

The Effect of Digital Leadership Styles on Sustainable Performance: A Systematic Literature Review

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ABSTRACT

The importance of sustainable performance (SP) increased after the launch of the Sustainable Development Goals (SDGs) by the United Nations. Governments instructed organizations to participate in achieving the SDGs. However, there are varied levels of compliance and achievement correlated with SGs across countries, industries, and organizations. This study reviewed the literature and examined the role of leadership styles in SP. The findings showed that the number of articles on this topic has been constantly increasing, especially after 2017. Moreover, the number of studies on this field has been correspondingly increasing in developing and emerging economies, and particularly in manufacturing and small and medium enterprises. The findings also indicate that most of these studies are quantitative and have utilized an adequate sample size. The Resource-Based View (RBV) and stakeholder theories are widely deployed. Leadership styles are critical for SP. There are mixed findings, though, in terms of the effect of certain leadership styles on SP. Hence, more studies need to be carried out in different countries and industries, while different approaches are required to be put into service since having the right leadership style can improve SP.

Keywords-*digital leadership; Transformational Leadership (TL); Transactional Leadership (TSL); sustainable leadership; Sustainable Performance (SP)*

I. INTRODUCTION

Sustainability has become one of the major goals of nations and organizations [1]. The importance of sustainability has been substantially increased after 2015, when the United Nations launched the 2030 vision, which regarded the accomplishment of its SDGs [2]. Since then, countries have urged all organizations to be involved in the achievement of the latter [3, 4]. Along with the SDGs, organizations also desire to be sustainable because this bears great importance for their customers and the general public [5]. Therefore, they have started focusing on enhancing their SP. SP at an organizational level constitutes a combination of environmental, social, and economic performances [6]. It is also about organizations'

capacity to maintain a competitive advantage in the long run by decreasing hazardous emissions and improving green innovation skills [7]. SP is equally essential for individuals, as sustainability ensures that the employees are morally motivated to achieve the organizational goals, while it is also critical for an organization, since in this way the latter differentiates itself from competitors [8]. Despite the importance of SP, there are variations in terms of compliance with the latter among organizations and countries [9, 10]. This is mainly due to the organizations' leadership commitment to the sustainable goal achievement [11]. Therefore, researchers have examined several styles of leadership aiming to understand the best one, which will be capable of leading to SP, shared leadership [12], Transformational Leadership (TL) [13-16], and Transactional

Leadership (TSL) [17, 18] being the most common. Other leadership styles include the sustainable leadership [24], entrepreneurial leadership [18], ethical leadership [19], servant leadership [9, 22], and digital leadership [25]. The effectiveness of these leadership styles varies and is context-based [25]. Although some researchers found that the aforementioned styles are significant in predicting SP [23, 24], others discovered that they can only affect the social and economic aspects of SP but not its environmental aspect [20, 21].

The current study aims to review the literature related to leadership styles and their effects on SP. The former constitutes a systematic literature review that aims to present the status quo of the literature regarding the link between leadership styles and SP and to provide directions for future work.

II. FINDINGS

This study's findings were derived using an excel sheet in which the information of the articles were extracted and analyzed by drawing figures and statistics to facilitate the results' understanding.

A. Article Profiles

The number of articles has been maintained steady until 2017, with a sharp increase observed from 2018 to 2024. The country of origin as well as the economic classification of the countries demonstrate that the number of the articles is the highest in Pakistan (5), followed by the articles in Malaysia (3) and South Korea. Other countries with two articles are Indonesia, Greece, and South Africa, while two studies have taken place in several countries (Asian countries and North America). In terms of classification, 14 articles were found in emerging economies, 7 in developing countries, and 4 in developed countries. The industries of the reviewed studies varied. Table I depicts the countries and industries of the reviewed articles.

The underpinning theories indicated that the RBV has been deployed six times, while the stakeholder theory has been utilized four times. Several studies, namely [9, 16, 24, 28-30], have encompassed more than one theories. The majority of the articles are quantitative. The mean value of the considered sample size is 310, with a minimum (min) of 107 and a maximum (max) of 892.

B. Effect of Leadership on SP

The effect of the leadership styles on SP and other relevant outcomes are presented in Table II. The relationship between the leadership styles and SP has garnered significant attention in recent years, with numerous studies having highlighted various leadership approaches that positively contribute to the organizational outcomes. Sustainable leadership has a consistent positive impact on SP [7, 9, 17, 22], since it promotes enhanced social, financial, and environmental performance. Similarly, TL has been widely recognized for fostering SP across diverse domains, involving financial outcomes [13], organizational sustainability [14], and green performance [25] This leadership style's adaptability to both organizational and environmental sustainability is well-documented, with authors in [16] affirming its positive effect on SP. Moreover, studies on shared and entrepreneurial

leadership provide varied results. Even though shared leadership is predicted to positively influence SP [12], entrepreneurial leadership yields mixed outcomes. For instance, authors in [18] reported an insignificant relationship between entrepreneurial leadership and environmental sustainability although positive results were observed for social and economic performance. Ethical leadership, on the other hand, demonstrated a significant positive influence on both social and financial sustainability; yet, its effect on environmental outcomes remains inconclusive [19].

TABLE I. COUNTRIES AND INDUSTRIES

Reference	Country	Industry
[7]	Asian countries	SMEs
[9]	Pakistan	SMEs
[12]	USA	Manufacturing
[13]	North America	Mother carries
[14]	Saudi Arabia	Petrochemical companies
[15]	Indonesia	Milling
[18]	China	Internet service industry
[17]	Indonesia	Industrial
[18]	Malaysia	SMEs
[19]	South Africa	SMEs
[20]	Vietnam	Tourism
[21]	Pakistan	Manufacturing
[22]	South Africa	Hospitality firms
[24]	Pakistan	Manufacturing
[25]	Taiwan	Manufacturing
[26]	Italy	Banking
[27]	China	Construction
[28]	Nigeria	SMEs
[29]	Thailand	SMEs
[30]	South Korea	Construction
[31]	Malaysia	Technological companies
[32]	Greece	Maritime
[33]	Malaysia	Manufacturing companies
[34]	Nigeria	Listed companies
[35]	Pakistan	Security and exchange commission
[36]	Pakistan	Manufacturing
[37]	Greece	A group of firms
[38]	South Korea	SMEs
[39]	South Korea	Large organizations
[40]	Conceptual paper	Review
[41]	Saudi Arabia	Manufacturing
[42]	UK	Large organizations
[43]	Egypt	Tourism

Servant leadership has also emerged as a driver of green performance, with authors in [20, 21] ascertaining its positive influence on sustainability initiatives, particularly in fostering environmental outcomes. Additionally, digital leadership is increasingly being associated with enhanced SP, as noted in numerous studies [23, 24, 38-43], which underscore the role of digital transformation in supporting long-term sustainability goals. The results of these studies highlight the complex yet critical role of leadership in shaping SP. Whether through transformational, digital, or sustainable leadership styles, the emphasis on leadership competence and commitment consistently emerges as a key moderator in achieving positive outcomes, particularly regarding the environmental and social dimensions of sustainability. However, it is important to note the occasional insignificant findings, particularly associated with authoritative and entrepreneurial leadership styles, as

reported in [37], where it is suggested that the efficacy of leadership styles may vary depending on the context and specific sustainability goals.

TABLE II. RELATIONSHIP BETWEEN LEADERSHIP STYLES AND SP

Ref.	Leadership Style	Dependent variable	Result
[7]	Sustainable leadership	SP	+
[12]	Shared leadership	SP	Predicted positive
[13]	TL	Financial performance	+
[14]	Environmental TL	Organisational SP	+
[15]	TSL	Innovative work behaviour	+
[16]	TSL TL	SP	+ +
[17]	Sustainable leadership	SP	+
[18]	Entrepreneurial leadership	SP Environmental Social Economic	Insignificant + +
[19]	Ethical leadership	SP Social Financial Environmental	+ + Insignificant
[20]	Servant leadership	Green performance	+
[21]	Servant leadership	Green performance	+
[22]	Sustainable leadership	SP Social Financial Environmental	+ + +
[9]	Sustainable leadership	SP	+
[23]	Digital leadership	SP	+
[24]	Digital leadership	SP	+
[25]	Green TL	Green performance	+
[27]	TL	SP	+
[28]	Leadership practices	Profitability	+
[29]	TL	SP	+
[30]	Leadership competence	SP	Moderator (+)
[31]	Leadership commitment	Environmental IT performance	+
[32]	Leadership	SP	+
[33]	Leadership	SP	+
[37]	Authoritative leadership/ Entrepreneurial leadership TL TSL	SP	Insignificant + + +
[38]	Digital leadership	SP	+
[39]	Digital leadership	SP	+
[40]	Digital leadership	SP	+
[41]	Digital leadership	SP	+
[42]	Digital leadership	SP	+
[43]	Digital leadership	SP	+

Overall, the literature presents a robust consensus that leadership styles, particularly those emphasizing transformation, sustainability, and digital innovation,

significantly contribute to enhancing SP across organizations. Therefore, the effect of digital leadership, servant leadership, TSL, TL, and sustainable leadership is positive. Authoritative leadership has an insignificant effect, ethical and entrepreneurial leadership have mixed effects, and shared leadership has not been empirically examined. The most investigated leadership is TL followed by digital leadership, sustainable leadership, and TSL.

III. DISCUSSION

This study was carried out to review the effect of leadership styles on SP. A review of 33 articles was conducted. The findings demonstrated that the number of articles has increased after SDGs were launched in 2015. The period between 2017 and 2022 witnessed a large increment in the number of published articles. These articles were detected in several countries and in particular in emerging economies, such as Pakistan, Malaysia, Indonesia, and South Africa. Therefore, there is still a lack of studies regarding the link between leadership and SP. This conclusion is in line with the one derived by authors in [24], calling for more studies on leadership styles to be performed in different regions and cultures. Most of the considered studies were either conducted on manufacturing or SMEs industries. The RBV is one of the highly employed theories in the SP investigation, possibly owing to the fact that this review's articles focused on the organizational level of SP, and RBV is essential in explaining the link between internal resources and the capability to strengthen the performance of organizations [44, 45]. Almost one third of the articles did not deploy a theory, possibly due to the fact that the SP is still emerging, and researchers are trying to develop a specific theory that can suit this context. It was noticed from the reviewed articles that there is a trend to adjust and modify existing theories to suit the SP. For instance, the green TL and environmental TL are derived from the original TL theory [16]. In addition, the natural RBV [9] is derived from the original RBV. These theories attempt to cover the new SP trend of organizations. The stakeholder theory, which focuses on the notion that an organization should be concerned about the well-being of all stakeholders, has been adopted by four studies reflecting the importance of this theory in considering the economic, social, and environmental aspect of SP [46].

The approach followed by most of the studies is quantitative and deployed a sample size above the required number of SEM to meet the assumption of using Smart Partial Least Square (PLS). The study also identified the effect of leadership styles, with nine styles being involved. The effect of digital leadership [23, 24], servant leadership [20, 21], sustainable leadership [7, 17, 22], TL, and TSL [15, 16, 27, 37] was found to be positive and significant. However, TL was further divided into green TL [25, and environmental TL [14], with both of them having a substantial positive effect on SP. Other leadership styles, such as shared leadership, have not been empirically examined [12], while mixed findings were derived from the relationship between ethical leadership [18] and entrepreneurial leadership [19] with SP. An insignificant effect was observed between authoritative leadership and SP.

IV. CONCLUSION

This study reviewed the articles related to leadership style and SP. There are nine leadership styles that have been investigated in the reviewed articles, with their relationship with SP having been respectively explored, mostly in studies using economic, social, and environmental dimensions. The findings showed that the number of articles has increased after 2017, and this increase is noticeable in the developing and emerging economies. The studies were conducted in several industries with the highest number of them evidenced in manufacturing and SMEs. The Resource Based View (RBV) and stakeholder theories are the most utilized theories in investigating the relationship between leadership style and SP. Most of the studies are quantitative in nature using a sample size above the one required by SEM. Transformational Leadership (TL) was the most explored leadership style. The effect of the considered leadership styles is positive with also insignificant and mixed findings, especially in terms of ethical and entrepreneurship styles.

The reviewed articles were extracted from Scopus and WoS. The findings are limited to the articles that have been published in these databases between 2012 and 2024. The keywords that have been used are limited to leadership and SP. The study only focused on leadership styles. As a way forward, several avenues for future work are suggested. Since 2030 is approaching, more studies are needed in all countries to assess the achievement of the SDGs and examine the SP in industries other than manufacturing and SMEs. Public sector organizations can be a direction for future work, where governments can instruct the public sector to adhere to the sustainability indicators. Further studies are also needed to examine the SP from different perspectives and based on different theories, namely the social exchange theory, the stakeholder's theory, as well as a combination of theories. More studies are also recommended to explore cross country SP by examining the SP in more than one country. Future researchers are suggested to use a mixed method approach or a focus group in which experts will be interviewed to understand the link between some factors, such as organizational commitment, engagement, and leadership with SP.

Researchers can benefit from this study by expanding the literature using future work directions. Policy makers are advised to focus on new and emerging leadership styles such as the sustainable leadership and the digital leadership. TL is also critical for improving the SP. Therefore, having a transformational mindset can lead to better SP. Examining empirically the effect of these leaderships can contribute to the understanding of the role these styles play in SP enhancement.

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