

Empirical Research Paper

Social sustainability in action: An explorative study of practices in construction project management



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ABSTRACT

The significance of recognizing social sustainability practices for the successful management of projects is increasingly acknowledged. However, to what extent these practices are actually implemented within project management has not been sufficiently addressed in the literature. To address this gap, an empirical study was conducted to investigate the usage of social sustainability practices and explore any disparities in their implementation between domestic and international construction firms in the United Arab Emirates. This study employed a mixed-methods approach, combining interviews and a structured questionnaire. Through the interviews, 32 social sustainability practices were identified. Subsequently, a questionnaire was used to collect data from project managers representing 259 firms. The analysis revealed several key findings: 1) social sustainability practices are adopted at varying rates; 2) twelve practices, primarily concerning fundamental human rights and labor ethics, are uniformly employed by both domestic and international firms; and 3) international firms are more likely than their domestic counterparts to regularly implement the other 20 social sustainability practices. These findings develop new knowledge on the implementation of social sustainability practices and advance the understanding of how firm origin influences the adoption of these practices. Additionally, the findings and their implications provide valuable guidance for policymakers and project leaders looking to incorporate social sustainability practices into their operational strategies.

1. Introduction

In today's rapidly evolving world, project leaders are under increasing pressure to address the deeply interrelated challenges of society, the environment, and the economy through adopting sustainable project management, an approach that goes beyond conventional project practices to integrate sustainability practices into every aspect of the project management lifecycle (Silvius and Schipper, 2014). It involves considering the lifecycle of resources as well as the processes, results, and wider effects of the project (Magano et al., 2021). Although there is extensive research on environmental and economic sustainability in construction, social sustainability is less explored (Rostamnezhad and

Thaheem, 2022).

Social sustainability, rooted in sustainable development goals, focuses on securing a high quality of life for future generations (WCED, 1987), where individuals and communities are healthier, more educated, economically stable, culturally rich, and environmentally conscious. In construction project management, project leaders foster significant transformation when they prioritize social sustainability. They shape a future that is not only prosperous but also equitable and sustainable for everyone. This future includes implementing strategies to meet the requirements of individuals throughout the construction cycle, from the initial commissioning to demolition, ensuring high customer satisfaction, and fostering strong relationships with clients,

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suppliers, workers, and the surrounding communities (Hussin et al., 2013). Karakhan and Gambatese (2017) described social sustainability as an effort to improve life quality, targeting social fairness and covering areas such as health, education, economic stability, and fundamental human rights. Thounaojam and Laishram (2022) argued that construction projects fostering sustainable work and living environments serve present-day communities and protect people's future well-being, particularly health and safety.

Nonetheless, just like sustainable development, social sustainability presents its complexities, particularly in evaluating its effectiveness due to its context-dependent nature (Montalbán-Domingo et al., 2021). This complexity could lead to a wide variation in the application of social sustainability practices across different firms, influenced by each firm's distinctive features and operational range. Additionally, firms operating in local markets may adopt sustainability strategies that differ from those of multinational corporations, resulting in a broad spectrum of practices and objectives customized to specific local or global needs.

Most current research has focused on creating assessment frameworks, as highlighted in Rostamnezhad and Thaheem (2022). However, a notable scarcity of research focuses on exploring how extensively social sustainability practices are being implemented. Moreover, few studies have investigated whether there are significant differences in the frequency of usage of these practices between domestic and international firms. This study aimed to explore these issues within the construction industry of the United Arab Emirates (UAE). The findings are expected to provide valuable guidance for public policymakers and project leaders from domestic and international firms interested in incorporating social sustainability practices into their project delivery processes.

2. Literature review

2.1. Social sustainability in construction project management

In project management within the construction industry, social sustainability (SS) is increasingly recognized for its role in improving the well-being and quality of life of internal and external stakeholders. Studies by Zuo et al. (2012) and Valdes-Vasquez and Klotz (2013) have supported the importance of this concept. Using a qualitative methodology, Zuo et al. (2012) investigated SS issues within the construction sector. Interviewees identified workplace safety provisions, access to personal protection, and community protection during the construction and demolition phases as the most significant criteria for SS in the sector. On the other hand, Valdes-Vasquez and Klotz (2013) outlined processes focusing on the planning and design stages, organizing them into a framework to incorporate and assess social aspects in construction endeavors. Their framework highlights that SS is user-centric, catering to end-users' requirements throughout a project's lifespan. It calls for evaluating the project's impact on the direct users and the wider community, emphasizing a comprehensive commitment to societal welfare.

Expanding on these foundational insights, scholarly work presents several classifications of SS practices across different levels, including project, industry, and government. The most comprehensive categories are provided by Kordi et al. (2022), Goel et al. (2020a), Montalbán-Domingo et al. (2018), and Rostamnezhad and Thaheem (2022), which are particularly notable. These categories can be combined to form nine distinct categories: 1) Cultural Heritage, 2) Occupational Health and Safety, 3) Employment, 4) Community and Societal Impact, 5) End-User Engagement, 6) Ethical Practices, 7) Project, 8) Industry, and 9) Government Rules, Regulations, and Support.

Specific criteria and practices to improve outcomes define each SS category. For example, Cultural Heritage (Category 1), as explored by Arce and Gullón (2000), focuses on preserving architectural and historical legacies, demonstrating profound respect for the identities and histories of local communities. Abdel-Raheem and Ramsbottom (2016) also highlighted the importance of protecting cultural resources for the

well-being of current and future generations. The well-being of construction workers, addressed in Categories 2 and 3, highlights the importance of maintaining health, safety, and employment standards, which is especially vital in areas prone to worker exploitation. Category 4, Community and Societal Impact, stresses the need for active community engagement to address social risks and empower local communities (Boutilier and Zdziarski, 2017; Di Maddaloni and Sabini, 2022; Liao et al., 2016). End-User Engagement (Category 5) is crucial for fulfilling the needs and expectations of the eventual users of the built environments (Pocock et al., 2016; Toole and Carpenter, 2013). Ethical Practices (Category 6) concern the ethical responsibilities of entities involved in construction, promoting compliance with ethical standards and fair business practices, as Moodley et al. (2008) and Oladimirin and Ho (2014) detail. Project (Category 7) focuses on the need for project-specific practices to enhance SS, including planning and management practices critical for project success. Industry (Category 8) involves practices that necessitate changes across the entire construction sector to be effective, such as implementing industry-wide training programs to enhance the skills, safety knowledge, and competencies of workers and promoting responsible sourcing and procurement practices across the industry (Nasirzadeh et al., 2019; Kordi et al., 2022). Lastly, Government Rules, Regulations, and Support (Category 9) provide crucial context and operational support to foster SS in construction projects on a broader scale, tackling issues that transcend the realms of specific projects, sectors, or community concerns. This support includes government efforts to ensure compliance with relevant laws and policies, such as those governing land use, sectoral planning, and alignment with broader economic and social development objectives (Hendiani and Bagherpour, 2019; Nasirzadeh et al., 2019). Additionally, it involves promoting equity and human rights by upholding social justice and acknowledging the varied positions of all stakeholders involved (Hendiani and Bagherpour, 2019). Furthermore, government efforts to embed SS in the construction industry can be seen in adopting social procurement policies. These policies refer to strategies and regulations governments or firms implement to leverage their purchasing power to achieve broader social goals. These initiatives aim to create positive social outcomes through the procurement process beyond merely acquiring goods and services (Loosemore et al., 2022a, 2022b, 2023).

2.2. Assessment of SS

Various research efforts on the assessment of SS in construction project management have centered on formulating assessment frameworks, with some being partial and targeting specific SS aspects. For example, Li et al. (2018) explored SS involving multiple stakeholders, while Doloi (2018) developed an SS evaluation framework focusing on the community. Goel et al. (2020b) introduced a three-tiered structure for SS features, identified six integration areas within construction project management, and emphasized the project lifecycle, specifically from the managerial viewpoint and through the lens of stakeholders. In another vein, Fatourehchi and Zarghami (2020) designed a sustainable construction management framework for residential buildings, where SS indicators were measured using a multi-criteria decision-making approach, incorporating input from local experts to prioritize the criteria.

Other research has pivoted towards creating more holistic frameworks. For instance, Valdes-Vasquez and Klotz (2013) developed a comprehensive framework with 50 processes aimed at incorporating and assessing social aspects in construction, especially during the planning and design phases, due to their significant impact on project performance. They utilized concept mapping, drawing insights from 25 experts across academia, industry, and government. They categorized the findings into six main SS dimensions in construction: stakeholder engagement, user needs, project team assembly, management practices, impact assessment, and understanding of the local context.

Kumar and Anbanandam (2019) introduced a methodology for

calculating an SS index centered around factors, aspects, and characteristics relevant to the SS of freight transportation. This framework was evaluated within the context of several freight transport enterprises and by consulting with eight specialists in North India's industry. Through a comprehensive literature review and iterative discussions with these experts, key enablers, dimensions, and attributes pertinent to the social aspect of freight transportation were pinpointed and confirmed. This confirmation included the integration of four primary enablers, 16 dimensions, and a total of 74 attributes, of which 17 were newly identified factors contributing to SS.

Rostamnezhad and Thaheem (2022) analyzed 28 articles on framework development to identify their emphases, limitations, and practical applications. They then proposed a comprehensive framework around seven key enablers or themes, comprising 27 indicators and 76 sub-indicators. This framework incorporates a Likert scale for evaluating contributions and maps out the specific project phases for each indicator in alignment with the Project Management Body of Knowledge (PMBOK) guide's project lifecycle stages (PMBOK, 2021), focusing on project execution.

Rather than developing frameworks, some research has concentrated on suggesting techniques for evaluating SS (e.g., Hendiani and Bagherpour, 2019) or examining factors that influence the SS aspect of construction projects (e.g., Almahmoud and Doloi, 2020).

Further exploration of relevant research is available in the literature review by Rostamnezhad and Thaheem (2022). Their findings suggest a gap in understanding to what extent SS is put into practice. Montalbán-Domingo et al. (2018), Montalbán-Domingo et al. (2019), Goel et al. (2020a), Montalbán-Domingo et al. (2020), and are among the few studies that have addressed this issue.

Kordi et al. (2022) studied SS practices within construction projects by conducting structured face-to-face interviews with 15 practitioners from the Malaysian construction sector. They examined the application of 20 S S practices, referred to as sub-attributes, across nine categories termed as attributes. Their research indicated that the Safety and Health attribute experienced the most extensive application, especially concerning safety provisions in the workplace and worker health and safety. Conversely, stakeholder participation and social procurement were the sub-attributes that experienced the least implementation in the projects.

Montalbán-Domingo et al. (2018) identified eight SS categories: adherence to professional ethics, cultural heritage, employment, health and safety, local impact, public engagement, training, and user impacts. They conducted a content analysis, which yielded 2724 social indicators classified into 23 sub-categories. The researchers employed descriptive and inferential statistics to examine data from 451 procurement documents across ten countries from three continents: Europe, North America, and South America. Their findings indicated a shortfall in objective measures for evaluating SS, with health and safety emerging as the dominant social criteria factored into public procurement. Additionally, the size of a contract plays a significant role in determining the range of social categories considered during procurement processes.

Drawing from the same source of data as their earlier study (Montalbán-Domingo et al., 2018), Montalbán-Domingo et al. (2019) conducted a more in-depth exploration into the effects of procurement techniques and delivery mechanisms on the inclusion of social standards in public construction bidding. The research employed content analysis, descriptive statistics, and logistic regression. This investigation uncovered worldwide trends in delivery methods and procurement practices. It highlighted the significance of the country and the contract's scale as primary determinants in integrating social criteria within tendering procedures.

To benefit a broader range of stakeholders, Goel et al. (2020a) investigated the extent to which SS considerations are integrated into construction project feasibility studies. Feasibility reports from 61 projects across various Indian government organizations were analyzed using content analysis and "VOSviewer" text analysis software to identify 48 S S criteria. The findings highlighted insufficient attention to

occupational health and safety, employment practices for workers, and the active participation of local communities and end-users in these reports. Moreover, the analysis identified the project-affected community as the most prominent stakeholder group, succeeded by end-users and construction workers. Statistical analyses also showed a significant correlation between SS considerations and both the type of project and the project delivery system. Montalbán-Domingo et al. (2020) assessed the public procurement performance in the construction industry across European Union countries, focusing on social and environmental sustainability. They employed 18 environmental and 24 social indicators, with the social indicators distributed across eight categories as defined in their earlier work (Montalbán-Domingo et al., 2018). Using the PROMETHEE method, the countries of the European Union were ranked, and subsequent cluster analysis delineated them into two primary groups. The first group, comprising the more affluent EU nations, was directed to concentrate on environmental performance enhancements. In contrast, the second group, less economically advanced, was advised to elevate their focus on SS measures while also managing their environmental impact.

2.3. in the UAE's construction project management

In the UAE, the protection and improvement of conditions for construction workers, predominantly expatriate laborers, have seen significant attention (Bashir et al., 2022). Progressive measures have led to improved labor practices, including prompt payment of wages, enhanced living conditions, and strict adherence to safety protocols, aligning the UAE more closely with global labor norms.

The construction industry is witnessing a trend towards developing projects with a community-oriented approach, especially within residential areas. These projects are designed to encourage social interaction and promote the well-being of residents, incorporating green spaces and accessible design. Nevertheless, a recent study by Abdulkasoud and Beheiry (2023), based on feedback from 129 industry professionals in 2022, revealed that these individuals are less acquainted with sustainability's economic and social aspects than the environmental aspects. However, specific details about which SS practices are adopted and their frequency of implementation remain unexplored. This gap has led to formulating the first research question: Which SS practices are currently utilized in the UAE's construction project management, and how does their implementation frequency vary?

2.4. practices in domestic versus international construction firms

The review of existing literature indicates that various aspects of a project can impact the adoption of SS practices. For example, Goel et al. (2020a) identified a significant relationship between the adoption of SS practices and the type of the project (such as construction, infrastructure, and industrial/utility projects) as well as the project delivery approach (like design-bid-build, design-build, and build-operate-transfer). Montalbán-Domingo et al. (2019) found that the country and contract size were the most impactful factors for incorporating SS practices in tender processes. Furthermore, beyond these determined associations, we argue that there may be a meaningful relationship between the implementation of SS and whether a construction firm is domestic or international, given that each faces unique challenges in achieving SS. The current study explores two differing viewpoints on this issue.

The first viewpoint suggests that domestic firms benefit from operating within their country's familiar economic, legal, and cultural framework. Although they face their own set of challenges, it is generally less complex to manage a domestic firm compared to an international one. Domestic firms benefit from clearer communication channels and well-defined regulations. Conversely, international firms must navigate complex cross-border regulations, necessitating a more adaptable management style. In a domestic context, achieving

sustainability, which includes environmental, economic, and social aspects, might be more straightforward due to established local corporate sustainability frameworks and climate risk management practices.

In contrast, the second viewpoint, highlighted by Eccles et al. (2014), stresses that international firms' complex challenges force them to develop innovative and progressive strategies to remain competitive. These firms tackle various issues, such as fostering innovation, creating quality employment, offering affordable products, and participating in global initiatives that contribute to societal betterment and tackle broader issues, as indicated by Bresnahan and Reiss (1991). These firms must conduct thorough self-assessments to leverage their strengths and address their weaknesses, as Taylor (2017) emphasized. While international operations are complex, they also present growth opportunities. If international firms see these challenges as chances to innovate in sustainability, they might surpass their domestic peers in sustainability efforts.

With these perspectives in mind, we have formulated the second research question: Does the implementation rate of SS practices differ significantly between domestic and international construction firms?

3. Methodology

This research adopted a mixed-methods strategy involving interviews and a structured questionnaire to examine SS practices within construction project management in the UAE.

We conducted personal, one-on-one interviews with five project managers; three were affiliated with domestic and two with international firms. During these interviews, each manager was informed about the goals of the study and then tasked with reviewing and validating a list of 75 S S practices identified in the literature review by Ros-tamnezhad and Thaheem (2022). This validation entailed modifications, additions, or removals of practices based on their applicability within the manager's respective firm. This process resulted in five distinct lists, one from each manager. We then combined these five lists into a single comprehensive list. This final list was carefully checked to ensure no redundancy, as practices in one list often appeared in others. Redundant and overlapping practices were removed, ensuring that each practice was distinct. The final list comprised 32 S S practices, categorized into seven main groups based on their common characteristics, as shown in Table 1: Project planning and resource management; health, safety, and well-being; worker rights and conditions; ethics and integrity; diversity, inclusion, and community engagement; skill development and knowledge management; and infrastructure and facilities management. Moreover, as Table 1 shows, each SS practice corresponds to at least one of the general knowledge or construction-specific project management areas from the PMBOK (2021).

3.1. Questionnaire design

We developed a questionnaire to collect the required data for this study and for research whose results are not reported in this article. The questionnaire comprised several sections. The first section inquired about the respondent's job role and, optionally, the name of the firm. The following section focused on the firm profile of the respondent's employer, gathering details on the number of employees and ownership type. The section pertaining to this study concentrated on obtaining data about the implementation of the 32 S S practices identified (refer to Table 1). Here, participants rated the frequency of these practices' implementation in their firms over the past five years on a scale of 1–5, where 1 denoted "Never" and 5 signified "Always."

We piloted our preliminary questionnaire with project managers from five distinct firms, including three domestic and two international firms. In this initial version, the project managers could suggest additional SS practices and comment on the clarity of questions. The input received led to modifying certain SS practice descriptions, but no additional SS practices were incorporated.

Table 1
Mapping of SS practices to project management knowledge areas.

Category	SS Practice	Knowledge Area	
Project Planning and Resource Management	Design a thorough plan detailing the objectives, strategies, and operations before starting the project	Integration management, scope management	
	Evaluate and report on a supplier's ability to meet the firm's needs and standards	Procurement management	
	Use clear supplier selection criteria	Procurement management	
	Set aside funds to cover unexpected damages related to the project	Cost management	
	Evaluate potential risks before beginning construction to ensure safety	Health, safety, security & environment management	
	Implement measures to prevent accidents that can affect surrounding areas	Health, safety, security & environment management	
	Health, Safety, and Well-being	Ensure the well-being of workers and offer appropriate insurance	Resource management
		Educate workers on potential dangers from new materials or installation methods	Health, safety, security & environment management, resource management
		Ensure workspaces have good lighting and airflow	Health, safety, security & environment management
		Supply workers with gear to keep them safe	Health, safety, security & environment management
Make available essential contact details for emergencies		Communications management, Health, safety, security & environment management	
Educate workers about local traditions and practices		Stakeholder management	
Provide suitable living conditions for workers		Cost management, health, safety, security & environment, resource management	
Ensure open dialogue between workers and management		Communications management, stakeholder management	
Pay workers their wages punctually		Financial management	
Offer structured annual leave planning while ensuring adaptability for unforeseen emergencies		Resource management	
Worker Rights and Conditions	Share job openings equally among existing staff	Resource management	
	Ensure working hours align with local laws and respect holidays	Resource management	
	Prevent of forcing employees/labors to work after duty hours	Resource management	
	Allow workers to contact neutral parties for disputes or issues	Stakeholder management	
	Give workers rest periods based on their tasks	Resource management	
	Educate employees about the firm's ethical guidelines	Stakeholder management	
	Complying with corporate social responsibility	Stakeholder management	
	Ethics and Integrity	Have a verification from a certified third party to eliminate corruption	Procurement management
		Ensure transparency in the bidding process.	Procurement management
		Adhere to ethical standards in engineering practices	Quality management

(continued on next page)

Table 1 (continued)

Category	SS Practice	Knowledge Area
Diversity, Inclusion, and Community Engagement	Consider aspects of race diversity and gender equality in the composition of the project team.	Resource management
	Offer more jobs for employment generation and growth	Resource management
	Involve stakeholders at necessary stages of the project	Stakeholder management
Skill Development and Knowledge Management	Collaborate with agencies for testing and commissioning tasks	Quality management
	Develop a method for assessing employee skills and knowledge	Resource management
Infrastructure and Facilities Management	Work with facility management teams for proper upkeep and management of project infrastructure	Integration management

3.2. Data collection

In this study, selecting a suitable population and determining the sample size were vital considerations. The research targeted 723 construction-contracting firms active in the UAE (Bashir et al., 2022). Equation (1) (Olejnik, 1984) established that the study required at least 252 firms to constitute an adequate sample size.

$$\text{Sample Size} = \left(\frac{z^2 * p (1 - p)}{e^2} \right) / \left(1 + \left(\frac{z^2 * p (1 - p)}{e^2 N} \right) \right) \tag{1}$$

Where,

N represents the population size, which is 723.

E is the margin of error, set at 0.05 (5%). This value is chosen to balance precision and the study’s feasibility, allowing for a 5% deviation from the sample proportion to the true population proportion.

z represents 1.96, the standard Z-value for a 95% confidence interval, indicating the level of certainty we desire in our results.

p is the proportion of the population with the characteristic of interest, assumed to be 50%. This assumption is made because 50% maximizes the sample size requirement, ensuring the sample is sufficiently large to be representative of the population for any proportion.

The sampling entailed contacting the 723 active construction-contracting firms in the UAE to obtain project managers’ contact information. We successfully obtained contact information for 350 project managers representing distinct firms. The questionnaire was then distributed to them, some through email and others physically. From this distribution, 259 questionnaires were completed and returned, indicating a response rate of 74%. The responses came from 259 different firms, highlighting the breadth of participation across the sector. Among the respondents, 169 firms were domestic, while 77 were international. As displayed in Table 2, most domestic firms (about 78%) operate with 500 or fewer employees. Notably, more than 80% of international firms had an employee base within the 501 to 1000 range.

Table 2
Surveyed firms’ profile.

Number of Employees	Domestic Firms		International Firms	
	Number	Percentage	Number	Percentage
Less than 50	16	9.5	1	1.3
51–100	66	39.0	6	7.8
101–500	50	29.6	8	10.4
501–1000	27	16.0	48	62.3
Over 1000	10	5.9	14	18.2

3.3. Data analysis methods

The analysis of the questionnaire data regarding the frequency of specific practices was based on the percentage of responses categorized as never, rarely, occasionally, often, and always. Mean ranks were employed to differentiate between domestic and international firms in practice adoption. The mean rank for a given practice indicates the average position of that practice across all responses from each group. A higher mean rank for a practice among a group of firms suggests that these firms generally adopt the practice more regularly than their counterparts. These mean ranks facilitated the application of the Mann-Whitney *U* test, a non-parametric statistical test. This test was employed to test hypotheses related to the second research question. The choice of mean ranks and the Mann-Whitney *U* test stems from their appropriateness for evaluating responses on a Likert scale and in situations where the assumption of normal distribution does not hold (Kvam et al., 2022).

Due to the exploratory nature of this study, hypotheses were formulated based on the results from comparing mean ranks between the two groups, as detailed in Section 4. This method was chosen because there was no evidence before conducting this study to suggest whether the frequency of usage of SS practices was significantly higher in international firms than in domestic firms or vice versa.

4. Results

Table 1, which resulted from the literature review and interviews with five project managers from domestic and international firms, captures a holistic approach to SS by incorporating diverse categories such as planning, worker conditions, ethics, diversity, skill development, and infrastructure management. These categories cover 32 S S practices. Compared to earlier studies, this count aligns with the range of SS practices identified in similar research, which varies from 23 (Montalbán-Domingo et al., 2018) to 48 (Goel et al., 2020a). Notably, the comprehensive list of 75 S S practices shared with the managers was derived from Montalbán-Domingo et al.’s literature review (2018). Consequently, it is rare to find a scenario where such a high number of SS practices are utilized.

Building on these identified SS practices, Fig. 1 presents the results from the questionnaire regarding the frequency of SS practices’ usage, categorized by responses: never, rarely, occasionally, often, and always. By combining the percentages for the “often” and “always” responses, SS practices can be classified based on their usage levels. Practices with at least 70% of firms either always or often using them can be considered high-usage practices, while those with less than 70% of firms either always or often using them can be considered low-usage practices and in need of significant improvement.

For instance, of the firms surveyed, 83.8% either always or often prioritize ethical standards in their engineering practices. Additionally, 80.7% of firms either always or often consistently provide safety equipment to their workers. Furthermore, 76.5% of firms always or often have emergency contact details available. The results also revealed that 78.4% of firms either always or often regularly inform their employees about the firm’s ethical guidelines. Timely compensation is valued, with 77.2% of firms either always or often ensuring punctual wage payments. Other practices with high usage rates include giving workers rest periods based on their tasks (75.7%), ensuring transparency in the bidding process (73.4%), and collaborating with agencies for testing and commissioning tasks (70.3%).

In addition to revealing high usage of SS practices, the survey results identified some SS practices that need significant improvement. For instance, only 55.6% of firms either always or often consider aspects of race diversity and gender equality in the composition of their project teams. Another concern is that only 55.2% of firms either always or often avoid forcing employees to work after duty hours. Additionally, only 54.8% of firms either always or often educate workers about local traditions and practices. Moreover, just 47.88% of firms are always or

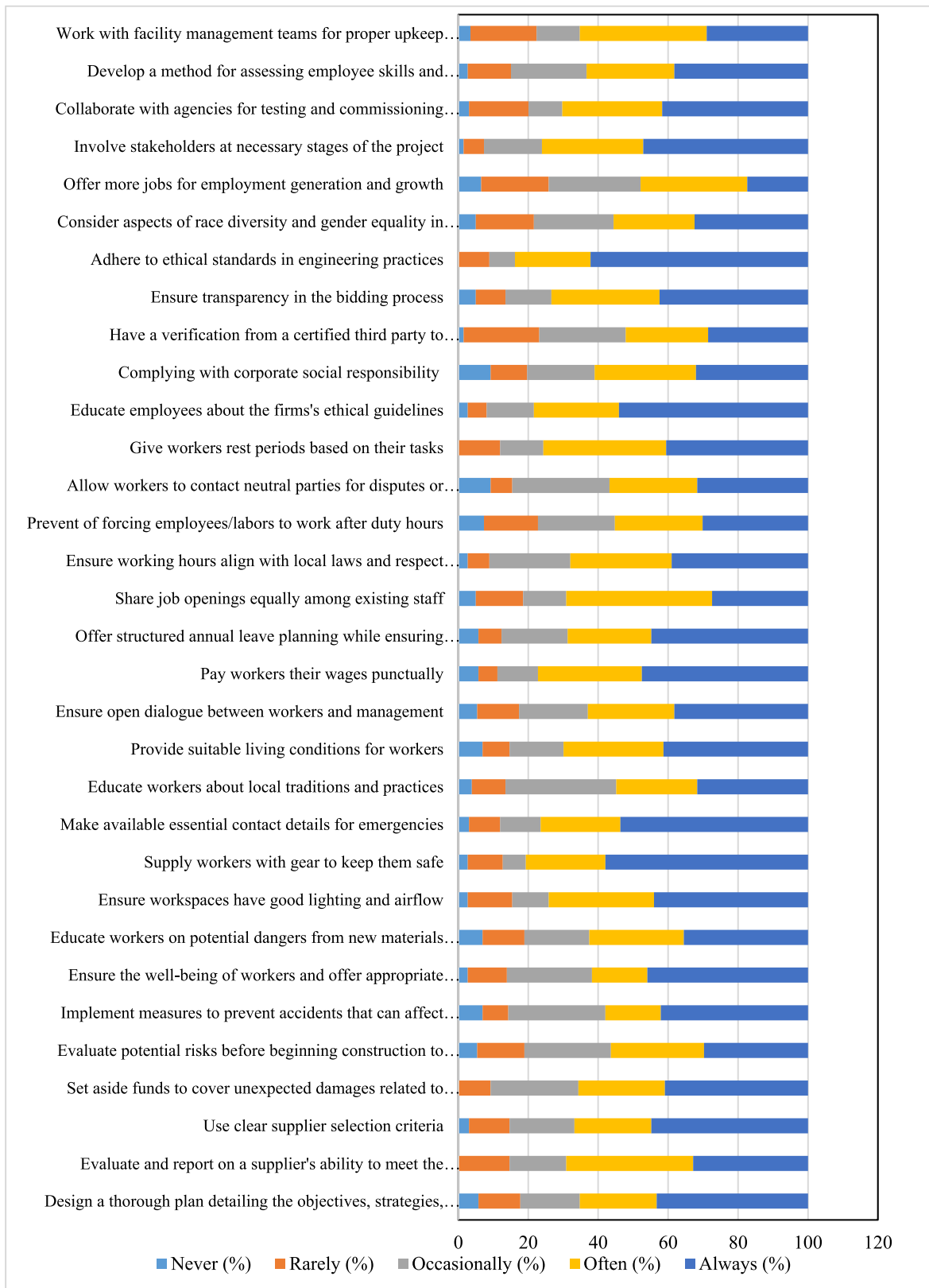


Fig. 1. Percentage distribution of responses for the implementation of SS practices.

often offering additional job opportunities for employment expansion. With regard to the usage of practices in domestic versus international firms, Table 3 shows that when mean rank values were calculated, international firms exhibited a greater frequency in implementing 28 of

the 32 practices than their domestic counterparts. In contrast, domestic firms reported higher usage frequencies in just four practices: providing adequate living conditions for workers, ensuring compliance with local labor laws regarding working hours and holidays, preventing mandatory

overtime, and allocating rest periods appropriate to the workers' tasks. The following hypotheses were posited to answer the second research question to statistically compare these frequencies across the two populations of firms.

H0. There is no significant difference in the frequency of practice i usage between domestic and international firms, for $i = 1, 2, \dots, n$, where $n = 32 =$ number of practices

H1. The frequency of practice i usage is significantly higher in international firms than in domestic firms, for $i = 1, 2, \dots, n$, where $n = 32 =$ number of practices.

The results presented in [Table 3](#), based on the Mann-Whitney U test at a 0.05 level of significance, indicate no significant difference in the usage frequency of 12 of the 32 SS practices between domestic and international construction firms. These practices include evaluating and reporting on a supplier's capability to meet the firm's needs and standards, ensuring workspaces have good lighting and airflow, providing suitable living conditions for workers, paying workers their wages punctually, ensuring working hours align with local laws and respect holidays, preventing forcing employees/labors to work after duty hours, allowing workers to contact neutral parties for disputes or issues, giving workers rest periods based on their tasks, complying with corporate social responsibility, having a verification from a certified third party to eliminate corruption, ensuring transparency in the bidding process, and adhering to ethical standards in engineering practices. On the other hand, the Mann-Whitney U test indicates a significantly higher frequency of usage of 20 SS practices by international firms compared to their domestic counterparts.

5. Discussion and contributions

To address a significant gap in the literature, this study was conducted within UAE construction firms to explore the implementation SS practices and examine to what extent domestic and international construction firms differ in the usage level of these practices. Prior research on the specific implementation of SS practices within the construction industry, particularly in the context of these differences, was limited. By filling this gap, the study has enhanced academic understanding of how SS practices are integrated into construction project management, moving beyond theoretical principles to practical applications. To comprehensively present our findings, our discussion is structured into three subsections below, highlighting the theoretical and practical contributions this study makes to construction project management research.

5.1. General observations on the identified SS practices

There are several general observations regarding the identified SS practices ([Table 1](#)). One notable observation is that some practices could fit into multiple knowledge areas. Furthermore, a significant portion predominantly aligns with the "resource management" knowledge area. This alignment highlights the critical role of effective resource management in ensuring SS practices ([Stahl et al., 2020](#)). Focusing on aspects such as workers' rights, conditions, and skill development within project resource management makes it evident how integral these factors are to the broader goal of achieving SS. All practices within the "health, safety, and well-being" SS category are commonly aligned with the "health, safety, security & environment management (HSSE)" knowledge area. This alignment highlights the close connection between ensuring safety and health in construction projects and adhering to HSSE guidelines. By implementing these guidelines, firms can fulfill their SS commitments to protecting workers while also enhancing their well-being and productivity ([Baniassadi et al., 2018](#)).

Moreover, the "ethics and integrity" category features practices related to procurement, indicating that ethical considerations play a

pivotal role in supplier selection, bidding processes, and third-party verifications. Several practices in different categories, like "worker rights and conditions" and "diversity, inclusion, and community engagement," are linked to the "stakeholder management" knowledge area, reflecting the importance of engaging stakeholders in various aspects of SS, from workers' rights to community involvement ([Kordi et al., 2021](#); [Pauna et al., 2023](#)).

The emphasis on practices like "consider aspects of race diversity and gender equality in the composition of the project team" aligns with previous studies highlighting the significance of inclusivity and diversity in modern construction projects (e.g., [Currie et al., 2021](#); [Kissi et al., 2023](#)). Including "infrastructure and facilities management" as a category stresses the importance of maintaining the social infrastructure established during the project, ensuring its longevity and continued positive impact. For instance, the practice of "working with facility management teams for the proper upkeep and management of project infrastructure" highlights the critical role of collaboration in ensuring that the built environment remains functional, safe, and beneficial to the community over time. Proper upkeep and management are essential for sustaining the social benefits initially provided by the project infrastructure, thereby supporting the broader goals of SS ([Grum and Kobal Grum, 2020](#)). Furthermore, while the identified SS practices in [Table 1](#) are comprehensive, there is always room for expanding them with emerging practices and considerations in the rapidly evolving field of social SS in construction project management.

5.2. Inclusivity, diversity, and areas for improvement

Most high-usage practices are related to 1) health, safety, and well-being, 2) worker rights and conditions, and 3) ethics and integrity. The high usage of SS practices related to health, safety, and well-being, along with worker rights and conditions, corresponds somewhat with the findings of [Kordi et al. \(2022\)](#). Their study highlighted that the Safety and Health attribute experienced the most extensive implementation in the Malaysian construction industry. Similarly, [Montalbán-Domingo et al. \(2018\)](#) found that health and safety-related practices were more commonly implemented than other SS practice categories in the construction industries of Argentina, Australia, Canada, Chile, Colombia, Panama, Peru, the United Kingdom, and the United States. This trend is also seen in Denmark, Germany, the Netherlands, the United Kingdom (again), and Sweden, as reported in [Montalbán-Domingo et al. \(2020\)](#). Conversely, this trend is not observed in the construction industry in India ([Goel et al., 2020a](#)), Hungary, Lithuania, Portugal, Romania, and Spain ([Montalbán-Domingo et al., 2020](#)), where a notable lack of adequate focus on occupational health and safety and employment practices for workers has been reported.

The finding regarding the high usage of SS practices related to ethics aligns somewhat with observations from European countries like Austria, Belgium, Denmark, Finland, the Netherlands, Sweden, and the United Kingdom ([Montalbán-Domingo et al., 2020](#)), as well as the United States ([Montalbán-Domingo et al., 2018](#)), which exhibit a solid adherence to practices related to professional ethics.

In addition to revealing high usage of SS practices, the survey results identified some SS practices that need significant improvement. For instance, only 55.6% of firms either always or often consider aspects of race diversity and gender equality in the composition of their project teams, indicating potential gaps in promoting diversity and inclusion within construction firms. Addressing these gaps could beneficially influence the performance of these firms ([Kordi et al., 2022](#)). Human resources managers could be instrumental in bridging these gaps by deepening their understanding of individuals from diverse racial, ethnic, and linguistic backgrounds ([Davis et al., 2016](#)). Another concern is that only 55.2% of firms either always or often avoid forcing employees to work after duty hours, suggesting potential lapses in ensuring ethical working conditions. Additionally, there is a possible deficiency in cultural awareness, particularly in varied settings, as indicated by 54.8% of

Table 3
Comparative analysis of SS practices: Domestic vs. international firms.

Category	SS Practice	Mean Rank		P-value
		Domestic	International	
Project Planning and Resource Management	Design a thorough plan detailing the objectives, strategies, and operations before starting the project.	90.73	139.24	0.000
	Evaluate and report on a supplier's ability to meet the firm's needs and standards	103.85	114.41	0.106
	Use clear supplier selection criteria	95.23	130.72	0.000
	Set aside funds to cover unexpected damages related to the project	100.31	121.10	0.007
Health, Safety, and Well-being	Evaluate potential risks before beginning construction to ensure safety	98.51	124.50	0.001
	Implement measures to prevent accidents that can affect surrounding areas	91.62	137.54	0.000
	Ensure the well-being of workers and offer appropriate insurance	90.07	140.47	0.000
	Educate workers on potential dangers from new materials or installation methods	91.85	137.11	0.000
	Ensure workspaces have good lighting and airflow	102.89	116.23	0.055
	Supply workers with gear to keep them safe	98.10	125.29	0.000
	Make available essential contact details for emergencies	101.61	118.65	0.016
	Educate workers about local traditions and practice	99.71	122.24	0.004
	Provide suitable living conditions for worker	109.03	104.61	0.301
	Ensure open dialogue between workers and management	99.34	122.95	0.003
	Pay workers their wages punctually	103.41	115.24	0.078
	Offer structured annual leave planning while ensuring adaptability for unforeseen emergencies	99.69	122.28	0.004
	Share job openings equally among existing staff	96.19	128.90	0.000
	Ensure working hours align with local laws and respect holiday	108.57	105.48	0.358
Prevent of forcing employees/labors to work after duty hours	111.20	100.49	0.108	
Worker Rights and Conditions	Allow workers to contact neutral parties for disputes or issues	104.66	112.87	0.170
	Give workers rest periods based on their tasks	109.44	103.83	0.250
	Educate employees about the firm's ethical guidelines	98.70	124.15	0.001

Table 3 (continued)

Category	SS Practice	Mean Rank		P-value
		Domestic	International	
Ethics and Integrity	Complying with corporate social responsibility	104.13	113.89	0.128
	Have a verification from a certified third party to eliminate corruption	107.19	108.09	0.458
	Ensure transparency in the bidding process	102.76	116.46	0.053
	Adhere to ethical standards in engineering practice	105.16	111.93	0.192
Diversity, Inclusion, and Community Engagement	Consider aspects of race diversity and gender equality in the composition of the project team	94.27	132.53	0.000
	Offer more jobs for employment generation and growth	101.09	119.62	0.016
	Involve stakeholders at necessary stages of the project	100.39	120.95	0.006
Skill Development and Knowledge Management	Collaborate with agencies for testing and commissioning tasks	99.81	122.05	0.004
	Develop a method for assessing employee skills and knowledge.	95.16	130.85	0.000
	Work with facility management teams for proper upkeep and management of project infrastructure	94.10	132.85	0.000

firms, which either always or often educate workers about local traditions and practices. This deficiency suggests a need for greater cultural sensitivity and awareness within construction firms. Enhancing cultural awareness can facilitate better communication and collaboration among diverse teams and stakeholders (Davis et al., 2016).

Moreover, just 47.88% of firms are always or often offering additional job opportunities for employment expansion, which suggests that many firms may not proactively engage in workforce enlargement or team development. This lack of engagement could be due to reaching their desired operational size, or perhaps they are optimizing operations through technology, reducing the need for more staff. The cautious attitude towards job creation might stem from economic apprehensions or potential downturns. The absence of a strong focus on generating employment could mean firms overlook the benefits of a varied team, new ideas, and the innovative spark new employees bring. This restrained approach to hiring might also suggest a shortfall in the firms' dedication to SS, particularly in community involvement. Some firms are possibly more inclined to enhance the expertise of their current employees rather than hiring new ones, aligning with their strategic goals and focusing on retaining employees (Nguyen and Duong, 2021). Benson's (2006) study found that training significantly contributed to employee retention. Firms that invest substantially in education and training often demonstrate a heightened capability to retain their staff. Training and development initiatives also foster innovation among employees, which is advantageous for a firm and its employees. However, this innovation should not come at the expense of commitments to SS. Firms can adopt a comprehensive approach that combines internal talent development with external community engagement efforts to tackle this issue.

5.3. Domestic vs. international firms

The absence of a significant difference in the usage frequency of 12 of the 32 SS practices suggests that domestic and international firms give equal importance to these specific SS practices, pointing towards a globalized understanding and consensus about certain fundamental SS standards in the construction industry. Moreover, there is a strong emphasis on ethics and morality in the construction industry. This emphasis is evident from practices like following engineering ethics and providing mechanisms for conflict resolution. Additionally, the industry's focus on practices such as third-party verification to eliminate corruption and fair nomination of bidders highlights a push towards transparency and ethical business conduct.

In contrast, the significantly higher usage of the other 20 SS practices by international firms can stimulate new scholarly debates on how implementation strategies vary between domestic and international construction firms. Goel et al. (2020a) found that the adoption of SS practices is impacted by the project type as well as the project delivery approach. Similarly, Montalbán-Domingo et al. (2019) found that SS practices are influenced by the country and contract size. Our study focused on the usage of SS practices and found that this usage is impacted by whether the firm is domestic or international. Thus, the findings of our study complement the aforementioned studies by adding another dimension to understanding the factors that influence SS practice implementation. This finding also contributes theoretically to the literature by prompting further questions and discussions about the factors driving these differences in SS practice usage. Among these factors could be that international firms, which often operate across multiple countries and regulatory environments, might adopt more comprehensive SS practices due to their exposure to diverse expectations and standards. Conversely, domestic firms may focus on practices that align closely with local norms and regulations. This comparative perspective helps in understanding the influence of context on sustainability strategies.

This higher frequency of SS practice usage by international firms reveals several insights into their operational methodologies. First, there is a clear focus on safety and worker well-being. This focus includes physical safety measures—such as reducing accident risks and providing personal protective equipment—and the holistic welfare of the workforce. Practices like training on potential hazards, offering health insurance, sharing emergency contact numbers, and orienting employees about local customs highlight a commitment to employees' physical and psychological well-being. Second, international firms emphasize transparent communication and professional development. The establishment of open communication channels between labor and management, the circulation of job vacancies, and the implementation of proper evaluation systems illustrate a progressive work environment that values growth, learning, and feedback. Third, there is a notable commitment to ethical conduct and inclusivity. Initiatives such as ethics and code of conduct training, alongside considerations for racial diversity and gender equality in team compositions, manifest a desire to foster a productive and equitable workspace. Lastly, the engagement of multiple stakeholders, including developers, consultants, testing and commissioning agencies, and facilities management, indicates a collaborative approach to project management.

The insights mentioned above, drawn from the advanced adoption of SS practices by international firms, can serve as an exemplary model for domestic firms aiming to enhance their implementation of SS practices by gauging their practices against global standards and identifying areas for improvement. By understanding how leading international firms implement SS practices, domestic firms can adopt similar strategies to improve their own sustainability performance. This enhancement requires the integration of structured project controls that align with sustainability objectives to provide a practical mechanism through which firms can consistently apply SS practices (Kivilä et al., 2017). This systematic approach ensures that SS practices are not just a peripheral

part of project management but are embedded within the core processes of planning, execution, and evaluation (Sabini et al., 2019). For firms that adopt the PMBOK, aligning SS practices with the relevant knowledge areas can help systematically incorporate these practices into their project management processes (Musa and Bashir, 2019). This alignment can ensure comprehensive and consistent implementation, meeting ethical and legal standards while also contributing positively to the broader goals of SS.

Furthermore, adopting ISO 26000 standards, which cover key areas such as organizational governance, human rights, labor practices, environmental responsibility, fair operating practices, consumer issues, and community involvement (Sergeeva and Kapetanak, 2022), can significantly enhance SS practices in construction project management. This approach fosters a firm's social accountability to itself, its stakeholders, and the public and aligns with global best practices. Finally, governments can play a pivotal role in setting the stage for SS practices by offering incentives and establishing clear regulatory frameworks. Such actions can significantly reduce barriers to implementing these practices, making it easier for firms to adopt them without substantial financial or operational burdens (Balasubramanian and Shukla, 2020), and thus encourage the widespread adoption of SS practices in the construction industry (Albastaki et al., 2021).

6. Conclusion

Despite the importance of and interest in implementing social SS practices in construction, this area remains under-researched in academic literature. This study aimed to bridge this gap by exploring the adoption of SS practices in construction project management in the UAE. Data were collected through a combination of interviews and a survey using a structured questionnaire. The interviews identified 32 SS practices used by UAE construction firms. These SS practices correspond to either one of the general knowledge areas or the construction-specific project management areas from the PMBOK (2021). Many SS practices fell under "resource management," emphasizing its critical role in SS. This critical role might be because construction projects are resource-intensive, involving a wide range of resources such as labor, materials, equipment, and finances. Effective management of these resources is crucial for the success of any construction project. SS's focus on the ethical, fair, and responsible use of resources naturally aligns with resource management principles.

The survey findings indicate that SS practices are employed at varying frequencies. Most highly used practices fall into three categories: 1) health, safety, and well-being, 2) worker rights and conditions, 3) and ethics and integrity. These align with trends observed in European countries—including Austria, Belgium, Denmark, Finland, the Netherlands, Sweden, and the United Kingdom—as well as the United States, where a strong adherence to professional ethics and employee welfare is also prevalent. Moreover, the study has shown that while there was no significant disparity in how often domestic and international firms adopt 12 SS practices, international firms tend to adopt the other 20 SS practices more frequently.

Like many research endeavors, our study has several limitations that lay the groundwork for future research. A particular limitation concerns the generalizability of our findings. Subsequent research could broaden the scope beyond the construction sector to encompass multi-industry analyses within the UAE to overcome this limitation. However, one should be cautious with such research as the usage of SS practices could differ significantly across various industries, and hence, a study that includes a diverse range of industries could yield results that are not entirely accurate due to the heterogeneous nature of the sample. Another limitation of this study is its focus solely on one aspect of sustainability, in this case, the social dimension.

Finally, the contribution of this study remains within the boundaries of exploring the status of SS practices within the context of the UAE construction project management and comparing domestic and

international in terms of these practices. Nonetheless, there may be interest in pursuing an in-depth analysis of the driving forces that result in higher sustainability among international firms. This aspect has not been addressed explicitly in this study, but it undoubtedly represents a promising area for subsequent research endeavors.

CRedit authorship contribution statement

Hamdi Bashir: Writing – original draft, Supervision, Project administration, Methodology, Formal analysis, Conceptualization. **Rana Musa:** Writing – original draft, Data curation, Conceptualization. **Hassan Ahmed Al Zarooni:** Writing – review & editing, Project administration, Conceptualization. **Udechukwu Ojiako:** Writing – review & editing, Conceptualization. **Salah Haridy:** Formal analysis, Conceptualization. **Mohammad Shamsuzzaman:** Formal analysis, Conceptualization.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this paper the authors used OpenAI ChatGPT in order to check grammar and spelling and improve readability and language. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Declaration of competing interest

The authors of the manuscript titled “Social Sustainability in Action: An Explorative Study of Practices in Construction Project Management,” declare no conflict of interest.

Data availability

Data will be made available on request.

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