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Influence of Intercompany Collaboration for Innovation on Organizational Sustainability of Textile Industry in Rift Valley Region, Kenya

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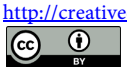

Abstract

The textile industry is increasingly recognized as a key pillar in achieving Kenya's Big Four Agenda and Vision 2030. However, these firms face the challenge of maintaining competitiveness in a rapidly changing global landscape. To thrive in the evolving market, Kenyan textile firms must embrace innovation across all stages but there remains a gap in understanding how to successfully integrate innovation for sustainable performance. This study aimed to examine the influence of intercompany collaboration on the organizational sustainability of textile companies in the Rift Valley region. Guided by the National Innovation System theory, the study employed a cross-sectional survey research design, targeting 14 textile manufacturing companies. A census method was used to select 61 managers, while 12 key informants were purposively chosen from innovation-leaning institutions in the region. Data were collected through questionnaires and interviews. Questionnaire data was analysed using frequencies, mean, standard deviation, and linear regression method while qualitative data was analysed using the thematic technique. Findings indicated that inter-company collaboration has strong effects on organizational sustainability, explaining 62.1% of organizational sustainability variance. The study concludes that to effectively promote organizational sustainability, firms in the Rift Valley textile industry should enhance inter-company collaboration because it a significant effect. The study recommends that policymakers and industry practitioners should foster stakeholder engagement through frameworks encouraging diverse perspectives. Collaborative practices can be improved by offering incentives for partnerships and creating networking platforms.

Subject Areas

Entrepreneurship, Marketing

Keywords

Intercompany Collaboration, Open Innovation, Value Co-Creation, Organizational Sustainability

1. Introduction

Organizational sustainability is the capacity of an organization to ensure continuity of operations over prolonged duration [1]. It entails ensuring that the operations of an organization benefit not just the present generation but also future generation. The concept of organizational sustainability therefore has to do with ensuring the benefits of the organization persist in the long-term. It is the capacity of an organization to be competitive at present and in the future [2]. Estrada *et al.* also pointed out that there cannot be sustainable development without building resilient organizations and societies [3]. Organizations must develop the capacity to absorb and respond to changing circumstances to remain competitive both at present and in the future [4].

Irawan *et al.* also observed the organizational sustainability is on a decline around the globe with the average age of Standard & Poor (S&P) 500 companies decline from 33 years to 24 years between 1964 and 2016 [5]. This statistics evidence an increase in the mortality rate of businesses. Ahmad *et al.* also observed that the average life of businesses has declined over the years due to increasing complexities in the business environment [6]. Trends like globalization and information technology proliferation has made survival one of the leading causes of concern for companies around the globe. Pineda observed that companies tend to perish quickly in modern economic dispensation due to increased uncertainty [7]. Organizational sustainability also varies for one country to another with Belgium having the highest 5-year business survival rate of 82.2% among the OECD countries followed by Finland (63.5%) and Austria (59.7%) [7]. Mexico has the lowest survival rate of 35% followed by Germany at 39.6% and the UK at 39.7%. These variations in firm survival rate across countries suggest that country level factors also play role in determining organizational sustainability.

Organizational sustainability also varies from one industry to another. The textile industry is of significance importance to the global economy as it accounts for 2% of the word's GDP and employs over 60 to 70 million workers directly [8]. The industry has been a source of industrialization, economic growth and poverty reduction in many countries. Berger and Ostermeyer observe that the survival rate of textile firms in Sweden was high because these firms adopted the factor model of operation [9]. This model is characterized by greater division of labour and use of inanimate power like steam or water to mechanize production. The textile industry was the first to adopt the factor model in Sweden in the early parts of the 19th Century. The division of labour and mechanization increased the productivity of the textile factories substantially.

On the other hand, the study by Dolinar and Bojnec revealed a major slump in the contribution of the textile industry towards the economy of Slovenia [10]. The number of people employed in the industry dropped from 69,454 in 1991 to about 9800 employees in 2017. The drop in employment numbers of signals sustainability challenges. The study by Chandio and Talpur also beckoned challenges associated with the financial stability of textile sector in Pakistan [11]. While 30% of the companies are financially healthy ("safe"), a significant 40% fall into the "grey" zone, indicating potential risk and another 30% are in the "distress" zone.

The textile and garment industry has encountered a number of challenges including massive dumping of used clothes locally known as *mitumba* that has significantly undermined growth prospects and competitiveness of the sub-industry [12]. A report by a departmental committee of the Senate of Kenya showed that the number of textile mills in Kenya declined from 52 in 1984 to about 15 mills operating at 45% capacity [13]. According to Pineda *et al.*, the best way for the textile manufacturing industry to turn their fortune around, be able to compete and thrive is through innovation [7]. However, the liability of smallness and resource constraints put Kenya textile manufacturers in a relatively weak position when tackling the complexity of the innovative process.

One viable solution that will enable Kenya textile manufacturers to successfully engage in innovation is to embrace intercompany collaboration. As the business environment becomes more competitive, it is becoming harder for enterprises to rely on internal resources to innovate [14]. Intercompany collaboration acknowledges that valuable ideas, knowledge, and technologies can come from inside or out of the company and can go to market from inside or outside the company [15]. It thus comprises both inbound and outbound movements of ideas, knowledge, and technologies. Although there are some studies linking intercompany collaboration to long-term sustainability of organizations, most originate from outside Africa. There remains a scarcity of evidence demonstrating how intercompany collaborative innovation contributes to organizational sustainability within the African context.

2. Lirerature Review

2.1. Theoretical Literature Review

The study was guided by the national innovation system theory, sustainable development theory, and the resource-based view (RBV) theory.

2.1.1. National Innovation System Theory

Freeman introduced the concept of the National Innovation System (NIS) to describe a framework through which information and technology circulate among people and organizations, driving innovation at a national level [16]. According to this theory, innovation in modern economies is not a rare, isolated act of creativity by an individual or a single organization; rather, it is the result of dynamic interactions among diverse public and private entities. Innovation is seen as the

outcome of learning relationships among individuals with different skills, or across various departments within an organization [17]. In essence, NIS connects innovation directly to national development by arguing that breakthroughs arise from complex interplays among components such as private companies, government research institutions, and universities.

The NIS framework emphasizes that collective knowledge creation is achieved through the collaboration of public and private sector institutions, whose goal is to initiate, import, modify, and disseminate new technologies [17]. Within this system, universities conduct research, industries implement and commercialize research outputs, and the government plays a coordinating and or a regulating role. Casadella and Uzunidis argue that developing countries can build an effective NIS by strengthening formalized learning systems among various communities and stakeholders [18]. For such countries, establishing a robust NIS not only promotes inclusive growth and sustainable development but also enables them to respond effectively to the challenges of globalization. Freeman further emphasizes that the effectiveness of an NIS largely depends on the capabilities of its actors to create, spread, and utilize economically valuable technologies [16].

2.1.2. Sustainable Development Theory

The term sustainable development was coined by the World Commission on Environment and Development chaired by Gro Harlem Brundtland in 1987 [19]. The term refers to development effort that pays attention to economic, social, and ecological wellbeing. Key proponents of the sustainable development theory include Amartya Sen and Johan Rockstrom [20]. One of the key concepts in this theory is intergenerational equity, which emphasizes the need to balance between the needs of the present generation and future generations. The theory emphasizes the need to pursue development efforts that meet the need of the present generations without compromising the needs of future generation [19]. It stresses the importance of long-term thinking and planning that leads to outcomes that can be sustained over a prolonged period.

The concept of intergenerational equity was relevant to this study because it emphasizes the need to promote sustained performance among organizations [21]. Sustained performance ensures that an organization benefits both the present and future generation. The concept also emphasizes the need to pursue efforts that balances between short-term and long-term benefits. Sustainable development theory concept of integrating economic, social, and environment objectives requires development effort to address economic, social, and environment concerns for them to translate to long-term benefits [19]. This concept suggests that for textile companies to enjoy sustained success, they ought to balance economic, social, and environmental concerns. Innovation may be instrumental in assisting the textile firms to achieve this balance. Different types of innovation may contribute to positive outcomes across the three dimensions of sustainability. Other concepts of systemic thinking and stakeholder engagement prescribes how organizations should plan their innovation efforts [22].

2.1.3. Resource-Based View Theory

Resource-Based Theory (RBV) by Jay Barney emphasizes that firms should strive to possess strategic resources that are valuable, rare, difficult to imitate, and non-substitutable [23]. These resources encompass natural resources, human capital, market access, technology, innovation, and organizational processes. When effectively deployed, these resources can lead to a sustainable competitive advantage for the firm [24]. The resource-based view explains the differences among firms in their ability to achieve and maintain a competitive advantage. The resource-based view offers valuable insights into how innovations are introduced and managed within firms [24]. A firm's available resources and capabilities influence the outcomes of its internal innovation processes. Key enablers of innovation include financial assets, technical prowess, and the intangible value of human resource knowledge.

The growing emphasis on human knowledge has led to the emergence of the knowledge-based view, essentially an extension of the resource-based approach [23]. Dynamic competences are especially prized because they can be integrated to form specialized skills, which, in turn, empower an organization to drive both technological innovations (in products and processes) and non-technological changes (in management and marketing). These dynamic competences encompass an innovation-oriented culture, the ability to implement new ideas, and entrepreneurial traits like risk tolerance, acknowledging that innovation inherently involves risk. Saleem *et al.* argue that the resource-based view allows for a clear examination of how innovation ties into organizational performance [25]. Through innovation firms accumulate knowledge and build unique capabilities that enhance their competitiveness, survival prospects, and growth potential.

2.2. Empirical Review of Literature

Collaboration between companies is requisite for successful innovation because single actors often lack adequate resources to undertake innovation [26]. Innovation has become a network-based endeavour that requires different actors to work together in a network relationship. In recent years, the rapid advancement of technology has significantly improved how companies collaborate [27].

The study by Villares *et al.* established that collaboration between industry players and government had led to establishments of hundreds of incubator programmes in Spain [28]. These programmes are largely entities funded by the government or private foundation with aim of nurturing innovation and transforming them into competitive businesses with high survival rates. Results showed that the survival rates of firms that have been born out of the incubator programmes in Spain stood at 90.8% as compared to 53.7% for companies that do not go through incubator programmes. This finding implies that collaboration between government and private foundation can lead to establishment of sustainable organizations through establishment of incubator programme. However, the study was not specific to the textile sector and therefore it may have failed to capture the contextual dynamics of textile industry.

In Italy's textile industry, Lottersberger found that academia and industry collaborate frequently and effectively [29]. However, most academic research rarely makes its way into industrial practice, leaving industry processes largely conventional and disconnected from current evidence. According to the study, one major barrier is the industry's limited ability to interpret academic insights, which prevents them from turning abstract ideas into viable products, services, or processes. Because the study was conducted in a European context, its findings may not accurately reflect the situation in Kenya.

In a study conducted in Dubai, Mohammed for that to promote successful intercompany collaboration, companies, institutions, teams, partners, vendors, and customers must be enabled to communicate quickly and collaborate securely and effectively [30]. The author also found that collaborative innovation capability was found to be a robust predictor of overall collaborative innovation performance. While the study provides substantial insights into how inter-organizational collaboration affects performance, it does not determine the degree of inter-organizational professional collaboration necessary to sustain organizational performance over the long term. Additionally, since the research was carried out in Dubai, its findings may not be entirely transferable to the Kenyan context.

In another study, Chen found that a unit increase in intercompany collaboration in innovation activities enhances the commercialization of ideas by 0.380 units [31]. In addition, a unit increase in intercompany collaboration enhanced the performance of SMEs by 0.189 units. The study concluded that intercompany collaboration promotes the commercialization of new ideas leading to enhanced business performance. The study is relevant to the present study because it implies that one of the pathways through which companies could have sustained organizational performance is by promoting the commercialization of new ideas through intercompany collaboration. However, it fails to clarify on the extent to which inter-company collaboration promotes sustainability. The study was also done in China which implies that the findings may not be wholly valid in the Kenyan context.

Similarly, Zhang and Chen discovered that engaging in external partnering and sourcing is positively linked to the sustainable innovation performance of manufacturing firms in China [32]. For every one-unit increase in external partnering, innovation performance improved by 0.113 units, while a one-unit rise in external sourcing resulted in a 0.543-unit boost. External partnering enhances innovation by eliminating redundant R&D efforts, sharing costs, and facilitating the transfer of knowledge, whereas external sourcing empowers firms to tap into ideas that lie beyond their existing competencies. However, observation from the study may not reflect the situation in the Kenyan textile industry.

Regionally, Ekwueme found that interpersonal collaboration influenced organizational performance in a Nigerian healthcare facility [33]. In particular, it had a negative effect patient's mortality and frequency of staff conflict and a positive effect on work performance and job satisfaction. The study is important because

it provides baseline information on the potentials of collaboration towards organizational performance. However, the study is focused on the health sector which also brought about contextual gap. The study also looked at inter-professional collaboration whereas the current study focuses on inter-organizational collaboration.

Locally, Gachengo found that collaborations had a positive significant effect on the performance of Courier firms in Nairobi City County [34]. Therefore, it offers insight and contributes to the debate about the role of collaboration and organizational performance. However, it offers one major gap, in that it focused on the currier section which is different from the textile industry and therefore the findings may not be entirely applicable.

3. Research Methodology

3.1. Research Design

The study employed the cross-sectional survey design. It was guided by the pragmatism research philosophy, which asserts that the most effective way to discover knowledge and truth is through experience [35]. It was carried out in the Rift Valley region of Kenya. It is the largest region in the country covering 14 counties namely: Baringo, Bomet, Elgeyo Marakwet, Kajiado, Kericho, Laikipia, Nakuru, Nandi, Narok, Samburu, Trans Nzoia, Turkana, Uasin Gishu, and West Pokot. The target population for the study consisted of 70 senior managers from various departments across 14 textile manufacturing companies located in the Rift Valley region. In addition to the quantitative data obtained from the managers, the study also incorporated qualitative insights from 12 key informants drawn from diverse innovation-leaning institutions that included government institutions, academia, and business associations. This multi-faceted approach enriched the research by providing a broader context for understanding innovation in the textile industry.

3.2. Data Collection and Analysis

The study used two data collection instruments: questionnaires for managers and interview guides for key informants. The use of two research instrument was informed by the need to collect different type of data (quantitative and qualitative data respectively). Questionnaires were used to collect quantitative data from the departmental managers. Interview guides were used to collect qualitative data from key informant. To enhance reliability and validity, the questionnaire and interview guide were pre-tested on a sample of 7 respondents, which comprised 5 managers and 2 key informants, selected from Thika Cotton Mills in Thika.

Data was analysed using both quantitative and qualitative approaches. The data from the field was thoroughly checked to ensure completeness, consistency and accuracy. The data was then coded and tabulated to facilitate data analysis. Descriptive statistics such as percentages, means, standard deviations and other measures of central tendency was used to summarize the quantitative data. The simple linear regression method was used to test the relationship between inter-

company collaboration and organizational sustainability. The qualitative data from interviews was analysed using thematic analysis.

4. Results and Discussion

4.1. Respondent Profile

The study had a response rate for the questionnaires of 61 out 70 respondents from the 14 organizations translating to a percentage response rate 87.1%. All the 12 key informants that were reached completed the study marking a response rate of 100%. Table 1 presents the profile of the questionnaire respondents:

Table 1. Questionnaire respondents profile.

Demographic Trait	Categories	Frequency	Percent
Gender	Male	27	44.3
	Female	34	55.7
Age	20 - 29 years	4	6.6
	30 - 39 years	25	41.0
	40 - 49 years	31	50.8
	Above 50 years	1	1.6
Highest level of education	Diploma/Undergraduate	46	75.4
	Master's degree	14	23.0
	PhD degree	1	1.6
Number of years as a manager of the company	5 years or less	12	19.7
	6 - 10 years	26	42.6
	11 - 15 years	22	36.1
	More than 15 years	1	1.6

Results in Table 1 reveal that 44.3% (n = 27) of the respondents were male, while 55.7% (n = 34) were female. The age distribution of respondents is as follows: 50.8% (n = 31) were in the 40 to 49-year-old bracket, followed by 40.9% (n = 25) in the 30 to 39-year-old group. The younger age group of 20 to 24 years accounted for only 6.6% (n = 4), while the 50 years and older category comprised a mere 1.6% (n = 1). In terms of education, 75.4% (n = 46), were holders of either a Diploma or an Undergraduate degree, implying that a large portion of the respondents had attained at least an elementary level of higher education. Further, 23.0% (n = 14) had a master's degree; thus, almost a quarter of the respondents had furthered their education. A small number of respondents, merely 1.6% (n = 1), had PhDs, confirming that very few have been able to get the highest academic honour. Lastly, 42.6% of the respondents had served as managers in their respective organizations for 6 - 10 years while 36.1% had served for 11 - 15 years. Over 80% of the respondents had served as managers in their organizations for at least 6 years.

4.2. Intercompany Collaboration in the Rift Valley Textile Industry

The second independent variable was intercompany collaboration in the Rift Valley textile industry. This variable was measured using three indicators namely: number of collaborations, type of collaboration partners, and value from collaboration. To collect data on these indicators, five items were included in the questionnaire that were rated on the five-point scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always). The use of Likert rating is also informed by the rationale that intercompany collaboration is a spectrum rather than a binary concept. Table 2 presents the results.

Table 2. Intercompany collaboration in the rift valley textile industry.

Item	N	Mean	S.D.
Our company frequently engages in collaborations with other firms within the textile industry to enhance organizational sustainability.	61	3.08	.954
We actively collaborate with a diverse range of partners, including suppliers, competitors, and research institutions, to improve our business operations.	61	2.87	1.297
The number of inter-company collaborations our organization engages in has significantly contributed to its long-term sustainability.	61	2.75	1.299
The partnerships we establish with other companies provide valuable knowledge, resources, and market opportunities that enhance our sustainability.	61	2.66	1.340
Our company prioritizes forming strategic collaborations with external organizations to foster innovation and improve overall business performance.	61	2.61	1.144
Overall intercompany collaboration score	**61**	**2.79**	**1.091**

Results in Table 2 shows that the frequency of collaboration on innovation has a mean score of 3.08. Respondents generally agree that their companies sometimes engage in collaborations aimed at enhancing innovation. This score suggests the companies engage in collaborative effort from time to time. The standard deviation is less than 1 suggesting a high level of consensus among the managers on this issue. This result resonates with Vellesalu *et al.*, who emphasize that successful innovation often requires collaborative efforts among firms [26]. As noted, single actors frequently lack the resources necessary to undertake innovative projects independently, underscoring the need for collaboration in resource-sharing and knowledge exchange. This aligns with the idea of innovation being a network-based endeavor, suggesting that Kenyan textile firms recognize the necessity of collaboration, albeit inconsistently, in enhancing their innovative capacities.

Results also show collaboration with diverse partners had a mean score of 2.87. This also indicates that respondents agreed that their companies sometimes collaborate with a diverse range of partners including suppliers, competitors and re-

search institutions. Although this reflects an appreciation for collaborative diversity, the slightly lower average suggests that such engagements may not be as robust or widespread across all firms leading to recognition of mutual benefits. A standard deviation that is greater than 1 is an indication of divergence of managers' responses on this issue. The divergent views may towards varying attitudes towards collaboration across companies, variation in collaboration resources, or difference in the companies' stage of development [26]. This outcome echoes Dziubaniuk and Stenroos, who highlight that successful collaborations require efficient interaction among various actors, which is largely influenced by ethical values like transparency and trust [27]. Although the respondents show appreciation for diverse partnerships, the higher standard deviation signals divergence, indicating that not all firms engage equally or effectively with a broad range of collaborators. This variation may point towards systemic barriers or historical practices that limit the extent and effectiveness of these collaborations, as noted in Lottersberger's observations about the textile sector in Italy [29].

The number of intercompany collaborations had a mean score of 2.75 indicating that a cautious optimism among the managers regarding the number of intercompany collaborative relationships that their company has established. The score indicate that the number of relationships could not be too many. The standard deviation also suggests there exist of major disparities in the number of intercompany collaborative relationship across the textile firms. The disparities may be attributed to differences in the companies' strategic approaches towards innovation, their resources and capacity to collaborate, and market position and goals [31]. This finding aligns with observations in the studies by Chen [31] and Zhang and Chen [44], highlighting that establishing a high number of collaborative relationships can positively impact innovation and business performance. However, it also underlines the need for firms to actively seek and cultivate these collaborations to realize their full potential, further emphasizing the geographically contextual barriers in lack of inter-organizational collaboration identified by researchers.

The value of partnership on company knowledge and resources had a mean of 2.66. This implies that according to managers, the intercompany partnerships in which their companies are engage sometimes provide valuable knowledge, resources and opportunities that can enhance innovation. The high standard deviation indicates a divergence in the managers' view, suggesting that while some see value in these partnerships, others do not fully recognize their potential impact. The divergence in managers' perceptions suggests that while some firms experience significant gains from partnerships, others may not fully leverage these relationships. This finding parallels the challenges identified by Lottersberger [29] and Mohammed [30], where the integration of knowledge and the practical benefits of collaborations remain obstacles. The lack of consistent realization of the benefits from partnerships might be influenced by limited interpretation capabilities, as highlighted by Lottersberger, constraining firms' abilities to convert col-

laborative innovations into tangible products or services [29].

Prioritization of forming external collaboration was rated 2.61. This indicates that the firms sometimes prioritize forming external partnership to foster innovation. This is an indication that while intercompany collaboration is acknowledged, it is not always prioritize in organizational efforts to improve innovation. The large standard deviation signals disparities in the prioritization of external partnerships across the textile firms. The disparities may be attributed to differences in strategic focus, resource availability, leadership, culture, and experiences [30]. This aligns with observations from Chen [31], where the emphasis on collaboration needs to be intentional and well-structured to enhance commercialization of ideas and sustain organizational performance. The results imply there might be a missed opportunity; without prioritization, the potential for collaborative efforts to lead to innovation could remain untapped, suggesting a strategic adjustment is warranted to cultivate a culture of collaboration.

The overall mean score for intercompany collaboration was 2.79. This implies that intercompany collaboration is practiced in the textile firms but somewhat inconsistently. This score indicates an opportunity for organizations to enhance their collaborative approaches and align them more closely with innovation and sustainability goals. The high standard deviation hints at major differences in intercompany collaborations across the 14 textile firms. This finding echoes the challenges identified in the literature, such as varying levels of engagement and effectiveness illustrated in studies conducted in other regions (e.g., Dubai and China). As highlighted by Zhang and Chen, external collaboration can enhance innovation performance, yet it requires a consistent and organized effort to achieve sustainable outcomes [44]. The high standard deviation in the overall collaboration score indicates significant disparities among firms, reflecting that while some companies actively engage in collaborations, others lag. These disparities may stem from different organizational cultures, resource availability, or historical approaches to innovation. The issue of intercompany collaboration was also explored qualitatively through interviews with key informants. **Table 3** summarizes the themes from the interviews.

Table 3. Key themes on intercompany collaboration in the textile industry.

Themes	Key Points	Illustrative Quotes
Collaboration and Resource Sharing	Collaborations enable companies to pool resources, share costs, and reduce financial risks associated with sustainability initiatives.	"Collaborations have allowed the company to jointly pool resources, share costs, and reduce the financial risk associated with research and development."
Access to Expertise and Innovation	Collaborating with research institutions, NGOs, and technology providers leads to improved access to cutting-edge technologies and sustainable practices.	"We gain access to cutting edge technologies and research output by collaborating with research institutions related to sustainable materials processes."

Continued

Supply Chain Transparency and Sustainability	Partnerships improve transparency in the supply chain, ensuring ethical sourcing and adherence to sustainable practices throughout the production process.	"Collaborations with suppliers, manufacturers, and retailers have helped improve supply chain transparency and traceability, making it easier to identify and address environmental issues."
Market Expansion and Visibility	Collaborations with retailers and distributors enhance market reach, customer trust, and brand recognition, which are essential for long-term success.	"Working with international retailers and distributors has opened up new markets, increasing global reach and customer base."
Shared Knowledge and Best Practices	Inter-company collaborations facilitate the exchange of knowledge and best practices, reducing redundancy and speeding up the adoption of sustainable practices.	"Collaborations have facilitated the exchange of knowledge, best practices, and lessons learned related to sustainability."
Environmental and Social Impact	Collaborations amplify sustainability initiatives, yielding significant environmental and social benefits through collective action.	"By working together, with other companies, it achieves more on scale and reaches greater scale leading to more significant environmental and social benefits."
Development of Unique Products	Collaborating with designers and creative agencies results in innovative products that set companies apart in the competitive textile market.	"Collaborating with designers and creative agencies can lead to innovative and unique textile designs that attract customers."

The first theme that emerged was the importance of collaboration and resource sharing. Across all respondents, there was a strong consensus that effective collaborations enable companies to pool resources, share costs, and reduce financial risks associated with sustainability initiatives. This collective approach not only alleviates the burden on individual firms but also enhances their ability to achieve sustainable outcomes in a resource-constrained environment.

"*Collaborations have allowed the company to jointly pool resources, share costs, and reduce the financial risk associated with research and development.*" (*Respondent* 2)

"*Because of scarce resources, the company made a deliberate decision to collaborate to pull together resources for the common good of the industry.*" (*Respondent* 5)

These statements highlight how strategic partnerships are instrumental in overcoming resource limitations and facilitate joint efforts toward achieving sustainability goals. The qualitative findings resonate with existing literature, suggesting that shared resources can significantly enhance the impact and effectiveness of sustainability initiatives [26]. The emphasis on collaboration as a strategic neces-

sity reinforces the understanding that companies can achieve more collectively than alone.

Another prominent theme was the access to expertise and innovation resulting from collaborative partnerships. Respondents consistently noted that engaging with research institutions and technology providers leads to valuable insights and innovative practices in sustainability.

"*Collaborations with technology providers and research institutions have led to the development of cutting-edge materials and techniques*." (*Respondent* 1)

"*We gain access to cutting-edge technologies and research output by collaborating with research institutions related to sustainable materials processes*." (*Respondent* 4)

These quotes illustrate the critical role that external partnerships play in enhancing firms' capabilities to innovate and adopt sustainable practices. The qualitative findings align with the argument that external expertise is essential for fostering innovation and advancing sustainability efforts, as noted in studies by Dziubaniuk and Stenroos [27]. The recognition of external expertise as a key driver for innovation speaks to the necessity of collaboration in the rapidly evolving textile industry.

The theme of supply chain transparency emerged as a fundamental aspect of sustainability influenced by collaborations. Respondents emphasized how partnerships improve visibility throughout the supply chain, ensuring responsible sourcing and sustainable practices.

"*Collaborations with suppliers, manufacturers, and retailers have helped improve supply chain transparency and traceability*." (*Respondent* 3)

"*By working together, the achievements are tangible on scale, leading to more significant environmental and social benefits*." (*Respondent* 4)

These statements underline the vital role of collaboration in addressing contemporary supply chain challenges, particularly in the context of sustainability and ethical sourcing. The qualitative findings support existing research that indicates that enhanced transparency through partnerships can lead to more ethical practices and improved sustainability outcomes. Engaging in collective efforts fosters trust among stakeholders and ensures adherence to sustainability standards.

Market expansion and increased visibility emerged as another critical theme facilitated by collaborative partnerships. Respondents noted that engaging with distributors and retailers significantly enhances their market reach and customer trust.

"*Working with international retailers and distributors has opened up new markets, increasing global reach and customer base*." (*Respondent* 2)

"*Collaborating with reputable organizations enhances the company's brand image, fostering trust and loyalty among consumers*." (*Respondent* 3)

These quotes highlight the crucial advantage of collaboration in amplifying market presence and building brand credibility. The qualitative insights reflect a strategic perspective emphasizing that visibility and trust are imperative for long-

term success in the competitive textile industry. Supporting literature demonstrates that strong collaborative networks can lead to enhanced brand reputation and customer loyalty [26].

The exchange of knowledge and best practices was another vital theme highlighted by respondents. Collaborations allowed companies to learn from each other and adopt proven sustainable practices swiftly.

"*Collaborations have facilitated the exchange of knowledge, best practices, and lessons learned related to sustainability.*" (*Respondent* 5)

"*Working with multiple partners fosters innovation in sustainable materials, eco-friendly production methods, and waste reduction techniques.*" (*Respondent* 1)

These statements reinforce the idea that shared knowledge accelerates the adoption of effective sustainability practices. The qualitative findings are consistent with research indicating that collaborative environments promote collective learning, leading to enhanced operational outcomes [29]. The active exchange of best practices among companies can significantly contribute to driving the industry towards sustainability.

Finally, the amplification of environmental and social impact through collaborations was a pervasive theme. Respondents highlighted that working together allows for more significant achievements in sustainability initiatives.

"*By working together, it achieves more on scale leading to more significant environmental and social benefits.*" (*Respondent* 4)

"*Collaborating with environmental organizations and regulatory bodies has helped in adopting sustainable practices.*" (*Respondent* 3)

These quotes illustrate how collective action amplifies the effectiveness of sustainability efforts. The emphasis on achieving more substantial environmental and social outcomes through collaboration aligns with existing literature that advocates for collective approaches to sustainability challenges [36]. These statements showcase the potential for shared initiatives to create meaningful change, emphasizing the imperative for on-going collaboration in sustainability.

4.3. Organizational Sustainability of the Textile Industry in the Rift Valley Region

The study's dependent variable was the organizational sustainability of the textile industry in the Rift Valley region. This variable was assessed through three indicators: adaptability, years of operation, and market and production trends. Data for these indicators were collected using nine items, each measured on a five-point Likert scale, where 1 indicated strongly disagree, 2 indicated disagree, 3 was neutral, 4 signified agree, and 5 denoted strongly agree. The results are summarized in Table 4.

A mean of 3.21 for the first item is marginally above the neutral point, which suggests that respondents slightly agreed that their organization can adapt quickly to changes in the business environment. This result echoes the findings of Ahmad

et al., which showed that adaptability is essential for organizational sustainability [6]. The standard deviation (SD = 1.018) is greater than 1 suggesting some variability in responses. This indicates that while some organizations feel confident in this adaptability, others may not share the same view. The literature emphasizes that organizations must be responsive to shifting market dynamics to ensure sustainability [2].

Table 4. Organizational sustainability of textile industry.

Statement	N	Mean	S.D.
Our organization quickly adapts to changes in the business environment	61	3.21	1.018
We have a well-established process for responding to market disruptions.	61	3.23	1.101
Our company actively invests in training employees to enhance adaptability.	61	3.08	1.053
Our organization's longevity is a result of strong business strategies.	61	3.07	.772
The experience gained over the years has improved our operational efficiency.	61	3.07	.834
Stability and financial resilience have contributed to our sustained operations.	61	3.05	.921
Our production processes align with current industry trends.	61	2.98	.785
The organization regularly invests in new technology to stay competitive.	61	3.33	1.106
Our company effectively integrates sustainable production practices.	60	3.17	1.092
Overall organizational sustainability score	**61**	**3.13**	**.791**

The mean score of 3.23 for the second item suggests a weak positive sentiment regarding the presence of established processes for dealing with market disruptions. This finding resonates with the ongoing academic discourse indicating that well-organized frameworks are pivotal for fostering resilience [5]. The higher standard deviation (SD = 1.101) indicates more variability, suggesting that some organizations may have strong processes, while others may not. This is congruent with the study by Chakraborty and Biswas, which found that many textile firms globally lacked adequate frameworks to navigate the sudden disruptions caused by the COVID-19 pandemic, resulting in increased production costs and a decrease in consumption [37].

The mean score of 3.08 for the third item also implies very weak positive views regarding the investment in employee training for adaptability with the organizations. It suggests the existence of faint efforts in prioritizing employee development to adapt to changes. The results are consistent with the study by Kim and Choi, who found that the use of human resource management practices that adaptation-oriented enhanced firms' self-organization, which in turn led to in-

creased exploration [38]. Exploration is an adaptation strategy that entails venturing into new markets, products or technologies that are characterized by high uncertainty but potentially high rewards. The standard deviation (SD = 1.053) signals major disparities in prioritization of employees' training across organizations. Some organizations could be doing better in this aspect than others.

The mean score of 3.07 for the fourth item also shows that respondents slightly agreed that strong business strategies contribute to their longevity. This finding is congruent with the study by Farida and Setiawan, which found that business strategies Indonesian textile industry enhances innovation and business performance, which in turn enhanced the competitive advantage of textile firm [39]. Competitive advantage is an important component of organizational sustainability as it determines the organizational capacity to sustain operations amidst increasing competition. The lower standard deviation (SD = 0.772) suggests that there is somewhat more consensus on this item compared to others. This implies that most of the organizations are more or less in the same levels regarding the contribution of their business strategies to their longevity.

The fifth item also had a mean of 3.07, which reflects slight agreement about how years of operation have contributed to operational efficiency of the organizations. This result echoes those of Mallinguh *et al.*, which showed firms that have been in operations for many years tend to exhibit better performance than relatively new companies [40]. On the other hand, Bouncken *et al.* found that companies with many years of operations are less innovative than younger companies [41]. However, the innovation of older companies is enhanced by establishing partnerships that facilitate co-creation of knowledge. The low standard deviation (SD = 0.834) suggests that the moderate contribution of years of experience towards operational efficiency cuts across most organizations.

The mean of 3.05 for the sixth item also indicates that respondents felt marginally agreeable to the claim that financial stability has been an important factor in sustaining the operations of their organizations. This result aligns with those of Chandio and Talpur, which indicated that textile industry in Pakistan is predominantly in a "grey" zone, meaning a mix of stable and potentially unstable firms [11]. Thirty percent of companies are financially sound, 40% are in a potentially risky area, and 30% are in a distress zone. The overall average suggests room for improvement in financial ratios to achieve greater stability within the industry. The standard deviation (SD = 0.921) implies that these sentiments cut across most organizations.

Item seven has the lowest mean score of 2.98, which indicates slight disagreement with the idea that production processes within the textile companies are in line with current trends. This suggests the existence of a gap in the product processes. This outcome reaffirms the study by Sikander *et al.*, which observed that that drop in production orders for textile products during the COVID-19 pandemic, heightened competition in the textile industry, making it more challenging to satisfy customers [42]. The low standard deviation (SD = 0.785) suggests that

this problem is consistently perceived across most of the sampled organizations.

On the other hand, item eight had the highest mean score of 3.33, indicating that respondents feel more positively about their organization's commitment to investing in new technology. The result correlates those Abraham *et al.*, which showed that the textile industry in Ghana had adopted new technologies like computer-generated designs and digital embroidery technologies in their productions [43]. However, the high standard deviation (SD = 1.106) indicates that commitment to new technologies may not be evident in all organizations. This result also echoes those of Abraham *et al.*, which showed that while most textile companies in Ghana had adopted digital production technologies that were some that were still relying on traditional advertising techniques and manual screen printing [43].

The ninth item had a mean of 3.17 indicating a moderately positive perception among respondents that sustainable practices are integrated into their organization's production process. This observation aligns with those of Sharma and Narula, which showed that the Indian textile industry is increasingly adopting sustainable practices, with an emphasis on using recyclable materials, local sourcing, and green certifications for suppliers [44]. However, the standard deviation (SD = 1.092) suggests that not all organizations may be affectively prioritizing sustainability in their operations. This also echoes the findings of Sharma and Narula, which also showed that the Indian textile industry scored highly in some sustainability aspects like investing in energy-efficient technologies, redesigning products for sustainability, educating suppliers about green practices and executing environmental audits [43]. However, the industry had low scores on aspects like utilizing leftover materials and having dedicated environmental management teams. Overall, findings from the current and previous studies show potential for further integration of sustainability into the textile industry.

The overall organizational sustainability mean score of 3.13 suggests that the respondent view the overall sustainability of their organizations as slightly above neutral but not strongly positive. The standard deviation indicates little variance in perceptions, reflecting little disparities in the overall organizational sustainability across the firms. Notably, the highest individual mean score of 3.33 for investing in new technology highlights a proactive approach in recognizing the importance of technological innovation, which aligns with findings by Abraham *et al.* regarding the critical role of modernization in achieving competitive advantage [43]. However, the lowest mean score of 2.98 concerning the alignment of production processes with industry trends underscores a significant gap in adaptability to market demands; an area emphasized in the literature as essential for resilience amidst uncertainty. Overall, these findings suggest that while firms demonstrate awareness and proactive measures towards sustainability, there's a need for enhanced focus on aligning operational practices with emerging trends and fostering deeper organizational adaptability to ensure long-term success in a dynamic business environment.

4.4. Intercompany Collaboration and Organizational Sustainability

The second objective of the study was to examine the influence of inter-company collaboration on organizational sustainability of the textile industry in Rift Valley, Kenya. The relationship was also tested using the simple linear regression method. Table 5 summarizes the outcomes.

Table 5. Intercompany collaboration influence on organizational sustainability.

Statistic	Value
R	0.788
R Square	0.621
Std. Error of the Estimate	0.491
ANOVA	
F	96.550
Sig.	0.000
Regression Coefficients	
Intercompany Collaboration Unstandardized coefficient	0.571
T	9.826
Sig	0.000

Results in Table 5 shows that the influence of inter-company collaboration on organizational sustainability in the textile industry of Rift Valley is statistically significant. The correlation coefficient (R) was found to be 0.788, indicating a strong positive relationship between inter-company collaboration and organizational sustainability. The coefficient of determination ($R^2 = 0.621$) reveals that approximately 62.1% of the variance in organizational sustainability can be explained by inter-company collaboration. The ANOVA results indicated that the overall regression model was statistically significant, $F(1, n - 1) = 96.550$, $p < 0.001$, suggesting that inter-company collaboration significantly predicts organizational sustainability. The coefficients from the regression analysis further highlight this relationship, with an unstandardized coefficient of 0.571 for inter-company collaboration. The t-test for this coefficient was significant, $t(1) = 9.826$, $p < 0.001$, confirming the positive influence of inter-company collaboration on organizational sustainability.

These findings suggest that fostering collaborative efforts among textile companies can lead to improved sustainability practices within the industry, emphasizing the critical role of inter-company relationships in enhancing organizational performance. Thus, the results support the rejection of the second null hypothesis and the conclusion that intercompany collaborations can significantly contribute to achieving sustainability goals in the textile sector. The findings are congruent with qualitative findings where respondents emphasized that collaboration enables resource pooling, cost-sharing, and risk mitigation, which are crucial in re-

source-constrained environments. This collective resource mobilization directly supports sustainability initiatives, explaining part of the variance captured in the regression. In addition, interviews revealed that partnerships with research institutions and technology providers facilitate the adoption of cutting-edge sustainable practices. This access accelerates innovation, which the regression results quantitatively confirm as a key driver of sustainability. In addition, interviewees highlighted that partnerships improve traceability and ethical sourcing, which are core to sustainable supply chains. These insights substantiate the statistical finding that collaboration significantly predicts sustainability.

These results resonate with the literature highlighting the importance of collaboration for successful innovation and sustainability. Vellesalu *et al.* emphasize that individual companies often lack the resources needed to drive innovation, necessitating a network-based approach where various actors collaborate to share resources and knowledge [26]. The findings suggest that textile firms in the Rift Valley region are indeed leveraging inter-company collaborations to enhance their sustainability efforts. Moreover, the work of Dziubaniuk and Stenroos posits that for inter-company collaboration to be effective, efficient interactions must occur among stakeholders, shaped significantly by ethical values such as trust and transparency [27]. The strong correlation found in this study indicates that textile companies in the Rift Valley are likely fostering positive social ties that facilitate better collaboration and, consequently, improved sustainability. In recent times, advancements in technology have greatly enhanced the potential for inter-company collaboration. Varela *et al.* note a shift from traditional email communication to more dynamic team collaboration services that enable real-time interactions and information sharing [45]. The utilization of these technologies in the Rift Valley textile industry may be contributing to the observed effectiveness of collaboration, allowing companies to respond swiftly to sustainability challenges and innovate more effectively.

The study's findings align closely with Sustainable Development Theory (SDT), which emphasizes the interconnectedness of economic, social, and environmental well-being. The strong correlation between collaboration and sustainability outcomes suggests that such partnerships allow companies to pursue practices that benefit both present and future generations, a concept central to intergenerational equity. By integrating economic, social, and environmental objectives, collaborative efforts foster innovations that promote efficiency and ecological responsibility while also enhancing community relations. Systemic thinking within SDT highlights the importance of recognizing the interdependencies of the various aspects of sustainability, illustrating that environmental initiatives can yield economic benefits and improve social outcomes. Furthermore, stakeholder engagement, a critical component of SDT, underscores the necessity of involving key players in decision-making, ensuring that innovations are relevant and inclusive. Despite its strengths, SDT faces critiques regarding its applicability in specific contexts, like Kenya's textile sector. This necessitates a more localized approach, potentially in-

tegrating frameworks such as the National Innovation System to better address the unique challenges of sustaining organizational performance within the industry.

The results are echoing sustainable development theory, which emphasizes the interconnectedness of economic, social, and environmental dimensions [19]. By fostering partnerships, textile firms in the Rift Valley can achieve a balanced approach that meets current needs without compromising future generations. Collaborating allows companies to share resources, expertise, and innovative practices, ultimately driving continuous improvement and resilience while addressing intergenerational equity. Incorporating systematic thinking enhances this collaboration by prompting firms to consider how their collective actions impact the broader system, including the environment and community stakeholders [22]. Engaging stakeholders such as employees, suppliers, and local communities in decision-making processes will further facilitate this holistic approach, ensuring that diverse perspectives contribute to the development of sustainable practices [20]. Thus, inter-company collaboration emerges as a vital strategy in advancing organizational sustainability and achieving the long-term goals outlined by sustainable development theory.

The significant influence of inter-company collaboration highlighted in the findings also resonates with National Innovation Systems theory's emphasis on collective knowledge creation and the importance of relationships among diverse actors, including companies, universities, and government agencies. The study demonstrates that textile firms participating in collaborative networks beneficially engage in ideation and knowledge sharing, fulfilling the NIS perspective that innovation is a product of multi-actor interactions [17]. By facilitating effective resource allocation and knowledge dissemination, collaboration enhances innovation capacity, driving sustainable practices within firms. Therefore, while the NIS provides valuable insights, it also underscores the need for a nuanced approach that incorporates the unique characteristics and structures of the industry, balancing formal and informal contributions to innovation and sustainability.

The results further align with the RBV theory, which posits that strategic resources drive competitive advantage and sustainability [24]. In the context of the textile industry in Rift Valley, fostering collaborative relationships can enhance firms' access to valuable resources, knowledge, and capabilities that are not easily imitable by competitors. By pooling resources, firms can leverage shared expertise and innovative practices, leading to improved operational efficiencies and product differentiation. Such collaboration aligns with the RBV's emphasis on utilizing unique organizational capabilities to create value [46]. Moreover, engaging in partnerships helps firms develop dynamic competencies essential for adapting to rapid changes in the market. The ability to innovate and respond effectively is bolstered through shared initiatives, enhancing the competitive positioning of these firms. Ultimately, this collaborative approach can contribute significantly to achieving long-term sustainability within the industry, firmly rooting itself in the principles of the RBV theory.

5. Conclusions

From the findings, the study conclude that intercompany collaboration also has a positive and statistically significant influence on organizational sustainability in the Rift Valley textile industry. The statistical analysis reveals that intercompany collaboration is a crucial predictor of sustainability, supported by significant regression coefficients. This underscores the need for companies to leverage collaborative networks to enhance their sustainability practices. The study aligns with established literature, emphasizing that effective collaboration leads to resource sharing, knowledge exchange, and innovation, which are essential elements for sustaining long-term organizational success. Moreover, it highlights the role of technology in facilitating these collaborations, allowing firms to respond swiftly to sustainability challenges. Overall, the findings advocate for the strategic prioritization of intercompany collaboration to achieve sustainability goals within the textile sector.

Findings also indicate a moderate engagement level in collaborative practices among firms in the Rift Valley textile industry, underscoring both the recognition of its significance and the need for improvement. While companies acknowledge the importance of collaboration for enhancing innovation, inconsistencies in their approach suggest missed opportunities for growth. The appreciation for diverse partnerships reveals a potential that remains underutilized, with many firms not fully capitalizing on the knowledge and resources available through these relationships. Qualitative insights highlight the critical role of collaboration in achieving sustainability goals through resource sharing and expertise access. The strong positive influence of intercompany collaboration on sustainability emphasizes its necessity for long-term organizational success within the industry. By prioritizing collaboration, companies can share best practices, access expertise, and co-develop solutions to common challenges. These findings advance the theoretical understanding by illustrating how intercompany collaboration acts as a catalyst within the National Innovation System, facilitating knowledge sharing and collective innovation essential for sustainable growth. They also reinforce the Resource-Based View (RBV) by demonstrating that strategic partnerships enhance firms' access to valuable, inimitable resources and capabilities, thereby strengthening their competitive advantage and long-term sustainability.

6. Recommendations

Based on the conclusions, the study recommends that to improve collaborative practices in the Rift Valley textile industry, policymakers and practitioners must take strategic actions that foster meaningful partnerships and enhance innovation. Policymakers should create incentives for collaboration among firms such as grants or tax benefits for joint initiatives, encouraging companies to pool resources and share knowledge. Additionally, establishing platforms for regular networking events and workshops will facilitate connections and knowledge exchange among firms, enhancing collaborative efforts. Industry practitioners must

recognize the untapped potential in diverse partnerships and actively engage with other organizations, research institutions, and stakeholders.

Leveraging technological advancements such as collaborative software and communication tools can significantly improve the efficiency of these partnerships. Firms should also track and measure the impact of collaborative efforts on their sustainability goals, ensuring that every partnership aligns with broader organizational objectives. By fostering a culture of collaboration, the Rift Valley textile industry can enhance innovation and achieve long-term sustainability. Firms must strategically prioritize and enhance their collaborative networks, leveraging technological advancements to facilitate more effective partnerships. This collaborative focus is essential for driving innovation and achieving organizational sustainability.

Future research should investigate the ways in which digital transformation can promote innovation and sustainability within the textile industry. In addition, studies should consider examining the impact of external factors like market trends, international competition, and environmental regulations on firms' perceptions of sustainability. Future investigations could also adopt a cross-regional approach, involving various textile companies, to provide deeper insights into best practices related to innovation-led sustainability at the individual firm level.

Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Srisathan, W.A., Ketkaew, C. and Naruetharadhol, P. (2020) The Intervention of Organizational Sustainability in the Effect of Organizational Culture on Open Innovation Performance: A Case of Thai and Chinese SMES. *Cogent Business & Management*, **7**, Article 1717408. https://doi.org/10.1080/23311975.2020.1717408

[2] Galaitsi, S.E., Pinigina, E., Keisler, J.M., Pescaroli, G., Keenan, J.M. and Linkov, I. (2023) Business Continuity Management, Operational Resilience, and Organizational Resilience: Commonalities, Distinctions, and Synthesis. *International Journal of Disaster Risk Science*, **14**, 713-721. https://doi.org/10.1007/s13753-023-00494-x

[3] Corrales-Estrada, A.M., Gómez-Santos, L.L., Bernal-Torres, C.A. and Rodriguez-López, J.E. (2021) Sustainability and Resilience Organizational Capabilities to Enhance Business Continuity Management: A Literature Review. *Sustainability*, **13**, Article 8196. https://doi.org/10.3390/su13158196

[4] Osiyevskyy, O., Shirokova, G. and Ritala, P. (2020) Exploration and Exploitation in Crisis Environment: Implications for Level and Variability of Firm Performance. *Journal of Business Research*, **114**, 227-239. https://doi.org/10.1016/j.jbusres.2020.04.015

[5] Irawan, D., Prabowo, H., Kuncoro, E.A. and Thoha, N. (2022) Operational Resilience as a Key Determinant of Corporate Sustainable Longevity in the Indonesian Jamu Industry. *Sustainability*, **14**, Article 6431. https://doi.org/10.3390/su14116431

[6] Ahmad, S., Omar, R. and Quoquab, F. (2019) Corporate Sustainable Longevity: Scale Development and Validation. *Sage Open*, **9**, 1-19. https://doi.org/10.1177/2158244018822379

[7] Pineda, A. (2022) State of the Art on Organizational Longevity: A Systematic Literature Review. *Journal of Management*, **38**, e4011031. https://doi.org/10.25100/cdea.v38i73.11031

[8] United Nations University (2024) Garments and Apparel. https://unu.edu/cpr/article/garments-and-apparel

[9] Berger, T. and Ostermeyer, V. (2024) Firm Survival and the Rise of the Factory. *The Economic History Review*, **78**, 62-86. https://doi.org/10.1111/ehr.13328

[10] Jernejčič Dolinar, B. and Bojnec, Š. (2019) Dynamics of Enterprises in the Slovenian Textile Industry. *Management*, **14**, 185-203. https://doi.org/10.26493/1854-4231.14.185-203

[11] Chandio, P. and Talpur, A.B. (2021) An Assessment of Financial Stability of Textile Sector of Pakistan: An Altman Z Score Approach. *Sustainable Business and Society in Emerging Economies*, **3**, 309-318. https://doi.org/10.26710/sbsee.v3i3.1957

[12] Wolff, E.A. (2020) The Global Politics of African Industrial Policy: The Case of the Used Clothing Ban in Kenya, Uganda and Rwanda. *Review of International Political Economy*, **28**, 1308-1331. https://doi.org/10.1080/09692290.2020.1751240

[13] Mutunga, J., Yegon, B., Chege, S., Wanyonyi, F., Odanga, G., *et al.* (2024) Report of the Departmental Committee on Agriculture and Livestock on the Cotton Industry Development Bill (Senate Bill No.5 of 2023). The Senate of Kenya.

[14] Adam, N.A. and Alarifi, G. (2021) Innovation Practices for Survival of Small and Medium Enterprises (SMES) in the COVID-19 Times: The Role of External Support. *Journal of Innovation and Entrepreneurship*, **10**, Article No. 15. https://doi.org/10.1186/s13731-021-00156-6

[15] D'Angelo, A. and Baroncelli, A. (2019) An Investigation over Inbound Open Innovation in SMES: Insights from an Italian Manufacturing Sample. *Technology Analysis & Strategic Management*, **32**, 542-560. https://doi.org/10.1080/09537325.2019.1676888

[16] Freeman, C. (1987) Technology and Economic Performance: Lessons from Japan. Oxford University Press.

[17] Johnson, B. and Lundvall, B. (2013) National Innovation Systems (NIS). In: Carayannis, E., Ed., *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*, Springer, 1341-1347. https://doi.org/10.1007/978-1-4614-3858-8_458

[18] Casadella, V. and Uzunidis, D. (2017) National Innovation Systems of the South, Innovation and Economic Development Policies: A Multidimensional Approach. *Journal of Innovation Economics & Management*, **23**, 137-157. https://doi.org/10.3917/jie.pr1.0007

[19] Mensah, J. and Casadevall, S. (2019) Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review. *Cogent Social Sciences*, **5**, Article: 1653531. https://doi.org/10.1080/23311886.2019.1653531

[20] Kotzé, L.J. and Adelman, S. (2022) Environmental Law and the Unsustainability of Sustainable Development: A Tale of Disenchantment and of Hope. *Law and Critique*, **34**, 227-248. https://doi.org/10.1007/s10978-022-09323-4

[21] Spijkers, O. (2018) Intergenerational Equity and the Sustainable Development Goals. *Sustainability*, **10**, Article 3836. https://doi.org/10.3390/su10113836

[22] Voulvoulis, N., Giakoumis, T., Hunt, C., Kioupi, V., Petrou, N., Souliotis, I., *et al.* (2022) Systems Thinking as a Paradigm Shift for Sustainability Transformation. *Global Environmental Change*, **75**, Article 102544. https://doi.org/10.1016/j.gloenvcha.2022.102544

[23] Mailani, D., Hulu, M.Z.T., Simamora, M.R. and Kesuma, S.A. (2024) Resource-Based View Theory to Achieve a Sustainable Competitive Advantage of the Firm: Systematic Literature Review. *International Journal of Entrepreneurship and Sustainability Studies*, **4**, 1-15. https://doi.org/10.31098/ijeass.v4i1.2002

[24] Adnan, M., Abdulhamid, T. and Sohail, B. (2018) Predicting Firm Performance through Resource-Based Framework. *European Journal of Business & Management*, **10**, 31-36.

[25] Saleem, S., Taib, C. and Asaad, M. (2023) A Systematic Literature Review of Sustainable Competitive Advantage: Identifying Directions for Future Research. *International Journal of Business and Technology Management*, **5**, 187-223.

[26] Vellesalu, A., Chkanikova, O., Hjelmgren, D. and Salomonson, N. (2023) Institutional Re-Configuration and Value Co-Creation in Circular Product Development: A Service Ecosystem Perspective in the Textile and Apparel Industry. *Journal of Cleaner Production*, **414**, Article 137682. https://doi.org/10.1016/j.jclepro.2023.137682

[27] Dziubaniuk, O. and Aarikka-Stenroos, L. (2025) Ethical Value Co-Creation in Circular Economy Ecosystems: A Case Study of the Textile Industry. *Journal of Business & Industrial Marketing*, **40**, 1423-1438. https://doi.org/10.1108/jbim-04-2024-0288

[28] Del Campo Villares, M.O., Miguéns-Refojo, V. and Ferreiro-Seoane, F.J. (2020) Business Survival and the Influence of Innovation on Entrepreneurs in Business Incubators. *Sustainability*, **12**, Article 6197. https://doi.org/10.3390/su12156197

[29] Lottersberger, A. (2012) Design, Innovation and Competitiveness in the Textile Industry. PhD Thesis, The Polytechnic University of Milan.

[30] Daradkeh, M. (2022) Business Analytics and Collaborative Innovation Performance in the ICT Sector: The Mediating Role of Collaborative Innovation Capability. *International Journal of E-Entrepreneurship and Innovation*, **12**, 1-23. https://doi.org/10.4018/ijeei.314465

[31] Chen, H. (2022) The Impact of Intellectual Property Protection on the Development of Digital Economy and Regional Entrepreneurial Activity: Evidence from Small and Medium Enterprises. *Frontiers in Psychology*, **13**, Article ID: 951696. https://doi.org/10.3389/fpsyg.2022.951696

[32] Zhang, M. and Mohnen, P. (2022) R&D, Innovation and Firm Survival in Chinese Manufacturing, 2000-2006. *Eurasian Business Review*, **12**, 59-95. https://doi.org/10.1007/s40821-021-00200-1

[33] Ekwueme, O. (2018) Nigerian Hospital-Based Inter-Professional Collaborative Patterns and Organizational Implications. Doctoral Dissertation, Walden University.

[34] Gachengo, L.W. (2018) Inter-Organizational Collaborations and Performance of Courier Firms in Nairobi City County, Kenya. *Journal of Chemical Information and Modeling*, **53**, 1689-1699.

[35] Kaushik, V. and Walsh, C.A. (2019) Pragmatism as a Research Paradigm and Its Implications for Social Work Research. *Social Sciences*, **8**, Article 255. https://doi.org/10.3390/socsci8090255

[36] Heitzig, D. and Mestrovic, M. (2020) Impact of Organizational Vision on Ideation within SMEs. Master's Thesis, KTH Royal Institute of Technology.

[37] Chakraborty, S. and Biswas, M.C. (2020) Impact of COVID-19 on the Textile, Apparel and Fashion Manufacturing Industry Supply Chain: Case Study on a Ready-Made Garment Manufacturing Industry. *Journal of Supply Chain Management, Logistics and Procurement*, **3**, Article 181. https://doi.org/10.69554/gjkf4967

[38] Kim, J. and Choi, J. (2022) The Impact of Adaptation-Oriented HRM on Exploration:

Mediating Effects of Self-Organization. *Sustainability*, **14**, Article 15772. https://doi.org/10.3390/su142315772

[39] Farida, I. and Setiawan, D. (2022) Business Strategies and Competitive Advantage: The Role of Performance and Innovation. *Journal of Open Innovation*: *Technology*, *Market*, *and Complexity*, **8**, Article 163. https://doi.org/10.3390/joitmc8030163

[40] Mallinguh, E., Wasike, C. and Zoltan, Z. (2020) The Business Sector, Firm Age, and Performance: The Mediating Role of Foreign Ownership and Financial Leverage. *International Journal of Financial Studies*, **8**, Article 79. https://doi.org/10.3390/ijfs8040079

[41] Bouncken, R.B., Ratzmann, M. and Kraus, S. (2021) Anti-Aging: How Innovation Is Shaped by Firm Age and Mutual Knowledge Creation in an Alliance. *Journal of Business Research*, **137**, 422-429. https://doi.org/10.1016/j.jbusres.2021.08.056

[42] Sikander, S., Naseem, A., Shahzad, A., Akhtar, M.J. and Salman, A. (2024) Improving Production Processes with a Customer-Centric Perspective Using a Novel Hybrid Approach in the Textile Sector. *International Journal of Productivity and Performance Management*, **74**, 1796-1827. https://doi.org/10.1108/ijppm-04-2024-0254

[43] Abraham, I., Howard, E.K. and Acquaye, R. (2022) Technological Innovation: An Assessment of Operational Practices of Small and Medium Textile Enterprises in Ghana. *Journal of Textile Science and Technology*, **8**, 123-132. https://doi.org/10.4236/jtst.2022.83010

[44] Sharma, A. and Narula, S.A. (2020) What Motivates and Inhibits Indian Textile Firms to Embrace Sustainability? *Asian Journal of Sustainability and Social Responsibility*, **5**, Article No. 6. https://doi.org/10.1186/s41180-020-0032-8

[45] Varela, L., Putnik, G. and Romero, F. (2022) The Concept of Collaborative Engineering: A Systematic Literature Review. *Production & Manufacturing Research*, **10**, 784-839. https://doi.org/10.1080/21693277.2022.2133856

[46] Burvill, S.M., Jones-Evans, D. and Rowlands, H. (2018) Reconceptualising the Principles of Penrose's (1959) Theory and the Resource Based View of the Firm: The Generation of a New Conceptual Framework. *Journal of Small Business and Enterprise Development*, **25**, 930-959. https://doi.org/10.1108/jsbed-11-2017-0361