

SUCCESSFUL MANAGERIAL ATTRIBUTES OF CONSTRUCTION PROJECT MANAGERS: EMPIRICAL EVIDENCE FROM AUSTRALIA

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Abstract

Construction industry growth necessitates effective management of projects to meet time, budget, quality and safety considerations. This research explores 'project success criteria' and project managers as 'critical success factors' to determine successful leadership styles and attributes. Utilizing an exploratory approach, 16 qualitative interviews with project managers and specialist recruiters were undertaken. Content analysis was also carried out on 200 industry targeted job advertisements. Findings highlight that the three traditional success criteria (time, budget, and quality) should also include stakeholder satisfaction, community engagement, health and safety, and environmental factors. Project managers must demonstrate leadership, communication, team motivation, entrepreneurship and decisiveness. These are important contributions to industry and recruitment practices within construction project management.

Keywords: project management, residential construction, success factors

INTRODUCTION

Australia's property industry is an important economic, social, and environmental contributor to society, as the country's largest industry sector representing 13 percent of gross domestic product and contributing AUD\$202.9 billion to the nation's economy (Zorbas, 2023). Sixty percent of this contribution is attributed to residential property (AUD\$122 billion) (Property Council of Australia, 2017). The residential property development sector in Australia directly supports nearly 735,000 full time equivalent jobs. Because of its complex nature this economic sector also contributes to indirect employment through activities such as manufacturing and energy usage, finance, materials, equipment, and labour (Navaratnam et al., 2022). Therefore, the property industry is a significant contributor to the social and economic prosperity of Australia generating income and job opportunities, while also supplying housing and other built form.

Housing is among the basic social conditions which define quality of life and well-being for any nation's citizens. However, in a constantly changing and urbanizing world, housing supply has not been able to adequately keep pace with demand (Chan & Adabre, 2019; Gan et al., 2017). A survey conducted among some developed countries including USA, Australia, Singapore, Hong Kong (China), New Zealand and Ireland revealed that only 63 out of 293

housing markets were considered affordable (Chan & Adabre, 2019; Cox & Pavletich, 2008). Because more than forty percent of low-income Australian households now face housing stress, defined as spending more than thirty percent of their income on housing, federal and state governments have introduced several planning mechanisms to assist with housing affordability (Han et al., 2021).

These affordable housing initiatives need to preserve the economic sustainability of developers through effective cost management of projects to ensure that they can be delivered on a continuous basis (Gan et al., 2017; Pullen et al., 2009). Cost management is part of the purview of project managers and is defined as the process of planning, estimating, coordination, control and reporting of all cost-related aspects of a project (Ashworth & Perera, 2015; Kirkham, 2014; Obi et al., 2021). Therefore, efficient construction project management not only ensures successful project delivery but also has far-reaching effects on housing prices and affordability.

The complexity of construction projects has increased in recent decades as projects have grown in scale (Chan et al., 2004; Pollack & Remington, 2016; Turner et al., 2009). Project managers are pivotal in managing these complex construction projects by applying project management tools during the planning, execution, and handover phases (Giri, 2019; Hwang & Ng, 2013; Jasper, 2018; Yang & Maxwell, 2011). To craft an effective strategy, it is important that project managers possess the essential skills, knowledge and competencies to be able to make timely decisions and actively engage the right people in the right jobs (Ahmad & Pinedo-Cuenca, 2013).

Project managers are a critical factor in achieving project success (Aronson & Lechler, 2021; Gunduz & Yahya, 2018; Mavi & Standing, 2018; Müller & Turner, 2005). Research identifies that people management drives project success more than technical issues (Aronson & Lechler, 2021; Gorod et al., 2019; Kukah et al., 2022), although few studies examine the people side of project management (Magano et al., 2020; Müller & Turner, 2005; Nicholas & Steyn, 2020; Prabhakar, 2008). Possessing traditional project management technical competencies is no longer sufficient to achieve project success (Magano et al., 2020). Consequently, project management studies in recent years have demonstrated growing interest in transferable skills like leadership, strategic management, problem-solving, communication, negotiation, and teamwork (Blaskovics et al., 2023; Magano, Silva, et al., 2021; Ribeiro et al., 2021; Rogo et al., 2020).

Despite the economic significance of the property industry and its heavy reliance on the management attributes and leadership styles of project managers, there are clear gaps in literature relative to the determination successful leadership styles and attributes. Although some existing research identifies leadership, teamwork or interpersonal competencies as contributing to project success, there is little that explores these elements. There is even less relating to construction projects and none regarding the role of project managers of land subdivisions and low-rise residential dwelling construction in Australia. To address this literature gap this study explores insights of project managers as a Critical Success Factor

(CSF) from the perspectives of two sample groups, project managers and recruitment specialists. While there are parallels in the pre-requisite skills and desirable characteristics deemed essential for employment of project managers across various industries, the main thrust of this research undertaking is limited to developing a better understanding of the employable skills and requirements in the residential construction industry in Australia. This approach allows for potential regional differences owing to domestic variations with respect to construction practices and regulatory compliance.

LITERATURE REVIEW

Project Managers

Literature highlights that, globally, the construction industry underwent significant transformation during the 1990s in response to increased human resource competition, technological advancements, contractual negotiations, and supply chain logistics (Abdel-Wahab & Vogl, 2011; Hayden, 1996). Emphasis was placed on supplementing traditional skills and knowledge of project managers with non-technical skills to meet these unprecedented industry changes (Edum-Fotwe & McCaffer, 2001; Magano, Silvius, et al., 2021).

Studies highlight the critical role played by construction project managers in solving organizational challenges such as improved productivity, conflict resolution and environmental safety (Gunduz & Yahya, 2018; Magano, Silvius, et al., 2021). Effective management as a critical factor in defining project success has been researched since the 1970's (Albert et al., 2017; Ika, 2009; Rezvani et al., 2016). Despite this, an agreed upon definition of project success does not exist (Prabhakar, 2008; Serrador & Turner, 2015). Construction project success has been studied in terms of 'project success criteria' (PSC) that are used to measure success and 'critical success factors' (CSFs) that facilitate the achievement of success (Biddulph et al., 2018; Gomes & Romão, 2016; Ika, 2009).

Project Success Criteria (PSC)

Stakeholders assess success criteria according to how accurately they align with both individual perspectives and enterprise goals (Alami, 2016; Baccarini & Collins, 2004; Chang et al., 2013). Traditionally, construction PSC have been associated with the "Iron-Triangle", highlighting time, budget and quality as benchmark measures of success (Chovichien & Nguyen, 2013; Musa & Amirudin, 2016; Silva et al., 2016). In an age where 'housing affordability' has become such a prominent topic, 'budget' is a particularly important PSC. Pollack et al. (2018) posit that although the Iron Triangle does not fully account for project success measurement, the criteria of time, budget and quality are indicative of whether a project has been delivered as planned.

The emerging need to broaden the concept of success has led researchers to adopt additional success criteria (Al-Shaaby & Almessabi, 2018; Lamprou & Vagiona, 2018). Product success (Baccarini, 1999), project efficiency, customer impact, future organizational benefits (Shenhar et al., 2001), stakeholder satisfaction (Khan et al., 2013), and other dimensions for measuring project success have been identified evolutionary elements of literary project success constructs (Castro et al., 2019). Other important literary PSC include safety, employee satisfaction, learning and development, and environmental performance (Al-Shaaby & Almessabi, 2018; Albert et al., 2017; Silva et al., 2016). 'Safety' has long been adopted as a PSC without any ambiguity or confusion (Adabre & Chan, 2019; Lamprou & Vagiona, 2022; Parfitt & Sanvido, 1993). It is defined as the degree to which general conditions promote the completion of a project without major accidents or injuries (Chan et al., 2004; Muñoz-La Rivera et al., 2021; Silva et al., 2016).

'Satisfaction' is a term that is widely defined as a PSC within literature (Chovichien & Nguyen, 2013; Khalifeh et al., 2020; Rezvani et al., 2016). Narrower uses of the term include 'user satisfaction' and 'customer' satisfaction (Al-Tmeemy et al., 2011; Chan & Chan, 2004; Ellatar, 2009). Referring to 'client satisfaction, Takim and Adnan (2009) mentioned benefits to end users, including functionality, aesthetic value, service, a pleasant environment and easy maintenance. An emerging 'satisfaction' PSC relates to staff retention, morale, growth, and skills development (Oh & Choi, 2020; Serrador & Turner, 2014). Another PSC that has attracted less attention from researchers is 'learning and development' (Takim & Adnan, 2009; Williams, 2016). This is important because lessons learned in executing projects can improve future processes and actions through better knowledge and understanding that extends beyond standard staff training (Takim & Adnan, 2009; Wai et al., 2012).

Australia's private housing sector interacts with environmental factors in three ways. First, it 'impacts' climate change through land clearing and resource usage; Second, 'sustainability' measures aim to mitigate present and future environmental impact through design decisions, material choices and process planning; Third, extreme weather events expose projects and their outputs to 'risk', which project managers aim to identify and mitigate (Hurlimann et al., 2019; McAneney et al., 2014). Recent studies have turned their attention to assessing these aspects of environmental performance as a construction PSC (Li et al., 2019; Mavi & Standing, 2018; Wuni & Shen, 2020).

Sebestyen (2017) suggests that creating a universally agreed upon PSC checklist is a continuous quest because PSC will vary from project to project and depend on a variety of issues (Kothandath & Jom, 2018; Lamprou & Vagiona, 2018; Shokri-Ghasabeh & Kavouosi-Chabok, 2009). For example, the degree of complexity, as determined by the size, duration or other parts of a project, will compel project managers to identify varying PSC (Luo et al., 2017; Ma & Fu, 2020). As technological advancements make existing systems more complex, organizations are dealing with increasingly multifaceted and perplexing issues that place greater responsibility on project managers (Jitpaiboon et al., 2019; Zuo et al., 2018; Joslin & Müller, 2016; Raziq et al., 2018).

Critical Success Factors (CSF)

Although PSC and CSFs are fundamentally different, the two elements are highly interconnected (Yong & Mustafa, 2012, 2017). According to Altarawneh and Samadi (2019) PSC are defined as the measures by which success or failure of a project or business will be judged, whereas CSFs are the management inputs that lead to the success of the project or business. Appropriate CSFs should be identified and agreed upon at the commencement of a project as they can be used as a guide to stakeholders' behaviour and are key to project success (Els et al., 2012). Todorović et al. (2015) claim the first paper that defines CSFs was published as late as 1979. CSFs in the construction industry have been extensively researched since the 1980s by numerous authors including Rockart (1982), Boynton and Zmud (1984), Sanvido et al. (1992), Chua et al. (1999) and Yu and Kwon (2011).

A systematic review undertaken by Zia (2020) focused on identifying the top ten CSFs after reviewing 40 research papers found the most critically important factor was the competence of the project manager. The remaining nine critical success factors included; appropriate planning, proficiency of the project team, management skills, past experience of project management, on-time decisions, size of the project, effective procurement methods, effective communications, and project control (Zia, 2020).

CSFs in the construction industry may include various components such as meticulous project inception, continuous management support, project manager competency, project team members competency, effective leadership, adequate financial resources, commitment, and continuous monitoring (Ahmed & Azmi bin Mohamad, 2016; Cserhádi & Szabó, 2014). Although project manager competency has been regularly highlighted in the literature as a CSF (Seiler et al., 2012; Verburg et al., 2013; Zwikael & Smyrk, 2009), most studies on project success have fallen short of identifying or analyzing the positive contribution of effective soft skills (Zuo et al., 2018). Thus, this study seeks to go some way to filling that gap in literature. Some of the factors associated with the performance of a project manager in the construction industry will be discussed in the succeeding section.

Project Managers as a CSF

Project managers play a key role in making a project successful (Giri, 2019; Zuo et al., 2018). While earlier studies only focused on the significance of project managers' technical knowledge and skills to project success (Hyvari, 2006; Pinto et al., 1998; Thamhain, 1999), subsequent literature also includes the positive effects of effective communication mechanisms (Davis, 2016). In fact, behavioral elements of project managers, such as their attitudes, interpersonal skills and knowledge, are strongly correlated with project performance (Fan et al., 2014; Thal & Bedingfield, 2010). However, no unequivocal literary consensus has been established for the measurement of personal characteristics of a project manager, particularly in the construction industry (Moura et al., 2017). The same can be said for project failure. Sauser et al. (2009, p. 665) stated that *"When important projects fail, the investigation is often focused on the engineering and technical reasons for the failure... Yet, in many cases the root cause of the failure is not technical, but managerial."* Sage et al. (2014) also noted that project failure is often a result of technically deficient management.

Lechler (1998) made an early assertion that project management is all about people management. Project managers enhance project success by influencing employees' morale, rather than only focusing on traditional project planning and controls (Aronson & Lechler, 2021). During those intervening years, project management ushered in a fresh focus on people skills (soft skills), representing a paradigm shift that moved away from technical (hard) skills of project managers (Leybourne, 2007). Notwithstanding the core fundamentals of project managers' training, which focuses on hard skills and formal qualifications, the requirement for sound human skills has become imperative (Pant & Baroudi, 2008).

A positive relationship between successful construction projects and applied management skills can be seen as contributing to the economic success of construction enterprises (Rezvani et al., 2016). This has led to the expectation that project managers need to grasp strong interpersonal skills such as enhancing unity and managing conflict, in addition to the more generally accepted, requisite technical skills (Gao, 2017). Although some authors suggest the application of interpersonal skills in the construction industry can contribute to successful outcomes (Ahsan et al., 2013; Love et al., 2005), there is scarce available literature to help equip graduates with sufficient interpersonal skills to enable them to become strong communicators, problem-solvers, conflict resolvers, decision makers, or leaders (Suhonen & Paasivaara, 2011).

METHODOLOGY

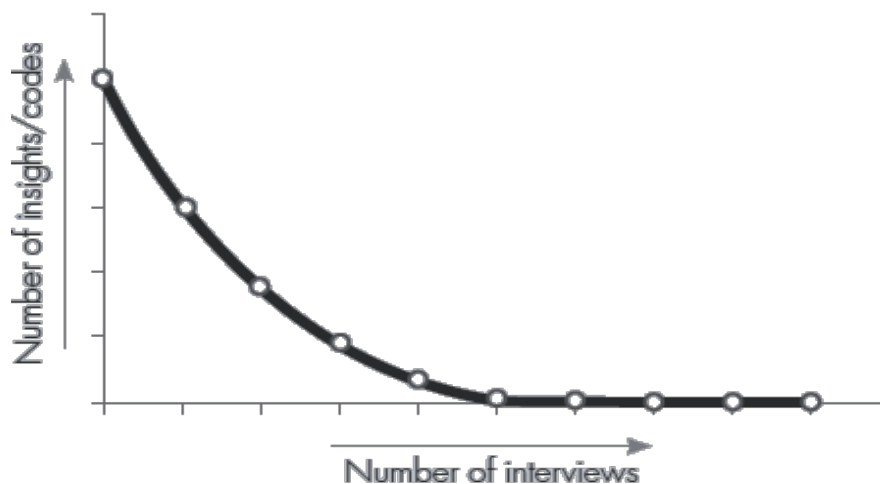
A qualitative research methodology was utilised as it focuses on describing and understanding the meaning of a particular phenomenon that is constructed by people (Basias & Pollalis, 2018). Gorman and Clayton (1997) assert that the goal of qualitative research is to understand those being studied from their perspective. Because people and their social world are the subjects of the social sciences it is necessary to see and understand the world through their eyes by seeking their views, gaining an insight into their context, and comprehending their experiences (Bryman, 2008).

A purposive sampling approach was used to home in on a specific phenomenon or process (Robinson, 2014), with expert subjects recruited who were able to offer more useful insights about the research questions from the two sample groups. Primary data was collected from semi-structured interviews of approximately 30 minutes duration. Interviews offer the added benefits of being good at obtaining detailed information and requiring few participants to gather rich and detailed data (Atkinson & Coffey, 2002; Creswell, 2003; Fontana & Frey, 2005; Kvale, 1996). Interviews of approximately 30 minutes duration were conducted via online conferencing and face-to-face during a four-month period in 2021 from June to September, inclusive.

In total, 16 respondents were interviewed, including 8 project managers who were either working actively or had been recently engaged in land development and low-rise residential construction in Australia. The remaining 8 respondents were recruitment professionals possessing considerable experience in the successful placement of project managers in the construction industry within Australia. Since qualitative studies aim for depth as well as breadth, the constraints of time, budget and resources restrict the analysis of substantial numbers of interviews (Ritchie & Lewis, 2003). In instances such as

this, where there is narrow research scope with a homogenous target group sharing similar characteristics, eight interviews per group is deemed sufficient to achieve data saturation because individual interviews are likely to overlap considerably in content (Atkinson & Coffey, 2002; Bryman, 2008; Bunce et al., 2006). Figure I displays a typical pattern of data saturation where the majority of information comes from initial interviews and then diminishes to a point where no new information is observed.

Figure I: Data Saturation Pattern



Source: Bonde (2013)

The purposive sampling technique, also referred to as judgement sampling, is a non-random technique that does not require underlying theories or a set number of participants (Tongco, 2007). In purposive sampling, the researcher decides what needs to be known and sets out to find people willing and able to provide the information by virtue of their knowledge, experience or expertise (Bernard, 2002). The main strengths of purposive sampling are that it is time and cost efficient and is suited to exploratory research design (Taherdoost, 2016). The main weaknesses are that it does not allow for generalisation and can be seen as being subjective (Etikan et al., 2016).

Typically used in qualitative research, purposive sampling involves identifying and selecting individuals or groups that are well-informed about a phenomenon of interest (Creswell, 2003; Patton, 2000). This form of purposive sampling is often referred to as expert sampling (Etikan et al., 2016). In addition to providing knowledge and experience, effective purposive subjects need to be available and willing to participate in studies and be able to articulate their experience reflectively (Bernard, 2002). These two study groups were sourced through professional networks and targeted internet searches according to their ability to fulfil the aforementioned criteria. Details about profiles of participants are presented in Tables I and II.

Table I: Profile of Participants (Project Managers) and Interview Settings

Manager	A	B	C	D	E	F	G	H
Academic Qualifications	Undergrad Degree	Undergrad Degree	Undergrad Degree	Undergrad Degree	Undergrad Degree	Undergrad Degree X2	Diploma	Nil
Professional background	Architecture	Town planning, Engineering	Public service	Property economics	Property development	Engineering economics	Real estate	Trade (Plasterer)
Years of industry experience	>20	>15	>3	>10	>5	>20	>20	>20
No. of companies worked for	>5	>3	2	2	2	>5	>5	>5
Nationality	Australian	Australian	Australian	Australian	Australian	Australian/Indian	Australian	Australian

Table II: Profile of Participants (Recruitment Specialists) and Interview Settings

Manager	A	B	C	D	E	F	G	H
Academic Qualifications	Advanced Diploma	Nil	Nil	Undergrad Degree	MBA	Undergrad Degree	Undergrad Degree	Diploma
Professional background	Recruitment Industry	Technical	Recruitment Industry	Recruitment Industry	Accounting	Human Resources	Recruitment Industry	Recruitment Industry
Years of industry experience	>20	<5	>5	>20	>10	>5	<5	>20
No. of companies worked for	2	2	1	3	2	2	2	4
Nationality	New Zealand	Australian	Australian	South African	Australian	Australian	United Kingdom	Australian

The 16 interviews yielded 150 pages of interview transcripts providing inputs about project success criteria, critical success factors, and personal characteristics of a successful project manager. Data analysis commenced with reading the transcripts thoroughly to achieve immersion. Codes were then derived through a process of highlighting exact words from the text that captured key thoughts or concepts. NVivo software was utilized to support descriptive coding and identify recurring words, phrases, and themes. Upon completing the coding process, key themes were identified, and their frequency noted. A word frequency analysis was undertaken to facilitate comprehension of the proximity between all the identified themes.

FINDINGS

This section focuses on presenting individual findings from interviews with both the recruiter and project manager sample groups, beginning with perceptions of PSC. Project manager attributes are explored as a CSF together with leadership styles of successful project managers. In the tables below,

each individual was given a code 'A' through to 'H' for both project managers and recruiters. Project manager responses are represented by 'X' while recruiter responses are shown as 'O'.

Project Success Criteria

Table III: Perceptions of PSC

	A	B	C	D	E	F	G	H
Budget								
Shareholder return, profit / margins, budget delivery, cost control	X O	X O	X O	X O	X O	X O	X O	X O
Time								
Timeframe, timely delivery, quick sales, schedule	X O	X O	X O	X O	X O	X O	X O	X O
Quality								
End user, customer alignment, right fit /product, Great place to live		X	O	X	X	X O	X	
Community								
Community need, does not disenfranchise, amenity	X		X O	X		X		
Safety and Compliance								
Workplace health and safety, accidents, injury	X O			X			O	X
Stakeholders								
Satisfaction, inclusion, relationship building	O	O	X O	O			X	X O
Environment								
Compliance, environment, avoid contamination	X							

X = Project Manager Responses O = Recruiter Responses

Both sample groups were asked to identify and discuss PSC according to their own standards and beliefs of what is important. They were requested to name their own set of criteria, in the absence of any prompting, with outcomes summarised in Table III. All project managers believed that budgetary control is necessary as a measure of success in construction projects while most perceived that project managers need to constantly remind themselves not to deviate too much from the budget forecast for any given activity. According to Project Manager C, "If the project meets or goes beyond its specified business case then it would be a successful project". In this context, it was explained that the reference to going beyond the specified business case related to exceeding budget expectations. Like the findings of project managers, all the recruitment specialists identified budget as a key indicator of project success.

Just as with budget, every project manager in the group considered time, in the context of keeping to schedules, as being an important criterion. "Is it on time and is it on budget?" stated Project Manager

H who wasn't the only one to group those two criteria together. There was a recurrent theme that a detailed and practical schedule for project activities should be developed to ensure that project performance remains on track with respect to the schedule baseline. All but one of the recruiters stated time is a crucial element that must be considered with high priority. Like the project managers, most recruiters grouped time and budget together as evidenced by Recruiter E's opinion that *"most important are time and budget"*. As testament to the enduring emphasis placed on the "Iron Triangle" incorporating budget, time and quality, the next most common response from project managers, related to quality of project outputs. Project Manager D framed the importance of this criterion by claiming *"The real success is how well it aligns to customer expectations in respect of quality"*. Surprisingly, the criterion of quality was mentioned by only two recruiters.

Community engagement was raised as a significant factor by some of the project managers who share the view that local residents have an important role to play in determining the success of low-rise residential projects. This manifests as harmony and support where planning processes are inclusive, thereby creating a perception that people's lives will be enhanced by both a greater sense of community as well as added amenities. According to Project Manager C *"Successful projects tend to create a strong sense of community, especially in property development projects"*. Only one of the recruitment specialists made any reference to community engagement, marking the first of several points where a divergence between the two groups became most evident.

Workplace safety was raised by only three project managers with minimal detail, despite placing emphasis on its importance. *"... the issue of safety and compliance is very, very important to us"* (Project Manager A). Similarly, only two recruiters offered anything in relation to this PSC with Recruiter A noting *"they would have had a good safety record as well"*.

While not a dominant theme among the project managers, some cited stakeholder satisfaction as an important PSC. Project Manager C articulated the point by saying *"I look more to the inclusion of the stakeholders and it's sort of like getting that win-win outcome"*. In contrast to the project manager group, almost all the recruiters were mindful of stakeholder satisfaction with one example being Recruiter D who listed *"Good stakeholder engagement"* as an important skill. However, when pressed to define the term 'stakeholder', almost all recruiters focused on their clients as prospective employers of project managers.

Although literature highlights the growing importance of complying with ever increasing environmental development conditions (Haaland & van Den Bosch, 2015), only one project manager mentioned this topic. However, this participant was very passionate about environmental issues, stating the importance of *"Meeting all the enviro benchmarks"* (Project Manager A). None of the recruiters made any mention of environmental compliance.

Project Managers as a Critical Success Factor

Respondents were asked to describe the salient attributes of successful project managers as CSFs based on their experience. Table IV presents the key attributes that contribute to the success of project managers that emerged through the interviews.

Table IV: Attributes of Successful Project Managers as CSFs

	A	B	C	D	E	F	G	H
Leader								
Captain, leader, management, engaged, strong, resilient	X O	X O	X O	X O	X O	X O	X O	X O
Communicator								
Communicate, communicator, detail, vision, listener	X O	X O		X O		X O	X O	
Motivator								
Disciplined, motivated, organized, Diligent, focused	X O		X O			X O		X O
Entrepreneurial								
Strategic, visionary, creative		X O		X O		X O	X O	
Decisive								
Decision, decisions, decision maker		X O		X O		X O		X O

X = Project Manager Responses O = Recruiter Responses

All respondents from both groups formed the view that successful project managers display natural leadership qualities. Leadership is the function of having vision that is well communicated, building trust among team members, and influencing groups of individuals to achieve a common goal (Al Khajeh, 2018; Bennis, 2009; Law, 2008; Nanjundeswaraswamy & Swamy, 2014; Al-Malki & Juan, 2018; Gandolfi & Stone, 2017; Northouse, 2007). The underlying theme of all responses was summed up by Project Manager A who stated that, *“My belief is the attributes of a good leader are usually the attributes of a good project manager”*.

Five project managers mentioned communication with Manager B stating, *“The best PMs are ones that have an ability to communicate amongst teams”*. This attribute faired even more prominently among the recruiter group and was underpinned by comments like, *“good communication skills lead to the successful completion of the project on time and on budget”* (Recruiter A). Taking the theme of communication to the next level, four project managers mentioned the ability to motivate others as a key requisite for successful project managers. Project Manager A stated, *“They need to find effective methods to motivate their project team members”*. Three recruiters mentioned the significance of motivation with their sentiments best summarised by Recruiter D’s assertion that *“...indeed, the responsibility for team motivation is entirely dependent upon the project manager”*.

According to some studies, entrepreneurialism is among a short list of key attributes that are most commonly correlated to project success, particularly in complex projects (Malach-Pines et al., 2008; Muller et al., 2012). Four project manager participants raised this concept. *“It’s that entrepreneurial or raw visionary quality that is key to development project success”* according to

Project Manager B. Meanwhile three recruiters underscored the importance of project managers exercising an entrepreneurial mindset with Recruiter D positing that *“It comes down to being visionary and an out of the box thinker”*.

Mullaly’s (2004) study of management practices and concepts of 550 large organizations deduced that one of the key contributors to project success included effective decision-making which was raised by four project managers and four recruiters. According to these interviewees, successful project managers are able to gather all available information from appropriate people and sources, weigh the pros and cons, then facilitate successful results through timely decisions. Representative of each group, Project Manager C asserted that *“they’re the person who will make sure that all decisions are made”* while Recruiter B stated *“They need to quickly come up with answers and resolve issues”*.

Leadership Attributes

Respondents were asked to describe the leadership traits of successful project managers based on their experience. Table V presents the leadership abilities of successful project managers that emerged through further investigation.

Table V: Views on Leadership Styles of Successful Project Managers

	A	B		C	D	E	F	G	H
Collaborative									
Collegiate, inclusive, empowering, ownership, listening; communication, direction, understanding	X	X		X O	X	X O	X O	X	O
Authoritative									
Power, management, skilled, expert; aggressive; direction				O	O	X	X		X
Adaptive									
Chameleon, adapt, flexible	O	X O		O		X	X	O	

X = Project Manager Responses O = Recruiter Responses

All but one project manager voiced support for a collaborative leadership style in successful project managers. Summarizing their views, collaborative leadership takes place when the project manager and other team members trust each other and jointly decide on adopting a path of mutually beneficial cooperation. In these circumstances, everyone, including the project manager, is willing to share knowledge and resources for the benefit of positive outcomes. Successful project managers *“...do not pretend to be the smartest person in the room but enable the smartest ideas out of that group to drive the direction of the project”* (Project Manager D). There was also strong support for a collaborative leadership style from four recruitment specialists. Those recruiters believed that project success is fundamentally dependent on a project manager’s ability to engage, involve and empower their teams. One example of this came from Recruiter F who asserted *“...project success is a derivative of the collaborative contribution of teams of skilled experts”*.

Another dominant style of leadership mentioned by both groups was generally termed as being authoritative. While the concept of being authoritative was generally supported, the notion of dictating terms in a strictly authoritarian fashion was mostly resisted. One example of this came from Project Manager E who stated, *"I ended up having to pull the "I'm the client, you're the contractor" talk which I don't like doing at all"*. Two of the recruiters firmly believed that Authoritative leadership is oftentimes required in the construction industry. They openly expressed these rigid opinions with statements like, *"Everyone's got their job to do and they need to take responsibility if things go wrong"* (Recruiter E).

Two project managers expressed the view that different circumstances require different leadership styles, allowing flexibility to adapt according to situational demands. *"...when you're dealing with your consultant team, it's collaborative but it's also authoritative to say, 'That's great, guys, but we need to hit the performance criteria'"* (Project Manager F). Both respondents believe that the complex nature of construction projects means it is important for project managers to readily adapt to changing circumstances as they arise. Project Manager F talked about being *"a chameleon at times"*. Meanwhile, three recruiters also felt that successful project managers need to employ an adaptive leadership style to effectively deal with people from all walks of life. Recruiter B proffered *"You really need to adapt your style to who you're dealing with"*.

DISCUSSION

Budget, time and quality were the three main PSC that were identified in this research study, albeit the criterion of quality was less underscored by both interview groups, particularly the recruiters. Although budget, time and quality have always been the traditional measures for project success, they are now regarded as less essential PSC (Liu et al., 2020; Turner & Zolin, 2012).

Community engagement as a PSC, is also evident in areas of literature. Thwala (2010) documented the role of community participation in South Africa; asserting that any construction development should be people driven. Others contend that community participation should be considered at the time of initiating the project as well as during implementation phases to instill a sense of ownership and responsibility in local community populations (Ahmed & Abdullahi, 2017; Sebestyen, 2017). As noted in the findings section of this article, this was the first of several points where there was significant divergence between the responses of project managers and those of the recruiters. Being current industry practitioners, the project managers are in sync with the literary view that effective community engagement is important, while the recruiters proved not to be.

Workplace safety was only mentioned in a minor way by some project managers. Although there seems to be a general lack of commitment to the importance of safety, another possible explanation is that the wellbeing of site workers is so entrenched in industry norms, that it falls outside of the project manager's purview. A review of the literature reveals that, despite years of policy reform and safety initiatives, the Australian construction industry still managed to record 27 work-related fatalities in 2022 (Safe Work Australia, 2023). A 2018 attitudinal survey of 228 construction employees found that training was largely ineffective

in changing workers' safety attitudes (Loosemore & Malouf, 2019). This may be because male domination is a hallmark of the Australian construction industry (Cartwright & Gale, 1995; Loosemore & Galea, 2008), and industries with a strong masculine culture tend to attract and retain workers with a 'macho' attitude who are inclined to take risks in their daily duties (Lingard & Wakefield, 2019; Mearns & Yule, 2009).

To be properly achieved, project success should be explored from a range of different perspectives including active stakeholders and end users of the project's outputs (Chan et al., 2004; Wai et al., 2012). However, stakeholders have competing interests that are often at odds with each other and these need to be balanced (Bahadorestani et al., 2020; Lin et al., 2018). Stakeholder satisfaction was raised as a PSC more prominently by recruiters, as compared to project managers. This may well be because recruiters are most influenced by pleasing their clients who as owners, investors, or senior managers of projects who they perceived as stakeholders.

The low priority placed on the criterion of environmental compliance by both groups is consistent with contemporary literature. Hurlimann et al. (2019) collected data from more than two-hundred construction projects across Australia finding 499 environmental breaches that occurred over 8 years. Most common environmental incidents included oil leakages, fuel spillages, plant and machine breakdowns, and contamination found in groundwater (Hurlimann et al., 2019). Notwithstanding the Environmental Protection and Biodiversity Conservation Act (1999), research pertaining to Australia's construction industry reveals that the existing regulatory context is a major obstacle in achieving climate protection (Hurlimann et al., 2018). Other impediments to the nation's environmental compliance include lack of resources, awareness about climate change, interest in spending money on green development, and risk-averse behaviors of financiers (Hurlimann et al., 2018; Shearer et al., 2016).

Of the three ways that Australia's private housing sector interacts with the environmental effects of climate change, 'sustainability' is the most contentious in the context of this study. Brundtland (1987, p. 2) defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs', thereby acknowledging social and economic aspects rather than exclusively focusing entirely on environmental matters. However, because most economic benefits are spread over the useful life of buildings, there is no immediate return for the party who bears the cost and, therefore, little motivation to do so (Bordass, 2000). It therefore follows that the willingness of house buyers to pay an extra premium for climate-adaptive elements to housing developers is low, making it harder for developers to garner financial support for "green" projects (Crabtree & Hes, 2009; Tapsuwan et al., 2018).

Thus, the main barrier to sustainable development at project investor and senior management levels is the perceived additional cost that is met with market resistance by end users. Although modern literature seeks to address negative perceptions of sustainable development and promote its uptake, it is slow to take on and does not feature strongly as a

PSC in the purview of project managers. Similarly, recruiters are not particularly environmentally literate in the context of this study. Although there is a gap between real-world practice and the literature, the move towards greater sustainability is inevitable and could be better managed with proper planning at the corporate level that flows through to project managers and is also shared with educators and recruiters.

Although the significance of effective leadership has been recognised as a major contributing success factor for organizations, there is scant material available to support the relationship between construction project success and leadership styles of project managers (Müller & Jugdev, 2012; Yang et al., 2014). Nonetheless, there are some authors who note that among CSFs, the personal qualities and leadership styles of project managers have a significant role to play (Khan et al., 2013; Müller & Turner, 2005; Thal & Bedingfield, 2010). It is clear from this research that project managers and recruiters alike believe strong leadership qualities are required to generate successful outcomes. Another significant congruence of CSF responses related to effective communication, both through appropriate use of correct channels as well as the way in which information is framed. The importance of smooth, effective communication between project managers and other team members should not be underestimated as it can either allow teams to work freely or, conversely, it can constrain the open flow of information and ideas (Fedor et al., 2003; Rezvani et al., 2016).

The emphasis that project managers and recruiters placed on the ability of project managers to motivate others as a CSF is interesting. Although theories of motivation are abundant in leadership literature, the same cannot be said in relation to project management as a discipline. Regardless, the Chartered Institute of Building (2010) asserts that part of the role of construction project managers is to effectively motivate their project management teams to fully optimise each individual's positive contribution to the overall effort and outputs of the project. Effective motivation of project managers can substantially influence the productivity in projects, especially within the construction sector which relies heavily on human resources (Johari & Jha, 2020; Phan et al., 2020; Van Tam et al., 2021).

Strong support from both interview groups for entrepreneurialism as a key determinant of project management success is well represented in literature. While there is definitional diversity of the term entrepreneurship (Alegre et al., 2017; Audretsch et al., 2015; Conway Dato-on & Kalakay, 2016), several accepted sources describe it as opportunity pursuit, business creation, and profit-seeking (Bennett, 2003; Bennett, 2006; Prince et al., 2021). Hence, it has been contended in some studies that there is a need to apply entrepreneurial functions to construction projects to achieve success (Abd-Hamid et al., 2015; Mbiru et al., 2020). According to a literature review of entrepreneurial research studies over the last 20 years, creative thinking is at the core of entrepreneurial success, together with a willingness to take risks, managerial skill sets, the ability to mobilise resources and the ability to bounce back from failures (Yoganandan & Kumar, 2021).

The final finding relating to CSFs was the decision-making skills of project managers. Eweje et al. (2012) asserts that decisions made by project managers depend heavily on the information on which they are

based and have a significant impact on the strategic value of the asset delivered. To be truly effective decision makers, project managers should be empowered with sufficient authority and avenues of delegation (Giri, 2019). Timely decisions made by project managers can also help significantly in adopting effective measures to mitigate risks (Giri, 2019).

The three prominent leadership styles that emerged were identified as 'Collaborative', 'Authoritative' and 'Adaptive'. Collaborative can be aligned with 'Democratic' leadership where one encourages employee participation, works with employees to determine what to do, and does not micromanage (Tayfur Ekmekci & Tosunoglu, 2016). Meanwhile Authoritative resembles 'Autocratic' leadership, where one person makes all decisions, tells employees what to do, and micromanages them (Tayfur Ekmekci & Tosunoglu, 2016). These categories originated from Lippitt and White's (1939) early experiments on the behaviours of leaders and remain relevant today (Billig, 2014; Gandolfi & Stone, 2017; Ullah et al., 2019).

The third identified leadership style, Adaptive, bears resemblance to Situational Leadership as first recognised by Hersey and Blanchard (1969). This leadership style is based on a leader's ability to adapt to the requirements of different teams and situations (Jasper, 2018).

Several studies posit that project success is being viewed more widely as a collaborative achievement involving trust and teamwork to overcome challenges and deliver positive outcomes (Bond-Barnard et al., 2018; Buvik & Rolfsen, 2015; Cuganesan & Floris, 2020). The true spirit of collaborative leadership, however, can only be achieved when all project members share a common purpose, develop mutual trust, and when all the members follow work practices (Chen et al., 2003; Ollus et al., 2011). From this it can be deduced that what the respondents referred to as a collaborative leadership style can just as easily be interpreted as Democratic.

Autocratic leadership is most common in smaller enterprises and leads to low levels of employee satisfaction (Turner et al., 2010). Project managers who subscribe solely to this style of leadership generally struggle to control and direct their team members (Ali et al., 2021). This may well explain why the project manager interviews yielded tempered responses suggesting moderation in adopting an authoritative leadership style. It is perplexing, however, that there was such staunch support for autocratic leadership coming from at least two of the recruiters.

The final leadership style identified in this study was Adaptive leadership which has been likened to Situational Leadership as it was spoken about in terms of being flexible according to differing situations and dealing with people from all walks of life. Although recognized as being easily understood, intuitively appealing, and applicable to a wide range of settings in some areas of literature (Jasper, 2018; Shonhiwa, 2016) there was only minor support for Situational Leadership from both project managers and recruiters.

CONCLUSIONS

There is strong evidence to support continued adherence to budget, time and quality as major PSC despite some studies suggesting a movement away from these traditional benchmarks. Of particular note is that budget and time seem to attract the major focus with attention to quality being deemed as less important. This is most likely a result of economic pressure pertaining to the magnitude and risk profile of land development and residential construction projects. The lack of attention paid to quality as a PSC may also be representative of the stakeholders that were interviewed. It would be reasonable to assume that owners of a project or consumers of its outputs would place far more importance on quality as a measure of project success. The divergence between project managers and recruiters regarding the remaining PSC is understandable in the sense that members of the former group are immersed in the industry full-time, while those in the latter group are not. It is also reasonable to conclude that recruiters' gaps in understanding may well be a result of being improperly briefed at their time of engagement.

In gaining an understanding of the identified themes of successful attributes from both project managers and recruiters, the labels of leader, communicator, motivator, entrepreneurial and decisive are obviously quite generic. Similarly, Collaborative, Authoritative and Adaptive leadership styles have all been recognized in long established literature, albeit under different names. While none of these are specific to any industry or situation, the findings of this study conclude that project managers who exhibit Collaborative leadership attributes are most likely to achieve successful outcomes. Therefore, recruiters who are seeking project managers for construction firms in Australia should place a great amount of significance on requisite interpersonal skills and leadership qualities, as opposed to established, conventional criteria such as technical knowledge, formal qualifications and management competencies.

All research has limitations, and we wish to acknowledge the key limitations of this study. Firstly, the research approach required a depth of understanding of the phenomena from those experiencing it and as such in-depth interviews with a smaller number of respondents were undertaken. While this enhanced the depth of information that was able to be obtained, the subjective nature of the data may not be generalizable to all populations. Secondly, the sample size was limited to project managers and recruitment specialists and as such these stakeholders have particular views of PSC and CSF that might not be replicated by other stakeholder groups. Thirdly, interviews that take place in a natural setting make it difficult to replicate studies (Wiersma, 2000). During the interviews, particular attention was paid to avoiding any possibility of interviewer bias by not leading the interviewees. Fourthly, an inductive approach to content analysis was also adopted in this study, with researcher bias can potentially influence the process of inductive coding through their own subjectivities (Bryman, 2008). To address this, detailed field notes were taken immediately after each interview for later reference. Finally, because this research is exploratory by nature and identifies characteristics or attributes that these specific individuals consider important to the success of project managers the findings are not readily transferable or generalizable. The findings do form a basis for addressing this under-researched field, particularly in this context.

The misaligned perception of clearly defined PSC that exists between project managers and recruiters is a cause for concern. These criteria generally form the basis of key performance indicators by which project manager performance is assessed, so there should be far stronger alignment and clarity regarding expectations. Construction firms need to create systems and processes that ensure recruiters are adequately briefed to attract suitable candidates who clearly understand what is expected of them. As it is now widely recognized that the role of project managers has evolved to extend beyond technical elements of a project and incorporate effective people management, there is a requirement to make sure they are equipped with the metaphoric tools to succeed. In this sense, education, upskilling, and ongoing training programs need to include elements such as interpersonal skills, conflict resolution, negotiation strategies, teamwork and critical problem-solving techniques.

This study benefits both the land development and low rise construction industry by identifying specific factors that define successful project managers so that employers can apply better targeted essential selection criteria. It also provides recommendations to training and education institutions about more effective focus areas so that courses and subjects can be better targeted towards the specific knowledge requirements that will aid project managers in delivering successful outcomes. At present there are significant gaps to explore within the literature as there is limited research that is targeting this specific discipline and industry context. A key contribution of this study is that it extends the work of researchers in project management as a broad field, whilst demonstrating links between existing literature and, more specifically, the discipline of land development and low-rise construction in a local context.

DISCLOSURE STATEMENT

The authors report there are no competing interests to declare.

REFERENCES

- Abdel-Wahab, M., & Vogl, B. (2011). Trends of productivity growth in the construction industry across Europe, US and Japan. *Construction Management and Economics*, 29(6), 635–644. <https://doi.org/10.1080/01446193.2011.573568>
- Abd-Hamid, Z., Azizan, N. A., & Sorooshian, S. (2015). Predictors for the success and survival of entrepreneurs in the construction industry. *International Journal of Engineering Business Management*, 7, 12. <https://doi.org/10.5772/60530>
- Adabre, M. A., & Chan, A. P. C. (2019). The ends required to justify the means for sustainable affordable housing: A review on critical success criteria. *Sustainable Development*, 27(4), 781–794. <https://doi.org/10.1002/sd.1919>
- Adams, J. R., & Campbell, B. W. (1988). Roles and responsibilities of the project manager. Project Management Institute

- Ahmad, M. M., & Pinedo Cuenca, R. (2013). Critical success factors for ERP implementation in SMEs. *Robotics and Computer-Integrated Manufacturing*, 29(3), 104–111. <https://doi.org/10.1016/j.rcim.2012.04.019>
- Ahmed, R., & Azmi bin Mohamad, N. (2016). Exploring the relationship between multi-dimensional top management support and project success: An international study. *Engineering Management Journal*, 28(1), 54–67. <https://doi.org/10.1080/10429247.2015.1136525>
- Ahmed, S., & Abdullahi, A. M. (2017). Leadership and project success in development sector. *Journal of Economics and Management*, 30, 5–19. <https://doi.org/10.22367/jem.2017.30.01>
- Ahsan, K., Ho, M., & Khan, S. (2013). Recruiting project managers: A comparative analysis of competencies and recruitment signals from job advertisements. *Project Management Journal*, 44(5), 36–54. <https://doi.org/10.1002/pmj.21366>
- Al Khajeh, E. H. (2018). Impact of leadership styles on organizational performance. *Human Resource Management Research*, 2018, 1–10
- Alami, A. (2016). Why do information technology projects fail? *Procedia Computer Science*, 100, 62–71. <https://doi.org/10.1016/j.procs.2016.09.124>
- Albert, M., Balve, P., & Spang, K. (2017). Evaluation of project success: A structured literature review. *International Journal of Managing Projects in Business*, 10(4), 796–821. <https://doi.org/10.1108/IJMPB-01-2017-0004>
- Alegre, I., Kislenko, S., & Berbegal-Mirabent, J. (2017). Organized chaos: Mapping the definitions of social entrepreneurship. *Journal of Social Entrepreneurship*, 8(2), 248–264. <https://doi.org/10.1080/19420676.2017.1371631>
- Ali, M., Li, Z., Haider, M., Khan, S., & Mohi Ud Din, Q. (2021). Does humility of project manager affect project success? Confirmation of moderated mediation mechanism. *Management Research Review*, 44(9), 1320–1341. <https://doi.org/10.1108/MRR-10-2020-0640>
- Al-Malki, M., & Juan, W. (2018). Leadership styles and job performance: A literature review. *Journal of International Business Research and Marketing*, 3(3), 40–49. <https://doi.org/10.18775/jibrm.1849-8558.2015.33.3004>
- Al-Shaaby, A., & Almessabi, A. (2018). How do we measure project success? A survey. *Journal of Information Technology and Software Engineering*, 8(229), 2
- Altarawneh, J. Y., & Samadi, B. (2019). The relationship between critical success factors and success criteria in construction projects in the United Arab Emirates. *International Journal of Advanced and Applied Sciences*, 6(7), 43–53. <https://doi.org/10.21833/ijaas.2019.07.006>
- Al-Tmeemy, S. M. H. M., Abdul-Rahman, H., & Harun, Z. (2011). Future criteria for success of building projects in Malaysia. *International Journal of Project Management*, 29(3), 337–348. <https://doi.org/10.1016/j.ijproman.2010.03.003>
- Aronson, Z. H., & Lechler, T. G. (2021). Project success: What is the role of project team morale and how it can be boosted? *International Journal of Innovation and Technology Management*, 18(7), 2150031. <https://doi.org/10.1142/S0219877021500310>
- Ashworth, A., & Perera, S. (2015). *Cost studies of buildings*. Routledge

- Atkinson, P., & Coffey, A. (2002). Revisiting the relationship between participant observation and interviewing. In J. Gubrium & J. Holstein (Eds.), *Handbook of interview research: Context and method* (pp. 801–814). Sage Publications
- Audretsch, D. B., Belitski, M., & Desai, S. (2015). Entrepreneurship and economic development in cities. *The Annals of Regional Science*, 55(1), 33–60. <https://doi.org/10.1007/s00168-015-0685-x>
- Baccarini, D. (1999). The logical framework method for defining project success. *Project Management Journal*, 30(4), 25–32. <https://doi.org/10.1177/875697289903000405>
- Baccarini, D., & Collins, A. (2004, October 10–12). The concept of project success—What 150 Australian project managers think. Australian Institute of Project Management (AIPM) conference. Perth. <http://hdl.handle.net/20.500.11937/4041>
- Bahadorestani, A., Naderpajouh, N., & Sadiq, R. (2020). Planning for sustainable stakeholder engagement based on the assessment of conflicting interests in projects. *Journal of Cleaner Production*, 242, 118402. <https://doi.org/10.1016/j.jclepro.2019.118402>
- Basias, N., & Pollalis, Y. (2018). Quantitative and qualitative research in business and technology: Justifying a suitable research methodology. *Review of Integrative Business and Economics Research*, 7, 91–105
- Bennett, F. (2003). *The management of construction: A project life cycle approach*. Butterworth-Heinemann
- Bennett, R. (2006). Business lecturers' perceptions of the nature of entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, 12(3), 165–188. <https://doi.org/10.1108/13552550610667440>
- Bennis, W. (2009). Crises reveal the quality of leadership. *Leader to Leader*, 2009(54), 27–31. <https://doi.org/10.1002/ltl.361>
- Bernard, H. (2002). *Research methods in anthropology: Qualitative and quantitative approaches* (3rd ed.). Alta Mira Press
- Biddulph, S., Manu, P., Dziekoński, K., Mahamadu, A., Aigbavboa, C., & Lee, S. (2018). The effect of project success factors on project success criteria [Paper presentation]. Construction Industry Development Board (CIDB) Postgraduate Conference, Port Elizabeth, South Africa
- Billig, M. (2015). Kurt Lewin's leadership studies and his legacy to social psychology: Is there nothing as practical as a good theory? *Journal for the Theory of Social Behaviour*, 45(4), 440–460. <https://doi.org/10.1111/jtsb.12074>
- Blaskovics, B., Maró, Z. M., Klimkó, G., Papp-Horváth, V., & Csiszárík-Kocsir, Á. (2023). Differences between public-sector and private-sector project management Practices in Hungary from a competency point of view. *Sustainability*, 15(14), 11236. <https://doi.org/10.3390/su151411236>
- Bond-Barnard, T. J., Fletcher, L., & Steyn, H. (2018). Linking trust and collaboration in project teams to project management success. *International Journal of Managing Projects in Business*, 11(2), 432–457. <https://doi.org/10.1108/IJMPB-06-2017-0068>
- Bonde, D. (2013). Qualitative interviews: When enough is enough. <http://www.researchbydesign.com.au/media/RBD-WhitePaper-Margin-of-Error.pdf>
- Bordass, B. (2000). Cost and value: Fact and fiction. *Building Research and Information*, 28(5–6), 338–352. <https://doi.org/10.1080/096132100418492>

- Boynton, A. C., & Zmud, R. W. (1984). An assessment of critical success factors. *Sloan Management Review*, 25(4), 17–27
- Brundtland, G. H. (1987). Our common future. United Nations. <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- Bryman, A. (2008). Of methods and methodology. *Qualitative Research in Organizations and Management: An International Journal*, 3(2), 159–168. <https://doi.org/10.1108/17465640810900568>
- Buvik, M. P., & Rolfsen, M. (2015). Prior ties and trust development in project teams—A case study from the construction industry. *International Journal of Project Management*, 33(7), 1484–1494. <https://doi.org/10.1016/j.ijproman.2015.06.002>
- Cartwright, S., & Gale, A. (1995). Project management: Different gender, different culture?: A discussion on gender and organizational culture—part 2. *Leadership and Organization Development Journal*, 16(4), 12–16. <https://doi.org/10.1108/01437739510089058>
- Castro, M. S., Bahli, B., Farias Filho, J. R., & Barcaui, A. (2019). A contemporary vision of project success criteria. *Brazilian Journal of Operations and Production Management*, 16(1), 66–77. <https://doi.org/10.14488/BJOPM.2019.v16.n1.a6>
- Chan, A. P. C., & Adabre, M. A. (2019). Bridging the gap between sustainable housing and affordable housing: The required critical success criteria (CSC). *Building and Environment*, 151, 112–125. <https://doi.org/10.1016/j.buildenv.2019.01.029>
- Chan, A. P. C., & Chan, A. P. L. (2004). Key performance indicators for measuring construction success. *Benchmarking: An International Journal*, 11(2), 203–221. <https://doi.org/10.1108/14635770410532624>
- Chan, A. P. C., Scott, D., & Chan, A. P. L. (2004). Factors affecting the success of a construction project. *Journal of Construction Engineering and Management*, 130(1), 153–155. [https://doi.org/10.1061/\(ASCE\)0733-9364\(2004\)130:1\(153\)](https://doi.org/10.1061/(ASCE)0733-9364(2004)130:1(153))
- Chang, A., Chih, Y.-Y., Chew, E., & Pisarski, A. (2013). Reconceptualising mega project success in Australian Defence: Recognising the importance of value co-creation. *International Journal of Project Management*, 31(8), 1139–1153. <https://doi.org/10.1016/j.ijproman.2012.12.005>
- Chartered Institute of Building (2022). *Code of practice for project management for construction and development* (6th ed.). Wiley-Blackwell
- Chen, F., Nunamaker, J. F., Romano, N. C., & Briggs, R. O. (2003). A collaborative project management architecture. In *Proceedings of the 36th annual Hawaii international conference on system sciences*. <https://doi.org/10.1109/HICSS.2003.1173655>
- Cheong Yong, Y., & Emma Mustafa, N. (2012). Analysis of factors critical to construction project success in Malaysia. *Engineering, Construction and Architectural Management*, 19(5), 543–556. <https://doi.org/10.1108/09699981211259612>
- Chovichien, V., & Nguyen, T. (2013). List of indicators and criteria for evaluating construction project success and their weight assignment [Paper presentation]. The 4th International Conference on Engineering, Project, and Production Management, Bangkok, Thailand
- Chua, D. K. H., Kog, Y. C., & Loh, P. K. (1999). Critical success factors for different project objectives. *Journal of Construction Engineering and Management*, 125(3), 142–150. [https://doi.org/10.1061/\(ASCE\)0733-9364\(1999\)125:3\(142\)](https://doi.org/10.1061/(ASCE)0733-9364(1999)125:3(142))

- Conway Dato-on, M., & Kalakay, J. (2016). The winding road of social entrepreneurship definitions: A systematic literature review. *Social Enterprise Journal*, 12(2), 131–160. <https://doi.org/10.1108/SEJ-06-2015-0016>
- Cox, W., & Pavletich, H. (2008). 4th Annual Demographia International Housing Affordability Survey. Pavletich Properties Limited
- Crabtree, L., & Hes, D. (2009). Sustainability uptake in housing in metropolitan Australia: An institutional problem, not a technological one. *Housing Studies*, 24(2), 203–224. <https://doi.org/10.1080/02673030802704337>
- Creswell, J. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Sage Publications
- Cserhádi, G., & Szabó, L. (2014). The relationship between success criteria and success factors in organisational event projects. *International Journal of Project Management*, 32(4), 613–624. <https://doi.org/10.1016/j.ijproman.2013.08.008>
- Cuganesan, S., & Floris, M. (2020). Investigating perspective taking when infrastructure megaproject teams engage local communities: Navigating tensions and balancing perspectives. *International Journal of Project Management*, 38(3), 153–164. <https://doi.org/10.1016/j.ijproman.2020.01.006>
- Davis, K. (2016). A method to measure success dimensions relating to individual stakeholder groups. *International Journal of Project Management*, 34(3), 480–493. <https://doi.org/10.1016/j.ijproman.2015.12.009>
- Edum-Fotwe, F., & McCaffer, R. (2001). The future project manager—Some considerations of knowledge and skill requirements [Paper presentation]. CIB World Building Congress
- Ellatar, S. (2009). Towards developing an improved methodology for evaluating performance and achieving success in construction projects. *Scientific Research and Essays*, 4, 549–554
- Els, M., Van der Merwe, M., & Hauptfleisch, A. (2012). Critical success criteria and success factors in project management: A quest to enhance generic professional practice. *ICEC Publ*, 36, 1–15
- Act, E.P.B.C., 1999. *Environment Protection and Biodiversity Conservation Act 1999* (Cth).
- Etikan, I., Musa, S., & Alkassim, R. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Eweje, J., Turner, R., & Müller, R. (2012). Maximizing strategic value from megaprojects: The influence of information-feed on decision-making by the project manager. *International Journal of Project Management*, 30(6), 639–651. <https://doi.org/10.1016/j.ijproman.2012.01.004>
- Fan, Y., Thomas, M., & Anantatmula, V. (2014). A longitudinal study of the required skills of project managers. *The Journal of Modern Project Management*, 1(3).
- Fareed, M. Z., Su, Q., & Awan, A. A. (2021). The effect of emotional intelligence, intellectual intelligence and transformational leadership on project success; an empirical study of public projects of Pakistan. *Project Leadership and Society*, 2, 100036.
- Fedor, D. B., Ghosh, S., Caldwell, S. D., Maurer, T. J., & Singhal, V. R. (2003). The effects of knowledge management on team members' ratings of project success and impact. *Decision Sciences*, 34(3), 513–539. <https://doi.org/10.1111/j.1540-5414.2003.02395.x>

- Fontana, A., & Frey, J. (2005). The interview: From neutral stance to political involvement. In N. Denzin & Y. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 695–727). Sage Publications
- Gan, X., Zuo, J., Wu, P., Wang, J., Chang, R., & Wen, T. (2017). How affordable housing becomes more sustainable? A stakeholder study. *Journal of Cleaner Production*, 162, 427–437. <https://doi.org/10.1016/j.jclepro.2017.06.048>
- Gandolfi, F., & Stone, S. (2017). The emergence of leadership styles: A clarified categorization. *Revista de Management Comparat International*, 18(1), 18
- Gao, L. (2017). Optimization of enterprise training system from the perspective of project management. *DEStech Transactions on Social Science, Education and Human Science*, (), (). <http://doi.org/10.12783/dtssehs/icsste2017/9297>
- Giri, O. P. (2019). Study on the role of project manager in improving the project performance. *Technical Journal*, 1(1), 133–139. <https://doi.org/10.3126/tj.v1i1.27711>
- Gomes, J., & Romão, M. (2016). Improving project success: A case study using benefits and project management. *Procedia Computer Science*, 100, 489–497. <https://doi.org/10.1016/j.procs.2016.09.187>
- Gorman, D., & Clayton, P. (1997). *Qualitative research for the information professional: A practical handbook*. Library Association Publishing
- Gorod, A., Hallo, L., Ireland, V., & Gunawan, I. (2019). *Evolving toolbox for complex project management*. CRC Press
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Gunduz, M., & Yahya, A. M. A. (2018). Analysis of project success factors in construction industry. *Technological and Economic Development of Economy*, 24(1), 67–80. <https://doi.org/10.3846/20294913.2015.1074129>
- Haaland, C., & van Den Bosch, C. K. (2015). Challenges and strategies for urban green-space planning in cities undergoing densification: A review. *Urban Forestry and Urban Greening*, 14(4), 760–771. <https://doi.org/10.1016/j.ufug.2015.07.009>
- Han, H., Kim, S., Jin, M. Y., & Pettit, C. (2021). Providing affordable housing through urban renewal projects in Australia: Expert opinions on barriers and opportunities. *International Review for Spatial Planning and Sustainable Development*, 9(2), 41–61. https://doi.org/10.14246/irspsd.9.2_41
- Hayden, B. J. (1996). Learning on the jagged edge. *Journal of Management in Engineering*, 12(1), 23–25. [https://doi.org/10.1061/\(ASCE\)0742-597X\(1996\)12:1\(23\)](https://doi.org/10.1061/(ASCE)0742-597X(1996)12:1(23))
- Hersey, P., Blanchard, K., & Johnson, D. (1988). *Management of organizational behavior: Utilizing human resources*. Prentice Hall
- Hurlimann, A. C., Browne, G. R., Warren-Myers, G., & Francis, V. (2018). Barriers to climate change adaptation in the Australian construction industry—Impetus for regulatory reform. *Building and Environment*, 137, 235–245. <https://doi.org/10.1016/j.buildenv.2018.04.015>
- Hurlimann, A. C., Warren-Myers, G., & Browne, G. R. (2019). Is the Australian construction industry prepared for climate change? *Building and Environment*, 153, 128–137. <https://doi.org/10.1016/j.buildenv.2019.02.008>

- Hwang, B.-G., & Ng, W. J. (2013). Project management knowledge and skills for green construction: Overcoming challenges. *International Journal of Project Management*, 31(2), 272–284. <https://doi.org/10.1016/j.ijproman.2012.05.004>
- Hyväri, I. (2006). Success of projects in different organizational conditions. *Project Management Journal*, 37(4), 31–41. <https://doi.org/10.1177/875697280603700404>
- Ika, L. A. (2009). Project success as a topic in project management journals. *Project Management Journal*, 40(4), 6–19. <https://doi.org/10.1002/pmj.20137>
- Jasper, L. (2018). Building an adaptive leadership style. *Strategic Finance*, 99(9), 54–61
- Jitpaiboon, T., Smith, S. M., & Gu, Q. (2019). Critical success factors affecting project performance: An analysis of tools, practices, and managerial support. *Project Management Journal*, 50(3), 271–287. <https://doi.org/10.1177/8756972819833545>
- Johari, S., & Jha, K. N. (2020). Impact of work motivation on construction labor productivity. *Journal of Management in Engineering*, 36(5), 04020052. [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000824](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000824)
- Joslin, R., & Müller, R. (2016). The impact of project methodologies on project success in different project environments. *International Journal of Managing Projects in Business*, 9(2), 364–388. <https://doi.org/10.1108/IJMPB-03-2015-0025>
- Safe work Australia (2023). Key work health and safety statistics Australia, 2023. <https://data.safeworkaustralia.gov.au/insights/key-whs-stats-2023>
- Khalifeh, A., Farrell, P., & Al-edenat, M. (2020). The impact of project sustainability management (PSM) on project success. *Journal of Management Development*, 39(4), 453–474. <https://doi.org/10.1108/JMD-02-2019-0045>
- Khan, K., Turner, R., & Maqsood, T. (2013). Factors that influence the success of public sector projects in Pakistan [Paper presentation]. IRNOP XI. Oslo, Norway. <https://doi.org/10.13140/2.1.4832.9605>
- Kiani Mavi, R., & Standing, C. (2018). Critical success factors of sustainable project management in construction: A fuzzy DEMATEL-ANP approach. *Journal of Cleaner Production*, 194, 751–765. <https://doi.org/10.1016/j.jclepro.2018.05.120>
- Kirkham, R. (2014). *Ferry and Brandon's cost planning of buildings*. John Wiley & Sons
- Kothandath, S., & Jom, I. (2018). Project success criteria preferences. *IUJ Journal of Management*, 6(2), 73–77
- Kukah, A. S. K., Owusu-Manu, D.-G., & Edwards, D. (2023). Critical review of emotional intelligence research studies in the construction industry. *Journal of Engineering, Design and Technology [Advance online publication]*, 21(6), 1925–1947. <https://doi.org/10.1108/JEDT-08-2021-0432>
- Kvale, S. (1996). *InterViews: An introduction to qualitative research interviewing*. Sage Publications
- Lamprou, A., & Vagiona, D. (2018). Success criteria and critical success factors in project success: A literature review. *RELAND: International Journal of Real Estate & Land Planning*, 1, 276–284
- Lamprou, A., & Vagiona, D. G. (2022). Identification and evaluation of success criteria and critical success factors in project success. *Global Journal of Flexible Systems Management*, 23(2), 237–253. <https://doi.org/10.1007/s40171-022-00302-3>

- Law, D. (2008). Making a difference: Leadership and academic libraries. *Library Review*, 57(6), 471–473. <https://doi.org/10.1108/00242530810886797>
- Lechler, T. (1998). When it comes to project management, it's the people that matter: An empirical analysis of project management in Germany. *IRNOP III. The nature and role of projects in the next 20 years: Research issues and problems*, 20, 205–215
- Lewin, K., Lippitt, R., & White, R. K. (1939). Patterns of aggressive behavior in experimentally created "social climates". *The Journal of Social Psychology*, 10(2), 269–299. <https://doi.org/10.1080/00224545.1939.9713366>
- Leybourne, S. A. (2007). The changing bias of project management research: A consideration of the literatures and an application of extant theory. *Project Management Journal*, 38(1), 61–73. <https://doi.org/10.1177/875697280703800107>
- Li, Y., Song, H., Sang, P., Chen, P.-H., & Liu, X. (2019). Review of Critical Success Factors (CSFs) for green building projects. *Building and Environment*, 158, 182–191. <https://doi.org/10.1016/j.buildenv.2019.05.020>
- Lin, X., Ho, C. M.-F., & Shen, G. Q. (2018). For the balance of stakeholders' power and responsibility. *Management Decision*, 56(3), 550–569. <https://doi.org/10.1108/MD-05-2016-0275>
- Lingard, H., & Wakefield, R. (2019). *Integrating work health and safety into construction project management*. John Wiley & Sons
- Liu, B., Xue, B., Meng, J., Chen, X., & Sun, T. (2020). How project management practices lead to infrastructure sustainable success: An empirical study based on goal-setting theory. *Engineering, Construction and Architectural Management*, 27(10), 2797–2833. <https://doi.org/10.1108/ECAM-08-2019-0463>
- Loosemore, M., & Galea, N. (2008). Genderlect and conflict in the Australian construction industry. *Construction Management and Economics*, 26(2), 125–135. <https://doi.org/10.1080/01446190701798810>
- Loosemore, M., & Malouf, N. (2019). Safety training and positive safety attitude formation in the Australian construction industry. *Safety Science*, 113, 233–243. <https://doi.org/10.1016/j.ssci.2018.11.029>
- Love, P. E., Fong, P. S.-w., & Irani, Z. (2005). *Management of knowledge in project environments*. Routledge
- Luo, L., He, Q., Jaselskis, E. J., & Xie, J. (2017). Construction project complexity: Research trends and implications. *Journal of Construction Engineering and Management*, 143(7), 04017019. [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001306](https://doi.org/10.1061/(ASCE)CO.1943-7862.0001306)
- Ma, L., & Fu, H. (2020). Exploring the influence of project complexity on the mega construction project success: A qualitative comparative analysis (QCA) method. *Engineering, Construction and Architectural Management*, 27(9), 2429–2449. <https://doi.org/10.1108/ECAM-12-2019-0679>
- Magano, J., Silva, C., Figueiredo, C., Vitória, A., Nogueira, T., & Pimenta Dinis, M. A. (2020). Generation Z: Fitting project management soft skills competencies—A mixed-method approach. *Education Sciences*, 10(7), 187. <https://doi.org/10.3390/educsci10070187>
- Magano, J., Silva, C. S., Figueiredo, C., Vitória, A., & Nogueira, T. (2021). Project management in engineering education: Providing generation Z with transferable skills. *IEEE Revista*

- Iberoamericana de Tecnologías del Aprendizaje. IEEE. IEEE Publications, 16(1), 45–57. <https://doi.org/10.1109/RITA.2021.3052496>
- Magano, J., Silvius, G., Silva, C. S., & Leite, Â. (2021). The contribution of project management to a more sustainable society: Exploring the perception of project managers. *Project Leadership and Society*, 2, 100020. <https://doi.org/10.1016/j.plas.2021.100020>
- Malach-Pines, A., Dvir, D., & Sadeh, A. (2008). Project manager-project (PM-P) fit and project success. *International Journal of Operations & Productions Management*, 29(3), 268–291
- Mbiru, J., Wickham, M. D., & Ayentimi, D. T. (2020). Introducing an entrepreneurial project management model. *The Journal of Modern Project Management*, 7(4), 1–21
- McAneney, J., Crompton, R., Musulin, R., Walker, G., McAneney, D., & Pielke, Jr., R. (2014). Reflections on disaster loss trends, global climate change and insurance. In J. P. Palutikof, S. L. Boulter, & J. Barnett (Eds.), *Applied studies in climate adaptation* (pp. 26–33). Wiley
- Mearns, K., & Yule, S. (2009). The role of national culture in determining safety performance: Challenges for the global oil and gas industry. *Safety Science*, 47(6), 777–785. <https://doi.org/10.1016/j.ssci.2008.01.009>
- Mukhtar, M. M., & Amirudin, R. (2016). The Success Criteria of Public Housing Project in Nigeria. *International Journal of Built Environment and Sustainability*, 3(2). <https://doi.org/10.11113/ijbes.v3.n2.126>
- Mullaly, M. (2004). PM success in organizations, trends, best practices and next steps [Paper presentation]. 18th IPMA Global Congress, Budapest, Hungary
- Müller, R., Geraldi, J., & Turner, J. R. (2012). Relationships between leadership and success in different types of project complexities. *IEEE Transactions on Engineering Management*, 59(1), 77–90. <https://doi.org/10.1109/TEM.2011.2114350>
- Müller, R., & Jugdev, K. (2012). Critical success factors in projects: Pinto, Slevin, and Prescott—the elucidation of project success. *International Journal of Managing Projects in Business*, 5(4), 757–775. <https://doi.org/10.1108/17538371211269040>
- Müller, R., & Turner, R. (2005). The Project manager's Leadership Style as a Success Factor on Projects: A Literature Review. *Project Management Journal*, 36(1), 49–61
- Muñoz-La Rivera, F., Mora-Serrano, J., & Oñate, E. (2021). Factors influencing safety on construction projects (FSCPs): Types and categories. *International Journal of Environmental Research and Public Health*, 18(20), 10884. <https://doi.org/10.3390/ijerph182010884>
- Nanjundeswaraswamy, T. S., & Swamy, D. R. (2014). Leadership styles. *Advances in Management*, 7(2), 57
- Navaratnam, S., Satheeskumar, A., Zhang, G., Nguyen, K., Venkatesan, S., & Poologanathan, K. (2022). The challenges confronting the growth of sustainable prefabricated building construction in Australia: Construction industry views. *Journal of Building Engineering*, 48, 103935. <https://doi.org/10.1016/j.jobe.2021.103935>
- Nicholas, J. M., & Steyn, H. (2020). *Project management for engineering, business and technology*. Routledge
- Northouse, P. (2007). *Leadership: Theory and practice* (4th ed.). Sage Publications
- Obi, L. I., Arif, M., Awuzie, B., Islam, R., Gupta, A. D., & Walton, R. (2021). Critical success factors for cost management in public-housing projects. *Construction Innovation*, 21(4), 625–647. <https://doi.org/10.1108/CI-10-2020-0166>

- Oh, M., & Choi, S. (2020). The competence of project team members and success factors with open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(3), 51. <https://doi.org/10.3390/joitmc6030051>
- Ollus, M., Jansson, K., Karvonen, I., Uoti, M., & Riikonen, H. (2011). Supporting collaborative project management. *Production Planning and Control*, 22(5–6), 538–553. <https://doi.org/10.1080/09537287.2010.536624>
- Pant, I., & Baroudi, B. (2008). Project management education: The human skills imperative. *International Journal of Project Management*, 26(2), 124–128. <https://doi.org/10.1016/j.ijproman.2007.05.010>
- Parfitt, M. K., & Sanvido, V. E. (1993). Checklist of critical success factors for building projects. *Journal of Management in Engineering*, 9(3), 243–249. [https://doi.org/10.1061/\(ASCE\)9742-597X\(1993\)9:3\(243\)](https://doi.org/10.1061/(ASCE)9742-597X(1993)9:3(243))
- Patton, M. (2000). *Qualitative research and evaluation method*. Sage Publications
- Phan, P. T., Pham, C. P., Tran, N. T. Q., Le, H. T. T., Nguyen, H. T. H., & Nguyen, Q. L. H. T. (2020). Factors affecting the work motivation of the construction project manager. *The Journal of Asian Finance, Economics and Business*, 7(12), 1035–1043. <https://doi.org/10.13106/jafeb.2020.vol7.no12.1035>
- Pinto, J., Thoms, P., Trailer, J., Palmer, T., & Govekar, M. (1998). *Project leadership: From theory to practice*
- Pollack, J., Helm, J., & Adler, D. (2018). What is the Iron Triangle, and how has it changed? *International Journal of Managing Projects in Business*, 11(2), 527–547. <https://doi.org/10.1108/IJMPB-09-2017-0107>
- Pollack, J., & Remington, K. (2016). *Tools for complex projects* (1st ed.). Routledge
- Prabhakar, G. P. (2008). What is project success: A literature review. *International Journal of Business and Management*, 3(9), 3–10. <https://doi.org/10.5539/ijbm.v3n9p3>
- Prince, S., Chapman, S., & Cassey, P. (2021). The definition of entrepreneurship: Is it less complex than we think? *International Journal of Entrepreneurial Behavior & Research*, 27(9), 26–47. <https://doi.org/10.1108/IJEER-11-2019-0634>
- Property Council of Australia (2017). *Economic significance of the property industry to the Australian economy*. https://cdn2.hubspot.net/hubfs/2095495/_Industry%20Campaign/REPORTS/ECONOMIC%20SIGNIFICANCE%20OF%20THE%20PROPERTY%20INDUSTRY%20TO%20THE%20WESTERN%20AUSTRALIAN%20ECONOMY%20-%20FULL%20REPORT.pdf?t=1516793583966
- Pullen, S., Zillante, G., Arman, M., Wilson, L., Zuo, J., & Chileshe, N. (2009). *Ecocents living: Affordable and sustainable housing for South Australia*
- Raziq, M. M., Borini, F. M., Malik, O. F., Ahmad, M., & Shabaz, M. (2018). Leadership styles, goal clarity, and project success: Evidence from project-based organizations in Pakistan. *Leadership and Organization Development Journal*, 39(2), 309–323. <https://doi.org/10.1108/LODJ-07-2017-0212>
- Rezvani, A., Chang, A., Wiewiora, A., Ashkanasy, N. M., Jordan, P. J., & Zolin, R. (2016). Manager emotional intelligence and project success: The mediating role of job satisfaction and trust. *International Journal of Project Management*, 34(7), 1112–1122.

- Ribeiro, A., Amaral, A., & Barros, T. (2021). Project Manager Competencies in the context of the Industry 4.0. *Procedia Computer Science*, 181, 803–810. <https://doi.org/10.1016/j.procs.2021.01.233>
- Ritchie, J., & Lewis, J. (2003). *Qualitative research practice: A guide for social science students and researchers*. Sage publications
- Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, 11(1), 25–41. <https://doi.org/10.1080/14780887.2013.801543>
- Rockart, J. F. (1982). The changing role of the information systems executive: A critical success factors perspective. *Sloan Management Review*, 24(1), 3–13
- Rogo, V., Rarasati, A. D., & Gumuruh, H. (2020). The influence of transformational leadership and soft skills on project manager for project success factors. *IOP Conference Series: Materials Science and Engineering*, 830(2). <https://doi.org/10.1088/1757-899X/830/2/022057>
- Sage, D., Dainty, A., & Brookes, N. (2014). A critical argument in favor of theoretical pluralism: Project failure and the many and varied limitations of project management. *International Journal of Project Management*, 32(4), 544–555. <https://doi.org/10.1016/j.ijproman.2013.08.005>
- Sanvido, V., Grobler, F., Parfitt, K., Guvenis, M., & Coyle, M. (1992). Critical success factors for construction projects. *Journal of Construction Engineering and Management*, 118(1), 94–111. [https://doi.org/10.1061/\(ASCE\)0733-9364\(1992\)118:1\(94\)](https://doi.org/10.1061/(ASCE)0733-9364(1992)118:1(94))
- Sausser, B. J., Reilly, R. R., & Shenhar, A. J. (2009). Why projects fail? How contingency theory can provide new insights—A comparative analysis of NASA’s Mars Climate Orbiter loss. *International Journal of Project Management*, 27(7), 665–679. <https://doi.org/10.1016/j.ijproman.2009.01.004>
- Sebestyen, Z. (2017). Further considerations in project success. *Procedia Engineering*, 196, 571–577. <https://doi.org/10.1016/j.proeng.2017.08.032>
- Seiler, S., Lent, B., Pinkowska, M., & Pinazza, M. (2012). An integrated model of factors influencing project managers’ motivation—Findings from a Swiss Survey. *International Journal of Project Management*, 30(1), 60–72. <https://doi.org/10.1016/j.ijproman.2011.03.002>
- Serrador, P., & Rodney Turner, J. (2014). The relationship between project success and project efficiency. *Procedia – Social and Behavioral Sciences*, 119, 75–84. <https://doi.org/10.1016/j.sbspro.2014.03.011>
- Serrador, P., & Turner, R. (2015). The relationship between project success and project efficiency. *Project Management Journal*, 46(1), 30–39. <https://doi.org/10.1002/pmj.21468>
- Shearer, H., Coiacetto, E., Dodson, J., & Taygfeld, P. (2016). How the structure of the Australian housing development industry influences climate change adaptation. *Housing Studies*, 31(7), 809–828. <https://doi.org/10.1080/02673037.2016.1150430>
- Shenhar, A. J., Dvir, D., Levy, O., & Maltz, A. C. (2001). Project success: A multidimensional strategic concept. *Long Range Planning*, 34(6), 699–725. [https://doi.org/10.1016/S0024-6301\(01\)00097-8](https://doi.org/10.1016/S0024-6301(01)00097-8)

- Shokri-Ghasabeh, M., & Kavouosi-Chabok, K. (2009). Generic project success and project management success criteria and factors: Literature review and survey World scientific and engineering academy and society
- Shonhiwa, D. C. (2016). An examination of the situational leadership approach: Strengths and weaknesses. *Cross-Currents*, 2(2), 35–40. <https://doi.org/10.36344/ccijhss.2016.v02i02.002>
- Silva, G., Warnakulasooriya, B., & Arachchige, B. (2016). Criteria for construction project success: A literature review [Paper presentation]. 13th International Conference on Business Management (ICBM). University of Sri Jayewardenepura
- Suhonen, M., & Paasivaara, L. (2011). Shared human capital in project management: A systematic review of the literature. *Project Management Journal*, 42(2), 4–16. <https://doi.org/10.1002/pmj.20211>
- Taherdoost, H. (2016). Sampling methods in research methodology: How to choose a sampling technique for research. *SSRN Electronic Journal*, 5, 18–27. <https://doi.org/10.2139/ssrn.3205035>
- Takim, R., & Adnan, H. (2009). Analysis of effectiveness measures of construction project success in Malaysia. *Asian Social Science*, 4(7), 74. <https://doi.org/10.5539/ass.v4n7p74>
- Tapsuwan, S., Mathot, C., Walker, I., & Barnett, G. (2018). Preferences for sustainable, liveable and resilient neighbourhoods and homes: A case of Canberra, Australia. *Sustainable Cities and Society*, 37, 133–145. <https://doi.org/10.1016/j.scs.2017.10.034>
- Tayfur Ekmekci, O., & Tosunoglu, H. (2016). Laissez-Faire leaders and organizations: How does Laissez-Faire leader erode the trust in organizations. *Journal of Economics Finance and Accounting*, 3(1), 89–99
- Thal, A. E., & Bedingfield, J. D. (2010). Successful project managers: An exploratory study into the impact of personality. *Technology Analysis and Strategic Management*, 22(2), 243–259. <https://doi.org/10.1080/09537320903498587>
- Thamhain, H. (1999). Effective project leadership in complex self-directed team environments [Paper presentation]. In Proceedings of the 32nd annual Hawaii international conference on systems sciences
- Thwala, W. D. (2010). Community participation is a necessity for project success: A case study of rural water supply project in Jeppes Reefs, South Africa. *African Journal of Agricultural Research*, 5(10), 970–979
- Todorović, M. L., Petrović, D. Č., Mihić, M. M., Obradović, V. L., & Bushuyev, S. D. (2015). Project success analysis framework: A knowledge-based approach in project management. *International Journal of Project Management*, 33(4), 772–783. <https://doi.org/10.1016/j.ijproman.2014.10.009>
- Tongco, M. D. C. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research and Applications*, 5, 147–158. <https://doi.org/10.17348/era.5.0.147-158>
- Turner, R., Ledwith, A., & Kelly, J. (2010). Project management in small to medium-sized enterprises: Matching processes to the nature of the firm. *International Journal of Project Management*, 28(8), 744–755. <https://doi.org/10.1016/j.ijproman.2010.06.005>
- Turner, R., & Zolin, R. (2012). Forecasting success on large projects: Developing reliable scales to predict multiple perspectives by multiple stakeholders over multiple time frames. *Project Management Journal*, 43(5), 87–99. <https://doi.org/10.1002/pmj.21289>

- Turner, R., Zolin, R., & Remington, K. (2009). Monitoring the performance of complex projects from multiple perspectives over multiple time frames [Paper presentation]. In Proceedings of the 9th international research network of project management conference, Berlin, Germany
- Ullah, I., Kiran, A., & Liu, B. (2019). Impacts of leadership styles on motivations of employees. In *Servant leadership styles and strategic decision making* (pp. 205–217). IGI Global. <https://doi.org/10.4018/978-1-5225-4996-3.ch010>
- Van Tam, N., Quoc Toan, N., Tuan Hai, D., & Le Dinh Quy, N. (2021). Critical factors affecting construction labor productivity: A comparison between perceptions of project managers and contractors. *Cogent Business and Management*, 8(1), 1863303. <https://doi.org/10.1080/23311975.2020.1863303>
- Verburg, R. M., Bosch-Sijtsema, P., & Vartiainen, M. (2013). Getting it done: Critical success factors for project managers in virtual work settings. *International Journal of Project Management*, 31(1), 68–79. <https://doi.org/10.1016/j.ijproman.2012.04.005>
- Wai, S., Aminah, M., & Syuhaida, I. (2012). Reviewing the notions of construction project success. *International Journal of Business and Management*, 7(1), 90–101
- Wiersma, W. (2000). *Research methods in education: An introduction*. Allyn & Bacon
- Williams, T. (2016). Identifying success factors in construction projects: A case study. *Project Management Journal*, 47(1), 97–112. <https://doi.org/10.1002/pmj.21558>
- Wuni, I. Y., & Shen, G. Q. (2020). Critical success factors for modular integrated construction projects: A review. *Building Research and Information*, 48(7), 763–784. <https://doi.org/10.1080/09613218.2019.1669009>
- Yang, L.-R., Huang, C.-F., & Hsu, T.-J. (2014). Knowledge leadership to improve project and organizational performance. *International Journal of Project Management*, 32(1), 40–53. <https://doi.org/10.1016/j.ijproman.2013.01.011>
- Yang, T.-M., & Maxwell, T. A. (2011). Information-sharing in public organizations: A literature review of interpersonal, intra-organizational and inter-organizational success factors. *Government Information Quarterly*, 28(2), 164–175. <https://doi.org/10.1016/j.giq.2010.06.008>
- Yoganandan, G., & Kumar, M. D. (2021). Qualities of successful entrepreneurs—A review of relevant literature. *Materials Today: Proceedings*
- Yong, Y. C., & Mustafa, N. E. (2017). Critical success factors for Malaysian construction projects: An investigative review. *International Journal of Built Environment and Sustainability*, 4(2). <https://doi.org/10.11113/ijbes.v4.n2.180>
- Yu, J.-H., & Kwon, H.-R. (2011). Critical success factors for urban regeneration projects in Korea. *International Journal of Project Management*, 29(7), 889–899. <https://doi.org/10.1016/j.ijproman.2010.09.001>
- Zia, M. N. (2020). A review paper on identification of Critical Success Factors (CSFs) for successful project management of construction projects. *Journal of Management Practices. Humanities and Social Sciences*, 4(2), 29–36
- Zorbas, M. (2023). We're the Voice of the Australian Property Industry. Property Council of Australia. Retrieved 1/11. <https://www.propertycouncil.com.au/>

- Zuo, J., Zhao, X., Nguyen, Q. B. M., Ma, T., & Gao, S. (2018). Soft skills of construction project management professionals and project success factors. *Engineering, Construction and Architectural Management*, 25(3), 425–442. <https://doi.org/10.1108/ECAM-01-2016-0016>
- Zwikael, O., & Smyrk, J. R. (2009). Towards an outcome based project management theory IEEE International Conference on Industrial Engineering and Engineering Management (pp. 633–637). <https://doi.org/10.1109/IEEM.2009.5373256>