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Sustainability Assessment of Factories in an Apparel Supply Chain in South Africa

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A green economy that enables environmentally friendly economic and employment growth is particularly important in South Africa due to the country's exceptional level of unemployment and high carbon emissions (Borel-Saladin & Turok, 2013). The clothing and textiles industrial sectors in South Africa have experienced declining production post-1995 (Kaplan, 2004). Sustainably revitalizing the textile and apparel industries is a strategy for South Africa to create jobs and reduce the unemployment rate. The Higg Index, developed by the Sustainable Apparel Coalition, is a self-assessment tool that asks practice-based, qualitative questions to measure environment and social/labor performance of brands, facilities, and products. The purpose of this research was to use the Higg Index Facility Modules to assess the sustainability performance of factories in an apparel supply chain in South Africa; and to identify challenges and make recommendations for sustainable development. The Higg Index 2.0 includes two separate Facility Modules, i.e., environment (seven sections with a total of 100 points) and social/labor (three sections with a total of 606 points). Both modules were used in this study. Data were collected from five factories in an apparel supply chain, including one yarn spinning, one knitting, one dyeing and finishing, and two CMTs (cut, make and trim). Table 1 summarizes the Higg Index environment and social/labor scores of the five factories.

The yarn spinning and dyeing and finishing factories have better environmental performance than other factories. Many of the questions were not answered, which negatively impact the score. Except for the dyeing and finishing factory, the other four factories noted they did not use chemicals, and did not answer the questions in "chemicals management" section. It should be further investigated whether no chemicals were used, or whether chemical management was disregarded due to a very small amount of chemicals used. For example, yarn spinning may use lubricant, and CMT factories may use cleaning agents. The Higg Index encourages setting and reviewing improvement targets (level 2 questions) and providing demonstrated evidence of reducing environmental impact (level 3 questions). The knitting factory did not earn any points in levels 2 and 3 questions (70% of total points) for all 7 sections, resulting in a lower Higg score compared with the other two textile factories.

Similar to the environmental assessment, textile factories had higher social/labor scores than CMT factories. The unanswered questions negatively impacted the score of CMT 1, which only completed 43% of the questions. The CMT 2 factory had a low score in "worker treatment and development" due to its lack of anti-harassment training, opportunities for workers' life skills development, and processes around diversity and equality. The main social/labor challenges for all factories were in the areas of value chain labor and workplace performance management; and external engagement, community impact, and transparency. Addressing these issues would make the factories earn higher social/labor scores.

Table 1. Higg Index Environment and Social/Labor Scores of the Five Factories

		Yarn	Knit	Dye & Finish	CMT 1	CMT 2
Env.	Questions completed (%)	64	73	72	34	27
	Environmental management system (15 pts)	2.7	0.45	9.75	0	0
	Energy use & GHG emission (15 pts)	10.5	1.5	6.75	2.25	7.5
	Water use (15 pts)	10.5	3.75	4.5	3.75	3.75
	Wastewater/effluent (15 pts)	0	2.25	4.5	0	0
	Emission to air (10 pts)	3	1	0	0	0
	Waste management (15 pts)	1.2	2.25	1.95	0	0
	Chemicals (15 pts)	0	0	11.25	0	0
	Total environmental points (100 pts)	28	11	39	6	11
Social/ labor	Questions completed (%)	76	81	76	43	75
	Labor performance management					
	Recruitment/hiring (70 pts)	33	19	23	14	12
	Compensation (43 pts)	26	14	11	3	11
	Hours of work (54 pts)	17	17	4	11	13
	Worker improve./comm. (53 pts)	30	16	24	7	10
	Worker treatment & development (101 pts)	40	18	27	10	10
	Health & safety (76 pts)	53	18	52	12	22
	Termination (6 pts)	6	6	5	0	2
	Total (403 pts)	205	108	146	57	80
	Labor perform manage value chain (125 pts)	0	4	1	0	0
	Ext. engagement (13 pts)	9	0	3	0	0
	Community impact (27 pts)	0	0	7	0	1
	Transparency (38 pts)	2	0	1	0	0
	Total (78 pts)	11	0	11	0	1
Total social/labor points (606 pts)	216	112	158	57	81	

In summary, the Higg Facility scores were relatively low for all five factories. Unanswered questions and unavailable data were among the main challenges for the factories. Improving sustainability performance requires that a facility knows what its impacts are, has goals to improve, and provides evidence of improvement. The Higg Index modules are comprehensive and cover all important aspects related to environmental and social sustainability. It is recommended that factories examine the Higg questions, and fill the gaps between the current practices and the Higg questions to improve sustainability performance.

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References

- Borel-Saladin, J. M., & Turok, I. N. (2013). The impact of the green economy on jobs in South Africa. *South African Journal of Science*, 109(9/10), Article #a0033, 4 pages.
- Kaplan, D. K. (2004). Manufacturing in South Africa over the last decade: A review of industrial performance and policy. *Development Southern Africa*, 21(4), 623-644.