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REMEDIAL SOLUTIONS FOR POOR PLANNING IN PERAK CONSTRUCTION SECTOR

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Abstract: *Through the implementation of the Perak Sejahtera 2030 initiative, the Perak State Government aims to significantly improve and modernize the construction industry. Yet, the construction sector faces ongoing challenges related to project execution, which frequently stem from early-stage planning deficiencies. This research aims to investigate the factors contributing to these issues and suggest solutions to prevent poor planning, with a specific focus on Grade 7 (G7) contractors specializing in construction sector focusing on Perak state. A quantitative research methodology was employed, utilizing an online Google form. A total of 169 survey questionnaires were distributed to efficiently gather primary data, yielding 92 completed responses. The findings reveal that a lack of managerial experience and inadequate scheduling are the most prominently agreed-upon factors leading to poor planning. To counteract these challenges, respondents ranked performance monitoring as the most effective preventative measure. In conclusion, this research highlights managerial and scheduling gaps as the fundamental root causes of planning failures within the Perak construction sector. By* *identifying these critical areas, the study concludes that implementing continuous performance monitoring serves as a vital remedial solution. This approach will give the essential oversight needed to prevent future planning failures and ultimately drive overall project success.*

Keywords*:* *Poor planning, project management, construction sector.*

Introduction

The construction industry plays an essential role in driving national development, urban migration, and improving socioeconomic. The construction sector in Malaysia serves as an important economic pillar, projecting market valuation which exceeds USD 41 billion (Department of Statistics Malaysia [DOSM], 2024; Mordor Intelligence, 2026). Modern Malaysian construction landscape is moving toward complex private-sector industrial facilities, green infrastructure, and hyperscale data centres (The Star, 2026).

Regionally, Perak's construction sector were known to be at a slower pace of infrastructure development historically compared to neighbouring industrial hubs like Penang and Selangor. However, it is seen to have expanded rapidly in civil engineering, building construction, and specialized technical works (DOSM, 2024). This regional construction boom is heavily anchored by the execution of the Perak Sejahtera 2030 masterplan launched by the state government which acts as a comprehensive roadmap designed to modernize the state and become a highly competitive economic powerhouse.

Perak Sejahtera 2030 heavily depends on the construction sector as its physical backbone in accomplishing high-impact mega-projects, such as the Automotive High-Tech Valley (AHTV) in Tanjong Malim and the Silver Valley Technology Park (SVTP) in Khantan (Perak State Government, 2023). Nonetheless, this masterplan establishes strict Environmental, Social, and Governance (ESG) targets, moving builders away from conventional practices while adopting eco-industrial park models, low-carbon designs, and modern methods of construction.

However, the process of turning this goal into reality seems significant hurdles. As construction projects grow increasingly complex, fragmented, and fast-paced, the industry frequently suffers from chronic inefficiencies, including material waste, budget overruns, labour shortages, and unexpected project delays (Musarat et al., 2021). To overcome these challenges and making sure Perak Sejahtera 2030 is being delivered successfully, the proper construction planning is essential.

As shown in empirical evidence, it is suggested that conventional construction planning practices in Perak remain largely reactive, heavily dependent on fragmented communication and traditional planning techniques. Therefore, this paper seeks to identify the factors which leads to poor construction planning within Perak's built environment; and suggesting possible solutions on preventing poor planning to occur during construction stage in the state of Perak. By proposing actionable remedial solutions to mitigate poor pre-construction planning, this research aims to directly enhance the efficiency and reliability of Perak's construction sector. Ultimately, optimizing these early-stage processes is vital for realizing the sustainable infrastructure and socio-economic development goals outlined in the Perak Sejahtera 2030 blueprint

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Problem Statement

Construction delays remain an endemic crisis in Malaysia, evolving from chronic mismanagement into systemic failures. Historically, inadequate planning and poor site management left over 17% of government contracts severely delayed (Sambasivan & Soon, 2007). Recent analyses indicate this trajectory has worsened, with 55% to 89% of modern commercial and public projects now experience significant time delays and severe cost overruns (Sohu et al., 2024).

Poor pre-construction planning is seen to be primary, nationwide catalyst for these disruptions, though regional manifestations vary. Urbanized states like Selangor and Pahang struggle with unresolved design changes and pre-contract errors (Riduwan, 2024; Halim & Zin, 2016). Conversely, Sarawak faces severe logistical failures (Zamzuriarepen, 2021), while high-density zones like Johor and the Klang Valley grapple with inflexible supply chains. Ultimately, this widespread lack of planning precision inevitably results in schedule disruptions, physical defects, and costly rework (Olanrewaju & Lee, 2022).

Despite extensive contemporary research documenting these delays across various states, literature specific to Perak remains notably outdated. With the most prominent localized study dating back to Wafa and Singh (2016), a significant temporal gap exists. This establishes a critical need for new empirical research to assess the current landscape of pre-construction planning within Perak's construction sector

Literature Review

In the context of project management, construction planning is defined as the systematic process of identifying, defining, sequencing, and structuring all the necessary activities, resources, timelines, and methodologies required to execute a physical build from inception to completion (Chitkara, 2019; Project Management Institute, 2021). It serves as a predictive blueprint that establishes the logical flow of a project, aligning procurement, machinery deployment, financial cash flows, and human capital against predetermined temporal constraints.

Factors leading to poor planning

Poor planning in construction is defined as the lack of a structured pre-construction methodology for defining project scope, estimating required resources, and forecasting potential risks (Lines et al., 2015). This deficiency manifests through ineffective scheduling and poor resource allocation, inevitably causing schedule slippages, cost overruns, and project failure (Eja & Ramegowda, 2020). From previous literatures, the factors leading to poor planning are identified as stated below.

Lack of Managerial Experience

In the construction industry, poor project planning and scheduling are fundamentally driven by a lack of practical management experience, a critical vulnerability highlighted in global studies (Zidane and Andersen, 2018). Effective planning relies heavily on experiential knowledge, which allows professionals to foresee potential difficulties and formulate practical, preventative solutions. Without a foundation of past project experience, inexperienced contractors and managers struggle to predict uncertainties, anticipate the outcomes of high-risk decisions, and avoid repeating common industry mistakes—all of which lead to severe planning errors (Yap et al., 2021). Furthermore, this lack of foundational expertise also sabotages the implementation of modern planning technologies. For example, inexperienced personnel utilizing Building Information Modelling (BIM) frequently produce flawed execution plans, translating their

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incompetence into poor operational planning that can ultimately cause entire building projects to fail (Mahazir et al., 2024)

Language Barriers and Poor Planning

Language barriers between management and foreign workers significantly contribute to poor project planning and execution. Linguistic communication gaps hinder site progress, as workers often struggle to comprehend instructions or provide accurate feedback (Nawarathna et al., 2023). This is particularly evident during site briefings, where chronic miscommunication leads to mismatched goals, team frustration, and a severely compromised planning process (Fellows et al., 2022; Hamidu et al., 2024). Furthermore, in regions like Malaysia, reliance on diverse migrant labor with varying literacy levels intensifies these challenges, resulting in critical on-site misunderstandings of technical details and safety standards (Ohueri et al, 2023).

Limitations and Consequences of Inadequate Scheduling

Traditional scheduling tools like the Critical Path Method (CPM) and bar charts are often inadequate for construction projects involving repetitive tasks, as they fail to manage variable production rates or map complex task interdependencies effectively (Kendre & Sanap, 2024). This reliance on ineffective scheduling mechanisms is a primary driver of poor project planning, which empirically leads to significant schedule slippages and budgetary overruns. Furthermore, poorly constructed schedules severely compromise risk forecasting—leaving projects vulnerable to unexpected challenges—and ultimately act as a major barrier to overall project success and efficiency (Slaeat., 2024).

Lack of Technology Implementation in Construction Planning

The failure to adopt modern technologies significantly hinders effective construction project planning, preventing efficient coordination and leading to severe delays (Martin et al., 2024). Without the integration of advanced software like Artificial Intelligence (AI), the industry continues to suffer from poor performance, driven largely by a scarcity of experienced personnel and a deep-rooted resistance to change (Hilmy et al., 2024). This challenge is particularly evident in rapidly developing markets like Saudi Arabia, where technologies such as Building Information Modeling (BIM) possess transformative potential for planning efficiency, yet critical technical and organizational barriers continually prevent their systematic implementation (Iqbal et al., 2025).

Insufficient Risk Detection on Planning

Insufficient risk detection is a primary cause of inadequate construction planning, leading to unexpected on-site difficulties that derail both schedules and budgets (Dicks & Molenaar, 2024). When comprehensive risk assessments are neglected, stakeholders fail to identify critical vulnerabilities related to human resources, materials, equipment, and environmental conditions (Muhammed-Yakubu, 2024; Tepeli, 2021). Without a complete risk register, informed decision-making becomes severely compromised, leaving the project vulnerable to poorly managed uncertainties (Isah & Kim, 2023). Furthermore, this lack of systematic risk analysis triggers cascading management issues, such as cash flow constraints and resource over-reliance. Ultimately, failing to mitigate these risks results in severe time delays and drastic budget overruns, leading to unavoidable claims and disputes that further hinder project delivery (Krishnamurthy & Mahesh, 2024).

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Design Errors on Planning

Design errors critically disrupt construction planning, leading to extended timelines, increased expenses, and reduced quality. Furthermore, because construction demands seamless multidisciplinary coordination, failing to align architectural and engineering workflows creates severe project discrepancies. When coordination is neglected—often due to incomplete drawings or poor concurrent integration—it causes significant misalignments (Ayalp & Metinal, 2023). Ultimately, this lack of integrated design necessitates costly rework and systemic inefficiencies that sabotage overall project execution.

Solutions on Preventing Poor Planning

Implementing robust solutions to prevent poor planning is fundamentally essential for the success of any construction project. When early planning phases are neglected, productive ventures quickly devolve into unsuccessful projects plagued by severe schedule delays, budget overruns, and diminished quality (Hamidu et al., 2024). Therefore, proactive mitigation strategies—such as integrating modern planning technologies, enforcing strict communication protocols, and conducting comprehensive risk assessments—are vital to stabilizing the project life cycle. By directly addressing these root vulnerabilities, stakeholders can ensure optimal resource efficiency, maintain strict timelines, and ultimately guarantee the successful delivery of complex building initiatives (Slaeat, 2024). Below are lists of ways on how to prevent poor planning as stated in previous literature reviews.

Recruiting Planning Experts in Mitigating Poor Planning

Recruiting highly skilled professionals, particularly dedicated planning engineers, is a critical strategy to mitigate poor construction planning and execution (Gaur, 2023; Hamidu et al., 2024). Competent experts—equipped with the necessary knowledge, skills, and professional attitude—dramatically improve project oversight, risk management, and interdepartmental collaboration (Pratama et al., 2024). By utilizing expert judgment and advanced trend analysis, these professionals ensure accurate workforce forecasting, efficient resource allocation, and strict cost control, even amidst severe market adversities and labor deficits (Biruk et al., 2022). Ultimately, deploying qualified personnel across all project phases prevents crippling delays and budget overruns, ensuring that complex building operations achieve their strategic objectives and maintain rigorous quality standards (Naji et al., 2024).

Roles of AI Technology in Construction Planning

Artificial Intelligence (AI) offers transformative solutions to overcome construction planning obstacles by automating operations, enhancing precision, and optimizing resource allocation. Specifically, Machine Learning algorithms analyse vast datasets to forecast outcomes and identify subtle patterns human planners often overlook (Victor, 2023). Natural Language Processing (NLP) interprets complex project documentation to clarify requirements, while Computer Vision enables real-time site monitoring to detect structural discrepancies (Victor, 2023). Furthermore, Predictive Analytics anticipates critical hazards like budget overruns and schedule delays, empowering managers to deploy proactive mitigation strategies (Elfirjani et al., 2025). Ultimately, integrating AI-driven scheduling software ensures highly resilient planning procedures and minimizes costly project failures (Victor, 2023).

Procore – Enhancing as a Solution for Poor Planning

Cloud-based construction management platforms like Procore effectively mitigate poor planning by drastically improving stakeholder communication and collaboration (Gajera, 2019). By offering real-time messaging, centralized document management, and remote mobile

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access, Procore ensures that contractors, architects, and owners remain perfectly aligned on current project data. This streamlined task management minimizes errors, prevents schedule delays, and optimizes tracking. Furthermore, future integrations of Artificial Intelligence (AI) and Virtual Reality (VR) promise to advance these systems, cementing them as essential tools for efficient and error-free construction project execution (Gajera, 2019).

Lean Construction as a Planning Solution

Lean construction methodologies, including the Last Planner System (LPS) and Just-In-Time (JIT) delivery, offer highly effective remedies for inadequate project planning by proactively targeting and eliminating both physical and non-physical waste (Bawate & Apte, 2020; Aisyah et al., 2023). By emphasizing continuous improvement, weekly work planning, and constraint analysis, this framework enables project teams to identify resource challenges and scheduling delays early in the lifecycle (Tamošaitienė & Starta, 2019). Furthermore, this iterative approach facilitates immediate workflow interventions and captures lessons learned, ultimately optimizing labor efficiency, minimizing material waste, and establishing sustainable productivity benchmarks for future projects (Aisyah et al., 2023).

The Role of Performance Monitoring in Construction Planning

Continuous performance monitoring and evaluation (M&E) are essential for preventing inadequate planning in construction projects. By consistently assessing project advancement, managers can swiftly identify operational limitations, recognize schedule deviations, and ensure targets are met. This ongoing feedback loop acts as a proactive defence mechanism, allowing teams to implement critical modifications and remedial measures before minor gaps escalate into severe delays or failures. As demonstrated in recent studies, robust M&E planning directly correlates with enhanced overall project performance, ensuring that initial planning constraints are actively managed and resolved throughout the building phase (Moussa & Akims, 2024).

Conceptual Framework

The conceptual framework maps the proposed relationships between the root causes of poor planning, their resulting project disruptions, and the strategic interventions to be tested in this study. It identifies six independent variables as hypothesized catalysts for planning vulnerabilities: lack of managerial experience, inadequate scheduling, design errors, insufficient risk detection, language barriers, and poor technology implementation. These factors are proposed to drive the core phenomenon of pre-construction planning failures, which cascade into chronic operational inefficiencies, schedule slippages, and budget overruns.

To counteract these disruptions, the model introduces five intervening variables as actionable remedial solutions: continuous performance monitoring, recruiting planning experts, AI technology integration, Lean construction methodologies, and enhanced communication platforms like Procore. Ultimately, the framework hypothesizes that applying these interventions bridges the gap to the dependent variable: successful project delivery. By mitigating root risks, these proposed solutions aim to optimize resource efficiency, directly supporting the sustainable infrastructure objectives of the Perak Sejahtera 2030 masterplan.

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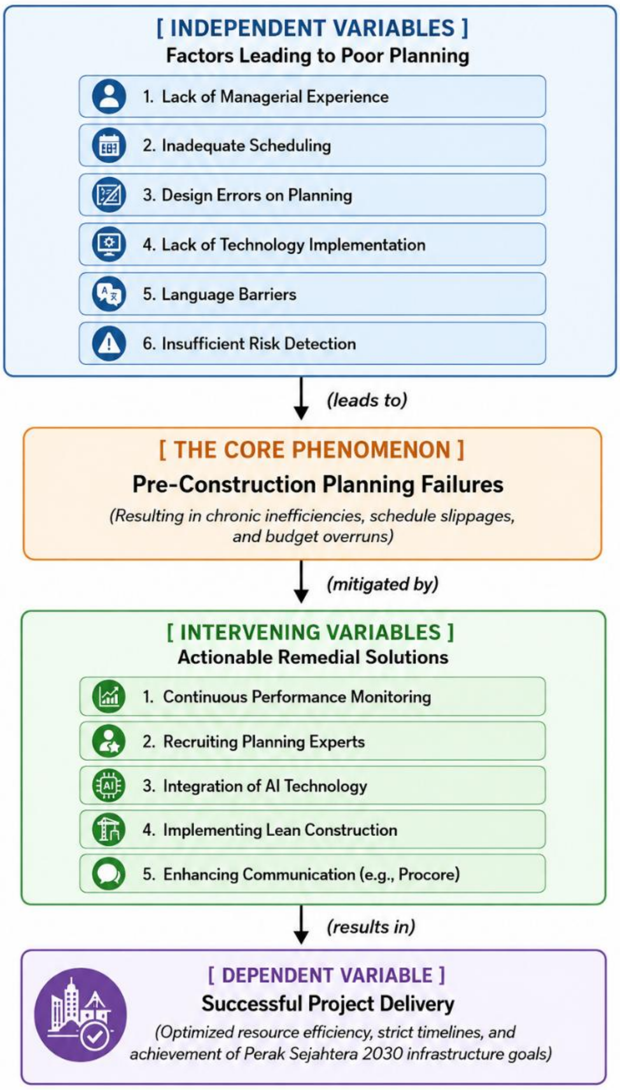

Figure 1: Conceptual Framework of Factors Influencing Pre-Construction Planning Failures and Their Impact on Successful Project Delivery

Methodology

This research focused on the Malaysian state of Perak as the state targets to improve the economic transformation. This is achieved by improving massive industrial park and mega township projects; infrastructures and logistic; emphasizing green construction and Environmental, Social, and Governance (ESG) standards; and housing and community development (Perak Sejahtera 2030). This research aims to suggest solutions to prevent poor planning focusing on contractor Grade 7 which specialises in building.

Grade 7 contractors were selected due to their involvement in a large-scale project that frequently has problems in poor planning, making them suitable respondents due to having vast experience in poor planning. Solution to prevent poor planning can be useful to contractors when they face poor planning in their project. Referring to CIDB Contractor Search centralised information management system, the total population of Grade 7 Contractors in Perak is 301 numbers. The sample sizes of targeted contractors were determined using Krejcie and Morgan's

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(1970) method, yielding 169 numbers of respondents' sample size. 5-categories Likert scale system were used to determine respondents' level of agreement.

Table 1: Questionnaire distribution and response

Distribution technique	Google Form
Questionnaire Distribution	169
Questionnaire Response	92
Percentage (%)	54.4

This quantitative research employed an online Google Forms survey to collect primary data from industry respondents. A total of 92 responses were collected, which calculated as 54% response rate. This exceeds the 30% acceptable threshold for online surveys (Nulty, 2008). Data was analysed using SPSS—specifically frequency and mean index analysis—to evaluate the causes and preventative solutions for poor construction planning.

Table 2: Likert Scale system adopted in the questionnaire

Scale	Level of Agreement
5	Strongly Agree
4	Agree
3	Neutral
2	Disagree
1	Strongly Disagree

Finding and Discussion

This section presents the primary findings and discussion of the research. It comprehensively explores the underlying factors causing poor planning in the Perak construction sector and proposes effective remedial solutions.

Factors leading to poor planning in Construction Sector

This section ranks the critical factors leading to poor planning within the construction sector using mean score descriptive statistics. The Table 3 below clearly summarizes these primary causes for further analysis.

Table 3: Factors That Lead to Poor Planning in Construction Sector

Variables	Mean Score	Rank
Lack of managerial experience	4.054	1
Inadequate Scheduling	4.054	1
Design errors on planning	4.033	3
Lack of technology implementation	3.837	4
Language barrier	3.728	5
Insufficient Risk Detection	3.641	6

It is seen that the most agreed upon factors that lead to poor planning which is the "lack of managerial experience" and "inadequate scheduling". The respondents' rate of agreement about the lack of managerial experience supports statement by previous literatures that stated that poor planning are mainly caused by lack of management experience and experiential previous project knowledge (Zidane and Andersen, 2018; Yap et al., 2021).

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"Inadequate scheduling" which also ranked the highest with the same mean score. This supports the statement by Slaeat (2024), poorly constructed schedules compromise risk forecasting making the projects vulnerable to unexpected challenges which ultimately becomes a major barrier to overall project success and efficiency.

Solutions to Prevent Poor Planning Occur in Construction Sector

This section discusses actionable solutions to prevent poor planning from occurring in the construction sector. The table below outlines these effective remedial measures for successful project management.

Table 4: Solutions to Prevent Poor Planning Occur in Construction Sector

Variables	Mean Score	Rank
Performance monitoring	4.022	1
Recruiting planning expert	3.957	2
Roles of AI technology	3.946	3
Implementing lean construction	3.859	4
Procore - Enhancing communication	3.848	5

Table 4 shows that "performance monitoring" is ranked the highest of all solutions to prevent poor planning in construction sector. This result backs up Moussa & Akims (2024) which stated that robust monitoring and evaluation planning directly correlates with overall project performance while ensuring that initial planning constraints are actively managed and resolved throughout the building phase.

Conclusion and Recommendations

In conclusion, this research highlights a lack of managerial experience and inadequate scheduling as the fundamental root causes of poor planning within the Perak construction sector. By identifying these critical gaps, the study concludes that implementing continuous performance monitoring serves as a vital remedial solution, equipping stakeholders with the oversight needed to prevent future planning failures and drive overall project success.

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