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IDENTIFICATION OF DOMINANT RISK FACTORS CAUSING INTERIOR PROJECT DELAYS BASED ON CONTRACT MANAGEMENT STANDARD (CMS) (CASE STUDY: PT. X)

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Abstract

Retail interior projects are experiencing rapid development but face chronic delays. A case study at PT. X shows that 40–50% of projects experience delays, resulting in cost overruns and reputational decline. The root cause is a weak contract management process. This study aims to identify the dominant risk factors causing delays in retail interior projects using the Contract Management Standard (CMS) framework as the activity basis. The research method employs a mixed-methods design involving qualitative content validation and quantitative risk analysis through surveys and statistical ranking. The research comprises three main stages: (1) validation of 51 CMS activities from the literature by five experts, resulting in 47 activities relevant to interior projects; (2) validation of risk factors from the literature by experts, yielding 31 relevant delay risks; and (3) a primary survey of 46 PT. X respondents to assess the probability and impact of the 31 risks, followed by ranking analysis. The results identified 19 dominant risk factors (high risk). The three highest-ranking risks are: (1) risk of error in contract/work drawing interpretation, (2) risk of error in monitoring or accepting contract performance, and (3) risk of delay in approval of fit-out drawings by Building Management. These findings indicate that the majority of critical risks (9 out of 19) occur during the *Contract Execution* stage. This study provides a prioritized risk list that companies can use as a basis for developing effective mitigation strategies.

Keywords: Contract Management, Contract Management Standard (CMS), Interior Project, Project Delay, Risk Management

INTRODUCTION

The interior design industry is experiencing rapid growth, both globally and domestically (Chandwade, 2024; Flanders, 2021). In Indonesia, this growth is driven by the need for aesthetically pleasing and functional commercial spaces such as retail, café, and residential spaces (Ministry of Tourism and Creative Economy, 2020). However, as the number of projects increases, delays have become a growing issue (Reza, 2022; Margareta, 2016). As a company focused on retail interiors, PT. X faces similar challenges; internal data indicates that approximately 40-50% of its projects experience delays (Setiawan, 2023; Utami & Ramadhan, 2021).

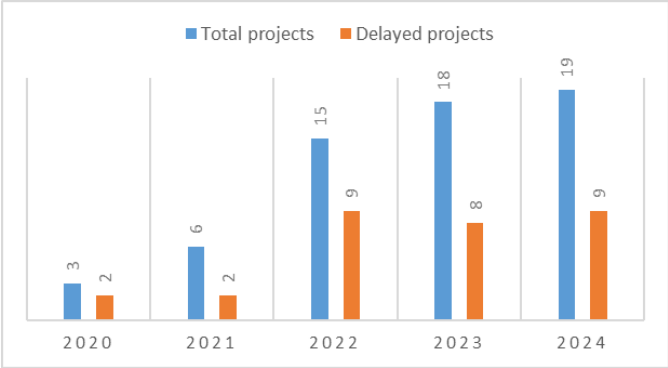

Figure 1. Number of PT. X Projects that Experienced Delays

Source: PT.X Internal Data

This phenomenon has become a crucial issue due to the characteristics of the projects handled by PT. X. These retail interior projects have very short work durations, usually only ranging from 30-90 days (Budi & Santoso, 2020). This short duration is also regulated in the Fit-out Guidelines by the building manager (Grand Indonesia, 2023). Furthermore, this work is complex, involves many vendors, and is highly interdependent (sequence dependent), where the delay in one activity can hamper the entire project (Puil & Weele, 2014; Wijaya & Syafrudin, 2021).

The impact of this delay was felt directly by the company. Significant cost overruns occurred, which reduced the company's profits.

Table 1. Cost Overrun on Projects Previously Worked on by PT. X

Year	Cost Overrun (%)	Lost Profit (%)	Information
2020	4.5% of the initial budget	0	Overrun closed Management Reserve
2021	7.7% of the initial budget	0	Overrun closed Management Reserve
2022	6.4% of the initial budget	0	Overrun closed Management Reserve
2023	8.7% of the initial budget	14.6%	Overrun erodes profits
2024	8.9% of the initial budget	15.2%	Overrun erodes profits

Furthermore, these delays lead to a loss of reputation and client trust. This is reflected in company data showing a decline in tender win percentage from 66.7% (2021) to 46.3% (2024).

Table 2. Tender Winning Rate of PT. X

Year	Tender Incoming	Tender Won	Lost Tender	Win Rate (%)
2020	5	3	2	60
2021	9	6	3	66.7
2022	28	15	13	53.6
2023	33	18	15	54.4
2024	41	19	22	46.3

Source: PT. X Internal Data

An internal analysis identified one of the root causes of the problem as a weak contract system (Flores, 2022). It was found that PT. X only used a simple Purchase Order (PO) document as a form of cooperation, which did not include a late payment penalty clause or clear rights and responsibilities. This finding aligns with studies that state that poor contract management is a major cause of project.

Several studies have examined project delays and contract management in construction contexts, though research specifically focused on retail interior projects in Indonesia remains limited. Internationally, Hanak and Vitkova (2022) investigated contract management failures in European construction projects and found that inadequate contract documentation and poor monitoring systems were primary causes of delays (Hanak & Vitkova, 2022) . Similarly, Puil and Weele (2014) demonstrated that contract management inefficiencies in complex projects led to supply chain disruptions and schedule overruns (Puil & Weele, 2014) . In the Indonesian context, Zentenno and Suroso (2022) studied construction project delays and identified weak contract administration as a significant contributor (Zentenno & Suroso, 2022) . However, their study focused on large-scale infrastructure projects rather than fast-paced retail interiors. Masombe, Rumayar, and Rondonuwu (2021) examined risk management in construction projects in Indonesia and emphasized the importance of systematic risk identification, though they did not specifically address contract management activities (Masombe, Rumayar, & Rondonuwu, 2021) . More recently, Zali, Mulyani, and Anif (2025) highlighted the critical role of organizational risk identification capabilities in project success (Zali, Mulyani, & Anif, 2025) . Despite these contributions, there is a notable gap in research that systematically maps delay risks to specific contract management activities in the context of Indonesian retail interior projects, which have unique characteristics such as extremely short durations (30-90 days), high vendor interdependency, and strict building management regulations.

Projects with high uncertainty such as this require a sound risk analysis to prevent failure (Masombe, Rumayar, & Rondonuwu, 2021). Project success is highly dependent on an organization's ability to identify and manage risks (Zali, Mulyani, & Anif, 2025). Before PT. X can improve its system, a fundamental step is to clearly understand the key risks that cause these failures. Therefore, this study focuses on identifying the dominant risk factors causing project delays at PT. X. To ensure comprehensive risk identification, this study maps risks to an activity framework adapted from the Contract Management Standard (CMS) (NCMA, 2022).

METHODS

This research used a mixed-methods approach (qualitative-quantitative) which is implemented in several sequential stages, as illustrated in the flow diagram. To ensure the validity and reliability of the research instruments, several validation procedures were employed. First, content validity was established through expert validation involving five qualified experts with extensive experience (minimum 10 years) in interior project management. Second, construct

validity was assessed through literature review alignment, ensuring that all risk factors and CMS activities were grounded in established theoretical frameworks. Third, instrument reliability was tested using Cronbach's Alpha coefficient for internal consistency of the survey questionnaire, with a threshold of $\alpha > 0.70$ considered acceptable. Fourth, inter-rater reliability among expert validators was calculated to ensure consistency in their assessments. These validation procedures were conducted iteratively, with instruments refined based on expert feedback before deployment in the main survey.

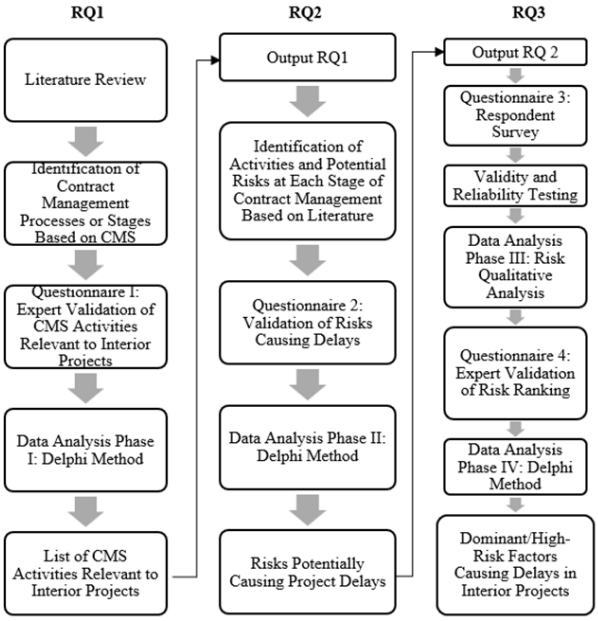

Figure 2. Research Flowchart

Source: Processed by the Author

The first stage (RQ1) focused on content validation to identify contract management activities relevant to interior projects. This process began with 51 sub-activities identified from the Contract Management Standard (CMS) literature. These activities were then validated through Questionnaire 1 and an intensive discussion session by four expert practitioners from PT. X with a minimum of 10 years of experience and one academic expert.

The second stage (RQ2) aims to identify and validate risk factors for delays associated with approved activities. Using Questionnaire 2, the same five experts validated the risk list from the literature review. The experts made corrections, removed invalid factors, and added new risk factors.

The third stage (RQ3) is a quantitative risk analysis to identify dominant risk factors (high risk). The main survey was conducted online using Google Forms with 46 respondents directly involved in the project (such as Project Managers, Site Managers, Quantity Surveyors, and

Supervisors). In the main survey, respondents rated the probability and impact of expert-validated risks using a Likert Scale of 1-5.

Table 3. Project Impact Assessment Scale

Impact Risk		
Criteria	**Mark**	**Information**
Not important	1	Time delays do not affect the work.
Small	2	Execution time increases by 1-5%
Currently	3	Execution time increased by 6-10%
Big	4	Execution time increased by 11-15%
Fatal	5	Execution time increased by >15%

Source: Expert FGD

Table 4. Project Probability Assessment Scale

Probability Risk		
Criteria	**Mark**	**Information**
Seldom happen	1	Risk occurs with a percentage of <20%, rarely occurs in projects.
Possibility small happen	2	Risk occurs with a percentage of 20-40%, sometimes occurring in projects.
Enough Possible happen	3	Risk occurs with a percentage of 40-60%, often occurring in certain projects.
Very possible happen	4	Risks occur at a rate of 60-80%, often occurring in every project.
Almost Certain happen	5	Risk occurs with a percentage of >80%, occurring in every project.

Source: Expert FGD

Data was analyzed (phase III analysis) using validity and reliability tests, followed by risk ranking analysis. The risk value was calculated by multiplying the average value of probability and impact, then mapped on a 5x5 risk matrix to classify the risk (low, medium, high). The risk factors identified as " high risk " were revalidated through structured interviews (phase IV analysis: Delphi Method) with 5 experts to ensure the suitability of the results with field conditions.

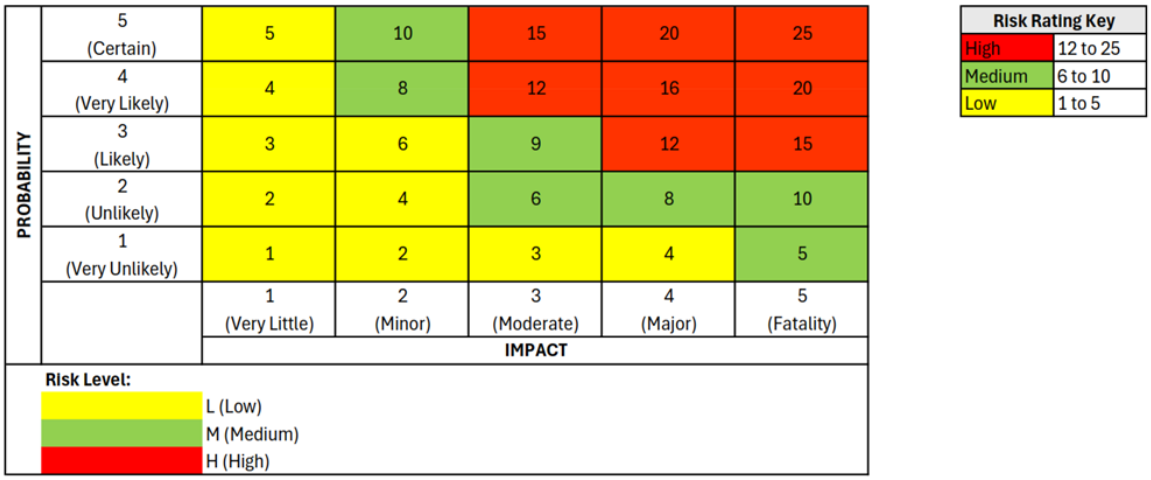

Figure 3. Project Risk Matrix of PT. X

Source: Expert FGD

RESULTS AND DISCUSSION

Phase 1 Outcome: Relevant CMS Activities

The first phase (RQ1) focuses on content validation to identify applicable/relevant contract management activities for interior projects. This process begins with 51 sub-activities and their associated risk factors identified from Contract Management Standard (CMS) literature and previous research, which are presented to experts through Questionnaire 1. The complete list of

In this study, the validation process involved 5 (five) experts who were practitioners in interior projects, specifically PT. X personnel with substantial experience, namely a minimum of 10 (ten) years in interior projects. This qualification ensures that the experts have adequate depths of knowledge not only in contract management in general, but also in the specifics of interior projects.

Table 5. Expert Profile

No	Expert	Education	Position	Experience
1	Expert 1	S1	Project Director	26
2	Expert 2	S1	Purchasing	12
3	Expert 3	S1	Site Manager	11
4	Expert 4	S1	Project Manager	19
5	Expert 5	S2	Project Management Lecturer	14

Source: Processed by the Author

Of the initial 51 CMS sub-activities, the experts eliminated four activities as they were deemed irrelevant or too bureaucratic for a fast-paced retail interior project. Consequently, 47 CMS sub-activities were found to be relevant. The eliminated activities are as follows.

Table 6. Eliminated CMS Activities

No	Code	Activity	Discussion
1	X2.1.4	Document analysis results report	Ineffective. Too bureaucratic. A technical evaluation meeting is sufficient to determine which subcontractors are capable, no formal "report" required.
2	X2.4.1	Filling an appeal	Irrelevant. This is a government tender mechanism (for major civil engineering projects). This process will only slow down projects that are facing deadlines.
3	X2.4.2	Responding to appeal objections	Irrelevant. A logical consequence of X2.4.1 which is also irrelevant.
4	X.3.2.2	Planning contract performance monitoring	Ineffective. For agile projects, planning and monitoring activities occur simultaneously. The formal "plan-monitor" process is inefficient.

Source: Processed by the Author

Phase 2 Results: Validated Risk Factors

Based on 47 relevant activities, experts validated the risk list from the literature. As a result, 16 risks were eliminated. The primary reason for elimination was that they considered commercial/financial risks (e.g., X2.1.3 Pricing error risk) or administrative risks (e.g., X2.3.8 Documentation omissions) that did not directly cause physical project delays.

Table 7. Omitted Risk Variables

No	Code	Risk	Discussion
1	X1.1.2	Risk of inaccuracy or incompleteness of market data	Most experts consider this a purely commercial (cost) risk. Incorrect market data will impact on profit margins or the cost estimate (RAB) but won't directly cause delays in physical construction on the ground.
2	X1.1.3	Risk of incompleteness in identifying potential risks	Considered too general
3	X1.1.4	The risk of selecting the wrong type of contract can result in incorrect risk allocation.	Most experts believe that the type of contract (e.g., fixed price vs. lump sum) has no direct impact on physical delays. What does have an impact is the content or clauses within the contract.
4	X1.2.3	Risk of errors in distribution or delays in the time of issuing requests so that vendors/subcontractors do not receive the RFP on time, the tender is delayed.	Considered an internal administrative issue or a symptom of poor management, not the root cause of project delays. As long as the project deadline remains

No	Code	Risk	Discussion
			unchanged, internal procurement delays are not considered a project risk.
5	X2.1.3	The risk of errors in determining the correct price, which can potentially lead to underpricing or overpricing.	Considered a financial/commercial risk, not a delay risk.
6	X2.2.2	Risk of ambiguity in setting the objectives of the tender document	Considered a risk of the (commercial) negotiation process. Negotiation goals (e.g., price targets) have a greater impact on profit than schedule.
7	X2.3.3	The risk of making mistakes in negotiation strategy so that you don't get the best price	This risk explicitly mentions “not getting the best price”, which is purely a commercial (cost) risk.
8	X2.3.4	Risk of non-conformity or omission in finalizing negotiations	Considered a pure administrative risk.
9	X2.3.5	Risk of errors in revising the offer	Considered a pure administrative risk.
10	X2.3.7	Risk of inaccuracy in finalizing or handing over contracts	The majority of experts (especially the P1, P2, P3 field teams) consider this an administrative risk.
11	X2.3.8	Risk of negligence in documenting the results of the tender	Considered a purely administrative risk. Failure to document (archive) will not prevent the contractor from working on site.
12	X3.1.3	Risk of incomplete or lost contract documentation	Considered a pure administrative risk.
13	X3.1.4	Risk of errors in recording or reporting costs	Considered a pure cost control risk. Cost reporting errors are not causally related to physical schedule delays.
14	X4.1.6	Risk of mismatch or inconsistency of information in the contract	Considered a pure administrative risk that occurs in the closing phase (after physical completion).
15	X4.1.7	The risk of errors in final payments causing late payments and disputes	Considered an effect, not a cause. Late final payments are the result of a late project (or a finance administration issue), not the cause of the project being late.
16	X4.1.9	Risk of inaccuracy in contract finalization	Considered a pure administrative risk in the closing phase (after physical completion).

Source: Processed by the Author

A total of 31 risk factors were found to be valid and relevant as causes of delays. Of these, 13 received editorial revisions from experts to be more specific and contextualized to the retail interior project. The following are the risk factors validated by experts.

Stage 3 Results: Dominant Risk Factors (High Risk)

The main survey was distributed online and successfully collected 46 respondents whose data could be processed. These respondents consisted of individuals directly involved in project activities at PT. X. Respondent Profile Based on Position The distribution of respondents' positions was very diverse, reflecting various functions in project implementation. The majority of respondents were Project Supervisors (SPV), which covered 37.5% of the total respondents. The following is a breakdown of the percentage of respondents based on position.

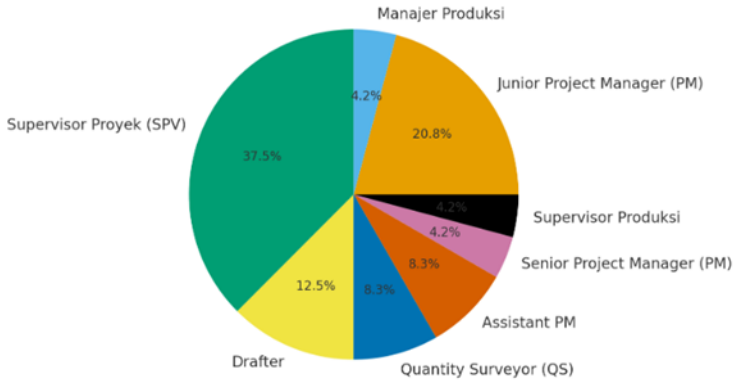

Figure 4. Position of Respondent PT. X

Source: Processed by the Author

In this stage, each risk variable is assessed based on the average frequency and impact values obtained from the respondent questionnaire. These values are then combined to determine the risk severity using a probability and impact matrix. Below are the results of the calculation of the average frequency and impact values for each variable.

Table 8. Average Risk Probability Values

Risk Variable	Probability Value					Average
	Rarely Occurs	Unlikely to Occur	Quite Likely to Occur	Very Likely to Occur	Almost Certain to Occur	
	1	2	3	4	5	
X1.1.1	1.00	12.00	48.00	92.00	0.00	3.33
X1.1.5	0.00	6.00	54.00	100.00	0.00	3.48
X1.2.1	1.00	40.00	75.00	0.00	0.00	2.52
X1.2.2	0.00	0.00	12.00	88.00	100.00	4.35
X1.2.4	0.00	4.00	66.00	88.00	0.00	3.43
X1.2.5	0.00	0.00	21.00	152.00	5.00	3.87
X2.1.1	0.00	10.00	111.00	16.00	0.00	2.98
X2.1.2	0.00	0.00	36.00	136.00	0.00	3.74
X2.2.1	0.00	8.00	87.00	52.00	0.00	3.20

Risk Variable	Probability Value					Average
	Rarely Occurs	Unlikely to Occur	Quite Likely to Occur	Very Likely to Occur	Almost Certain to Occur	
	1	2	3	4	5	
X2.2.3	0.00	0.00	6.00	136.00	50.00	4.17
X2.3.1	0.00	32.00	90.00	0.00	0.00	2.65
X2.3.2	0.00	4.00	33.00	132.00	0.00	3.67
X2.3.6	4.00	42.00	63.00	0.00	0.00	2.37
X3.1.1	0.00	2.00	72.00	84.00	0.00	3.43
X3.1.2	0.00	0.00	42.00	128.00	0.00	3.70
X3.1.5	0.00	0.00	18.00	140.00	25.00	3.98
X3.1.6	0.00	12.00	66.00	72.00	0.00	3.26
X3.1.7	0.00	0.00	12.00	152.00	20.00	4.00
X3.2.1	0.00	6.00	93.00	48.00	0.00	3.20
X3.2.3	0.00	4.00	6.00	40.00	160.00	4.57
X3.3.1	0.00	0.00	15.00	92.00	90.00	4.28
X3.3.2	0.00	4.00	72.00	80.00	0.00	3.39
X3.4.1	0.00	0.00	18.00	144.00	20.00	3.96
X3.4.2	0.00	2.00	3.00	40.00	170.00	4.67
X3.4.3	0.00	0.00	12.00	152.00	20.00	4.00
X4.1.1	0.00	8.00	78.00	64.00	0.00	3.26
X4.1.2	0.00	0.00	12.00	140.00	35.00	4.07
X4.1.3	2.00	44.00	66.00	0.00	0.00	2.43
X4.1.4	0.00	0.00	0.00	164.00	25.00	4.11
X4.1.5	0.00	0.00	39.00	132.00	0.00	3.72
X4.1.8	0.00	4.00	12.00	144.00	20.00	3.91

Source: Processed by the Author

Table 9. Average Risk Impact Values

Risk Variable	Impact Value					Average
	Insignificant	Minor	Moderate	Major	Fatal	
	1	2	3	4	5	
X1.1.1	0.00	0.00	84.00	72.00	0.00	3.39
X1.1.5	0.00	0.00	54.00	112.00	0.00	3.61
X1.2.1	0.00	80.00	18.00	0.00	0.00	2.13
X1.2.2	0.00	0.00	0.00	8.00	220.00	4.96
X1.2.4	0.00	14.00	117.00	0.00	0.00	2.85
X1.2.5	0.00	0.00	30.00	144.00	0.00	3.78
X2.1.1	0.00	46.00	69.00	0.00	0.00	2.50
X2.1.2	0.00	0.00	30.00	144.00	0.00	3.78
X2.2.1	0.00	16.00	66.00	64.00	0.00	3.17
X2.2.3	0.00	0.00	0.00	8.00	220.00	4.96

Risk Variable	Impact Value					Average
	Insignificant	Minor	Moderate	Major	Fatal	
	1	2	3	4	5	
X2.3.1	0.00	58.00	51.00	0.00	0.00	2.37
X2.3.2	0.00	0.00	54.00	112.00	0.00	3.61
X2.3.6	0.00	80.00	18.00	0.00	0.00	2.13
X3.1.1	0.00	2.00	117.00	24.00	0.00	3.11
X3.1.2	0.00	16.00	96.00	24.00	0.00	2.96
X3.1.5	0.00	0.00	27.00	148.00	0.00	3.80
X3.1.6	0.00	0.00	33.00	140.00	0.00	3.76
X3.1.7	0.00	0.00	27.00	148.00	0.00	3.80
X3.2.1	0.00	48.00	66.00	0.00	0.00	2.48
X3.2.3	0.00	0.00	9.00	8.00	205.00	4.83
X3.3.1	0.00	0.00	0.00	0.00	230.00	5.00
X3.3.2	0.00	0.00	21.00	156.00	0.00	3.85
X3.4.1	0.00	0.00	9.00	172.00	0.00	3.93
X3.4.2	0.00	0.00	15.00	0.00	205.00	4.78
X3.4.3	0.00	0.00	60.00	104.00	0.00	3.57
X4.1.1	0.00	34.00	87.00	0.00	0.00	2.63
X4.1.2	0.00	0.00	0.00	4.00	225.00	4.98
X4.1.3	36.00	20.00	0.00	0.00	0.00	1.22
X4.1.4	0.00	0.00	3.00	180.00	0.00	3.98
X4.1.5	0.00	0.00	102.00	48.00	0.00	3.26
X4.1.8	0.00	0.00	12.00	20.00	185.00	4.72

Source: Processed by the Author

Risk levels are determined by multiplying the frequency scale value by the impact scale value for each risk variable. This multiplication indicates the relative risk level of each identified factor. These risks are then ranked from highest to lowest to determine the factors most influential in project delays. The following are the results of multiplying the impact and frequency, as well as the classification of risk categories based on the risk matrix.

Table 10. Risk Score Calculation Results

No	Risk Variable	Probability (P)	Impact (I)	Risk Score (P x I)	Risk Level	Rank
1	X1.1.1	3.33	3.39	11.28	Medium	20
2	X1.1.5	3.48	3.61	12.55	High	17
3	X1.2.1	2.52	2.13	5.37	Medium	29
4	X1.2.2	4.35	4.96	21.55	High	3
5	X1.2.4	3.43	2.85	9.78	Medium	24
6	X1.2.5	3.87	3.78	14.64	High	12
7	X2.1.1	2.98	2.50	7.45	Medium	27
8	X2.1.2	3.74	3.78	14.14	High	14
9	X2.2.1	3.20	3.17	10.14	Medium	23

No	Risk Variable	Probability (P)	Impact (I)	Risk Score (P x I)	Risk Level	Rank
10	X2.2.3	4.17	4.96	20.69	High	5
11	X2.3.1	2.65	2.37	6.28	Medium	28
12	X2.3.2	3.67	3.61	13.26	High	15
13	X2.3.6	2.37	2.13	5.05	Medium	30
14	X3.1.1	3.43	3.11	10.68	Medium	22
15	X3.1.2	3.70	2.96	10.93	Medium	21
16	X3.1.5	3.98	3.80	15.13	High	11
17	X3.1.6	3.26	3.76	12.26	High	18
18	X3.1.7	4.00	3.80	15.22	High	10
19	X3.2.1	3.20	2.48	7.92	Medium	26
20	X3.2.3	4.57	4.83	22.03	High	2
21	X3.3.1	4.28	5.00	21.41	High	4
22	X3.3.2	3.39	3.85	13.05	High	16
23	X3.4.1	3.96	3.93	15.57	High	9
24	X3.4.2	4.67	4.78	22.35	High	1
25	X3.4.3	4.00	3.57	14.26	High	13
26	X4.1.1	3.26	2.63	8.58	Medium	25
27	X4.1.2	4.07	4.98	20.24	High	6
28	X4.1.3	2.43	1.22	2.96	Low	31
29	X4.1.4	4.11	3.98	16.35	High	8
30	X4.1.5	3.72	3.26	12.12	High	19
31	X4.1.8	3.91	4.72	18.46	High	7

Source: Processed by the Author

Based on the risk score calculations, 19 risk variables were identified with a risk score of 11 or higher, as shown in the risk matrix, thus categorizing them as high-risk. The following are the 19 dominant risk factors causing delays in interior projects, ranked by highest score.

Table 11. Dominant Risk Factors Causing Delays in Interior Projects

Ranking	Code	Risk Factors	Process
1	X3.4.2	The risk of errors in contract interpretation, potentially leading to implementation deviating from the agreement	Contract Execution
2	X3.2.3	Risk of errors in monitoring or accepting contract performance	Contract Execution
3	X1.2.2	The risk of delays in approval of fit-out submission drawings (MEP, Architecture) by the Mall Building Management (BM) resulting in the Work Permit (SIK) not being issued	Creating a Request for Quote
4	X3.3.1	The risk of errors in determining supply chain provisions, potentially leading to supply delays and material mismatches.	Contract Execution

Ranking	Code	Risk Factors	Process
5	X2.2.3	Risk of errors in communication or understanding during discussions, potentially leading to miscommunication of scope and expectations.	Forming a Contract
6	X4.1.2	The risk that the work results will not match the mock-up or specifications that have been agreed upon.	Contract Closing
7	X4.1.8	Risk of negligence in evaluating aesthetic aspects and compliance with fit-out/client standards	Contract Closing
8	X4.1.4	The risk of equipment coordination mismatches causing incorrect placement or low efficiency.	Contract Closing
9	X3.4.1	Risk of errors in managing contract changes so that change orders are not documented/handled	Contract Execution
10	X3.1.7	Risk of non-conformity or delay in output /result management	Contract Execution
11	X3.1.5	Risk of errors or delays in communication	Contract Execution
12	X1.2.5	Risk of errors in change communication	Creating a Request for Quote
13	X3.4.3	The risk of contracts being hastily established without complete technical and pricing validation	Contract Execution
14	X2.1.2	The risk of errors in assessing the seller's terms and not anticipating contractual risks or hidden costs	Forming a Contract
15	X2.3.2	Mall fit-out experience causes delays in interior work.	Forming a Contract
16	X3.3.2	The risk of errors in the preparation or issuance of sub-contracts, potentially resulting in unclear scope and unfulfilled deliverables.	Contract Execution
17	X1.1.5	The risk of ambiguity or ambiguity in the RFP document can lead to vendors/subcontractors potentially misinterpreting it.	Creating a Request for Quote
18	X3.1.6	Risk of inaccuracy or omission in performance evaluation	Contract Execution
19	X4.1.5	Risk of non-conformity in sub-contract completion	Contract Closing

Source: Processed by the Author

Analysis of the 19 dominant risks (Table 3.7) reveals several key findings:

1. The majority of risks occurred at the contract execution stage of 19 high risks, 9 of which (47%) were at the "contract execution" stage. This indicates that although the planning (pre-award) and contract formation (award) phases are important, failures in control, supervision, and communication during the execution (post-award) phase are the most dominant triggers of delays in fast-paced interior projects.
2. Top three ranked risks

a) Rank 1 (X3.4.2): Misinterpretation of working drawings. This risk is considered to have the most severe impact because misinterpretation of technical specifications or working drawings will immediately result in rework, which is significantly time-consuming and expensive.
b) Rank 2 (X3.2.3): Performance monitoring errors. This risk highlights the failure to monitor finishing quality in real time. In interior projects, if small defects are not promptly corrected, they will accumulate and explode into a long defect list at the final stage (snagging), delaying the handover of the work.
c) Rank 3 (X1.2.2): Delayed Building Management approval. This is a very specific external risk for retail interiors. Experts confirmed that without building management approval of fit-out drawings, work permits will not be issued, and no physical work can begin. This is a critical bottleneck early in the project.

3. Supply chain risks and vendor specifications related to material risks (X3.3.1) and misjudgment of vendor lead times (X2.1.2) also fell into the high category. This underscores the importance of supply chain management in very short-duration projects. Furthermore, selecting subcontractors unfamiliar with mall regulations (X2.3.2) proved to be a high risk, indicating that technical expertise alone is not enough

CONCLUSION

Retail interior projects are experiencing rapid development but face chronic delays. A case study at PT. X shows that 40–50% of projects experience delays, resulting in cost overruns and reputational decline. The root cause is a weak contract management process. This study aims to identify the dominant risk factors causing delays in retail interior projects using the Contract Management Standard (CMS) framework as the activity basis. The research method employs a mixed-methods design involving qualitative content validation and quantitative risk analysis through surveys and statistical ranking. The research comprises three main stages: (1) validation of 51 CMS activities from the literature by five experts, resulting in 47 activities relevant to interior projects; (2) validation of risk factors from the literature by experts, yielding 31 relevant delay risks; and (3) a primary survey of 46 PT. X respondents to assess the probability and impact of the 31 risks, followed by ranking analysis. The results identified 19 dominant risk factors (high risk). The three highest-ranking risks are: (1) risk of error in contract/work drawing interpretation, (2) risk of error in monitoring or accepting contract performance, and (3) risk of delay in approval of fit-out drawings by Building Management. These findings indicate that the majority of critical risks (9 out of 19) occur during the *Contract Execution* stage. This study provides a prioritized risk list that companies can use as a basis for developing effective mitigation strategies.

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