

# The role of organizational capabilities in driving sustainable performance: Mediating role of green organizational culture



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**Abstract** Economies around the globe are now experiencing significant changes in the business practices and choices of customers. The manufacturing industry's product life cycle and technology are becoming outdated faster; therefore, businesses must improve their resources, skills, and innovation processes to not only provide goods that meet requirements but also do so quickly to sustain them. This study conceptualizes while following the RBV theory, which posits that unique organizational resources can facilitate the achievement of competitive advantage. Considering the dynamic situation of business markets, unique organizational capabilities can create differentiation and ensure survival in the longer run. These unique capabilities include several factors, i.e., innovative skills, networking, new technology utilization and strategic processes. Thus, this study considers three key organizational capabilities, i.e., organizational collaboration (with partners and suppliers), the capacity for product innovation, and the adoption of advanced technology to achieve sustainable performance among large-scale textile manufacturing firms. Furthermore, this study also shows that the establishment of a green organizational culture differentiates the firm, as it can align the individual's mindset with the firm's green norms and values and can be helpful for achieving sustainable performance. This study can be helpful for future studies to identify the key factors that can be helpful in achieving sustainable performance in large-scale textile firms. Furthermore, this study provides insights into the textile sector, as business practices and customer requirements are rapidly changing, which poses the challenge of sustaining highly uncertain business markets. Therefore, this study will be helpful for adjusting their unique capabilities to achieve sustainable performance. Additionally, this study will also be beneficial for the top management of large-scale textile firms to understand the crucial role of a green organizational culture as a catalyst to transform its unique resources towards sustainable outcomes.

**Keywords:** collaboration with partners and suppliers, capacity for product innovation, adoption of advanced technology, TPL approach, RBV theory

## 1. Introduction

Global population growth has resulted in a significant increase in textile manufacturing, which has fuelled the expansion of economies worldwide (Gbolarumi et al., 2021). The textile industry makes a substantial contribution to the economy of many countries through manufacturing units, excessive exports, foreign exchange earnings, and job creation (Okai-Mensah et al., 2022). Notably, the textile industry is the third largest manufacturing industry after the automobile sector and is worth US\$ 1.3 trillion (Boscacci, 2018). Pakistan, India, Bangladesh, and Russia are the largest producers of cotton, and they primarily contribute to exports and play a significant role in their economy and job creation (Panigrahi et al., 2020). Although the textile industry is renowned for its contribution to GDP and employment generation worldwide, the activities of these textile manufacturing companies are majorly damaging to the environment and society. Notably, the textile industry accounts for 10% of the global carbon emissions and other greenhouse gas emissions that cause global warming (Farhana et al., 2022; Okai-Mensah et al., 2022). The study emphasized that an individual's global annual consumption of textile products is approximately 13 KGs and that the rising population over time requires more expansion of textile firms, which generate more waste (Khandaker et al., 2022). Therefore, the continuous expansion of the textile industry in the same pattern poses a threat to the environment, as textile firms will be responsible for 1/4<sup>th</sup> of the world's carbon emissions by 2050, and the carbon footprint of the textile sector will be equal to the quantity of the carbon footprint produced by all the countries in the EU region (MacArthur, 2017). Notably, the textile sector is dominant in terms of environmental degradation among all manufacturing firms (Heo et al., 2019).

Furthermore, India, Turkey, Pakistan, Bangladesh, Vietnam, and China are among the top exporters of textile products from developing economies, and more than 200 million people still face risks from industrial pollution (Ahmad et al., 2021). Similarly, textile firms are the largest exporters of garments, hold a significant position in the industrialization of China (Ruan



et al., 2022), and enormously damage the environment and society through excessive utilization of energy and water and disposal of untreated liquid chemicals, solid waste, and other gases (Hasanbeigi & Price, 2015; Hayat et al., 2020; Jia et al., 2020). Likewise, India contributes to the majority of exports of textile products to the U.S. and European markets and holds large-scale textile manufacturing units, which contribute to 14% of the total manufacturing production of the country, 4% of the total GDP, 27% of the foreign exchange inflow and 45 million individuals (Grace Annapoorani, 2017). Despite their enormous production and contribution to the major exports of India, textile firms pose a threat to the environment and society and face difficulty in managing compensation to employees, which compromises competitiveness and ultimately hinders the achievement of sustainable performance (Grace Annapoorani, 2017). Similarly, Bangladesh relies primarily on textile firms for exports and employment generation; however, they discharge 349 million m<sup>3</sup> of wastewater through the dyeing process, which is hazardous to the environment and nearby society (Hossain et al., 2018). Similarly, Pakistan ranks fourth in the world in terms of the production of cotton, and the textile sector is the second largest employer, accounting for 13.6% of the country's GDP and 60% of all exports (Hayat et al., 2020). However, the textile industry of Pakistan is majorly affecting the environment and damaging the health of both humans and animals (Shahzad et al., 2020). Similarly, chemical waste from the textile industry is a major threat to the health and ecosystem of the surrounding area (Turker & Altuntas, 2014).

More specifically, manufacturing firms, including those in the textile industry, require excessive energy, which is generated through the use of fossil fuels (Haseeb et al., 2020; Khandaker et al., 2022). A previous investigation revealed that more than 1000 barrels of fossil fuels are burned every second worldwide, which influences climate change (Teo et al., 2022). To address the growing issues of environmental degradation, societal challenges, and long-term survival effectively, sustainable performance has become increasingly crucial (Iqbal et al., 2021). Furthermore, the UN has presented 17 SDGs and enforced economies and businesses to implement these goals in their business practices and meet them by 2030 (Halkos & Gkampoura, 2021). Sustainable performance involves three key elements, i.e., economic, social and environmental, which makes it possible to fulfill economic goals along with environmental goals (Halim et al., 2023; Hossain et al., 2021). Previously, the literature noted that textile industries established in developed economies have taken significant measures toward sustainable performance (Eckstein et al., 2017; Islam et al., 2021); however, developing economies experience difficulty in the implementation of sustainable practices due to a lack of information, strategic plan adoption and the transformation of their business processes (Kazancoglu et al., 2020). Therefore, it is necessary to identify the key factors for sustainable performance in the textile manufacturing sector of developing economies (Jia et al., 2020). Additionally, consumers and other stakeholders are aware of the importance of transparent organizational procedures, and manufacturing companies are under pressure to consider sustainable practices (Long et al., 2020).

On the other hand, despite the enormous potential of the textile sector, the overall performance of the large-scale textile manufacturing sector is unsatisfactory (Memon et al., 2020). The reason behind the decline in economic performance may include the inability of these textile firms to adopt modern technology, which is necessary to fulfill the changing requirements of customers from the U.S. and European countries and ultimately lose their competitiveness (Bala & Arora, 2023). Similarly, Oelze (2017) noted that a lack of capability and appropriate resources are the major barriers to sustainable performance in the textile sector. Furthermore, business markets are rapidly changing, which introduces economic struggle, inequality in society, and a devastating natural environment because the operations of manufacturing firms pose significant challenges to sustainable performance (Ferro et al., 2019; Johnsen et al., 2017). Moreover, large-scale manufacturing firms, especially textile firms, need to adjust their business practices beyond traditional practices to benefit society along with their financial gains (Matten & Moon, 2020). Consequently, businesses should increase their networking and collaboration with partners and suppliers to learn new ideas and acquire skills that are necessary to overcome the challenges of sustainable performance (Möller & Halinen, 2017). Collaboration with partners and suppliers encourages firms to learn modern skills, acquire new information, and increase the availability of the resources that lead to sustainable performance (F. Jia, Yin, et al., 2020). The study also emphasized that collaboration with partners and suppliers increases manufacturing firms' ability to meet the changing requirements of customers in a short time through the utilization of shared resources and the ability to learn new ideas and skills (Bag et al., 2022). Another study noted that collaboration and cooperation with partners and suppliers account for 50% of the success of manufacturing firms (Dubey et al., 2019). Woo (2021) also reported a positive and significant relationship between collaboration with partners and suppliers and superior financial performance. Similarly, Gimenez and Tachizawa (2012) reported a positive relationship between collaboration with partners and suppliers among manufacturing firms and environmental performance.

In addition to collaboration, the achievement of economic, social, and environmental goals that exhibit sustainable performance requires a firm's ability to innovate products (Seebode et al., 2012). Notably, innovative products play a crucial role in sustainable performance (Schöggel et al., 2017). More precisely, adopting sustainable practices pushes businesses to embrace the capacity to provide cutting-edge products to achieve sustainability and environmental objectives. Manufacturing companies can achieve environmental goals and gain a competitive edge by taking sustainable performance and product innovation into account (Hsu et al., 2021). They can also satisfy customer requirements by using ethical measures and maintaining business viability in quickly evolving markets (Afum et al., 2023; Kuzma et al., 2020). Another study revealed that a firm's ability to offer innovative products significantly influences sustainable performance (Asadi et al., 2020).

Additionally, Industry Revolution 4.0 influences business practices, and customers also prefer products produced through modern technology-driven processes (Tasleem et al., 2019). Furthermore, the adoption of the latest technology facilitates efficient resource utilization and energy usage, reduces the organization's waste, and ultimately causes less damage to the environment (Khanfar et al., 2021). The adoption of advanced technology in the textile sector can be helpful in making the overall process more transparent and traceable, which promotes sustainable and socially responsible production. In contrast, organizational capabilities cannot be translated directly into sustainable outcomes (Li, 2022). The achievement of sustainable outcomes requires organizational capabilities and deliberate adoption and usage of advanced technology (da Silva et al., 2021). In contrast, the organizational culture must encourage their staff toward sustainable performance (Sharma, Prakash, et al., 2021). Thus, a green organizational culture promotes and facilitates employees in meeting a firm's economic goals while causing less damage to society and the environment (García-Machado & Martínez-Ávila, 2019). Green organizational culture can be defined as the organizational strategies that give value and show concern for the environment (Klassen & Vachon, 2003; Yung & Chan, 2012). Therefore, a green organizational culture can help overcome the potential risks of sustainable performance among manufacturing firms while aligning their capabilities with sustainable outcomes (Sandin & Peters, 2018; Sen et al., 2017).

Furthermore, after the significant attraction of professionals toward sustainable performance, academicians have also considered the investigation of sustainable business practices to meet the suitable business goals of the manufacturing industry and several other sectors (Levänen et al., 2022; Rajeev et al., 2017). The sustainable performance of the textile industry in developed economies has previously been studied in the literature (Harms et al., 2013; Walker & Jones, 2012); however, there is a dearth of information regarding the sustainable performance of the textile industry in emerging economies, such as Bangladesh, Pakistan, India, etc. (Desore & Narula, 2018; Saha et al., 2022). The literature has also noted that emerging economy textile companies are falling short of achieving sustainable performance, which emphasizes the necessity for more research into the factors that might contribute to sustainable outcomes (Shahi et al., 2021). Another study noted that major textile firms do not comply with the standards of the environment and society (Chowdhury & Quaddus, 2021; Oelze, 2017). Moreover, suppliers attached to large-scale textile firms also lack the ability to implement sustainable business practices and are more concerned about cost effectiveness, which ultimately affects competitive advantage (Raian et al., 2022). Previously, studies have considered several antecedents to achieve sustainable performance, i.e., leadership styles (Gull et al., 2022), organizational culture (Năstase et al., 2020), and GHRM practices (Amjad et al., 2021). Similarly, the literature has considered the mediating role of green innovation, knowledge management, a green psychological climate, and CSR between manufacturing firms' sustainable performance and its antecedents (Abbas et al., 2020; Das et al., 2019; M. Sharma, Kamble, et al., 2021; Warwas et al., 2021). Notably, the literature has sufficiently considered the factor of sustainable performance in several sectors; however, sustainable outcomes among large-scale textile firms have rarely been investigated (Sandin & Peters, 2018). Therefore, this study conceptualizes the relationships among collaboration with partners and suppliers, the capability of product innovation and the adoption of advanced technology toward the sustainable performance of the textile sector through the mediating role of a green organizational culture.

### 1.1. Research questions

- 1- Does collaboration with partners and suppliers influence a large-scale textile firm's sustainable performance?
- 2- Does the capacity for product innovation influence a large-scale textile firm's sustainable performance?
- 3- Does the adoption of advanced technology influence a large-scale textile firm's sustainable performance?
- 4- Does a green organizational culture influence a large-scale textile firm's sustainable performance?
- 5- Does green organizational culture mediate the relationship between collaboration with partners and suppliers and large-scale textile firms' sustainable performance?
- 6- Does green organizational culture mediate the relationship between the capacity for product innovation and a large-scale textile firm's sustainable performance?
- 7- Does green organizational culture mediate the relationship between the adoption of advanced technology and the sustainable performance of large-scale textile firms?

## 2. Literature Review

### 2.1. Theoretical background

This study utilized the resource-based view theory as the underpinning theory. RBV theory emphasizes that unique organizational resources help achieve competitive advantage (Barney, 1991) and ultimately lead to a firm's sustainable performance. A firm's competitive resources include tangible and intangible resources that help in the further growth of the firm (Lockett et al., 2009). Another study noted that firms keep competitive resources and that these distinctive resources enable distinctive capabilities to significantly determine competitive advantage (Nagati & Rebolledo, 2012). Thus, this study follows the RBV and considers organizational capabilities, i.e., collaboration with partners and suppliers, the ability to offer innovative products and the adoption of advanced technology, as unique combinations of resources that lead textile firms

toward sustainable performance. Barney's (1991) RBV highlights the importance of valuable, unique, and infrequently available resources in gaining a competitive edge. Notably, organizational capabilities provide unique resources to firms to achieve success (Zhang et al., 2022). Additionally, the development of organizational capabilities, i.e., offering product innovation and adopting advanced technology, provides competitive resources to meet customers' requirements more effectively than competitors do (Ávila, 2022). In the same manner, a green organizational culture can provide valuable assets that can facilitate the transformation of key capabilities into sustainable outcomes (Aggarwal & Agarwala, 2023). Thus, a green organizational culture can provide an organizational environment that encourages employees to instill organizational capabilities, which can help textile firms achieve sustainable performance.

### *2.2. Organizational collaboration (with partners and suppliers) and sustainable performance*

The interactions among the different parties in organizational networks are crucial components of a firm's resource management (Pahl-Wostl, 2007). In large-scale firms, managers face multiple issues regarding individuals and organizations as units, which require cooperation among the actors from the network to create compatibility and overcome contradictions (Abreu et al., 2021). Furthermore, collaboration among the actors of the organizational network creates learning and ultimately produces stability (Håkansson & Ford, 2002). Collaboration with partners and suppliers significantly reduces conflicts and other social issues (Proença et al., 2018). Formal and informal collaboration with partners and suppliers also leads to cooperation, interdependence, and vicinity (Håkansson & Ford, 2002). Furthermore, these collaborations positively influence the firm's strategic decision-making and organizational processes and help create the alignment of organizational elements and create a balance of power (Abreu et al., 2021). Collaboration with partners and suppliers involves the sharing of organizational risks (Peterson, 2005) and is more useful for firms than doing things on their own (Fawcett et al., 2011). Notably, collaboration with partners and suppliers enhances a firm's knowledge and provides a means of problem solving (Lozano, 2007). Previously, collaboration with partners and suppliers significantly determines sustainable performance, as it provides the necessary innovative skills, technology access, information, knowledge, and resources that are necessary to meet customers' rapidly changing requirements (Caniglia et al., 2017; Govindan et al., 2021; Kishna et al., 2017; McLachlan et al., 2015).

Cova et al. (2023) stated that cooperation among partners should be viewed as dynamic and that it is a useful strategy for creating value. Therefore, collaboration with partners and suppliers becomes the reason for better firm performance and competitive advantage, which ultimately determines sustainable performance. Another study revealed that open constellations among the actors of the textile sector significantly lead to sustainable solutions (Abreu et al., 2021).

H1: There is a positive relationship between collaboration (with partners and suppliers) and sustainable performance.

### *2.3. Capacity for product innovation and sustainable performance*

The organizational ability for product innovation is the crucial element for the success of any firm and is responsible for the overall economic growth of any country worldwide (Heenkenda et al., 2022). The capacity for product innovation is described as the firm's ability to transform ideas and information into new products that are beneficial for customers and their stakeholders (Kafetzopoulos & Psomas, 2015). Another study explains the capacity for product innovation as the ability to design and develop products with unique features (Xu et al., 2008).

The study noted the positive and significant association between product innovation capacity and greater firm performance (Cheng et al., 2010). A firm's intangible abilities and resources are also positively linked with higher performance (Barney, 1991). Previous empirical investigations have also revealed a positive and significant relationship between innovative capability and manufacturing firms' performance (Naranjo-Valencia et al., 2016; M. Zhang & Hartley, 2018). Similarly, it is emphasized that organizational potential for production innovation significantly leads to a successful business future (Saunila & Ukko, 2014). In the same manner, a firm's ability to innovate is determined as the key contributor to sustainability (Muñoz-Pascual et al., 2019). In recent years, business markets and customer preferences have rapidly changed, which forces manufacturing firms to produce products on the basis of the latest technology-driven and more recent features (Asad et al., 2018). Therefore, the capacity for product innovation is necessary to overcome the challenges of rapidly changing customer requirements and ultimately achieve sustainable performance (Baeshen et al., 2021).

H2: There is a positive relationship between the capacity for product innovation and sustainable performance.

### *2.4. Adoption of advanced technologies and sustainable performance*

In the past decade, technology has rapidly changed worldwide, which poses significant challenges for firms to adopt the latest technology in their practices to meet the demands of this modern era (Nguyen et al., 2020). The advanced technology includes AI, blockchain, big data analytics, IOT, and other efficient, cost-effective and energy-efficient equipment (Javaid et al., 2022). In recent years, technologies such as big data have emerged as transformative tools in various sectors, including the tourism and textile industries (ur Rehman, Khan, Antohi, Bashir, Fareed, Fortea & Cristian, 2024).

The adoption of these modern technologies improves organizational performance while exchanging data, optimizing business processes, increasing cost-effectiveness, ensuring protection and creating a mechanism of trust. Another study noted that modern technology adoption adjusts performance through fulfilling societal and economic necessities (Mikalef et al., 2019). Modern technology adoption aligns with sustainable business practices and ultimately determines sustainable performance (Farooq et al., 2021). Advanced technology adoption successfully overcomes technology-related challenges and efficiently manages organizational innovation process challenges (Di Vaio & Varriale, 2020; Haseeb et al., 2019; Raguseo, 2018). Previously, it was found that a lack of innovation is primarily determined through organizations' ignorance of the adoption of modern technology (Heenkenda et al., 2022). However, achieving sustainable performance necessitates the ability to innovate (Bacinello et al., 2020). In a similar vein, implementing modern technology helps businesses quickly satisfy client desires, improves problem-solving skills, efficiently oversees the innovation process, and ultimately promotes business sustainability (Asadi et al., 2020; Haseeb et al., 2019).

H3: There is a positive relationship between the adoption of advanced technologies and sustainable performance.

### 2.5. Green organizational culture and sustainable performance

Organizational culture explains the value, beliefs and behavioral system of the organization (Wang, 2019). Furthermore, culture significantly aligns individual thinking with organizational goals and facilitates the achievement of competitive advantage (Aggarwal & Agarwala, 2021). Fareed, Isa and Noor (2016) further elaborated that organizational culture is a way in which a group of people think, which directly influences the way in which they behave inside the organization. However, green organizational culture clarifies the principles and values that uphold sustainable environmental practices and prioritizes the safety of the environment (Harris & Crane, 2002). Furthermore, green organizational culture provides a unique source to firms while postulating RBV theory and enabling firms with a competitive advantage (Wang, 2019). Furthermore, a green organizational culture creates a positive mindset and like-mindedness among people and influences the environment (Sroufe et al., 2010). Another study noted that green organizational culture influences the thinking patterns of individuals and plays a critical role as a catalyst to change the organizational process toward green practices and yields a competitive advantage (Gürlek & Tuna, 2018). Likewise, green organizational culture identifies the areas that require the improvement and establishment of green practices and helps in solving environmental issues (Dangelico, 2015). Moreover, a green organizational culture leads to the adoption of green values among the employees of firms (Harris & Crane, 2002). Therefore, a green organizational culture creates differentiation for the organization among competitors and significantly solves environmental problems (Muisyo et al., 2022). The study also noted that green organizational culture motivates green initiatives to reduce harm to the environment and attain sustainable performance (Roscoe et al., 2019).

H4: There is a positive relationship between green organizational culture and sustainable performance.

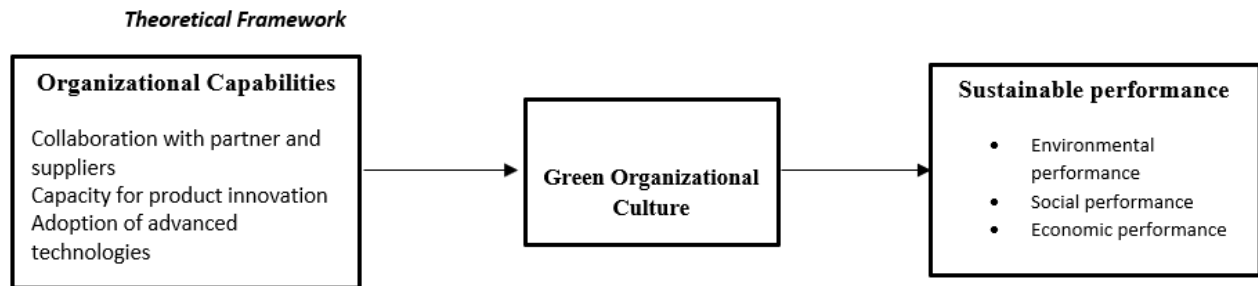
### 2.6. Mediation of green organizational culture

The enforcement of sustainability in organizations poses a challenge for which several findings have considered leadership styles, GHRM practices, organizational capabilities and resources to achieve sustainability; however, these strategies alone cannot confirm the attainment of sustainability (Roscoe et al., 2019). Therefore, the unique capabilities of organizations can play a crucial role in transforming organizational capabilities toward sustainable outcomes (Muñoz-Pascual et al., 2019). Furthermore, a green organizational culture creates a pro-environmental mindset among the employees of organizations and ultimately leads to a competitive advantage (Gürlek & Tuna, 2018). The inculcation of a green organizational culture can act as a catalyst to transform organizational resources into a competitive advantage strategically (Muisyo et al., 2022). Thus, a green organizational culture provides the means to exploit organizational competitiveness and achieve a firm's goals. Another study noted that a green organizational culture significantly alters employees' behavior and aligns them with organizational goals (Shah et al., 2021). The green organizational culture presents eco-environmental value that facilitates the implementation of changes in organizational environmental practices (Tahir et al., 2021). Therefore, on the basis of this discussion, the following hypotheses are derived in theoretical framework (see figure 1):

H5: Green organizational culture mediates the relationship between collaboration (with partners and suppliers) and sustainable performance.

H6: Green organizational culture mediates the relationship between the capacity for product innovation and sustainable performance.

H7: Green organizational culture mediates the relationship between the adoption of advanced technologies and sustainable performance.



**Figure 1** Theoretical Framework.

#### 4. Conclusion

This study conceptualizes the role of organizational capabilities as the antecedents of large-scale textile firms' sustainable performance. Additionally, this study presents how green organizational culture can play a significant mediating role between sustainable performance and its antecedents among these large-scale textile firms. This study uses the RBV theory as the underpinning theory, which postulates that unique organizational resources significantly yield a competitive advantage (Barney, 1991). Therefore, this study considers collaboration with partners and suppliers, the capacity for product innovation and the adoption of advanced technology as unique resources that can increase textile firms' ability to overcome the emerging challenges of dynamic business markets and achieve sustainable performance. Furthermore, the establishment of a green organizational culture aligns the individual's mindset with the organization's green value and positively affects sustainable performance. Therefore, textile firms that have the potential to collaborate with partners and suppliers, have the capacity for product innovation, adopt advanced technology while exhibiting ecological value in their activities can create superior long-term results.

##### 4.1. Implications of the research

This study provides a gateway for future studies to consider collaboration with partners and suppliers, the capacity for product innovation and the adoption of advanced technology as the key ingredients to achieve sustainable performance among large-scale textile firms. Furthermore, this study highlights the importance of establishing a green organizational culture to uphold strategies for attaining sustainable outcomes in the textile sector. This study provides insights into the textile sector, as business practices and customer requirements are rapidly changing, which poses the challenge of sustaining highly uncertain business markets. Therefore, this study will be helpful for adjusting their unique capabilities to achieve sustainable performance. Additionally, this study will be helpful for the top management of large-scale textile firms to understand the crucial role of a green organizational culture as a catalyst to transform its unique resources toward sustainable outcomes. This study will also be beneficial for policymakers to facilitate the textile sector regarding the establishment of unique resources through training and development, funding in the acquisition of the necessary technology and creating platforms for collaboration among the actors of the textile sector. Furthermore, to the best of our knowledge, previous investigations have not considered the combination of collaboration with partners and suppliers, the capacity for product innovation and the adoption of advanced technology as unique capabilities for sustainable performance. Therefore, this study provides guidelines in the literature for identifying the unique capabilities of the textile sector to attain sustainable performance. In the same manner, future empirical investigations can also benefit from this study and analyze the associations among the constructs. In the same manner, this study can help managers of textile firms implement a green organizational culture as a tool to encourage the establishment of capabilities to achieve sustainable performance. As a result, the textile industry stands to gain from this research and invest in unique capabilities in addition to fostering a green organizational culture that can offer a competitive advantage and long-term success.

##### Ethical Considerations

Not applicable.

##### Conflict of Interest

The authors declare no conflicts of interest.

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