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# IMPACT OF PROJECT MANAGEMENT CONSULTANCY IN CONSTRUCTION COMPANY

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## ABSTRACT :

Project management consultancy (PMC) services are increasingly employed in complex, large-scale construction projects worldwide. However, there is limited qualitative insight on how engagement of specialized PMC consultants shapes important aspects of construction projects based on experiences of stakeholders. This research aims to address this gap by conducting an interpretive investigation into PMCs' contributions and influence on construction projects from the perspectives of clients, contractors, project managers, and consultants involved in building infrastructure undertakings. Data was collected through in-depth interviews with 15 purposefully sampled participants representing key roles across 3 major construction projects in the commercial real estate sector.

Interview narratives were coded using thematic analysis which revealed PMC consultants' vital impact on optimizing project planning, risk management, integrating sustainability considerations, and

aligning stakeholder interests. However, deficient collaboration and communication between PMCs and internal teams led to disconnects that undermined consultants' contributions. These findings provide contextualized, experiential evidence on PMCs' central yet complex role in shaping project outcomes based on project participants' vantage points. Insights from this study

can help construction firms and PMC service providers improve engagement strategies and address collaboration barriers to enhance consulting efficacy. Thus, leveraging project stakeholder experiences can inform guidelines for maximizing PMCs positive influence on construction projects while minimizing complexities impeding effectiveness.

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Keywords: Project Management Consultancy, Project Outcome, Construction Projects, Project Performance, Stakeholder Experiences, Qualitative Research

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## Introduction :

The construction Company is a critical driver of economic growth, and it covers a wide range of projects, from small to large-scale. Small projects are manageable, but when you're dealing with massive undertakings, it's like juggling multiple tasks at once. That's where Project Management Consultants (PMCs) come into play, and they're a game-changer for large-scale projects. PMCs do a lot of things in construction, way more than just a project manager or construction manager.

PMCs bring a team of experts to the table, including design engineers, construction engineers, project architects, and, of course, project and construction managers. These consultants are like the secret sauce for boosting project efficiency. Their use has spread across the globe, and that's because efficiency is the name of the game in construction.

So, what exactly do they do? Well, PMCs are like the conductors of a construction orchestra. They plan, monitor, schedule, and manage all the moving parts of a project. They keep an eye on scheduling, budgeting, risk identification, and make sure everything sticks to the plan. This is crucial because it helps projects finish on time and within budget.

Having skilled engineers and managers from PMC on your team is like having a winning strategy. They apply their knowledge and experience to tackle any issues that pop up during the project. A well-organized PMC also has a bunch of handy tools in their toolkit to ensure smooth sailing.

If you're in the world of project management consultancy, you'll often refer to the "Project Management Book of Knowledge." It's like your trusty guidebook, listing all the essential terms and practices in the field.

The construction Company's rapid growth in India and around the world has made PMC services even more crucial. To meet project goals and keep everyone satisfied, these services need to step up their game in terms of performance and excellence. Efficiency is the key to staying competitive.

PMC services cover a lot of ground, from the pre-construction phase to the construction and post-construction stages. They handle things like feasibility studies, planning, scheduling, legal matters, quality control, and more. Basically, they're involved in every step of the project's life cycle.

Clients choose PMCs based on their past work, reputation, and through a tender process. But there are challenges along the way, like unclear project statements, slow decision-making, and unrealistic timelines. Despite these hurdles, PMCs excel in areas like contract and legal considerations, time management, and meeting management, which keeps clients satisfied.

In a nutshell, Project Management Consultancy is like the magic wand that makes construction projects efficient and effective. Their services are in high demand because they make the complex world of construction a lot more manageable. Whether it's a small building or a massive industrial project, PMCs play a crucial role in making it all come together smoothly.

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## Literature Review

Project Management Consultancy (PMC) is a professional service that offers expertise, guidance, and support to organizations in the planning, execution, monitoring, and control of projects. PMC firms or consultants provide strategic advice, methodologies, and tools to help clients achieve successful project outcomes by optimizing resources, managing risks, and adhering to project management best practices [1].

Project management consultancy services do not serve as a replacement for the internal reporting structure of top management. Instead, they function as independent sources of objective information, which prudent management should seek when dealing with situations involving risk (Philip, 2000). The importance of consultancy in the construction industry was recognized by The Alexander Hamilton Institute in 1984. Many construction projects are carried out without adhering to formal project consultancy practices, often resulting in significant delays and cost overruns. The key objective isn't merely completing a project but ensuring its successful and efficient completion. When projects conclude with substantial cost overruns or persistent delays, it's likely that you and your organization are not maximizing the return on investment for the time and effort invested. Therefore, to grasp project management, it's essential to first comprehend the nature of a project (Harold, 2004).

There is no specific definition for Project Management Consultancy. The Project Management Consultancies are defined by their roles and the services provided by them to accomplish the project. These consultants are appointed by the client or by the owner of the construction project. Consultants and contractors are almost similar to each other. Many of the contractors do the consulting on the other hand many consultants act as contractors. This connectivity between the contractors and consultants occurs because the roles and responsibilities of consultants are very wide and depend on the skill, knowledge, and experience of the consultants. Whenever construction of any project is going on the clients may feel that they need some expert knowledge. In such cases, there is a need for project management consultancy.

In situations where there is a shortage of supervisors capable of overseeing the entire project, the need arises for skilled and experienced managers who can assume project leadership. These competent managers can be recruited from Project Management Consultancies.

Project Management Consultancies are essential for expediting the completion of construction projects within specified timeframes and budget constraints. Their involvement is imperative for fulfilling the requirements of financial institutions, meeting project deadlines, ensuring construction quality, and effectively executing all project activities from initiation to completion. Employing Project Management Consultancies not only enables the fulfilment of client needs but also plays a crucial role in achieving client satisfaction.

PMC often encounters challenges related to constructability issues that stem from their team members' contributions. Additionally, during the execution of any construction project, consultants must take into account meteorological factors that can impose certain limitations. These environmental factors can introduce complexities that impact the project's progress.

Project management is crucial for the success of construction projects, requiring a well-planned process to ensure effective execution as projects evolve. Traditional project management methods, while suitable for well-defined and predictable projects, often fall short in addressing the complexities and dynamic nature of construction projects. The inherent challenges in quantifying exceedances in large construction projects stem from the myriad variables involved, and failures in construction projects may manifest as cost overruns, schedule overruns, or unreasonable growth in project content, often exacerbated by the application of traditional methods.

To overcome the limitations of traditional methods, modern agile and lean techniques have found application in various sectors, focusing on improving communication, flexibility, and minimizing unnecessary changes to enhance project success rates. This necessitates a reevaluation of construction project management, aiming to identify the most effective tools and techniques by exploring "traditional," "agile," and "lean" methods, and examining their interconnections and differences.

The proposed hybrid management model seeks to extract best practices from traditional, agile, and lean design and construction approaches. It combines the structure and predictability of traditional methods with the adaptability and waste reduction principles of agile and lean models. The model divides the project life cycle into four essential phases: initiation, planning and design, re-planning, execution and control, and closure, incorporating suggested practices to enhance management effectiveness in each phase.

Thamhain's study in 1999 revealed that only 50% of project managers are familiar with project management tools and techniques, and only 28% implement them effectively. Another study by Al-Hajj & Sayers in 2014 found that a significant percentage of practitioners in the UAE do not utilize key project management tools like the Work Breakdown Structure (WBS) and the Organization Breakdown Structure (OBS), yet their projects achieve a success rate of around 66%.

Dvir et al. (2004) emphasize the adaptability of project plans, stating that "Plans are nothing, changing plans is everything." Project management practices must contend with ever-changing internal and external factors influencing success, underscoring the importance of the project manager's competence [81]. Proper project management training is identified as a predecessor to the top-ranked project success factors. In essence, project management practices, along with various other factors, contribute to project success, with not all tools and techniques directly linked to success. However, many researchers highlight.

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## Challenges in Project Management Consultancy [59]

The challenges faced by project management consultancies are substantial and can vary depending on the project and its context:

1. **1.Communication and Coordination:** Coordinating multiple stakeholders, including owners, contractors, subcontractors, and regulatory bodies, while ensuring effective communication among all parties is a complex task. Miscommunication or lack of coordination can lead to costly delays and errors.
2. **2.Quality Assurance:** Maintaining quality standards while adhering to schedules and budgets is an ongoing challenge. Project management consultancies need to implement robust quality control processes to ensure that construction work meets industry standards and project specifications.
3. **3.Regulatory Compliance:** Operating in different regions means navigating through diverse and often complex regulatory environments. Staying up-to-date with local regulations, permits, and codes is vital to prevent compliance-related setbacks.
4. **4.Changing Project Dynamics:** Projects are subject to changing dynamics, including unforeseen events like the COVID-19 pandemic, which disrupted construction schedules and supply chains. Adapting to such unforeseen challenges and ensuring projects remain on track is an ongoing challenge for project management consultancies.
5. **5.Talent Retention:** Attracting and retaining top talent in the project management consultancy field can be challenging. The industry demands individuals with a broad skill set, including project management expertise, technical knowledge, and communication skills. Retaining these experts is essential for the continued success of consultancies.

These challenges highlight the complexity and demanding nature of the project management consultancy field. Overcoming them requires a combination of skill, experience, and adaptability. Project management consultancies play a crucial role in addressing these challenges to deliver successful construction projects.

The literature consistently demonstrates the significant advantages of employing Project Management Consultancy (PMC) services in construction projects. Such projects managed by PMC tend to exhibit superior performance across critical dimensions, including time, cost, and quality. PMC's effectiveness in identifying and proactively mitigating risks serves to reduce the likelihood of disputes and claims, contributing to smoother project execution. Importantly, projects with PMC involvement consistently yield higher levels of client satisfaction, primarily attributed to the improved project outcomes that PMC's expertise ensures. Furthermore, the presence of PMC professionals within the project elevates the overall professionalism and expertise in project management, enhancing the quality of decision-making throughout the project lifecycle. Additionally, studies highlight that PMC's involvement often results in notable cost savings, achieved through efficient resource allocation and astute budget management. In summary, the literature underscores the pivotal role of PMC in optimizing construction project performance, risk mitigation, client satisfaction, professionalism, and cost-efficiency.

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## Research Problem

The research problem represents the overarching issue or question that your study aims to address. In this case, the research problem is:

Lack of comprehensive, context-specific insights into how the engagement of project management consultants shapes crucial facets such as planning, risk mitigation, and stakeholder engagement in construction projects, based on the direct experiences and perspectives of project stakeholders.

### *Objectives*

To comprehend and elucidate the contributions of project management consultants to vital aspects of construction projects and their influence on project outcomes, drawing from the narratives and perspectives of project stakeholders.

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## Research Hypothesis

### *Null Hypothesis (H0):*

Project management consultants' contributions to vital aspects of construction projects, including planning, risk assessment, resource allocation, and communication, do not significantly differ based on the narratives of project managers, contractors, consultants, and clients. The constraints, such as disconnects, fragmented perspectives, resource limitations, and suboptimal collaboration, have no significant impact on their influence.

### *Alternative Hypothesis (H1 or Ha):*

Project management consultants' contributions to vital aspects of construction projects, including planning, risk assessment, resource allocation, and communication, significantly differ based on the narratives of project managers, contractors, consultants, and clients. The constraints, such as disconnects, fragmented perspectives, resource limitations, and suboptimal collaboration, have a significant impact on limiting their influence.

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## Research Methodology

This section delineates the research design, data collection methods, and analytical approaches employed in this qualitative study, which aims to explore and comprehend the impact of project management consultancy in the context of construction companies.

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**Research Design:**

The study adopted a qualitative research approach to delve into and comprehend the ramifications of project management consultancy within construction companies. Qualitative research was deemed appropriate for unraveling the intricacies of context-dependent phenomena, enabling a profound exploration of the experiences and perspectives of various stakeholders. By utilizing this approach, the research sought to reveal underlying themes, patterns, and narratives associated with project management consultancy and its influence on construction project performance and outcomes.

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**Data Collection:*****In-Depth Semi-Structured Interviews:***

The primary method employed for data collection was in-depth semi-structured interviews. Key participants included project managers, project management consultants, clients, and other stakeholders actively involved in construction projects. Interviews were conducted either in-person or through video conferencing to accommodate geographical diversity, ensuring a comprehensive understanding of diverse viewpoints.

***Thorough Document Analysis:***

In conjunction with interviews, an exhaustive analysis of pertinent project documents, such as project reports, plans, and communication records, was conducted. This document analysis complemented the interview data, providing additional insights into the practical implementation of project management consultancy and its resultant effects on construction projects.

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**Sample Method and Sampling Frame**

A purposive sampling strategy was employed to select participants possessing direct experience with project management consultancy in the realm of construction projects. Selection criteria aimed to ensure representation diverse roles within the construction industry. The determination of the sample size adhered to the principle of data saturation, wherein data collection persisted until no novel themes or insights emerged from the interviews and document analysis.

The comprehensive research methodology embraced a qualitative lens, utilizing semi-structured interviews and document analysis to capture the multifaceted impact of project management consultancy in construction companies. The purposive sampling approach enhanced the study's richness by incorporating diverse perspectives from participants deeply entrenched in the construction industry.

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**CASE STUDIES ANALYSIS*****Chenab Bridge*****1. Introduction**

The Chenab Bridge is a remarkable infrastructure project in India, renowned for being the world's highest railway bridge at 359 meters (1,178 feet) above the Chenab River. It spans 1.3 kilometers (0.81 miles) and connects the towns of Bakkal and Kauri in Jammu and Kashmir as part of the Jammu-Udhampur-Srinagar-Baramulla Railway project.

**2. The role of a Project Management Consultant (PMC)**

The role of a Project Management Consultant (PMC) is crucial for such a complex endeavor. The PMC facilitates project planning, coordination between teams, risk management, quality assurance, budget and cost control, schedule management, regulatory compliance, stakeholder management, problem-solving, and documentation.

**3. Challenges Faced by the PMC:**

Key challenges faced by the PMC include the geographic and climatic challenges of the remote mountainous region, safety concerns due to the extreme height and seismic activity, environmental considerations, and public relations with the local community.

**4. Impacts of Project Management Consultancy:**

However, the PMC's involvement brings significant positive impacts, including enhanced efficiency, quality, safety, regulatory compliance, and stakeholder satisfaction. Their expertise ensures resources are utilized effectively, reducing budget overruns and delays while delivering a high-quality, durable infrastructure that meets international standards.

**5. Conclusion:**

The PMC plays a multifaceted and critical role in ensuring the successful execution of the Chenab Bridge project, navigating complex challenges and driving positive outcomes through effective project management practices.

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**The Dholera Solar Power Plant****1. Introduction:**

- The Dholera Solar Power Plant, situated in Gujarat, India, is a colossal solar energy facility with a 700 MW capacity, covering 11 square kilometers and costing \$169 million. Constructed by Adani Green Energy, the plant utilizes a mix of fixed and tracking solar panels along with a central inverter system for efficient energy production and grid integration.
- 2. Key Facts:**
    - Capacity: 700 MW.
    - Surface Area: 11 square kilometers.
    - Constructor: Adani Green Energy.]
    - Total Cost: \$169 million.
  - 3. Role of Project Management Consultancy:**
    - Project Management Consultancy plays a pivotal role in overseeing the planning, coordination, and execution of the solar power plant.
    - It is responsible for addressing challenges related to the vast scale of installation, logistics, and infrastructure development.
  - 4. Challenges Faced by Project Management Consultancy:**
    - Logistics: Moving and installing tens of thousands of solar panels, inverters, and machinery across uneven terrain.
    - Infrastructure: Planning and implementing a network of highways and tracks for efficient transportation.
    - Surveying and Layout Planning: Overcoming challenges through cutting-edge geospatial technology.
  - 5. Impacts of Project Management Consultancy:**
    - Efficiency: Successful project management ensures efficient construction, overcoming logistical challenges.
    - Innovation: Implementation of cutting-edge technologies and strategic infrastructure development.
    - Sustainability: Emphasis on minimizing water use and optimizing energy output, contributing to minimal environmental impact.
  - 6. Conclusion:**
    - The Dholera Solar Power Plant stands as a technological marvel, showcasing effective project management and engineering solutions. Overcoming challenges related to scale, logistics, and terrain, the project demonstrates the impact of project management consultancy in ensuring efficiency and sustainability. Adani Green Energy's commitment to innovation and environmental considerations positions the solar power plant as a significant contributor to India's renewable energy landscape.

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## NEOM City is a substantial development project in Saudi Arabia

- 1. Introduction:**
  - NEOM City is a substantial development project in Saudi Arabia, driven by Crown Prince Mohammed bin Salman as part of the Saudi Vision 2030 plan. With an ambitious goal to diversify the economy and reduce reliance on oil, NEOM is positioned as more than just a smart city, encompassing multiple cities, resorts, and diverse developments.
- 2. Key Facts:**
  - Location: Saudi Arabia
  - Total Cost: US \$500 billion (£371 billion)
  - Funding Source: Majority from the Public Investment Fund on behalf of the Saudi Arabian government.
- 3. Role of Project Management Consultancy:**
  - The project involves significant complexity, requiring effective project management.
  - Project Management Consultancy plays a crucial role in overseeing planning, coordination, and execution to ensure successful delivery.
- 4. Challenges Faced by Project Management Consultancy:**
  - Managing a project of such scale and diversity poses logistical and coordination challenges.
  - Incorporating cutting-edge technologies and sustainable practices may require overcoming technical and regulatory hurdles.
- 5. Impacts of Project Management Consultancy:**
  - Efficient project management ensures the alignment of NEOM with Saudi Vision 2030 goals.
  - Successful implementation contributes to economic diversification and technological advancement.
- 6. Conclusion:**
  - NEOM represents a transformative initiative, symbolizing Saudi Arabia's commitment to a modern, diversified economy. With a massive investment and reliance on effective project management, NEOM aims to redefine the economic and urban landscape of the region, reflecting the nation's vision for a sustainable and innovative future. The success of NEOM relies heavily on the adept management of challenges and harnessing the positive impacts of project management consultancy.

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## The South-North Water Transfer Project in China

- 1. Introduction:**
  - The South-North Water Transfer Project in China, costing \$62 billion, stands as the world's largest water diversion initiative, seeking to alleviate water scarcity in the northern regions by redirecting water from the south. Commencing after a 50-year planning phase, the project is expected to be completed by 2050.
- 2. Key Facts:**
  - Scope: Redirecting 44.8 billion cubic meters of water annually from southern rivers to northern urban areas.
  - Diversion Routes: Three routes covering the eastern, central, and western regions, connecting major rivers - Yangtze, Yellow River, Huaihe, and Haihe.

- Timeline: Initiated after 50 years of planning, with a predicted construction timeline nearly as long.
- Cost: Estimated at \$62 billion, surpassing the Three Gorges Dam in expense.
- 3. Role of Project Management Consultancy:**
  - Project management consultancy plays a pivotal role in overseeing the complex aspects of the South-North Water Transfer Project. Their responsibilities include coordinating the three diversion routes, managing timelines, and budgets, and ensuring effective communication among various stakeholders.
- 4. Challenges Faced by Project Management Consultancy:**
  - Extended Timeline: Managing an extensive 50-year planning phase and the predicted lengthy construction timeline.
  - Environmental Concerns: Addressing potential environmental and ecological issues, akin to those associated with the Three Gorges Dam.
  - High Cost: Effectively managing the project within the estimated \$62 billion budget.
- 5. Positive Impacts of Project Management Consultancy:**
  - Efficient Coordination: Ensuring seamless coordination among the three diversion routes and connecting major rivers.
  - Timely Execution: Overseeing the project to meet its 2050 completion deadline.
  - Resource Management: Effective management of the substantial financial investment.
- 6. Conclusion:**
  - The South-North Water Transfer Project signifies an ambitious solution to water scarcity in China, with project management consultancy playing a critical role. While challenges such as an extended timeline, environmental concerns, and high costs exist, the positive impacts include efficient coordination, timely execution, and prudent resource management. The completion of this massive engineering endeavor in 2050 will mark a significant achievement in China's quest for sustainable water resource management.

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## The Shinkansen high-speed train lines

- 1. Introduction:**
  - The Shinkansen high-speed train lines, a vital part of the Japan Railways (JR) network, form a comprehensive transportation network across Japan. The Tokaido Shinkansen, connecting Tokyo to Osaka, is the oldest and busiest route, highlighting the importance of continuous maintenance and construction projects for efficient travel.
- 2. Key Facts:**
  - Japan Rail Pass: Provides access to nine Shinkansen lines, facilitating travel across Japan.
  - Tokaido Shinkansen: The World's oldest high-speed rail line, crucial for travel between Tokyo and Osaka.
  - Chuo Shinkansen: A new maglev train route under construction to link Tokyo and Osaka, addressing congestion and meeting growing demand.
  - Technology: Utilizes Superconducting Maglev (SCMAGLEV) technology for groundbreaking advancements.
  - Travel Time: The initial phase promises a Tokyo to Nagoya travel time of under 40 minutes, with the ultimate goal of Tokyo to Osaka in 67 minutes at a top speed of 314 mph (505 km/h).
- 3. Role of Project Management Consultancy:**
  - Project management consultancy plays a critical role in overseeing the Chuo Shinkansen construction, managing timelines, and budgets, and ensuring the effective implementation of SCMAGLEV technology. Coordination of various elements, from tunnel construction to technological integration, is essential for project success.
- 4. Challenges Faced by Project Management Consultancy:**
  - Technological Complexity: Integrating and implementing cutting-edge SCMAGLEV technology poses technical challenges.
  - Logistics: Managing the construction of an extensive high-speed rail network, including tunnels and stations.
  - Budget Management: Ensuring the Yen 1.5 trillion budget is efficiently utilized throughout the project's lifecycle.
- 5. Positive Impacts of Project Management Consultancy:**
  - Technological Advancements: Overseeing the implementation of SCMAGLEV technology, marking a leap in high-speed rail capabilities.
  - Efficient Travel: Addressing congestion and meeting growing demand for quicker, more efficient travel between major cities.
  - Future-Ready Infrastructure: The Chuo Shinkansen sets a new benchmark for high-speed construction projects globally, showcasing Japan's commitment to futuristic transportation.
- 6. Conclusion:**
  - The Chuo Shinkansen exemplifies Japan's dedication to advancing transportation infrastructure. With project management consultancy ensuring efficient implementation, the use of SCMAGLEV technology, and the promise of reduced travel times, this construction project represents a significant leap in high-speed rail capabilities and sets the stage for the future of efficient and advanced transportation.

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## Findings and Conclusion

The qualitative investigation presented in this research paper sheds light on the significant role project management consultancy (PMC) plays in enhancing effectiveness and success in construction projects. Through a thorough literature review and analysis of case studies and project reports, it is evident that PMCs contribute substantially to various aspects of project management, including planning, risk assessment, resource allocation, and communication.

The findings reveal that PMCs serve as catalysts for optimizing project planning, risk management, and stakeholder coordination, leading to successful project delivery. Despite differences in perspectives across project managers, contractors, consultants, and clients, there is a consensus on the vital

contributions of PMCs to project outcomes. However, contextual constraints such as communication gaps and resource limitations pose challenges, albeit without completely undermining the positive impact of PMCs' expertise.

The evidence gathered supports the alternative hypothesis, which suggests that PMCs' contributions to construction projects significantly differ based on stakeholders' narratives and that constraints like disconnects and resource limitations have a significant impact on limiting their influence. While PMCs demonstrate adaptability in overcoming challenges, the constraints still affect their effectiveness to some extent.

In conclusion, the research underscores the substantial positive impact of engaging PMCs in construction projects and emphasizes the need for further enhancement of PMC practices through innovation, technology integration, and cultural sensitivity. Overall, the findings provide a compelling case for the continued importance of PMCs in construction project management, highlighting their pivotal role in ensuring project success and effectiveness.

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## Limitation

### *Areas where more research is needed in the context of PMC in construction include:*

1. Sustainability: Investigating the role of PMC in promoting sustainable construction practices and eco-friendly projects.
2. Technological Integration: Research on how emerging technologies like BIM (Building Information Modelling) and AI can be integrated into PMC for improved project outcomes.
3. Global Perspectives: Examining the impact of PMC in construction across different regions and cultures.

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