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Exploring The Nexus Among Green Supply Chain Management, Environmental Management, And Sustainable Performance: The Mediating Role Of Environmental Management

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Abstract: The main objective of the current study is to investigate the direct relationship between the green supply chain management, environmental management, and sustainable performance. In addition to that the study has also examined the mediating role of environmental management. The manufacturing firms listed in PSX are chosen as a sample of the study. The study has employed the survey based methodology and the data were collected with the aid of a questionnaire. The response rate after omitting unusable questionnaires is 59.6%. For the data analysis, the study has chosen, SEM-PLS, which is one of the most robust technique for the data analysis. The findings of the study have shown agreement with the hypothesized results. The response rate after omitting unusable questionnaires is 59.6%. The researchers highlighted the presence of two different mediation impacts between the internal and external GSCM activities or both are the mediators of these associations. The scholars highlighted the presence of two different mediation impacts between internal and external GSCM practices and organizational economic performance enhancement. The study will be helpful for practioners, and policymakers in understanding the issues related to green supply chain management, environmental management, and sustainable performance.

Keywords:green supply chain management, environmental management, sustainable performance, Pakistan

BACKGROUND

The growing technical and institutional pressures have influenced the enterprises to increase their target towards greening their firms (Tseng, Islam, & Karia, 2019). Organizational economic performance is therefore required to be stable along with the organizational greening efforts (Peng, Lee, & Lu, 2020). At the same time, in a large network of enterprises, the individual enterprise participates as a member while also growing from independent activities towards an even more effective way of working through combined strategies of the supply chain.

Such kind of associations of the firms would continuously change towards their integration with their supply chain partners resulting in an improved collaboration (Sreedevi & Saranga, 2017). During the previous few decades, these environmental and supply chain strategies that have been concerned with the green supply chain management (GSCM) have advanced and now become an essential manufacturing enterprise strategy, and their supply chains enhance the competitive position and general performance (Lee, Noh, & Choi, 2017).

However, the implementation of GSCM has a crucial hurdle to be conquered. For instance, uncertainties and multiple complexities are significant barriers when enterprises are trying to find and accept the GSCM activities in their projects tasks. Cross-functional and inter-organizational combination of marketing, engineering, production, logistics personnel, and environmental integration and their fears which illustrate the efficient GSCM attributes that participate in uncertain considerations and complexities (Lee et al., 2017).

For manufacturing enterprise to achieve efficient performance from coordination, GSCM practice adoption and incorporation of both internal for instance external GSCM practices and management support such as collaboration with customers and suppliers play a vital role. From the implementation of GSCM activities, the enhancement in the enterprise performance occurs which would support both the aspects of the firm including non-financial and financial dimensions (Liao & Zhang, 2020; Mores, Finocchio, & Barichello, 2018). There are numerous types of impacts on the performance improvement on the complexity 2 of the GSCM implementation

condition that is because of the problems in understandings and degree of measurement during the multiple performance dimensions (Bai & Sarkis, 2019; Shojaei, 2020).

The primary theory of this research work is that management of external and internal GSCM practices plays a vital role to gain multiple performance advantages in the areas such as business, economic, and environmental performance dimensions. Especially, the researchers highlighted that GSCM management depends upon the implementation of activities in a particular manner and a certain order to gain numerous performance advantages and improve efficiency. For instance, in some specific conditions firstly implementation of internal GSCM activities plays a vital role in the efficient implementation of external GSCM activities to recognize the attainment of performance.

This research work is the originator to examine the role of the progressive implementation of GSCM practices and its influence on performance. The investigation of the intervention among GSCM practices because of the progressive implementation and their impacts of performance can give more understandings regarding efficiently handle the GSCM problems during the process of adoption. For the recognition of progressively implementation and management conditions during the GSCM adoption, the researchers investigating the different intervening impacts by the external and internal GSCM practice implementation and numerous dimensions for the enhancement of the firm's performance.

A mediation model supports recognizing that whether an association among dependent factors (such as organizational performance) and independent factor (such as specific internal GSCM practice) is impacted by the presence of a facilitating variable (such as particular external GSCM activity). Here the facilitator plays a vital role, as it shows that the variables that act as a moderator variable are required to be implemented for the significant association among dependent and independent variables. Hence, the researchers claimed the progressively implementation and management conditions for environmental management activities for instance the GSCM achieves the managerial significance.

The current study of the researchers developed the insight about GSCM theory that was developed by integral management of theoretical vision towards the GSCM study. Coordination theory claimed that the coordination of a firm's practices for instance the external and internal dimensions of management activities tend to move towards the efficient results of performance among the supply chain (Zaid, Jaaron, & Bon, 2018). Practical participation from this research work such as the managerial perceptions according to the facilitating impacts for manufacturing enterprises to develop and plan the particular plans for the efficient GSCM adoption and other various environmental management activities.

LITERATURE REVIEW

GSCM collaborates with the environmental issues inside the management of the supply chain. The supply chain practices consist of the relationship among the flow of services and goods from materials assets towards the final buyers such as the combination of those activities that are external and internal to the organization (Shtal, Uvarova, & Ostapenko, 2018). In the same way, GSCM perception can be observed at multiple stages such as internal and external GSCM perceptions.

The consideration regarding environmental management practices consists of transactions among customers and suppliers as external practices of the supply chain; the external practices with the absence of customer and supplier contain four factors such as environmental management, eco-design and financial policies inside the manufacturer direct supervision and refers as in internal activities (Lee & Lim, 2020). These categories and practices are operationalized and explained further in the sector of methodology. Various research work represents that GSCM activities can enhance the performance regarding the environment but the association based on the capability of the firm (Pudjiarti, 2018).

The association between economic performance and GSCM (various corporate practices regarding environment) has been investigated but there was a contradiction in the findings (Teh, Ong, & Lee, 2020). According to partial research work that has investigated the link between operational performance and GSCM (Yu, Zhang, & Huo, 2019).

The is an absence of any indication for the recognized association among the resulting improved performance and GSCM adoption, whether it is operational, economic, and environmental these variables were like an obstacle for the manufacturing enterprises that were recognized to explain the GSCM adoption. The earlier research work explained that there is a direct significant impact among performance improvement and GSCM but the performance enhancement is not recognized always (Liu, Feng, & Zhu, 2018).

This research work claimed that internal GSCM activities for instance eco-design and environmental management have been implemented at a wider range as compare to the external GSCM practices, such as the collaboration with the customers and suppliers. The difference among the implementation of external and internal GSCM practices would describe why enhancements in economic, environmental, and operational performance do not take place always.

These uncertainties and complexities have to be examined more cautiously. The researchers now recognize the theoretical model that would support the description that is the reason why these changes occur in performance results in the difficult GSCM condition which might happen. Particularly, the researchers, targeted on the coordination theory and the promising facilitating interrelationship among external and internal GSCM practices over the performance results of manufacturing enterprise, which would support to evaluate that how the sequence of coordination should happen.

HYPOTHESES

The earlier research work has investigated that environmental management act as a moderator (which is an important activity) for a manufacturing enterprise to achieve expanse and service competitiveness by the SCM which is associated with the activities for instance supplier management (Peng et al., 2020). The concerns arise associating to the implementation of internal order as compare to the external GSCM practices although the study consideration plays a significant role regarding the adaptation problem which is revealing.

For instance, in some conditions when external practices need to implement the internal practices for the enhancement of performance. Otherwise, the implementation of internal practices would not only completely participate in the improvement of performance in that case in which the implementation of (facilitating) external practices does not exist. Scholars' targets in this research evaluate whether mediation categorizes and mediation present among the implementation of external and internal GSCM activities and performance of the firms.

The scholars examine the three potential theoretical models which are represented in Figure 1. The research work examined the different features of the first model (A), the independent impact of external and internal GSCM practice groups regarding GSCM practices implementation over the enhancement of performance, which would attain various findings (Nkrumah, Asamoah, & Annan, 2020). These association of examinations represents the no, weak, and strongly positive associations. Furthermore examination of the remaining, facilitating, the model would support the researchers to reveal the perceptions for this variation over the performance results which is linked with the GSCM adoption.

The theoretical background of this research work deals with the coordination-theoretic perception inside the management of the supply chain. The study individually examined the external and internal features when examining the inter-organizational and supply chain performance (Saeed, Malhotra, & Abdinnour, 2019). According to this research work, which is based on a survey that was conducted among 100 randomly selected supply chain management study articles, the researcher claimed that the frame-work among inter-organizational analyses which were highly recognized in the literature, but the research work on the framework of intra-organizational associations and management of supply chain were the main topic of many research works (Song, Turson, & Ganguly, 2017).

Just one publication established that examined the intra and inter-organizational constructs both (Mokhtar, Genovese, & Brint, 2019). Coordination theory claims that enterprises must collaborate the practices with their supply chain (Haulder, Kumar, & Shiwakoti, 2019). Coordination theory represents the presence of dependencies within the activities required to accomplish appropriately. The theory has been practiced to investigate the inter-organizational dependencies, generation of digitized logistics practices, and management of product information in the supply chain (Asamoah, Owusu, & Baidoo, 2020; Corbière, Rowe, & Saunders, 2019).

Firm's activities, for instance, GSCM are organized by the communication systems and the presence of association within the firm's performers, and there is 7 strength of these systems which anticipates efficient performance. In the 1990s, the strategic supply chain management develops the acknowledgment that enhanced over collaborations, an information exchange with supply chain partners and was required with the target to work as cooperative value chains as compared to the independent firms which are looking for personalized financial targets (Kim, 2017).

The external and internal modifications among firms were needed for efficient supply chain management. More coordination and cooperation in the supply chain of inter and intra firm's both, by strategic and long-term associations which tends to enhance the organizational and financial performance (Awan, 2019; Kazancoglu, Kazancoglu, & Sagnak, 2018a). The examination of external and internal coordinating mechanisms altogether within the inter-organizational and organizational systems has hardly been researched.

Among firms, the external cooperation would not perform significantly neither they would be successfully deprived of appropriate internal cooperation. The researchers claimed that manufacturers through established external and internal interfaces performance efficient as compared to the opponents just acknowledge the internal interfaces (Kim, 2017). Innovation (according to some perception the GSCM activities considered as environmental organizational innovations) is the general performance of collaboration among different external entities and an organization (Dubey, Gunasekaran, & Childe, 2019).

The customer's and suppliers' alliances, integration, and involvement are significant ways to produce performance and innovation in firms (Xian, Sambasivan, & Abdullah, 2018). The external and internal

associations and concerns play a significant role in the generation of innovation (Dubey et al., 2019). However, inter and intra-organizational coordination are studied in the research literature of management, the scholars generally acknowledge them through distinctive analytical contexts.

The organizational structure drawn out from the internal unit to external firms, can support the organizational coordination networks and support them among those for intra-organizational coordination (Perlines, Han, & Law, 2019). The unsuccessful practice is precisely coordinated among Intra and inter-organizational levels who have unfortunately performance and expensive coordination expenses (for instance, re-handling and delay). The modification in firms deprived of allowing dependency between the components of coordination tends to move towards poor performance as compared to the anticipated one.

The influence of external association among customers and suppliers over the performance is generally facilitated through internal coordination. This is a one-way association which was examined and extended as potential two-way facilitation among delivery performance, supplier coordination investments, and customer coordination investments (Kazancoglu, Kazancoglu, & Sagnak, 2018b). This two-way mediation which is a theoretical assumption claimed that the association among delivery performance and customer coordination investments were facilitated through supplier coordination investments and the association among delivery performance and supplier coordination investments were facilitated through the customer coordination investments. These analyses of supply chain mediation targeted on coordination and external investments. No one measured the integral internal coordination mechanisms and their associations towards the external mechanisms.

The research work literature of environmental performance and GSCM practices has presented the perception over possible internal and external patterns of supply-chain which depends upon the associations for environmental performance enhancement (Liao & Zhang, 2020; Mores et al., 2018). The positive association between environmental performance and supply chain management is continuously verified in the research work literature.

Earlier research work reflects that external GSCM activities for instance customer and supplier 10 collaborate which would mediate the implementation of internal GSCM activities, along with the obvious aim of environmental performance enhancement according to the supply-chain perception (Yu et al., 2019). Moreover, the establishment of associative links along with suppliers is encouraging for the growth and implementation of internal innovative environmental technologies (Liao & Zhang, 2020).

According to the coordination theory as per empirical proves from the earlier research work stated by the researchers Liao and Zhang (2020), the scholars claimed that absence of internal GSCM growth and coordination along with external practices which would fail the environmental performance enhancements between manufacturing enterprises. In the same way, externally focused GSCM activities (for instance, the process of green design with customer cooperation for eco-design of product and suppliers for minimizing wastes) internal coordination mechanisms required (for instance particular staff training on cross-functional cooperation and environmental management issues) to force the needs of the goals by the hierarchy of the firms for external practices which would be efficiently supported. Hence, the researchers highlighted the first set of substitution hypotheses:

H1: Green supply chain management (GSCM) has significant impact on the environmental management (ENVM) of manufacturing firms in Pakistan.

H2: Green supply chain management (GSCM) has significant impact on the operational performance (OPP) of manufacturing firms in Pakistan.

H3: Green supply chain management (GSCM) has significant impact on the economics management (ECOP)of manufacturing firms in Pakistan.

H4: Green supply chain management (GSCM) has significant impact on the environmental performance (ENVP) of manufacturing firms in Pakistan.

H5: Environmental management (ENVM) has significant impact on the operational performance (OPP) of manufacturing firms in Pakistan.

H6: Environmental management (ENVM) has significant impact on the economics management (ECOP)of manufacturing firms in Pakistan.

H7: Environmental management (ENVM) has significant impact on the environmental performance (ENVP) of manufacturing firms in Pakistan.

H8: Environmental management (ENVM) mediates the relationship between the Green supply chain management (GSCM) and operational performance (OPP) of manufacturing firms in Pakistan.

H9: Environmental management (ENVM) mediates the relationship between the Green supply chain management (GSCM) and economics management (ECOP) of manufacturing firms in Pakistan.

H9: Environmental management (ENVM) mediates the relationship between the Green supply chain management (GSCM) and environmental performance (ENVP) of manufacturing firms in Pakistan.

METHODOLOGY

To collect data for present research, we employed structured questionnaire using qualitative research approach. For sample selection, the convenient sampling technique is adopted in this study. During the process, 550 questionnaires were distributed for data collection from the respondents, and we obtained only 360 questionnaires that were distributed to the targeted respondents. At the data sorting stage, Hair, Hult, and Ringle (2016) suggestion is considered, i.e. omitting those questionnaires which were incomplete, consequently, 32 questionnaires were excluded at this stage. The response rate after omitting unusable questionnaires is 59.6%.

The descriptive analysis is then performed on the obtained data, followed by the application of statistical analysis, which was performed by adopting the Partial Least Square Structural Equation Modeling (PLS-SEM). It is a technique which is used to statistically analyze the multivariate relation among the model's observed and the latent constructs. With regards to analysis, PLS-SEM is one of the most powerful techniques as it simultaneously analyzes multiple independent and dependent variables as well as the relationship between these variables. Besides, this technique can efficiently handle missing data problem, multicollinearity among variables, and allows stronger prediction regarding the relationship between the variables.

RESULTS

This section of the study discusses the application of PLS-SEM, which usually takes place in two steps, 1) the outer or the measurement model, and 2) the inner or the structural model. The outer model specifies the nature of association among latent variables in the model with their respective indicators. Reflective and formative blocks are the sub-parts of the outer model. Therefore, in a PLS-SEM analysis, we estimated the outer model in the first step and the inner model will be estimated once the reliability and validity of the constructs are ascertained (Basheer et al., 2018; Basheer et al., 2019; Hameed et al., 2019; Nuseir et al., 2020). Each item of the construct is measured to determine whether items truly represent their respective construct and how well these items load theoretically. Simply put, the outer model analysis makes sure whether all the items that are involved in the survey are in fact valid and reliable, i.e. they are measuring what they are supposed to measure.

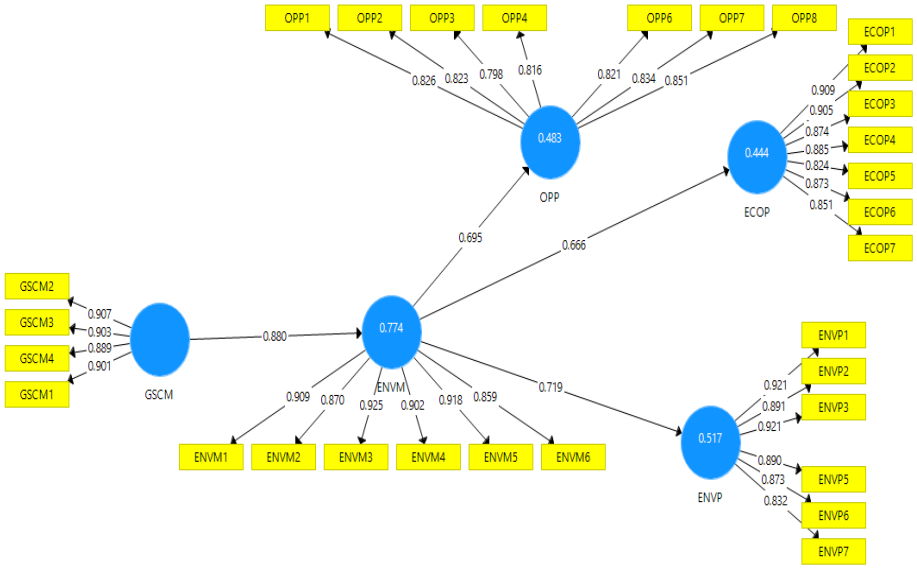

Fig.1: Measurement Model

H2: Green supply chain management (GSCM) has significant impact on the operational performance (OPP) of manufacturing firms in Pakistan.

Table 1: Cross Loadings

	ECOP	ENVM	ENVP	GSCM	OPP
ECOP1	**0.909**	0.583	0.829	0.633	0.748
ECOP2	**0.905**	0.606	0.820	0.608	0.769
ECOP3	**0.874**	0.592	0.814	0.585	0.719
ECOP4	**0.885**	0.620	0.809	0.618	0.729
ECOP5	**0.824**	0.530	0.747	0.564	0.688

ECOP6	**0.873**	0.594	0.810	0.562	0.710
ECOP7	**0.851**	0.545	0.780	0.532	0.772
ENVM1	0.614	**0.909**	0.652	0.817	0.652
ENVM2	0.528	**0.870**	0.570	0.778	0.558
ENVM3	0.624	**0.925**	0.662	0.797	0.653
ENVM4	0.576	**0.902**	0.652	0.791	0.589
ENVM5	0.619	**0.918**	0.686	0.791	0.652
ENVM6	0.619	**0.859**	0.641	0.763	0.630
ENVP1	0.854	0.678	**0.921**	0.641	0.808
ENVP2	0.866	0.655	**0.891**	0.604	0.779
ENVP3	0.868	0.675	**0.921**	0.632	0.814
ENVP5	0.792	0.622	**0.890**	0.563	0.744
ENVP6	0.760	0.647	**0.873**	0.566	0.737
ENVP7	0.738	0.540	**0.832**	0.526	0.664
GSCM1	0.593	0.828	0.615	**0.901**	0.617
GSCM2	0.633	0.772	0.587	**0.907**	0.608
GSCM3	0.587	0.806	0.599	**0.903**	0.598
GSCM4	0.603	0.758	0.590	**0.889**	0.624
OPP1	0.836	0.600	0.852	0.592	**0.826**
OPP2	0.809	0.637	0.873	0.614	**0.823**
OPP3	0.784	0.588	0.792	0.578	**0.798**
OPP4	0.553	0.476	0.543	0.491	**0.816**
OPP6	0.555	0.512	0.556	0.486	**0.821**
OPP7	0.593	0.547	0.603	0.527	**0.834**
OPP8	0.648	0.615	0.646	0.605	**0.851**

In PLS-SEM analysis, outer model is mainly estimated by determining the validity and reliability of the items and the constructs (Hair et al., 2016; Henseler, Hubona, & Ray, 2016; Ramayah, Cheah, & Memon, 2018). Thus, we examined Cronbach alpha coefficients and composite reliability for each construct, and obtained greater than 0.70 values of Cronbach alpha and CR for all the constructs, which are presented below in Table 3, indicating that all values satisfy the recommended threshold level i.e. 0.70 (Hair, Matthews, Matthews, & Sarstedt, 2017; Naala, Nordin, & Omar, 2017; Ong & Puteh, 2017). For current study, the obtained range for CR is 0.83-0.91, which confirms the outer model reliability. Afterwards, convergent validity is observed for this study, which is defined as the point where for a particular construct, two measures that were related theoretically are also found statistically related to each other (Henseler et al., 2016). While measuring a construct, the convergence element is identified by using average variance extracted (AVE) measure, with 0.50 or above as the threshold level (Henseler et al., 2016; Naala et al., 2017).

Table 2: Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ECOP	**0.949**	**0.950**	**0.958**	**0.765**
ENVM	**0.952**	**0.953**	**0.961**	**0.805**
ENVP	**0.947**	**0.950**	**0.957**	**0.790**
GSCM	**0.922**	**0.923**	**0.945**	**0.810**
OPP	**0.922**	**0.925**	**0.937**	**0.680**

After the convergent validity, discriminant validity is also determined. The extent that a particular item is distinct from the rest of the items of a same construct is observed under discriminant validity test. Putting differently, it measures whether the items of the construct are theoretically unrelated (Akter, Fosso Wamba, & Dewan, 2017; Hair et al., 2016; Henseler et al., 2016). In this regard, Fornell-Larcker criterion is the

conventional approach that can be used to determine discriminant validity (Hair et al., 2017). Moreover, a more liberal approach is the cross-loading method. However, we use the AVE analysis, which requires that the AVE square roots must be greater than the correlations between the constructs. Thus, once this condition is met, discriminant validity is achieved, which confirms the construct validity.

Table 3: Discriminant Validity

	ECOP	ENVM	ENVP	GSCM	OPP
ECOP	**0.875**				
ENVM	0.666	**0.897**			
ENVP	0.817	0.719	**0.889**		
GSCM	0.671	0.880	0.664	**0.900**	
OPP	0.838	0.695	0.855	0.680	**0.825**

To test the measurement model results, we performed the validity and reliability tests, which analyze the measurement model's ability and the relationship among the items. Before examining the structural model, it is important to check for the problem of multicollinearity (Hair et al., 2017). The structural model is the second step of PLS analysis, which is systematically analyzed in this study for providing a comprehensive view of the hypotheses testing and the results. Primarily, the direct relationships were examined among the dependent and the independent variables of the inner model. The PLS-SEM algorithm is then employed to measure the size of path coefficients and their significance, t-values, and standard errors using bootstrapping method in Smart PLS 3.

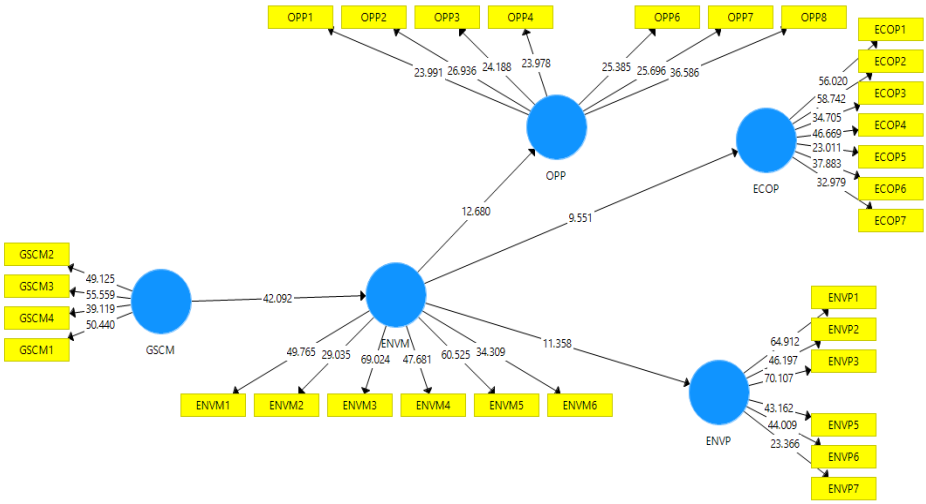

Fig.2: Structural Model

For obtaining significant relationship, another condition is the indirect mediation effect that creates a relationship among dependent and the independent variable (Memon, Cheah, & Ramayah, 2018). It can be explained as the independent variable's effect on mediator, which in turn affect the dependent variable, thus, the dependent variable will be influenced by the independent variables through indirect effect. Therefore, if this effect of independent variable through the mediating variable is significant on the dependent variable then it shows that there is no mediation effect in the study (Memon et al., 2018). The result in table 4 indicates that all the direct paths are significant at p-value less than 0.05.

Table 4: Direct Relationships

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ENVM -> ECOP	0.666	0.667	0.070	9.551	**0.000**
ENVM -> ENVP	0.719	0.720	0.063	11.358	**0.000**
ENVM -> OPP	0.695	0.698	0.055	12.680	**0.000**
GSCM -> ECOP	0.586	0.587	0.065	9.033	**0.000**
GSCM -> ENVM	0.880	0.880	0.021	42.092	**0.000**
GSCM -> ENVP	0.632	0.633	0.058	10.880	**0.000**

GSCM -> OPP	0.611	0.614	0.053	11.634	**0.000**

The result in table 5 indicates that all the mediating t paths are significant as p-value are less than 0.05.

Table 5: Mediation

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
GSCM -> ENVM -> ECOP	0.586	0.587	0.065	9.033	**0.000**
GSCM -> ENVM -> ENVP	0.632	0.633	0.058	10.880	**0.000**
GSCM -> ENVM -> OPP	0.611	0.614	0.053	11.634	**0.000**

The coefficient of determination is the commonly used method to analyze the conceptual model (Hair et al., 2016; Memon et al., 2018). The coefficient of determination is represented by R^2 which has a range of 0-1, where 0.02, 0.13 and 0.27 represent weak, moderate and fair predictive accuracy, respectively (Akter et al., 2017).

Table 6: R-Square

	R Square
ECOP	0.444
ENVM	0.774
ENVP	0.517
OPP	0.483

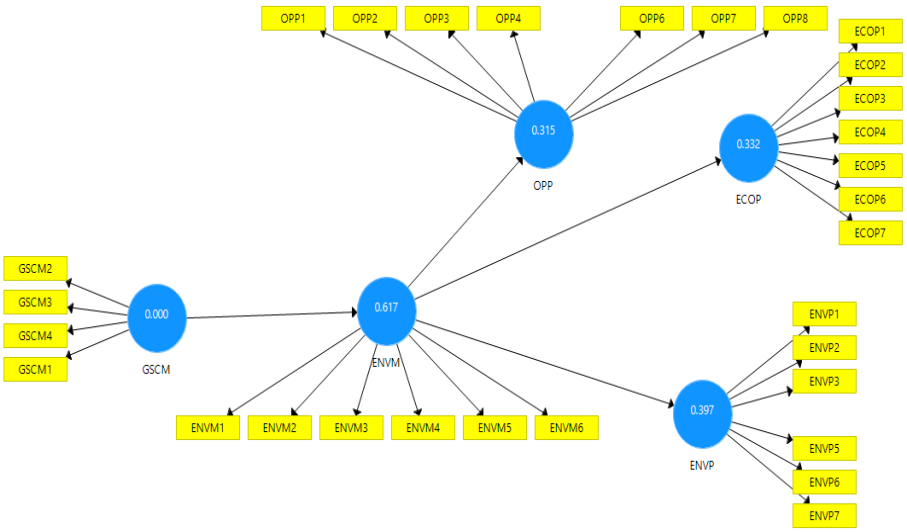

Fig.3: Blindfolding

The predictive relevance ability is another criterion for measuring the structural model, for which the Stone-Geisser's (Q^2) test is conducted by employing the blindfolding method (Akter et al., 2017; Henseler et al., 2016; Ong & Puteh, 2017). Thus, to assess Q^2 value, which must be non-zero, the Stone-Geisser test is performed in this study through applying a blindfolding procedure, which presents a cross-validated redundancy measure for the latent endogenous construct in this model (Henseler et al., 2016). the predictive relevance of the endogenous construct is ascertained if the value for Q^2 is greater than zero and shows no predictive relevance if $Q^2 < 0$.

Table 7: Q-square

	SSO	SSE	Q^2 (=1-SSE/SSO)
ECOP	1519.000	1014.521	0.332
ENVM	1302.000	498.277	0.617
ENVP	1302.000	785.570	0.397
GSCM	868.000	868.000	

OPP	1519.000	1040.720	0.315

DISCUSSION

Either it is corporate socially responsible or the GSCM practices that support the economic performance enhancement, though it is a vague interrogation (Mores et al., 2018). Few researchers claimed that a firm's economic performance has a positive association with GSCM and environmental management (Feng, Wang, & Wong, 2018). Traditionally, the association inside the firm gives the informal and formal mechanisms that encourage the reduction risk, trust and as a result, it enhances the commitment, cooperation, and thus profitability as well.

The various researchers claimed that economic performance cannot exist and is attained in a short period of profitability and during the adaption of GSCM practices the performance of sales (Dai, Cantor, & Montabon, 2017). From the previous 15 years, the research literature appears with various perceptions on either there are a combined success, tradeoffs, or win-win's that would be achieved for economic and environmental performance in the supply chains which are sustainable (Mores et al., 2018). Between the hurdles to adopting the environmental management activities, the utmost significant perception seems to be the economic issues and causes that are linked with the overheads (Green, 2019).

The limited firm's behavior may appear from the representation of internal processes as well as from traditionalism with the surviving regulations regarding the environment. Eco-control for instance agreement with external and internal methods highlights the significant limitations towards the adaptable organizational behavior, the operational costs enhanced as well, and this would not value the economic performance of the contributing companies (Alomari & Ibraheem, 2019). These diversified findings in the association between environmental and economic performance point towards the potential of further difficult occurring of the mediation between the external and internal practices.

For instance, the absence of external GSCM programs would fail the long term feasibility of operating benefits for internal profitability (Isaksson & Lantz, 2015). It is promising for well-executed external GSCM associations that deteriorating during the attainment of economic performance. The purpose behind it would be an absence of internal managerial resources and support to proceed with the financial benefit of these associations. It is vague yet that either internal or external GSCM activities are facilitators of this association.

The research work shows that operational performance and GSCM practices show a positive association between operational performance and GSCM practices. By the interaction with the customers and suppliers, the manufacturers could enhance their operational performance (Dubey et al., 2019; Truong, Sameiro, & Fernandes, 2017). The study represents that the internal GSCM practices for instance staff involvement and integrated environmental management systems can enhance the operational performance (Bon, Zaid, & Jaaron, 2018). The researchers discussed that the production of a product that is friendly with the environmental conditions would develop the resulted product which is safe and has low cost as well, and the products which has high cost are of greater scrap value and are more consistent quality.

The "lean and green" research work literature claimed that the consumer's participation level in the lean performance enhancement of a supplier firm is positively associated with the environmental management practices (Feng et al., 2018). Although, the coordination between external and internal practices has resulted in no certain proves. With the support of these internal and external GSCM practices both have an impact on the operational performance, the researchers support the coordination theory to highlight the two alternate mediation impacts.

CONCLUSION

There are various studies adaptations according to the mediation impacts on external and internal GSCM practices for the enhancement of operational, economic, and environmental performance. The researchers argued about the empirical proves which represent the presence of the mediation impacts which point out the manufacturer's requirement to organize among external and internal GSCM practices to recognize the best maximum performance. The internal GSCM practices mediate the association between environmental performance and external GSCM practices.

There are three internal GSCM practices that over-all mediate the associations of two external GSCM practices such as investment recovery and green purchasing along with environmental performance. Just financial policy internally acts as a moderator in the association between environmental performance and customer cooperation. From the coordination theoretical perception, the role of internal GSCM practice to enhance the environmental performance by the external GSCM practice must not be ignored. The researchers argued about the numerous partial and complete impact by the mediating factors of different internal and external GSCM practices over the enhancements of economic performance.

Generally, the green purchasing overall mediates the association between economic performance and eco-design. Internal financial policy overall acts as a mediating factor in the association between economic performance and green purchasing. Customer cooperation act as a mediating factor between economic performance and internal GSCM practices. Investment recovery generally acts as a mediating factor in the association between eco-performance and eco-design. Hence, manufacturing enterprises must consider the complications involved in the internal and external GSCM practices during the effort of economic benefit attainment from the adoption of practices. Just a few mediating impacts were reported as an outcome variable of operational performance. Green purchasing overall acts as a mediating factor between the association of operational performance and eco-design.

Relatively, customer cooperation mediated the association between operational performance and financial policy. Green purchasing initiatives must not be ignored, for eco-design to the advantage of the operational performance. The inputs which are environmentally-friendly, by green purchasing are needed in the earlier stage of products eco-design which could provide the operational advantages. Investigating the green purchasing role as a significant element in the firm, for performance advantages, the eco-design is a fertile line regarding GSCM study has still not been examined in the earlier research literature. As per the research results, certain limitations that need to be addressed through further examinations regarding consumer involvement in environmental management benefits of manufacturers for instance recycling policy, product return, incentive schemes to attain the financial gains, which would be favorable for more GSCM study.

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