

The Impact of Agile Project Management on Project Success in Saudi Arabia's Giga-Project Sector

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Chapter 1: Introduction

1.1 Research Background

Saudi Arabia's Vision 2030 has pushed the Kingdom's construction sector into a scale and pace of delivery it has never had to handle before. The giga-projects launched under it, NEOM, Red Sea Global, Qiddiya, and Diriyah Gate, are development programmes that differ from conventional megaprojects not only in physical scale but in the sheer number of separate contracting organizations involved in delivering any one of them, and they are all moving forward at once, across different regions. Contract awards across these programmes climbed 20 percent to reach \$196 billion in 2025 alone (Arab News, 2025). Delivery performance has not kept pace. A 2025 study of 222 completed construction projects in Saudi Arabia found that 64 percent ran over schedule and 53 percent went over budget, even where formal project control systems were already in place (Alotaibi et al., 2025). That gap between record investment and persistent overruns suggests the sequential, phase-gated project management approach construction has relied on for decades may not fit an environment where regulations, stakeholder demands, and site conditions keep shifting over a multi-year delivery programme. Agile project management is one alternative. Built around iterative planning, cross-functional collaboration, and continuous adaptation, it has produced measurable results in the sector that developed it.

The Manifesto for Agile Software Development formalized the approach around four priorities: individuals and interactions, working deliverables, customer collaboration, and responsiveness to change, over rigid adherence to a fixed plan (Beck et al., 2001). Whether those priorities survive the move out of software has been tested repeatedly since, and the answer so far is a qualified yes: the practices turn up in industries that never adopted them deliberately, and where their use has been measured against project outcomes the association is positive (Conforto et al., 2014; Serrador & Pinto, 2015). Construction is the exception. What exists there is largely review work, and the relationship has never been measured on live projects (Zamil & Alhusban, 2025).

Saudi Arabia's giga-project construction sector falls outside all of it. The review work on construction addresses the industry broadly and never reaches the scale, regulatory density, and multi-stakeholder complexity of a national programme, and the cross-industry samples that did measure outcomes contained no construction megaprojects to begin with. Alotaibi et al. (2025) documented serious project control and delivery weaknesses in Saudi construction under conventional project management arrangements, but never asked whether agile practices were present or connected to those outcomes. Nothing in the literature establishes whether these principles hold where a fixed site, layered regulatory approval, and safety codes limit what a project team is free to change.

Contractors and project management professionals delivering these giga-projects face constant pressure to move faster as contract values and project counts keep climbing (Arab News, 2025), but nothing in the literature tells them which project management approaches improve outcomes at this scale. Knowing whether agile project management relates to project success here, and through which specific practices, would give procurement, staffing, and governance decisions something firmer to rest on than the untested assumption that what works in software transfers directly to megaproject construction. The relationship may behave here much as it does elsewhere, or it may be weakened and reshaped by the physical and regulatory constraints megaproject construction imposes, and at present there is no evidence either way. Settling it means going to the professionals who manage delivery inside these programmes, since they are the only people positioned to report both which practices are in use and how the work is turning out.

1.2 Research Problem

Agile project management practices have been linked to improved project success in software development and in a growing number of other industries (Conforto et al., 2014; Serrador & Pinto, 2015). Whether that link survives the move into complex physical construction is far less clear, since regulatory approvals, safety codes, and fixed site conditions all constrain what a project team is free to change, and the theoretical case for agile assumes a degree of that freedom. Evidence is also thin. Few studies have

examined agile adoption within Saudi Arabia's giga-project construction sector at all, let alone its relationship to project success, which leaves practitioners working at the largest scale the industry has handled with the least evidence about the methods available to them.

1.3 Research Significance

1.3.1 At the Theoretical Level

This study is grounded in agile project management theory as formalized in the Manifesto for Agile Software Development (Beck et al., 2001), and in project success theory as developed through the iron triangle tradition of time, cost, and scope and its later extensions (Atkinson, 1999; Pinto & Slevin, 1987). Rather than propose new theory, it tests whether an established one holds up in a setting where it has not yet been tried. Existing cross-industry evidence (Conforto et al., 2014; Serrador & Pinto, 2015) has never been tested against the fixed physical, regulatory, and safety constraints of construction megaprojects. Testing five recognized agile dimensions against project success within Saudi Arabia's giga-project construction sector establishes whether that relationship extends to this setting. The findings would indicate whether agile project management theory generalizes to complex physical construction megaprojects as currently specified, or whether this sector's fixed constraints mean the theory needs qualifying before it is applied here with confidence.

1.3.2 At the Practical Level

This study also matters to the project management professionals and contractors responsible for delivering Saudi Arabia's giga-projects. Its findings could tell giga-project managers which specific agile practices, among iterative planning, cross-functional collaboration, adaptive scope management, stakeholder collaboration, and continuous improvement, show the strongest association with project success in this sector. That would let implementation effort go where it helps most, rather than adopting agile practices wholesale on the assumption that every dimension transfers equally. Procurement criteria, project governance structures, and training investment for giga-project delivery teams are all plausible applications. The 64 percent time-

overrun and 53 percent cost-overrun rates documented by Alotaibi et al. (2025) were measured under conventional project management arrangements. This study can establish whether agile practices and those overrun rates are statistically associated, not whether agile practices would lower them; that link is what would make testing the stronger causal claim worthwhile later.

1.4 Research Questions

Main Research Question

How does Agile Project Management influence Project Success in Saudi Arabia's giga-project construction sector?

Research Sub-questions

SQ1. How does iterative planning relate to project success in Saudi Arabia's giga-project construction sector?

SQ2. What relationship exists between cross-functional collaboration and project success in this sector?

SQ3. How does adaptive/flexible scope management relate to project success in Saudi Arabia's giga-project construction sector?

SQ4. What relationship exists between stakeholder collaboration and project success in this sector?

SQ5. How does continuous improvement relate to project success in Saudi Arabia's giga-project construction sector?

1.5 Research Objectives

1. To examine the current Agile Project Management practices and adoption levels in Saudi Arabia's giga-project construction sector.
2. To identify the key challenges faced in implementing agile project management in this sector.

3. To evaluate the impact of agile project management practices on project success.
4. To propose recommendations for improving agile project management adoption in giga-project construction.
5. To generate insights for future research on agile project management in construction contexts.

1.6 Research Hypotheses

H0 (Null): There is no statistically significant relationship between Agile Project Management Practices and Project Success in Saudi Arabia's giga-project construction sector.

Ha/H1 (Alternative/Directional): There is a statistically significant positive relationship between Agile Project Management Practices and Project Success in Saudi Arabia's giga-project construction sector.

Because the five dimensions make different demands on a project's contractual and regulatory environment, each is tested on its own rather than folded into a single agile-adoption score:

H1a. Iterative planning is positively related to project success in Saudi Arabia's giga-project construction sector.

H1b. There is a positive relationship between cross-functional collaboration and project success in Saudi Arabia's giga-project construction sector.

H1c. Adaptive/flexible scope management has a positive relationship with project success in Saudi Arabia's giga-project construction sector.

H1d. Stakeholder collaboration is positively related to project success in Saudi Arabia's giga-project construction sector.

H1e. There is a positive relationship between continuous improvement and project success in Saudi Arabia's giga-project construction sector.

1.7 Research Model

[Figure 1: Conceptual Research Model of Agile Project Management Practices (five dimensions) and Project Success]

Agile Project Management Practices enter the model shown in Figure 1 as a single independent variable measured through its five dimensions, with Project Success as the dependent variable, kept whole instead of split into its efficiency and stakeholder components. Averaging the dimensions into one agile-adoption score would have been simpler, but it would also conceal any unevenness in how far each practice travels into a construction setting, and that unevenness is what a delivery team most needs to know about. Which practices earn their place on a giga-project is a more useful question than whether agile as a whole belongs there.

1.8 Research Methodology

The design rests on a positivist stance and deductive reasoning (Saunders et al., 2019). Agile project management practices and project success are treated as constructs that can be measured objectively and expressed as numerical scores, not interpreted through practitioners' subjective accounts, and the hypotheses in Section 1.6 come from existing theory and are then tested against data, which is the reverse of building theory up out of open-ended fieldwork. Those two commitments settle most of what follows: a mono-method quantitative design, data drawn from a single structured questionnaire administered at one point in time, and correlational analysis testing whether agile practices and project success move together without manipulating either variable. The alternatives were ruled out on practical grounds more than philosophical ones. Manipulating agile adoption experimentally on live giga-projects would be neither ethical nor feasible, and a longitudinal design tracking practices and outcomes across successive delivery phases would outrun the timeline available for Final Project 2.

Both constructs will be measured using adapted versions of instruments that have already been validated, not newly written items. The agile practices measures developed by Conforto et al. (2014) supply the independent variable, reworded to reference construction delivery activities in place of software development activities. Project

success draws on the efficiency and stakeholder success dimensions used by Serrador and Pinto (2015), a two-part treatment that follows Atkinson's (1999) objection to time, cost and scope as a complete definition of success on their own.

Both instruments will be presented as five-point Likert items, the response format used in the source studies, with respondents rating how far each practice was used on their current or most recent giga-project and how far each success criterion was met. Demographic items will capture role, organization type, years of experience, and the programme worked on, which lets the analysis check whether any association holds across client-side and contractor-side respondents or is driven by one group. Wording the agile items for construction is the main adaptation risk. Terms that read naturally to a software team, sprint, backlog, release, have no settled equivalent on a construction site, so each item will describe the underlying behaviour, planning and re-planning work in short repeated cycles for instance, without naming the practice it belongs to.

A pilot with a small number of project management professionals will run before full distribution, to confirm that the adapted wording is read as intended and to catch items that are ambiguous or that draw the same answer from everyone. Internal consistency will be assessed by computing a Cronbach's alpha coefficient for each of the five agile dimensions and for both project success sub-scales, with .70 set as the minimum acceptable value; any dimension falling below that will have its items reviewed before the data is used for hypothesis testing. These checks carry more weight here than they would in a straight replication, since the instruments are being moved across an industry boundary and their reliability in a construction sample has never been established.

[Figure 2: This Study's Path Through Saunders et al.'s (2019) Research Onion]

The layers run from the positivist stance at the outside to the questionnaire at the centre.

The target population is project management professionals working within Saudi Arabia's giga-project construction sector: client-side project managers, contractor and subcontractor project management staff, and consultants engaged on developments such as NEOM, Red Sea Global, Qiddiya, and Diriyah Gate. The term covers anyone holding a project management role on these programmes, not only those holding a formal

certification. A sample of roughly 150 to 200 respondents is proposed. Babyak (2004) notes that linear models such as multiple regression generally need a minimum of 10 to 15 observations per predictor variable to produce good estimates, and with five agile dimensions as predictors a sample in this range gives an adequate ratio for regression-based hypothesis testing while staying realistic against the size of the accessible population. Carrying out the collection and running the analysis both belong to Final Project 2; what this study fixes is the instrument, the definition of the population and sample, and the procedure set out below.

Recruitment will be purposive, not random, since no public register exists of project management staff working on these programmes from which a probability sample could be drawn (Saunders et al., 2019). Participants will be approached through professional and industry networks connected to the giga-project programmes, and respondents will be asked to pass the questionnaire on to colleagues in comparable roles, which extends reach into contracting organizations the researcher has no direct route into. The cost of sampling this way is that a self-selecting group may over-represent practitioners who already take an interest in delivery methods, and the demographic items are partly there to make that visible in the data instead of leaving it as an unexamined assumption.

Analysis will proceed in three stages. Descriptive statistics will summarize adoption levels across the five dimensions and the distribution of reported success, which on its own answers the first research objective about current practice. Each sub-hypothesis will then be tested by correlating its dimension with the project success score. Multiple regression with all five dimensions entered together as predictors will follow, because correlations taken one at a time cannot show whether a dimension still contributes once the others are accounted for, and these practices are likely to travel together in the field, so a firm that runs iterative planning well probably also runs retrospectives. The significance threshold will be set at .05 throughout.

1.9 Scope of the Study

Several conditions bound what the eventual study can claim. The setting itself is the straightforward part, since Saudi Arabia's giga-project sector is a live, large-scale

case of construction delivered under exactly the accelerated pace and adaptive-management pressure that motivates the research question. Access to the population is realistic through professional and academic networks connected to the Kingdom's construction sector, and because these programmes collectively employ large numbers of project management staff spread across many firms and disciplines, a sample drawn that way should reflect practice across the sector reasonably well rather than being confined to a single project or organization, although findings should still be generalized with caution. The design also has to survive on modest resources, which a self-administered digital questionnaire distributed through professional networks allows, without external funding, paid database access, or in-person collection across multiple sites. Data collection will observe the standard ethical protections for survey research: voluntary participation, informed consent, anonymity or confidentiality of individual responses, and each participant's right to withdraw.

Two further limits follow from the design itself. Because agile practice use and project success are both reported by the same respondent on the same questionnaire, part of any association found may reflect common method variance instead of a relationship between the underlying constructs; separating the two would mean drawing outcome data from project records, which is beyond what this study can access. Perceptual measures of success also carry the respondent's own vantage point, since a contractor's project manager and a client-side manager can judge the same outcome differently. Collecting role as a demographic variable at least allows that to be examined, though it does not remove the problem.

1.10 The Suggested Project Structure

This project runs across five chapters. Chapter 1, this one, covers the background, problem, significance, questions, objectives, hypotheses, model, methodology, and scope. Chapter 2, the Literature Review, then works through the independent and dependent variables in more depth and how they connect. The remaining three belong to Final Project 2: Chapter 3 (Research Methodology) will work out the questionnaire design, sampling procedure, and data analysis plan; Chapter 4 (Statistical Analysis) will present the results once the data comes in; and Chapter 5

(Findings' Discussion and Conclusion) will interpret those results against the hypotheses and objectives set out here, then draw conclusions and recommendations for the sector.

Chapter 2: Literature Review

2.1 Introduction

The agile project management literature supplies the independent variable and its recognized dimensions, each traceable to a specific value or principle in the field's founding documents. The dependent variable comes from a separate tradition, one in which project success was long equated with the iron triangle of time, cost, and scope, though more recent multidimensional frameworks argue for counting customer and stakeholder outcomes alongside those efficiency measures. Where the two overlap, the evidence for a positive relationship comes almost entirely from software and general cross-industry settings. None of it comes from Saudi Arabia's giga-project construction sector.

2.2 The Independent Variable: Agile Project Management

Agile project management traces back to Japanese manufacturing research from the 1980s. Studying companies including Fuji-Xerox, Honda, and Canon, Takeuchi and Nonaka (1986) found that the fastest product-development teams did not hand work sequentially between departments; they used overlapping, self-organizing teams that carried a project from concept to launch as one unit. That observation, made well outside software, would later shape Scrum and other iterative frameworks.

The approach was formalized for software development some fifteen years later. Beck et al. (2001) set out four core values in the Manifesto for Agile Software Development: individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, and responding to change over following a plan, backed by 12 supporting principles. Writing in the same year, Highsmith and Cockburn (2001) placed this shift within a broader argument that businesses operating in fast-changing environments need development approaches built around adaptation rather than upfront prediction, characterized by close customer involvement and continuous teamwork rather than sequential handoffs. Highsmith (2004) extended these ideas beyond software

development into a general discipline of agile project management built around iterative delivery, active customer involvement, and tolerance for changing requirements throughout a project's life.

The move from software to general project management was not a simple transfer. Takeuchi and Nonaka (1986) were describing product development teams in manufacturing companies, so the original observation was never confined to software. Beck et al. (2001) added a specific set of values and principles written for software teams, and Highsmith (2004) generalized those values back out into a discipline that could apply to other kinds of project. The practices therefore have a broader origin than the Manifesto alone suggests.

Five dimensions recur across this literature. Three come straight out of the Manifesto's principles (Beck et al., 2001). The instruction to deliver working output frequently, instead of holding everything back for one release at the end of a long planning cycle, gives iterative planning: work planned and delivered in short repeated cycles, with the plan revised at the end of each cycle instead of fixed at the outset. Welcoming changing requirements even late in a project produces adaptive scope management, which lets scope move during delivery in response to new information, where the alternative treats the original scope as settled and routes every change through formal change control. The principle that a team should stop at regular intervals to reflect on how to work better lies behind continuous improvement.

The other two sit closer to the Manifesto's values than to its principles. Stakeholder collaboration, meaning continuous involvement of the client and other affected parties throughout delivery rather than consultation confined to defined approval points, follows from customer collaboration over contract negotiation, and cross-functional collaboration from individuals and interactions over processes and tools, although that second one has the older pedigree, reaching back to the self-organizing teams Takeuchi and Nonaka (1986) described, whose members held different specialisms and stayed with the project as a unit instead of passing work between departments in sequence.

There is more than one way to break agile project management into measurable parts, and the five dimensions used here are not the only option. Some of the literature organizes agile practices around specific named ceremonies instead, such as Scrum's daily stand-ups, sprint reviews, and retrospectives. Those map closely enough onto continuous improvement and cross-functional collaboration that adopting ceremony-specific language would add terminology without changing what is being measured. The five-dimension structure used in this study follows Beck et al.'s (2001) values and principles more directly, and it travels better to a construction setting, where formal Scrum ceremonies are far less established than in software teams but the underlying values, frequent delivery, cross-functional teams, adaptability, stakeholder involvement, and regular reflection, still apply. Agile project management is therefore used throughout this proposal to mean the practices themselves, not any one branded framework.

Empirical work on these practices spans software and non-software settings, though most of it comes from outside construction. A survey of 19 medium- and large-sized companies across sectors including consumer goods, aerospace, and telecommunications found agile enablers such as iterative planning and close customer involvement already in use at many of the firms before any formal agile adoption, which suggested the underlying practices are not intrinsically bound to software development (Conforto et al., 2014). Serrador and Pinto (2015) took a broader cross-industry sample a year later and found a statistically significant positive relationship between the extent of agile practice use and project success, most pronounced for stakeholder satisfaction.

Construction is thinner ground. The earliest direct attempt at the question, Owen et al. (2006), found the practices showed considerable promise during a project's pre-design and design phases but ran into substantial structural obstacles once physical construction began, among them fixed contracts, sequential trade dependencies, and safety regulation. A decade on, a survey of 67 respondents working on projects that combined lean and agile practices identified 51 statistically significant correlations between those practices and better management of project complexity, with the effect strongest where project leadership actively backed the approach (Sohi et al., 2016).

Zamil and Alhusban (2025) more recently reviewed 104 studies published between 2006 and 2025 and drew out five recurring themes: iterative planning, responsiveness to change, stakeholder collaboration, digital facilitation, and sustainability integration. Three of those correspond closely to dimensions used here, and their conclusion was that agile principles can improve adaptability, decision-making, and communication on construction projects, although organizational resistance and policy constraints continue to limit adoption.

But not all three barriers work the same way. A fixed contract makes scope change expensive by agreement rather than by preference, and trade sequencing means one team's delay propagates to every trade downstream of it, which limits how far any single team can iterate without disrupting work it does not control. Safety regulation is different again, setting a floor that no amount of team-level flexibility can move. The first two are commercial and organizational arrangements that could in principle be renegotiated by the parties to a project; the third cannot. For a study asking whether agile practices transfer into this setting, that distinction separates barriers a client could choose to lower from barriers nobody on the project is in a position to touch.

2.3 The Dependent Variable: Project Success

Project managers have traditionally measured success against what is commonly called the iron triangle: time, cost, and scope (or quality), the three constraints they are classically taught to balance against one another (Atkinson, 1999). Pinto and Slevin (1987) extended this baseline empirically. Surveying project management professionals across a range of industries, they identified 10 critical factors associated with successful project implementation and showed that measures of technical performance and client satisfaction, not cost and schedule adherence alone, distinguished the projects practitioners considered successful. The ten factors were project mission, top management support, project schedule and plans, client consultation, personnel, technical tasks, client acceptance, monitoring and feedback, communication, and troubleshooting. Several of these concern how a project team works and who it talks to rather than what it delivers against the schedule. Client consultation and client acceptance both point to the client relationship, while communication, monitoring and

feedback, and troubleshooting describe how information moves within a team during delivery. These are the aspects of delivery that agile practices are designed to change.

The iron triangle has not gone unchallenged. Atkinson (1999) put the objection most directly, calling cost, time and quality a base checklist rather than a full definition of success and proposing organizational benefits and stakeholder benefits as additional criteria. A related distinction is Cooke-Davies's (2002): project management success means delivery against time, cost and quality targets, while project success means whether the delivered output achieves the benefits it was meant to achieve, and the two can come apart in either direction. Working from empirical analysis of completed projects, Shenhar, Dvir, Levy, and Maltz (2001) built a four-dimension model covering efficiency, customer impact, business success, and future preparation, and showed that the weight each dimension carries shifts with a project's time horizon and level of technological uncertainty. What runs through all three is customer or stakeholder satisfaction, the dimension proposed most consistently alongside the traditional time-cost-scope measures. Project success is therefore measured here in two parts, efficiency (time, cost, scope) and stakeholder success (Serrador & Pinto, 2015).

One implication of these multidimensional models is that success is not fixed at a single moment. Shenhar et al. (2001) found that the weight each dimension carries depends on how far past delivery the assessment is made, with efficiency dominating immediately after handover and the business and future-preparation criteria only becoming visible years later. Cooke-Davies's (2002) separation of project management success from project success rests on the same observation, since a project can meet its time and cost targets and still fail to deliver the benefits that justified building it. That creates a real constraint for the present study. A cross-sectional survey captures assessments at one moment, which favours the efficiency and stakeholder criteria observable during or shortly after delivery and gives no purchase on the longer-horizon outcomes a giga-project is ultimately judged on. The two-part measure adopted here is therefore best read as covering the near-term half of what these frameworks describe.

2.4 The Relationship Between Agile Project Management and Project Success

Line the two literatures up and the theoretical case is fairly direct. Three of the dimensions work on the efficiency side of project success. Iterative planning surfaces problems earlier in a project's life, when they are cheaper to correct; adaptive scope management lets a project absorb changing requirements without routing each one through slow formal change control; and cross-functional collaboration cuts the sequential handoffs Takeuchi and Nonaka (1986) identified as a source of delay and rework. All three act on time, cost, and scope, which is where the iron triangle does its measuring. Stakeholder collaboration acts somewhere else, on the customer impact and stakeholder satisfaction that Shenhar et al. (2001) and Cooke-Davies (2002) both argue the iron triangle leaves out. Continuous improvement is different again, since it targets no single dimension of success so much as it compounds whatever gains the others produce, through the regular reflection and adjustment the practice is built around.

The two overrun figures Alotaibi et al. (2025) documented, 64 percent of projects over schedule and 53 percent over budget, may respond differently to agile adoption rather than moving together as a single problem. Schedule slippage often originates in discovery, where a problem goes unnoticed until a milestone review because a phase-gated approach concentrates feedback at a few fixed points, and iterative planning and continuous improvement address that by shortening the interval between doing work and finding out whether it was right. Cost overruns are more often traced to scope changes routed through slow, formal change control, which is the mechanism adaptive scope management targets. The separation is not clean, since a scope change discovered late will usually show up in both figures at once and a schedule extension carries its own costs, but if the emphasis differs even partly then agile adoption may be more strongly associated with one overrun type than the other instead of showing a uniform effect on both.

The empirical record is thinner than the theoretical case, and only partly supportive. Conforto et al. (2014) established that the practices travel outside software without testing whether they improve anything, so the positive association rests largely on Serrador and Pinto's (2015) cross-industry sample, which contained none of the contractual and regulatory constraints that define construction work. Within

construction the findings point two ways at once, promising at the design stage and obstructed once building starts (Owen et al., 2006; Zamil & Alhusban, 2025), and none of it was gathered at giga-project scale or from a Saudi sample (Sohi et al., 2016). A positive association wherever the relationship has been measured directly, set against unresolved structural barriers wherever construction has been examined, is what leaves the question open.

The barriers Owen et al. (2006) reported also suggest that the five dimensions may not transfer evenly. Iterative planning and continuous improvement operate largely inside the delivery team and do not require renegotiating anything external, so fixed contracts and regulatory approval constrain them least. Adaptive scope management is the opposite case, because changing scope on a construction project usually means varying a contract and, where the change affects a structure, obtaining fresh approval. Cross-functional collaboration and stakeholder collaboration sit between these two, depending less on contractual terms than on how the client and contractor organizations choose to work together. If the relationship between agile practices and project success does hold in giga-project construction, these differences make it plausible that it holds more strongly for some dimensions than for others.

The application of these practices within giga-project construction remains unexamined, particularly at the scale and institutional complexity Saudi Arabia's own programmes present. Owen et al.'s (2006) finding that agile practices face structural obstacles once construction begins is itself based on general construction projects, not the layered regulatory approvals, safety oversight, and site-scale constraints that a giga-project adds on top, and Sohi et al.'s (2016) complexity findings were not collected from a giga-project or Saudi Arabian sample either. Alotaibi et al. (2025) documented the scale of Saudi construction's delivery problems, cost and schedule overruns on 64 percent and 53 percent of surveyed projects respectively, but never examined whether agile practices were present, absent, or associated with these outcomes.

2.5 Conclusion

The literature supports a positive relationship between agile project management practices and project success in software and general cross-industry settings (Conforto et al., 2014; Serrador & Pinto, 2015), with some promise shown within construction (Owen et al., 2006; Sohi et al., 2016; Zamil & Alhusban, 2025). Project success itself now extends beyond time, cost, and scope to include stakeholder and customer-related outcomes (Atkinson, 1999; Cooke-Davies, 2002; Pinto & Slevin, 1987; Shenhar et al., 2001). No study has yet tested this relationship within giga-project construction, let alone in Saudi Arabia specifically.

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