for evaluating tender processes to identify and address participant constraints, and advising Service Users to conduct thorough market price surveys. These strategies aim to enhance tender processes, ensuring better absorption of allocated budgets and effective project execution.

KEYWORDS *Tender Failure, Causal Factors, Implementation Strategies*

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INTRODUCTION

Indonesia, as an archipelago and developing country, prioritizes sustainable infrastructure development to boost the economy and connectivity between islands. The state budget is allocated a considerable amount for the construction sector, indicating the important role of construction in the country's progress plan. Based on regulations, the Head of SKPD/UKPD is required to prepare a work plan and budget as part of the RAPBD, which then becomes the APBD to support development through the procurement of goods and services.

Public procurement of goods and services is carried out in accordance with applicable regulations, mainly through tenders, which aim to obtain competent winners. E-procurement was implemented to increase transparency and efficiency in this process, in order to reduce corruption and speed up public spending.

Procurement budget absorption is an important performance indicator, especially in the construction industry. Failed tenders can lead to unabsorbed budgets, resulting in lost expenditure benefits. X Regency, a strategic area in Central Java Province, experienced many failed tenders on construction projects, with the failure rate reaching 73% in 2019.

This research will analyze the factors causing tender failures in X Regency, and develop implementation strategies to minimize future failures. From the data collected, the majority of construction work packages in X Regency are for small qualification service providers using the onefile post-qualification method, which is the focus of this research.

This research aims to identify factors that cause tender failures in government construction projects in X Regency and develop implementation strategies to minimize these failures. The scope of the research includes analyzing the factors that cause tender failures and strategies to overcome them, with the hope that the results can be useful for academics and related parties in the tender process. The research limitations include a focus on X Regency and tender failures on government construction works, and do not include failures due to KKN, unfair business competition, or cost negotiation failures.

RESEARCH METHOD

The research framework combines theories, observations, facts, and literature review to form the basis and logical flow of the research. It is often visualized in the form of an interconnected diagram.

The research flow is designed as a guideline so that the research remains in accordance with the predetermined objectives. In collecting data, this study used secondary data from literature and regulations, as well as primary data from questionnaires distributed to relevant parties in X Regency. The questionnaires were used to identify the factors causing tender failure. This questionnaire was used to identify factors causing tender failure.

Respondents of the questionnaire consisted of tender committee, construction service users, and construction service providers in X Regency. Determination of

the number of samples was carried out using the Cochran method, resulting in 24 respondents who would provide data for analysis.

Once the data was collected, validity and reliability tests were conducted to ensure the questionnaire measurement tool was accurate and consistent. Further analysis used RII and Multiple Criteria Decision Analysis (MCDA) methods to identify the main factors causing tender failure and devise implementation strategies to address the issues, with emphasis on prioritizing actions.

RESULT AND DISCUSSION

Respondent Profile

The author initially planned to send an online questionnaire via email to construction service companies in X Regency, with the list of companies obtained from the Construction Company Directory of Central Java Province 2023. The priority for respondents was companies with small business qualifications. However, after sending the Google Form link to 100 companies, very few responses were received. Since the online method was not effective, the author decided to visit the company directly. The results are on target, namely 12 respondents from Construction Service Providers who have participated in tenders in X Regency. Table 1 is data from respondents who are Construction Service Providers within the scope of X Regency who have participated in X Regency tenders.

Table 1. Service Provider Respondents

Nama perusahaan	Nama / Inisial	Pendidikan terakhir	Jabatan	Pengalaman kerja
CV. TEHNIK JAYA	SALIMUN	SMA / Sederajat	DIREKTUR	> 6 Tahun
PT. CITRA TAMA ELEKTRINDO	GALIH ASA ARRAFIF	D3 / D4	STAFF K3 DAN ADMINISTRASI	2 - 6 Tahun
CV ELING WONG TUA	Sunarso	S1	PEMILIK	> 6 Tahun
CV Camal Abadi	Rochayat Budianto	S1	Direktur	> 6 Tahun
CV Banyu Biru	Kuntarini	S1	DIREKTUR	> 6 Tahun
CV. NAGARAYA GROUP	Abah Nono	D3 / D4	Direktur	> 6 Tahun
CV. Delta Karya	Dayat	S1	Direktur	> 6 Tahun
CV. Dua Putra	Rohmat	S1	Direktur	> 6 Tahun
CV. DUA PUTRI	Tony	S1	Pemilik	> 6 Tahun
CV. Cipta Rizki Pratama	Rizki	D3 / D4	Pemilik	2 - 6 Tahun
CV. Dian Resty	Sugiyono	D3 / D4	Pemilik	> 6 Tahun
CV. Antara Mitra Sejati	A	S1	Pemilik	> 6 Tahun

The author also went to the Regional Secretary's office to ask the committee and service users and the results were on target, namely 12 respondents were obtained from the committee and users in X Regency. Based on the questionnaires distributed to the Committee and Users in X Regency, 24 respondents were obtained which will be described in Table 2.

Table 2. Committee & Service User Respondents

Nama Lengkap	Jenis Kelamin	Pendidikan terakhir	Nama Instansi	Satuan Kerja	Jabatan	Pengalaman kerja
Edy purbowo	Laki - Laki	S1	Pemkab Banyumas	Bagian Layanan Pengadaan Barang/jasa Setda Kab Banyumas	Kepala UKPBJ	> 6 Tahun
Sulistiono	Laki - Laki	D3 / D4	Sekretariat Daerah	Bagian Layanan Pengadaan B/J	Lainnya	> 6 Tahun
Danang Arif Rudhianto	Laki - Laki	S2	Sekretariat Daerah Kabupaten Banyumas	Bagian layanan pengadaan barang dan jasa	Fungsional Ahli Pertama PPBJ	2 - 6 Tahun
M. Agus Tri Romadhoni	Laki - Laki	S2	Pemerintah Kabupaten Banyumas	Bagian Layanan Pengadaan Barang/Jasa Sekretariat Daerah	Kelompok Kerja Pemilihan	2 - 6 Tahun
Nunik	Perempuan	S1	Bagian Layanan PBJ	Sekretariat Daerah Kab. Banyumas	Pengelola LPSE	2 - 6 Tahun
Sugeng Dwi Harianto	Laki - Laki	S1	Pemerintah Daerah Kabupaten Banyumas	Bagian Layanan Pengadaan Barang/Jasa Setda Kab. Banyumas	Kasubag Pengelolaan Barang/Jasa Pemerintah	> 6 Tahun
Driantoro	Laki - Laki	S1	Setda kabupaten Banyumas	Bagian Layanan Pengadaan barang dan jasa	Kelompok Kerja Pemilihan	> 6 Tahun
Syaihun	Laki - Laki	S1	Pemda Banyumas	Dinas Lingkungan Hidup	Pejabat Pembuat Komitmen	> 6 Tahun
ANDREAS DIAN MEI SUNARKO,A.Md	Laki - Laki	D3 / D4	PEMKAB BANYUMAS	SEKRETARIAT DAERAH	Pengelola LPSE	> 6 Tahun
ridha perkasa	Laki - Laki	S2	Bagian Layanan Pengadaan	Sekretariat Daerah Banyumas	Kelompok Kerja Pemilihan	> 6 Tahun
Agus Susanto	Laki - Laki	S1	Pemerintah Kabupaten Banyumas	Dinas Perhubungan	Pejabat Pembuat Komitmen	2 - 6 Tahun
Muhammad Hasan Syajaiy	Laki - Laki	S1	Pemerintah Kabupaten Banyumas	RSUD Banyumas	JF PPBJ Ahli Pertama	2 - 6 Tahun

Validity and Reliability Test

Validity is the accuracy or accuracy of an instrument in measuring what it wants to measure, in determining whether or not an item is suitable for use, in this study a correlation coefficient significance test was carried out at the 0.05 significance level, which means that each research variable is considered valid if it is significantly correlated with the total score. While the reliability test is used to determine the consistency of the measuring instrument, whether the measuring instrument used in this study is reliable and remains consistent if the measurement is repeated. Data validity testing is carried out using the *corrected item-total correlation* which uses the r value from the table. Meanwhile, the reliability test uses the *Cronbach's Alpha* method, where the research variable can be said to be reliable if the alpha value is greater than the critical r *product Moment* generated.

Validity Test

To facilitate *input* into the SPSS program and facilitate the analysis process, the factors will be coded as P1, P2, and so on. After conducting the validity test in the SPSS program, the validity test output results were obtained. In the validity test, variables can be tested by comparing the *Corrected Item-Total Correlation* with the r table. R table is determined at α 0.05 with free degrees df = (N-2). In this study, the number of respondents (N) was 24 so that df = 22. Referring to table x, R (0.05; 22) on a one-way test is 0.4044.

Then, according to the decision-making for the validity test,

- If r count is positive and r count> r table, then the variable is valid
- If r count is negative or r count < r table, then the variable is invalid. *The* calculated R value can be seen in the *Pearson correlation* column.

From the results obtained, 12 factors are classified as invalid. The invalid factors are P1, P2, P3, P6, P7, P8, P12, P21, P22, P23, P29, P36. In table x is denoted by green for valid factors and red for invalid factors. Then, there are 25 factors that pass the validity test, namely P4, P5, P9, P10, P11, P13, P14, P15, P16, P17, P18, P19, P20, P24, P25, P26, P27, P28, P30, P31, P32, P33, P34, P35, P37 which will be used for reliability testing.

Reliability Test

The reliability test is carried out by comparing the r Alpha (Alpha Cronbach) value with the r table value. If the r Alpha value is positive and > r table, it can be concluded that the variables used are reliable. The results of the reliability test using the SPSS program can be seen in Figure 1 and the following:

Case Processing Summary

		N	%
Cases	Valid	24	100.0
	Excluded[a]	0	.0
	Total	24	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.953	25

Figure 1. Reliability test results

From the results obtained, the Cronbach's Alpha value is 0.953. Because the reliability test rules are met (Cronbach's alpha value> 0.6), it can be concluded that all 25 factors in this study are reliable.

Calculation of RII (Relative-Importance Index)

After the validity and reliability tests are carried out, the data from the distribution of questionnaires that have been filled in by 24 respondents will be seen. However, the data that will be discussed next is only for 25 factors that pass the validity and reliability tests. Table 3 shows the results of the questionnaire that has been recapitulated by the author.

Table 3. Questionnaire Results

Variabel	Kode	Faktor	Frekuensi pengisian				Total Responden
			"1"	"2"	"3"	"4"	
terdapat kesalahan dalam proses evaluasi	P4	Proses tender tidak sesuai dengan perpres	4	11	7	2	24
tidak ada peserta yang menyampaikan dokumen penawaran setelah ada pemberian waktu perpanjangan	P5	Peserta tidak mengetahui jadwal	5	1	10	8	24
	P9	Paket pekerjaan tidak diminati peserta	9	3	10	2	24
	P10	Peserta kurang memahami site proyek	6	11	4	3	24
	P11	Resiko paket pekerjaan yang tinggi	5	14	3	2	24
	P13	Waktu yang tersedia untuk menyiapkan dokumen penawaran terlalu sedikit	0	7	5	12	24
	P14	Peserta tidak siap dengan sistem elektronik yang dipakai	5	6	11	2	24
	P15	Peserta terlambat mengetahui pengumuman penawaran	4	7	6	7	24
	P16	Peserta gagal mengupload dokumen penawaran	2	5	10	7	24
tidak ada peserta yang lulus evaluasi penawaran	P17	Dokumen penawaran tidak lengkap	0	2	16	6	24
	P18	Jaminan penawaran tidak sesuai dengan dokumen	8	2	11	3	24
	P19	Surat penawaran tidak sesuai dengan dokumen	9	3	8	4	24
	P20	Surat-surat administrasi (SBU, IUJK, SKA/SKT, SPT) tidak dilampirkan / tidak sesuai	7	4	9	4	24
	P24	Spesifikasi teknis peserta tender kurang dari yang disyaratkan pada dokumen pemilihan	0	8	12	4	24
	P25	Peserta tidak siap dengan bukti kualifikasi yang dimiliki	7	4	9	4	24
	P26	Peserta tidak hadir dalam pembuktian kualifikasi	8	3	7	6	24
	P27	Kualifikasi personil peserta tidak sesuai dengan dokumen pemilihan	3	5	11	5	24
	P28	Peralatan minimal tidak sesuai dengan dokumen pemilihan	0	14	10	0	24
	P30	Metode pelaksanaan tidak sesuai	6	5	11	2	24
ditemukan kesalahan dalam Dokumen Pemilihan atau tidak sesuai dengan ketentuan dalam Peraturan Presiden ini	P31	Ketidakpatuhan terhadap persyaratan hukum	1	11	6	6	24
	P32	Kesalahan pengetikan pada dokumen pemilihan	7	8	8	1	24
	P33	Ketidakcukupan informasi atau detail yang diperlukan untuk paket pekerjaan yang menyebabkan multitafsir	4	4	11	5	24
seluruh penawaran harga Tender Barang/ Pekerjaan Konstruksi/ Jasa Lainnya di atas HPS	P34	Pengguna Jasa menetapkan HPS terlalu rendah	0	7	15	2	24
	P35	Estimator penyedia jasa kurang berpengalaman	4	16	3	1	24
	P37	Besarnya biaya overhead proyek yang dimasukkan peserta ke dalam dokumen penawaran	5	16	3	0	24

After the data is recapitulated, the RII calculation will be carried out on the factors above, then the average will also be sought for the related variables (reasons for tender failure). The RII calculation uses the formula:

$$RII = \frac{\sum \quad W}{A \times N}$$

RII = Relative Importance Index
W = Weight
A = highest weight
N = total respondents
The formula for 4 scales is :

$$RII = \frac{4n_4 + 3n_3 + 2n_2 + 1n_1}{4N}$$

Data Analysis

Analysis of Factors Causing Tender Failure

In this sub chapter, we will discuss one by one the factors that have passed the validity test and reliability test. This factor discussion will be in accordance with the factor code sequence. The numbers below correspond to the variables (reasons for tender failure) and factors. Variables are for words that are not bolded and factors are words that are bolded.

1. There were errors in the evaluation process because the **tender process was not in accordance with the Presidential Regulation.**
   The implementation of construction work package tenders often faces various obstacles that can cause failure, one of which is an error in the evaluation process that is not in accordance with the Presidential Regulation.
2. There were no participants who submitted bidding documents after the extension because the **participants did not know the schedule**.
   Problems that may be faced by the tender committee are the lack of integration between the various departments involved in the tender process and also limitations in maintaining and updating the information system used. While the problem faced by small service providers is that they do not have specialized staff to monitor and follow information about the tender schedule, so they often find out important information too late.
3. There were no participants who submitted bid documents after the extension of time because the **work package was not of interest to the participants**.
   The failure of a tender for a construction work package because no participants submit bidding documents despite an extension of time is often caused by a lack of interest in the work package. Lack of interest is usually due to unclear technical specifications, unfavorable contract conditions, and unrealistic cost estimates.
4. There were no participants who submitted bid documents after the extension of time because the **participants did not understand the project site**.
   The problem with this factor is that the committee may not provide enough detailed information about the project site. The site visit may not be sufficient to provide the service provider with an in-depth understanding. Small service providers may also not have sufficient experience or expertise to analyze the

project site in depth and may have limited time and resources to conduct an adequate site visit.

5. No participants submitted bid documents after the extension was granted due to the **high risk of the work package**.
   High risk can include factors such as uncertainty of field conditions, technical complexity, and potential unforeseen additional costs. The problem that can occur for this factor is that the committee may not consult with experts or related parties in setting realistic and achievable specifications. Also, service providers may struggle to identify and plan effective risk mitigation.
6. There were no participants who submitted bid documents after the extension because the **time available to prepare bid documents was too little**.
   Limited preparation time may prevent bidders from conducting a thorough analysis of the project, gathering the necessary documents, and preparing a competitive bid. Limited time to prepare bidding documents can result in reduced bid quality and increase the risk of bidding errors. Inadequate time also reduces bidders' interest as they are unable to estimate costs and time with sufficient accuracy.
7. There were no participants who submitted bid documents after the extension of time because the **participants were not ready with the electronic system used**.
   Technological unpreparedness and participants' lack of understanding of electronic systems can lead to low participation in the e-tendering process. Technological barriers and lack of training and technical support are often the main barriers to effective implementation of e-tendering systems. The problem that occurs for the committee is that many participants do not participate in the training that is made, making participants unfamiliar with the electronic system used. As for participants, the electronic system used is often unstable and less user-friendly, causing difficulties for participants to access and use it.
8. There were no participants who submitted bid documents after there was an extension because the **Participants found out about the bid announcement late.**
   The problem experienced by the committee is the limited use of more modern and effective communication media such as *email blasts* or social media. The problem for participants is that small service providers may not have dedicated staff to monitor information about bid announcements on a regular basis.
9. There were no participants who submitted bid documents after an extension was granted because the **Participants failed to upload bid documents**
   Technical constraints and participants' lack of understanding of the e-procurement system are often the main inhibiting factors in the tendering process. Technical issues such as server downs, file size limitations, and lack of technical training are the main causes of document submission failure in e-tendering.
10. No participant passed the bid evaluation due to **incomplete bidding documents**

The bidding process is one of the most important processes in construction projects. Construction projects involve complex and difficult procurement processes. One important stage is the bidding process, where the amount of profit value is critically determined and requires a lot of time and effort. In order to participate in the tender, service providers must submit bidding documents addressed to the tender committee. Service providers must make realistic bidding documents in order to win the tender.

11. No participant passed the bid evaluation because the **bid guarantee was not in accordance with the documents**.
    Construction service providers bidding on government construction projects must submit security in their bids to guarantee that if selected, they will execute a formal contract to perform the work in accordance with the terms of their bid.
12. No participant passed the bid evaluation because the **bid letter was not in accordance with the documents**.
    In participating in e-tenders for the procurement of goods and services, bidders are required to fulfill administrative requirements consisting of an offer letter, offer guarantee letter, power of attorney (if any) according to the selection document (Sopian, 2024). The offer letter must be dated indicating the date of making the offer letter, the offer letter must include the nominal value of the offer in numbers and letters, the validity period of the offer as specified in the tender document, the offer letter must be signed by an authorized person.
13. There were no participants who passed the bid evaluation because the **administrative letters (SBU, IUJK, SKA / SKT, SPT) were not attached / were not appropriate.**
    Qualification of project team personnel is not suitable (SKA & SKT certificate) The core team personnel of a construction company are responsible for handling managerial and technical aspects. For small construction companies, the Construction Services Development Board only requires experienced technicians, while experienced engineers are required for medium and large companies, but medium and large companies are still required to have experienced and qualified engineers for each major area of construction work that meets their requirements (Arifin, 2020). The implementation of e-tenders for construction services in Indonesia requires contractors to have Qualified Personnel of the project team in accordance with the selection documents stipulated by the working group, consisting of at least 1 (one) Skilled Certified Permanent Personnel (SKT) in accordance with the required SBU Classification (For Small Businesses) in the procurement document and 1 (one) Expert Certified Permanent Personnel (SKA) in accordance with the required SBU Subclassification in the procurement document (For Medium and Large Businesses) (Arman et al., 2023).
14. None of the bidders passed the bid evaluation because the **technical specifications of the bidders were less than those required in the selection document**.

The inability of participants to meet the set technical specifications is often due to several factors. First, the entrant may not have an in-depth understanding of the technical requirements specified in the tender documents. Second, the technical capabilities and resources possessed by the entrant may be inadequate to meet the set standards. Third, discrepancies in the interpretation of technical specifications between service providers and tender organizers may cause the submitted technical bids to not meet the expected criteria. Vagueness in technical specifications and participants' lack of understanding of technical requirements are the main causes of failure in technical evaluation (Hapsari, 2017).

15. No participant passed the bid evaluation because the **Participant was not prepared with proof of qualifications**.
    Qualification proof is a procedure carried out to prove that the qualification documents submitted by prospective providers who meet the qualification requirements are correct and valid. This qualification proof is carried out after the Selection Working Group evaluates the offer based on the documents submitted by the providers. The problem experienced by the committee is the limited time according to the tender procedures set out in the regulations so that the qualification proof schedule is not flexible. Meanwhile, the problem experienced by service providers is the inability to prepare and attach proof of qualifications in accordance with the requirements.
16. No participant passed the bid evaluation because the **Participant did not attend the qualification proof**.
    Qualification substantiation is an important stage in the tender process where participants must be present to show physical evidence and validation of the submitted qualification documents. Non-attendance at this stage can be caused by several factors, including a lack of understanding of the importance of attendance, unclear timelines, or logistical and coordination issues. Absenteeism is one of the main causes of failure in the tender process, resulting in low tender success rates (Maharani et al., 2023).
17. No participant passed the bid evaluation because the **participant's personnel qualifications were not in accordance with the selection document**.
    Personnel qualifications include certifications, experience, and technical competence relevant to the work being tendered. These discrepancies can occur for several reasons, participants may not fully understand the qualification requirements set out in the tender documents, lack of clarity in the selection documents regarding the required qualifications, or errors in drafting or submitting the qualification documents. Research in the *Journal of Construction Engineering and Management* reveals that errors in the assessment of personnel qualifications are often a major cause of tender failure.
18. No participant passed the bid evaluation because the **minimum equipment was not in accordance with the selection document**.
    The availability of construction equipment owned by the contractor is one of the contractor's technical qualifications that are taken into account in the implementation of construction services tenders (Suri & Dharmawan, 2023).

In the implementation of construction services tenders, the number, type, size, condition, availability, and suitability of the required equipment is an assessment factor of the technical qualifications of bidders which is worth 20% of the total value in the technical qualification requirements.

19. No participant passed the bid evaluation because the **method of implementation was not appropriate**.
    The Work Implementation Method is a proposal made by the contractor that contains the aims and objectives of the contractor to take part in the tender, in addition there are also objectives to be achieved, definition of the scope of work, work plan and work schedule, standards and criteria as standards in achieving goals. The work implementation method proposal must also be able to provide a clear description of the steps the contractor will take to complete a project (Putri & Puspasari, 2023).
20. Errors are found in the Election Documents or are not in accordance with the provisions of this Presidential Regulation due to **non-compliance with legal requirements**.
    Non-compliance with the law can include aspects such as incomplete documents, errors in procurement procedures, or violations of applicable legal rules. Non-compliance with legal requirements is often caused by a lack of understanding of regulations, administrative negligence, or a lack of coordination between the Election Working Group and PPK/KPA. For example, the selection document may not contain all the necessary information or contain ambiguities that may cause bidders to fail to meet the necessary requirements. In addition, violation of procurement procedures stipulated by Indonesian regulations may result in disqualification of the entire tender process.
21. Errors are found in the Election Document or are not in accordance with the provisions in this Presidential Regulation due to **typing errors in the election document**.
    These typographical errors can be in the form of misinformation, discrepancies between specified and written requirements, or errors in technical details that cause bidders to misunderstand or fulfill the specified requirements. Such errors are often caused by a lack of verification and revision of documents prior to dissemination, as well as a lack of quality control procedures in the preparation of tender documents.
22. Errors are found in the Selection Document or are not in accordance with the provisions of this Presidential Regulation due to **insufficient information or details required for the work package that cause multiple interpretations.**
    Smith (2016) defines tender documents as all relevant information about the proposed contract, rules, conditions, etc. A complete and clear tender document can enable the contractor to price the work as accurately as possible, taking into account all the particularities of each construction project (Smith, 2016). Cook (2011) explains that the purpose of tender documents is to provide general project data in sufficient detail to suit the circumstances of

the project, and help to obtain competitive tenders that can be objectively evaluated in order to obtain the best contractor.

23. All price quotations for the Tender for Goods/Construction Works/Other Services were above the HPS because the **Service User set the HPS too low**. Tenders for construction work packages can fail when all price quotations exceed the self-estimated price (HPS) set by the Service User. This often happens because the Service User sets the HPS too low, not reflecting actual market conditions. Setting the HPS too low can be caused by a variety of factors, including a lack of accurate market data, inappropriate cost estimation methods, or an attempt to squeeze an unrealistic budget. The use of accurate market data can assist in setting a HPS that is more realistic and in line with market conditions. Research in the *Journal of Construction Engineering and Management* shows that significant differences between the HPS and the bids submitted by contractors can lead to tender failure, as contractors cannot lower their prices without reducing quality or sacrificing a reasonable profit margin (Fadlan, 2022).
24. All bids for Tender for Goods / Construction Works / Other Services are above the HPS because the **Estimator of the service provider is inexperienced**.
    Less experienced estimators may not have sufficient ability to accurately identify all costs involved in a construction project. This can lead to overestimation or underestimation of project costs. Errors in cost estimation can have a significant impact, as the bid price submitted by the contractor becomes uncompetitive and far above the HPS set by the Service User. Inaccuracies in cost estimation are often caused by lack of experience and adequate training, as well as lack of understanding of current market conditions (Simalango & Setiawan, 2019).
25. All bids for the Tender for Goods / Construction Works / Other Services were above the HPS due to the **large amount of project overhead costs that participants included in the bidding documents.**
    Cost is a sacrifice of economic resources that is usually measured in units of money, whether it has occurred, is occurring, or is likely to occur for a specific purpose. In a construction project, cost is one of the most crucial and important elements. Matters related to project costs must be attached and recorded in the report to be accounted for.

Recommended Action

In this sub-chapter, recommendations for action / *improvement* steps that can be taken on each factor will be given. Action recommendations will be given in Table 4. In this table, action recommendations in the form of additions / changes to regulations are included in the literature study in 4. However, for general action recommendations, there is a literature study from the table.

Table 4. Recommended Action

Kode faktor	Variabel dan Faktor	Rekomendasi tindakan
P4	Terdapat kesalahan dalam proses evaluasi karena Proses tender tidak sesuai dengan perpres	UKPBJ sebaiknya menempatkan anggota pokja pemilihan yang belum berpengalaman dengan yang lebih berpengalaman dalam satu tim.(Ramli, 2011)
		UKPBJ sebaiknya menugaskan pokja pemilihan untuk mengikuti training-training pendalaman kompetensi pengadaan melalui lembaga-lembaga resmi seperti LKPP, Kementerian PUPR, dan lembaga berkompeten lainnya (Ramli, 2011)
		Pokja Pemilihan sebaiknya tidak menetapkan persyaratan personil yang berlebihan, contohnya tidak menetapkan persyaratan peralatan yang bukan peralatan utama, tidak menetapkan persyaratan tahun pembuatan alat dengan tujuan bahwa alat yang disediakan terjamin kelaikan fungsinya, menetapkan persyaratan sertifikat layak fungsi alat, melakukan klarifikasi untuk hal-hal yang meragukan/ klarifikasi tidak tuntas, tidak menetapkan pemenang di beberapa paket dengan personil dan peralatan yang sama. ((Kementerian PU & PR, 2017)
P5	Tidak ada peserta yang menyampaikan dokumen penawaran setelah ada pemberian waktu perpanjangan karena Peserta tidak mengetahui jadwal	Pada bagian 4.2.2 Lampiran II Peraturan LKPP No.12 Tahun 2021, dapat ditambahkan penjabaran mengenai : - Panitia tender wajib menggunakan Sistem Informasi Pengadaan Secara Elektronik (SPSE) yang dilengkapi dengan fitur notifikasi otomatis dan memastikan semua informasi dalam sistem tersebut selalu terbarukan dan akurat. - Setiap peserta tender wajib menerima notifikasi otomatis terkait perubahan jadwal, perpanjangan waktu, dan informasi penting lainnya melalui email dan SMS.
		Pada Bagian 7 Lampiran II Peraturan LKPP No.12 Tahun 2021, dapat ditambahkan penjabaran mengenai : (1) Panitia tender di Kabupaten Banyumas wajib melakukan evaluasi berkala terhadap efektivitas penyampaian informasi terkait tender kepada peserta. (2) Hasil evaluasi harus dilaporkan kepada LKPP setiap enam bulan sekali dan harus mencakup analisis mengenai kesesuaian jadwal penyampaian informasi, respons peserta, dan identifikasi kendala yang dihadapi. (3) LKPP berhak melakukan audit terhadap laporan evaluasi yang disampaikan oleh Panitia tender untuk memastikan kepatuhan terhadap ketentuan ini. (4) Panitia tender di Kabupaten Banyumas yang gagal melaksanakan kewajiban evaluasi dan monitoring sesuai ketentuan ini dapat dikenakan sanksi administratif.
P9	Tidak ada peserta yang menyampaikan dokumen penawaran setelah ada pemberian waktu perpanjangan karena Paket pekerjaan tidak diminati peserta	Pada Bagian 4 Lampiran II Peraturan LKPP No.12 Tahun 2021, dapat ditambahkan penjabaran mengenai : (1) Spesifikasi teknis dalam dokumen tender harus disusun dengan jelas, ringkas, dan spesifik untuk menghindari kebingungan di kalangan peserta. (2) Panitia tender wajib melakukan konsultasi dengan ahli terkait untuk memastikan bahwa spesifikasi teknis realistis dan dapat dipenuhi oleh calon peserta.

Analysis of Action Recommendations Using MDCA

After finding the recommended actions that have been described in the previous sub-chapter, the recommended actions will be analyzed using *Multiple Criteria Decision Analysis* to get strategy implementation. To use this *tool*, the criteria used will first be defined in order to get the value that will be generated later. The criteria for this analysis are:

- The duration required to implement the action.
- How massive the action will be.
- Level of difficulty of the action.
- Failure cause rate of related factors

After determining the criteria, the weight for each criterion will be determined.

- The duration required to implement the action.

This criterion is given a weight of 15% (0.15) because time is a critical factor in strategy implementation. Strategies that can be implemented in a shorter period of time are often more desirable as they allow relevant parties to see results immediately and make necessary adjustments. However, despite its importance, duration is not always the main deciding criterion if other strategies have a more significant impact.

- How massive the action will be.

This criterion is given a weight of 10% (0.1) as scalability and scope of actions are important to ensure that the strategy can be widely implemented and deliver maximum impact. However, this criterion is given a slightly lower weight as actions that are massive but ineffective or too difficult to implement can be counterproductive.

- Level of difficulty of the action.

This criterion is given a weight of 25% (0.25) because actions that are too difficult may require significant resources or major changes in implementation.

Strategies that are easier to implement tend to have a higher chance of success, so this criterion is given more weight.

- Failure cause rate of related factors

This criterion is given a weight of 50% (0.5) because the main focus of implementing this strategy is to minimize the risk of failure. Therefore, this criterion is given the most weight to ensure that the strategy chosen is a solution to the factor that has the highest rate of causing failure in X Regency.

After determining the weight for each criterion, we will discuss how to score each criterion.

- The duration required to implement the action.

These criteria are subjectively rated on a scale of 1 to 4. Score 1 for actions of long duration and score 4 for those of short duration

- How massive the action will be.

These criteria are subjectively scored on a scale of 1 to 4. Score 1 for massive action and score 4 for non-massive action.

- Level of difficulty of the action.

These criteria are subjectively rated on a scale of 1 to 4. Score 1 for difficult actions and score 4 for non-difficult ones

- Failure cause rate of related factors

These criteria are rated on a scale of 1 to 4 based on the results of a questionnaire that has been processed into an RII value. After obtaining the RII value, the level of cause of each factor will be classified first. This class classification is assessed based on the range of RII values obtained. Class classification can be seen in Table 5

Table 5. Classification of Causes of RII Value

Klasifikasi Penyebab dari Nilai RII				
Range Nilai RII			Klasifikasi Kelas	Nilai
0,25	-	0,4375	Sangat tidak menjadi penyebab	1
0,4375	-	0,625	Tidak menjadi penyebab	2
0,625	-	0,8125	Menjadi penyebab	3
0,8125	-	1	Sangat menjadi penyebab	4

Therefore, a tabulation of the factors along with their factor codes and the class classification of the factors will be provided. The tabulation will be given in order according to the RII value obtained for each factor. Table 6 is a table that includes codes, RII values, factors, and class classifications for each factor.

Table 6. Class Classification for Each Factor

Kode	Nilai	Faktor	Klasifikasi Kelas
P13	0.802	Waktu yang tersedia untuk menyiapkan dokumen penawaran terlalu sedikit	Menjadi Penyebab
P17	0.792	Dokumen penawaran tidak lengkap	Menjadi Penyebab
P16	0.729	Peserta gagal mengupload dokumen penawaran	Menjadi Penyebab
P5	0.719	Peserta tidak mengetahui jadwal	Menjadi Penyebab
P24	0.708	Spesifikasi teknis peserta tender kurang dari yang disyaratkan pada dokumen pemilihan	Menjadi Penyebab
P34	0.698	Pengguna Jasa menetapkan HPS terlalu rendah	Menjadi Penyebab
P27	0.688	Kualifikasi personil peserta tidak sesuai dengan dokumen pemilihan	Menjadi Penyebab
P31	0.677	Ketidakpatuhan terhadap persyaratan hukum	Menjadi Penyebab
P33	0.677	Ketidakcukupan informasi atau detail yang diperlukan untuk paket pekerjaan yang menyebabkan multitafsir	Menjadi Penyebab
P15	0.667	Peserta terlambat mengetahui pengumuman penawaran	Menjadi Penyebab
P26	0.615	Peserta tidak hadir dalam pembuktian kualifikasi	Tidak Menjadi Penyebab
P14	0.604	Peserta tidak siap dengan sistem elektronik yang dipakai	Tidak Menjadi Penyebab
P20	0.604	Surat-surat administrasi (SBU, IUJK, SKA/SKT, SPT) tidak dilampirkan / tidak sesuai	Tidak Menjadi Penyebab
P25	0.604	Peserta tidak siap dengan bukti kualifikasi yang dimiliki	Tidak Menjadi Penyebab
P28	0.604	Peralatan minimal tidak sesuai dengan dokumen pemilihan	Tidak Menjadi Penyebab
P18	0.594	Jaminan penawaran tidak sesuai dengan dokumen	Tidak Menjadi Penyebab
P30	0.594	Metode pelaksanaan tidak sesuai	Tidak Menjadi Penyebab
P4	0.573	Proses tender tidak sesuai dengan perpres	Tidak Menjadi Penyebab
P19	0.573	Surat penawaran tidak sesuai dengan dokumen	Tidak Menjadi Penyebab
P9	0.552	Paket pekerjaan tidak diminati peserta	Tidak Menjadi Penyebab
P10	0.542	Peserta kurang memahami site proyek	Tidak Menjadi Penyebab
P32	0.531	Kesalahan pengetikan pada dokumen pemilihan	Tidak Menjadi Penyebab
P11	0.521	Resiko paket pekerjaan yang tinggi	Tidak Menjadi Penyebab
P35	0.510	Estimator penyedia jasa kurang berpengalaman	Tidak Menjadi Penyebab
P37	0.479	Besarnya biaya overhead proyek yang dimasukkan peserta ke dalam dokumen penawaran	Tidak Menjadi Penyebab

After determining the weight and value of each criterion for all recommended actions, a *Multiple Criteria Decision Analysis* (MDCA) calculation is carried out for each recommended action. The calculation will use the formula:

$$V(a) = \sum_{i=1}^{n} v_i(a) w_i$$

Where:

V(a) = the value of all alternatives a

vi (a) = score value representing the performance of alternative a,

wi= the weight given to the importance of criterion i.

The final score of each recommendation will be multiplied by 25 so that the score scale becomes 0 - 100. Action recommendations that have been calculated will be grouped based on the MDCA assessment level. The strategy implementation level scale is determined into three levels, namely: poor, moderate and good. The determination of the scale is shown in Figure 2. This scale is also used by Kruger & Kerney (2005) in measuring information security awareness in a mining company (Amin, 2014). Kusumaningrum et al. (2022) also used the same levels for assessing the level of *cyber* security awareness.

Figure 2. Scale of Strategy Implementation Levels

Table 7 is the result of the MDCA calculation carried out with the steps above. Green colored columns represent good strategy implementation, yellow colored columns represent sufficient strategy implementation, red colored columns represent poor strategy implementation.

Table 7. Calculation Results

Kode faktor	Faktor	Rekomendasi tindakan	Durasi	Masif	Sulit	Faktor Penyebab	Nilai akhir
P27	Kualifikasi personil peserta tidak sesuai dengan dokumen pemilihan	Penyedia Jasa dianjurkan mengoptimalkan rotasi personil yang sudah memiliki kualifikasi yang sesuai untuk proyek yang berbeda	4	4	3	3	86.25
P16	Peserta gagal mengupload dokumen penawaran	Pada PerBup, dapat ditambahkan pasal mengenai hotline Layanan Pengadaan Secara Elektronik apabila terjadi kesalahan sistem.	3	3	4	3	85.00
P17	Dokumen penawaran tidak lengkap	Penyedia Jasa dianjurkan dapat meneliti kembali kelengkapan dan persyaratan masing – masing kegiatan yang dilelangkan sebelum mendaftar	3	3	4	3	85.00
P13	Waktu yang tersedia untuk menyiapkan dokumen penawaran terlalu sedikit	Pada Perbup, dapat ditambahkan pasal mengenai evaluasi terhadap setiap proses tender untuk mengidentifikasi kendala peserta dan Menggunakan hasil evaluasi untuk melakukan perbaikan dan penyesuaian prosedur	4	3	3	3	82.50
P34	Pengguna Jasa menetapkan HPS terlalu rendah	Pengguna Jasa dianjurkan perlu melakukan survei harga pasar	4	3	3	3	82.50
P24	Spesifikasi teknis peserta tender kurang dari yang disyaratkan pada dokumen pemilihan	Pokja Pemilihan dianjurkan untuk menegaskan peserta tender bahwa spesifikasi yang digunakan adalah yang terdapat pada buku spesfikasi/RKS dan gambar	3	3	3	3	78.75
P17	Dokumen penawaran tidak lengkap	Penyedia Jasa dianjurkan menyediakan pembinaan serta bimbingan teknis untuk karyawan perusahaan khususnya untuk bidang administrasi penawaran	3	3	3	3	78.75
P31	Ketidakpatuhan terhadap persyaratan hukum	Sebaiknya koordinasi antara konsultan perencana, PPK, dan Kelompok Kerja Pemilihan ditingkatkan untuk memastikan semua aspek hukum terpenuhi.	3	3	3	3	78.75
P33	Ketidakcukupan informasi atau detail yang diperlukan untuk paket pekerjaan yang menyebabkan multitafsir	KPA dianjurkan melakukan review akhir antara desain dari Konsultan perencana dengan Standard dan peraturan yang berlaku	3	3	3	3	78.75
P5	Peserta tidak mengetahui jadwal	Pada Peraturan LKPP No.12 Tahun 2021, dapat ditambahkan pasal mengenai Panitia tender wajib menggunakan SPSE yang dilengkapi dengan fitur notifikasi otomatis dan Setiap peserta tender wajib menerima notifikasi otomatis melalui email dan SMS.	3	4	2	3	76.25

Implementation of Strategies to Minimize Tender Failure

Next, a strategy implementation table will be created, the strategy implementation is made of recommended actions and will be sorted based on the scores in MDCA in Table 7. If there is a similarity in the final value, the *ranking* order of the strategy implementation will be based on the RII value of the related factors because it is part of the criteria assessment in MDCA. The strategy implementation table can be seen in Table 8. In Table 8 can also be seen the level of the resulting strategy. Green will symbolize a good strategy, yellow symbolizes a sufficient strategy, and red symbolizes a bad strategy.

Table 8. Strategy Implementation

Nomor strategi	Kode faktor	Faktor	Strategi Implementasi	Nilai akhir
1	P27	Kualifikasi personil peserta tidak sesuai dengan dokumen pemilihan	Sebaiknya Penyedia jasa menerapkan rotasi personil, dalam artian mengoptimalkan rotasi personil yang sudah memiliki kualifikasi yang sesuai untuk proyek yang berbeda, merupakan strategi manajemen sumber daya manusia yang sangat efektif (Dessler, 2013). Dengan menerapkan rotasi ini, perusahaan dapat memaksimalkan penggunaan sumber daya manusia yang sudah ada tanpa harus mengeluarkan biaya tambahan untuk merekrut personil baru (Noe et al., 2015).	86.25
2	P16	Peserta gagal mengupload dokumen penawaran	Pada Lampiran I Peraturan Bupati Kabupaten Banyumas, dapat ditambahkan mengenai Tugas dan Fungsi Bagian Layanan Pengadaan Secara Elektronik, yaitu : (17) Menyediakan hotline Layanan Pengadaan Secara Elektronik apabila terjadi kesalahan sistem.	85.00
3	P17	Dokumen penawaran tidak lengkap	Penyedia Jasa sangat dianjurkan untuk meneliti kembali kelengkapan dan persyaratan masing – masing kegiatan yang dilelangkan sebelum mendaftar (Prihatini, Malik, & Komara, 2017)	85.00
4	P13	Waktu yang tersedia untuk menyiapkan dokumen penawaran terlalu sedikit	Pada Lampiran I Peraturan Bupati Kabupaten Banyumas, dapat ditambahkan poin mengenai Tugas dan Fungsi Bagian Layanan Pengadaan Barang/Jasa, yaitu : (11) Melakukan evaluasi terhadap setiap proses tender untuk mengidentifikasi kendala yang dihadapi oleh peserta dalam menyiapkan dokumen penawaran. (12) Menggunakan hasil evaluasi untuk melakukan perbaikan dan penyesuaian prosedur tender di masa mendatang	82.50
5	P34	Pengguna Jasa menetapkan HPS terlalu rendah	Pada Bagian 3.1 di Lampiran II Peraturan LKPP No.12 Tahun 2021, dapat ditambahkan bahwa Pengguna Jasa perlu melakukan survei pasar secara menyeluruh dan menggunakan metode estimasi biaya yang sesuai dengan jenis pekerjaan konstruksi yang ditenderkan.	82.50
6	P24	Spesifikasi teknis peserta tender kurang dari yang disyaratkan pada dokumen pemilihan	Pokja Pemilihan dianjurkan membuat penegasan kepada peserta tender bahwa spesifikasi yang digunakan adalah yang terdapat pada buku spesfikasi/RKS dan gambar (bukan spesifikasi yang disebutkan dalam BQ) (Handoza, 2013)	78.75

CONCLUSION

The conclusion of this study shows that of the 37 factors that caused tender failure identified through the literature study, 25 factors passed the validity and reliability tests, with 10 of them being the main causes of tender failure in X Regency. These factors include short document preparation time, incomplete documents, and delays in knowing about the bid announcement. These factors include short document preparation time, incomplete documents, as well as participants' delay in learning about the bid announcement. In addition, this study identified 46 strategies to minimize tender failures, with 5 main strategies that are expected to be implemented by related parties, such as optimizing personnel rotation and adding articles in local regulations. The author also provides several suggestions, including the importance of conducting research in a location close to the researcher, the challenges in obtaining objective data, and the recommendation that the assessment of implementation strategies be carried out by procurement experts.

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