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| RESEARCH ARTICLE

Sustainable Organizational Performance and Khulna's Jute Industry: Issues, Challenges, and Opportunities

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| ABSTRACT

The jute industry in the Khulna division of Bangladesh encounters various problems as it seeks to maintain sustainable performance in this sector, particularly from the viewpoint of a developing nation. This article examines strategies to enhance the sustainable jute industry in the Khulna division of Bangladesh by addressing critical issues, challenges, and opportunities regarding technology, innovation, leadership, and digital competencies to achieve sustainable organizational performance. The article also presents a research paradigm for achieving sustainable organizational performance based on a rigorous evaluation of the literature. Utilizing the PRISMA strategy for comprehensive documentation retrieval, the study illustrates the importance of ensuring sustainable organizational performance for the jute industry from the broader perspective of technology, innovation, leadership, and digital literacy. The review focused on developing the research framework for the study and identified deficiencies and opportunities in the current sustainability practices of the jute industry. The analysis indicated that the jute industry in Bangladesh has substantial obstacles to sustainable organizational performance concerning technological innovation, transformational leadership, digital leadership, and digital literacy, as addressed in this article. Similarly, this industry has huge potential in this era of sustainability consideration from an environmental, social, and economic perspective. The study reviews current research on how the jute industry in Bangladesh can perform sustainably and suggests future research directions, aiming to better understand the strategies needed to achieve sustainable performance by promoting technological innovation, transformational leadership, digital leadership, and digital literacy in the jute industry. The paper lacks inquiry into additional dimensions of management, behavioral, and human resources. Conversely, future studies may investigate alternate contexts across various industrial settings.

| KEYWORDS

Khulna's Jute Industry, Technological Innovation, Transformational Leadership, Digital Leadership, Digital Literacy, Sustainable Organizational Performance.

| ARTICLE INFORMATION

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1. Introduction

Sustainable organizational performance (SOP) is an organization's ability to achieve long-term success by balancing economic growth, environmental responsibility, and social well-being. It involves aligning strategic goals with sustainable practices like resource efficiency, ethical governance, innovation, and stakeholder engagement (Owalo and Aosa, 2025; Khan and Sohaib, 2024). Similarly, Rahman et al. (2022b) emphasized organizational sustainability as a complete strategy that improves the ability to handle changes in the environment, society, economy, and politics by encouraging positive leadership, a skilled workforce, resources, organizational behavior, and culture that work together to solve sustainability problems and shape overall

organizational sustainability. Bestman et al. (2022) describe SOP as the capacity to operate effectively over time. Demastus and Landrum (2024) added that it includes guiding structures, processes, and strategies toward sustainability. In the current unstable economy, businesses are becoming more concerned with sustainability and are striving to ensure that their organizational performance is sustainable. Manufacturing organizations, such as those in the jute industry, prioritize organizational sustainability to achieve greater value and global success in this sector. Consequently, this field is a critical area of focus from the perspectives of economic, social, and environmental factors (EFPIA, 2016; Ang et al., 2020; Marques et al., 2019). Globally, the jute industry is valued for its eco-friendly and biodegradable nature, offering a sustainable alternative to synthetic packaging. Due to escalating environmental concerns, the demand for natural fibers such as jute is surging. Countries such as India have modernized jute production, adopted green technologies, and promoted value-added products, enhancing their SOP by boosting exports, reducing environmental impact, and supporting rural jobs. However, the industry still faces challenges like price volatility, limited innovation, and inconsistent quality (Choudhury and Singh, 2024). In Bangladesh, historically celebrated for its "golden fiber," the jute industry has deteriorated due to antiquated machinery, elevated expenses, substandard labor conditions, and ineffective governance (Hossain and Nishu, 2021; Ahmed and Sultana, 2024), compounded by insufficient technical innovation, inadequate leadership, and little digital literacy.

The jute industry in the Khulna Division of Bangladesh, a key production and export hub, is in crisis. UNB (2021) reports that jute exports through Daulatpur and Mongla ports have halved since 2020. Production has dropped across major districts, which is seriously affecting businesses and jobs. In the last fiscal year, 2020–2021, 175,200 bales were worth Tk. 18.39 crore were exported, compared to just 69,000 bales worth Tk. 84.92 crore in the first nine months of the year 2021. The evidence indicates that the jute industry in Bangladesh, particularly in the Khulna region, faces numerous challenges, including high production costs, labor conflicts, corruption, poor management, and outdated machinery (Rahman et al., 2023). Despite challenges, the Export Promotion Bureau remains optimistic about Khulna's jute industry, noting that the government plans to lease closed jute mills to the private sector to revive sustainable performance in the region. Organizations must also establish clear protocols, demonstrate leadership commitment, and implement performance systems that integrate transformational leadership, digital literacy, and employee engagement as essential components for achieving sustainability (Hossain and Kabir, 2022).

Despite the global demand for eco-friendly fiber, Khulna has not modernized its practices or met international standards, which has prevented the region from achieving sustainable organizational performance (SOP) (UNB, 2021; BSS, 2023). The situation emphasizes the dire need for SOPs to revive the industry. Practices such as equipment modernization, private investment, transparency, and farmer support can help sustain mill operations. Without a clear SOP framework, efforts may fail again. Although the jute industry is vital to Bangladesh's economy, little research addresses the specific organizational and sustainability challenges faced by the jute industry in Khulna. Most studies focus on national or global issues, overlooking regional problems like outdated infrastructure, weak management, and reduced farmer involvement. Khulna's jute industry requires a multi-level approach for sustainable organizational performance (SOP). Public-private partnerships can help reopen mills with better governance. Technological upgrades, such as energy-efficient machinery and digital tracking, can enhance efficiency (Ahmed and Hossain, 2023). Training and financial aid for farmers will secure raw jute supply, while policy reforms promoting transparency and fair trade are crucial (Rahman and Chowdhury, 2024).

While previous studies show that technology innovation, transformational leadership, and digital leadership enhance performance (Ahmed and Hossain, 2023; Bass and Riggio, 2006; Kane et al., 2019), they mostly focus on urban industries. The role of digital literacy in rural, traditional sectors like Khulna's jute industry remains underexplored (Park and Kim, 2020). Only a limited number of studies examine sustainable organizational performance (SOP) in declining industries that are experiencing closures and mismanagement (Demastus and Landrum, 2024). This study will look at how these variables interact to help restore and sustain the jute industry in the Khulna region, addressing this clear research gap.

The study follows a structured format, where Section 2 provides a comprehensive review of the relevant literature. Section 3 discusses the challenges facing the sustainable jute industry in the Khulna division, focusing on the study's main ideas and their creation and explanation. Section 4 examines the opportunities for the sustainable jute industry in the Khulna division, while Section 5 describes the methods employed in the study. Subsequently, Section 6 engages in a discussion of the implication and conclusion of this study. Finally, Section 7 covers limitations and directions for future studies.

2. Literature Review

2.1 Sustainable Organizational Performance

Recently, there has been a growing recognition of sustainable organizational performance (SOP) as a comprehensive goal that integrates social welfare, economic stability, and environmental stewardship with profits (Alateeg, 2025). The three pillars of the sustainability paradigm are the economy, society, and environment. Short-term objectives prioritize financial profit (DuBois and Debois, 2012), whereas long-term aspirations of a corporation encompass environmental sustainability, emphasizing triple bottom line profitability, societal impact, and planetary health (Elkington and Fennell, 1998). Akhtar et al. (2017) contend that the

recent developments and environmental impacts confronting several businesses significantly impede sustainability. Rahman et al. (2022a) emphasized the challenges and issues of organizational sustainability within the Bangladesh pharmaceutical sector, concentrating on human resources, stakeholders, governmental influence, and the behavior of employees. Friedman (1970) and DuBois and Debois (2012) assert that, to optimize profits, socially responsible enterprises ought to allocate their resources to initiatives without long-term viability. In a developing country like Bangladesh, Rahman et al. (2024) investigate how socially responsible human resource management (SRHRM) and voluntary green behavior (VGB) influence organizational sustainability, particularly regarding environmental, social, and economic concerns. Rahman et al. (2023) suggest a conceptual model for sustainability based on three theories, highlighting their importance in understanding the relationship between organizational sustainability and motivation. The reaction and achievements are essential elements of sustainable organizational performance (Rahman et al., 2022b) since they demonstrate an organization's capacity to respond to difficulties, execute effective strategies, and attain long-term objectives. Furthermore, they contended that organizational sustainability is an all-encompassing strategy that enhances the organization's ability to adapt to institutional, political, social, and economic influences (Rahman et al., 2022b; Doppelt, 2017).

Sustainable organizational performance in the jute industry goes beyond profitability to include environmental responsibility, economic resilience, and social well-being (Alateeg, 2025). However, achieving this balance remains difficult due to inefficiency, outdated technology, and a lack of strategy. Economically, some companies have tried to cut waste, invest in CSR, lower costs, and adopt sustainable sourcing (Porter and Kramer, 2011; Nidumolu et al., 2009). Yet, product innovation and diversification remain limited, making firms vulnerable to market shifts and raw material shortages (Elluche et al., 2018). Ecologically, while there are modest steps toward greener practices like resource use and waste reduction, these efforts are inconsistent and lack alignment with broader environmental frameworks (Garren and Brinkmann, 2018). Sustainable organizational performance is further espoused as the effect, return, and outcome that firms achieve after setting their mission, vision, and goals and objectives, and refers to output and outcomes realized in pursuit of the aspirations and organizational targets (Dastmalchian et al., 2020). It is the expectation of what is to be delivered by various stakeholders in the firm (Kamariotou and Kitsios, 2022). Many advances occur independently, hindered by outdated technology and weak monitoring systems (Wahyuningrum et al., 2023). Socially, some firms promote ethics, community ties, and gender inclusion in rural areas. Still, many face poor working conditions, low morale, and inadequate healthcare, especially in state-run units (Wong and Zhou, 2015; Yasmin et al., 2025). The absence of structured HR policies and long-term local partnerships further weakens the sector's social base (Hossain et al., 2021).

In light of the growing demand for renewable products around the world, the jute industry has enormous potential to become an industry leader in green production. However, to achieve this goal, there needs to be a significant change in organizational culture that prioritizes innovation, accountability, and sustainability (DHL, 2024; Observer BD, 2024). To be successful in the long run, the jute industry needs strong leadership, supportive policies, and a focus on sustainability as a key part of its goals, not just an extra feature, to improve its competitiveness and resilience in economic, environmental, and social areas. This study enriches the existing literature by integrating these three dimensions into a single narrative specific to the jute sector, emphasizing the interdependence between leadership, innovation, and cultural transformation. By looking at sustainability in a traditional and less-studied industry, this paper provides a new viewpoint on how internal company factors and external policies, along with technology innovation, leadership, and digital literacy, can ensure the sustainable jute industry in the Khulna division of Bangladesh.

2.2 Technological Innovation

Successful technological innovation can lead to several advantages, including improved goods and services, more customer satisfaction, and increased market competitiveness (Chege et al., 2020; Yunis et al., 2017). Additionally, they also mentioned that technological innovation enhances organizational effectiveness, especially productivity and financial performance. Furthermore, prior research has demonstrated the noteworthy impact that process technology innovation implementation has on organizational performance, which helps to achieve sustainable business performance (Haned et al., 2014; Yunis et al., 2018). Technological innovation is key to improving sustainable organizational performance by increasing efficiency, reducing waste, and supporting eco-friendly practices. The jute industry in Bangladesh, particularly in Khulna Division, however, has a long-standing structural and cultural barrier that has slowed the adoption of new technologies. Rahman and Haque (2020) noted that traditional methods still dominate, limiting the use of automated looms, water-efficient systems, and biological treatments.

However, a major issue is the reliance on outdated machinery and manual labor. Khan and Sultana (2019) reported that over 60% of jute mills in Khulna and Jessore still use 1980s-era equipment, resulting in high-energy use, low productivity, and failure to meet global environmental standards. Financial constraints, a lack of skilled workers, and limited access to research and collaboration hinder innovation beyond equipment. While private jute product manufacturers aim to adopt sustainable practices, Ahmed et al. (2021) found that progress is slow due to weak institutional support, limited innovation incentives, and

procurement-related bureaucracy. Their interactions with authorities and managers indicated that policy deficiencies and insufficient cooperation impede progress. Nonetheless, advancement is in progress. Several contemporary jute mills are experimenting with solar-powered drying, computerized fiber grading, and environmentally sustainable coloring. Chakma and Alam (2022) reported that mills using steam recovery systems saw notable reductions in water use and energy costs. These outcomes show that, with proper support, technology can significantly advance the sector's sustainability.

While existing research offers valuable insights into the operational challenges and eco-friendly practices within the jute sector of the Khulna division, it often focuses too narrowly on improvements at the machine level or on isolated success stories. Broader strategic integration, such as customer-driven product innovation, digital supply chains, or smart manufacturing, remains largely unexplored. This paper shifts the focus from operational tools to strategic change, emphasizing that sustainable competitiveness requires more than just updated machinery. It also relies on organizational culture, leadership, and collaboration among businesses, government, and academia. By viewing technological innovation as a driver of strategic sustainability, this study highlights how technological innovation, automation, and customer-centric development can transform the Bangladesh jute industry, particularly in the Khulna division, into a sustainable sector.

2.3 Transformational Leadership

Burns (1978) characterized transformational leadership as an approach that addresses the demands of supporters and enhances performance outcomes. It emphasizes leadership that motivates and inspires individuals by optimizing their potential. Wang and Hu (2020) assert that a company's performance is contingent upon the effective exploitation of knowledge and its innovation potential. Change management, a process that inspires and aligns personnel toward common objectives, is essential for facilitating transformation and achieving sustainability. Notwithstanding heightened understanding of the need for leadership, Bangladesh's jute industry remains devoid of transformational leadership. Inflexible hierarchies and authoritarian behaviors continue to shape the sector. Rahman and Chowdhury (2020) noted that numerous jute companies continue to rely on authority-centric approaches, which diminish employee involvement, hinder innovation, and restrict the creativity vital for effective change management.

However, a major issue is the focus on transactional leadership, which emphasizes short-term results and strict rule following over strategic sustainability. In a study of five jute factories, Akter and Hossain (2021) found that leadership focused more on cost control and discipline than long-term vision. Kabir and Nahar (2022) observed a lack of leadership development and succession planning, where jobs are frequently determined by familial or political connections, hindering innovation and adaptation. There are some positive examples in this area. Medium-sized jute firms underwent significant improvement under transformational leadership, as documented by Ahmed and Sultana (2023).

The majority of the available literature is descriptive rather than analytical, while it does draw attention to leadership difficulties and offers some helpful instances. These studies frequently delineate styles without assessing the influence of transformational leadership. Hence, this study addresses that gap by introducing a framework that links transformational leadership with indicators like energy efficiency, waste reduction, and employee loyalty. It shows how leadership behaviors can drive sustainable outcomes and shift traditional industry culture. Thus, this research offers new perspectives on modernizing the jute sector in line with global sustainability goals.

2.4 Digital Leadership

Digital leadership is one of the contemporary concepts adopted to indicate the utilization of digital platforms in guiding and influencing employees' behavior to achieve the strategic goals of the organization (Sheninger, 2019). Artuz and Bayraktar (2021) pointed out that digital leaders think and act differently from traditional leaders when interacting with the digital world. Therefore, researchers should modify these leadership styles, including the three elements of computing, communication, and content, to ensure organizational success. Creativity in digital leadership refers to leaders' use of modern technology-based methods to influence employee behavior (Tiekam, 2019). Hence, digital leadership refers to a leader's ability to leverage data, digital tools, and agile decision-making to drive change. In the Bangladesh jute industry, particularly in the Khulna division, the integration of digital leadership is still restricted due to the prevalence of manual labor and traditional leadership. As Hasan and Jahan (2020) note, the lack of vision for digital transformation hinders progress, particularly in innovations like smart waste tracking and digital inventory systems. On the other hand, a major issue is the limited digital competency among leaders. Alam and Ferdous (2021) found that senior managers in most jute firms in Khulna Division see technology as a cost rather than a strategic asset. Their research in three firms revealed little awareness of digital tools that could boost energy efficiency, reduce waste, or enhance supply chain visibility. Resistance to change, along with inadequate training, further slows the adoption of new technologies. Nasir et al. (2022) observed that few companies invest in leadership programs focused on digital strategy. Many

top executives lack knowledge of cloud platforms and data-driven decision-making, both essential for sustainable practices. Additionally, infrastructure challenges like slow internet and frequent outages further restrict the sector's digital shift.

While existing literature successfully outlines these limitations, it tends to focus only on operational constraints without exploring leadership-driven digital transformation as a strategic enabler of sustainability. This research provides a new perspective on digital leadership in the jute industry, asserting that it not only serves as a support function but also drives quantifiable sustainability outcomes. It suggests a paradigm in which digital leadership promotes digital supply chain visibility, real-time decision-making, and predictive analytics to optimize resources. This integrated approach suggests that with the right leadership mindset, digital technologies can be harnessed not just to modernize processes but also to embed sustainability into the core of organizational performance. By connecting leadership vision with specific digital capabilities, this research adds a novel contribution to how traditional sectors like jute can transform in alignment with global sustainability standards through addressing these issues.

2.5 Digital Literacy

Digital literacy and proficiency in social media usage not only enhance communication and collaboration but also shape how leaders influence and direct their followers (Hidayat et al., 2024). Digital literacy is the capacity to use digital devices and networked technologies to safely and appropriately access, manage, comprehend, integrate, communicate, evaluate, and generate information to participate in social and economic life. Information literacy, media literacy, computer literacy, and ICT literacy are some of the terms used to describe these competencies (UNESCO, 2018, p. 21). Digital literacy is growing as an essential component for people's social and economic advancement. However, because of socioeconomic issues such as poverty, poor literacy levels (Bureau, 2018), a lack of infrastructure, social inequality, and inadequate local content, obtaining digital literacy is difficult. Effective digital literacy programs emphasize digital citizenship, critical thinking, and the appropriate and safe use of technology in addition to technical abilities (Hobbs, 2010).

Digital literacy remains significantly low, limiting the sector's progress toward SOP in the context of Bangladesh's jute industry, particularly in major industrial zones like Khulna. Despite the growing relevance of digital tools in achieving sustainability goals, most jute mills in Khulna continue to rely on outdated manual operations and paper-based management systems (Kabir and Sultana, 2022). While existing studies emphasize digitalization's benefits in improving efficiency and transparency, they largely focus on advanced sectors like garments or IT, with minimal attention to traditional industries like jute (Hasan and Jahan, 2020; Alam and Ferdous, 2021). This oversight is critical, as digital literacy, including the use of digital tracking, smart energy tools, and data reporting, could significantly enhance both environmental and operational outcomes in the jute industry.

However, current literature offers limited insight into how digital literacy directly supports sustainability in this sector. Most research lacks empirical and conceptual evidence on whether digitally competent leadership and workforce practices improve SOP indicators such as energy efficiency, waste reduction, or workforce morale (Nasir et al., 2022). Understanding whether to address digital literacy as a technological issue, a human capital investment, or a leadership challenge presents a key research gap. Furthermore, the question of whether digital literacy alone can drive sustainable transformation or if it requires integration with organizational restructuring and policy support remains controversial. In regions like Khulna, where the jute sector still relies on manual processes, this gap represents a critical barrier to innovation and long-term resilience (Rahman and Haque, 2020). This paper aims to address these issues effectively.

3. Challenges for the Sustainable Jute Industry in Khulna Division

According to Gladwin et al. (1995), sustainability supports human development and is open, integrated, equitable, reasonable, and secure. In manufacturing, it reflects producing environmentally friendly goods or services through various methods. Globally, companies are focusing on environmental sustainability, resource management, corporate social responsibility, and promoting green, innovative behaviors. The jute industry faces similar challenges as climate change, pollution, and resource depletion grow (Cassettari et al., 2017; Bonizella and Sagar, 2004). Globalization and eco-conscious consumers have pushed the sector to enhance both quality and sustainability. Traditionally, industries like jute prioritized profits, often harming the environment. Such practices caused resource overuse and pollution. However, stricter regulations and stakeholder pressure now demand compliance with environmental laws (Chan et al., 2017; Esfahbodi et al., 2016). Thus, the jute industry must adopt sustainable models that balance economic and environmental goals.

Rapid industrialization, population growth, and environmental degradation are global concerns. While developed countries face enforcement challenges, developing nations like Bangladesh struggle even more. Weak compliance has led to high pollution, placing Bangladesh among the most polluted countries (World Air Quality Report, 2019). To stay competitive and ensure sustainable performance, the Bangladeshi jute industry must improve its environmental, social, and economic management.

Ignoring these areas risks market loss and long-term failure. Success depends on integrating environmental protection, social progress, and economic growth with sound management (Rahman et al., 2022). This requires socially responsible practices, green employee initiatives, and strong collaboration with government bodies to ensure compliance and innovation. Such actions foster voluntary green behavior and support eco-friendly jute products, boosting sustainable organizational performance (Rahman et al., 2022; Cassettari et al., 2017).

SOP is a crucial matter, yet it is often overlooked, leading to setbacks in the jute industry due to shortcomings in various aspects (Hossain and Rahman, 2020; Islam et al., 2020). One of the major context-based challenges in achieving sustainable organizational performance in the jute industry is the limited adoption of technological innovation. Many traditional jute mills operate with outdated machinery and lack the investment or expertise needed to modernize their processes. This technological gap hinders efficiency and sustainability efforts. Moreover, the absence of proper research and development support and an innovation-friendly culture adds to the problem (Rahman and Hossain, 2022). One of the core problems is the industry's deep reliance on outdated machinery and manual labor. Khan and Sultana (2019) reported that over 60% of jute mills in Khulna and Jessore still use equipment from the 1980s, leading to high-energy use, low productivity, and difficulty meeting global environmental standards. Beyond machinery, barriers include financial limitations, lack of skilled workers, and weak institutional support (Ahmed et al., 2021). Despite interest in green technologies, bureaucratic hurdles and policy gaps slow progress. However, innovations like solar-powered drying and steam recovery systems show potential, as seen in Chakma and Alam's (2022) case study. Yet, most studies remain descriptive, lacking empirical evidence on how technological innovation improves environmental and social outcomes across the industry.

Achieving sustainable organizational performance (SOP) in the jute industry in Khulna Division is often constrained by contextual factors that weaken the impact of transformational leadership. Rigid, hierarchical work environments reduce the effectiveness of transformational leadership, which emphasizes vision, motivation, and employee empowerment. Myalo, (2023) observed that this type of leadership necessitates a culture receptive to change and innovation, which is often absent in many conventional jute mills in Bangladesh. Low participation from employees, resistance to authority shifts, and limited leadership development programs hinder SOP outcomes. Therefore, despite the potential of transformational leadership, context-based barriers must be addressed to unlock its full contribution to sustainability. One key challenge is the dominance of transformational leadership, which focuses on routine tasks and short-term goals rather than sustainability (Silva and Mendis, 2017; McCann and Holt, 2010). Akter and Hossain (2021) found that most jute mill leaders prioritize cost control and discipline over team building or environmental efforts. Furthermore, Kabir and Nahar (2022) observed that political or familial ties often assign roles, which hinder innovation. However, Ahmed and Sultana (2023) highlighted a case where transformational leadership led to inclusive decisions, eco-training, and improved compliance. Although rare, these cases demonstrate that transformational leadership can enhance standard operating procedures (SOPs) when implemented correctly.

Digital leadership plays a key role in achieving sustainable organizational performance (SOP), yet several challenges hinder its effectiveness in the jute industry in the Khulna division. Many leaders lack a digital mindset and struggle to adapt to new technologies, limiting innovation and sustainability (Thony, 2022). Organizational resistance to change, outdated management practices, and poor digital infrastructure further obstruct progress (Rahman and Hossain, 2022). A significant digital skill gap among employees also prevents effective implementation (Ahmed et al., 2021). Financial constraints and a lack of clear government policies weaken digital transformation efforts (Khan and Sultana, 2019). As Thony (2022) pointed out, these issues are not merely technical but stem from deeper organizational and cultural barriers that need critical attention for sustainable outcomes. One of the core challenges facing the jute industry today is that many organizational leaders lack the digital competence needed to guide meaningful transformation. Alam and Ferdous (2021) noted that senior managers in most jute enterprises view technology as a financial burden rather than a strategic investment. Resistance to change and the lack of digital leadership training further complicate the situation. According to Nasir et al. (2022), few firms invest in leadership programs focused on digital strategy, and infrastructure issues like poor connectivity also hinder digital adoption.

Digital literacy plays a critical role in achieving sustainable organizational performance (SOP), yet it remains low in many traditional industries like the jute industry. Al Masud (2024) found that limited digital skills among workers and mid-level managers hinder the adoption of eco-friendly technologies and data-driven decision-making. The absence of structured digital training programs and poor infrastructure makes it difficult to build a digitally capable workforce. However, Islam (2025) documented a jute firm that implemented digital upskilling workshops, resulting in better production tracking and reduced waste. This suggests that improving digital literacy can directly support sustainability efforts in the sector. Digital literacy is crucial for enhancing sustainable organizational performance in the jute industry by improving economic, environmental, and social outcomes. Economically, it helps reduce costs, optimize resources, and drive innovation for competitiveness (Yasmin et al., 2025; Hossain et al., 2021). Environmentally, it supports eco-friendly practices like waste reduction and energy conservation

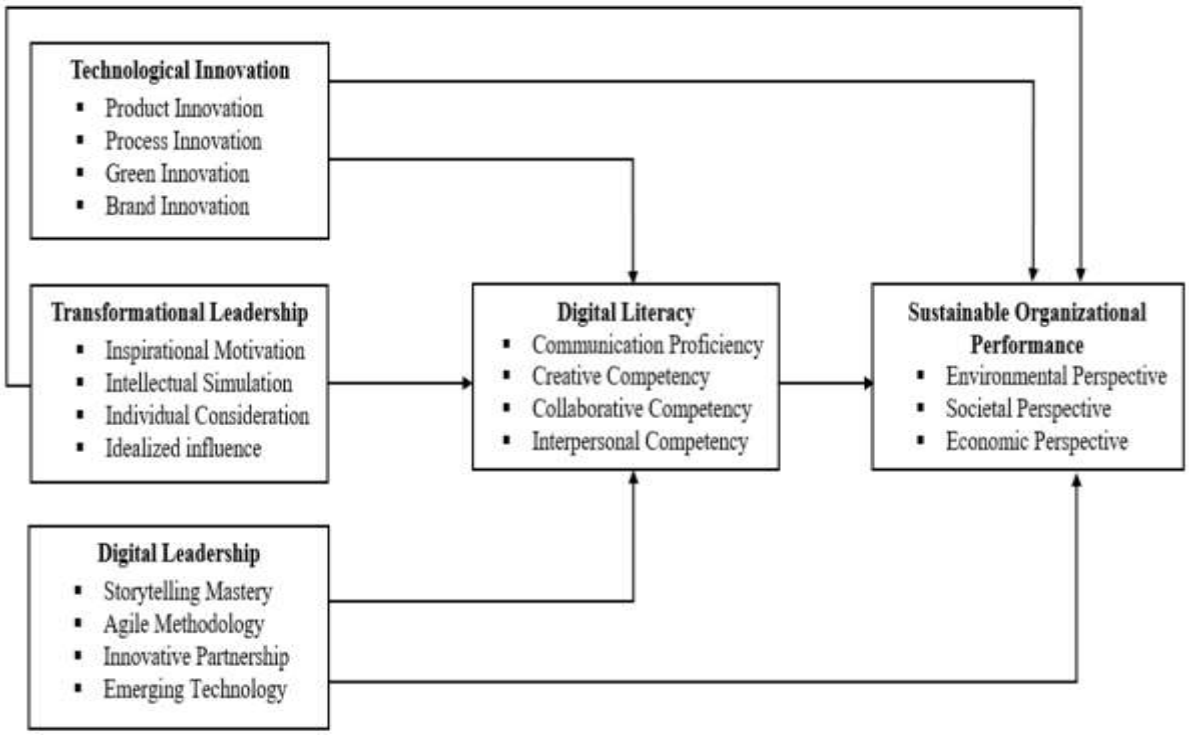
(Wahyuningrum et al., 2023; Wong and Zhou, 2015). Socially, it empowers employees, encourages inclusive decision-making, and strengthens community engagement (Danso et al., 2019; Elleuche et al., 2018). Additionally, digital literacy enhances cybersecurity awareness, protecting organizational data and supporting long-term sustainability of the organization (Alateeg, 2025; Garren and Brinkmann, 2018).

The aforementioned literature reveals that this section delineates numerous impediments and contextual issues regarding the most significant determinants affecting sustainable organizational performance. Factors such as outdated leadership styles, limited digital literacy, and low technological innovation continue to hinder sustainable progress in the jute sector. These challenges reflect deep-rooted structural and cultural issues within the industry. However, some emerging practices and success stories suggest that with proper support, training, and strategic leadership, significant improvement is possible. Therefore, understanding these issues and identifying pathways forward remains essential for promoting long-term sustainability in this traditional yet vital sector. This research identifies several factors that significantly contribute to sustainable organizational performance (SOP), including technological innovation, transformational leadership, digital leadership, and digital literacy.

This paper proposes a conceptual framework, as illustrated in Figure 1, based on the existing literature. The conceptual framework presented in this study (Figure 1) demonstrates that the sustainable organizational performance of Khulna's jute industry can be accomplished by fortifying technological innovation, transformational and digital leadership, and digital literacy. By facilitating technological advancements in products, processes, brands, and green innovation, the framework aids managers and proprietors in their pursuit of sustainability. These managers and proprietors employ a transformational leadership approach that fosters motivation, intellectual stimulation, and consideration for each employee, shaping them into ideal individuals who contribute to sustainable organizational performance. In this proposed framework, the jute industry in the Khulna division of Bangladesh is guaranteed sustainable performance through the collaboration of digital literacy, transformational leadership, and technological innovation. This platform establishes a direct connection between the sustainable performance of manufacturing organizations, technology, innovation, leadership, and digital literacy. While digital literacy has both direct and indirect relations with SOP, it has a direct impact on SOP. It mediates the relationships between technological innovation, transformational digital leadership, and digital literacy on SOP.

Figure 1

Proposed Research Framework of the Study



4. Opportunities for Sustainable Jute Industry in Khulna Division

The prospect of sustainable organizational performance in the jute industry is promising, given the global shift toward eco-friendly and biodegradable alternatives. As environmental concerns grow, the demand for sustainable packaging materials like jute has increased significantly, positioning the jute industry as a key contributor to green manufacturing (Yasmin et al., 2025). The industry has the potential to enhance economic sustainability through the efficient use of resources, waste reduction, and cost-effective innovations (Hossain et al., 2021). Environmental sustainability is achievable as jute is a biodegradable and renewable resource, and the adoption of digital tools can further support eco-friendly practices and reduce environmental impact (Wahyuningrum et al., 2023). Socially, the jute industry supports rural employment, especially for women, and can promote inclusive growth through digital empowerment and skills development (Danso et al., 2019; Elleuche et al., 2018).

Research indicates that jute packaging can fully biodegrade within four to six months and can reduce carbon emissions by up to 60% compared to plastic alternatives (Shahinur et al., 2022). The U.N. estimates that the world recycles less than 10% of its 400 million tons of plastic trash annually (UN, 2023). Furthermore, the global market for biodegradable packaging, which will consist mainly of jute, hemp, and paper, will increase to $21.6 billion by 2026, reflecting the growing economic and environmental importance of jute (Jahan et al., 2022). With strategic investment in digital literacy, modern machinery, and sustainable practices, the jute sector in Khulna Division can strengthen its global competitiveness while contributing to sustainable development goals (Alateeg, 2025; Wong and Zhou, 2015). Therefore, the integration of technology, environmental responsibility, and inclusive social policies presents a strong foundation for the long-term sustainability of the jute industry. Digital leadership is crucial for guiding the jute sector through technological transformation and fostering a culture of sustainability by encouraging innovation and smart decision-making (Marques and Ferreira, 2020). Digital literacy empowers employees to effectively use digital tools, automate processes, and contribute to environmentally responsible practices (Vu et al., 2021). Additionally, transformational leadership motivates employees to embrace change, align with sustainability goals, and actively participate in green initiatives, driving long-term organizational performance (Iqbal et al., 2020; Kura et al., 2023). This sector will reclaim its former name and prominence, as it possesses a significant opportunity to emerge as the leading industry in the Khulna region, provided it effectively addresses the concerns and challenges identified in this study.

5. Methodology

This study applies a systematic literature review approach to examine the key factors influencing sustainable organizational performance in the Bangladeshi jute industry. The review process follows the method recommended by Thorpe et al. (2005) and Pittaway et al. (2004), ensuring a structured and transparent approach. According to Krieger et al. (2018) and Smith et al. (2022), the scoping review method is particularly valuable for exploratory research, as it offers more flexibility than systematic reviews. It enables researchers to modify the scope of literature and refine key study terms during the review process, which is why it was purposefully chosen for this study. Among the resources used to locate pertinent material were Scopus and ScienceDirect. Scopus was selected due to its comprehensive access to nearly all peer-reviewed articles across various study disciplines (Harzing and Alakangas, 2016). ScienceDirect, recognized for its interdisciplinary focus on business, management, leadership, technology, and sustainable organizational performance, was considered appropriate for this research (Zhao et al., 2023). This inclusion was motivated by its extensive collection of distinctive and sustainable issues that could elevate standards or unveil innovative breakthroughs. The subsequent key phrases were employed to identify pertinent papers for the investigation. Table 1 outlines the literature selection technique used in this investigation.

Table 1

Flowchart for Literature Selection

SPAR-4-SLR (PRISMA)	Consideration	Decision
Assembling (Identification)	Search Focus	Sustainable organizational performance in the jute-made product manufacturing industry
	Search Keywords	• Jute Industry • Sustainability • Organizational Sustainability • Sustainable Performance • Technological Innovation • Transformational Leadership • Digital Leadership • Digital Literacy
	Search Database	Scopus, ScienceDirect
	Search Field	Article title, abstract, and keywords
	Search Result	1061 Documents
Arranging (Screening and Eligibility)	Search Period	2015 to 2025
	Subject Area	"Organizational Sustainability", "Business, Management and Leadership", "Technological Innovation and Digitalization", and "Social Sciences " 585
	Document Type	"Article" 391
	Publication Stage	"Final" 384
	Source Type	"Journal" 375
	Language	"English" 346
	Developing Nation	"Bangladesh, India, China, Vietnam, etc.", 65
	Search Result	65 Documents

The review process identified a complete collection of 65 relevant publications. It is worth noting that each selected article comprises published works entirely from developing countries, including Bangladesh, India, China, and Vietnam. Stringent inclusion and exclusion criteria were applied during the literature review to determine the relevance and suitability of the chosen publications.

6. Implication and Conclusion

The jute industry stands as a linchpin in maintaining economic stability across various developing nations. Recognizing the jute industry's pivotal role, it is imperative to make substantial investments in technology, innovation, leadership, and digital literacy to foster inclusive and sustainable growth. Notably, the surge in the utilization of sustainable manufacturing organizations in these regions has been conspicuous, marking a paradigm shift in the landscape of digital innovation, leadership development, and transformation. To fully harness the potential of the sustainable jute industry, a pressing need arises for increased adoption across these sectors.

The use of technological advancements designed to enhance digital literacy and sustainability is promising for furthering economic growth, alleviating poverty, and achieving the Sustainable Development Goals (SDGs). Only a coordinated policy initiative by the appropriate authorities can fully actualize this promise. Coordinated efforts are essential to manage the complexities of adopting technical innovations, ensuring alignment with the distinct dynamics of the jute industry in a developing country such as Bangladesh.

Additionally, the study presents a conceptual framework demonstrating how technological innovation, transformational and digital leadership, and digital literacy may enhance the sustainable performance of the jute industry in the Khulna division of Bangladesh. Sustainable organizational performance initiatives include innovation, motivation, collaboration, technology, expertise, and competency, supported by diverse resources beneficial to all stakeholders, and also addressing the economic, social, and environmental aspects of sustainability within the jute industry. Highlighting the implementation of an appropriate business model allows managers and owners to strategically utilize staff development, especially in the context of developing countries. Such comprehension can influence strategic decisions at the industry level and provide benefits to stakeholders, such as employees and employers at the lowest echelons of development.

Furthermore, the research holds significant potential to impact public policy development, particularly through collaboration between the Ministry of Agriculture and the Ministry of Textiles and Jute across multiple countries. This collaboration may enable the formulation of a unified developmental program tailored for farmers and producers of jute products, resulting in substantial benefits for them. Additionally, using new technology, strong leadership, and digital skills in public policy efforts could make the jute industry sustainable, ensuring that government policies support environmental, social, and economic sustainability to create a more effective and helpful sector for everyone involved.

Hence, the research illustrates the importance of technology, leadership, and digital competencies in enhancing sustainability within the jute industry in the Khulna division of Bangladesh. It suggests that industrial managers should adopt environmentally friendly product technologies and sustainable coping models to optimize operational efficiency and global sustainability compliance. Digital literacy and leadership are crucial for innovation and sustainability in traditional sectors like jute. The study also emphasizes the integration of technological innovation to enhance product quality and packaging solutions, aligning with global demand for biodegradable alternatives. The government should implement supportive policies, foster a culture of continuous learning, and support training institutions in designing workshops and upskilling programs. Despite challenges like outdated equipment and limited digital capacity, the growing demand for biodegradable materials presents opportunities. Sustainable organizational performance requires a coordinated approach to technology, policy, and workforce development. The proposed research framework includes investing in technologies and innovation, promoting effective leadership strategies, and enhancing digital literacy to support sustainable organizational performance (SOP) and a more equitable, robust, and sustainable future.

7. Limitations and Directions for Future Studies

The study has limitations due to its dependence on secondary data, as it concentrates on sustainable organizational performance within the jute industry in Khulna, Bangladesh. The analysis might not fully capture the challenges and inner workings of the companies and focusing only on the Khulna area could limit how well the findings apply to other places, affecting the accuracy and depth of real-time insights about businesses. This study examined the contributions of technical innovation, transformational leadership, digital leadership, and digital literacy to SOP in Bangladesh's jute sector. The analytical model addresses external factors such as government initiatives, climate hazards, and global trade regulations, but does not thoroughly incorporate them. Subsequent empirical investigations should examine these factors, as they may substantially affect sustainable organizational performance. The suggested paradigm provides a robust conceptual basis that facilitates future empirical validation opportunities. Investigating the interconnections between digital literacy, digital leadership styles, and technical innovation might enhance practical applications. Subsequent research may augment the concept by using it in other organizational and regional settings. Subsequent studies ought to encompass primary data acquisition, sectoral comparisons, and the evaluation of external influences such as governmental laws and climate change. The research advocates the development of digital transformation roadmaps that include green human resource management, employee engagement, and supply chain transparency, while also evaluating gender-sensitive leadership and digital literacy programs to enhance sustainable organizational performance.

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