

Green Supply Chain Management: Pressures, Practices and Performance with Reference to Ethiopian Leather and Leather Products Industry
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Abstract

Green supply chain management (GSCM) practices have emerged as an important proactive organizational approach for improving environmental performance of processes and products in accordance with the requirements of environmental goals. The main purpose of this study was to investigate the drivers, green supply chain management practices and its effect on organizational performance of Ethiopian Leather & Leather Products Industries. This study used descriptive and explanatory research design. Structured questionnaires were used to get primary data from top and middle level managers in the leather industry in Ethiopia. Data were analyzed using descriptive statistics, regression analysis, and structural equation model. The findings revealed that government and senior managers' pressure is important driver for Ethiopian leather industry to adopt GSCM practices, whereas, employees' and competitor' pressure is not important drivers for leather industry of Ethiopia to implement GSCM practices. In addition, the result of the study indicated that the Ethiopian leather industry has implemented the GSCM practices. The companies in Ethiopian leather and leather product industry have significantly initiated implementing the practices of GSCM in terms of internal environmental management practice, eco-design, green manufacturing practice, green packaging and investment recovery. On the contrary, green distribution practice, cooperation's with customers and reverse logistics practices are evidenced by low-level practices. Moreover, the findings of the study revealed that GSCM practice has insignificant effects on both environmental and operational performance of the companies. The originality of this research is that it ascertains the primary drivers in promoting green supply chain practices in African manufacturing industry. The study provides policy insights for professional organizations, regulators, and legislators to further promote Green practices.

Keywords: Green supply chain management, Drivers, GSCM practice

1.1 Introduction

Environmental issues are among the most pressing concerns for modern humanity, governments, and environmentally conscious business organizations to promote organizational sustainability in the world, specifically for the emerging economies (Hsu & Hu, 2008).

Over the past two decades, there has been increasing concern and awareness of widespread environmental degradation present and future generations are facing. Its importance emanates from increasing environmental problems such as air pollution, changing water quality and quantity, discharge of toxic substances and chemicals, increase in solid waste and climate change (Esty & Winston, 2006). These problems have largely been related to the operations of manufacturing industries (Beamon, 1999). Particularly, they affect in terms of carbon monoxide emissions, discarded packaging materials, scrapped toxic materials, traffic congestion and other forms of industrial pollution (Chin et al., 2015). As a result, the manufacturing companies have found themselves receiving different pressures from various stakeholders and organizational groups to conduct environmentally-friendly operations.

Green supply chain management (GSCM) refer to the involvement of environmental thinking into the supply chain management from the extraction of raw materials to product design, manufacturing processes, delivery of the final products to the consumers and end of the useful life of the product, including the management of the product after its useful life, i.e., reverse logistics (Zhu & Sarkis, 2005).

The research work of Zhu, Sarkis, & Lai (2007) revealed that environmental impact occurs at all stages of a product life cycle from resource extraction to production, use, reuse, recycle and disposal. In essence, GSCM practices focus on minimizing the environmental effect of the forward and reverse flows of the supply chain, while creating economic value and lower costs for the manufacturing companies (Zhu & Sarkis, 2004). In addition, implementation of GSCM practices plays a crucial role in influencing the total environmental impact of any firm involved in supply chain activities and thus contributing to sustainability performance enhancement.

The research of Fortes (2009) asserted that by integrating the ‘green concept to the supply chain management’ concept, it has created a new research agenda for both

developed and developing countries where the supply chain will have a direct relation with the environment.

The manufacturing sector, particularly the leather industry, plays a key role in the Ethiopian economy in terms of contribution to GDP, employment and exports (Amede, 2017). Nowadays, the Ethiopian economy has been gradually integrated into the world economy. These linkages and growth in globalization provide opportunities for Ethiopian firms to export products. However, the Ethiopian leather industry sector has been identified as a generator of air, wastewater, solid waste, toxic gases and other environmental pollutants (Beyene, 2015).

Therefore, businesses in general and manufacturing industries in particular, need to be proactive in their strategies towards managing the environmental impacts of their activities. In this regard, understanding the GSCM practices within manufacturing firms operating in Ethiopia is very crucial. Thus, the current study examines the drivers of GSCM, its practices and its effect on firms' environmental and operational performance within the context of Ethiopian leather and leather products industry.

1.2 Statement of the Problem

The growing degradation of the natural environment is one of the main threats to human survival in the long term. Since the industrial revolution, human beings have degraded the environment through the uncontrolled consumption of natural resources by the manufacturing industries and through the emission of pollutants in their various forms (Srivastava, 2007). As a result, the firms have found themselves receiving diverse pressures from regulatory authorities, customers, competitors, non-governmental organizations, employees and various organizational groups to conduct environmentally-friendly operations.

Increasing pressures to enhance environmental, operational and economic performance have caused emerging countries in general, and manufacturing firms in particular, to consider and start implementing GSCM. The study of (Zhu, Sarkis, & Lai, 2012) stated that the integration of environmental issues and SCM has become a thriving subfield over the past two to three decades.

Interest in GSCM has been growing among researchers and practitioners of operation and supply chain management since the early 1990s (Carter & Rogers, 2008; Kumar, Chattopadhyaya, & Sharma, 2012). A number of studies have been conducted to examine the link between GSCM practices and organizational performance. However, an in-depth investigation of the relationship between GSCM practices and organizational performance is still lacking (Zhu et al., 2013) Hence, a critical review of these prior studies reveals significant knowledge gaps.

The first research gap is that the existing research has not provided more conclusive evidence on GSCM practices, and environmental and operational performances. On the one hand, some studies found out that implementation of GSCM practices has a significant effect on both environmental and operational performance of organizations (Giovanni, 2014; Zhu & Geng, 2013). There are also contradictory results which indicated that implementing GSCM practices has no significant effect on environmental and operational performances of the organizations (González-Benito & González-Benito, 2005; Rusli et al., 2013). Given the above points, this study has tried to present a clearer picture of the relationship between GSCM practices, and environmental and operational performance in the context of Ethiopian leather and leather products industry.

The other research gap for this study to fill is that different scholars have operationalized the GSCM construct differently. The majority of them has a narrow perspective of the concept of GSCM and does not adequately cover all aspects of the construct. Prior researchers in GSCM have stressed the need to look at all aspects of GSCM (Kung et al., 2012). They argued that every activity at every step of the supply chain has an effect on the environment. That is why this study has made an attempt to consider all dimensions in the supply chain.

The other motivation for this study is that the concept of GSCM practices in the manufacturing industry in developing countries remains unclear and is relatively a new concept in this region. Most of the previous researches on this topic were skewed towards developed countries, mostly in North America, Europe, and Asia. In addition, studies concluded that there is still little research about GSCM implementation in developing countries, especially in Africa, and recommended further undertaking about the implementation of GSCM (Chen et al., 2012). In short, from the review of past studies, there was lack of researches that have addressed

GSCM practice issues in Africa. Therefore, this study tries to extend these previous researches into the Ethiopia manufacturing sector, particularly, leather and leather product industry.

Another research gap is the variety of stakeholders' pressures that can act as motivating forces to push firms to pursue GSCM practices previous studies found out are inconclusive.(Cai & Zhou, 2014). While the identification of the drivers of GSCM practices is a popular topic in the literature, still many questions remain unanswered. Firstly, most of the studies in this field are concentrating on developed economies; their findings may not be applicable to the developing countries such as Ethiopia due to the differences in organizational cultures, legislation, and economic conditions. Besides, it is unclear whether these stakeholder drivers solely or collectively motivated the implementation of GSCM practices.

Therefore, this study tries to identify the critical drivers of GSCM practices and draws a clearer picture of the relationship between drivers and GSCM practices adopted in the context of Ethiopian leather industry

Research Questions

Based on the above-stated problems, this research endeavors to find answers to the following key questions:

1. What factors pressure/drive the Ethiopian Leather & Leather Product Industry to implement GSCM?
2. What does the current status of GSCM practices of the Ethiopian Leather & Leather Product Industry look like?
3. What is the effect of green supply chain management practice on the environmental performance of the Ethiopian Leather & Leather Product Industry?
4. What is the effect of green supply chain practice on the operational performance of the Ethiopian Leather & Leather Product Industry?

1.3 Objective of the Study

The main objective of this study was to investigate the drivers, green supply chain management practices, and its effect on organizational performance of Ethiopian Leather & Leather Product Industry.

Specifically, this study has four objectives:

1. To examine the pressure/driver factors affecting GSCM practices in Ethiopian Leather & Leather Product Industry;
2. To assess the current practices of GSCM in Ethiopian Leather & Leather Product Industry;
3. To investigate the effect of GSCM practices on the environmental performance of Ethiopian Leather & Leather Product Industry; and
4. To investigate the effect of GSCM practices on the operational performance of Ethiopian Leather & Leather Product Industry.

1.4 Conceptual Framework and Research Hypotheses

A research conceptual framework was developed to investigate the relationships between drivers and GSCM practices, and to examine the effects of green supply chain management practices on organizational environmental and operational performance.

The first relationship between drivers and GSCM practices was developed based on intensive review of findings of previous studies and literature that addressed various aspects of GSCM (Zhu and Sarkis, 2004; Amit R. & Pratik, 2012; Rahman et al, 2014; Zhang and Yang, 2016).

The findings of previous studies indicated that both internal and external stakeholders play a significant role in the implementation of GSCM practices. Internal stakeholders, employees as well as managers, play a vital role in the adoption of environmental operational practices. Senior managers and employees' pressure are vital internal forces driving the manufacturing industry to pursue GSCM Practices (Walker et al., 2008; Clark et al., 2014). The implementation of GSCM practices depends not only on internal drivers or pressures but also on many external drivers namely; customers, governments, and competitors (Zhu et al., 2005; Laosirihongthong et al., 2013; Zhang and Yang, 2016). In a nutshell, the finding of previous studies indicated that government regulations, customers' and competitors' pressures have positively related to GSCM practices (Zhu et al., 2005; Holt and Ghobadian, 2009; Zhang and Yang, 2016). Thus, based on the intensive literature review the researcher developed five hypotheses that are tested in this study.

- Ha1: Employees' pressure positively affects the organization's adoption of GSCM practices.
- Ha2: Senior managers' pressure positively affects the organization's adoption of GSCM practices.
- Ha3: Governments' pressure positively affects the organization's adoption of GSCM practices.
- Ha4: Customers' pressure positively affects the organization's adoption of GSCM practices.
- Ha5: Competitors' pressure positively affects the organization's adoption of GSCM practices.

The second relationship between GSCM practices and environmental and operational performance of organizations is developed based on an intensive review of literature of previous studies. Former researchers have proved that GSCM practices enhance environmental performance in organizations. They have found out significant and positive relationships between GSCM practices and environmental performance (Zhu et al., 2005; Ninlawan et al., 2010; Eltayeb et al., 2011). In addition, a number of previous studies have also proved that GSCM practices improve operational performance in organizations. Likewise, Vachon and Klassen (2008) and Chavez et al., (2016) have found out significant and positive relationships between GSCM practices and operational performance. Thus, based on the above discussion the following hypotheses are put forward:

- Ha6: Green supply chain management practices positively affect environmental performance.
- Ha7: Green supply chain management practices positively affect operational performance.

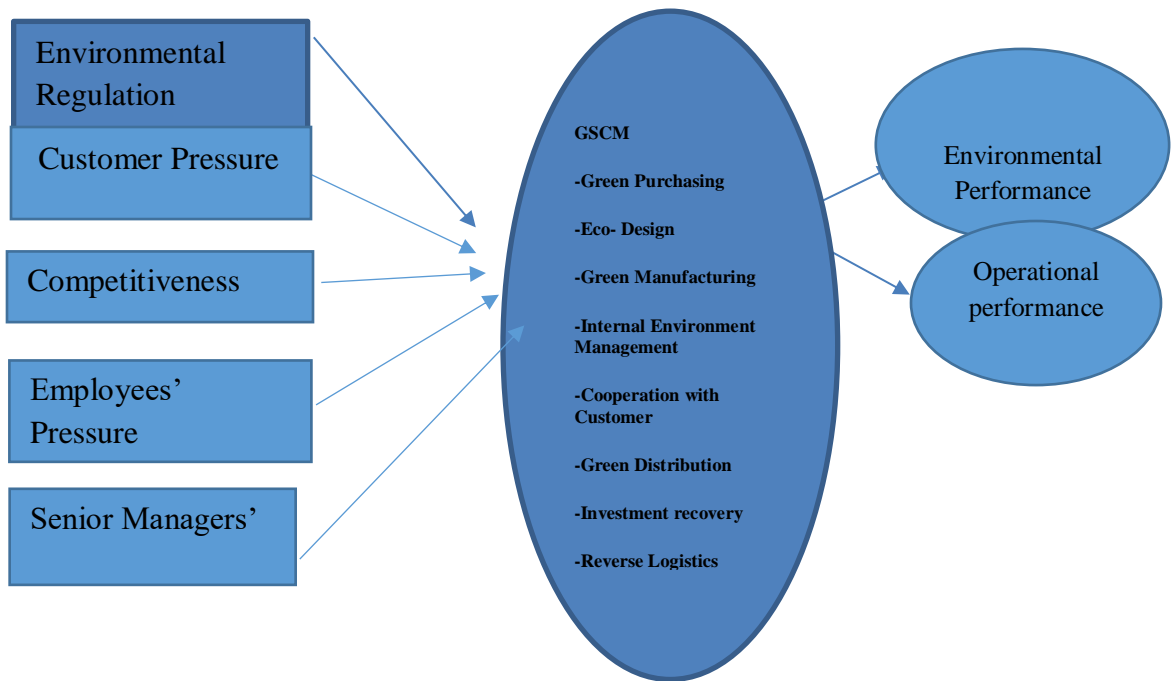


Figure 1: Conceptual framework

Source: Intensive review of prior studies

1.5 Limitation and Area for Future Research

This study has a few limitations which should be considered when interpreting the results, and these limitations may serve as a foundation for future research. First, environmental and operational performance measures were assessed using perceptual data. Thus, future research can focus on actual and more objective data on environmental and operational performance. The second limitation of this study is that it was based on a limited geographic location. This study focused only on Ethiopia while further studies can be carried on different geographic areas. The third limitation of this study is that it was sector or industry-based. This study focused only on the leather and leather product industry; thus further studies can be done on different sectors like construction, mining, and textile sector.

2. Research Methodology

This study employed descriptive and explanatory types of research and employed a survey research strategy to capture the relevant information from the respondents. Besides, this study applied a cross-sectional survey research design. In order to meet the predetermined objectives of the study, quantitative types of data are used. In addition to this, to generate valuable and relevant data, the researcher employed both primary and secondary sources of data. The primary sources of data were collected through a questionnaire. The subjects of this study were all registered leather and leather product manufacturing companies operating in Ethiopia - Ethiopia had 92 registered leather and leather products manufacturers at the time of the study. Since the subjects of the study were very large, the researcher selected 65 firms for the study based on the theoretical assumption that 70 % of the target population are taken as representatives.

Considering that that leather and leather product industries have different strata, proportional stratified random sampling was employed to determine representative sample. After stratifying in such a way, simple random sampling technique was utilized for selecting each company from the sample frame of each stratum.

The instrument used for data collection was questionnaire. The questionnaire was designed in the form of Likert scale. The questionnaire was adapted from the work of previous studies of Zhu et al., 2005; D. Holt & Ghobadian, (2009); Zhang & Yang, (2016) with minor modification.

A total of 301 questionnaires were ultimately collected from 65 companies. The final respondents for the questionnaires of this study were top management, middle managers and senior experts.

Finally, the collected data were analyzed through descriptive statistics, multiple regressions and structural equation modeling.

3. Results and Discussion

3.1 Results of Regression of GSCM Drivers on GSCM Practices

Table 1: Results of Regression Analysis on the Effects of GSCM Drivers on GSCM Practices

Model		Coefficients						
		Unstandardize d Coefficients		Standardize d Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	B			Tolerance	VIF
1	(Constant)	2.035	.188		10.846	.000		
	Employees' pressure	.005	.027	.007	.165	.869	.983	1.017
	Senior Managers' pressure	.229	.033	.352	6.941	.000	.673	1.486
	Government's pressure	.231	.026	.438	8.745	.000	.690	1.450
	Customers' pressure	-.058	.028	-.088	-2.095	.037	.986	1.014
	Competitors' pressure	.039	.034	.048	1.148	.252	.989	1.011
a. Dependent Variable: GSCM practices.								
R=0.699								
R ² =0.489								
F value is significant (Sig. =.000, and P, =<0.01).								

Source: survey result, 2019

As shown in Table 1 above, the R-value of 0.699 (69.9%) indicated that there is a high positive relationship between the predictor and dependent variables. The value of R-square is 0.489. This suggests that 48.9 percent of the variation in the model is explained by the variables already incorporated into the model. In addition, the F value is significant (Sig. =.000, and P, =<0.01). This indicates that the regression model is significantly good to predict how GSCM drivers affect the implementation of GSCM practices.

Table 1 also clearly shows that the pressure effect of employees on the organization's adoption of GSCM practice is not statistically sufficient. This means the relationship is positive and insignificant ($\beta=0.007$, $t= 0.165$, $p \geq .05$). The regression results show that employees' pressure has no significant influence on the implementation of GSCM.

With respect to senior managers' pressure, the results of the regression presented above show that it has a significantly positive effect on GSCM practices with the value of ($\beta=0.229$, $t= 6.94$, $P=0.00$). This shows that a senior manager has profound influence on the firm's GSCM practices. The finding of this study is consistent with the large body of research which upholds that pressures from senior managers have significant positive impact on the adoption of GSCM practices (Bowen et al., 2001; Zhang & Yang, 2016).

Moreover, Table 1 shows the results of the significance test for the relationship between the pressure of government regulation and GSCM practices. The relationship is found to be positive and significant ($\beta = 0.231$, $t = 8.74$, $p \leq .01$). This implies that the environmental regulation of the government has a positive effect on the implementation of GSCM in the Ethiopian leather industry firms. This result is also consistent with a number of earlier researches which claimed that government regulations and legislations and the major drivers for GSCM practices (Zhu et al., 2005; Yalabik and Fairchild, 2011).

With regard to customers' pressure, the result indicates that customers' pressure has a significantly negative effect on the implementation of GSCM practices ($\beta = -0.058$, $t = -2.095$, $p \leq .05$). The result of this study goes along with the study conducted by Zhu et al., (2013) which emphasized that customers' pressures had a negative effect on green supply chain management practices. The possible reason is, in developing countries consumer's desire low cost products. This initiates these manufacturers to reduce the interest of investing on green practices.

Another result is that competitors' pressure has a positive effect on GSCM practices, but it is not statistically sufficient. This finding aligns with the study conducted by Zhang & Yang (2016) which reported that pressure from competitors had no significant positive impact on GSCM practices. One possible explanation for the

insignificant competitors' pressure could be the firm size. Many manufacturing firms in developing countries, particularly in Ethiopia, are small in size and thus they are not in fierce competition with large competitors in the market.

3.2 Descriptive Statistical Analysis on the Extent of Current GSCM Practices

Table 2: Current GSCM practices of Ethiopian Leather & Leather Product Industry

S. No	Key dimensions of GSCM practices	Grand Mean	Std. Deviation
1	Internal environmental management	3.79	1.04
2	Green purchasing	3.41	1.14
3	Eco-design	3.78	1.04
4	Green manufacturing	3.67	1.02
5	Green packaging	3.63	1.04
6	Green distribution	2.35	0.92
7	Cooperation with customers	2.63	0.99
8	Investment recovery	3.55	1.09
9	Reverse logistics	2.81	1.4

Source: survey result, 2019

The survey results exhibited in the above table reveal that the internal environmental management practices have the highest mean score. This implies that Ethiopian Leather & Leather Product Industry has implemented internal environmental management practices to a great extent. This was followed by eco-design, green manufacturing practice, green packaging practice, and investment recovery, in this order. On the other hand, green distribution practice, cooperation's with customers, and reverse logistics practices are evidenced by low mean score, respectively. This implies that these dimensions of GSCM practices are practiced to a low extent.

Therefore, it is evident from the result that the Ethiopian manufacturing industry, particularly the leather and leather product industry, in the infant learning stages of GSCM practices has witnessed low level of GSCM implementation.

3.3 The Effects of GSCM Practices on Organizational Performance

Exploratory Factor Analysis (EFA)

Table 3: Exploratory Factor Analysis Result

Scale	Initial Number of items	Extracted factors ¹	Com. %age of variance explained	Number of retained items ²	Number of items discarded ³
GSCM practices and performance (KMO=0.91, Bartlett's test= sig. 0.000)	59	9	0.70	40	19

Notes: ¹Factors with eigenvalues of 1 were retained, ² loadings for all retained items were above 0.5, ³items were removed due to low loadings, low communalities and cross-loadings. Principal component Analysis extraction using Varimax rotation was run.

Confirmatory Factor Analysis (CFA)

CFA was used to address the validity and reliability issues by refining and confirming the resulting factors in the EFA, and to assess the unidimensionality of constructs.

- Construct reliability:** Composite reliability (CR) and Cronbach's alpha coefficient were employed to examine the reliabilities among the items within each construct. The CR of all constructs was above 0.7 (range from 0.790 - 0.938) and Cronbach Alpha value ranged from 0.787 to 0.936. The composite reliability and Cronbach's alpha of all the factors/constructs

exceed the widely recognized rule of thumb of 0.70, thus demonstrating adequate reliability of the measurement scales (Fornell and Larcker, 1981).

- **Construct Validity:**

- ✓ Convergent validity: Standardized regression weights for all indicators in the overall measurement model fall between 0.603 and 0.913 (and significant), providing an evidence of convergent validity. Moreover, the AVE values for each latent construct were found to be > 0.5 providing additional support of construct validity.
- ✓ Discriminant Validity: CR= 0.790 to 0.938, Maximum shared variance (MSV) <Average variance extracted (AVE), thus providing support for discriminant validity.

Overall Measurement Model Fitness

Goodness-fit indices	First-order Measurement Model	Higher-order Measurement Model	Recommended values for satisfactory model-fit
X ² /df. (CMIN/df.)	1.53	1.529	<3
Goodness of fit index (GFI)	0.853	0.714	>0.8
Comparative fit index (CFI)	0.944	0.942	>0.9
Tucker-Lewis index (TLI)	0.938	0.910	>0.9
Incremental fit index (IFI)	0.945	0.913	>0.9
Root mean square error of approx. (RMSEA)	0.042	0.042	<0.05
PCFI	0.851	0.881	>0.7
<i>NB: Thresholds were adopted from Hair et al.,2006; Kline, 2005 and Byrne,2010</i>			

Assessment of Structural Model

The structural model connects the proposed exogenous and endogenous latent constructs with each other in order to predict the hypothesized causal relationships between these constructs.

The overall fit indices of the structural model (CFI=.942 (≥ 0.90), IFI =.943 (≥ 0.90) and SRMR=0.053 (< 0.06) satisfied the cut-off points, X² statistics of 1115.27 at 730 degrees of freedom implies that X²/df =1.528, which is less than the benchmark of 3.0; PCFI=0.882, which is greater than 0.7. Thus, the test results confirmed that all the fit index values of the structure model were acceptable.

Analysis of Hypothesis

Ha6: Green supply chain management practices positively affect environmental performance.

Ha7: Green supply chain management practices have positive effect on operational performance.

Table 4: Results of Hypothesis test using SEM

Hypothesis	Path way	Standard Coefficient	P-value	Result
H6	EP <--- GSCM Practice	.09	.178	Not Supported
H7	OP <--- GSCM Practice	.05	.495	Not Supported

Source: Amos result, 2019

As shown in the structure path in Table 4 above, the path coefficient of GSCM practices to the latent variable environmental performance is 0.09 and the P-value is 0.178. The results of the study revealed that the implementation of green supply chain management practices had a positive but insignificant effect on the environmental performance of the firm, which confirms that the implementation of GSCM practices did not improve firm environmental performance. This could be attributed to the fact that most leather industry firms have started adopting green supply chain strategies in the recent past and the effects of these practices may not

have been fully realized. The finding of this study is consistency with studies conducted by Rahman et al., (2014); Younis, H. et al., (2016).

This study also aimed at investigating the effects of GSCM practices on operational performance. The path coefficient of GSCM practices to the latent variable operational performance is 0.05 and P-value is 0.495. This result implies that the implementation of green supply chain management practices has a positive but insignificant effect on the operational performance objectives of the firms. The finding of this study is consistent with a study conducted by Green et al., 2012; Zhu et al., (2007), which did not find a significant association between GSCM implementation and operational performance. Based on the above results, it was confirmed that the implementation of GSCM practices could not enhance operational performance of the firms in the context of Ethiopia leather industry. This may have resulted from the fact that firms in developing countries such as Ethiopia are still at the early stages of adopting GSCM practices related to reverse logistics, cooperation's with customers and green distribution (Zhu et al., 2005; Beyene, 2015). Because of the above justification, GSCM practices failed to have impact on operational and environmental performance.

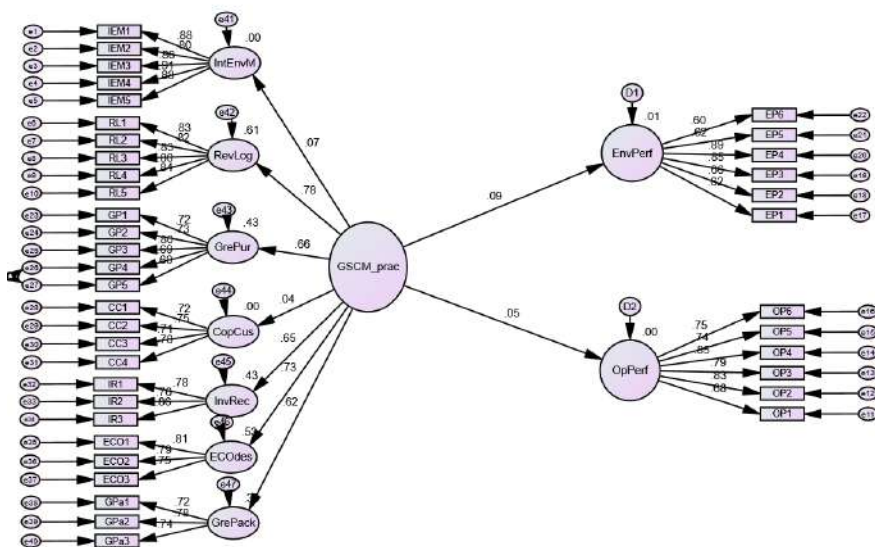


Figure 2: Structure model diagram with path coefficients
Source: Amos result, 2019

4. Conclusion

The study examined the relationship between GSCM drivers and GSCM practices, and found out that government rules and regulations were the most critical drivers/factors for Ethiopian leather industry to adopt GSCM practices. The study also found out that Ethiopia leather industries have experienced strong pressures from senior managers. Therefore, based on the above results, it can be concluded that the pressures of the government and senior managers rather than employees' and competitors' that were important drivers for the Ethiopian leather industry to adopt GSCM practices.

In light of these pressures, the result of the study indicated that Ethiopian leather industry has significantly initiated implementing the practices of GSCM in terms of internal environmental management, eco-design, green manufacturing, green packaging, and investment recovery; whereas green distribution practice, cooperation's with customers and reverse logistics practices revealed low-level practices. Therefore, it is evident from the result that the Ethiopian manufacturing industry, particularly the leather and leather product industry, could not fully implement GSCM practices because it is at an early stage.

Finally, the results of the hypothesis tests through SEM analysis revealed that GSCM practices had no positive and significant effects on both environmental and operational performance. The finding of the study leads to the conclusion that Ethiopian leather & leather product industry was under pressure to take GSCM into consideration and their GSCM initiatives did not lead to an improvement in their environmental and operational performance.

5. Recommendations

Based on the findings and conclusions, the following recommendations are forwarded:

- Firstly, the government has been playing a critical role in encouraging and stimulating leather industry firms to consider and implement GSCM. Following suit, it should scale up implementing GSCM practices by taking steps in making environmental regulations more stringent in line with the developed countries. To encourage the implementation of GSCM practices, governments of Ethiopia should introduce and promote ideas such as extended producer responsibility.

- Secondly, the study found out that the Ethiopian leather industry is more likely to be encouraged in terms of GSCM with support from management, eco-design, green manufacturing, green packaging, and investment recovery. Therefore, if subsequent clear and effective communications and well-managed cooperation throughout the organizations are made, that will have significant contributions towards helping leather firms to achieve their objectives with respect to GSCM. Increasing environmental awareness via training and education of both management and employees, investing more into pollution preventive solutions, and integrating environmental strategies into the whole production process are all recommended as effective tactics by which the leather industry can improve its environmental and operational performance.
- Thirdly, even though the findings provided that the implementations of GSCM practices have no significant effect on the environmental and operational performance of the industry, it is recommended that implementing it further should be emphasized. Former researches also indicated that GSCM practices have a significant effect on both environmental and operational performance. Therefore, leather industry firms should implement environmentally sound practices in all phases of the supply chain - beginning with the procurement of raw materials and suppliers through design, manufacture, packaging, distribution of their products, and end of life disposal. In doing so, they are likely to perform better environmental and operational performance.

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