ID 76

Sustainability Culture in UAE Construction Companies – A Snapshot Assessment and Improvement Guidelines

Hasan Mahmoud[1], Mustafa Al-Tekreeti[2], Salwa Beheiry[3]

[1] Ph.D. in Engineering Systems Management, American University of Sharjah
[2] Ph.D. in Engineering Systems Management, American University of Sharjah, UAE
[3]Associate Professor at Civil Engineering Department at the American University of Sharjah, UAE, Corresponding Author
sbeheiry@aus.edu

Abstract
The construction industry is the largest employer worldwide and shifting the core values and culture of construction companies toward sustainable practices could lead to significant progress in that direction. Hence, this paper investigates the current state of integration of sustainability maxims in the United Arab Emirates (UAE) construction industry and provides guidelines that facilitate employee awareness and attitudes modification towards sustainable practices. The study was conducted via a comprehensive literature review to identify the best practices utilized by companies to realign employees' mindsets with sustainability goals. A series of interviews with experts in the UAE construction industry were then carried out to validate the approach and create tailored guidelines. The developed guidelines were used in a survey form to collect data and assess the key professionals' attitudes towards these relevant practices. The study results indicated a reasonable level of awareness and that implementation of practices to foster the culture of sustainability in the UAE construction companies is underway, with the main emphasis on training and education followed by leading initiatives and introducing incentives. The results also show that 80% of the survey participants assessed the identified practices as important, which shows a reasonably strong trend towards establishing a sustainable culture.

Keywords
Sustainable Culture; construction companies; Sustainable Practices; Green Culture; Organizational Culture; Sustainable Construction.

1. Introduction

Sustainability promotion is profoundly associated with individuals' choices and daily life practices, such as: switching off lights, recycling, using public transport, conserving water, using energy-efficient domestic appliances, choosing their energy supplier, buying eco-friendly products, and so forth. To what extent people can change their habits and adopt new sustainable practices is one of the fundamental questions asked by policymakers across the globe (Iveroth and Bengtsson, 2014). To achieve sustainable development, society needs to change the established basic assumptions, beliefs, and behaviors by nourishing its sustainable code of conduct in favor of sustainability requirements. This code of conduct is a sustainable culture representing a driving force towards a sustainable society (Robin and Poon, 2009). The construction industry is amongst the largest employers in the world. Construction companies play a crucial role in society's development and can minimize the negative impact of projects on the environment while maximizing their economic contribution (Tan et al., 2011). Throughout the past decade, construction professionals have started to change their mindsets unconsciously towards sustainability, which indicates changing to a sustainable culture (Sfakianaki, 2015). Due to this crucial role, it is imperative to change the construction culture. The purpose of the culture in any organization is to: develop a sense of identity for the organization's employees, enable commitment, improve organization stability, and provide a sense-making device that shapes and guides employee behavior. Therefore, changing organizational culture is believed to be the foundation for its efficiency, especially in the construction industry, as numerous scholars pinpoint this sector's lack of efficiency. In addition, those changes will

enhance the company's shareholder value and protect its reputation among competitors (Cheung et al., 2011), (Tan et al., 2011). Most of the studies on sustainable construction practices explore the practices that enhance project sustainability without considering changing the company's culture. Therefore, it is important to explore the various practices used in the construction sector to change employees' mindsets toward sustainable practices. This is crucial, especially in the current construction environment in UAE, where there is a severe economic crisis. Therefore, this study aims to provide a set of practices that can help construction companies shift their stagnant traditional culture towards a sustainable one by changing their employees' mindset toward sustainably.

2. Literature Review

Organizational Culture

Organizational culture is considered an essential asset in building the organization's strength (Pham et al., 2018). According to Martin and Siehl, organizational culture is "the social or normative glue that holds an organization together" (Martin and Siehl, 1983). However, the most cited definition for organizational culture is "a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (Schein (Schein, 2010), p. 18). As such, organizational culture represents the organization's structure deeply rooted in beliefs, values, and employees' assumptions (Chatterjee et al., 2018). Hofstede defines the organization's culture as the 'mental software' shared by the organization's employees (Hofstede, 1994).

Hofstede intensively studied organizational culture in 50 countries and developed a framework consisting of four dimensions: power/distance, which represents how employees view power relationships such as superior/subordinate relationship; individualism/collectivism, which measures the integration degree of individuals into groups; masculinity/femininity which measures the gender equality of roles distribution among employees; and uncertainty avoidance which represent the tolerance of society for ambiguity and uncertainty (Hofstede, 1983). Understanding those dimensions within the organization helps managers change their employees' behavior and eventually changing the organizational culture by observing and measuring those variables within their organizations. Therefore, organizational culture plays a crucial role in shifting the current stagnant culture toward a sustainable culture by providing the proper climate that encourages sustainability outputs within the organization (Gü rlek and Tuna, 2018).

Sustainable Pillars (Economic, Environmental, and Social)

The World Commission on Environment and Development defines sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and, 1987). By extension, sustainable development, according to Thiele, is "meeting current needs in a way that does not undermine future welfare" (Thiele, 2016). Additionally, according to Thiele, sustainability stands on three pillars: economy, ecology, and society, which can also be called the "triple bottom line" (Thiele, 2016). The ecology pillar focuses on enhancing the environment through reducing carbon footprint, waste packaging, using environmentally friendly materials, sustainable energy, water conservation, so on and so forth. The society pillar focuses on balancing individual needs with group needs by engaging the social system (organization, family, community) into organization projects to mitigate their negative impact. The economic pillar seeks profitability without compromising the other pillars by conducting risk management and proper governance strategies to reach that goal (Mikulčić et al., 2017). Within the context of the business perspective, those pillars are manifest through company practices that balance corporate financial performance with social and environmental performance (Tepe Kü ÇÜ Koğ Lu, 2018). This study will focus on the three pillars of sustainability since the practices that could be applied by the company to enhance its sustainability will have an impact on all the pillars of sustainability.

Green Culture in Companies

From a corporation point of view, being a sustainable organization is not only done by supporting pollution prevention through sustainable operation practices, selling ecofriendly products, or minimizing resource allocation, but also by changing the culture of the organization to be sustainable by facilitating to their employees the adoption of sustainable

behaviors and attitudes (Harris and Crane, 2002). Therefore, green organization culture is defined as integrating organizational culture with environmental management (Linnenluecke and Griffiths, 2010). Chen defined it as a symbolic and interpretive concept that guides organization processes and employees' behaviors into environmental management and protection (Chen, 2011).

The driving force of sustainability amongst project stakeholders within the construction industry is sustainable cultural development. It is categorized into awareness, concern, motivation, and implementation, where awareness represents the need for change within the organization and dissatisfaction with the current condition, which encourages the change to rectify the current condition. If stakeholders in the construction industry are aware of the negative impacts caused by construction projects such as unnecessary wastage (environment), low product quality (economic), poor on-site safety (social) caused by their current actions and performance, then their willingness to improve will increase (Robin and Poon, 2009). The concern is a product of awareness, defined as bringing the feelings about the current unsatisfied condition into the conscious attitudes of project stakeholders and integrating it with their judgments (Chakravarti et al., 1997). On the other hand, Motivation is the desire to rectify the current unsustainable activities through proper direction from the company to promote sustainability (Young et al., 2015). Lastly, Implementation is applying the intended behaviors and activities through spending money, time, and effort by construction companies to achieve sustainable changes in construction projects (Ajzen, 1991). As such, green organizational culture is the primary driver of shifting employees' behaviors and attitudes toward sustainability. Therefore, it is essential to understand the organization's practices to achieve that goal, especially within construction companies.

The Common Practices Used by Companies to Enhance Employees' Sustainable Practices

Different factors drive the implementation of sustainable practices within a company, and the main factor is the company's policies and strategies that support sustainability. Additionally, there are two types of factors that affect the implementation of those practices from the company's point of view: internal and external factors. Internal factors are financial resources, expertise, knowledge, measuring systems, and infrastructure. On the other hand, external factors are competition, social pressure, laws and regulations, and the global market (Tepe Kü ÇÜ Koğ Lu, 2018).

Nevertheless, it is vital to communicate the organization's sustainable programs, goals, and initiatives with employees frequently to inform them about the applied practices properly and to allow them to report areas of improvement (Madsen and Ulhøi, 2001). Ramus supports this argument by stating that if senior managers embrace an open and democratic communication style regarding sustainable ideas, it will increase the willingness of employees to undertake sustainable initiatives adopted by the company (Ramus, 2001). Additionally, for the company to support its culture transformation toward a green culture, it is essential to implement education and training programs for its employees to increase their awareness about the importance of sustainable practices that are being or will be applied within the company (Van Rensburg et al., 2017). Furthermore, the organization's commitment toward ongoing sustainable training enables employees to incorporate what they learned into their day-to-day activities, which will positively impact the environment (Liao, 2018). Additionally, environmental awareness training can help the organization to: change the organization's environmental philosophy, cope with the complex regulatory climate and the heightened liability concerns (Cook and Seith, 1992). On the other hand, sustainability training conducted by companies may lead to many benefits such as compliance with regulatory requirements, positive public image, encouraging employees to become environmentally aware, and increasing employees' motivation to engage with proactive environmental management measures (Ndzibah et al., 2010).

Apart from that, employees' empowerment has a considerable positive impact on their motivation and commitment towards engaging and implementing sustainable practices. Company management can promote this empowerment by changing their organizational structure and core values. Similarly, the traditional hierarchy of an organization (top-down) inhibits employees' empowerment. For this reason, it is preferable to adopt a flatter, horizontal organizational structure to promote this empowerment (Schultz, 2014). Moreover, shifting decision-makingabilities from managers down to employees will allow more power and freedom to make suggestions and implementnew sustainable practices (Tariq et al., 2016). Empowering employees affects Employee Involvement (EI), which Cotton describes as "a participative process to use the entire capacity of workers, designed to encourage employee commitment to organizational success" (Cotton, 1994). EI has a positive impact on changing the organization's culture to reduce the pollutants caused by projects through the employees as part of their responsibility towards the new core values of the organization. Therefore, EI plays a critical factor in ensuring a successful culture change (Alt et al., 2015).

Furthermore, to encourage employees to participate in environmental practices, a well-designed rewards system is required. Rewards refer to benefits, whether extrinsic or intrinsic, that employees receive from their performance in a particular task (Meyer, 2016). The rewards system applied by a company can reinforce continuous motivation and increase commitment from the company's employees to be more environmentally responsible. However, incentives must be in parallel with corporate environmental objectives to reflect the organization's commitment to enhancing environmental performance (Baird et al., 2018). The rewards can take different forms, whether recognition awards or financial rewards such as profit-sharing programs, pay rises, recognition programs, incentives and benefits, monetary rewards (the strongest motivation for employees' involvement in environmental practices). These rewards will motivate employees to innovate and adopt sustainable practices (Govindarajulu and Daily, 2004). However, some companies may use different rewards systems to motivate their employees through innovative non-monetary rewards such as time off from work, paid vacations, favored parking, or gift certificates (Bragg, 2000).

Construction and Companies Sustainable Cultures

Construction has many definitions in the modern world; some consider construction to be the science of constructing buildings and projects, while others define it as the art of constructing buildings and projects (Carty, 1995). Nevertheless, construction is one of the largest industries and is considered one of the most advanced and evolved in the modern world. It has evolved from building with stones and other primitive materials to building massive structures with advanced materials and systems (Newton, 2016).

Sustainable aspects and responsibilities are rooted in the definition of the construction industry. The multitude of interactions between the stakeholders in the construction industry makes it the best candidate to promote and apply sustainability in its organizational culture. Many studies and reports have been done to identify the key aspects and practices that construction companies adopt to enhance the sustainability aspects of the business and build the sustainability principles in their organizational cultures. All of which indicated that the first step to promote sustainability in the construction industry is to initiate the change within the company's culture, which will eventually reflect on the whole industry. This concept of change comes from the stakeholders' influence on the industry, called "influential factors." Based on their disciplines and functional roles, stakeholders are categorized into five groups: government, developers, consultants (architects, structural engineers), contractors (main contractors, subcontractors, suppliers), and non-professionally recognized participants (sits supervisors, foremen, sits agents). Each stakeholder has different influences and powers in changing the construction culture, which means that the higher the influential factors (depending on the stakeholders' group), the greater the magnitude of the implemented change. Government authorities initiate the regulations of sustainability that govern the other construction stakeholders' groups. On the other side, developers are responsible for hiring consultants, and contractors should influence the consultants' and contractors' sustainable outputs (Robin and Poon, 2009). Therefore, the most crucial step to enhance sustainable practices and thus the green culture starts with the commitment of regulatory bodies involved in the construction industry toward sustainability practices.

Alternatively, in their report that dissects the issue of sustainability reporting in the construction and real estate sector, The Global Reporting Initiative (GRI) (2008) shows that construction and real estate companies tend to focus on the social aspects of sustainability in all the reported indicators (GRI, 2008). These indicators include training and development in sustainability, community involvement, participation in local community programs, diversity, and equal opportunity.

Much research has been done on projects sustainability, but only a little research is done to promote sustainable culture in construction companies. Akadiri et al. developed a framework that implements sustainability in the building sector, which identified several practices that can promote the culture of sustainability if implemented. Such practices touch on the company's organizational culture that aids in delivering more sustainable projects (Akadiri et al., 2012). Some of these practices are reviewing each project to understand its sustainable aspects with all stakeholders, securing a commitment from the stakeholders to a continuous improvement on sustainable performance, managing sustainable activities by setting goals and targets to give feedback and self-regulation of the process to supports the learning process and teaching the stakeholders about the interaction between the environment and development.

Another study by Trufil and Hunter (2006) to evaluate the relationship between the sustainability concepts and the competitiveness of small and medium construction companies concluded that it is fundamental for companies to build their reporting systems in a way where stakeholders can report gaps in the practices undertaken by the company to the management. Another practice that the authors mentioned is that companies must assist the stakeholders in

incorporating the best practices they perceive to be valid and functional to aid in developing a sustainable culture in the company (Trufil and Hunter, 2006).

Similarly, Tohidi and Jabbari (2012) argue for the efficiency of the reporting system by emphasizing the idea that the change, the drive, and the steering should come from senior management as they are the source of trust and leadership in any organization (Tohidi and Jabbari, 2012). On the other hand, Lee et al. (2014) highlighted that the concept of sustainability should be driven from the corporate level down to the micro-project level, with an emphasis on the role of education and training of employees to enhance their knowledge allowing them to play an influential role in the development of the community. Moreover, employees can benefit from drawing upon ideas from the community they are part of, making them a more effective part of society (Lee et al., 2014).

The United Arab Emirates Current Sustainable Practices and Future Trends

The economy of the United Arab Emirates is fast-developing based on three main axes: oil and gas, trade and logistics, and real estate and construction. Moreover, any decline in any of these axes can harm the overall economy and the quality of life. Recent reports predicted that real estate prices would fall another 5 to 10% this year due to the large gap between supply and demand before it stabilizes in 2020 (Standard and Poors, 2019).

As a result, the construction industry in the United Arab Emirates is currently undergoing a considerable risk of insolvency as the overall real estate market is falling and the financial situation is unstable. During such times, construction companies must sustain their existence through many measures both economically and strategically. From this, construction companies in the United Arab Emirates have realized the importance of sustainability and sustainable development on their overall performance.

Many construction companies and organizations include sustainability in their vision and mission statements. They realized the importance of developing sustainable practices in their organizational culture, which will eventually reflect on how they operate and deliver projects. Some examples of these organizations are the Al Naboodah Group and Dubai Multi Commodities Centre Authority (DMCC) organizations. Both these entities have reported their sustainability goals and records, and they have shown that the main driver for sustainable development and the main contributor to the sustainable culture are the stakeholders. They deem that the stakeholders, with some direction and advice from the management, can achieve significant benefits and rewards for their organizations and communities (Al Naboodah Group, 2017) (DMCC Authority, 2017).

Therefore, sustainable practices centered on the inclusion of stakeholders, engagement of employees, and the development of initiatives can have a significant impact on the positive change of the organizational culture. This study will consider the essential practices identified from the literature to develop and identify the most important practices that could assist construction companies in fostering the shift towards sustainable organizational cultures.

3. Methodology

To accomplish the objectives of this study, the authors carried out an extensive literature review to deduce the available practices that aid the promotion of the sustainability culture in organizations. The literature investigation focused on the drivers and practices that could change employees' mindsets in the construction industry to a more sustainable one to propagate into the whole construction industry. The investigated studies had recommended methods used in construction companies to change their stagnant culture to a more dynamic culture that allows for development. Moreover, the literature review also built the required understanding of the dynamics of change in organizations to identify the critical concepts that underline changes in organizational cultures.

Furthermore, the literature investigation allowed for collecting qualitative data through the interviews with industry experts to explore the practices applied in their companies to enhance employees' sustainable practices. Additionally, the interviews also allowed the experts to provide future sustainable practices that could positively impact the promotion of sustainable organizational culture. Finally, an investigation to validate the study results was done via electronic surveys with professionals in the construction industry. The interview targeted the collection of the level of importance of the identified practices via a Likert scale. Finally, the results were reported in a guideline format that could significantly impact the promotion of sustainability and sustainable practices in UAE construction companies if applied.

Data Nature and Collection

There are two types of data collected for this study. The first type of data is qualitative data in the form of practices that promote changes in the construction companies' culture from the current status to a more sustainable culture. After collecting practices from the literature, the authors sought to validate and seek the opinion of industry experts on the collected practices and the inclusion of current and recommended practices in the UAE construction market. The authors targeted industry experts with more than ten years of experience and are committed to sustainability in their professional practice. The sampling method for identifying the participants was convenient sampling since the targeted participants were specialized. Five industry expertise were interviewed to validate the collected practices. Table 1 below demonstrates the profile of the interviewees and their roles and experience level.

Table 32. Interviewees Background and Experience Level.

Sr.	Education Level	Type of Organization	Role	Experience	Involvement in Sustainability
1	Master's Degree in Civil Engineering	Private Construction Company	Owner and General manager	32 Years	Highly committed to sustainability with a focus on sustainable construction methods
2	Bachelor's Degree in Mechanical Engineering	Private Construction Company	Projects Director	27 Years	Committed to sustainability and focused on waste reduction and recycling to minimize the impact on society
3	Bachelor's Degree in Civil Engineering	Semi-Government Developer	Technical Manager	17 Years	A proponent of sustainable development and focused on Life Cycle analysis for projects and development to maximize the utility and minimize the impact on the environment and community
4	Master's Degree in Construction Management	Government Entity	Head of Department	12 Years	Pro-environment preservation and focused on implementing sustainable development practices within the department vision and mission
5	Bachelor's Degree in Business Management	Private Construction Consultancy Firm	Business Development Manager	23 Years	Highly committed to promoting sustainability in the organization by educating and involving stakeholders internally and externally to promote sustainable development.

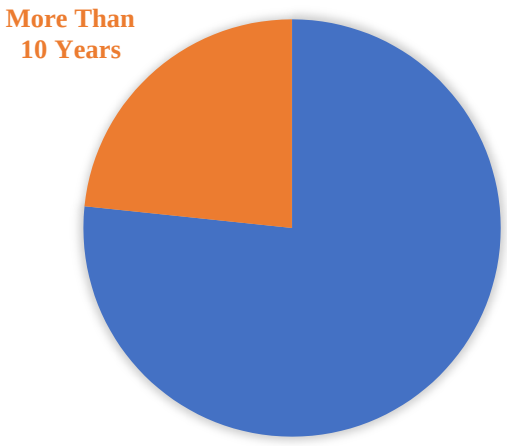
Upon collecting the data, a guideline consisting of the set of practices was developed to assist construction companies in changing their organizational culture to a more sustainable one by changing the employees' mindsets. Table 2 below lists the set of practices extracted from the literature which were the bases of the interviews.

Table 2. Interviewees Background and Experience Level.

Sr.	Practices	Nature of the practices	Reference
1	Influential factors	The commitment of authoritative bodies involved in the construction industry toward sustainability practices	(Robin and Poon, 2009)
2	Communicate	Embrace an open and democratic communication style regarding environmental ideas	(Madsen and Ulhøi, 2001) , Ramus, 2001)
3	Green education and training programs	Increase employee's awareness about the importance of sustainable practices	(Van Rensburg et al., 2017), (Liao, 2018), (Cook and Seith, 1992), (Ndzibah et al., 2010), Interviewees Response

4	Empowered employees	Moving decision-making power from managers down to employees will allow them more power and freedom to make suggestions and implement new sustainable practices. Empowering employees affects Employee Involvement	(Schultz, 2014), (Tariq et al., 2016), (Cotton, 1994), (Alt et al., 2015)
5		Reinforce the continuous motivation and increase commitment from the company's employees to be environmentally responsible.	(Meyer, 2016), (Baird et al., 2018), Interviewees Response
6	Rewards system	Financial rewards: profit-sharing programs, pay increases, recognition programs, incentives and benefits, monetary rewards	(Govindarajulu and Daily, 2004)
7		Non-monetary rewards such as time off from work, paid vacations, favored parking, or gift certificates	(Bragg, 2000)
8	Include all stakeholders in making the decision	To understand the complexity of the sustainable concept.	(Akadiri et al., 2012)
9	Setting goals and targets	To managing sustainable activities and concepts and give feedback and self-regulation of the process which supports the learning process	Akadiri et al., 2012)
10	Monitoring companies' reporting systems	where stakeholders can report gaps in the practices undertaken by the company and can report them to the management	(Trufil and Hunter,2006)

After developing the guideline, the authors sought to validate the developed guideline via electronic surveys with professionals from the construction industry to seek their feedback on the efficiency of the practices to change the mindset of employees to a more sustainable one. The targeted participants were professionals in the construction industry in junior to senior positions working in construction companies. A total of 38 surveys were sent to professionals in the construction industry and 30 surveys were filled achieving a 78.9% rate of response. Figure 1 below illustrates the level of experience the participants had.



6 - 10 Years

Fig. 33. Respondents Years of Experience.

The interview collected the participants' opinions on the practices via a Likert scale that ranged from 1 to 5, Not Important to Extremely Important, respectively. The questions were framed to ask the respondents the importance of the practice's efficiency to change their minds to adopt a more sustainable mindset.

3. Results

3. 1 Sustainable Practices and Guideline Development

The conducted interviews with the five professionals from different companies were done to examine their organizations' current and previous practices and what they would recommend as good practices that could help promote the sustainability concept in construction companies.

All interviewees have more than ten years of experience in the construction industry, and all of them are in managerial roles where they were able to enforce and implement practices and procedures in their organizations. When the interviewees were asked to comment on UAE-based companies' practices to promote sustainability, they all agreed that implementing sustainable practices in construction in the UAE seems to be behind the rest of the world. However, in recent years there has been more emphasis on implementing these practices. Due to the demographic of the society that makes up most employees within the construction industry in the UAE, no understanding or level of education emphasizes the importance of sustainability.

There are tends amongst this demographic of only doing the bare minimum in their allotted tasks, and a lot of the time sustainable practices take a back seat in favor of just getting the job done. This mentality needs to change, and it can only change through education, training, and enforcing/rewarding certain practices. All interviewees had the same answers and shared the same belief when asked about the practices done in their organizations to promote sustainability. Table 3 below illustrates the responses of the interviewees.

Table 3. Interviewees Response on Current Practices.

Sr.	Education Level	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
1	Encouraging staff to lead and champion initiatives that support the practice of sustainability.	×		×		×
2	Providing training and mentoring for junior staff on the concept of sustainability and the outcomes of sustainability.	×	×		×	
3	Providing incentives for employees to reduce consumption of papers and other office appliances.		×	×	×	
4	Engaging the staff in community activities could bring them closer to the people they serve.	×			×	×
5	Starting initiatives to lead by example.		×		×	

On the other hand, when the interviewees were asked about recommendations they could give or suggestions they could offer to enhance further the promotion of sustainability in their organization's cultures, they gave insightful responses, as illustrated in Table 4 below.

Table 4. Interviewees Response on Recommended Practices.

Sr.	Education Level	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5

1	Rewarding champions and considering the sustainability contributions in staff evaluations.		×	×		×
2	Involving the staff in the conception and the application of sustainability concepts in projects.	×		×	×	×
3	Creating departments in their organizations that foster and enhance employees' understanding of sustainability which eventually will allow employees to be creative		×		×	×
4	Government authorities should set goals and monitor them closely to achieve sustainable cultures.	×		×	×	

Table 5 below portrays the summary of the previous practices found from both the literature review and the interviewees' responses. Combining all practices builds the guideline that can assist construction companies in promoting sustainability within their organizations.

Table 5. Sustainable Guidelines to Enhance Construction Companies' Sustainable Culture.

Sr.	Practices	Nature of the practices	Reference
1	Influential factors	The commitment of authoritative bodies involved in the construction industry toward sustainability practices	(Robin and Poon, 2009)
2	Communicate	Embrace an open and democratic communication style regarding environmental ideas	(Madsen and Ulhøi, 2001) , Ramus, 2001)
3	Green education and training programs	Increase employee's awareness about the importance of sustainable practices	(Van Rensburg et al., 2017), (Liao, 2018), (Cook and Seith, 1992), (Ndzibah et al., 2010), Interviewees Response
4	Empowered employees	Moving decision-making power from managers down to employees will allow them more power and freedom to make suggestions and implement new sustainable practices. Empowering employees affects Employee Involvement	(Schultz, 2014), (Tariq et al., 2016), (Cotton, 1994), (Alt et al., 2015)
5		Reinforce the continuous motivation and increase commitment from the company's employees to be environmentally responsible.	(Meyer, 2016), (Baird et al., 2018), Interviewees Response
6	Rewards system	Financial rewards: profit-sharing programs, pay increases, recognition programs, incentives and benefits, monetary rewards	(Govindarajulu and Daily, 2004)
7		Non-monetary rewards such as time off from work, paid vacations, favored parking, or gift certificates	(Bragg, 2000)
	Include all stakeholders in	To understand the complexity of the sustainable	

making the decision concept. (Akadiri et al., 2012)

9	Setting goals and targets	To managing sustainable activities and concepts and give feedback and self-regulation of the process which supports the learning process	Akadiri et al., 2012)
10	Monitoring companies' reporting systems	where stakeholders can report gaps in the practices undertaken by the company and can report them to the management	(Trufil and Hunter,2006)
11	Providing incentives for employees	To reduce consumption of papers and other office appliances.	Interviewees Response
12	Engaging the staff in community activities	To bring them closer to the people they serve.	Interviewees Response
13	Starting initiatives	Leading by example	Interviewees Response
14	Staff involvement	Include the staff in the conception and the application of sustainability concepts in projects	Interviewees Response
15	Creating sustainable departments	Foster and enhance employees' understanding of sustainability, which eventually will allow employees to be creative.	Interviewees Response

3.2 Guideline Validation

The authors conducted electronic surveys with 30 industry professionals in junior to senior positions to validate the developed guideline. The interviews sought the professional opinion of the respondents on the efficiency of the developed guideline to change their mentality to be more sustainable. The results of the interviews are illustrated in Table 6 below, where the percentage represents the percentage of participants that have chosen the level of importance and efficiency.

Table 6. Results of the Guideline Validation Interviews.

Practice	Not Important	Somewhat Important	Important	Very Important	Extremely Important	Important to Extremely Important
Influential Factors	0%	0%	0%	30%	70%	100%
Communicate	0%	0%	17%	23%	60%	100%
Green Education and Training Programs	0%	0%	7%	30%	63%	100%
Empowered Employees	0%	0%	7%	53%	40%	100%
Rewards System	0%	0%	3%	27%	70%	100%
Include All Stakeholders in Making the Decision	0%	7%	33%	23%	37%	93%
Setting Goals and Targets	0%	3%	3%	50%	43%	97%
Monitoring Companies' Reporting Systems	10%	10%	17%	27%	37%	80%
Providing Incentives for Employees	0%	0%	0%	20%	80%	100%

Engaging the Staff in Community Activities	0%	7%	3%	27%	63%	93%
Starting Initiatives	0%	3%	7%	37%	53%	97%
Staff Involvement	3%	7%	20%	0%	70%	90%
Creating Sustainable Departments	0%	7%	10%	13%	70%	93%

4. Discussion

Climate change forces construction companies to change their practices to become more sustainable, and for that, a change to the employees' mindsets is essential. The driving force for this change comes from laws and regulations, social pressure, financial resources, and the availability of expertise and knowledge. For companies to implement those changes, they must have the full support of their managers to initiate cultural transformation to be more sustainable. To realize this cultural transformation, companies must initiate green education and training programs for the employees to increase their awareness of protecting the environment through their practices. In addition, companies must change their communication style to be more open to inform company employees about new environmental policies and practices to support this initiative.

The collection of practices from the literature resulted in identifying ten practices that are recommended to have a positive impact on changing employees' mindsets toward more sustainable culture. On the other hand, the five identified practices from the interviews with the industry experts provided insight into adopting sustainable practices in the UAE construction industry on organization levels. From the response of the experts, it was found that construction companies in the UAE implement practices to nurture the culture of sustainability in their organizations, and they do that through many practices with the main emphasis on training and educating their staff, and then leading initiatives and incentivizing the adoption of them.

On the other hand, for recommended practices to further enhance the implementation of sustainable company cultures, the experts suggested that including a sustainability indicator in employees' evaluations and rewarding sustainability champions as well as the role of the government in enforcing the sustainability concept can immensely benefit the initiative of adoption of sustainability in construction companies. It was also concluded that the concept of sustainable cultures in the construction industry exists but with a minimal application. Thus, there is a venue for improving the current state sustainability and sustainable culture on the corporate level of the construction industry. The fifteen identified practices can aid construction companies in fostering a sustainable culture in their organizations.

Moreover, the study results show a significant promise for the developed guideline since the validation analysis results indicated that 80% or more of the participants in the interviews indicated that all of the reported practices are important to extremely important. As such, this validates the efficacy of the guidelines in changing the mindset of employees in construction companies to adopt more sustainable practices and sustainability exercises in their professional life to change the overall organizational culture to be more sustainable.

5. Conclusions

To create the proper climate that supports transformation to sustainable organizational culture, companies must empower their employees to increase employee involvement in this cultural shift. Also, companies can motivate employees to be part of this initiative through rewards systems, whether monetary or non-monetary, for sustainable practices adopted by employees. In this study, best practices to improve corporate culture were collected from the literature and five industry experts were interviewed to obtain their input on implementing practices that promote sustainability in their organizations and provide recommendations on future practices that can be implemented; from the results of the interviews, a guideline for the development of the adoption of sustainable practice was built.

After which, the guideline was validated via electronic surveys answered by 30 construction professionals, in which 80% or more indicated that identified practices are essential and efficient in promoting sustainable culture in construction companies. In conclusion, all experts agreed that the concept of sustainability in company culture is lightly practiced in the UAE, and further efforts are needed to develop and enhance it. The developed guidelines can be a starting point to building frameworks for implementation.

This study recommends applying the developed guideline on a construction company to observe the impact of the application on adopting sustainable organizational culture. On the other hand, the study's main limitation is collecting data due to the COVID-19 pandemic outbreak; however, the authors sought industry connections and relationships to collect data.

References

AJZEN, I. 1991. The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes,* 50**,** 179.

AKADIRI, P. O., CHINYIO, E. A. & OLOMOLAIYE, P. O. 2012. Design of A Sustainable Building: A Conceptual Framework for Implementing Sustainability in the Building Sector. *Buildings,* 2**,** 126-152.

ALT, E., DÍEZ-DE-CASTRO, E. P. & LLORÉ NS-MONTES, F. J. 2015. Linking Employee Stakeholders to Environmental Performance: The Role of Proactive Environmental Strategies and Shared Vision. *Journal of Business Ethics,* 128**,** 167-181.

AUTHORITY, D. M. C. C. 2017. Sustainability Report 2017. *Sustainability Series.* DMCC.

BAIRD, K., SU, S. & TUNG, A. 2018. Organizational Culture and Environmental Activity Management. *Business Strategy and the Environment,* 27**,** 403-414.

BRAGG, T. 2000. How to effectively reward and inspire your team. *Occupational Hazards,* 62**,** 131-134.

CARTY, G. J. 1995. Construction. *Journal of Construction Engineering and Management,* 121**,** 319-328.

CHAKRAVARTI, D., EAGLY, A. H. & CHAIKEN, S. 1997. The Psychology of Attitudes. *Journal of Marketing Research,* 34**,** 298.

CHATTERJEE, A., PEREIRA, A. & BATES, R. 2018. Impact of Individual Perception of Organizational Culture on the Learning Transfer Environment. *International Journal of Training and Development,* 22**,** 15-33.

CHEN, Y. S. 2011. Green organizational identity: sources and consequence. *Management Decision,* 49**,** 384-404.

CHEUNG, S. O., WONG, P. S. P. & WU, A. W. Y. 2011. Towards an organizational culture framework in construction. *International Journal of Project Management,* 29**,** 33.

COOK, J. & SEITH, B. J. 1992. Designing an Effective Environmental Training Program. *Journal of Environmental Regulation,* 2**,** 53.

COTTON, J. L. 1994. *Employee involvement : methods for improving performance and work attitudes,* Newbury Park, Sage Publ.

GOVINDARAJULU, N. & DAILY, B. F. 2004. Motivating employees for environmental improvement. *Industrial Management & Data Systems,* 104**,** 364-372.

GRI 2008. *A Snapshot of Sustainability Reporting in the Construction and Real Estate Sector*. Amsterdam, Netherlands: Global Reporting Initiative Research & Development Series.

GROUP, A. N. 2017. Sustainability Report 2017. *Sustainability Report.* Dubai: Al Naboodah Group.

GÜ RLEK, M. & TUNA, M. 2018. Reinforcing competitive advantage through green organizational culture and green innovation. *The Service Industries Journal,* 38**,** 467-491.

HARRIS, L. C. & CRANE, A. 2002. The greening of organizational culture: Management views on the depth, degree and diffusion of change. *Journal of Organizational Change Management,* 15**,** 214-234.

HOFSTEDE, G. 1983. The Cultural Relativity of Organizational Practices and Theories. *Journal of International Business Studies,* 14**,** 75-89.

HOFSTEDE, G. 1994. Cultures and Organizations. Software of the Mind. *ORGANIZATION STUDIES -BERLIN- EUROPEAN GROUP FOR ORGANIZATIONAL STUDIES-,* 15**,** 457.

IVEROTH, E. & BENGTSSON, F. 2014. Changing behavior towards sustainable practices using Information Technology. *Journal of Environmental Management,* 139**,** 59.

LEE, K. H., AHN, Y. H., JEON, M. & SUH, M. J. 2014. Organizational strategies to support sustainability in the construction company. *In the World SB14 Barcelona*.

LIAO, Z. 2018. Corporate culture, environmental innovation and financial performance. *Business Strategy and the Environment,* 27**,** 1368-1375.

LINNENLUECKE, M. K. & GRIFFITHS, A. 2010. Corporate sustainability and organizational culture. *Journal of World Business,* 45**,** 357.

MADSEN, H. & ULHØI, J. P. 2001. Greening of human resources: environmental awareness and training interests within the workforce. *Industrial Management & Data Systems,* 101**,** 57-65.

MARTIN, J. & SIEHL, C. 1983. Organizational culture and counterculture: An uneasy symbiosis. *Organizational dynamics,* 12**,** 52-64.

MEYER, C. 2016. Rewarding employees. *Journal of Accountancy,* 222**,** 20.

MIKULČIĆ, H., DUIĆ, N. & DEWIL, R. 2017. Environmental management as a pillar for sustainable development. *Journal of Environmental Management,* 203**,** 867-871.

NDZIBAH, E., JOSÉ CHIAPPETTA JABBOUR, C., ALVES TEIXEIRA, A., HENRIQUE CALDEIRA DE OLIVEIRA, J. & FOUAD SOUBIHIA, D. 2010. Managing environmental training in organizations Theoretical review and proposal of a model. *Management of Environmental Quality: An International Journal,* 21**,** 830-844.

NEWTON, S. 2016. The being of construction management expertise. *Construction Management and Economics,* 34**,** 458-470.

PHAM, N. T., PHAN, Q. P. T., TUČ KOVÁ , Z., VO, N. & NGUYEN, L. H. L. 2018. Enhancing the organizational citizenship behavior for the environment: the roles of green training and organizational culture. *Management & Marketing,* 13**,** 1174-1189.

RAMUS, C. A. 2001. Organizational Support for Employees: Encouraging Creative Ideas for Environmental Sustainability. *California Management Review,* 43**,** 85-105.

ROBIN, C. P. Y. & POON, C. S. 2009. Cultural shift towards sustainability in the construction industry of Hong Kong. *Journalof Environmental Management,* 90**,** 3616.
SCHEIN, E. H. 2010. *Organizational Culture and Leadership,* San Francisco, Jossey-Bass.
SCHULTZ, J. R. 2014. Creating a Culture of Empowerment Fosters the Flexibility to Change. *Global Business and Organizational Excellence,* 34**,** 41.
SFAKIANAKI, E. 2015. Resource-efficient construction: rethinking construction towards sustainability. *World Journal ofScience, Technology and Sustainable Development,* 12**,** 233-242.
STANDARD & POORS 2019. Dubai Real Estate Downturn To Continue: Projections And Ratings Impact.
TAN, Y., SHEN, L. & YAO, H. 2011. Sustainable construction practice and contractors' competitiveness: A preliminary study.
Habitat International, 35**,** 225-230.
TARIQ, S., JAN, F. A. & AHMAD, M. S. 2016. Green employee empowerment: a systematic literature review on state-of-art ingreen human resource management. *Quality and Quantity,* 50**,** 237-269.
TEPE KÜ ÇÜ KOĞ LU, M. B. 2018. THE MEDIATING ROLE OF GREEN ORGANIZATIONAL CULTURE BETWEEN SUSTAINABILITY AND GREEN INNOVATION: A RESEARCH IN TURKISH COMPANIES. *Business &*
Management Studies: An International Journal, 6.
THIELE, L. P. 2016. *Sustainability,* Cambridge, UK ;, Polity Press.
TOHIDI, H. & JABBARI, M. M. 2012. Organizational culture and leadership. *Procedia-Social and Behavioral Sciences,* 31**,**856-860.
TRUFIL, G. & HUNTER, K. Development of a sustainability framework to promote business competitiveness in constructionSMEs. 2006 2006. 584.
VAN RENSBURG, G., BOTMA, Y. & HEYNS, T. 2017. A creative analysis of the role of practice development facilitators in acritical care environment. *Health SA Gesondheid,* 22**,** 105-111.
WORLD COMMISSION ON ENVIRONMENT AND, D. 1987. *Our common future,* Oxford ;, Oxford University Press. YOUNG, W., DAVIS, M., MCNEILL, I. M., MALHOTRA, B., RUSSELL, S., UNSWORTH, K. & CLEGG, C. W. 2015.
Changing Behaviour: Successful Environmental Programmes in the Workplace Changing Behaviour. *Business Strategyand the Environment,* 24**,** 689-703.