Organizational Culture and Quality Improvement on Sustainability Performance During the First Year of Covid-19 in the Healthcare Industry

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This research examines employees' perceptions of green practices implemented in organizations and their impacts on sustainability performance focusing on the healthcare industry during the first year of COVID-19. It explores how organizational culture and quality improvement practices affect the relationship between green practices and sustainability performance. Results indicate a multi-level framework that organizational culture and quality improvement practices significantly affect the relationship between green practices and healthcare organizations' sustainability performance.

Keywords: COVID-19, healthcare, organizational culture, quality improvement, sustainability performance

INTRODUCTION

The COVID-19 pandemic has created a global crisis for healthcare organizations (Allen, 2020). The pandemic has posed enormous, unprecedented, and complex challenged which has changed the way healthcare organizations work. Adaptive leadership style, cultural changes, and redesigned clinical processes were studied which supplemented the current theories and principles that foster organizational efficiency and effectiveness in the healthcare settings (Hartney, 2021; Hartney *et al*., 2022; Hiller *et al.*, 2022; Santra and Alat, 2022). Healthcare organizations around the world, including hospitals, aim to introduce innovative operations while maintaining high quality standards (Hwang and Chung, 2018). To minimize harm to the community from the innovation which could often affect the natural environment, administrators adopt environment management programs to alleviate potential damages. Through these programs, a greener orientation can be used in the field of energy conservation, proper disposal of waste, and safe management of medicines (Shaabani, *et al.*, 2020). Operational approaches taken by hospitals, medical clinics, healthcare facilities and beyond are more important now than ever. The state of wellness of hospital systems, current healthcare employees, and the general well-being of all organizations in this industry is something none of us can afford to ignore.

Greener operations in healthcare will sustain people's health by reducing environmental impact (McDermott, 2011). Healthcare organizations recognize the important relationship between human health and the environment, and they display this knowledge in its management, operations, and strategy (Yunhu, 2014). In the wake of the pandemic, medical organizations will need to continue balancing a greener practice while keeping business afloat. Hospitals and clinics and other healthcare facilities will need to consider how the world has changed and continue to lobby for environmental sustainability.

The healthcare literature lacks a comprehensive framework for measuring performance in relation to specific sustainability dimensions. Therefore, this research aims to address the healthcare sector by examining a set of sustainability factors which contribute to healthcare organizations' performance success during the first year of COVID-19. In particular, we look at the relationships between green practices, organizational culture, and quality improvement practices, and the impact on sustainability performance.

LITERATURE REVIEW

According to Kaplan *et al*. (2012), the U.S. healthcare industry could save roughly $15 billion by adopting more sustainable practices. Hospitals can save millions of dollars by being energy-efficient conscious, through waste reduction efforts, and environmentally responsible purchasing. To be environmentally and socially sustainable, healthcare organizations need to evaluate their building infrastructure, organizational practices, and related systems, in order to implement measures in line with their budgets. They need to have reliable and resilient engineering systems to ensure safety for all patients (Biason and Dahl, 2016).

Modern knowledge suggests that focusing on economic growth is not sufficient; businesses should also preserve the natural environment and our society at the same time (Carter and Rogers, 2008). Promoting sustainability can help organizations enjoy a significant source of competitive advantage (Hart, 1995; Rao and Holt, 2005; Pagell *et al*., 2010). One of the key strategies used by healthcare organizations to protect the environment was green productivity strategy and green productivity has been a strategic method used in different hospitals in the world (Karliner and Guenther, 2011).

The green operations strategy framework involves the three pillars of sustainability introduced by Elkington (1997), who pointed out that profit (economic), planet (environmental), and people (social) are all essential for an organization when it comes to sustainable decisions (Migdadi and Omari, 2019). A growing body of research has focused on green practices, and some studies investigated the impact of green practices and performance (Florida and Davison, 2001). Literature in green manufacturing and green healthcare shows that organizations of which adopt sustainable practices tend to improve their sustainable performance (Abdul-Rashed *et al*., 2017). The positive link between green initiatives and sustainable performance has been acknowledged in various studies (Zhu *et al*., 2012; Suheil, 2015; Omara *et al*., 2019). Longoni and Cagliano (2018) also found positive effects of environmental disclosure and green practices on firms' financial performance and environmental performance. Other evidence suggests that companies with green practices tend to enhance their sustainable performance (Hami *et al*., 2015; Rehman *et al.*, 2016). As healthcare organizations involve green practices in the implement of their operational procedures, their economic performance, environmental performance, and social performance will be enhanced. Drawing inferences from the abovementioned literature, the following hypotheses were developed:

Hypothesis 1: *Green practices have a significant positive effect on sustainability performance.*

H_{1a}: *Green practices have a significant positive effect on economic sustainability performance.*

H_{1b}: *Green practices have a significant positive effect on environmental sustainability performance.*

H_{1c}: *Green practices have a significant positive effect on social sustainability performance.*

Organizational Culture and Green Practices

An excellent tool to establish routines that link quality to performance is organizational culture (Polites and Karahanna, 2013). It can be used to integrate regulations and standards into everyday operations while maintaining a high level of performance and productivity (Valmohammadi and Rshanzamir, 2015).

When leaders in a healthcare organization can ensure uniformity in understanding and application of standardized procedures, enterprise culture can be enhanced, innovation can be stimulated, and good habits can be formed which lead to quality issues being reduced (Macht and Davis, 2018; Prodromou and Papageorgiou, 2022). When sustainability becomes a part of an organization's core strategy, the culture that binds the employees together can have a great impact on the level of success on sustainability initiatives. When the association between commitment to quality and information sharing, continuous improvement, and teamwork was examined by Malik and Blumenfeld (2012), a positive connection was found between the integration of quality management practices embedded in organizational culture (Macht and Davis, 2018). An organizational culture that emphasizes performance measurement and quality management should ultimately lead to higher levels of organizational effectiveness. Organizational culture is unique and difficult to duplicate, just as organizational knowledge is also unique and could be a great instrument to utilize in adding value (Macht and Davis, 2018; Biotto *et al.*, 2012).

A strong organizational culture within a healthcare organization can lead to more robust green practices and improved sustainability performance through those practices. Consequently, we hypothesize the following hypotheses:

Hypothesis 2: *Organizational culture have a significant positive relationship with green practices.*

Hypothesis 3: *Organizational culture affects the relationships between green practices and sustainability performance.*

Quality Improvement Practices

Quality improvement practices can make quality issues the responsibility of all administrators and providers within the healthcare organization (Alkhaldi and Abdallah, 2022; Balasubramanian, 2016). In the healthcare industry, this translates to preventing clinical problems, increasing patient satisfaction, continuously improving the organization's processes, and providing services that are as good, if not better than their competitors. These practices are rooted in stakeholder satisfaction and organizations' overall success (Chin *et al.*, 2001; Sanuri Mohd Mokhtar *et al.*, 2013). Healthcare organizations are constantly facing intense pressure from various economic, social, and environmental challenges, and they realize the need to incorporate sustainable development and quality checks in order to reach higher levels of improvement and ultimate profitability (Hitchcock and Willard, 2002; Jonker, 2000; McAdam and Leonard, 2003). It is a logical continuation of research to expand these practices into a concept that also includes sustainability, long-term survival and growth with the emphasis of globalizing economies (Dervitsiotis, 2001; Wilkinson *et al.*, 2001; Zairi, 2002).

Sustainable development is necessary to address environmental deterioration. Zairi and Liburd (2001) defined sustainability development as the ability of an organization to adapt to change in the business environment in order to deploy the best contemporary methods to achieve and further maintain superior performance. Their take on sustainability development implies competitiveness and an organization's competitiveness is partly dependent on their quality management practices. Sustainability is a new tool in company planning (Beatley and Manning, 1998) and a fundamentally important concept which should influence all policy developments within a firm (Loffler, 1998).

Employee attitudes regarding green practices may be influenced by their perceptions toward quality improvement programs implemented in the workplace. Previous research examined employee involvement (Rapp and Eklund, 2002), human resource management and leadership (Daily and Huang, 2001), commitment (Matta *et al.*, 1996), and personality traits (Ahmad and Schroeder, 2002) all expressed possible connections between perceptions and attitudes. How employees perceive the effectiveness of varying

quality improvement tools employed in the workplace should have significant consequences on employees' attitudes about going green. Based on this evidence, the following hypotheses were developed:

Hypothesis 4: *Quality improvement practices have a significant positive relationship with green practices.*

Hypothesis 5: *Quality improvement practices affects the relationships between Green practices and sustainability performance.*

Organizational Culture and Quality Improvement Practices

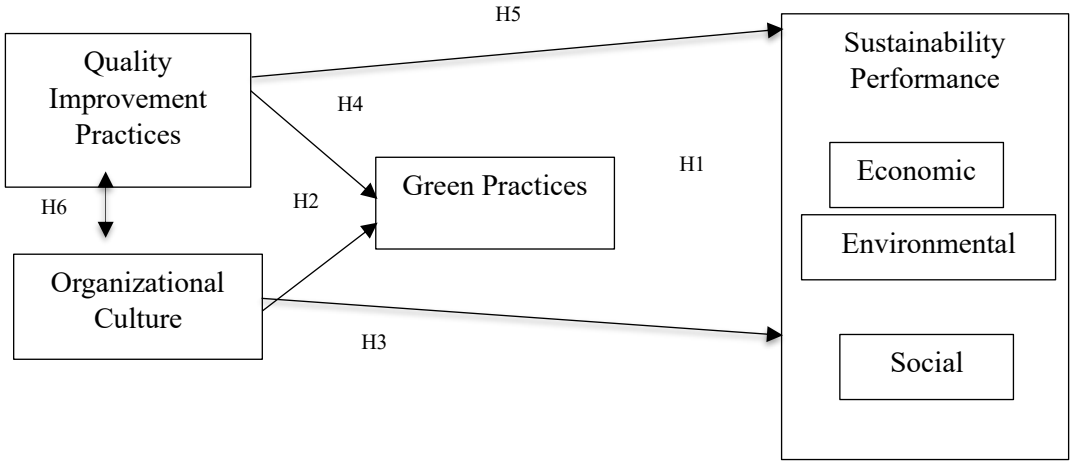
To cultivate a culture of quality, managers need to establish appropriate expectations and habits that link quality culture to performance (Alkhaldi, R. and Abdallah, 2022; Polites and Karahanna, 2013; Prodromou and Papageorgiou, 2022). It is the organization's responsibility to ensure that employees are embedded in a strong culture of which can lead to adherence of quality processes. There is a positive association between employee behaviors and organizational goals in relation to actual habits and how that leads to either positive or negative performances (Neal, et. al, 2012). Healthcare organizational leaders need to identify information that ensures compliance by integrating regulations and standards into the organizational culture while maintaining a high level of performance (Santra and Alat, 2022; Valmohammadi and Roshanzamir, 2015).

Research showed that cultural norms integrate into daily work practices when organizational performance was observed (Choi, et. al., 2010). It was concluded that shared knowledge identifies opportunities for continuous process improvement and product innovation. Leaders in healthcare entities may create a positive relationship between quality standards and organizational culture through learning and innovation (Long *et al.*, 2015). These studies support the notion that strong organizational culture should relate to better executed quality performance practices. Consequently, we developed the following hypothesis:

Hypothesis 6: *Organizational culture and quality improvement practices have significant positive relationship with each other.*

Figure 1 shows the model of our research. In our study, we predict that green practices within a healthcare organization should be related to sustainability performance—economic, environmental, and social performances (H1 in Figure 1). Additionally, a strong greener organizational culture in the healthcare industry should be related to green practices, and organizational culture will be indirectly related to sustainability performance (H2 and H3 in Figure 1). Furthermore, healthcare organizations with quality improvement practices in place should be more supportive of the green movement (H4 in Figure 1) and will indirectly impact sustainability performance (H5 in Figure 1). We also expect that organizational culture is related to organizations' quality improvement practices (H6 in Figure 1). The present study intends to investigate the perspectives and explanatory situation adjoining green practices toward sustainable performance within the healthcare setting, with influence from organizational culture and quality improvement practices.

FIGURE 1
RESEARCH MODEL



METHODOLOGY

Research Design, Sample, and Data Collection

The study was quantitative and exploratory in nature because, although the research variables were explicitly measured, the study focused on exploring the relationships among these variables in the context of the healthcare industry. Initially, 465 companies were contacted via personal referrals to seek participation in the study. Upon approval from the companies, questionnaires were distributed and a total of 179 valid questionnaires were collected from May 2020 to January 2021. The questionnaire asked the respondents about their perceptions and experiences about the green sustainability initiatives, quality management, and organizational culture in their own companies. The quantitative data in this study provided the evidence to explore the relationships among the factors that impacted the green movement and sustainability performance in the healthcare industry.

The sample size of 179 was enough for this study because the sample size computation for structural equation model (SEM) based on Soper (2021) reveals that the minimum sample for model structure was 172, with 0.1 as the effect size, 0.95 as the power, 5 as the number of latent variables, 29 as the number of observed variables, and 0.05 as Type I error. The respondents were 179 full-time employees from different healthcare organizations in the South. They were roughly 53.1 % male and 46.9% female with an average age of 35.6 years (Table 1). These respondents had an average of 17.2 years of working experience with 9.1 years in management positions. Roughly 42.5% of the respondents came from companies with more than 500 employees, 5% came from companies with 251 to 500 employees, 16.8% came from companies with 51 to 250 employees, and 35.8% came from companies with less than 50 employees.

TABLE 1
DEMOGRAPHIC INFORMATION

Gender	**Frequency**	**Percent**
Male	95	53.1
Female	84	46.9
Total	179	100.0

Descriptive Statistics	N	Minimum	Maximum	Mean	Std. Deviation
Age	178	20	62	35.60	11.921
Number of years working experience	176	1	55	17.22	11.429
Number of years managerial experience	176	0	40	9.11	8.245
Valid N (listwise)	176				

Number of employees	Frequency	Percent
Over 500	76	42.5
251-500	9	5.0
51-250	30	16.8
Less than 50	64	35.8
Total	179	100.0

Instrument

Green Practices. Previous research (Abdul-Rashid *et al.*, 2017; Cabral & Lochan Dhar, 2019; Hsu *et al.*, 2016) suggested the organizational green practices (GP) by measuring the perceived levels of use of fifteen green sustainability initiatives with a 5-point Likert's scale. After exploratory factor analysis (EFA), nine items were retained for the GP construct (Table 2).

TABLE 2
CONSTRUCT RELIABILITY AND CONVERGENT VALIDITY

Constructs	Factor loadings	Cronbach's Alpha	Composite reliability (CR)	Average variance extracted (AVE)
Green practices (GP)		0.932	0.930	0.599
Avoid business practices that harm the environment	0.751			
Make an effort to preserve the natural environment	0.830			
Use energy-saving technology	0.888			
Use environmentally friendly technology	0.798			
Use recycled material	0.581			
Reduce waste of material	0.705			
Encourage employees to conserve energy/resources.	0.707			
Set goals to conserve energy/resources.	0.816			
Commit to be environmentally friendly at all levels	0.840			

Constructs	Factor loadings	Cronbach's Alpha	Composite reliability (CR)	Average variance extracted (AVE)
Organization Culture (OC)		0.866	0.872	0.694
Quality-oriented-Quality-lacking	0.925			
Innovation-promoting-Innovation-lacking	0.783			
Proactive-Reactive	0.742			
Quality improvement practices (QIP)		0.846	0.850	0.588
QM Program	0.941			
Quality Circles	0.722			
Employee quality training programs	0.675			
Quality Improvement seminars	0.675			
Economic and social sustainability performance (EP_SP)		0.960	0.957	0.688
Provide better products	0.637			
Provide better services	0.699			
Have better relationship with customers	0.794			
Have better relationship with suppliers	0.743			
Have better relationship with employees	0.880			
Have better relationship with society at large	0.799			
Have better reputation	0.824			
Provide better working environment	0.871			
Increase profits	0.923			
Reduce costs	0.929			
Improve productivity	0.919			
Environmental sustainability (EnP)		0.902	0.902	0.688
Produce environmentally friendly goods and services	0.980			
Design environmentally friendly goods and services	0.667			

Quality Improvement Practices. In this study, based on previous research (Ahire & Golhar, 1996; Fok *et al.*, 2000, 2001; Isa *et al.*, 2016), Quality Improvement Practices (QIP) can be measured by the employee's perceived use of quality improvement tools and initiatives implemented in an organization which is consistent with hard TQM (Alkhaldi and Abdallah, 2022). These ideas assume that if an organization has more completely followed the quality management philosophy, QIP should be used throughout the organization and in various functional areas. Additionally, if "quality is indeed everyone's job," where quality management is more fully embraced, employees should be aware of the various QIP that are in use. If an organization, on the other hand, has very little or no experience with quality management, the opposite is expected to occur. The instrument dealt with perceived program use and asked

respondents whether QIP were in use in the organization, with a 5-point Likert's scale from "low usage" to "high usage." After EFA, four out of six items were retained for the QIP construct (Table 2).

Organizational Culture. Based on earlier research (Fok *et al.*, 2000, 2001; Hartman *et al.*, 2009), Organizational Culture (OC) was measured by a series of paired opposite items in which the respondents were asked whether the organization's climate should be described as open vs. closed, competitive vs. collaborative, proactive vs. reactive, and the like with a 7-point Likert's scale. After EFA, three out of five items were retained for the OC construct (Table 2).

Sustainability Performance. Sustainability performance is measured in three perspectives: environmental (EnP), social (SP), and economic (EP), which includes items such as "Provide better products," "Provide better services," "Have better relationship with customers," "Have better relationship with suppliers," "Have better reputation," "Provide better working environment," "Increase profits," "Reduce costs," "Improve productivity," "Promote environmentally friendly causes and products," and "Reuse or refurbish a product's components" (Abdul-Rashid *et al.*, 2017; Agyabeng *et al.*, 2020; Hami *et al.*, 2015; Sezen and Cankaya; 2013; Singh *et al.*, 2020). After EFA, thirteen out of fifteen items were retained with economic and social items as the EP_SP construct and environmental items as the EnP construct (Table 2).

Data Screen, Reliability, and Validity

Using SPSS and AMOS statistical programs, EFA, followed by a confirmatory factor analysis (CFA), were used to obtain the constructs, and various tests were done to ensure the constructs were sound, reliable, and has no validity issues. First, normality, homoscedasticity, and multicollinearity assumptions of variables were checked. Since the skewness and kurtosis values were within positive or negative three, the observed variables in the study met the normality requirement. Testing for homoscedasticity was done by scatter plots with the research variable on the y-axis and the residual on the x-axis (Hair *et al.*, 2019). The plots came up with consistent patterns and homoscedasticity was established.

Next, Harman's one-factor test (Harman, 1976) was used to verify if there is common method bias. The first extracted factor from EFA explained 29.6% of the variance which is lower than the 50% cutoff point. Consequently, it can confirm that common method bias is not found in this study.

Last, construct reliability, convergent validity, indicator reliability, and discriminant validity were examined and summarized in Table 2. Both Cronbach's alpha and composite reliability (CR) were estimated for construct reliability. The Cronbach's alphas for all constructs, ranging from 0.846 to 0.960, are well above the 0.7 threshold, and the CRs, ranging from 0.850 to 0.957, are above 0.6 threshold (Sarstedt *et al.*, 2017; Hair *et al.*, 2019). Hence, the constructs in the research model have good reliability. Average Variance Extracted (AVE) was used to determine convergent validity. The AVE values for all constructs, ranging from 0.588 to 0.694, are greater than 0.5 (Benitez *et al.*, 2020; Hair *et al.*, 2019) which indicates that convergent validity is achieved in this study. In addition, the average factor loadings for each construct is above 0.7, and therefore, indicator reliability is confirmed for all constructs in the study. As shown in Table 3, discriminant validity of the constructs is accomplished since AVE values are greater than the inter-construct correlations (Fornell and Larcker, 1981; Gaskin, 2016; Hair *et al.*, 2016, 2019).

TABLE 3
DISCRIMINANT VALIDITY – AVERAGE VARIANCE EXTRACTED (AVE) AND CONSTRUCT CORRELATIONS

	AVE	EP_SP	EnP	GP	OC	QIP
EP_SP	0.688	**0.83**				
EnP	0.688	0.48	**0.906**			
GP	0.599	0.442	0.718	**0.774**		
OC	0.694	0.457	0.19	0.162	**0.833**	
QIP	0.588	0.452	0.17	0.179	0.504	**0.767**

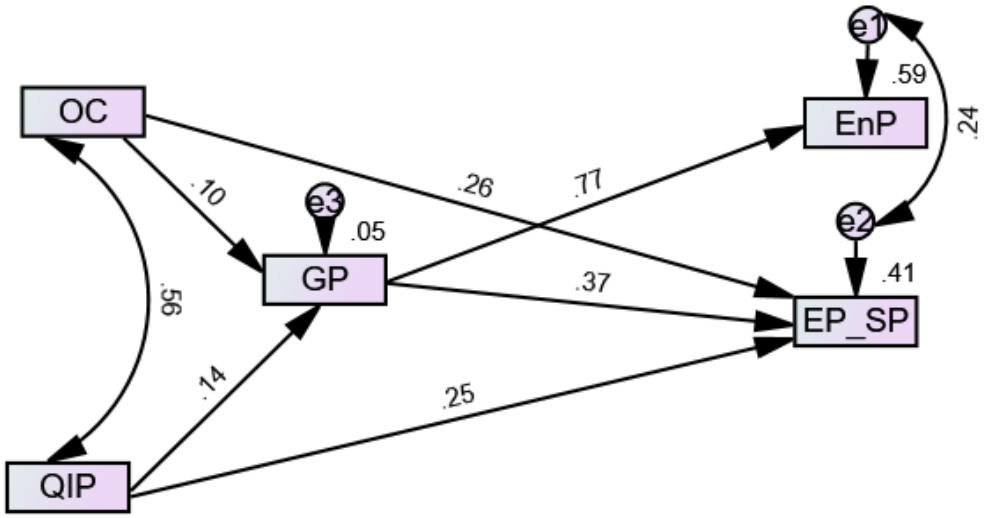
RESULTS

The hypothesized full structural model (Figure 1) was tested using AMOS and the model parameters were estimated using the maximum likelihood method. The proposed relationship QIP to EnP and OC to EnP were removed due to insignificant relationships and to free up the degrees of freedom for AMOS to estimate the model parameters. Overall, the model has a good fit, with root mean square error of approximation (RMSEA) equaling 0.034 and the comparative fit index (CFI) equaling 0.999 (Figure 2). The model also has shown predictive accuracy as evident by several significant R2. GP and QIP explained 59% of variance in EnP and 41% in EP_SP, respectively (Table 4). However, OC and QIP only explained 5% of variance in GP which is not statistically significant.

TABLE 4
PREDICTIVE ACCURACY (R^2)

Constructs	R^2
GP	0.05
EnP	0.59
EP_SP	0.41

FIGURE 2
THE STRUCTURE MODEL



To test the hypotheses of the study, the path coefficients of the model were estimated and were tested to examine if the proposed relationships were supported by the data. Our first hypothesis (H_{1a}, H_{1b}, and H_{1c}) examines the relationships between Green Practices and Sustainability Performances among healthcare organizations. Table 5 shows the beta coefficient values and p-values for each direct path of the SEM. We found GP had significant relationships with EnP (H_{1b}) and EP_SP (H_{1a} and H_{1c}), and therefore, H_1 is supported. The second and third hypotheses posit that Organizational Culture is relating to Green Practices used in healthcare organizations, and Organizational Culture is affecting the relationship between Green Practices and Sustainability Performances. As shown in Table 5, the direct path between OC and GP was not statistically significant but between OC and EP_SP was significant. When examining the indirect path of OC through GP to EnP and EP_SP (Table 6), the relationships are not significant. The results did not support H_2 and H_3 was partially supported. The fourth and fifth hypotheses look at relationships between

Quality Improvement Practices and Green Practices, and Quality Improvement Practices and Sustainability Performances through Green Practices. The direct path QIP to GP was not significant but QIP to EP_SP was significant at 0.000 level (Table 5). The indirect paths QIP to GP to EnP and QIP to GP to EP_SP were not significant (Table 6). H_4 was not supported and H_5 was partially supported. The sixth hypothesis suggests that Organizational Culture and Quality Improvement Practices are positively related. The covariance between OC and QIP is 0.56 which indicates a strong positive relationship. H_6 receives strong support. Table 7 summarizes the statistical evidence to show whether each hypothesis was supported or not.

TABLE 5
PATH COEFFICIENT (DIRECT EFFECT)

			Beta	S.E.	C.R.	P-value
GP	--->	EnP	0.768	0.048	16.128	***
GP	--->	EP_SP	0.406	0.064	6.323	***
OC	--->	GP	0.086	0.077	1.117	0.268
OC	--->	EP_SP	0.246	0.064	3.831	***
QIP	--->	GP	0.138	0.086	1.602	0.109
QIP	--->	EP_SP	0.265	0.072	3.688	***

*** significant at 0.000 level.

TABLE 6
INDIREST PATH COEFFICIENT (INDIRECT EFFECT)

Indirect Path	Standardized Estimate	P-Value
OC --> GP --> EnP	0.076	0.322
OC --> GP --> EP_SP	0.037	0.308
QIP --> GP --> EnP	0.110	0.114
QIP --> GP --> EP_SP	0.053	0.108

TABLE 7
SUMMARY OF SUPPORT FOR HYPOTHESES

Hypotheses	Path	Beta Coefficient	P-value	Supported?
H_{1a+1c}	GP --> EP_SP	0.406	0.000	Yes
H_{1b}	GP --> EnP	0.768	0.000	Yes
H_2	OC --> GP	0.086	0.264	No
H_3	OC --> EP_SP	0.246	0.000	Yes
	OC --> EnP	N/A in SEM		
	OC --> GP --> EP_SP	0.037	0.308	No
	OC --> GP --> EnP	0.076	0.308	No

H_4	QIP --> GP	0.138	0.109	No
Hypotheses	**Path**	**Beta Coefficient**	**P-value**	**Supported?**
H_5	QIP --> EP_SP	0.265	0.000	Yes
	QIP --> EnP	N/A in SEM		
	QIP --> GP --> EP_SP	0.053	0.108	No
	QIP --> GP --> EnP	0.110	0.114	No
H_6	OC --> QIP	0.670	0.000	Yes

DISCUSSION AND CONCLUSIONS

The COVID-19 pandemic is wreaking financial and social havoc on industries and disrupting economies worldwide. It is likely to further undermine progress healthcare organizations have made thus far on sustainable operations and addressing environmental issues. If sustainability is to be viewed continually as a development objective, then healthcare organizations will need to come up with modified policies that are affordable and achieve results simultaneously. We have attempted to identify organizational factors that could lead to successful sustainability implementation during the COVID-19 pandemic in this study.

Introducing environmental sustainability measures is often believed to lead to increased operating costs. In this study, we found that it may just be the opposite. With little capital investments, hospitals and other healthcare facilities could realize significant operating savings, better social and community impacts, and protecting the environment. Our results showed that healthcare organization overall sustainability performance is significantly affected by the degrees of green initiatives implemented in an organization. The perceived use of quality improvement practices and organizational culture have positive and direct impact on employees' perceptions of economic and social sustainability performances which is consistent with other studies (Hartney *et al.*, 2022; Prodromou and Papageorgiou, 2022). The results do not support the idea that organizational culture and quality improvement practices affect sustainability performances through green practices. Haque (2021) suggested that healthcare organizations need to adopt a multi-level model to include responsible leadership when examining the impact of organizational culture and quality improvement practices on sustainability performance.

We believe that healthcare facilities are in a prime position now to make sustainability a part of their mission and long-term strategic plan (Haque, 2021). This will ensure the organizations' longevity, increased profitability, improved relationships with the employees and community, and reduced negative environmental impacts (Alkhaldi and Abdallah, 2022; Prodromou and Papageorgiou, 2022; Santra and Alat, 2022).

IMPLICATIONS AND LIMITATIONS

There is a lack of research addressing the complexity of sustainability in the healthcare industry during the COVID-19 pandemic. The findings from the current study demonstrated that employees' perception of positive sustainability performance is related to their perception of organization's commitment to supportive culture, quality improvement, and sustainability initiatives. Implementation of sustainability and quality programs in the healthcare industry is a challenge. However, the top leaders in healthcare must align their strategic goals with the internal and external sustainability dimensions in a supportive organizational culture (Haque, 2021; Prodromou and Papageorgiou, 2022).

This study is limited to the healthcare organizations during the COVID-19 pandemic from a geographical location in the United States. Future research post-pandemic should include other industries, a different geographical location in the United States, or a different country which allows to see if the

findings can be generalized across different industries, geographical locations, or countries. In addition, this study has a small sample size of 179 respondents. A follow-up study should be done with a large sample size which can give deeper insights.

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