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Social Sustainability Empowering the Economic Sustainability in the Global Apparel Supply Chain

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Abstract: Scholarly discussion on the amalgamation of sustainability and supply chain management has been growing in the last decade. However, an integrated social and economic sustainability performance measurement in supply chains is an emerging avenue in the Sustainable Supply Chain Management discourse. Hence, the purpose of this study is to understand how socially sustainable practices affect economic sustainability performances in supply chains. A survey questionnaire and a conceptual framework were developed to explore this relationship. Survey data collected based on responses from 119 managers in the Sri Lankan apparel-manufacturing sector was analyzed using Partial Least Square Structural Equation Modelling. We observed that the practices conducted by apparel manufacturers ensuring the social sustainability of the human factor inside the company (Internally influencing Social Sustainability Practices-ISSP) and in society (Externally Influencing Social Sustainability Practices-ESSP) create a positive impact on the economic performance. However, the effect produced by ISSP was higher compared to the ESSP. This study is based on a single developing country and, thus, should be extended to other countries considering the different institution environments when studying this interrelation between the social and economic sustainability dimensions.

Keywords: social sustainability; economic sustainability; apparel manufacturing; Sustainable Supply Chain Management

1. Introduction

The discussions on sustainability in supply chains are embedded in the Triple Bottom Line (TBL) concept of Elkington [1] and how the best sustainability performance transpires at the integration point of the three dimensions [2]. Related studies accomplished this integration in Supply Chain Management (SCM) discourse have started emerging very recently [3]. The main reason for such a limited number of studies is the challenge of merging TBL in a single analytical framework and measuring them [4]. As a result, many of the studies have investigated the integration only between two sustainability dimensions, i.e., environmental and social sustainability [5].

More importantly, the debate on whether economic benefits can be gained via environmental and social sustainability is an ongoing discussion in the SCM discourse [6]. Winter and Knemeyer [4] called attention to studying the holistic perspective of sustainability to comprehend the economic consequences of these sustainability practices. For instance, Goworek [7] studied socially and environmentally sustainable practices of organizations and how they impact on the sales turnover and profitability, while Zailani et al. [8] discovered that socially and environmentally sound practices across the supply chain bring strategic economic benefits. Recently, many scholars, such as Yawar and

Seuring [9], Panigrahi et al. [10], and Sodhi and Tang [11], emphasized the importance of understanding the relationship between the social and economic sustainability dimensions.

When considering the practice of socially sustainable actions, the apparel sector in Sri Lanka has transformed its processes during the last few years to successfully implement sustainability practices and maintain their brand as “Garments Without Guilt” [12]. “Garments Without Guilt” is an initiative to place Sri Lankan apparel in the socially sustainable production criteria while sustaining its niche market [13]. Under this initiative, many apparel manufacturers have vouched to voluntarily commit themselves to ensure the social sustainability of their performance [14]. As a result, Sri Lankan apparel manufacturing is known for the successful implementation of social sustainability practices within their working premises, ensuring the health, welfare, education, labor rights, equity, equality, etc. of the workers and employees. Moreover, despite these voluntary actions ensuring the sustainability performance, establishing the socially sustainable practices in the facilities has been mandatory under the factory ordinance of Sri Lanka [15]. Hence, this is a unique context to explore how social sustainability practices result in economic performances, as Silvestre [16] emphasized the importance of contemplating practical examples with a successful implementation of sustainability in supply chains of different industries and countries. Further, conducting a study in this context fulfills the necessity of carrying out more research in developing countries as the focus of many studies lies on the social and economic sustainability dimensions in developed countries [17,18]. Additionally, this study contributes to the limited number of researches conducted on how companies integrate social sustainability practices into their management approaches of the supply chain in emerging economies [19]. Hence, we address the following research questions considering the Sri Lankan apparel manufacturing sector as the context:

1. What are the practices ensuring the social and economic sustainability dimensions from the perspective of manufacturers in supply chains?
2. What is the interrelation between social and economic sustainability dimensions?
3. What are the managerial and practical implications regarding this inter-relation?

The remainder of the paper is structured as follows. In the next section, we discuss the literature review, development of hypotheses, and the conceptual model followed by the research methodology. Then we discuss the estimations of the model and the findings. Finally, we address the discussion, conclusion of the research, along with implications and limitations.

2. Literature Review

2.1. Integration of Social and Economic Sustainability Dimensions and Its Impact

The integration of social and economic sustainability dimensions in TBL is crucial, mainly due to two reasons. Firstly, a limited number of studies has focused on this integration, especially from a supply chain perspective. Seuring and Muller [20] pointed out the trade-off between these two dimensions and proposed considering the supply chain-wide analysis when studying the interrelation between social and economic sustainability dimensions. This research gap has been, hitherto, hardly addressed.

Secondly, it is an open question of how being socially sustainable affects the economic performance of supply chains. From a scholarly perspective, the causality of this interrelation has been a recurring debate. The claim was emanated on doubt whether the economic performance of a company is a direct result of embracing sustainable practices or the companies that are performing well adopt these practices [10]. From a practitioner’s viewpoint, they are still unconvinced about how social sustainability makes economic sense in their businesses [21] despite their efforts to being socially sustainable, overcoming the repetition of disasters, such as the RanaPlaza incident in Bangladesh. Hence, delving into the interrelation between these two sustainability dimensions is crucial in the SCM context.

2.2. Social Sustainability Dimension in Supply Chains

In the Sustainable SCM discourse, the social sustainability dimension discusses how to resolve social sustainability issues throughout the supply chain [22]. However, social performance improvements are harder to be influenced by policy compared to economic and environmental performances [23]. Hence, socially sustainable practices implemented in different individual levels are crucial to resolving such issues.

On the other hand, socially sustainable practices tend to evolve over the years [24]. As a result, Nakamba et al. [25] (p. 532) argued that social sustainability to be an evolving concept without a “unifying accepted definition”. With the growing awareness of topics such as equity, safety, education, and ethical practices, there is a proliferation of studies conducted focusing on social sustainability in supply chains [26]. Moreover, Badri Ahmadi et al. [27] (p.101) also highlighted that the determination of “global and universal social sustainability measures” is challenging due to the lacking conceptual clarifications, especially in the manufacturing sectors and developing country contexts. Hence, this study attempts to comprise different facets of the social sustainability dimension in SCM literature.

Understanding the social sustainability dimension has been challenging, with the newly introduced socially sustainable practices as solutions to the increasing number of social issues. To overcome this challenge, Klassen and Vereecke [24] pointed out understanding three aspects as to who is taken into consideration, which social issues are taken into account, and how these social issues are addressed in the particular supply chain. Hence, in this study, we studied the social sustainability dimension in the apparel supply chain of a developing country involving employees and workers of apparel manufacturing companies and their surrounding communities. To identify and understand social issues considered, we focused on the practices depicted in Table 1, identified by Sudusinghe et al. [28], as they explored the social sustainability issues in the apparel supply chain of Sri Lanka via a comprehensive literature review and interviews with experts in the industry. To give a comprehensive notion of the social sustainability dimension, 11 different facets of social sustainability and their practices were identified, as depicted in Table 1.

Table 1. Social sustainability practices in apparel supply chains.

Social Sustainability Dimension	Code	Practices	Reference
External Social Sustainability Practices (ESSP)			
Social Sustainability Practices Benefiting towards Society (SB)	SB1	Access to quality essential health care services	[9,29–37]
	SB2	Awareness of sustainable development	
	SB3	Youth Employment	
	SB4	Access to Sanitation and Hygiene	
	SB5	Philanthropic Activities	
	SB6	Research & Development	
	SB7	Disaster/Emergency planning or response	
	SB8	Partnerships with third parties	

Table 1. Cont.

Social Sustainability Dimension	Code	Practices	Reference
Internal Social Sustainability Practices (ISSP)			
Education Benefits (EB)	EB1	Availability of a skilled workforce	[9,33,38,39]
	EB2	Capacity Building	
	EB3	Employee training and education	
Equity Improvement (EqIONE)	EqI1	Non-discrimination	[6,9,19,37,39,40]
	EqI2	Diversity and equal opportunity	
	EqI4	Inclusive decision making	
Gender Related Equity Improvement (EqITWO)	EqI3	Women in leadership	[9,33,40]
	EqI5	Gender equality	
	EqI6	Women empowerment through technology	
Ethical Improvement (EI)	EI1	Anti-corruption	[24,37,39,41]
	EI2	Ethical and lawful behavior	
Health and Safety Improvement (HS)	HS1	Healthy and affordable food	[32,34,42,43]
	HS2	Occupational health and safety	
Improved Labor Conditions (R2)	LC1	Actions against workplace violence and harassment	[21,34,37,39]
	LC2	Freedom of association and collective bargaining	
	LC3	Labor/management relations	
Child and Bonded Labor Conditions (R1)	LC4	Abolition of child labor	[33,37,44]
	LC5	Elimination of forced labor	
Regulatory Responsibility (RR)	RR1	Effective, accountable and transparent governance	[9,32,45,46]
	RR2	Compliance with laws and regulations	
Improved Wage Conditions (WC)	WC1	Wages and benefits negotiations along the supply chain	[9,21,33,45]
	WC2	Satisfactory benefits to the employees	
	WC3	Equal remuneration for women and men	
Workers' and Employees' Conditions (WEC)	WEC1	Childcare services and benefits	[21,29,32–34,43]
	WEC2	Sustainable transportation	
	WEC3	Access to affordable housing	

2.3. Economic Sustainability Dimension in Supply Chains

The vitality of studying the economic sustainability dimension is three-fold. Firstly, the dearth of studies focusing the economic sustainability in supply chains is the main highlight. Very limited attention has been paid to the economic sustainability dimension, even in the journals focused on businesses [4]. This is especially the case in the supply chain context [47].

Secondly, even the studies focusing on the integration among sustainability dimensions in TBL are paying less attention to the economic sustainability dimension. For instance, Kremer et al. [48] found that the majority of the scholars paid their attention towards implementing environmental sustainability, rather than economic sustainability, during the integration phase of the studies. Further

analysis showed that the existent discussions were limited to narrow economic aspects such as “direct, product-related costs.”

Thirdly, literature introduced the economic sustainability dimension as both “financial” and “non-financial”, while studies are mainly concentrated on the financially measurable economic sustainability practices [49]. Wang and Sarkis [50] mainly focused their attention on financial performance measures such as Return on Assets and Return on Equity in their study on the interrelation between social and economic sustainability performances. Moreover, Nakamba et al. [25] argued the importance of conducting studies while considering non-financial performance figures as to reflect that social sustainability practices affect not only monetary values, but also on non-financial, but economically valuable, outcomes.

Hence, this study focused on the following both financial and non-financial economic performance measures in supply chains, depicted in Table 2, to understand the interrelation with the social sustainability dimension.

Table 2. Economic sustainability practices.

Economic Sustainability Dimension	Code	Practices	Reference
Improved Economic Performance (EP)	EP1	Employee retention	[6,21,37,51–54]
	EP2	Employee attraction	
	EP3	Improved image	
	EP4	Attraction of new customers	
	EP5	Retention of existing customers	
	EP6	Foreign direct investment/Increase in investment	
	EP7	Improved profits	

3. Development of Hypotheses and Model

In this study, we investigated how the social sustainability dimension impacts the economic sustainability dimension. To understand this impact profoundly with the main focus on the social sustainability dimension of supply chains, we divided the social sustainability practices identified by Sudusinghe et al. [28] (as mentioned in Table 1) into two aspects from the perspective of a manufacturing firm as “internally influencing social sustainability practices” (ISSP) and “externally influencing social sustainability practices” (ESSP), aligning with the categorization of social sustainability practices of Rentizelas et al. [55] and Rebs et al. [56]. This categorization is outlined in Tables 1 and 2.

- ISSP construct focuses on the practices that majorly create an impact on the human factor (employees and workers) inside the company, such as improving education, working conditions, etc.
- ESSP construct focuses on the practices that ultimately create a benefit to society at large, such as increasing employment opportunities to the youth, improving living conditions of the surrounding communities, etc.
- Consequently, the economic sustainability dimension was considered under the “Economic Performance” (EP) construct while considering practices relating to improvement of both financial and non-financial measures of the company such as profit, attraction of new customers and employees while retaining existing customers and employees.

Hence, in order to resolve the scholarly debate over the causality of the relationship between social and economic sustainability dimensions and understand the managerial perspective in this regard, the following hypotheses are tested as in Figure 1.

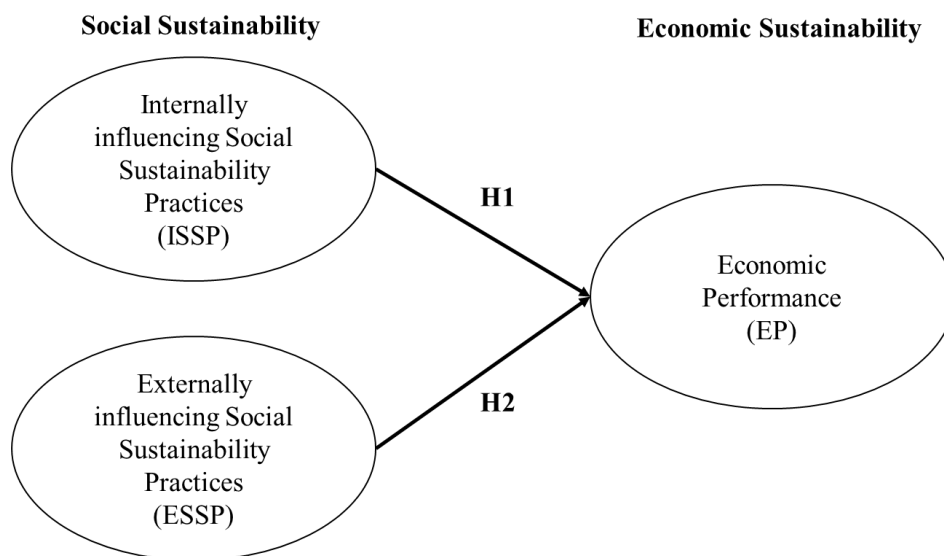


Figure 1. Model of social and economic sustainability dimensions.

Employee performance is crucial to achieving economic performance of a company [57]. In order to enhance employee performance, employee satisfaction empowered through improved social wellbeing is vital [58]. Especially, skilled labor shortages in the factories in developing countries can be overcome with social sustainability practices while ensuring the economic performance of the companies [21]. Hence, our first hypothesis is as follows.

H1: Internally influencing social sustainability practices positively impact on the economic performance of the apparel supply chain.

Companies concerned with social issues initiate their sustainability efforts with the employees and extend their practices to the communities they are interacting with, focusing on Corporate Social Responsibility (CSR) activities [43]. Under these CSR initiatives, organizations tend to involve with philanthropic activities [59]. Currently, organizations tend to move beyond philanthropic activities involving the engaged community and ensure the wellbeing of the society at large with activities such as mentioned under the ESSP construct. Even though scholars have explored the economic implications of the CSR activities for years [60], with the new social sustainability practices focused on the society at large, their impact on the economic performance is interesting to be studied in the SCM context. Hence, our second hypothesis is as follows.

H2: Externally influencing social sustainability practices positively impact on the economic performance of the apparel supply chain.

4. Methodology

We developed a survey questionnaire based on the constructs pretested by Sudusinghe et al. [28] through semi-structured interviews with the experts in the Sri Lankan apparel industry. Then we conducted this survey among the Sri Lankan apparel manufacturing industry in 2017 to test the hypotheses and the developed framework. The survey was conducted to gather data with a questionnaire of 56 questions measured by a Four-point Likert scale (1—Strongly Disagree and 4—Strongly Agree). This Likert scale was applied to compel respondents to check either on the negative or positive side, rather than loading heavily on the median point [61–65].

The survey questionnaire was developed as a self-administered online questionnaire to be easily sent via email. This survey form was distributed among top management, middle management, and operational level management personnel working in the apparel industry in Sri Lanka. However, in the cases with the difficulty of approaching respondents via email, face-to-face and telephone contact methods were also used.

Out of the 119 responses, 49 responses belonging to the small-scale manufacturers were collected mainly using face-to-face and telephone conversations. The rest of the respondents (70 respondents) were approached via email, where the response rate was 23%. While 69% of manufacturers catered to the export market, 17% and 14% of manufacturers catered to the local and mixed markets, respectively. The category of respondents varied as 50%, 25%, and 25%, respectively, representing the Operational Level, Middle Level, and Top-Level Management. The majority of the respondents (75%) belonging to the operational level and middle-level management reflects the validity of the existing situation, as they are closely working with the workers to understand working conditions [66].

The Partial Least Square Structural Equation Modeling (PLS-SEM) was used as the data analytic technique, as the research objective in this study is exploratory and predictive in nature. Since “data collected for social science research often fails to follow a multivariate normal distribution” [67] (p.108), PLS-SEM is a suitable technique to work with these non-normal data compared to Co-Variance Based Structural Equation Modeling (CB SEM). Moreover, PLS-SEM was suggested due to the complexity of the model and the relatively small sample size in this study. Additionally, PLS-SEM suits this model, as it contains formative indicators where their observed variables are mutually exclusive [67]. The path model evaluation was conducted using SmartPLS 3.0 software under the guidelines provided by Peng and Lai [68], Hair et al. [69], and Hair et al. [70]. Although there are different software, such as SPSS Amos and R packages, we used SmartPLS 3.0 in this study, as it is specifically designed for PLS-SEM with a user friendly interface and useful features. The model was tested using a computer system with Intel Core i5-5300U, 2.30 GHz Processor, 8 GB RAM, and 3 MB Cache.

5. Results of Model Estimation

Figure 2 depicts the Path Model developed based on Hierarchical Component Model (HCM) [63] to assess the relationship between social and economic sustainability dimensions. The list of single items measured for each construct can be found in Tables 1 and 2.

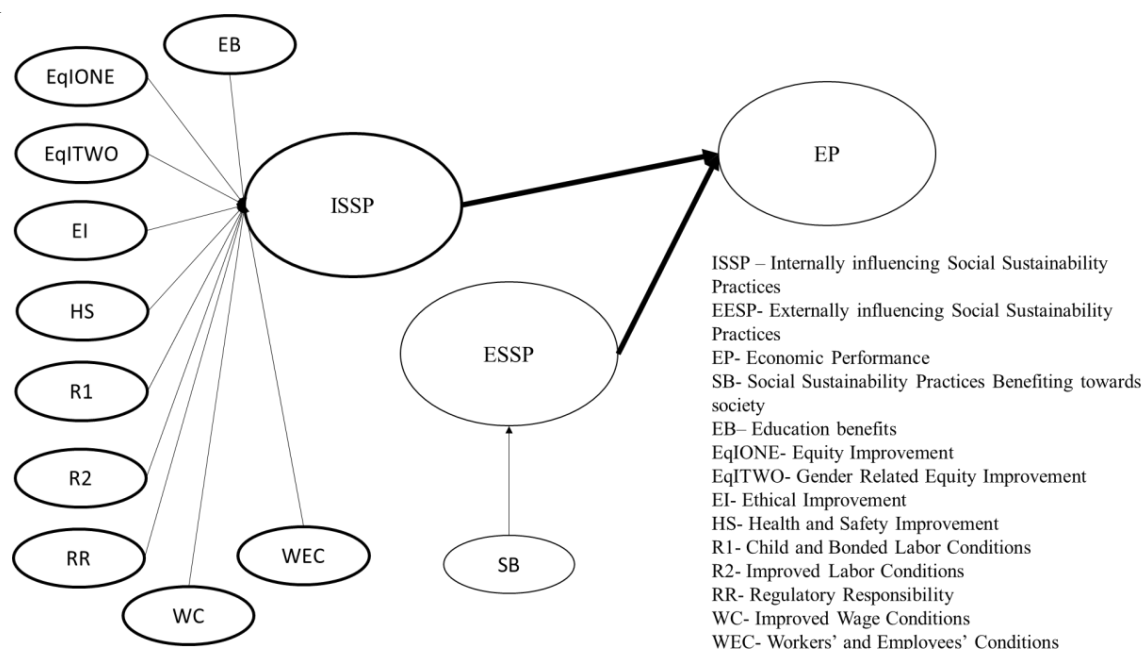


Figure 2. PLS path model.

“A HCM represents a more general construct, measured at a higher level of abstraction, while simultaneously including several sub-components, which cover more concrete traits of the conceptual variable represented by this construct” [70] (p.37). HCM includes two elements as “Higher-Order Component (HOC)” capturing the abstract entity, and “Lower Order Component (LOC),” capturing

the sub-dimensions of the abstract entity [67] (p.230). Hence, in this path model, LOCs in the outer model (EB, EqIONE, EqITWO, EI, HS, R1, R2, RR, WC, and WEC) and HOCs in the inner model (ISSP and ESSP) act as latent variables.

LOCs and HOCs can be defined based on either formative or reflective variables. Formative variables are suitable for a latent construct when a study aims to explain and predict key constructs [67]. Hence, in this research, the outer model consisted of formative constructs, as each sustainability practice identified (indicator) captures a specific aspect of the sustainability dimension (construct). For instance, when practices (indicators) such as “providing healthy and affordable food (HS1)” and “maintaining good OHS in the company (HS2)” are taken jointly into consideration, they determine the meaning of the construct “health and safety improvement (HS)”, which implies that “omitting an indicator potentially alters the nature of the construct” [69] (p.43). Therefore, LOCs representing different aspects of social and economic sustainability dimensions were developed as formative constructs.

Since we were studying how these ten themes contributed to the in-house social sustainability dimension, the relationship between LOCs and HOC is also formative. Hence, we used a “formative-formative HCM (Type 4)” relating to the “in-house practices for social sustainability” dimension. Since the LOCs in HCM has an almost similar number of indicators, a repeated indicator approach was applied to assess the measurement model of HOC. Finally, this path model was studied, analyzing the outer model (Measurement Model) and the inner model (Structural Model), respectively. Hence, we examined the outer model first to ensure the practicability of the inner model.

5.1. Assessment of Formative Measurement Model for LOCs

The assessment of the formative measurement models starts with content and convergent validity assessments followed by tests for collinearity, and significance and relevance of the indicators. “Content validity evaluates the extent to which the indicators capture the major facets of the construct” [67] (p. 112). Since we derived the constructs and indicators from the framework developed by Sudusinghe et al. [28], they have already tested the content validity through the literature review and interviews with the industry experts in the Sri Lankan apparel supply chain.

Convergent validity assessment assists in understanding the extent a particular indicator relates to the other indicators in the same construct [67]. To conduct this assessment, a global item (an endogenous single item construct) that summarizes the content of the indicators relating to the formative construct can be used. Hence, a separate question about each theme was added to the questionnaire. The strength of the path coefficients should be above 0.8 to indicate the validity of the set of formative indicators. The convergent validity testing results are depicted in Tables 3 and 4. As all the path coefficients are above the threshold of 0.8, they have sufficient degrees of convergent validity. Therefore, the formative indicators relating to each construct was validated and identified without adding or removing indicators.

Table 3. Convergent validity testing.

Formative Construct	EP	SB	EB	EqIONE	EqITWO	EI
Path Coefficient	0.856	0.898	0.889	0.884	0.942	0.884

Table 4. Convergent validity testing.

Formative Construct	HS	R1	R2	RR	WC	WEC
Path Coefficient	0.864	0.878	0.909	0.843	0.909	0.878

Later, a test for collinearity was conducted. High collinearity among two or more formative constructs can lead to bias because they affect the estimation of weights and statistical significance [67]. Variance Inflation Factor (VIF) is a related measure of collinearity used in this test. Therefore, a VIF value lower than 0.2 or higher than 5 reflects a potential collinearity issue [71]. Tables 5 and 6 depict

the VIF values in this model, which are below five and greater than 0.2. Hence, no critical level of collinearity is observed.

Table 5. VIF (Variance Inflation Factor) values of indicators in the measurement model of LOCs (Low Order Components).

SB		EB		EqIONE		EqITWO		EI		HS	
Indicator	VIF	Indicator	VIF	Indicator	VIF	Indicator	VIF	Indicator	VIF	Indicator	VIF
SB1	2.26	EB1	1.49	EqI1	1.29	EqI3	3.51	EI1	1.33	HS1	1.07
SB2	2.59	EB2	1.26	EqI2	1.31	EqI5	2.97	EI2	1.33	HS2	1.07
SB3	1.14	EB3	1.31	EqI4	1.08	EqI6	3.77				
SB4	1.75										
SB5	2.41										
SB6	2.55										
SB7	1.58										
SB8	3.05										

Table 6. VIF values of indicators in the measurement model of LOCs.

R1		R2		RR		WC		WEC		EP	
Indicator	VIF	Indicator	VIF	Indicator	VIF	Indicator	VIF	Indicator	VIF	Indicator	VIF
LC4	1.25	LC1	3.07	RR1	1.12	WC1	1.43	WEC1	1.31	EP1	1.39
LC5	1.25	LC2	1.92	RR2	1.12	WC2	1.48	WEC2	1.25	EP2	1.55
		LC3	2.44			WC3	1.57	WEC3	1.22	EP3	1.79
										EP4	2.03
										EP5	1.57
										EP6	1.54
										EP7	1.73

In the next step, the Significance and Relevance of Indicators in the Formative Constructs were assessed. We explore the contribution of formative indicators towards forming the formative construct by testing whether the outer weights of the formative measurement model were significantly different from zero. Since PLS-SEM does not assume a normal distribution, bootstrapping techniques were used to understand the significance of each weight assigned to each variable [67]. Accordingly, Table 7 depicts the indicators to be included and excluded in the model.

Table 7. Inclusion and exclusion of indicators in the formative construct.

Formative Construct	Formative Indicators	Outer Weights	Outer Loadings (>0.5)	t-Value	p-Value	Significance (based on p-value)	Include/Exclude
SB	SB1	0.02	0.58	0.14	0.89	NS	Include
	SB2	0.45		2.83	0	***	Include
	SB3	0.4		3.62	0	***	Include
	SB4	0.14	0.66	1.14	0.25	NS	Include
	SB5	0.25		1.65	0.1	*	Include
	SB6	0.05	0.66	0.33	0.74	NS	Include
	SB7	0.03	0.56	0.28	0.78	NS	Include
	SB8	0.06	0.77	0.34	0.74	NS	Include
EB	EB1	0.37		2.43	0.02	**	Include
	EB2	0.58		3.85	0	***	Include
	EB3	0.33		2.2	0.03	**	Include
EqIONE	EqI1	0.16	0.53	1.04	0.3	NS	Include
	EqI2	0.46		3.46	0	***	Include
	EqI4	0.7		6.61	0	***	Include

Table 7. Cont.

Formative Construct	Formative Indicators	Outer Weights	Outer Loadings (>0.5)	t-Value	p-Value	Significance (based on p-value)	Include/Exclude
EqITWO	EqI3	0.55		3.91	0	***	Include
	EqI5	0.28		1.99	0.05	**	Include
	EqI6	0.35		2.02	0.04	**	Include
EI	EI1	0.57		4.01	0	***	Include
	EI2	0.59		4.03	0	***	Include
HS	HS1	0.5		3.96	0	***	Include
	HS2	0.75		7.5	0	***	Include
R2	LC1	0.3		2.44	0.01	**	Include
	LC2	0.43		2.85	0	***	Include
	LC3	0.59		4.7	0	***	Include
R1	LC4	0.57		2.12	0.03	**	Include
	LC5	0.6		2.03	0.04	**	Include
RR	RR1	0.36		2.96	0	***	Include
	RR2	0.82		10.07	0	***	Include
WC	WC1	0.63		4.43	0	***	Include
	WC2	0.14	0.6	0.89	0.38	NS	Include
	WC3	0.42		2.65	0.01	***	Include
WEC	WEC1	0.13	0.69	0.52	0.6	NS	Include
	WEC2	0.73		3.64	0	***	Include
	WEC3	0.39		1.81	0.07	*	Include
EP	EP1	0.13	0.6	1.42	0.15	NS	Include
	EP2	0.21		1.75	0.08	*	Include
	EP3	0.4		2.94	0	***	Include
	EP4	0.29		1.8	0.07	*	Include
	EP5	0.09	0.56	0.51	0.61	NS	Include
	EP6	0.14	0.62	0.97	0.33	NS	Include
	EP7	0.15	0.66	1.29	0.2	NS	Include

*- $p < 0.1$, **- $p < 0.05$, ***- $p < 0.01$, NS—Not Significant; critical value for bootstrapping—Two-tailed, significance level—5%, critical t value—1.96.

If the p -value is less than 0.1, the indicator is recognized as significant. The significance of each indicator is reflected in the number of stars in Table 7. However, even if the p -value is above 0.1 and the outer loading is equal or greater than 0.5, the indicator is included in the model. All the outer loadings given in Table 7 are above 0.5. Therefore, none of the indicators are excluded from the PLS path model.

5.2. Assessment of Formative Measurement Model for HOC

The relations between HOC and LOCs are considered when assessing the measurement model of HOC in the path model. The relationships between LOCs and HOCs are mapped as path coefficients in a PLS-SEM analysis. From a modeling perspective, these path coefficients correspond to weights (in case of reflective-formative or formative-formative HCMs) and need to be interpreted accordingly [69] (p. 51). The same guidelines followed in assessing LOCs are followed here. A collinearity test was conducted for the HOCs. Table 8 depicts the VIF values, which are below the threshold of 5. Hence, we concluded that collinearity does not reach critical levels in the formative HOC, and is not an issue for the estimation of the measurement models of the HOC.

Table 8. VIF Values of indicators in the measurement model of HOC (Higher-Order Component).

Construct	EB	EI	EqIONE	EqITWO	HS	R1	R2	RR	WC	WEC
VIF	2.28	2.46	2.11	2.46	1.76	1.56	2.65	2.8	2.41	1.74

The weights (path coefficients) of the themes were analyzed for their significance and relevance, as given in Table 9.

Table 9. Significance and relevance of HOC.

	Path Coefficients (weights)	T Statistics (O/STDEV)	p Values	Significance Level	Correlation
EB -> ISSP	0.28	2.01	0.04	**	0.77
EI -> ISSP	-0.01	0.04	0.96	NS	0.689
EqIONE -> ISSP	0.17	1.27	0.2	NS	0.804
EqITWO -> ISSP	0.14	1.1	0.27	NS	0.8
HS -> ISSP	0.21	1.84	0.07	*	0.714
R1 -> ISSP	-0.01	0.08	0.94	NS	0.353
R2 -> ISSP	0.09	0.77	0.44	NS	0.771
RR -> ISSP	0.2	1.24	0.21	NS	0.783
WC -> ISSP	0.18	1.2	0.23	NS	0.762
WEC -> ISSP	0.02	0.15	0.88	NS	0.507

*- $p < 0.1$, **- $p < 0.05$, ***- $p < 0.01$, NS—Not Significant.

EB and HS have a significant relation to the ISSP. However, the practices other than R1 have correlations above 0.5. Therefore, this depicts that all the other LOCs contribute to the ISSP other than R1. This may arise since all the apparel manufacturers in Sri Lanka serve under the norm “Garments Without Guilt”, where the regulatory bodies ensure no child or bonded labor are allowed in their working environments. Therefore, this type of standardized practice may not explain the ISSP in the model amidst other varying factors. Hence, exploring how the social sustainability dimension can be defined as internal and external aspects can also be an interesting future research area in order to resolve this type of concern arisen.

5.3. Assessment of Structural Model

The structural model illustrates the relationship between latent variables. Assessment of collinearity issues, significance and relevance of structural model relationships, coefficient of determination (R^2), effect sizes (f^2), and prediction relevance (Q^2) was done, respectively, when evaluating the structural model.

VIF values were considered, as shown in Table 10, to assess collinearity. Since all the VIF values are below five and above 0.2, the structural model results will not be affected by the collinearity.

Table 10. VIF values.

Economic Performance	Construct	SB	ISSP
	VIF	2.84	2.84

The Significance and Relevance of Structural Model Relationships were analyzed, as shown in Table 11. The path coefficients varied from -1 to +1 indicate the hypothesized structural model relationships between latent constructs. Coefficients closer to +1 depict the strong positive relationship, while coefficients closer to -1 hint at the strong negative relationships. Bootstrapping is used to analyze the significance of these relationships, and the minimum number of bootstrap samples is considered to be 5000 [71]. A substantial relation for hypotheses H1 and H2 can be observed, as the path coefficient values are higher than 0.2.

Table 11. Significance of the structural model relationships.

	Structural Model Relationship	Path Coefficients	T Statistics (O/STDEV)	p Values	Significance Level
H1	ISSP -> EP	0.53	4.91	0	***
H2	SB -> EP	0.34	3.21	0	***

*- $p < 0.1$, **- $p < 0.05$, ***- $p < 0.01$, NS—Not Significant.

The coefficient of determination (R^2) ranges from 0 to 1, while 1 interprets the perfect predictive accuracy where 0.687 is the R^2 value for the economic sustainability dimension in our study. From this result, we can conclude a substantial explanatory power of our model as the R^2 values of 0.66, 0.33, and 0.19 can be interpreted as substantial, moderate, and weak relationships in PLS path models, respectively [72].

f^2 is calculated based on the change in R^2 occurs “when a specific construct is eliminated from the model” [67] (p.114). Further, f^2 depicts how the omitted exogenous construct impact on the endogenous construct and the values of 0.02, 0.15, and 0.35 respectively represent small, medium, and large effects of the exogenous construct [67]. The f^2 values shown in Table 12 reflect that Internal Social Sustainability Practices create a higher impact on Economic Performance compared to External Social Sustainability Practices.

Table 12. Effect sizes (f^2).

Excluded Exogenous Construct (Independent)	ESSP	ISSP
Economic Performance	0.089	0.239

The blindfolding technique can be used to get Q^2 [71]. Q^2 calculates the predictive relevance of the inner model [67]. The model is considered to have predictive validity if the value of Q^2 is greater than zero. However, this blindfolding technique is only used to endogenous constructs that have reflective measurement models [67]. Since this path model does not contain any construct with a reflective measurement model, we did not calculate Q^2 .

The following Table 13 summarizes the empirically tested practices, ensuring the social and economic sustainability dimensions while answering the RQ1.

Table 13. Summary of the practices ensuring social and economic sustainability.

Sustainability Dimension	Practices
Social Sustainability Practices Benefiting towards Society	<ul style="list-style-type: none"> • Improved access to quality essential health care services • Improved awareness towards sustainable development—e.g., informing consumers on sustainable efforts via labeling • Improved youth Employment • Improved access to Sanitation and Hygiene • Philanthropic Activities (e.g., Infrastructure development in communities) • Research & Development to improve social sustainability dimension • Providing emergency relief services (e.g., providing staff time during emergency operations) • Partnerships with third parties to improve social sustainability dimension—e.g., partnerships with healthcare NGOs to raise awareness on cancer

Table 13. Cont.

Sustainability Dimension	Practices
Education Benefits	<ul style="list-style-type: none"> Improved availability of a skilled workforce Capacity Building through skill development—e.g., for current and future employment Employee training and education
Equity Improvement	<ul style="list-style-type: none"> Non-discriminatory actions based on gender, race, etc., and taking corrective measures to resolve discriminatory actions. Diversity and equal opportunity, especially when hiring and promoting Inclusive decision making
Gender Related Equity Improvement	<ul style="list-style-type: none"> Opportunities for women in leadership Improved gender equality by giving opportunity to comfortably voice women's opinions about unequal treatment Women empowerment through technology
Ethical Improvement	<ul style="list-style-type: none"> Anti-corruption—e.g., taking actions against bribery and extortion Improved ethical and lawful behavior—e.g., written internal and external mechanisms for reporting and seeking advice on concerns about unethical or unlawful behavior
Health and Safety Improvement	<ul style="list-style-type: none"> Providing healthy and affordable food Improved occupational health and safety
Improved Labor Conditions	<ul style="list-style-type: none"> Actions against workplace violence and harassment—e.g., no verbal/physical abuse Improved freedom of association and collective bargaining Improved labor/management relations to come to mutual conclusions
Child and Bonded Labor Conditions	<ul style="list-style-type: none"> Abolition of child labor Elimination of forced labor
Regulatory Responsibility	<ul style="list-style-type: none"> Effective, accountable and transparent governance—e.g., ensuring that suppliers comply with the local regulations Compliance with laws and regulations—e.g., inside the operating country and the international markets catered into
Improved Wage Conditions	<ul style="list-style-type: none"> Wages and benefits negotiations along the supply chains Providing satisfactory benefits to the employees Equal remuneration for women and men based on employee category, location of operations, etc.
Workers' and Employees' Conditions	<ul style="list-style-type: none"> Providing safe and affordable childcare services—e.g., in-house daycare facilities Providing sustainable transportation—e.g., shuttle bus services to transport employees/workers to facilities Providing affordable housing options
Economic Performance	<ul style="list-style-type: none"> Employee retention Employee attraction Improved image Attraction of new customers Retention of existing customers Foreign direct investment/Increase in investment Improved profits

6. Discussion

The contribution of this study is three-fold as relating to social and economic sustainability dimensions, and their integration in sustainable SCM literature and practice.

First, 11 different facets of the social sustainability dimension with diverse practices under each aspect were introduced while filling the research gap of exploring successful implementation of

sustainability practices in real life. Moreover, as this framework has been empirically tested, different facets and practices identified under the social sustainability dimension can be used as an initial framework to study the evolution of socially sustainable practices in future research. As a result, this study can serve as an initiative to fill the research gap on establishing a generalized set of social sustainability practices in supply chains starting from the perspective of a manufacturer.

Secondly, we identify different economic performances in this study. As a result, we fill the research gap of excluding non-financial performance measures in similar studies. In order to give a broader perspective to the economic sustainability dimension, we suggest future research focusing on both financial and non-financial performance measures. Moreover, as a long time is taken to reflect the impact of social sustainability practices on the financial figures [50], we further suggest conducting longitudinal studies in similar contexts in the future to probe the interrelation between these two dimensions in depth.

Thirdly, in this study, we addressed the “trade-off” in social and economic sustainability dimensions discussed by Seuring and Muller [20] and filled the research gap left in the SCM discourse. Our finding of a strong interrelation between social and economic sustainability dimension is aligning with the results of early research in the field. For instance, while Wang and Sarkis [50] pointed out the positive relationship between social and “financially measured” economic performance, our study elaborated on the relationship between social and “non-financially measured” economic performance. Moreover, our finding in the developing country context is in line with a similar study conducted in a developed country context by Pinto [73].

Nevertheless, when studying the path model we tested in this study, an argument may arise that since the ISSP construct is studied deeply (as ISSP construct has been designed as a second-order construct in the Path model—refer Figure 2), the results of the study are biased towards ISSP. Hence, it is noteworthy that significant attention was intentionally paid to the ISSP construct, since the considered context of this study by nature is more focused on internal social sustainability practices. As a result, this study mainly scrutinized how a company ensuring internal social sustainability practices achieve economic sustainability performances.

Additionally, this finding contributes to partially resolve the scholarly debate on whether socially sustainable companies achieve economic performance or vice versa. Moreover, we suggest focusing on how economically sounding companies achieve social sustainability, both internally and externally, in order to understand the reverse causality of the debate. Hence, future research focused on the causation would assist in exploring more on the direction of the relationship while revalidating the model. Such future research on the direction of causality can be extended by conducting interviews with experts in the field.

Moreover, when considering the practitioner’s understanding relating to this interrelation of social and economic sustainability dimensions, we witnessed that the large-scale and exporting apparel manufacturers in Sri Lanka work towards social sustainability practices that are ultimately bringing them economic benefits. However, they had not attempted to measure or study this relationship so far as to how this impacted on their businesses. Hence, this is a single attempt in a highly labor-intensive industry in a developing country context; we suggest conducting similar studies in different settings as future studies, while revalidating our model and before generalizing our findings.

Due to the complexity of the apparel supply chain, this study mainly focused on social sustainability practices and the economic performance of the apparel manufacturers while understanding the standard sustainability practices in the Sri Lankan apparel manufacturing. Future research can be conducted focusing multi-tiers in the apparel supply chain, such as the suppliers and suppliers’ suppliers of these apparel manufacturing companies and explore how sustainable practices are extending towards the 2nd and 3rd tier suppliers [74]. Moreover, despite the single firm’s perspective considered in this study, it should be emphasized that the managerial perspective on inter-firm sustainability practices should align with the sustainability goals of the fellow actors in the entire supply chain. The removal of this

silo mentality, in practice, will lead companies to achieve a better sustainability performance across supply chains.

How the practices of sustainable activities vary based on the size of the apparel manufacturing company can also be studied with the PLS-SEM methodology. Nevertheless, we could not conduct such analysis due to the limited number of respondents from the small-scale apparel manufacturing companies in Sri Lanka. Hence, there is an opportunity to study how sustainable practices differ among the players within the same industry while identifying the reasons for this type of behavior and steps to motivate a positive response among the companies. Moreover, the application of artificial neural networks, especially for such more complex models, represents another perspective for future research.

7. Conclusions

With this study, we present 11 different facets of social sustainability dimension as benefits to the society, education benefits, equity improvement, gender-related equity improvement, ethical improvement, health and safety improvement, labor condition improvement, regulatory responsibility, wage condition improvement, elimination of child and bonded labor, and working condition improvement with diverse practices. Additionally, this study also presents financially and non-financially measured practices ensuring the economic sustainability of supply chains.

Moreover, the findings of this study provide evidence that there is a positive relationship between social and economic sustainability dimensions. While answering how successfully implemented social sustainability practices result in achieving excellent economic performance, this study instigates the scholarly discussion for future theory development relating to the interrelation among sustainability dimensions in supply chains. More importantly, since this study clarifies the impact of the social sustainability dimension separately as “impacts of the social sustainability practices relating to employees” and “impacts of social sustainability practices relating to the society” on the economic sustainability dimension, this framework guides managerial decision making in sustainability practices in the apparel supply chain and other similar human-intensive supply chains.

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