Sustainability in Supply Chain Considering the Triple Bottom Line to Determine Business Development

Priyanka Mishra[1]*, Lalit Prasad[2], Manisha Paliwal[1], Somnath Hadalgekar[2], Kunal Patil[2], Rashmi Dongre[3]

[1] Sri Balaji University, Pune 411033, India
[2] Dr D Y Patil Institute of Management Studies, Savitribai Phule Pune University, Pune 411044, India
[3] Department of Computer Science, Tilak Maharashtra Vidyapeeth, Pune 411037, India

Corresponding Author Email: priyanka.mishra@bimmpune.edu.in

ABSTRACT

Sustainability in business processes is a buzz in the business world. This research aims to focus on the supply chain process of the business. Not only for securing their future but also for considering it as a responsibility towards society. There are a lot of innovations happening in strategies adopted for ensuring sustainable applications in the supply chain process. This study has tried to identify some breakthrough strategies in the supply chain management processes which are sustainable in nature. Some of these strategies are reducing wastage, green shipping, sustainable packaging, reuse and recycle and adopting e-commerce platforms to sell the merchandise. Secondly, to ensure that sustainability is achieved, the study has taken the TBL (triple bottom line) as the metrics to measure sustainability. The TBL has been also considered as the mediating variable between supply chain strategies and the organization growth factors. Structured Equation Modelling was performed to study the model fit. It was observed that sustainable supply chain management directly has a significant influence on Organizational Growth and on TBL. But TBL has no significant influence on Organizational Growth. Also, sustainable supply chain management indirectly has no significant influence on organizational Growth through the triple bottom line as a mediating variable. The result of One-Way ANOVA says that there is a significant impact of different sectors like electronics manufacturing companies, apparel companies, and FMCG companies on organization growth.

1. INTRODUCTION

Sustainability today plays a preserving role in the future existence of humankind. Corporate houses and industries are paying keen attention to meeting human development goals by taking natural resources and ecosystem services to humans. According to the Brundtland Report, 1987 states that organizations should strive to meet the needs of the present generation without compromising the fulfillment of the basic needs of the future generations.

Economic development, social development, and protection of the environment are the three determiners of sustainability. It has a direct effect on the 3BL or the triple bottom line which are people, planet, and profits.

The process of supply chain begins from the time raw materials are procured till it reaches the marketplace and beyond that. So, for supply chain sustainability, the strategies that sustainability focuses upon are reuse, recycle, and reduce. The components of supply chain sustainability are minimizing waste in manufacturing, effective use of finite resources, fulfilling orders of customers, environment friendly packaging and shipping and least resource consumption [1]. The effective sustainable implementation of supply chain delivers the triple bottom line i.e., people, profits, and planet. Sustainable practices should be such that they take care of the people, the planet and at the same time look at the profit of the organizations. People consist of customers, employees, and investors. All of them look towards associating with companies that adopt sustainable practices. Secondly, taking care of the planet is the responsibility of every corporation. Hence, they adopt sustainable practices in packaging, delivery, and manufacturing. Some of the strategies adopted by companies in the supply chain are as follows:

- Differentiating brands through sustainable packaging.
- Minimizing use of raw materials at the early stage of design and production
- Reuse and recycle to avoid wastage of returned and discarded items from the market.
- Green shipping options.
- Shifting to e-commerce. Less footfall in the marketplace will lead to less emission, less packaging expenses, and other operating costs for the company.
- Include multiple items packaging which will reduce cost and waste.
- Minimize waste and sustain profits by quickly re-marketing returned products, reducing the significant volume of goods sent to landfills each year.

1.1 Research problem

Despite growing awareness and discourse surrounding sustainable supply chains, a considerable gap in understanding still exists on how businesses can effectively leverage sustainability initiatives to drive overall business development, while simultaneously considering the 3BL framework. This research aims to investigate the strategies, challenges, and impacts associated with fitting in sustainable initiatives within supply chains, with a specific focus on financial outcomes, environmental sensitivity, and social responsibility.

The study aims to bridge the gap by providing insights to organizations, strategy makers, and stakeholders in espousing finest strategies for developing sustainable supply chains, ultimately supporting long-term business growth and enhancing societal well-being.

1.2 Research questions

1. What are the key components of sustainability within the supply chain framework, and how do they contribute to the triple bottom line (economic, environmental, and social)?
2. How do businesses currently integrate sustainability practices into their supply chain management, and what are the main challenges they face in doing so?
3. What metrics or indicators are most effective in measuring the economic, environmental, and social impacts of sustainability initiatives within the supply chain?
4. What strategies can businesses implement to align sustainability goals with overall business development objectives, considering the triple bottom line approach?

1.3 Rationale of the study

The rationale of the study aims to address the pressing need for research that examines the intersection of sustainability, supply chain management, and business development, with a focus on practical strategies, challenges, and outcomes within the context of the triple bottom line framework. By shedding light on these issues, the research seeks to empower businesses to make informed decisions that promote sustainability while driving value creation and growth. The key factors on which the rationale is based are as follows:
1) Growing importance of sustainability
2) Supply Chain Complexity
3) Tripple bottom line approach
4) Business development imperatives
5) Knowledge gap
6) Competitive advantage.

1.4 Objectives

- To study the mediating effect of triple bottom line on the supply chain strategies and further on the business development of the organization.
- To study the components of sustainability in supply chain process.
- To study the strategies adopted by companies for ensuring sustainability of supply chain.

1.5 Relevance of the study

This study is relevant to society at large. Humankind in the future is because the environment and the natural ecosystem is protected. To ensure that, industries play a very vital role. There are several processes that an enterprise adopts to carry out its business operations. One such process is the supply chain management process. Sustainability in supply chain processes helps in reducing wastages, reduced delivery period and ecological packaging attracts customers, investors, and suppliers.

All these efforts are fruitless until the impact is visible in the business outcome and organization growth. Organization growth can be measured in this study by Strategic Business Growth (SBG), Internal Business Growth (IBG), Organic Business Growth (OBG), and Merger Business Growth (MBG) [2]. Hence this study has considered the impact of organization's sustainable strategies in supply chain on the business as an outcome variable considering the sustainability triple bottom line as a mediator.

This study will give a broad idea about how sustainability impacts business with the help of appropriate metrics.

1.6 Research gap

According to a recent survey conducted by Accenture in 2022 on "Green Metrics- are we measuring sustainability right", it says that companies don't identify the right metrics to measure the impact of sustainability. Hence, this study has tried to fit the right metrics to measure sustainability and its impact on the organizational growth through a thorough literature review.

1.7 Methodology

The study will adopt a descriptive research design. As part of the quantitative design, the researcher has studied the components of supply chain management and the triple bottom line. The triple bottom acts as the mediating variable, supply chain strategies as the independent variable and organization growth as the dependent variable. Mediation analysis has been performed to study the model fit using SEM as multiple relationships are being established at the same time.

Demographics like nature of the organization w.r.t to its sector is taken as IV to perform a comparative analysis of the effectiveness of the sustainable strategies across different organizations.

1.8 Sampling

The sampling design used in this study was non-probabilistic. Quota sampling method is predominantly used in the study where equal proportion of sample were collected from different sectors specifically electronics manufacturing companies, apparel companies, and FMCG companies. The samples for each quota are selected through Convenience sampling.

1.9 Data collection

Data for the study has been collected through primary survey through administration of the questionnaire, and personal interviews. Secondary data to be collected from e-databases, e-journals, books, and the web. Some of these

sources will include Science Direct, INFLIBNET, ELSEIVIER, Google Scholar, ProQuest, EBSCO host.

1.10 Analysis

The data in this study has been analyzed in the following ways.

a) One-Way ANOVA to compare the different sectors like electronics, apparel and FMCG organizations on achieving organization growth.

b) Mediation analysis is performed using Structured Equation Modelling to study the effect of supply chain management strategies in the business in the presence of a mediating variable 'the triple bottom line'.

c) Convergent and Divergent validity is performed to test the validity of the variables.

d) Cronbach Alpha test is performed to test the reliability.

1.11 Statistical tools for data analysis

Statistical methods have been implemented to analyze the results. Version 22 of the Statistical Package for the Social Sciences (SPSS- AMOS) has been used to analyze the data and provide concise analysis of the study sample.

2. LITERATURE REVIEW

Sustainability in organizations has become a differentiating factor for gaining competitive advantage [3]. The metric used by companies for differentiating itself are mostly financial performance and operational efficiency. Hence ensuring sustainability in such areas makes the form more competitive [4]. When a company becomes sustainable, then it's a sign that the company is sensitive to the environment, society and to the governance leading to improving the company's goodwill [5].

Even the agenda dictated by the United Nations for 2030 has also stated that an organization's survival is dependent on its sensitivity to sustainable development [6]. Sustainability is no longer a choice but a necessity [7]. The latest technologies that help in ensuring sustainable efforts in supply chain are 3D printing, Artificial Intelligence (AI), blockchain, and IoT [8].

Most of the time, it is observed that adhering to sustainable practices is just a mere tick in the checklist. In fact, organizations should strive not to manipulate but focus on measurable outcomes [9]. Companies which have understood the importance of true sustainability are able to create an ecosystem where other companies and the society at large can be benefitted with shared values, the dynamics of the market can be redefined thereby increase the acceptance of green initiatives [10]. Implementation of sustainability is a top-down approach that aids in improvement of ESG goals further uplifting employee morale and financial goals [11].

Sustainable supply chain strategies should align with SMART goals. To ensure that, the strategies must be practical, feasible and flexible at the same time [12]. Management support is crucial for the success of the implementation of such strategies. This promotes commitment and confidence amongst the employees within the organization [13]. Organizations must join hands for sharing resources within the supply chain integrated framework [14, 15].

A major part of an organization's efforts must be towards its commitment to the triple bottom line i.e., society, environment and financial position [16]. Stakeholder To understand the factors affecting sustainable supply chain management, it's necessary to analyze the stakeholders and understand the internal and external environment [17]. Organizations should diligently set their goals, work on their strategy building and implementation for achieving the sustainability objectives [18, 19].

Learning from failures is the steppingstone towards long term success in the sustainability journey [20]. Plus involving the stakeholders in the vision and aligning their efforts in the organization's goals entails trust amongst the public [21]. This attracts long term association of customers and investors ensuring profitability [22].

However, not all studies support a positive incremental relationship between sustainable strategies and business development. Because sometimes, not all companies, especially smaller ones, can't afford the cost associated with the implementation of these strategies [23]. The benefit of a sustainable practice is not always evident in the short term. It may take a few years to show results. Hence companies may not be able to evaluate the financial gains they derive from the investments made in sustainable practices and strategies. Although some research discussed above shows a positive correlation of sustainable factors and financials gains, some others show mixed or inconclusive results as well [24, 25]. Universality of a concept or theory is achievable only when a study gives uniform results experimented in different environments. Hence, this study where the objective is to prove the relationship between sustainable supply chain strategies and financial benefits to the organization has a wide scope to explore in varied industries, geographical locations, and adopting numerous measurement methods to prove the theory. But companies engross in green washing and promote their sustainability efforts hastily [26]. Such approaches can lose customers and stakeholders' trust in the companies particularly in sustainability claims. Also, studies have shown that organizations must make a trade-off between ESG objectives in the momentum to implement sustainability strategies [27]. Therefore, to maintain a balance between managing the challenges of implementation of sustainable practices yet ensuring profitability is what all organizations strive for today.

Organizations are trying to instill sustainability as per the regulatory compliance norms, but the stakeholders don't always support the organization in doing so and they exhibit lack of involvement and commitment [28]. This attitude of the stakeholders may be because of the organization culture, perceived importance, industry values and norms, etc. [29]. Whatever is considered a precedence in one region or industry may not hold the same magnitude in another place, leading to contradictory attitudes to sustainability.

3. DATA ANALYSIS

A model is created to align the Organizational growth which is measured by Strategic Business Growth (SBG), Internal Business Growth (IBG), Organic Business Growth (OBG), and Merger Business Growth (MBG) [2] with the supply chain strategies in the presence of a moderating variable triple bottom line. The supply chain strategies are defined by minimum use of raw materials, minimum wastage, sustainable packaging, green shipping, and e-commerce. The triple bottom

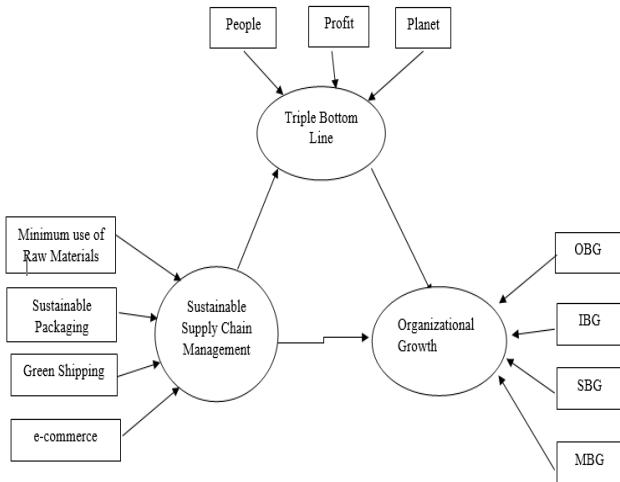line is defined by people, planet, and profit.

The model is shown in Figure 1:

Figure 1. Conceptual measurement model

4. RESULTS AND DISCUSSION

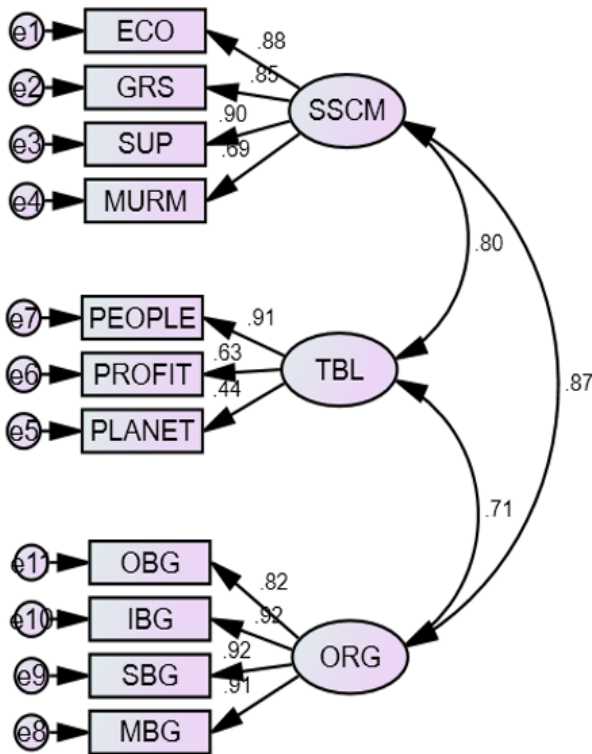The CFA of the Model is shown in Figure 2:

Figure 2. Measurement model through primary data using AMOS 2020

The convergent validity of a construct is valid if Composite Reliability (CR) and Average Variance explained (AVE) is greater than or equal to 0.7 and 0.5 respectively and CR > AVE.

The formula of AVE and CR are as follows:

$$AVE = \frac{\sum \lambda 2}{\sum \lambda 2 + \sum \varepsilon} \tag{1}$$

$$CR = \frac{(\sum \lambda)2}{(\sum \lambda)2 + \sum \varepsilon} \tag{2}$$

where, λ = Correlation coefficient between the variable and the construct.

And ε = error = 1-λ2.

The Average variance explained, and the composite reliability of the construct Sustainable Supply chain Management is as shown in Table 1:

Table 1. Validity and reliability of the construct sustainable supply chain management

Sustainable Supply Chain Management	λ	λ^2	$\varepsilon = (1-\lambda^2)$
Minimum use of Raw Materials	0.88	0.77	0.23
Sustainable Packaging	0.85	0.72	0.28
Green Shipping	0.90	0.81	0.19
E-commerce	0.69	0.48	0.52
	$\sum \lambda = 3.32$	$\sum \lambda^2 = 2.78$	$\sum \varepsilon = 1.22$
$(\sum \lambda)^2 = 11.02$			
Average Variance Explained (AVE)			0.70
Composite Reliability (CR)			0.90

The Average variance explained, and the composite reliability of the construct Triple Bottom Line is as shown in Table 2:

Table 2. Validity and reliability of the construct triple bottom line

| Triple Bottom Line	λ	λ^2	$\varepsilon = (1-\lambda^2)$
Profit	0.91	0.83	0.17
People	0.63	0.40	0.60
Planet	0.44	0.20	0.80
	$\sum \lambda = 1.98$	$\sum \lambda^2 = 1.43$	$\sum \varepsilon = 1.57$
$(\sum \lambda)^2 = 3.92$			
Average Variance Explained (AVE)			0.50
Composite Reliability (CR)			0.71

The average variance explained, and the composite reliability of the construct Organizational Growth is as shown in Table 3:

Table 3. Validity and reliability of the construct organizational growth

Organizational Growth	λ	λ^2	$\varepsilon = (1-\lambda^2)$
OBG	0.82	0.67	0.33
IBG	0.92	0.85	0.15
SBG	0.92	0.85	0.15
MBG	0.91	0.83	0.17
	$\sum \lambda = 3.57$	$\sum \lambda^2 = 3.20$	$\sum \varepsilon = 0.8$
$(\sum \lambda)^2 = 12.75$			
Average Variance Explained (AVE)			0.80
Composite Reliability (CR)			0.94

The composite reliability and average variance explained are greater than or equal to 0.7 and 0.5 respectively for all three constructs means it satisfies the conditions of reliability and validity of the instrument and the measurement model.

The Structural Equation Model is shown in Figure 3:
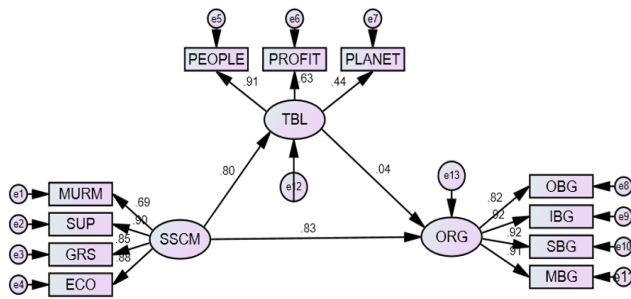
Figure 3. Structural Equation Model
Source: Processed primary data by using AMOS, 2020

4.1 Fit indices

Nine criteria are taken into consideration, with four being categorized as a bad fit and five as a good fit, as shown in Table 4 below. The likelihood, CMIN/DF, AGFI, and RMSEA indices all show a poor fit. On the other hand, the indices RMR, TLI, GFI, NFI, and CFI exhibit good match. The total model can be a good match if one or two of the requirements are met, according to the parsimony principle.

Table 4. Fit indices of the model

Fit Indices	Cut of Values	Result	Description
Probability (p)	≥ 0.05	0.000	Not Fit
CMIN/DF	< 2.00	3.406	Not Fit
GFI	≥ 0.90	0.918	Good Fit
RMSEA	≤ 0.08	0.095	Not Fit
RMR	≤ 0.08	0.011	Good Fit
AGFI	≥ 0.90	0.869	Not Fit
TLI	≥ 0.90	0.945	Good Fit
NFI	≥ 0.90	0.943	Good Fit
CFI	≥ 0.90	0.959	Good Fit

Source: Processed primary data, by using AMOS, 2020

To make sure a model in statistical modelling accurately represents the underlying data, it is essential to evaluate the model's fit. The model's goodness of fit is frequently assessed using the nine criteria listed above; certain indices suggest a satisfactory fit, while others point to regions where the model may not match the data well. The model may need to be improved in some areas when indices such as probability, CMIN/DF, AGFI, and RMSEA are not fulfilled. Nonetheless, the model is regarded as robust in terms of its alignment with the data when indices like RMR, TLI, GFI, NFI, and CFI exhibit a good fit.

Here is where the parsimony principle comes into play: if the model satisfies even one or two of these requirements, it can still be considered a good match, negating the need for superfluous complexity. When a model fits well, it offers a strong basis for more in-depth analysis, which enables researchers to derive valuable insights from their data.

4.2 Interpreting and modifying the model

The final step in Structural Equation Modeling (SEM) involves interpreting the model when it meets the criteria for a good fit, and analysing the path using the values of direct, indirect, and total effects. Hypothesis testing can be conducted through the AMOS software output, particularly by examining the regression weight values. Regression weight analysis is used to assess the relationship between independent (exogenous) variables and dependent (endogenous) variables.

In this study, the hypothesis is considered valid if the probability value is below 0.05 and the C.R. (Critical Ratio) exceeds 2.000. The results of the regression weight test are shown in Table 5 below.

Table 5. The result of regression analysis

Construct	C.R.	P-value
Sustainable Supply Chain Management → Organizational Growth	14.461	0.000
Sustainable Supply Chain Management → Triple Bottom Line	9.760	0.000
Triple Bottom Line → Organizational Growth	0.517	0.605

Source: Processed primary data, by using AMOS, 2020

The results of hypothesis testing based on the table are as follows:

4.2.1 Hypothesis 1
Regression weight analysis findings show that the C.R. value is greater than 2.000 (14.461 >2.000) and the probability level is less than α = 0.05 (0.000 < 0.05). As a result, the research hypothesis, or H1, is accepted and hypothesis H01 is rejected. This indicates that organizational growth is directly impacted by sustainable supply chain management.

4.2.2 Hypothesis 2
Regression weight analysis findings show that the C.R. value is greater than 2.000 (9.760 >2.000) and the probability level is less than α = 0.05 (0.000 < 0.05). As a result, research hypothesis H2 is approved while hypothesis H02 is rejected. This indicates that Triple Bottom Line is directly impacted by sustainable supply chain management.

4.2.3 Hypothesis 3
Regression weight analysis findings show that the C.R. value is less than 2.000 (0.515<2.000) and the probability level is more than α = 0.05 (0.605> 0.05). Consequently, hypothesis H03 is approved. Thus, it may be concluded that Organisational Growth is not much impacted by the Triple Bottom line. There is some influence, but not much.

4.2.4 Hypothesis 4
Next, we will investigate hypothesis 4, which states that the Triple Bottom Line serves as a mediating variable and that Sustainable Supply Chain management has a considerable indirect impact on Organisational Growth. The value of the standardised direct and indirect effects, as shown in Table 6 below, can be compared to see it.

Table 6. The result of standardized direct and indirect effects

Constructs	Standardized Direct Effects		Standardized Indirect Effects	
	SSCM	TBL	SSCM	TBL
TBL	0.801	0.000	0.000	0.000
ORG	0.833	0.042	**0.033**	0.000

Based on the results in the table above, the direct effect of sustainable supply chain management on organizational growth has a value of 0.042, while the indirect effect of the triple bottom line on organizational growth has a value of 0.033. Based on these results, it can be compared that the value of the indirect effect is lower than the direct effect. Therefore,

hypothesis H04 is accepted. It means that sustainable supply chain management indirectly has no significant influence on organizational Growth through the triple bottom line as a mediating variable (Figure 4).

H1: *There is an influence of Sustainable supply chain management on Organizational Growth.*
H2: *There is an influence of Sustainable supply chain Management on the Triple Bottom line.*
H3: *There is an influence of the Triple Bottom line on Organizational Growth.*
H4: *There is a mediating effect of the Triple bottom line between sustainable supply chain management and organizational Growth.*
H5: *There is a significant effect of different sectors of the organization on growth.*
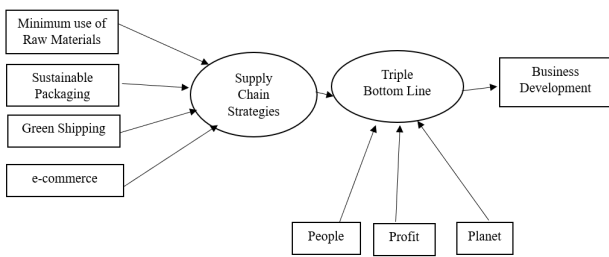
Figure 4. Output model showing the effect of sustainable supply chain on business development considering TBL as the mediating variable

Structured equation modelling has been performed to study the model fit. Convergent and Divergent validity has also been performed to check the validity of the variables. ANOVA was founded to study the impact of business w.r.t different sectors.

One-Way ANOVA was conducted to compare the organization growth of the three sectors by the researcher. As per the assumption of one-way ANOVA, the collected data were normally distributed of all the three categories of companies, as assessed by Shapiro-Wilk's test ($p > 0.05$) and there were no outliers in the data, as assessed by inspection of boxplots. Also, population variance of all the three sectors were equal as significant value of levene's test of homogeneity of variance was $0.260 > 0.05$. There was a significant difference in the organization growth of the three sectors as: S1 (M = 25.4, SD = 5.149), S2 (M = 32.1, SD = 5.165) and S3 (M = 27.4, SD = 2.836), p = 0.007. These results suggest that there is a significant difference in the organizational growth factors of the three sectors. Hence Alternative Hypothesis (H5) is accepted.

In the multiple comparisons, the Tukey HSD table shows that there is no significant difference between the organization growth of the sectors S1 vs S2 and S1vs S3 but there is significant difference between S2 vs S3 in terms of organization growth.

Practical relevance of the findings: From the empirical findings, cited in the literature review [27], sometimes people and environment are compromised when it comes to profitability. But sometimes, companies do superficial promotions of their sustainable practices [26]. Therefore, the research findings could justify that there is a significant relationship between sustainable supply chain practices and organizational growth. But in the presence of a mediating

variable triple bottom line, which is defined by people, planet and profit, the association is insignificant.

In addition to the argument, multiple factors furthermore play a critical role in addition to the measurement metrics taken in the study for each variable. Geographical locations, industry types, company's sensitivity towards environment and society and the samples taken for the study.

5. CONCLUSION

The model's good fit is confirmed by the SEM analysis results, which are based on fit indices including RMR, TLI, GFI, NFI, and CFI. This permits meaningful interpretation of the correlations between the variables. The study's implications provide important light on the underlying dynamics by highlighting the major direct, indirect, and cumulative effects of the independent variables on the dependent variables. This study is backed up by data derived from the literature as well as data interpretation which extensively support the hypothesis and improves the understanding of complex relationships within the studied context and lays the groundwork for further studies in the field. It does this by validating the model using strong statistical measures.

This study explored sustainable practices in supply chain management (SCM) powered by digital technologies. By reviewing relevant literature to find out if SCM can be rolled out using digital technology. The literatures have highlighted insights that offer researchers a thorough understanding of the intersection between these technologies and the triple bottom line (3BL) framework. Some researchers have identified the linkage between digital technologies and SCM whereas others have stressed on its connection to sustainability. This study has, however, attempted to bridge that gap in this research by aligning the digitalization to sustainable practices introduced in supply chain management. It clarifies how these technologies can promote sustainable supply chain management. However, it is essential to carefully implement digital technologies to effectively and sustainably transform supply chain processes. Further exploration of these topics is necessary, as they will soon be critical to societal and environmental well-being.

6. LIMITATIONS AND FUTURE DIRECTION OF RESEARCH

1) Many studies focus on specific industries or regions, limiting the generalizability of findings. Future research should aim for broader and more diverse samples to enhance the applicability of results across different contexts.
2) Access to reliable and comprehensive data on environmental, social, and economic aspects across the entire supply chain can be challenging. Future studies should explore innovative methods for data collection and analysis to address this limitation.
3) Integrating the three dimensions of the TBL (environmental, social, and economic) into a cohesive framework presents methodological challenges. Researchers need to develop robust measurement tools and analytical techniques to

accurately assess the impact of sustainability initiatives on business development.

4) Modern supply chains are complex and interconnected networks involving numerous stakeholders. Understanding the dynamics and interactions within these networks is crucial but challenging. Future research could focus on modeling and simulation techniques to unravel the complexity of supply chain systems.

5) Many studies focus on short-term outcomes, but the true impact of sustainability initiatives may only manifest over the long term. Future research should adopt longitudinal approaches to capture the dynamic nature of sustainability in supply chains and its effects on business development over time.

ACKNOWLEDGMENT

REFERENCES

[1] Ramos, M. (2022). What is supply chain sustainability? IBM Blog. http://www.ibm.com/blog/what-is-supply-chain-sustainability/.

[2] Bhasin, H. (2019). 5 types of business growth of an organization. http://www.marketing91.com/5-types-of-business-growth/.

[3] Baumgartner, R.J., Ebner, D. (2010). Corporate sustainability strategies: Sustainability profiles and maturity levels. Sustainable Development, 18(2): 76-89. https://doi.org/10.1002/sd.447

[4] Ahi, P., Searcy, C. (2015). Assessing sustainability in the supply chain: A triple bottom line approach. Applied Mathematical Modelling, 39(10-11): 2882-2896. https://doi.org/10.1016/j.apm.2014.10.055

[5] Alshehhi, A., Nobanee, H., Khare, N. (2018). The impact of sustainability practices on corporate financial performance: Literature trends and future research potential. Sustainability, 10(2): 494. https://doi.org/10.3390/su10020494

[6] Report of the World Commission on Environment and Development: Our Common Future. United Nations, pp. 16. http://www.un.org/en/academic-impact/sustainability.

[7] Cordova, M.F., Celone, A. (2019). SDGs and innovation in the business context literature review. Sustainability, 11(24): 7043. https://doi.org/10.3390/su11247043

[8] Varriale, V., Cammarano, A., Michelino, F., Caputo, M. (2023). Industry 5.0 and triple bottom line approach in supply chain management: The state-of-the-art. Sustainability, 15(7): 5712. https://doi.org/10.3390/su15075712

[9] Gold, S., Hahn, R., Seuring, S. (2013). Sustainable supply chain management in "Base of the Pyramid" food projects—A path to triple bottom line approaches for multinationals? International Business Review, 22(5): 784-799. https://doi.org/10.1016/j.ibusrev.2012.12.006

[10] Devika, K., Jafarian, A., Nourbakhsh, V. (2014). Designing a sustainable closed-loop supply chain network based on triple bottom line approach: A comparison of metaheuristics hybridization techniques. European Journal of Operational Research, 235(3): 594-615. https://doi.org/10.1016/j.ejor.2013.12.032

[11] Akisik, O., Gal, G. (2011). Sustainability in businesses, corporate social responsibility, and accounting standards: An empirical study. International Journal of Accounting and Information Management, 19(3): 304-324. https://doi.org/10.1108/18347641111169287

[12] Le, T.T., Kieu, X.H., Behl, A., Pereira, V. (2022). Building up more sustainable food supply chains: Implications for sustainable development. Journal of Cleaner Production, 378: 134650. https://doi.org/10.1016/j.jclepro.2022.134650

[13] Carter, C.R., Rogers, D.S. (2008). A framework of sustainable supply chain management: Moving toward new theory. International Journal of Physical Distribution & Logistics Management, 38(5): 360-387. https://doi.org/10.1108/09600030810882816

[14] Dadhich, P., Genovese, A., Kumar, N., Acquaye, A. (2015). Developing sustainable supply chains in the UK construction industry: A case study. International Journal of Production Economics, 164: 271-284. https://doi.org/10.1016/j.ijpe.2014.12.012

[15] Sarkis, J., Dewick, P., Hofstetter, J.S., Schröder, P. (2021). Changing of the guard: A paradigm shift for more sustainable supply chains. Resources, Conservation and Recycling, 170: 105587. https://doi.org/10.1016/j.resconrec.2021.105587

[16] Ibrahim, H., Elsayed, M.S., Moustafa, W.S., Abdou, H.M. (2023). Functional analysis as a method on sustainable building design: A case study in educational buildings implementing the triple bottom line. Alexandria Engineering Journal, 62: 63-73. https://doi.org/10.1016/j.aej.2022.07.019

[17] Salzmann, O., Ionescu-Somers, A., Steger, U. (2005). The business case for corporate sustainability: Literature review and research options. European Management Journal, 23(1): 27-36. https://doi.org/10.1016/j.emj.2004.12.007

[18] Gimenez, C., Sierra, V., Rodon, J. (2012). Sustainable operations: Their impact on the triple bottom line. International Journal of Production Economics, 140(1): 149-159. https://doi.org/10.1016/j.ijpe.2012.01.035

[19] Zhu, Q., Sarkis, J., Lai, K.H. (2008). Confirmation of a measurement model for green supply chain management practices implementation. International Journal of Production Economics, 111(2): 261-273. https://doi.org/10.1016/j.ijpe.2006.11.029

[20] Shamsuddoha, M. (2015). Integrated supply chain model for sustainable manufacturing: A system dynamics approach. In Sustaining Competitive Advantage Via Business Intelligence, Knowledge Management, and System Dynamics (Vol. 22). Emerald Group Publishing Limited, pp. 155-399. https://doi.org/10.1108/S1069-09642015000022B003

[21] Huma, S., Ahmed, W., Zaman, S.U. (2023). The impact of supply chain quality integration on a firm's sustainable performance. The TQM Journal, 36(2): 385-404. https://doi.org/10.1108/TQM-05-2022-0167

[22] Mohrman, S.A., Winby, S. (2018). Working toward sustainable development: Consulting to the eco-system. In Research in Organizational Change and Development

(Vol. 26). Emerald Publishing Limited, Leeds, pp. 1-45. https://doi.org/10.1108/S0897-301620180000026001

[23] Delmas, M., Pekovic, S. (2018). Corporate environmental performance: Do regulations matter? In Oxford Research Encyclopedia of Business and Management. Oxford University Press.

[24] Mishra, P., Prasad, L., Panda, A. (2023). Sustainable marketing strategies of white goods post-COVID-19. In Digital Economy Post COVID-19 Era. Springer, Singapore. https://doi.org/10.1007/978-981-99-0197-5_52

[25] Margolis, J.D., Walsh, J.P. (2003). Misery loves companies: Rethinking social initiatives by business. Administrative Science Quarterly, 48(2): 268-305. https://doi.org/10.2307/3556659

[26] Lyon, T.P., Maxwell, J.W. (2011). Greenwash: Corporate environmental disclosure under threat of audit. Journal of Economics & Management Strategy, 20(1): 3-41. https://doi.org/10.1111/j.1530-9134.2010.00282.x

[27] Seuring, S., Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. Journal of Cleaner Production, 16(15): 1699-1710. https://doi.org/10.1016/j.jclepro.2008.04.020

[28] Bansal, P., Roth, K. (2000). Why companies go green: A model of ecological responsiveness. Academy of Management Journal, 43(4): 717-736. https://doi.org/10.5465/1556363

[29] Jamali, D., Mirshak, R. (2007). Corporate social responsibility (CSR): Theory and practice in a developing country context. Journal of Business Ethics, 72(3): 243-262. https://doi.org/10.1007/s10551-006-9168-4