

Strategic Responses to Barriers Affecting Sustainable Entrepreneurship Performance: Ethiopian Apparel Manufacturing Case

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Abstract: The apparel industry in emerging countries is crucial in creating employment, enhancing export earnings, and stimulating industrial growth. Within an increasingly competitive global environment, the apparel managers are expected to strategically overcome the triple bottom line barriers to achieve sustainable entrepreneurship performance (SEP) and remain competitive. Failure to overcome these barriers can significantly diminish the performance of sustainable entrepreneurship in the industry. Although several studies have substantiated the barriers to sustainability performance, further research is needed to develop a decision-support framework that determines the set of strategic approaches to overcome SEP barriers, particularly in emerging countries. Therefore, the purpose of this study is to develop a decision-support framework to find the best set of strategic responses for barriers affecting SEP in Ethiopian apparel industries. The study follows a multi-faceted research methodology approach with a mix of qualitative and quantitative techniques. In the first phase, managers from the apparel industry were interviewed to identify context-specific barriers to SEP and a clear set of strategic responses to these barriers. The barriers were grouped into economic, social, and environmental dimensions based literature analysis. The Best-Worst Method (BWM) was then used to rank them based on their relative severity of effects on SEP. Subsequently, the Quality Function Deployment (QFD) approach was used to investigate the relationship between the prioritized barriers (WHATs) and strategic responses (HOWs) for enabling sustainable entrepreneurship performance and to rank the best strategic responses as a key takeaway for managerial decision-making. The results indicate that low product quality, weak buyer-supplier relationships, and high cost pressure are the strongest barriers to SEP. The study discovers that including developing circular practices (3R), adopting demand-driven production planning, and improving training and skill development are the most effective strategic responses to overcome the barriers. Grounded on stakeholder and resource based view theories, the decision support framework helps apparel managers for systematically prioritizing the barriers of SEP and build a best strategic response portfolio.

Keywords: Sustainable Entrepreneurship Performance, Barriers, Strategic Response, Quality Function Deployment, Best Worst Method.

1. Introduction

The global apparel industry is a crucial factor in economic growth, especially in emerging countries, through creating jobs, enhancing exports, and improving industrial progress (Chowdhury *et al.*, 2023). Due to the growing competition and the need to be sustainable, the apparel industry has to balance profitability with social and environmental responsibility, which leads to Sustainable Entrepreneurship Performance (SEP) (Todeschini *et al.*, 2017) (Somwethee *et al.*, 2023). In the apparel industry, SEP is reflected through higher productivity, efficient resource consumption, improved worker well-being, reduced environmental impact, and enhanced competitiveness (Abbate *et al.*, 2023)(Chowdhury *et al.*, 2023). Despite its importance, the apparel industries face an interconnected set of barriers across economic, social, and environmental dimensions that hinders SEP (Bhandari *et al.*, 2022). According to Brydges (2021) and Su *et al.*, (2022), poor product quality, high material cost, and poor buyer and supplier relationships are economic barriers that diminish competitiveness. The productivity and ethical compliance are minimized by social barriers like weak labor policies, low motivation, and safety risk (Akhter *et al.*, 2019)(Bashar *et al.*, 2021). Poor waste management and the absence of circular systems are some of the environmental challenges that aggravate the sustainability problems (Zhang *et al.*, 2019). These barriers are not independent but act in a dynamic manner, and it is hard to have companies adopt effective and holistic sustainability strategies (Milić, 2026)(Abbate *et al.*, 2023). Although several studies have substantiated barriers to sustainability performance, research on developing a decision-support framework to determine the set of strategic approaches to overcome SEP barriers needs further research attention, particularly in emerging countries. To address this gap, this study proposes a decision-support framework that integrates BWM and QFD in a systematic and sequential process to enhance sustainable entrepreneurship performance. The framework integrates the triple bottom line barriers with strategic response, aiming to enable

strategic prioritization and alignment under resource constraints. The scientific novelty lies in integrating methods, theory, and process within an operational framework. It combines stakeholder theory and the resource-based concept, integrating external pressures with internal capabilities. The study employed a mixed-method approach that included interviews and literature analysis to find and classify the barriers as economic, social, and environmental dimensions. The Best-Worst Method (BWM) is applied to prioritize the barriers according to their weights (Rezaei, 2016)(Guo and Zhao, 2017) and Quality Function Deployment (QFD) is implemented to visualize the relationship between the identified barriers (WHATs) and strategic responses (HOWs), and finally define the most effective strategies (Chowdhury *et al.*, 2024)(Chowdhury *et al.*, 2023). The study is predominantly grounded in Stakeholder Theory (ST) and Resource-Based View (RBV). Stakeholder theory focuses on managing stakeholder expectations (Medcalfe and Miralles Miro, 2022)(Chowdhury *et al.*, 2023), whereas the RBV focuses on leveraging internal resources and capabilities (Agrawal *et al.*, 2025). The combination of the theories used as the foundation of the study offers a holistic perspective on understanding both the internal and external factors affecting SEP and a reason to choose the strategic responses.

2. Literature Review

2.1 Sustainable Entrepreneurship Performance and Barriers

Sustainable entrepreneurship performance (SEP) can be defined as the capacity of a firm to generate economic value and consider both social and environmental responsibilities through entrepreneurial actions (Somwethee *et al.*, 2023). In apparel manufacturing, SEP is manifested in productivity, efficiency, employee welfare, less environmental impact, and sustainability in the long run, especially in emerging countries where the industry creates jobs and economic development (Chowdhury *et al.*, 2023)(Abbate *et al.*, 2023). According to Bashar *et al.*, (2021) and Arshad *et al.*, (2023) SEP is affected by internal capabilities and external factors such as market, institutional, and supply chain conditions. In apparel firms, barriers are categorized into economic, social, and environmental dimensions (Bhandari *et al.*, 2022). The economic barriers, like high costs, ineffective production, and poor demand planning, reduce the apparel performance, while innovative business models assist in balancing sustainability and financial viability (Abbate *et al.*, 2023). According to Akhter *et al.*, (2019) the social barriers of apparel includes weak labor standards, ineffective health and safety systems while environmental barriers are poor waste management, limited circular practices and the adoption of less environmentally friendly technologies, all of which undermine SEP (Akhter *et al.*, 2019) (Awino and Apitz, 2024). These interrelated barriers lower productivity and competitiveness, requiring integrated strategic responses rather than isolated solutions (DiVito and Bohnsack, 2017)(Todeschini *et al.*, 2017). The key barriers to SEP in the apparel industry are summarized in Table 2.

2.2 Strategic Responses to Sustainable Entrepreneurship Barriers

In order to address the barriers of SEP, companies utilize strategic responses to rationalize resources, capabilities, and stakeholder expectations (Agrawal *et al.*, 2025)(Tandon *et al.*, 2024). According to Sajan *et al.*, (2017) and Bashar *et al.*, (2021) argue that the benefits of the lean implementation brush-up efficiency by minimizing waste and costs, whereas agile strategy enhance flexibility and responsiveness to demand uncertainty. Collaboration in the supply chain increases efficiency in buyer-supplier relations, transparency, and planning, which contributes to sustainability performance(Wren, 2022)(Garcia-Torres *et al.*, 2022). Also, demand-driven planning, circular practices, clear labor policies, digital tools, and standardized procedures contribute to the minimization of waste, better coordination, and overall SEP (Younespour *et al.*, 2024)(Savini, 2021)(Cao *et al.*, 2024)(Buer *et al.*, 2021). The strategic responses are listed in Table 2. This study develops a decision support framework for the Ethiopian apparel industry as shown in Figure 1. This is grounded on Stakeholder Theory and RBV to detect, identify, and prioritize the barriers to SEP. Stakeholder Theory assists in identifying barriers that are connected to the lack of robust stakeholder relationships and transparency (Mahajan *et al.*, 2023)(Chowdhury *et al.*, 2023)(Medcalfe and Miralles Miro, 2022) and RBV identifies internal resource and capability gaps, including the skills, management, and production systems (Mokbel Al Koliby *et al.*, 2024)(Agrawal *et al.*, 2025). The framework relies on BWM and QFD, and would be of great relevance to apparel industry managers for easily assisting them in determining the optimal strategic response combination to set of SEP barriers.

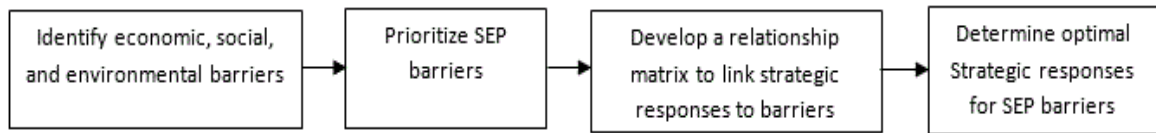


Figure 1: Decision support framework: Strategic response for SEP barriers

3. Method and Analysis

This study uses a mixed-method research approach that integrating qualitative and quantitative methods. Initially, a set of SEP barriers and strategic responses was developed through an extensive literature review. These findings were further refined and confirmed through semi-structured interviews with key decision-makers from five apparel companies. The profiles of the sampled companies and respondents are presented in Table 1. The economic, social, and environmental dimensions of barriers were identified and categorized based on the literature and company data to provide a systematic understanding of their nature. Recognizing the need for detailed analysis, a specific firm (Company-E) was chosen for the case study based on its size, experience, and availability of information. In this case, quantitative methods were employed, including the BWM for prioritizing the identified barriers and QFD for ranking the strategic responses that influence the SEP barriers. The BWM is a sophisticated multi-criteria decision making (MCDM) approach used to distinguish and prioritize obstacles to a SEP in the apparel industry. With the expert judgments, the BWM develops optimal weights with fewer comparisons, higher consistency, and reduced subjective bias, making it effective for complex sustainability evaluations (Mathiyazhagan *et al.*, 2021)(Rezaei, 2016). These optimized weights are then assimilated into QFD, in order to transform the determined barriers (WHATs) into actionable strategic responses (HOWs). In this framework, customer requirements (CRi) are defined as SEP barriers, and strategic responses are defined as design requirements (SRj). Their interrelationships are plotted as a relationship matrix (Rij) with each component indicating the strength of a relationship between a particular barrier and a particular strategic response. These relationships are measured on a four-level scale, strong = 9, moderate = 3, weak = 1, and none = 0. The QFD is broken down into the following steps: (1) identify the SEP barriers as WHATs (CRi), (2) Determine the weight of the SEP barriers (Wi), (3) defining strategic responses as HOWs (Sj), (4) develop the relationship between WHATs and HOWs (Rij), (4) determine the relative importance (AI) of each strategic response and (5) assess the relationship among the strategic responses (Chowdhury *et al.*, 2023)(Figure 2). Integration of BWM and QFD can offer an organized and reliable approach to prioritize SEP barriers and construct significant strategic responses to resolve the SEP barriers in the apparel industry efficiently.

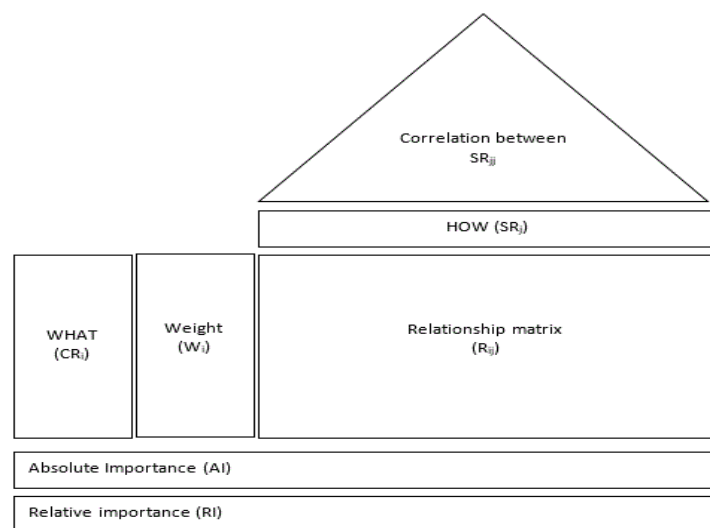


Figure 2: QFD model

3.1 Identify the SEP Barriers and Strategic Responses

In this study, a purposive sampling approach was employed, including five apparel industries (small, medium, and large), along with a fabric supplier and purchasing agent to capture a diversity of industry opinions. The data were collected through literature review and semi-structured interviews with the key decision-makers (average

duration of 25 minutes), during which the respondents provided the SEP barriers and suggested the strategies to address them. In this study, 22 SEP barriers and 12 strategic responses were identified. The set of SEP barriers was analysed using literature analysis to categorize them into economic, social, and environmental dimensions, ensuring alignment with real industry practice. The prioritized barriers and corresponding strategic responses are demonstrated in Table 2.

Table 1: Profiles of Sampled Companies and Respondents

Company Name	Respondents Position	Company Size (No. of employees)	Company Experience
Company-A	Production manager		
Company-B	Quality Manager	30-50	0-5years
Company-C	Supply chain manager	200-250	9-14 years
Company-D	Merchandising Manager	1500-2000	16-20 years
Company-E	General manager, Quality manager, Supply chain manager, Production manage	Less than 50	6-10 year
(Case study)		2000-3000	Over 20 years

The quantitative data are collected from the four apparel managers of the case Company-E

3.2 Prioritization of SEP Barriers (WHATs)

This study identifies the weights of SEP barriers (W_i) and the associated strategic responses by choosing a Company-E for detailed analysis. Data were gathered through structured questionnaires from four managers of the company. Company-E was found in 2004 and produces a variety of apparel products. It has a large-scale production facility consisting of more than 2,000 employees with technologies and qualified human resources. Over time, the company poses a competitive business with both local and international markets. However, with some prevailing barriers to the company for SEP. To address this, participants were asked to perform pair-wise comparisons of a structured set of SEP barriers, which were analysed through the BWM, and the results are presented in Table 2. Among the three triple bottom line dimensions, economic barriers were found to be the most dominant, with 65.20% of the total weight, followed by environmental (17.9%) and social barriers (16.9%). The consistency ratio for the three dimensions is 0.059. Under the economic dimension, the most significant barriers are poor-quality product (11.9%), poor long-term buyer- supplier relationships (10.5%), and high cost pressure based on limited resources (9.5%). Regarding the social dimension, the most significant barriers are a lack of clear labor and ethics policies (2.8%), health and safety risks in production (2.6%), and low worker motivation (2.2%). Similarly, in the environmental dimension, the major barriers are a lack of circular design and recovery systems (6.3%), a lack of government support (4.2%), and a lack of waste management practices (3.7%). In general, the findings reveal that economic barriers play the most significant role in limiting SEP, and poor product quality, weak buyer-supplier relationships, and cost pressure are the leading three barriers in all categories.

Table 2: The SEP barriers and its strategic responses

Sep Barriers	Bwm Weight	Rank	Consistency Ratio
Barriers to Economic factors (Weight: 65.20%)			
Poor quality product(Ec1)	11.9%	1	0.095
Poor long-term buyer-supplier relationships(Ec2)	10.5%	2	
Poor demand-driven production and forecast(Ec3)	5.1%	7	
Lack of business model innovation(Ec4)	5.5%	6	
Weak internal coordination between departments(Ec5)	2.9%	9	
inflexible production planning(Ec6)	6.9%	5	
Limited use of digital tools(Ec7)	4.7%	8	
High cost pressure (limited resource)(Ec8)	9.5%	3	
High product prices(Ec9)	8.2%	4	

Sep Barriers	Bwm Weight	Rank	Consistency Ratio
Barriers to social factors (Weight: 16.90%)			
Lack of clear labor and ethics policies(Sc1)	2.8%	1	0.097
Limited training for workers(Sc2)	1.5%	6	
Health and safety risks in production(Sc3)	2.6%	2	
Communication gaps in the supply chain(Sc4)	2.1%	4	
Low transparency toward consumers(Sc5)	1.2%	8	
Low worker motivation(Sc6)	2.2%	3	
Cultural diversity(Sc7)	1.9%	5	
Low-skilled workers for fast production changes(Sc8)	1.2%	9	
Lack of top management skill and knowledge(Sc9)	1.4%	7	
Barriers to Environmental factors (Weight: 17.9%)			
Lack of waste management practices(En1)	3.7%	3	0.087
lack of circular design and recovery(En2)	6.3%	1	
Lack of partners for recycling(En3)	3.6%	4	
Lack of government support(En4)	4.2%	2	
Strategic responses			
Lean supply chain implementation (SR1)	Making Collaboration across the supply chain (SR2)		
Training and skill development (SR3)	Adopt demand - driven production planning (SR4)		
Developing circular practice (SR5)	Introduce standardized operating procedures (SR6)		
Improve low - cost innovation (SR7)	Build trust and realistic planning (SR8)		
Establish clear polices (SR9)	Adopt simple digital tools (SR10)		
Implement agile supply chain strategy (SR12)	Actively engage with government and industry (SR11)		

3.3 Relationship Between SEP Barriers (WHATs) and Strategic Responses (HOWs)

The QFD approach was systematically used to translate 22 prioritized SEP barriers (WHATs) into 12 strategic responses (HOWs), based on literature and expert input from the Ethiopian apparel industry. In the first step, respondents evaluated the relationship between each barrier and strategic response using the R_{ij} scale. For instance, SEP Barrier 1 and Strategic Response 1 were rated by four respondents as 1, 9, 3, and 9, yielding an average of 4.333. This was multiplied by the BWM weight of Barrier 1 ($W1 = 0.119$) to obtain a relationship score of 0.5156, which was then normalized to 0.151 (Figure 3). The same procedure was applied across all barriers and strategic responses, and the normalized scores were aggregated to compute the absolute importance (AI) of each strategic response. In the AI outcome, the strategic responses with the highest ranking are circular practices (SR5), training and skill development (SR3), and demand-driven production planning (SR4). The roof matrix was applied to comprehend the interrelationship between strategic responses. To achieve improved outcomes, a strategic response with strong (✓) links should be executed jointly. For example, circular practices (SR5) are most effective when combined with training and skill development (SR3). Similarly, training (SR3) supports standardized processes (SR6) and agile supply chains (SR12) (Figure 3). In general, the results indicate that an integrated and coordinated approach is the most important to overcome SEP obstacles and enhance sustainable entrepreneurship performance.

4. Discussion and Implications

4.1 Summary of Findings

This study identified a total of twenty-two SEP barriers: nine economic, nine social, and four environmental, through literature analysis and expert validation in Ethiopian apparel firms. The classification follows the triple bottom line framework and is supported by prior studies, such as Bhandari *et al.*, (2022) and Chowdhury *et al.*, (2024), which similarly group supply chain challenges into economic, social, and environmental dimensions. The results indicate that economic barriers (65.20%) are the most dominant, followed by environmental (17.9%) and social barriers (16.9%). This suggests that financial and operational constraints are the key barriers to SEP in the

Ethiopian apparel industries, a finding supported by earlier studies such as Zeleke and Hailemariam, (2023) and (Minbale *et al.*, 2024).

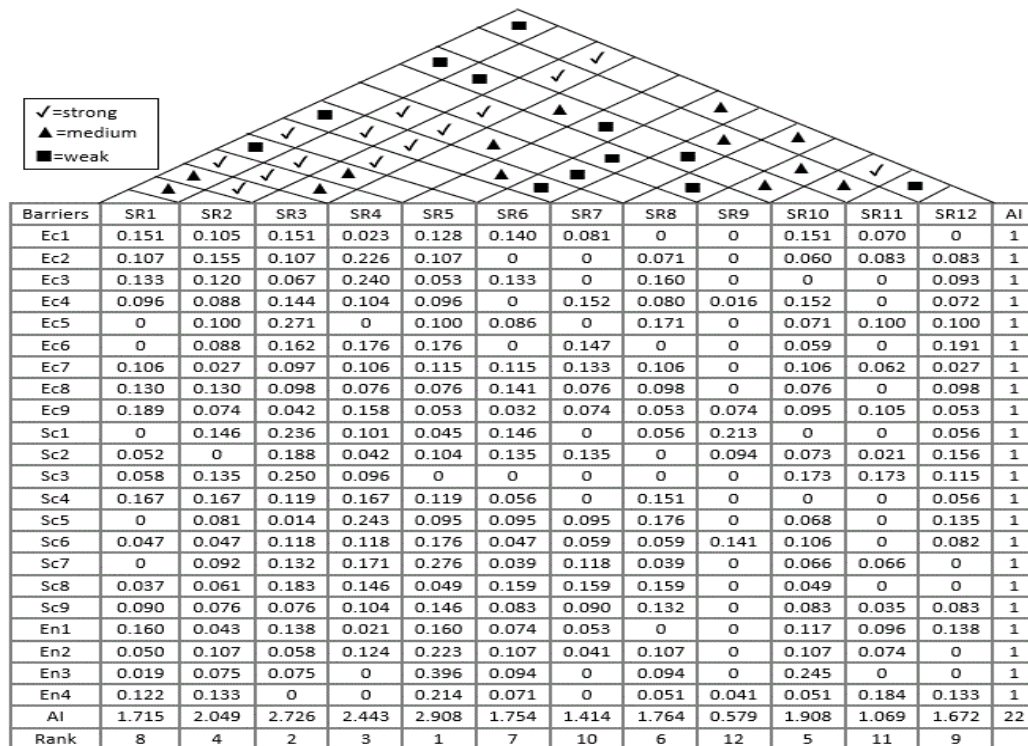


Figure 3: QFD Matrix for Apparel SEP Barriers and Strategic response

The most critical economic barriers are poor product quality, weak buyer–supplier relationships, and high cost pressure show that operational inefficiency and limited resources reduce competitiveness. These findings are supported by prior studies (Su *et al.*, 2022)(Brydges, 2021) Similarly, top social barriers such as lack of labor and ethics policies, health and safety risks, and low worker motivation are supported by prior studies highlighting labor standards and workplace safety as key determinants of sustainability performance (Akhter *et al.*, 2019)(Bhandari *et al.*, 2022). Environmental barriers such as lack of circular systems, lack of government support, and poor waste management are also consistent with earlier research emphasizing the importance of circular economy practices and institutional support (Brydges, 2021)(Abbate *et al.*, 2023)(Arshad *et al.*, 2023). To address these barriers, the study identified twelve strategic responses, emphasizing that multiple strategies are required to solve interconnected SEP barriers, which aligns with prior research (Todeschini *et al.*, 2017)(Su *et al.*, 2022). Among these, the top three strategic responses are developing circular practices (SR5), training and skill development (SR3), and adopting demand-driven production planning (SR4), which play a critical role in directly addressing the main SEP barriers. Developing circular practices helps to reduce waste and improve resource efficiency, which in turn helps overcome cost pressure and product inefficiencies. This is consistent with findings reported by Brydges, (2021) and Buer *et al.*, (2021). Training and skill development improve worker capability, product quality, and motivation, thus addressing poor quality products and social barriers. These findings are supported with studies by Journeault *et al.*, (2021). Demand-driven production planning reduces overproduction, improves coordination with buyers, and lowers cost pressure, thereby addressing challenges with buyer-supplier relationship and operational inefficiencies, consistent with the findings supported by Hussain and Malik, (2020) and Safra *et al.*, (2019). Generally, the findings confirm that aligning key strategic responses with the most critical barriers is essential, while emphasizing that integrated strategies significantly enhance sustainable entrepreneurship performance in the apparel industry.

4.2 Theoretical and Managerial Implication

The theoretical implication of this study has relevance to the literature on Stakeholder Theory and RBV by providing an integrated perspective to explain SEP in the apparel business. This study demonstrates that the combination of these theories can be used to gain a comprehensive explanation of how companies deal with sustainability issues. Concerning the stakeholder view, lack of effective buyer-supplier relationship, poor labor

policy, and low poor transparency are barriers that limit sustainability performance by failing to meet stakeholder expectations. According to the RBV view, problems like poor quality products, skill gaps, and poor internal coordination indicate a lack of resources and capabilities, whereas training, lean systems, and standard operation procedures are examples of strategic response that increase the capabilities of the firm. Strategic response alignment with the main barriers is a key capability that can help create sustainable competitive advantage, especially to the Ethiopian apparel industries. The study offers a decision-support framework that enables apparel managers to distinguish and categorize SEP barriers into the triple bottom line and rank them using BWM and QFD. It also helps in choosing optimal strategic responses. The finding focuses on combined approaches because combined efforts are more effective than single actions. The framework can help Ethiopian apparel companies to enhance their working efficiency, enhance their stakeholder relations, build their workforce capacity, and meet their sustainability objectives in the face of finite resources.

5. Conclusion

The study formulated a comprehensive decision support framework to identify the strategic response to the SEP barriers influencing the Ethiopian apparel industry. In this study, the mixed-method approach was used by combining the literature review and semi-structured interviews to identify 22 SEP barriers and 12 strategic responses. Furthermore, the literature analysis was employed to categorize the barriers as economic, social, and environmental. In the quantitative approach, BWM was used to prioritize the identified barriers, and QFD was used to establish a relationship between prioritized barriers (WHATs) and strategic responses (HOWs). In addition, the QFD matrix was used to rank the strategic responses and to choose the best ones. The findings showed that the most important barriers to SEP are low quality of products, lack of buyer-supplier relationship, and cost pressure, while the most effective strategies to overcome these SEP barriers are circular practices (3Rs), adopting demand-driven production planning, and improving training and skill development. This implies that a coordinated and integrated strategic action is required to address interlocked barriers to sustainability and improve SEP. The study contributes both theoretically and practically by connecting the theory of stakeholders and the resource-based view into a unified framework. This framework assists apparel managers in structurally prioritizing the barriers and choosing effective strategies in resource-constrained environments. However, there are some drawbacks to this study. The qualitative phase was based on a small number of respondents by purposive sampling, and the quantitative analysis was based on a single case company, which restricts the generalizability of the results. So, the findings should be interpreted in a context-specific way related to the Ethiopian apparel industry. Further studies are recommended to test the proposed framework in various countries and industrial applications. Additionally, future studies can include optimization models to assess the cost of implementation and the most effective combination of strategies.

Ethics Declaration

This study did not involve any in person experiments with human participants, and no sensitive personal information was collected that would require formal approval for ethical considerations. The data were gathered through the voluntary involvement of industry professionals, with all respondents willingly agreeing to take part in the study. Hence, this study did not need formal ethical.

AI Declaration

AI tools were not applied to create original research content or interpret findings. The authors have taken appropriate review, validated, and finalized all content to maintain originality and academic integrity.

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