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Revisiting the relationship between sustainable project management and project success: The moderating role of stakeholder engagement and team building

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Abstract

This paper examines the relationship between sustainable project management (SPM) and project success with the moderating effect of stakeholder engagement and team building on this relationship. A structured survey questionnaire technique was applied for data collection and 323 responses were received from project management professionals in Pakistan. The results revealed that SPM has a positive impact on project success. However, the effects of stakeholder engagement and team building were found insignificant. Accordingly, this paper contributes to SPM literature by demonstrating the relationship between SPM and project success in a developing world context. From a practical viewpoint, firms need to consider SPM from a holistic perspective by embracing and incorporating key sustainability aspects into various project life-cycle stages. To this end, project managers not only need to promote stakeholder engagement and team-building strategies, but also scrutinize all important project decisions from a sustainability lens to further enhance SPM outcomes and create a meaningful value proposition for each stakeholder group, which are increasingly recognized as critical issues for project success.

KEYWORDS
project success, stakeholder engagement, sustainability, sustainable project management, team building

1 | INTRODUCTION

Project success (PS) is a subjective, ambiguous, multidimensional, and subtle concept (Belassi & Tukel, 1996; Ika, 2009). Increasingly, sustainability—integration of social, environmental, and economic issues—is viewed as one of the critical factors for project acceptance and success (Chen et al., 2019; Shah et al., 2020; Toljaga-Nikolić et al., 2020). Rising competitive pressures, rapid technological advancements, and stringent government regulations on social and environmental standards are increasingly propelling firms to embrace sustainable business practices (Caffaro et al., 2019; Toljaga-Nikolić et al., 2020). In addition, factors such as growing public awareness of pressing sustainability issues and changing client expectations around these issues are continuously putting companies under intense pressure to take leadership in sustainability and deliver projects with improved environmental and social impacts (Adriana & Ioana-Maria, 2013; Darko et al., 2017; Moehler et al., 2018). For instance, Larson et al. (2018) posited that the threat of global warming and climate change has brought sustainability to the fore. Accordingly, it is argued that SPM has become an increasing focus for project management (Hasheminasab et al., 2020; Pinto, 2020) and emerging literature suggests that PS is largely determined by how well firms manage and integrate critical sustainability issues at various stages of the project life cycle (Carvalho & Rabechini, 2017; Hasheminasab et al., 2020;

Ismayilova & Silvius, 2021; Larsson & Larsson, 2020; Olawumi & Chan, 2019; Silvius & Schipper, 2015; Woźniak, 2021; Yazici, 2020).

Despite the growing relevance of sustainability in the project management discipline, the recognition of SPM has only recently attracted scholarly attention. This is because SPM has become a new school of thought in the project management literature (Silvius, 2017). At the same time, a large majority of companies are aligning their projects' work assignments with the principles of sustainability to accomplish sustainable outcomes (Aguilar-Fernández et al., 2015; Shang et al., 2020; Silvius et al., 2013; Silvius & Schipper, 2014). The emergence of sustainability in the project management discipline has been widely acknowledged in an increasing number of recent research publications (Carvalho & Rabechini, 2017; Chawla et al., 2018; Malik et al., 2020) suggesting that SPM is a significant source of PS (Adriana & Ioana-Maria, 2013; Carvalho & Rabechini, 2017; Dubois & Silvius, 2020; Ebbesen & Hope, 2013; Khalifeh et al., 2019; Martínez-Perales et al., 2018; Silvius & Schipper, 2015; Yazici, 2020). Nevertheless, there is ample room for further research to develop an improved understanding of the SPM and PS relationship and the underlying mechanisms that influence this relationship (Aarseth et al., 2017; Brones et al., 2014; Chofreh et al., 2019; Dubois & Silvius, 2020; Khalifeh et al., 2019; Martens et al., 2016).

In addition, most of the prior studies on SPM and PS were conducted in the developed world context (Carvalho & Rabechini, 2017; Dubois & Silvius, 2020; Goel et al., 2019; Larsson & Larsson, 2020; Martens & Carvalho, 2016; Martínez-Perales., 2018; Stanitsas et al., 2020; Yazici, 2020) while there is a dearth of empirical research looking at the relationship between SPM and PS in developing countries. With few exceptions (e.g., Malik et al., 2020; Ullah et al., 2020), there is a lack of comprehensive understanding of how sustainability is practiced in the Pakistani project management context and to what extent firms are embracing the SPM approach. Sustainability is an emerging phenomenon in Pakistan and most recent studies revealed that firms are in the early stages of sustainability adoption. In their study, Mahmood et al. (2019) demonstrated that inadequate regulation, lack of awareness and interest around sustainability issues, and lack of capability are some of the main drivers for sustainable reporting practices. Ahmad et al. (2021) revealed that sustainability adoption in the Pakistani SME sector is fragmented and in particular, the environmental dimension is the least practiced sustainability aspect in the SME sector. Ullah et al. (2020) examined the SPM practices in the construction sector of Pakistan. The results of the study revealed that the environmental dimension is considered an important issue, while social sustainability aspects are mostly ignored by construction companies. In addition, the results further indicated that the construction sector is facing several challenges at policy and operational levels while implementing sustainability. Accordingly, it is worthwhile to examine the current state of SPM implementation in the Pakistani context, which provides fresh insights for the SPM body of knowledge from a developing countries perspective.

Prior research has mostly focused on assessing the direct relationship between SPM and PS (Carvalho & Rabechini, 2017; Ebbesen & Hope, 2013; Martens & Carvalho, 2016; Mavi & Standing, 2018; Silvius et al., 2017; Silvius & Schipper, 2015). However, it has failed to identify key mechanisms through which the relationship can be enhanced and strengthened. Joslin and Müller (2015) recommended incorporating some moderating variables to investigate the relationship between SPM and PS. Accordingly, to bridge this gap in the literature we identified two key moderating variables—stakeholder engagement and team building—drawing on the International Project Management Association's (IPMA, 2013) Individual Competence Baseline framework to investigate the relationship between SPM and PS. We focused on stakeholder engagement and team building, as these constructs are critical for "putting sustainability on the agenda" (Silvius & Schipper, 2014, p. 52) and therefore the importance of these issues cannot be ignored concerning effective management of projects and delivering successful project outcomes.

The extant literature has paid increased attention to stakeholder engagement with SPM (Adema et al., 2020; Beringer et al., 2013; Di Maddaloni & Davis, 2017) and PS (Eskerod & Huemann, 2013; Song et al., 2012). Scholars have argued that stakeholder engagement is one of the central drivers for companies to adopt sustainability practices (Jakhar, 2017) in large public sector infrastructure and construction projects (Di Maddaloni & Davis, 2017), IT and telecom sector projects (Beringer et al., 2013), as well as international development projects (Ika et al., 2012). Bulgacov et al. (2015) noted that stakeholder engagement is a key enabling factor for improving sustainability in projects. In a similar vein, Carvalho and Rabechini (2017) proposed that the relationship between sustainability and PS can also be studied from the stakeholder perspective. Stanitsas et al. (2020) argued that future research needs to consider stakeholder involvement and participation issues in the project life-cycle stages to enhance project sustainability. Bahadorestani et al. (2020) also emphasized the significance of effective stakeholder engagement during the project life cycle, especially at the earlier stages of planning and implementation. Lehtinen et al. (2019) suggested that future research studies need to develop a comprehensive understanding of project stakeholder-specific practices where firms benefit from stakeholder involvement in complex project settings. Accordingly, we incorporated stakeholder engagement as a moderator variable for the first time to examine the relationship between SPM and PS.

Effective team building is an important factor that can influence SPM practices and project outcomes. Da Silva et al. (2013) argued that careful selection of team members positively influences projects in which these teams participate. Masanja and Chambi (2020, p. 96) suggested that "it is important to assess the team-building activities to ensure sustainable organizational growth." Similarly, Ozigbo et al. (2020) argued that a project team blends complementary skills and talents for SPM at a higher level; however, it needs to be nurtured over time. Latif et al. (2020) asserted that future studies need to focus on team-level issues such as team formation and team building to improve sustainable business outcomes. Hence, we incorporate team building as a moderator variable for the first time in the relationship between SPM and PS. To this end, our research questions are:

1. Does sustainable project management have an impact on project success?
2. Does stakeholder engagement moderate the relationship between sustainable project management and project success?
3. Does team building moderate the relationship between sustainable project management and project success?

This paper contributes to research on SPM in several ways. First, this paper provides support for SPM and PS. Second, prior studies mostly used data from a developed world context, while evidence from a developing country context is scarce. Thus, this paper bridges this gap in the literature by examining the relationship between SPM and PS in the Pakistani context. Third, team building and stakeholder engagement are increasingly considered central elements for improved project performance; however, to the best of our knowledge, research that investigates such contingencies is still scant in the context of SPM. We recognized the importance of these issues and specifically investigated the moderating roles of team building and stakeholder engagement on SPM and PS. Fourth, we provide some useful suggestions for practice that could help practitioners to understand the critical role of sustainability in project management. Finally, our paper contributes to the literature on resource-based view (RBV) and stakeholder theory by demonstrating the relationships between SPM, stakeholder engagement, team building, and PS.

The remainder of the paper is organized as follows. Next, in the theoretical framework section, an overview of the previous literature on SPM is presented. Then, drawing on the RBV and stakeholder theory, we propose and discuss the research model and hypotheses of the paper. After this, an overview of the data collection methods and research procedure is provided, which is followed by the data analysis and results section. Next, the paper presents a discussion and implications of the research. Finally, the paper is concluded with a summary of the main findings including limitations and directions for future research.

2 | THEORETICAL FRAMEWORK

2.1 | Sustainability

Sustainability is one of the most complex, critical, and pressing issues of our time. The concepts of sustainability and sustainable development are often used interchangeably despite some obvious distinctions. As Everard (2011, p. 39) noted: "whilst sustainability is a 'state' of indefinite continuance, sustainable development is a 'process' of development from where we stand today towards that ideal state." The report by the World Commission on Environment and Development (WCED), commonly known as the Brundtland Report, first brought the term 'sustainable development' to mass media attention and policy circles in 1987. The WCED (1987, p. 43) defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This definition posits that "the only truly sustainable form of progress is that which simultaneously addresses the interlinked aspects of the economy, environment, and social well-being" (Johnston et al., 2007, p. 60).

At the business level, sustainability is promoted as a triple bottom line concept (Elkington, 1998), which aims at simultaneous improvement in three independent but interlinked dimensions—people, planet, and profit (Silvius & Schipper, 2016). Sustainability involves balancing or harmonizing social, environmental, and economic business interests (Elkington, 1998), maintaining a balance between short-term and long-term business objectives (Gareis et al., 2013), and reducing risk (Godfrey et al., 2009), as well as demonstrating ethical values, moral commitment, transparency, and accountability towards business stakeholders (Silvius & Schipper, 2014). These sustainability aspects would "contribute to improving project value such as improved quality of output, increase productivity, profitability, reduction to life cost and business enhancement" (Zainul-Abidin & Pasquire, 2007, p. 275). Following on from the definition proposed by the WCED, Dyllick and Hockerts (2002, p. 131) conceptualized sustainability as "meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities, etc.), without compromising its ability to meet the needs of future stakeholders as well." This definition is particularly important as it identifies the satisfaction of stakeholders' current and future needs as a key goal of sustainable business. In addition, as we have selected stakeholder management as a moderating variable in this paper to test the relationship between SPM and PS, this definition points out the significance of stakeholder management for developing corporate sustainability.

2.2 | Sustainable project management

Project management is considered a key vehicle for implementing sustainability (Kivilä et al., 2017). While SPM is a relatively new concept, it is rapidly emerging as one of the central issues in the field of project management. Prior literature suggested that companies are under increased stakeholder scrutiny to embrace sustainability practices and demonstrate responsibility while performing their business affairs including the delivery and management of their projects (Eskerod & Huemann, 2013; Yuan, 2017). Thus, it can be argued that the integration of sustainability into project activities is imperative for effective project management and PS.

The concept of SPM is conceptualized in varied ways in the extant literature; however, SPM is broadly conceived as the application of social, environmental, and economic aspects of sustainability to project management. Further, Sabini et al. (2019) pointed out that the difficulty in developing a well-accepted definition relates to the multidisciplinary and multilevel nature of project management, as well as the discipline embodying both the traits of basic and applied research. They argued that understanding research on SPM relates to intrinsic project management processes which generate new knowledge in 'basic research and applied research that will provide a pragmatic solution to a sustainability problem. Tam (2010, p. 18) asserted

that SPM is "the promoting of positive and minimizing of negative sustainability impacts (economic; environmental; and social) within the process of coordinated management of related projects, which may include related business-as-usual activities that together achieve a beneficial change of a strategic nature for an organization and contributing to a sustainable society." While Tam's definition captures the key elements of sustainability, it does not emphasize the overall relationship between sustainability and project management. Thus, in this paper, we have adopted Silvius and Schipper's (2014) definition:

> SPM is the planning, monitoring and controlling of project delivery and support processes, with consideration of the environmental, economic and social aspects of the life cycle of the project's resources, processes, deliverables and effects, aimed at realizing benefits for stakeholders, and performed in a transparent, fair and ethical way that includes proactive stakeholder participation. (p.79)

This definition captures the key sustainability aspects and the traditional project management features including effective project delivery and improved support processes related to a project life cycle. While emerging literature suggests the significance of incorporating social and environmental sustainability aspects into project management (Aguilar-Fernández et al., 2015; Silvius, 2017; Silvius et al., 2013 Silvius & Schipper, 2014), the integration of sustainability aspects into project management is a critical challenge (Thamhain, 2014). Eskerod and Huemann (2013) and Silvius et al. (2013) posited that integrating sustainability issues into project management is more than just adding a new perspective to the existing project management standards, processes, and activities. To this end, Silvius and Schipper (2014) identified several potential areas where sustainability could have an impact on project management. The authors suggested that sustainability affects project management in three specific ways. First, promoting sustainability in projects indicates a fundamental shift of project scope from limited factors such as time, budget, and quality management to a broad set of issues including social, environmental, and economic impact. Second, embracing sustainability implies a shift of the project management paradigm from a control-oriented approach to a more complex, flexible, and opportunity-oriented perspective. Third, considering sustainability implies a mind-shift for the project manager. Unlike the traditional focus on financial, quality, performance, and customer satisfaction issues, project managers are required to demonstrate responsibility for sustainable development in organizations and society (Silvius & Schipper, 2014). According to Ebbesen and Hope (2013), sustainability dimensions need to be embedded throughout the project life cycle and beyond. This can be achieved through the incorporation of a variety of sustainability practices in the project management environment. This includes better use of natural resources, waste minimization, procurement of sustainable materials, stakeholder participation, improved transparency and accountability about environmental and social impacts of the project, as well as protection of human rights and improved working conditions (Martens & Carvalho, 2016; Martens & Carvalho, 2017; Silvius & Schipper, 2014).

2.3 | Project success

PS is a multi-dimensional construct (Shenhar et al., 2001). The traditional measurement of PS focuses on the iron triangle criteria—also known as a triple-constraint model—of scope, cost, and time (Atkinson, 1999; Ika, 2015). Previous literature mainly focused on quality, cost, and time as success criteria in measuring the degree of PS (Agarwal & Rathod, 2006; De Wit, 1988; Fortune & White, 2006). However, there is a growing recognition among academics and practitioners that in addition to conventional iron triangle criteria other measures including client acceptance, stakeholder satisfaction, business success and commercialization, and prospects and opportunities have pivotal roles in PS (Ika, 2015). Shenhar and Dvir (2007) proposed PS evaluation and assessment criteria in five dimensions of the project: efficiency, impact on the customer, impact on the team, business success, and preparation for the future. Emphasized customer and stakeholder satisfaction as critical elements for PS. Serrador and Turner (2015) posited the significance of triple project constraints, stakeholder requirements, and client satisfaction as key factors that determine PS. Ika and Donnelly (2017) argued that multiple-stakeholder commitment, collaboration, alignment, and adaptation are critical to PS.

To describe PS, Ika (2009) proposed alternative perspectives—common assumptions, a contingent approach, and a subjective view. First, common assumptions involve a universal list or grouping of critical success factors, which objectively exist in practice. Second, a contingent approach supports the view that there is "no one best way" or universal set of criteria to measure PS; rather, idiosyncratic criteria and critical success factors exist for specific projects and contexts. Third, a subjective view on PS holds that "success and failure are not only subjectively perceived and constructed by people, but they are entwined in meaning and action" (Ika, 2009, p. 16).

2.4 | Stakeholder engagement

The term stakeholder refers to any group or individual who can affect or is affected by the achievement of the organization's purpose and objectives (Freeman, 1984). Project stakeholders include all individuals or groups who have an active stake and interest in the project and can influence, either positively or negatively, its development (Larsson & Larsson, 2020; Pinto, 2020). As Garvare and Johansson (2010) argued, stakeholders are the performers of the project that provide the necessary support to the organization for the achievement of desired goals and objectives. Stakeholders may withdraw their support if an organization is unable to meet their expectations, which could eventually lead to project and organizational failure. In this regard, firms need to consider the important stakeholder groups through stakeholder analysis including: individual

(project manager, functional managers and project team members), organizational (project sponsors, clients, top management, and shareholders), global society (consumer groups, special interest groups—environmentalist, community activist, local and global communities). Thus, it is imperative for firms to recognize and embrace a holistic view in terms of addressing the needs of all stakeholders rather than only serving the shareholders' economic interests (Larsson & Larsson, 2020; Pinto, 2020).

Stakeholder engagement is a participative and mutually agreed course of actions that are undertaken by stakeholders to solve organizational environmental problems and develop a proactive environmental strategy (López-Gamero et al., 2011). In addition, active engagement of stakeholders can enhance work efficiency (Ahmed et al., 2018) by raising production capacity (Rajablu et al., 2014) and firm performance (Beringer et al., 2013), and also causing a greater succession of projects (Cuppen et al., 2016). The Project Management Body of Knowledge (PMBOK) identified stakeholder management as an important knowledge area and it is considered an essential element for a successful project (Fraz et al., 2016).

Moreover, stakeholder collaboration and improved cooperation are essential in processes from project initiation to completion (Rohrbacher, 2001; Williams & Dair, 2007). Ika and Donnelly (2017) suggested that high levels of multiple-stakeholder commitment, collaboration, alignment, and adaptation are necessary for PS. Nangoli et al. (2016, p. 184) argued that "stakeholders should be consulted as regards the project before it is implemented, and that this participation should be encouraged throughout the project life." Mathur et al. (2008) went further in suggesting that the benefits of a project can be maximized when stakeholder engagement and sustainability assessment processes are designed appropriately.

2.5 | Team building

Effective team building is a highly complex and challenging task. Toofany (2007, p. 27) defined team building as a pathway of "encouraging individuals to participate in activities together." Klein et al. (2009, p. 3) stated that team-building comprises "the formal and informal team-level interventions that focus on improving social relations and clarifying roles as well as solving the task and interpersonal problems that affect team functioning."

According to Pinto (2020), effective project teams share common underlying features including a clear sense of mission, productive interdependency, cohesion, trust, enthusiasm, and a results orientation. On the other hand, factors such as poorly developed goals, ill-defined team roles, lack of motivation, poor communication and leadership, higher turnover rates, and dysfunctional behaviours cause project teams to fail. In a similar vein, Larson et al. (2018) identified a set of characteristics commonly associated with high-performing teams that produce positive synergy by which project teams could deliver breakthrough products and improve customer satisfaction. Some of these characteristics include a sense of common purpose and shared vision, tolerance for differences in opinions, risk-taking, creativity, team identity, self-accountability, and higher levels of personal standards for performance.

Project delivery is an inherently team-based activity and the effectiveness of these teams plays a pivotal role in the organizational structure and complements organizational strategy, leading to a successful project (Latif & Williams, 2017). Team-building practices are characterized by different approaches. In this regard, Klein et al. (2009) identified four distinct and correlated team-building interventions: (1) project goal setting, (2) role clarification, (3) interpersonal relations, and (4) problem-solving techniques. With the combination of these four approaches project managers create a highly empowered and committed project team. These standard approaches could enable project managers to improve the capabilities of team members for a better understanding of a project's goal, roles and responsibilities, social interaction, and problem-solving thinking, which would in turn influence PS (Aga et al., 2016).

3 | RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

The previous discussion leads to the conceptual model and hypotheses proposed in Figure 1.

3.1 | Sustainable project management and project success

SPM is gaining greater prominence in the corporate strategic agenda (Pinto, 2020). According to Ebbesen and Hope (2013), many practitioners perceive sustainability as an important factor to include in the project planning, implementation, and control stages. A growing body of knowledge suggests a relationship between SPM and PS (e.g., Adriana & Ioana-Maria, 2013; Carvalho & Rabechini, 2017; Silvius & Schipper, 2015). In particular, several studies revealed that SPM positively affects PS (Carvalho & Rabechini, 2017; Ebbesen & Hope, 2013; Fraz et al., 2016; Martens & Carvalho, 2016; Silvius & Schipper, 2015).

For instance, a study by Martens and Carvalho (2016) investigated the relationship between sustainability and PS using a sample of companies in Brazil and the USA. The results revealed that

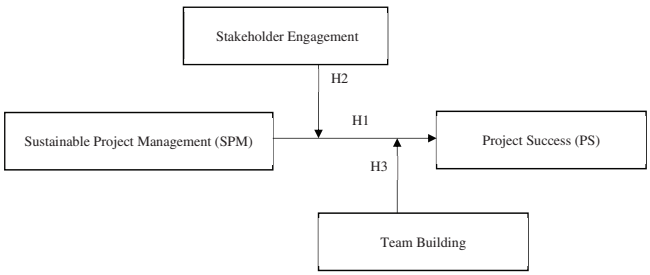

FIGURE 1 Conceptual model and hypotheses

sustainability is positively associated with PS and thus more companies are introducing sustainability practices into their projects. They noted that companies in the public sector are more concerned with addressing social sustainability issues than environmental and economic aspects. Silvius and Schipper (2016) proposed a maturity model for practicing SPM. The results of their study showed that there is a positive relationship between sustainability and PS outcomes including satisfaction of stakeholders, improved project control, refined future orientation, and better achievement of objectives or goals. Carvalho and Rabechini (2017) surveyed participants from 200 projects to investigate the relationship between project sustainability management and PS. The results showed that project sustainability management has a positive and significant impact on PS. Similarly, Martens et al. (2016) conducted exploratory research to answer the research question "does sustainability in project management contribute to project success?" The data were collected from experts in six different countries. As a result, they identified key variables of sustainability in project management consisting of economic, environmental, and social dimensions, and explore the significant impact of these variables on PS. While the academic research on SPM continues to evolve, a large majority of recent studies investigated the SPM phenomenon in the developed world context (e.g., Kivilä et al., 2017; Larsson & Larsson, 2020; Mavi & Standing, 2018; Sabini & Alderman, 2021; Woźniak, 2021). Thus, this paper bridges the gap in the current body of knowledge by focusing on the SPM and PS relationship in the developing world context.

The present study employs the RBV to examine the relationship between SPM with PS. According to RBV, organizations have a collection of unique resources and capabilities that serve as the foundation of the organization's strategy and the primary source of profitability (Barney, 1991). In addition, the key to RBV is that organizations intend to compete with each other in terms of their dynamic resources and competencies (Ayuso & Navarrete-Báez, 2018; Fernando et al., 2018). Building on RBV, it can be argued that SPM implementation capabilities are emergent, novel, innovative, valuable, and non-substitutable (Larsson & Larsson, 2020; Moehler et al., 2018), which may enable a firm to achieve competitive advantage over its competitors. SPM with a blend of the environmental, economic, and social considerations has been considered a distinct resource of the firms to support and complete project life-cycle stages efficiently (Silvius & Schipper, 2014). Firms with improved SPM implementation knowledge will have superior capabilities compared to those that practice SPM in a fragmented (or ad hoc) way (Larsson & Larsson, 2020). Based on the above discussion we propose the following hypothesis:

> **H1.** *Sustainable project management has a positive and significant impact on project success.*

3.2 | The moderating role of stakeholder engagement

Stakeholders play a central role throughout the project life cycle—from conceptualization to termination stages—towards achieving sustainable project outcomes (Rohrbacher, 2001; Williams & Dair, 2007). The World Bank (2012) notes that the basic purpose of stakeholder engagement is to provide project management authorities with the smooth functioning of their operations, by constructing long-lasting relationships with potential stakeholders, and the whole engagement process must be aligned with the concept of sustainability. In this view, the purpose of stakeholder engagement is to capture stakeholders' contribution to all the processes of project development and different phases of the project life cycle (Bourne & Walker, 2005). Accordingly, a stakeholder management approach provides a fundamental basis for incorporating sustainability practices in projects.

Past studies have investigated the relationship between stakeholder engagement and PS (e.g., Garvare & Johansson, 2010; Mathur et al., 2008; Rohrbacher, 2001; Williams & Dair, 2007). Several studies showed that there is a direct impact of stakeholder engagement on PS (Andersen et al., 2006; Fraz et al., 2016; Ika & Donnelly, 2017; Nangoli et al., 2016). For instance, Ika and Donnelly (2017) suggested that high levels of stakeholder commitment, collaboration, alignment, and adaptation are necessary for PS. Nangoli et al. (2016, p. 182) proposed that "stakeholders should be consulted as regards the project before it is implemented, and that this participation should be encouraged throughout the project life." In their study, Fraz et al. (2016) showed that PS is significantly related to stakeholder management. The authors further suggested that it is important to continually coordinate and inform key project stakeholders and proactively manage their concerns during the project life-cycle stages to achieve PS.

The stakeholder theory provides a foundation for studying the interrelationship between firms and society (Freeman, 1984). In this sense, the organization should strike a balance between the needs and interests of multiple stakeholders as they provide essential resources to firms for their survival and success (Chatterji, 2014; Naseem et al., 2020). Further, according to Freeman's (1984) stakeholder theory, a firm has various stakeholders including individuals, organizations, and groups who have legitimate interests regarding its performance and functioning, thereby all stakeholders must be given due consideration when a firm makes any decision. In line with these arguments, the following hypothesis is proposed:

> **H2.** *Stakeholder engagement positively moderates the relationship between sustainable project management and project success such that the relationship will be stronger when stakeholder engagement is high.*

3.3 | The moderating role of team building

An effective project team has a significant role in PS as team-building activities facilitate project management performance (Aga et al., 2016; Scott-Young & Samson, 2008; Turner et al., 2008). Turner et al. (2008) and Scott-Young and Samson (2008) emphasized the need for team building in the context of the project and proposed paying particular attention to team-building practices for improving project modalities. Aga et al. (2016) suggested that project managers

exhibiting a transformational leadership style are more likely to create team-building practices in a project environment that will help them to realize PS. Hwang and Tan (2012) argued that team building is required at the start of the project for the successful completion of the project. Da Silva et al. (2013) showed that team-building criteria including personality and behavioural aspects have significant and positive correlations with PS. Braun et al. (2013) argue that the successful performance of a project requires trust, collaboration, and communication among team members.

In addition, past studies have also investigated the relationship between sustainability and team building (Jamali, 2006; Mishra et al., 2011). For instance, Jamali (2006) posited that team building is useful for addressing sustainability issues and promoting sustainability values and cultural change within organizations. Conversely, Mishra et al. (2011) suggested that ethical values enable the project manager to embrace SPM practices that create trust and harmony within a project team, which in turn enable PS. Silvius and Schipper (2011) argued that the core responsibility of a project manager and team members is to regulate and support the sustainability agenda within a project, as they are actively involved throughout the project's activities from project planning to its implementation. From these studies, we developed the following hypothesis.

> **H3.** *Team building positively moderates the relationship between sustainable project management and project success such that the relationship will be stronger when team building is high.*

4 | METHODS

This paper investigates the relationship between SPM and PS with specific reference to stakeholder engagement and project team building as moderating variables augmenting the proposed relationship. For empirical validation, a quantitative survey-based research design was used. The structural equation modelling (SEM) technique was applied to validate the research model and to test the research hypotheses proposed in the previous section.

4.1 | Data collection

Data were collected from three sectors: construction, information technology, and telecommunications. The selection of multiple sectors is aligned with previous research (e.g., Carvalho & Rabechini, 2017; Ebbesen & Hope, 2013; Martens & de Carvalho, 2014). The unit of analysis in this research was individual projects in these three sectors. Projects as units of analysis can give more accurate and in-depth results (Zwikael et al., 2014). The data were obtained in the context of a project recently completed within the organization. We selected these sectors for the following reasons. First, the construction sector is a rapidly growing sector in Pakistan. In recent years, multiple ongoing infrastructure projects have begun to meet the current and future development requirements of the country. In addition, the construction sector plays a vital role in economic development and contributes a substantial proportion of the gross domestic product of the country. Second, Pakistan's Ministry of Information Technology is actively supporting information and communication technology projects. The purpose is to develop a knowledge-based economy by stimulating information and communication technology initiatives both within public and private sector organizations. Third, the telecommunications sector is well-established in Pakistan and it mostly relies on projects for the delivery of services to its clients.

We selected a sample of 500 project managers, team leaders, consultants, managers and assistant managers of projects, team supervisors, and senior team members. The demographic profiles of the respondents are shown in Table 1. A total of 359 responses were received, of which 121 came from the construction sector, 107 from information technology, and the remaining 95 from the telecommunications sector. After scrutiny, 36 questionnaires were removed due to missing entries and readability issues. Complete responses from 323 respondents (a response rate of 64.6%) were considered for further analysis.

4.2 | Measurement and analysis

This study used a survey method for data collection to test the research hypotheses. The questionnaire was distributed personally to the project managers, team leaders, consultants, managers and assistant managers of projects, team supervisors, and senior team members working in construction, telecommunication, and information technology sectors. The questions mainly asked for responses on seven-point Likert scales with options ranging from "strongly disagree" to "strongly agree." The items were designed in line with the objective-based approach and closed-question method (Sekaran & Bougie, 2010). Furthermore, the questionnaire comprised two sections. The first section focused on basic information about the type and size of the organization. The second section consisted of questions directly concerned with the main constructs: SPM, PS, stakeholder engagement, and team building.

The items to measure the variables were adapted from peer-reviewed articles published in the project management research domain (Appendix A). The variables were measured using perpetual subjective measures (Dess, 1987; Dess & Robinson, 1984; Powell, 1992). The reasons for choosing these measures are twofold. First, the respondents were not willing to provide confidential project-related information as a matter of policy (Powell, 1992). Second, subjective performance measures have become popular and are still used in numerous papers published in the project management literature (Den Hartog et al., 2013). The items were slightly modified based on the research setting while ensuring that the meaning of the statement did not change. The SPM construct was adapted from Silvius et al. (2017) and contained 14 items. These items were selected because they reflect relevant literature that links sustainability aspects to project management. The PS and team-

TABLE 1 Demographics

Characteristics	(N)	(%)
Sector		
Construction	121	37.5
IT	107	33.1
Telecom	95	29.4
Total	323	100
Position held		
Project manager	71	21.9
Team leader	42	13.0
Consultant	14	4.33
Manager projects	45	13.9
Assistant manager projects	57	17.6
Team supervisor	63	19.5
Senior team member	31	9.59
Total	323	100
Gender		
Female	118	36.5
Male	205	63.5
Total	323	100
Age		
20–29	157	48.6
30–39	99	30.7
40–49	42	12.9
50–59	20	6.10
60–65	5	1.50
Total	323	100
Education		
Intermediate	21	6.50
Undergraduate	68	21.0
Graduate	226	70.0
Doctoral	8	2.50
Total	323	100

building constructs were adapted from Aga et al. (2016) and comprised 14 and 17 items respectively. The PS items mainly relate to respondents' perceptions on the success of their projects from the customer acceptance/satisfaction and project efficiency (scope, budget, time) perspectives. The stakeholder engagement construct was adapted from Jang et al. (2017) and Mar Alonso-Almeida et al. (2017) with a total of 8 items.

We applied the SEM technique using Smart PLS-3. First, the instrument was tested for validity and reliability to ensure high quality using the Smart-PLS3 software. Second, SEM analyses were performed to test the proposed hypotheses. PLS path modelling represents a well-substantiated method for estimating complex cause-effect relationship models in management research (Gudergan et al., 2008). CB-SEM often eliminates relevant indicator variables, thereby reducing the validity of constructs. In contrast, PLS-SEM creates composite constructs that generally include additional theory-based indicator variables (Rigdon, 2012), while still optimizing predictive accuracy and relevance. Moreover, PLS-SEM analyses can easily obtain solutions to highly complex models, that is, models with a large number of constructs, indicators, and structural relationships (Hair et al., 2014). PLS-SEM is particularly suitable for early-stage theory development and testing (Hair et al., 2014), and permits the examination of constructs and relationships in complex structural models. This is entirely true for SPM, which is in the early stage of its theoretical development. Since the primary purpose in theory development is to find relationships, their directions, and strengths, as well as observable measures, PLS-SEM is appropriate.

CB-SEM requires larger samples than PLS-SEM because relationships between all variables must be assessed, while with PLS-SEM the model is separated into different smaller components. PLS-SEM works efficiently with small sample sizes and complex models and makes practically no assumptions about the underlying data (distributions) (Hair et al., 2014). In PLS-SEM, the guideline is that the sample size should be 10 times the number of arrows pointing at a construct (Hair et al., 2014). In contrast, CB-SEM requires a sample size of five times the number of indicators included in the original model. This makes PLS-SEM particularly suitable for the present research.

In addition, the constructs in the paper were first-order reflective. Nearly all scales in business and related methodological texts on scale development (Coltman et al., 2008) use a reflective approach to measurement. The paper assumes the relationship between construct and indicator is reflective. With the latent construct existing independent of the measures used and items sharing a common theme (Coltman et al., 2008), dropping some of the items would not change the theme of the construct; additionally, it is assumed that the items share a high positive inter-correlation as they measure the same underlying construct (Diamantopoulos & Siguaw, 2006). The scales utilized in the present paper have been based on previously validated instruments. The latent constructs have been treated as reflective in the original research (e.g., stakeholder engagement: Jang et al., 2017; Team building and PS: Aga et al., 2016). SPM has been referred to as a reflective measure in existing research (Carvalho & Rabechini, 2017).

5 | DATA ANALYSIS AND RESULTS

This section demonstrates the multiple analyses of the data collected through the survey questionnaire, to support the research model, research questions, and hypotheses, and to draw credible conclusions.

5.1 | Reliability and validity analysis

To assess the measurement model, the study assessed the reliability and validity of the constructs. Factor loadings ranged from 0.650 to 0.852. One item—team building (TB6)—had a loading of 0.426, hence this item was removed before bootstrapping. The results show that the composite reliability of each latent variable is greater than 0.8

TABLE 2 Reliability analysis

Items	Loadings	CR	Cronbach's alpha	AVE
Sustainability in project management		0.943	.935	.545
SPM1	0.749			
SPM2	0.741			
SPM3	0.711			
SPM4	0.650			
SPM5	0.791			
SPM6	0.659			
SPM7	0.680			
SPM8	0.690			
SPM9	0.741			
SPM10	0.774			
SPM11	0.792			
SPM12	0.786			
SPM13	0.800			
SPM14	0.746			
Project success		0.964	.959	0.655
PS1	0.761			
PS2	0.816			
PS3	0.847			
PS4	0.838			
PS5	0.808			
PS6	0.787			
PS7	0.781			
PS8	0.850			
PS9	0.702			
PS10	0.807			
PS11	0.804			
PS12	0.844			
PS13	0.823			
PS14	0.852			
Stakeholder engagement		0.930	.914	0.626
SH1	0.678			
SH2	0.851			
SH3	0.797			
SH4	0.759			
SH5	0.814			
SH6	0.815			
SH7	0.828			
SH8	0.775			
Team building		0.963	.958	0.618
TB1	0.801			
TB2	0.789			
TB3	0.760			
TB4	0.776			
TB5	0.807			
TB7	0.791			

(Continues)

TABLE 2 (Continued)

Items	Loadings	CR	Cronbach's alpha	AVE
TB8	0.824			
TB9	0.784			
TB10	0.742			
TB11	0.694			
TB12	0.762			
TB13	0.791			
TB14	0.818			
TB15	0.742			
TB16	0.838			
TB17	0.842			

TABLE 3 Discriminant validity results

	PS	SE	SPM	TB
PS	*0.810*	0.689	0.756	0.702
SE	0.651	*0.791*	0.678	0.695
SPM	0.722	0.636	*0.738*	0.657
TB	0.678	0.651	0.628	*0.786*

Note: Diagonal and italicized elements are the square roots of the average variance extracted (AVE). Below the diagonal elements are the correlations between the constructs' values. Above the diagonal elements are the HTMT values.

(Field, 2005), which indicates that good reliability has been attained. Similarly, Cronbach's coefficient alpha is the most common technique used to check the internal consistency of multiple-item scales (Saunders et al., 2009). The minimum acceptable limit of Cronbach's alpha of a construct is .7 (Nunnally, 1978). The results demonstrate that the values of Cronbach's alpha are greater than .9, which shows that the variables' items are internally consistent and reliable. Reliability analysis results along with item loadings are presented in Table 2. Validity was assessed using convergent and discriminant validity analysis. Convergent validity is established if an average variance extracted (AVE) of 0.5 or greater is achieved for the constructs. The results (Table 3) revealed that the AVE values of all constructs were over the required.50 (Wong, 2013).

Discriminant validity is assessed using the Fornell–Larcker Criterion (Fornell & Larcker, 1981) and Heterotrait–Monotrait Ratio (HTMT) methods. According to Fornell–Larcker's criterion, the square root of the AVE of each factor should be greater or larger than the correlation coefficients between the factor in question and other factors. Henseler et al. (2015) stated that the HTMT value of an effect should be less than 0.90. The results show that HTMT values were less than 0.90 which confirms discriminant validity (Table 3). We also analyzed Goodness of Fit (GoF) to assess the overall model fit. The GoF is 0.617 which shows the model fit is acceptable. Exceeding the threshold of GoF > 0.36 suggested by Wetzels et al. (2009). Thus, this study concludes that the research model has a good overall fit.

5.2 | Hypotheses testing

5.2.1 | Hypotheses 1

H1 seeks to assess whether SPM exerts a significant impact on project success. The result of the hypothesis test revealed that SPM has a significant impact on PS ($\beta = .397$, $t = 6.698$, $p < .001$). This shows that in the context of the present paper, SPM would result in PS. Hence, hypothesis H1 was substantiated.

5.2.2 | Hypotheses 2

H2 proposed that the influence of SPM on project success would be further enhanced by increased stakeholder engagement. The moderating effect of stakeholder engagement was insignificant ($\beta = -.065$, $t = 1.099$, $p = .272$). This shows that stakeholder engagement does not moderate the relationship between SPM and PS.

5.2.3 | Hypotheses 3

H3 proposed that the influence of SPM on PS would be further enhanced by increased team building. The moderating effect of team building was insignificant ($\beta = .051$, $t = .787$, $p = .432$). This shows that team building does not moderate the relationship between SPM and PS. The results of the hypotheses tests are summarized in Table 4.

6 | DISCUSSION AND RESEARCH IMPLICATIONS

6.1 | Discussion

This paper investigates the impact of SPM on PS with the moderating effects of stakeholder engagement and team building. The results

TABLE 4 Analysis results

	Path coefficient	Standard deviation	*T* statistics	*p* values
SPM - > PS	0.397	0.059	6.698	.000
Int_SPM_SH - > PS	−0.065	0.059	1.099	.272
Int_SPM_TB - > PS	0.051	0.065	0.787	.432

positively answer RQ1—Does SPM have an impact on project success? The result confirms that SPM has a positive and significant impact on PS. Accordingly, drawing on RBV it can be argued that SPM is one of the critical determinants of PS, indicating that SPM implementation capability could enable a firm to achieve competitive advantage through successful project delivery (e.g., Bamgbade et al., 2019; Fernando et al., 2018). The findings of this paper also resonate with the prior research conducted by Dubois and Silvius (2020) and Malik et al. (2020) who confirmed that sustainability has a positive influence on PS. Further, our findings address the call of Martens and Carvalho (2016), who questioned whether SPM practices enable the project manager to complete their project and the findings of Carvalho and Rabechini (2017) that showed a positive impact of SPM on PS. While it could be argued that there are contextual differences between Pakistan, other developing and developed countries, the objective of SPM remained the same in terms of improvements in social, environmental and economic concerns. As Pinto (2020, p. 207) suggested: "modern project management recognizes that being sustainable can benefit … the organization, its critical stakeholders and most importantly, the planet as a whole." Following this viewpoint, Mallick (2017, p. 61) asserts that "for Pakistan, climate-resilient economic development and infrastructure design is a must so that a sustained level of economic development is reached resulting in human dignity and protection of ecological and environmental processes" including in the project management context.

In response to research question 2, the paper revealed that stakeholder engagement does not moderate the relationship between SPM and PS. The result reveals that the effect of stakeholder engagement remains insignificant. In this regard, Alwaer et al. (2008) highlighted that agreement on sustainability issues among project stakeholders is a critical challenge due to the subjectivity involved in the SPM concept and the problems associated with prioritizing sustainability-related indicators. A number of external factors could be responsible for limited sustainability uptake and inadequate stakeholder engagement in the Pakistan context. For instance, studies reported that stakeholder-related issues such as lack of public awareness, poor stakeholder interest and inadequate legislative and regulatory frameworks (Bux et al., 2020; Inam et al., 2015; Sajjad et al., 2018; Sajjad & Eweje, 2014; Zahoor et al., 2017) are impeding sustainability adoption in Pakistan. According to Mathur et al. (2008), the value of the stakeholder engagement process depends on how firms conceptualize and practice this concept. The authors suggested that stakeholder engagement can be conceptualized from three different perspectives: (1) management, (2) ethics, and (3) social learning. The authors note that from a strategic management perspective, stakeholder engagement helps gather useful information and knowledge, improve innovative capacity, and with taking corrective measures to resolve conflicts. From an ethical point of view, the purpose of stakeholder engagement is to enhance responsible decision making, promote impartiality and build social capital. Taking a social learning perspective, stakeholder engagement promotes the feminization of organizational value systems and the creation of a common vision and objectives. Thus, firms need to employ an inclusive approach combing all the three perspectives if SPM is to be pursued, otherwise the contributions of stakeholder engagement remain insignificant.

Moreover, it can be argued effective communication and dialogue with salient project stakeholders is imperative (Beringer et al., 2013; Heravi et al., 2015); however, this process should be maintained throughout the project life-cycle phases including initiating, planning, executing, monitoring, and controlling. In addition, Nauman and Piracha (2016) stated that better communication with stakeholders increased positive and active participation. The information flow between the project and stakeholders is no longer unidirectional but transformed into a dialogue that allows participants to take part in developing the project (Libaert, 1998). Accordingly, some scholars have suggested that to improve stakeholder engagement, the firms need to encourage stakeholder management strategies (Khan et al., 2017; Khan & Iqbal, 2019; Larsson & Larsson, 2020; Nguyen & Mohamed, 2021), enhance communication and collaboration with project stakeholders (Fraz et al., 2016), and promote stakeholder awareness initiatives (Khan et al., 2017; Saad et al., 2020).

It appears from the results of the present research that inadequate stakeholder engagement in the context of Pakistan has constrained stakeholders' involvement. From a stakeholder theory perspective, firms should recognize the needs of all stakeholders and engage with them in a more collaborative way throughout the project life cycle (Larsson & Larsson, 2020; Pinto, 2020) to enhance SPM outcomes. Khan et al. (2017) asserted that a lack of stakeholder awareness and engagement caused adverse effects on construction sector PS. Similarly, Szwajkowski (2000) argued that efficient stakeholder engagement requires awareness of diverse project stakeholders and their involvement in business decisions. Moreover, Saad et al. (2020, p. 6) wargued that a project manager "needs to be aware of the stakeholder management practices and what outcomes those practices have. [the] Greater the awareness the greater will be the chances of efficient stakeholder management." Accordingly, it is necessary for an organization to formulate and implement inclusive stakeholder management strategies; otherwise, the contributions of these stakeholders remain insignificant.

In response to research question 3, the results show that team building does not moderate the relationship between SPM and PS. This insignificant effect of team building is aligned with several

past studies that suggest the insignificant influence of team building on project performance parameters (e.g., Buller & Bell, 1986; Salas et al., 1999; Tannenbaum et al., 1992). The extant literature indicates that evidence regarding the significant effect of team building on performance was "equivocal" (Tannenbaum et al., 1992), "inconclusive" (Buller & Bell, 1986), and 'insignificant' (Salas et al., 1999).

The literature also provides some justifications for the insignificant effect of team building. According to Bubshait and Farooq (1999, p. 34), "personnel management is vital for project success, but team building is not an easy task in a multicultural environment." They argued that factors such as different outlooks, priorities, and interests, role conflicts, power struggles, and inadequate communication skills can undermine the team process and quickly derail the task. In a similar vein, Kerzner (2013) stated that understanding of objectives, different viewpoints, competition over team leadership, role conflicts, dynamic project settings, lack of commitment, and team personnel selection are the challenges that detract from team performance. However, the extant literature has shown that a good leader enhances the motivational level of the team by stimulating different ideas and resolving their problems when deemed appropriate/necessary (Grazier, 1998). This positive approach of leaders inspires team members to perform well.

Effective communication is considered an important factor for PS (Fraz et al., 2016). Kerzner (2013) indicated that inadequate communication is a major obstacle to the development of good teams as it lowers motivation levels, reduces team spirit, and contributes to poorly stated targets and poor project control, coordination, and flow of work. Accordingly, failing to improve communication between team members could lead to insignificant effects of team building. In addition to these factors, the ethical considerations of project managers and practitioners also hinder effective team commitment to the attainment of the project goal. Accordingly, Mishra et al. (2011, p. 341) highlighted the importance of ethics and stated that "ethics is very important in gaining the support of [the] project team which is paramount in achieving the success of the specified project." Other possible reasons for this insignificant effect of team building in the Pakistani context include lack of top management support, an ambiguous role of the project manager in the composition of a competent team, low commitment to training programmes, and lower team dedication and team risk (Taveira, 2008).

6.2 | Research implications

This paper has several theoretical and practical implications. First, the findings of this paper are in alignment with the RBV that suggests the significance of incorporating SPM practices to achieve PS. Nonetheless, this stream of research has lacked empirical evidence (Brones et al., 2014; Chawla et al., 2018; Moehler et al., 2018), hence there is a need to incorporate sustainability into the entire project life cycle in a holistic way (Ismayilova & Silvius, 2021; Martens & de Carvalho, 2014; Stanitsas et al., 2020). We showed that apart from triple-constraint criteria, integration of sustainability has become an important factor in the management of projects. Our results suggest that project managers should consider SPM as a fundamental factor in the implementation of project life-cycle phases.

Second, our paper contributes to stakeholder theory by emphasizing the importance of stakeholder engagement for managing projects. Contrasting the operationalization by previous researchers (Eskerod & Huemann, 2013; Martens & Carvalho, 2016), who viewed stakeholder engagement as a possible determinant of sustainability in project management, our research did not find a significant moderating impact of stakeholder engagement. However, existing research has shown that stakeholder engagement is an important construct that enables organizations and project managers' successful project completion. Hence, there is a need to further study the role of stakeholders in other sectors and cultures. In addition, our paper also contributed to project team development theory by highlighting the fact that team building is a key construct that entails practices designed to support team performance. This contrasts with the viewpoint of Wang and Howell (2010), who argued that team building is not an independent construct, but rather a dimension of transformational leadership. Contrary to the hypotheses proposed, the paper failed to substantiate the moderating role of team building. This requires future research that could help determine the role of team building in the linkage between sustainability and PS.

Third, Pakistan is undergoing rapid economic expansion but is also suffering from corruption, poor governance, technological enhancement, and resource depletion (Burki, 2018). Many of the organizations have recognized the importance of SPM policies and practices that enable them to cope with these negative spirals of environmental, social, and economic impact/aspects. Thus, managers should pay attention to the adaptation and implementation of sustainability strategies that foster innovation and improve the environment. This will facilitate and accelerate the organization's sustainable development by stimulating the benefits from a stable economy, and a social and friendly environment.

Fourth, our paper opens a new avenue in the SPM domain by highlighting the fact that SPM has a positive and significant impact on triggering PS. By studying and analysing our research framework in a newer and less explored developing country, we extend the knowledge of SPM practices to organizations' top management and project managers working in different sectors of Pakistan.

7 | CONCLUSIONS

This paper examined the impact of SPM on PS by incorporating two moderating variables of stakeholder engagement and team building. A structured survey questionnaire technique was applied for data collection and 323 responses were received from Pakistani project management professionals. The results showed that SPM has a significant and positive effect on PS. However, it was found that the effects of stakeholder engagement and team building remain insignificant. This paper reports on one of the few studies that have examined the relationship between SPM and PS in the developing world context.

Hence, this paper contributes to an under-researched stream of literature that explores the adoption of the sustainability concept in project management and opens a new avenue for researchers to explore further.

This paper has some limitations. First, while data were collected from the construction, information technology, and telecommunication sectors to validate the hypothesized model, we did not perform cross-sector analysis; thus, future studies may address this omission. Second, due to the nature and requirements of the research, we applied convenience sampling (a non-probability sampling) technique, which means that our sample was not probabilistically stratified by country, organization size, and project complexity. To avoid asymmetries among categories we recommend probability sampling to validate hypotheses related to control variables in the future. Third, this study was conducted in the context of Pakistan. The results are more valid and applicable in similar contexts; therefore, it is suggested to gather data from different geographical settings including longitudinal studies to explore the causal relationships implied in this paper. Future studies could also explore drivers and critical success factors for firms to implement SPM practices. For instance, issues such as leadership commitment and values (Iqbal & Ahmad, 2021), organizational culture, employee involvement, and communication climate are critical for SPM implementation. Accordingly, future research could explore these issues in relation to SPM implementation.

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REFERENCES

Aarseth, W., Ahola, T., Aaltonen, K., Økland, A., & Andersen, B. (2017). Project sustainability strategies: A systematic literature review. *International Journal of Project Management*, *35*(6), 1071–1083.

Adema, L. C., Malietso, M. C., & Anyanje, S. T. (2020). Influence of stakeholder empowerment on sustainability of social based corporate projects in TVETs in Western Kenya. *International Journal of Project Management*, *2*(3), 98–108.

Adriana, T. T., & Ioana-Maria, D. (2013). Project success by integrating sustainability in project management. *Sustainability integration for effective project management*, *IGI global*, 106–127.

Aga, D. A., Noorderhaven, N., & Vallejo, B. (2016). Transformational leadership and project success: The mediating role of team-building. *International Journal of Project Management*, *34*(5), 806–818.

Agarwal, N., & Rathod, U. (2006). Defining 'success' for software projects: An exploratory revelation. *International Journal of Project Management*, *24*(4), 358–370.

Aguilar-Fernández, M. E., Otegi-Olaso, J. R., Cruz-Villazón, C., & Fuentes-Ardeo, L. (2015, September). *Analysing sustainability in project life cycle and business models from the perspective of the sustainable innovation drivers*. Paper presented at 2015 IEEE 8th International Conference on Intelligent data acquisition and advanced computing systems: Technology and applications (IDAACS), IEEE, 2, 490–495.

Ahmad, N., Mahmood, A., Han, H., Ariza-Montes, A., Vega-Muñoz, A., Iqbal Khan, G., & Ullah, Z. (2021). Sustainability as a "new normal" for modern businesses: Are SMEs of Pakistan ready to adopt it? *Sustainability*, *13*(4), 1944.

Ahmed, Z., Kumar, U., & Kumar, V. (2018). Managing critical success factors for IS implementation: A stakeholder engagement and control perspective. *Canadian Journal of Administrative Sciences*, *35*(3), 403–418.

AlWaer, H., Sibley, M., & Lewis, J. (2008). Different stakeholder perceptions of sustainability assessment. *Architectural Science Review*, *51*(1), 48–59.

Andersen, E. S., Birchall, D., Arne Jessen, S., & Money, A. H. (2006). Exploring project success. *Baltic Journal of Management*, *1*(2), 127–147.

Atkinson, R. (1999). Project management: Cost, time and quality, two best guesses and a phenomenon, it's time to accept other success criteria. *International Journal of Project Management*, *17*(6), 337–342.

Ayuso, S., & Navarrete-Báez, F. E. (2018). How does entrepreneurial and international orientation influence SMEs' commitment to sustainable development? Empirical evidence from Spain and Mexico. *Corporate Social Responsibility and Environmental Management*, *25*(1), 80–94.

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*(1), 118402. https://doi.org/10.1016/j.jclepro.2019.118402

Bamgbade, J. A., Nawi, M. N. M., Kamaruddeen, A. M., Adeleke, A. Q., & Salimon, M. G. (2019). Building sustainability in the construction industry through firm capabilities, technology and business innovativeness: Empirical evidence from Malaysia. *International Journal of Construction Management*, 1–16. https://doi.org/10.1080/15623599.2019.1634666.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120.

Belassi, W., & Tukel, O. I. (1996). A new framework for determining critical success/failure factors in projects. *International Journal of Project Management*, *14*(3), 141–152.

Beringer, C., Jonas, D., & Kock, A. (2013). Behavior of internal stakeholders in project portfolio management and its impact on success. *International Journal of Project Management*, *31*(6), 830–846.

Bourne, L., & Walker, D. H. T. (2005). Visualising and mapping stakeholder influence. *Management Decision*, *43*(5), 649–660.

Braun, S., Peus, C., Weisweiler, S., & Frey, D. (2013). Transformational leadership, job satisfaction and team performance: A multilevel mediation model of trust. *Leadership Quarterly*, *24*(1), 270–283.

Brones, F. A., Carvalho, M. M., & Zancul, E. S. (2014). Ecodesign in project management: A missing link for the integration of sustainability in product development? *Journal of Cleaner Production*, *80*(1), 106–118.

Bubshait, A. A., & Farooq, G. (1999). Team building and project success. *Cost Engineering*, *41*(7), 34–38.

Bulgacov, S., Ometto, M. P., & May, M. R. (2015). Differences in sustainability practices and stakeholder involvement. *Social Responsibility Journal*, *11*(1), 149–160.

Buller, P. F., & Bell, C. H. (1986). Effects of team building and goal setting on productivity: A field experiment. *Academy of Management Journal*, *29*(2), 305–328.

Burki, S. J. (2018). *Pakistan: Fifty years of nationhood*. New York, NY: Routledge.

Bux, H., Zhang, Z., & Ahmad, N. (2020). Promoting sustainability through corporate social responsibility implementation in the manufacturing industry: An empirical analysis of barriers using the ISM-MICMAC approach. *Corporate Social Responsibility and Environmental Management*, *27*(4), 1729–1748.

Caffaro, F., Roccato, M., Micheletti Cremasco, M., & Cavallo, E. (2019). An ergonomic approach to sustainable development: The role of information environment and social-psychological variables in the adoption of Agri-environmental innovations. *Sustainable Development*, *27*(6), 1049–1062.

Carvalho, M. M., & Rabechini, R. (2017). Can project sustainability management impact project success? An empirical study applying a contingent approach. *International Journal of Project Management*, *35*(6), 1120–1132.

Chatterji, M. (2014). *Corporate social responsibility*. New Delhi, India: Oxford University Press.

Chawla, V., Chanda, A., Angra, S., & Chawla, G. (2018). The sustainable project management: A review and future possibilities. *Journal of Project Management*, *3*(3), 157–170.

Chen, C., Yu, Y., Osei-Kyei, R., Chan, A. P. C., & Xu, J. (2019). Developing a project sustainability index for sustainable development in transnational public–private partnership projects. *Sustainable Development*, *27*(6), 1034–1048.

Chofreh, A. G., Goni, F. A., Malik, M. N., Khan, H. H., & Klemeš, J. J. (2019). The imperative and research directions of sustainable project management. *Journal of Cleaner Production*, *238*, 117810. https://doi.org/10.1016/j.jclepro.2019.117810

Coltman, T., Devinney, T. M., Midgley, D. F., & Venaik, S. (2008). Formative versus reflective measurement models: Two applications of formative measurement. *Journal of Business Research*, *61*(12), 1250–1262.

Cuppen, E., Bosch-Rekveldt, M. G., Pikaar, E., & Mehos, D. C. (2016). Stakeholder engagement in large-scale energy infrastructure projects: Revealing perspectives using Q methodology. *International Journal of Project Management*, *34*(7), 1347–1359.

Da Silva, F. Q., França, A. C. C., Suassuna, M., de Sousa Mariz, L. M., Rossiley, I., de Miranda, R. C., … Espindola, E. (2013). Team building criteria in software projects: A mix-method replicated study. *Information and Software Technology*, *55*(7), 1316–1340.

Darko, A., Zhang, C., & Chan, A. P. (2017). Drivers for green building: A review of empirical studies. *Habitat International*, *60*, 34–49.

De Wit, A. (1988). Measurement of project success. *International Journal of Project Management*, *6*(3), 164–170.

Den Hartog, D. N., Boon, C., Verburg, R. M., & Croon, M. A. (2013). HRM, communication, satisfaction, and perceived performance: A cross-level test. *Journal of Management*, *39*(6), 1637–1665.

Dess, G. (1987). Consensus on strategy formulation and organizational performance: Competitors in a fragmented industry. *Strategic Management Journal*, *8*(3), 259–277.

Dess, G., & Robinson, R. (1984). Measuring organizational performance in the absence of objective measures: The case of privately-held firm and conglomerate business unit. *Strategic Management Journal*, *5*(3), 265–273.

Di Maddaloni, F., & Davis, K. (2017). The influence of local community stakeholders in megaprojects: Rethinking their inclusiveness to improve project performance. *International Journal of Project Management*, *35*(8), 1537–1556.

Diamantopoulos, A., & Siguaw, J. A. (2006). Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. *British Journal of Management*, *17*(4), 263–282.

Dubois, O., & Silvius, G. (2020). The relation between sustainable project management and project success. *International Journal of Management and Sustainability*, *9*(4), 218–238.

Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, *11*(2), 130–141.

Ebbesen, J. B., & Hope, A. (2013). Re-imagining the iron triangle: Embedding sustainability into project constraints. *PM World Journal*, *2*(3), 1–13.

Elkington, J. (1998). Partnerships from cannibals with forks: The triple bottom line of 21st-century business. *Environmental Quality Management*, *8*(1), 37–51.

Eskerod, P., & Huemann, M. (2013). Sustainable development and project stakeholder management: What standards say. *International Journal of Managing Projects in Business*, *6*(1), 36–50.

Everard, M. (2011). Sustainability and sustainable development. In J. Brady, A. Ebage, & R. Lunn (Eds.), *Environmental management in organisations: The IEMA handbook* (2nd ed., pp. 39–61). London, UK: Earthscan.

Fernando, Y., Walters, T., Ismail, M. N., Seo, Y. W., & Kaimasu, M. (2018). Managing project success using project risk and green supply chain management: A survey of automotive industry. *International Journal of Managing Projects in Business*, *11*(2), 332–365.

Field, A. (2005). *Discovering statistics using SPSS*. Thousand Oaks, CA: Sage.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, *18*(3), 382–388.

Fortune, J., & White, D. (2006). Framing of project critical success factors by a systems model. *International Journal of Project Management*, *24*(1), 53–65.

Fraz, A., Waris, A., Afzal, S., Jamil, M., Shah, S. T. H., & Sultana, S. (2016). Effect of project management practices on project success in make-to-order manufacturing organizations. *Indian Journal of Science and Technology*, *9*(21), 1–8.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston, MA: Pittman-Ballinger.

Gareis, R., Huemann, M., Martinuzzi, R.-A., Weninger, C., & Sedlacko, M. (2013). *Project management & sustainable development principles*. Newtown Square, PA: Project Management Institute.

Garvare, R., & Johansson, P. (2010). Management for sustainability–A stakeholder theory. *Total Quality Management*, *21*(7), 737–744.

Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal*, *30*(4), 425–445.

Goel, A., Ganesh, L. S., & Kaur, A. (2019). Sustainability integration in the management of construction projects: A morphological analysis of over two decades' research literature. *Journal of Cleaner Production*, *236*, 1–21.

Grazier, P. (1998). *Team motivation*. The Team Building Supersite, Available at: http://www.teambuildinginc.com/article_teammotivation.htm

Gudergan, S. P., Ringle, C. M., Wende, S., & Will, A. (2008). Confirmatory tetrad analysis in PLS path modelling. *Journal of Business Research*, *61*(12), 1238–1249.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation model (PLS-SEM)*. Los Angeles: Sage.

Hasheminasab, H., Gholipour, Y., Kharrazi, M., Streimikiene, D., & Hashemkhani, S. (2020). A dynamic sustainability framework for petroleum refinery projects with a life cycle attitude. *Sustainable Development*, *28*(5), 1033–1048.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135.

Heravi, A., Coffey, V., & Trigunarsyah, B. (2015). Evaluating the level of stakeholder involvement during the project planning processes of building projects. *International Journal of Project Management*, *33*(5), 985–997.

Hwang, B. G., & Tan, J. S. (2012). Green building project management: Obstacles and solutions for sustainable development. *Sustainable Development*, *20*(5), 335–349.

Ika, L. A. (2009). Project success as a topic in project management journals. *Project Management Journal*, *40*(4), 6–19.

Ika, L. A. (2015). Opening the black box of project management: Does World Bank project supervision influence project impact? *International Journal of Project Management*, *33*(5), 1111–1123.

Ika, L. A., Diallo, A., & Thuillier, D. (2012). Critical success factors for World Bank projects: An empirical investigation. *International Journal of Project Management*, *30*(1), 105–116.

Ika, L. A., & Donnelly, J. (2017). Success conditions for international development capacity building projects. *International Journal of Project Management*, *35*(1), 44–63.

Inam, A., Adamowski, J., Halbe, J., & Prasher, S. (2015). Using causal loop diagrams for the initialization of stakeholder engagement in soil salinity management in agricultural watersheds in developing countries: A case study in the Rechna doab watershed, Pakistan. *Journal of Environmental Management*, *152*, 251–267.

IPMA. (2013). *Individual competence baseline*. http://products.ipma.world/wp-content/uploads/2016/03/IPMA_ICB_4_0_WEB.pdf

Iqbal, Q., & Ahmad, N. H. (2021). Sustainable development: The colors of sustainable leadership in learning organization. *Sustainable Development*, *29*(1), 108–119.

Ismayilova, A., & Silvius, G. (2021). Cradle-to-cradle in project management: A case study. *International Journal of Circular Economy and Waste Management*, *1*(1), 1–27.

Jakhar, S. K. (2017). Stakeholder engagement and environmental practice adoption: The mediating role of process management practices. *Sustainable Development*, *25*(1), 92–110.

Jamali, D. (2006). Insights into triple bottom line integration from a learning organization perspective. *Business Process Management Journal*, *12* (6), 809–821.

Jang, Y. J., Zheng, T., & Bosselman, R. (2017). Top managers' environmental values, leadership, and stakeholder engagement in promoting environmental sustainability in the restaurant industry. *International Journal of Hospitality Management*, *63*, 101–111.

Johnston, P., Everard, M., Santillo, D., & Robèrt, K.-H. (2007). Reclaiming the definition of sustainability. *Environmental Science and Pollution Research*, *14*(1), 60–66.

Joslin, R., & Müller, R. (2015). Relationships between a project management methodology and project success in different project governance contexts. *International Journal of Project Management*, *33* (6), 1377–1392.

Kerzner, H. R. (2013). *Project Management: A systems approach to planning, scheduling and controlling* (11th ed.). Hoboken, NJ: Wiley.

Khalifeh, A., Farrell, P., & Al-edenat, M. (2019). The impact of project sustainability management (PSM) on project success: A systematic literature review. *Journal of Management Development*, *39*(4), 453–474.

Khan, A. Z., Skibniewski, M., & Cable, J. H. (2017). Understanding project stakeholder psychology: The path to effective stakeholder management and engagement. *Project Management World Journal*, *6*, 2–7.

Khan, S., & Iqbal, A. (2019). Factors influencing stakeholders' engagement process in construction projects: KP region Pakistan. *Journal of Management Research*, *5*(2), 37–49.

Kivilä, J., Martinsuo, M., & Vuorinen, L. (2017). Sustainable project management through project control in infrastructure projects. *International Journal of Project Management*, *35*(6), 1167–1183.

Klein, C., Diaz Granados, D., Salas, E., Le, H., Burke, C. S., Lyons, R., & Goodwin, G. F. (2009). Does team building work? *Small Group Research*, *40*(2), 181–222.

Larson, E. W., Gray, C. F., Danlin, U., Honig, B., & Bacarini, D. (2018). *Project management: The managerial process* (7th ed.). NY, USA: McGraw-Hill Education.

Larsson, J., & Larsson, L. (2020). Integration, application and importance of collaboration in sustainable project management. *Sustainability*, *12* (2), 585.

Latif, K. F., Sajjad, A., Bashir, R., Shaukat, M. B., Khan, M. B., & Sahibzada, U. F. (2020). Revisiting the relationship between corporate social responsibility and organizational performance: The mediating role of team outcomes. *Corporate Social Responsibility and Environmental Management*, *27*(4), 1630–1641.

Latif, K. F., & Williams, N. (2017). Team effectiveness in non-governmental organizations (NGOs) projects. *Evaluation and Program Planning*, *64*(3), 20–32.

Lehtinen, J., Aaltonen, K., & Rajala, R. (2019). Stakeholder management in complex product systems: Practices and rationales for engagement and disengagement. *Industrial Marketing Management*, *79*, 58–70.

Libaert, T. (1998). Faire accepter unprojet: principes et méthodes. *Communication & Languages*, *117*(1), 76–90.

López-Gamero, M. D., Claver-Cortés, E., & Molina-Azorín, J. F. (2011). Environmental perception, management, and competitive opportunity in Spanish hotels. *Cornell Hospitality Quarterly*, *52*(4), 480–500.

Mahmood, Z., Kouser, R., & Masud, M. A. K. (2019). An emerging economy perspective on corporate sustainability reporting–main actors' views on the current state of affairs in Pakistan. *Asian Journal of Sustainability and Social Responsibility*, *4*(1), 1–31.

Malik, M. F., Khan, R. A., Khan, M. M., & Humayon, A. A. (2020). Role of sustainability and project complexity in achieving project success. *City University Research Journal*, *10*(1), 1–15.

Mallick, S. (2017). Scientific perspective on sustainable development goals for Pakistan. *Science Vision*, *21*(1), 51–62.

Mar Alonso-Almeida, M., Buil-Fabregà, M., Bagur-Femenías, L., & Aznar-Alarcón, J. P. (2017). Shedding light on sustainable development and stakeholder engagement: The role of individual dynamic capabilities. *Sustainable Development*, *25*(6), 625–638.

Martens, M. L., & Carvalho, M. M. (2016). The challenge of introducing sustainability into project management function: Multiple-case studies. *Journal of Cleaner Production*, *117*(20), 29–40.

Martens, M. L., & Carvalho, M. M. (2017). Key factors of sustainability in project management context: A survey exploring the project managers' perspective. *International Journal of Project Management*, *35* (6), 1084–1102.

Martens, M. L., Carvalho, M. M., & Martens, C. D. P. (2016). Sustainability and success in project management: A forum with academic experts. *International Association for Management of Technology IAMOT 2016 Conference Proceedings*, 103–132.

Martens, M. L., & de Carvalho, M. M. (2014). *A conceptual framework of sustainability in project management*. Newtown Square, PA: Project Management Institute.

Martínez-Perales, S., Ortiz-Marcos, I., Juan Ruiz, J., & Lázaro, F. J. (2018). Using certification as a tool to develop sustainability in project management. *Sustainability*, *10*(5), 1408.

Masanja, N. M., & Chambi, W. (2020). An assessment of team building activities for sustainable organizational growth at selected private and public entities in Arusha, Tanzania. *International Journal of Innovation in Education and Business*, *2*(2), 94–105.

Mathur, V. N., Price, A. D., & Austin, S. (2008). Conceptualizing stakeholder engagement in the context of sustainability and its assessment. *Construction Management and Economics*, *26*(6), 601–609.

Mavi, R. K., & Standing, C. (2018). Critical success factors of sustainable project management in construction: A fuzzy DEMATEL-ANP approach. *Journal of Cleaner Production*, *194*, 751–765.

Mishra, P., Dangayach, G. S., & Mittal, M. L. (2011). An ethical approach towards sustainable project success. *Procedia-Social and Behavioral Sciences*, *25*, 338–344.

Moehler, R., Hope, A., & Algeo, C. (2018). Sustainable project management: Revolution or evolution? *Academy of management proceedings*, *2018*(1), 13583.

Nangoli, S., Namiyingo, S., Kabagambe, L., Namono, R., Jaaza, M., & Ngoma, M. (2016). Stakeholder participation: An empirical investigation. *African Journal of Business Management*, *10*(8), 182–186.

Naseem, T., Shahzad, F., Asim, G. A., Rehman, I. U., & Nawaz, F. (2020). Corporate social responsibility engagement and firm performance in Asia Pacific: The role of enterprise risk management. *Corporate Social Responsibility and Environmental Management*, *27*(2), 501–513.

Nauman, S., & Piracha, M. S. S. (2016). Project stakeholder management-a developing country perspective. *Journal of Quality and Technology Management*, *13*(2), 1–24.

Nguyen, T. S., & Mohamed, S. (2021). Mediation effect of stakeholder management between stakeholder characteristics and project performance. *Journal of Engineering, Project & Production Management*, *11*(2), 102–117.

Nunnally, J. C. (1978). *Psychometric theory*. New York, NY: McGraw-Hill.

Olawumi, T. O., & Chan, D. W. (2019). Critical success factors for implementing building information modeling and sustainability practices in construction projects: A Delphi survey. *Sustainable Development*, *27*(4), 587–602.

Ozigbo, A. M., Idegbesor, M., Ngige, C. D., & Nwakoby, N. P. (2020). Team building and performance in organizations: An exploration of issues. *International Journal of Management and Entrepreneurship*, *2*(1), 184–199.

Pinto, J. (2020). *Project management: Achieving competitive advantage* (5th ed.). London: Pearson.

Powell, T. (1992). Organizational alignment as competitive advantage. *Strategic Management Journal*, *13*(2), 119–134.

Rajablu, M., Marthandan, G., & Yusoff, W. F. W. (2014). Managing for stakeholders: The role of stakeholder-based management in project success. *Asian Social Science*, *11*(3), 111.

Rigdon, E. E. (2012). Rethinking partial least squares path modeling: In praise of simple methods. *Long Range Planning*, *45*(5–6), 341–358.

Rohrbacher, H. (2001). Managing the technological transition to sustainable construction of buildings: A socio-technical perspective. *Technology Analysis & Strategic Management*, *13*(1), 137–150.

Saad, A., Zahid, S. M., & Muhammad, U. B. (2020). Role of awareness in strengthening the relationship between stakeholder management and project success in the construction industry of Pakistan. *International Journal of Construction Management*, 1–10. https://doi.org/10.1080/15623599.2020.1742854.

Sabini, L., & Alderman, N. (2021). The paradoxical profession: Project Management and the contradictory nature of sustainable project objectives. *Project Management Journal*, *52*, 87569728211007660.

Sabini, L., Muzio, D., & Alderman, N. (2019). 25 years of 'sustainable projects'. What we know and what the literature says. *International Journal of Project Management*, *37*(6), 820–838.

Sajjad, A., & Eweje, G. (2014). Corporate social responsibility in Pakistan: Current trends and future directions. In *Corporate social responsibility and sustainability: Emerging trends in developing economies* (Vol. 8, pp. 163–187). Bingley: Emerald Group Publishing Limited.

Sajjad, A., Jillani, A., & Raziq, M. M. (2018). Sustainability in the Pakistani hotel industry: An empirical study. *Corporate Governance: The International Journal of Business in Society*, *18*(4), 714–727.

Salas, E., Rozell, D., Mullen, B., & Driskell, J. E. (1999). The effect of team building on performance: An integration. *Small Group Research*, *30*(3), 309–329.

Saunders, M., Lewis, P., Thornhill, A., & Wilson, J. (2009). *Business research methods*. London: Financial Times, Prentice Hall.

Scott-Young, C., & Samson, D. (2008). Project success & project team management: Evidence from capital projects in the process industries. *Journal of Operations Management*, *2*(6), 749–766.

Sekaran, U., & Bougie, R. (2010). Theoretical framework and hypothesis development. In *Research methods for business: A skill building approach* (5th ed.). Chichester: Wiley.

Serrador, P., & Turner, R. (2015). The relationship between project success and project efficiency. *Project Management Journal*, *46*(1), 30–39.

Shah, M. A. R., Rahman, A., & Chowdhury, S. H. (2020). Assessing sustainable development of flood mitigation projects using an innovative sustainability assessment framework. *Sustainable Development*, *28*(5), 1404–1417.

Shang, H., Chen, R., & Li, Z. (2020). Dynamic sustainability capabilities and corporate sustainability performance: The mediating effect of resource management capabilities. *Sustainable Development*, *28*(4), 595–612.

Shenhar, A., Dvir, D., Levy, O., & Maltz, A. C. (2001). Project success: A multidimensional strategic concept. *Long Range Planning*, *34*, 699–725.

Shenhar, A. J., & Dvir, D. (2007). *Reinventing project management: The diamond approach to successful growth and innovation* (1st ed.). Boston, MA: Harvard Business School Press.

Silvius, A. G., Kampinga, M., Paniagua, S., & Mooi, H. (2017). Considering sustainability in project management decision making; an investigation using Q-methodology. *International Journal of Project Management*, *35*(6), 1133–1150.

Silvius, A. G., & Schipper, R. (2015). A conceptual model for exploring the relationship between sustainability and project success. *Procedia Computer Science*, *64*, 334–342.

Silvius, A. G., & Schipper, R. (2016). Exploring the relationship between sustainability and project success-conceptual model and expected relationships. *SciKA-Association for Promotion and Dissemination of Scientific Knowledge*, *4*(3), 5–22.

Silvius, A. J. G., & Schipper, R. (2014). Sustainability in project management competencies: Analyzing the competence gap of project managers. *Journal of Human Resources Sustainability Studies*, *2*, 40–58.

Silvius, G. (2017). Sustainability as a new school of thought in project management. *Journal of Cleaner Production*, *166*, 1479–1493.

Silvius, G., Schipper, R., & Nedeski, S. (2013). Consideration of sustainability in projects and project management: An empirical study. In *Sustainability integration for effective project management* (pp. 212–233). Hershey, PA: IGI Global.

Song, Y. W., Kim, J. D., Yu, L., Lee, H. K., & Lee, H. S. (2012). A comparative study of the telematics industry in Korea and China. *Journal of Internet Banking and Commerce*, *17*(1), 1–13.

Stanitsas, M., Kirytopoulos, K., & Leopoulos, V. (2020). Integrating sustainability indicators into project management: The case of construction industry. *Journal of Cleaner Production*, *279*, 123774.

Szwajkowski, E. (2000). Simplifying the principles of stakeholder management: The three most important principles. *Business & Society*, *39*(4), 379–396.

Tam, G. (2010). The program management process with sustainability considerations. *Journal of Project, Program & Portfolio Management*, *1*(1), 17–27.

Tannenbaum, S. I., Beard, R. L., & Salas, E. (1992). Team building and its influence on team effectiveness: An examination of conceptual and empirical developments. *Advances in psychology*, *82*, 117–153.

Taveira, A. D. (2008). Key elements on team achievement: A retrospective analysis. *Applied Ergonomics*, *39*(4), 509–518.

Thamhain, H. J. (2014). *Managing technology-based projects: Tools, techniques, people and processes*. New Jersey: John Wiley & Sons, Inc.

Toljaga-Nikolić, D., Todorović, M., Dobrota, M., Obradović, T., & Obradović, V. (2020). Project management and sustainability: Playing trick or treat with the planet. *Sustainability*, *12*(20), 8619.

Toofany, S. (2007). Team building and leadership: The key to recruitment and retention. *Nursing Management–UK*, *14*(1), 24–27.

Turner, R., Huemann, M., & Keegan, A. (2008). Human resource management in the project-oriented organization: Employee well-being & ethical treatment. *International Journal of Project Management*, *26*(5), 577–585.

Ullah, M., Khan, M. W. A., Hussain, A., Rana, F., & Khan, A. (2020). A construct validation approach for exploring sustainability adoption in Pakistani construction projects. *Buildings*, *10*(11), 207.

Wang, X.-H. F., & Howell, J. M. (2010). Exploring the dual-level effects of transformational leadership on followers. *Journal of Applied Psychology*, *95*(6), 1134–1144.

WCED. (1987). *Our common future*. Oxford: Oxford University Press.

Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS Quarterly*, *33*, 177–195.

Williams, K., & Dair, C. (2007). What is stopping sustainable building in England? Barriers experienced by stakeholders in delivering sustainable developments. *Sustainable Development*, *15*(3), 135–147.

Wong, K. K. K. (2013). Partial least squares structural equation modelling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin*, *24*(1), 1–32.

World Bank. (2012). *Getting to green: A sourcebook of pollution management policy tools for growth and competitiveness*. Pollution Management (PoMa) Sourcebook, Washington DC.

Woźniak, M. (2021). Sustainable approach in IT project management-methodology choice vs. client satisfaction. *Sustainability*, *13*(3), 1466.

Yazici, H. J. (2020). An exploratory analysis of the project management and corporate sustainability capabilities for organizational success. *International Journal of Managing Projects in Business*, *13*, 793–817.

Yuan, H. (2017). Achieving sustainability in railway projects: Major stakeholder concerns. *Project Management Journal*, *48*, 115–133.

Zahoor, H., Chan, A. P., Gao, R., & Utama, W. P. (2017). The factors contributing to construction accidents in Pakistan. *Engineering, Construction and Architectural Management.*, *24*(3), 462–485.

Zainul-Abidin, N., & Pasquire, C. L. (2007). Revolutionize value management: A mode towards sustainability. *International Journal of Project Management*, *25*(2), 275–282.

Zwikael, O., Pathak, R. D., Singh, G., & Ahmed, S. (2014). The moderating effect of risk on the relationship between planning and success. *International Journal of Project Management*, *32*(3), 435–441.

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APPENDIX A.

Sustainable project management

1. Within the project decision making, the environmental footprint was essential to take into consideration.
2. We spent a considerable percentage of project time and budget on health and safety practices.
3. Sustainable resources were used for the completion of project activities.
4. We listened to other people's points of view, seeking to understand them.
5. Within the project decision making, the economic, social and environmental consequences were crucial for the project.
6. The amount of energy used in the project was essential to take into consideration.
7. Within the project decision making, stakeholder engagement was essential to take into consideration.
8. We had knowledge about the community's opinion.
9. Within the project decision making, health and safety issues were checked.
10. The waste produced during project work was crucial to dispose of.
11. Within the project decision making, the carbon footprint was essential to take into consideration.
12. The sustainability of the project life cycle was important throughout the project.
13. The procurement process was sustainable throughout the project.
14. Renewable resources were essential for project completion.

Project success

1. The project was completed on time.
2. The project was completed according to the budget allocated.
3. The project outcomes were used by the intended end users.
4. The project outcomes were likely to be sustained.
5. The project outcomes have directly benefited the end users, through increasing efficiency or effectiveness.
6. Given the problem for which it was developed, the project seems to do the best job of solving that problem.
7. I was satisfied with the process by which the project was implemented.
8. Project team members were satisfied with the process by which the project was implemented.
9. The project had no or minimal start-up problems because it was readily accepted by its end users.
10. The project has directly led to improved performance for the end users/target beneficiaries.
11. The project has made a visible positive impact on the target beneficiaries.
12. Project specifications were met by the time of handover to the target beneficiaries.
13. The target beneficiaries were satisfied with the outcomes of the project.
14. Our principal donors were satisfied with the outcomes of the project implementation.

Stakeholder engagement

1. Stakeholder engagement was effective to solve the firm's environmental problems successfully.
2. Stakeholder engagement brought new ideas to improve management and environmental practices.
3. Stakeholders participated in defining environmental performance indicators a corporation should use and report on.
4. Stakeholders participated in identifying policies, objectives and programmes of the organization and corporation.
5. The firm's products and services were improved by collaborating with customers.
6. The firm's products and services were improved by collaborating with suppliers.
7. The customer focus and the detection of their needs was a key component in the strategy of the organization.
8. Employee education and involvement were key to business success.

Team building

1. The team participated in setting project goals.
2. The team were involved in action planning to achieve project goals.
3. The team were aware of the basic goals of the project.
4. The team received timely feedback on performance in relation to goals of the project.
5. Team members were encouraged to meet with each other during project activities.
6. We discussed relationships among the project team frankly.
7. We resolved conflicts arising among the project team frankly.

8. Training programmes enhanced the communication skills of the project team.
9. Team members shared and understood each other's feelings.
10. Job descriptions were clarified to each team member.
11. Shared responsibilities were communicated to each team member.
12. The team were aware of the project norms.
13. The team were involved in identifying project task-related problems.
14. The team were involved in generating ideas concerning the causes of task-related problems.
15. The team participated in designing action plans to solve task-related problems.
16. The team were engaged in the implementation of action plans to solve task-related problems.
17. The team were engaged in the evaluation of action plans to solve task-related problems.