

# Overcoming Barriers to Sustainability Accounting: An ISM Approach

Swati Sharma

Jindal Global Business School, OP Jindal Global University, India

Email: swati@jgu.edu.in

**Abstract**—The literature confirms that there are certain barriers in adaptation of sustainability accounting practice. This study elaborates on those barriers and suggest how to overcome and mitigate the effect of those barriers. An Interpretative Structural Model is developed to illustrates sustainability accounting barrier and its inter-relationship. This developed ISM suggests that two barriers i.e., Lack of reporting standard and insufficient knowledge are the most significant barriers and influences other barriers in sustainability accounting practice. Based on developed ISM, the present study concludes that by providing proper and adequate standard format for sustainability reporting and imparting sufficient knowledge on sustainability accounting, barriers can be overcome. The result of this study has wider applicability across regions. Hence, this study results are of interest for policy makers, business entity and researchers.

**Index Terms**— Sustainability, Accounting, Barriers, ISM, Policy making, Sustainability reporting, Environmental Accounting.

## I. INTRODUCTION

The KPMG documentation on sustainability reporting by business entities indicates that 80% of N100 (a sample of 5200 companies worldwide from 52 countries' top 100 companies by revenue) report their sustainability practices. However, their sustainability reports are often found to be disconnected from business goal(KPMG Report 2021). Therefore, even reporting sustainability practice by business entities does not bring desirable result for different stakeholder rather it seems like completing a formality by reporting their green practices. Such reporting trend reveals that there are barriers in integrating sustainability activities into accounting practice. Number of studies have explored the relationship between financial performance and sustainability reporting by companies but research on disclosure and details of those sustainability report are minimal. Most of sustainability reporting uses the GRI standard that not necessarily proves to be sufficient and comprehensive. Many variables have been discussed in literature which describe the challenges in integrating sustainability activities into accounting practice but study on exploration of those variables in order to mitigate its effect is missing in literature (Lata& Kumar, 2023). Most of these studies are not empirical in nature and are very specific to the region whereas review of literature suggests that most of these barriers are found to be the same for different regions. Therefore, the present study attempts to explore the listed barriers and to devise strategy to overcome those barriers in integrating sustainability into accounting practice. The empirical analysis of this study contributes to the existing literature in following ways:

The study list relevant barriers in adaptation of sustainability accounting practice as no study has elaborated

theoretical background of those barriers to sustainability accounting before.

The study also contributes by employing ISM-MICMAC model to analyze these barriers to sustainability accounting.

Lastly, this study contributes by commenting on which barriers to be handled first so that other barriers effect can be mitigated and minimized. This study also suggests policy makers on how those barriers can be overcome to make sustainability accounting implementation easy and effective for business entities.

The rest of this study is illustrated in five sections. Introduction is followed by section 2 on review of existing literature. Section 3 elaborates on research methodology employed in this study. Section 4 discusses the data analysis with employed research methodology and result of that data analysis. Section 5 elaborates on finding of the study and recommends strategies for policy maker. Lastly, Section 6 concludes with comment on implication and scope of this study.

## II. LITERATURE REVIEW

The study conducts an extensive literature review to identify key variables that serve as challenge in adaptation of Sustainability accounting. For this purpose, Scopus and Google Scholar database is explored. The explored studies are selected by searching keywords i.e., *Sustainability, Sustainability Development Goals, GRI reporting, Sustainability accounting, sustainability reporting, barriers, challenges, obstacle, policy, and ISM*. The search result of these keywords is analyzed with abstract and main text reading, and the relevant studies are chosen for further reading and understanding. The relevant studies are selected on the basis that it should have explored barrier in sustainability accounting practices in one or other way. This section on literature review discusses each of selected study and identify the variables which serves as barrier in sustainability accounting practice.

Reporting sustainability practice in accounting is not a very common practice by business entities as a systematic accounting process already exists and change in its format or practice is not welcomed by every firms. Apart from the well-placed accounting practice, lack of a standard reporting framework also hinders the process of integrating sustainability practices into accounting (Lee2011). An already established accounting system can integrate additional accounting practice only when it can be well understood, and a clear guideline is there to make reporting of such accounting system easy.

Sustainability reporting is not mandatory for all firms. There are few top listed companies which expect to prepare report on their sustainability practices and therefore not all business entities participate in such reporting. This voluntary nature of reporting, insufficient guidelines, converting sustainability practices of firm into numerical figure are challenges faced by accountant while integrating sustainability reporting into common accounting practice (Lata& Kumar, 2022). Accountants also do not find this sustainability reporting activities as value addition to existing system (Arora, Lodhiaand Stone 2021).

This disinterest in integrating sustainability practice may result because of lack of engagement from different stakeholders. As stakeholders including senior management, shareholders, employees and even investors do not find practice of including sustainability into accounting practice very important. Firms still use traditional accounting mechanism for reporting and this lack of engagement by management does not encourage balanced approach of business and environmental issue alike (Passetti et al. 2014).

The business issue in current situation evolves around sustainability practice and circular economy though implementation of such business practices finds many challenges. These challenges can be categorized as economical as implementation cost, sociological like ignorance of significance and demand, technological like data related issue and political like law and regulation (Charef,Morel and Rakhshan 2021).

Circular economy adaption into accounting practice brings more challenges in developing economy like Ghana. These barriers can be related to accounting reporting barriers, financial/economic barriers, technological barriers, managerial/behavioral barriers, organizational barriers, and institutional barriers (Kwarteng,Boateng and Simpson2022).

This adaptation of sustainability practices is not limited to big firms only. Small and medium scale business also practice sustainability goals. The list on barriers for small and medium scaled business includes environmental reporting and auditing system, inadequate resources, in adaption of sustainability accounting (Javed et. al. 2022). Another study of emerging economy data presents their work on what drive and what hinder the sustainability practice and concludes that inadequate resources, lack of training and education and ignorance about its importance plays as deterrent for the adoption of sustainability practices (Mahmood et al. 2019). A study on implication of Sustainable development goal inclusion in business practice and barriers in sustainability

accounting practice in developing economy find that data availability and quality, as well as the availability of funding and human resources are main challenge in adaptation of sustainability practice (Pirmana et. al. 2019). Addressing on how these barriers should be controlled, a study presents its finding from Indo-pacific region. Lewin field theory is applied, and result suggests that encouraging firm by providing support in terms of subsidies or other benefit will overcome the barrier of cost, time, and resources. The intensity of these barriers varies given that either country has advanced reporting mechanism or not, and any culture based hinderance exist or not for sustainability reporting (Dissanayake and Kuruppu 2020). Evidence from India illustrates that no proper reporting standards, high cost, time constraints, insufficient knowledge, risk of incredibility and misinterpretation, shortage of trained human resource, difficulty in data collection are the barriers to sustainability accounting practice. Literature also suggests that lack of encouragement from organization, integration of sustainability reporting with economic performance and lack of adequate guidelines on environmental management accounting as barriers (Setthasakko 2010).

Table 1 lists all identified variables which serves as barriers to sustainability accounting practice suggested in literature. These variables can be addressed as mentioned serial number in table 1 for purpose of this study.

TABLE 1: IDENTIFIED BARRIERS TO SUSTAINABILITY ACCOUNTING PRACTICE

Sr. No.	Barriers	Studies
V1	Lack of reporting standard	Lee (2011), Arora, Lodhia and Stone (2021), Kwarteng, Boateng and Simpson (2022), Dissanayake and Kuruppu (2020), Suprita P (2018), Setthasakko (2010)
V2	High Cost	Charef, Morel and Rakhshan (2021), Kwarteng, Boateng and Simpson (2022), Dissanayake and Kuruppu (2020), Suprita P (2018)
V3	Time Taking	Dissanayake and Kuruppu (2020), Suprita P (2018)
V4	Insufficient knowledge	Arora, Lodhia and Stone (2021), Kwarteng, Boateng and Simpson (2022), Mahmood et al. (2019), Dissanayake and Kuruppu (2020), Suprita P (2018)
V5	Risking credibility	Suprita P (2018)
V6	Ignorance about its importance	Charef, Morel and Rakhshan (2021), Kwarteng, Boateng and Simpson (2022), Javed et al. (2022), Mahmood et al. (2019), Dissanayake and Kuruppu (2020), Suprita P (2018)
V7	Unreliability of data	Javed et al. (2022), Mahmood et al. (2019), Suprita P (2018)
V8	Lack of engagement from stakeholder	Passett et al. (2014), Kwarteng, Boateng and Simpson (2022), Javed et al. (2022)

Table 1 also summarizes the studies which has identified those barriers. Lack of reporting standard is identified by maximum six studies followed by Insufficient Knowledge which is identified by five studies. The listed variable further categorized as organizational barrier, resource-based barrier, and accounting barrier. The categorization is based on whether a barrier can be overcome by that category activities or not? Few of these listed barriers belong to more than one category. Figure 1 shows the categorization of these barriers. *Time taking* variable is identified to be part of all three categories as this barrier can be overcome by organization effort, by applying adequate accounting method and by providing required resources. *Insufficient Knowledge* can be overcome by organizational activities and by providing required resource whereas *Unreliability of data* can be minimized with proper availability of resources and by accounting method. *Lack of reporting standard* fall into accounting barrier category only, *Lack of engagement from stakeholder*, *Ignorance about its' importance* and *Risking credibility* belong to organizational barrier category and *High cost* belong to resource-based barrier category.

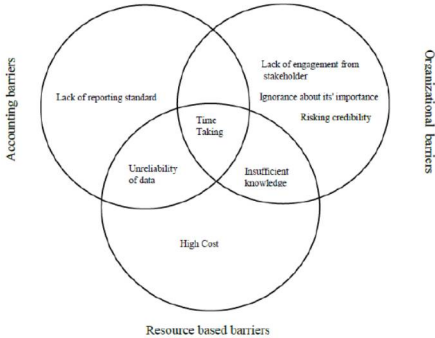


Figure 1: Categorization of barrier in sustainability accounting Source: Sharma

The summarized view of extant literature in Table 1 gives an insight about what kind of barriers exist in sustainability accounting practice but reviewed studies barely explain the direction of influence among these barriers. The review also indicates that identified barriers in literature are mostly same and similar irrespective to its geography therefore, a generalized strategy to overcome these barriers can be devised which will be applicable across geographies with some modification. These are few gaps which are identified with review on existing literature. Based on these gaps, research objective of the present study is discussed in next section.

III. RESEARCH OBJECTIVES

The identified research gap is used to develop the objective of this study i.e., to explore and analyze barriers to sustainability accounting practice and recommend policy maker on overcoming these barriers effectively by addressing following research problems:

1. Identification of relevant barriers in sustainability accounting implementation by conducting thorough literature review and establishment of contextual relationships among those identified barriers.
2. Development of an interpretive structural model to devise strategy for policy maker to minimize and mitigate effect of those barriers in effective adaptation of sustainability accounting by firms.

IV. RESEARCH METHODOLOGY

The present study employs ISM-MICMAC model to establish contextual relationship among identified barriers in sustainability accounting. Interpretive Structural Model is widely used method in literature for identifying interaction of different variables. Many studies have employed this method to study variables in different context (Mangla et al. 2014, Luthra et al. 2011, Shen et. al. 2016). Hence, the study employs this method given its usability and applicability to different study area. Interpretive Structural Model firstly establishes the relationship directions of chosen variables and then develops a hierarchical structural model to address underlying problem by specifying the relationship of variables. ISM enables one to comment on which element is more significant than other element so a strategy can be devised to control and/or to modify variables to achieve desired result like for this study ISM model enable to comment on how to ensure effective sustainability practice by specifying interaction between barriers to sustainability accounting. Originally developed by John N. Warfield, ISM model has been modified by researcher as needed. The MICMAC method classifies underlying elements into a cross-impact matrix to analyze relationships of elements. In this study, MICMAC analysis is employed to analyze identified barriers on the based on their driving and dependency power. The study employs integrated ISM-MICMAC method as elaborated in Figure 2.

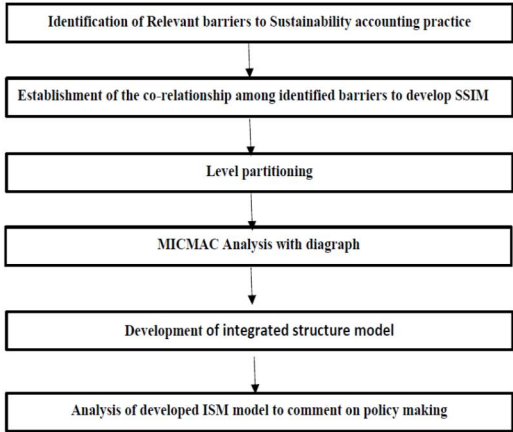


Figure 2: ISM-MICMAC Stepwise Process Source: Sharma

This integrated ISM-MICMAC method follows number of steps described in this section.

1. Firstly, the study conducts an extensive literature review and identify the in adoption of sustainability accounting. After identification of such barriers, the study establishes the co-relationship between barriers by employing input from experts’ feedback. For expert feedback, the study collects data with a questionnaire to establish co-relationship among barriers.
2. The next step of developing ISM-MICMAC model involves development of structural self-interaction matrix (SSIM) with given experts ‘feedback. SSIM represent the inter-relationship among identified enablers. In next

step, with the help of SSIM, the study frames barriers in initial reachability matrix (IRM). This reachability matrix further used to develop transitivity relation of identified barriers. This transitivity establishment converts initial reachability matrix into final reachability matrix.

3. Further to development of FRM, level partitioning is performed. Level partitioning classify each variable to create a hierarchical structure of identified barriers. The level of partitioning is decided by devising reachability set and antecedent. Each reachability set of listed barriers consists of the barrier itself and the barriers influenced by it whereas each antecedent set of barriers consists of the barrier itself and barriers that influence that barrier. The intersection of these two sets decides the level of listed barrier.
4. Given the hierarchical level of variables, the study calculates driving power and dependency power for each barrier. This measurement of driving and dependency power is employed to develop MICMAC graph of barriers. Accordingly, this MICMAC graph classifies the variables into categories of Autonomous, Dependent, Linkage, and Drivers. Further to MICMAC graph, a digraph with transitive links is created that graphically represent barriers and their interdependence.
5. This digraph is developed into interpretative structural model of barriers.
6. Lastly, this developed ISM model findings is matched with experts' feedback to ensure the applicability of findings based on literature review.

## V. DATA ANALYSIS & RESULTS

The study takes expert' feedback as input for employed research methodology. For data collection, a questionnaire is requested to fill to experts. Convenience sampling method is used for floating questionnaire. The respondents include Chartered Accountants, Auditors or Industry professionals related to accounting practices. Experts who submitted their responses are found from different countries. Most of the questions have same response and only few questions have different response as questions are answered as *Yes* or *No*. In case of differences in response, the option which has more than 50% of response is considered as answer for that question. With the data collected from the survey, the study employs it for further analysis using ISM-MICMAC method.

### A. The ISM-MICMAC Analysis

As explained in section 3 the ISM-MICMAC analysis follows certain step. Those steps are employed on collected data from experts to develop ISM model. This section describes each of steps as follows:

#### *Step 1: Identification of Relevant barriers to Sustainability accounting practice.*

Step 1 starts with listing those variables which serve as obstacle in integrating sustainable practices into common accounting system with the help of detailed review of existing literature. Such eight barriers are identified (Figure 1 and Table 1) which are mentioned in existing studies on the topic. Further to listing such variables, experts' opinion is also included to signify whether the identified barriers are relevant to the study or not. Experts rates each variable as very significant, significant, not significant. Experts find all eight variables very significant and hence no modification is done in this list.

#### *Step 2: Establishment of the co-relationship among identified barriers to develop SSIM.*

Identification of relevant barriers bring us to the next step. Step 2 establishes the contextual co-relation among identified variables with help of experts' input. For this purpose, a questionnaire is circulated to the same experts asking whether a particular variable influence other variable or not? The questionnaire consists of questions on all eight variables. Their responses are used in preparing structural self-interaction matrix (SSIM). The relation between the barriers is marked with following symbols (Luthra et al., 2011) in Table 2:

V - Barrier *p* influences barrier *q*;

A - Barrier *q* influences barrier *p*;

X - Barrier *p* and *q* influence each other;

O: Barriers *p* and *q* do not influence each other.

This SSIM is further developed as initial reachability matrix. For this, the study replaces the entries in SSIM i.e., V, A, X and O with binary numbers i.e., 0 and 1. The replacement of SSIM matrix symbol is done according to following rule:

All V is replaced with '1' in (p, q) entry and '0' in (q, p) entry.

All A is replaced with '0' in (p, q) entry and '1' in (q, p) entry.

All X is replaced with '1' in both (p, q) and (q, p) entries.

All O is replaced with '0' in both (p, q) and (q, p) entries.

Table 3 shows Initial Reachability Matrix with replaced entries.

TABLE 2: STRUCTURAL SELF-INTERACTION MATRIX (SSIM)

Barriers	Lack of reporting standard	High Cost	Time Taking	Insufficient knowledge	Risking credibility	Ignorance about its importance	Unreliability of data	Lack of engagement from stakeholder
Lack of reporting standard		O	V	O	O	O	V	O
High Cost			A	A	O	O	A	O
Time Taking				A	O	O	X	A
Insufficient knowledge					O	V	V	V
Risking credibility						X	A	O
Ignorance about its importance							O	X
Unreliability of data								O
Lack of engagement from stakeholder								

TABLE 3: INITIAL REACHABILITY MATRIX (IRM)

Barriers	Lack of reporting standard	High Cost	Time Taking	Insufficient knowledge	Risking credibility	Ignorance about its importance	Unreliability of data	Lack of engagement from stakeholder	Driving Power
Lack of reporting standard	1	0	1	0	0	0	1	0	3
High Cost	0	1	0	0	0	0	0	0	1
Time Taking	0	1	1	0	0	0	1	0	3
Insufficient knowledge	0	1	1	1	0	1	1	1	6
Risking credibility	0	0	0	0	1	1	0	0	2
Ignorance about its importance	0	0	0	0	1	1	0	1	3
Unreliability of data	0	1	1	0	1	0	1	0	4
Lack of engagement from stakeholder	0	0	1	0	0	1	0	1	3
Dependency Power	1	4	5	1	3	4	4	3	

With entries in Initial Reachability Matrix, the study prepares final reachability matrix by applying transitivity rule. Transitivity rules says if factor A affects factor B and factor B affects factor C then it can be said that factor A affects factor C or in simple words, if  $A=B$  &  $B=C$ , then by transitivity rule  $A=C$ . For example, Table 3 says barrier *Lack of standard reporting* influences barrier *Time Taking* whereas barrier *Time Taking* influences barrier *High Cost* therefore by applying transitivity rule, barrier *Lack of standard reporting* will influence barrier *High cost*. In final reachability matrix this transition is shown as “1\*”. Same process is followed for each barrier. Further we sum the entries in row and column. Summation of these entries in row is called driving power and in column is called dependence power. Table 4 shows the Final Reachability Matrix with applied transitivity rule. In FRM table, *Lack of reporting standard* is found to have highest driving power and barrier *High cost* is found to have highest dependency power. This means that *Lack of reporting standard* influence other barrier significantly and is not influenced by other barriers whereas barrier *High cost* is influenced by other barrier and does not influence any other barrier.

*Step 3: Level partitioning*

Final reachability matrix is transformed into level partitioning table by creating reachability, antecedent and intersection set. This intersection set decide the level of identified barriers to make a hierarchical structure. Level

1 is for barrier that has same reachability and intersection set like barrier of *High cost* has same reachability and intersection set in Table 5

TABLE 4: FINAL REACHABILITY MATRIX (FRM)

Barriers	<i>Lack of reporting standard</i>	<i>High Cost</i>	<i>Time Taking</i>	<i>Insufficient knowledge</i>	<i>Risking credibility</i>	<i>Ignorance about its importance</i>	<i>Unreliability of data</i>	<i>Lack of engagement from stakeholder</i>	<i>Driving Power</i>
<i>Lack of reporting standard</i>	1	1*	1	0	1*	1*	1	1*	7
<i>High Cost</i>	0	1	0	0	0	0	0	0	1
<i>Time Taking</i>	0	1	1	0	1*	1*	1	1*	6
<i>Insufficient knowledge</i>	0	1	1	1	1*	1	1	1	7
<i>Risking credibility</i>	0	1*	1*	0	1	1	1*	1*	6
<i>Ignorance about its importance</i>	0	1*	1*	0	1	1	1*	1	6
<i>Unreliability of data</i>	0	1	1	0	1	1*	1	1*	6
<i>Lack of engagement from stakeholder</i>	0	1*	1	0	1*	1	1*	1	6
<i>Dependency Power</i>	1	8	7	1	7	7	7	7	

TABLE 5: LEVEL PARTITIONING

Barriers	<i>Reachability set</i> $R(M_i)$	<i>Antecedent set</i> $A(N_i)$	<i>Intersection set</i> $R(M_i) \cap A(N_i)$	<i>Level</i>
<i>Lack of reporting standard</i>	1	1	1	3
<i>High Cost</i>	2	1,2,3,4,5,6,7,8	2	1
<i>Time Taking</i>	3, 5, 6, 7, 8	1,3,4,5,6,7,8	3, 5, 6, 7, 8	2
<i>Insufficient knowledge</i>	4	4	4	3
<i>Risking credibility</i>	3, 5, 6, 7, 8	1,3,4,5,6,7,8	3, 5, 6, 7, 8	2
<i>Ignorance about its importance</i>	3, 5, 6, 7, 8	1,3,4,5,6,7,8	3, 5, 6, 7, 8	2
<i>Unreliability of data</i>	3, 5, 6, 7, 8	1,3,4,5,6,7,8	3, 5, 6, 7, 8	2
<i>Lack of engagement from stakeholder</i>	3, 5, 6, 7, 8	1,3,4,5,6,7,8	3, 5, 6, 7, 8	2

Further, barrier with assigned level is eliminated and again reachability and antecedent set is identified for remaining barriers. In this way level is decided for each barrier. Table 5 shows the level partitioning of all eight barriers. *High cost* is assigned with level 1. Level 2 is assigned to barrier of *Time Taking*, *Risking credibility*, *Ignorance about its importance* and *Unreliability of data*. Lastly, *Lack of reporting standard* and *Insufficient knowledge* is decided as level 3.

*Step 4: MICMAC Analysis with diagraph.*

The next step is to develop MICMAC graph with barriers' driving and dependency power. Subsequently, the driving and dependence power for each barrier is investigated. MICMAC analysis classifies each of these barriers into four categories as follows:

Autonomous: Barriers that does not affect the system at all are called autonomous variable and will have low driving power and low dependence power. As none of identified barriers are part of *Autonomous* quadrant, it can be concluded that each of these eight identified barriers affect the implementation of sustainability accounting into practice.

Dependent: Dependent barriers has low driving power and high dependence power i.e., barrier of *High cost*, *Risking credibility*, *Lack of engagement from stakeholder* and *Ignorance about its importance*. These barriers do not influence other barriers but are influenced by other barriers.

**Linkage:** Linkage barriers are those which has high driving power and high dependence power i.e., barrier of *Time taking*, and *Unreliability of data*. It means these barriers affect and get affected by other barriers

**Drivers:** Drivers are the barriers with high driving power and low dependence power i.e., barrier of *Lack of reporting standard* and *Insufficient knowledge*. That means these barriers influence other barriers significantly and not influenced by other barrier at all. Hence, controlling drivers will control other barrier as well.

Further to MICMAC analysis, a diagraph is drawn. Figure 4 diagraph shows direction of barriers as which barrier direct to which barrier. For example, barrier *Lack of reporting standard(V1)* and *Insufficient knowledge(V4)* direct all other barriers.

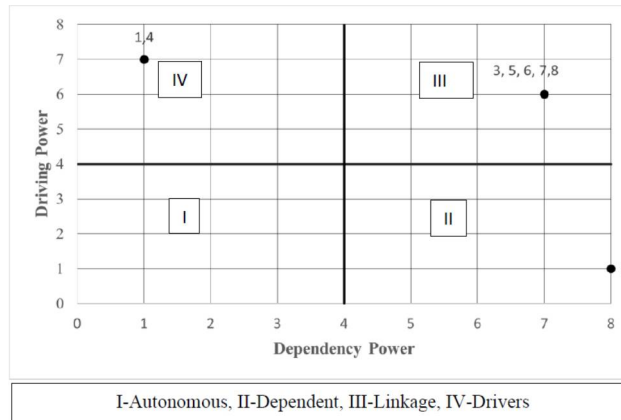


Figure 3: MICMAC Analysis of barriers to Sustainability Accounting Source: Sharma

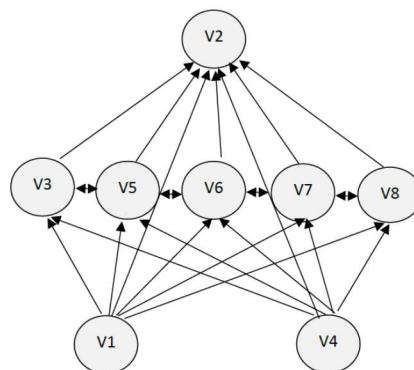


Figure 4: Diagraph on barriers to Sustainability Accounting Source: Sharma

*Step 5: Development of integrated structure model.*

Lastly, an integrated structural hierarchical model is developed based on diagraph (Figure 5).

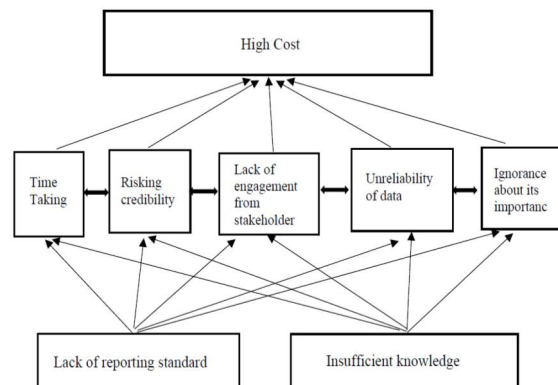


Figure 5: Interpretive Structural Model on barriers to Sustainability Accounting Source: Sharma



Number nodes is replaced with barrier itself and transitivity link is removed. The resulted model is ISM of barrier in sustainability accounting practice. Figure 5 of developed ISM suggests *Lack of reporting standard* and *Insufficient knowledge* these two barriers are most powerful barrier and drive other barriers in implementation of sustainability accounting into practice.

*Step 6: Analysis of developed ISM model to comment on policy making.*

This developed ISM model is matched with experts' input. Lack of reporting standard and Insufficient knowledge are voted by experts most influencing barriers to sustainability accounting practices. This unanimous response from experts validates the ISM model result. Hence, no further modification is done in developed ISM.

## VI. FINDINGS

Green practices are not future business practice but is a contemporary business practice and sooner or later every business has to integrate itself to achieve long term goals. Hence including these activities into accounting system is inevitable. Still there are very few firms which report their sustainability practices in accounting format due to several barriers as identified in this study.

The present study provides an insight about those barriers and provide a framework for policy maker to overcome such barrier. This study finds that by controlling the drivers i.e., barrier of *lack of reporting standard* and *insufficient knowledge*, the sustainability accounting practices can be effectively integrated by business. This study advocates the need of a standard reporting standard by policy maker on sustainability accounting practices. This standard reporting will save time, be cost effective, will check unreliability of data whereas sufficient knowledge on sustainability accounting practice will also save time, be cost effective, will provide reliable data and will also ensure to make business aware about its importance.

To provide a standard framework on sustainability reporting, many policies are framed but their reachability for the users is not that widely explored. Like Securities & Exchange Board of India (SEBI) in 2012 made filing of Business Responsibility Report (BSR) mandatory for the companies who are in top 100 list according to their market capitalization. Further in 2021, SEBI has introduced standard guidelines on ESG reporting named Business Responsibility and Sustainability Report (BRSR) that is required to be prepared by top 1000 listed companies. This BRSR include reporting on risk and opportunity related to ESG, strategies for mitigating those risk and for exploring those opportunities. The BRSR is an attempt to provide analytical insight of green practices by firms and also to maintain transparency with stakeholders. Though filing of BRSR is mandatory only for top 1000 listed companies, the need to include every business firm in BRSR will be next step in this direction.

Another sustainability standard reporting guideline is issued by European Commission. In 2019 the European Commission set guidelines on reporting climate-related information to supplement to the existing guidelines on non-financial reporting. Further in 2021, the Commission proposes to employ a proposal for a Corporate Sustainability Reporting Directive, which will modify existing reporting requirements of the non-financial reporting for better effectiveness and will align EU trading policies. The draft standards on CSRD are being developed by the European Financial Reporting Advisory Group which will implemented by October 2022(Consultation Strategy2020).

In addition to these guidelines, UNEP (United Nation Environment Program) has published a report on evaluating national policies on corporate sustainability reporting. That article suggests strategies to Governments for developing sustainability reporting policies. These policy recommendations are based on experience of 47 member countries on sustainability reporting (EvaluatingNationalPoliciesCorporate SustainabilityReporting 2015).

Primarily, it can be observed that efforts are being made to develop a clear guidelines and framework for sustainability reporting in accounting practices, but these efforts are not reaching to every business firm. Most of these guidelines are customized to achieve certain objective or for certain regions not necessarily focusing of sustainability practice alone. Therefore, policy framing needs to be focus on its inclusivity instead of only for to be used by few.

Another barrier i.e., insufficient knowledge is also needed to be tackled by policy maker. This barrier can be overcome by devising a plan to make people practice the sustainability on their own. Including curriculum on sustainability accounting as a fully developed course can be considered as one such efforts. Senior management of business firm should also put their effort to include such program or orientation on sustainability accounting to make their employees aware. To motivate the senior management for such initiative, policy maker needs to frame rules and devise lucrative strategies in terms of tax discount, easy loan disbursement etc. so business firm

itself starts training their employees on their own. Use of Fin Tech is also recommended for imparting adequate knowledge on sustainability accounting. Hence, Policy maker should frame policies on developing a standard framework on sustainability reporting and on making people aware of sustainability practice, process, and its advantages. Figure 6 illustrates the strategies to be included by regulative authorities on sustainability accounting practices.

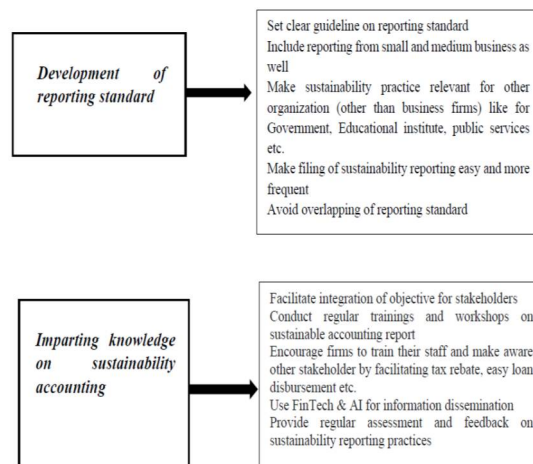


Figure 6: Strategies to overcome Sustainability Accounting barriers Source: Sharma

## VII. CONCLUSION

Sustainable development goal has taken an important place for business venture to survive in long term. Just including the SDGs in business goal is not sufficient but the assessment of those goals in accounting term is as much important as achieving the goal itself. Without accounting for sustainable practices in quantitative term, understanding its impact is difficult. Whereas a proper report on sustainability accounting brings more clarity and envision the future course of actions for different stakeholder. The present study attempts to understand why integrating sustainability practices into accounting is not a common business practice by studying the underlying barriers to sustainability accounting reporting. The findings of the study suggest that two of such underlying barriers i.e., lack of reporting standard and insufficient knowledge are in core of these barriers. Hence, negating these two barriers will make other barrier less effective or not at all effective and smooth transition from general accounting to sustainability accounting practices can be ensured. The present study also comment on how these barriers can be tackled by policymakers. Few of such recommendation for policy maker include use of Fintech, wider reachability, inclusion of small and medium size business in reporting, encouraging business by providing incentive and opportunities for growth etc. This study findings are of importance for business entities, regulative authorities, institutions, and researcher alike as all these stakeholders are part of ensuring sustainable development goals achieved by a firm.

For future study, one can use structural equation modelling to empirically test this study findings. The result of empirical tests can be compared with other adopted research methods of empirical testing like system dynamic modelling. For assessment and analysis of identified variables, other methods can also be used except ISM-MICMAC. Lastly, this study recommendation to policy maker can also be evaluated for better explanation and implementation of sustainability accounting practices.

## REFERENCES

- [1] Arora, Mitali Panchal, Sumit Lodhia, and Gerard Stone. 2021. "Enablers and barriers to the involvement of accountants in integrated reporting. *Meditari Accountancy Research* 30, no. 3: 676-709. <https://doi.org/10.1108/MEDAR-11-2020-1102>
- [2] Asogwa, Ikenna Elias, Maria Estela Varua, Peter Humphreys, and Rina Datt. 2021. "Understanding Sustainability Reporting in Non-Governmental Organisations: A Systematic Review of Reporting Practices, Drivers, Barriers and Paths for Future Research" *Sustainability* 13, no. 18: 10184. <https://doi.org/10.3390/su131810184>.
- [3] Bartels, Wim, Adrian King, Jennifer Shulman, Richard Threlfall. 2020. "The Time has Come: The KPMG Survey of

Sustainability Reporting". <https://home.kpmg/xx/en/home/insights/2020/11/the-time-has-come-survey-of-sustainability-reporting.html>

- [4] Brand, Fridolin Simon, Verena Berger, Katharina Hetze, Jörg E. U. Schmidt, Marie-Christin Weber, Herbert Winistörfer and Claus-Heinrich Daub. 2018. "Overcoming current practical challenges in sustainability and integrated reporting: insights from a Swiss field study." *Nachhaltigkeits Management Forum* 26: 35–46. <https://doi.org/10.1007/s00550-018-0474-y>
- [5] Charef, Rabia, Jean-Claude Morel, and KambizRakhshan. 2021. "Barriers to Implementing the Circular Economy in the Construction Industry: A Critical Review" *Sustainability* 13, no. 23: 12989. <https://doi.org/10.3390/su132312989>
- [6] Cinquini, Lino, Emilio Pasetti, Alessandro Marelli, and Andrea Tenucci. 2014. "Sustainability accounting in action: Lights and shadows in the Italian context." *The British Accounting Review* 46, no. 3: 295-308. <https://doi.org/10.1016/j.bar.2014.05.002>.
- [7] De Micco, P., Rinaldi, L., Vitale, G., Cupertino, S. and Maraghini, M.P. (2021), "The challenges of sustainability reporting and their management: the case of Estra", *Meditari Accountancy Research* 29, no. 3: 430-448. <https://doi.org/10.1108/MEDAR-09-2019-0555>
- [8] Dissanayake, Dinithi, SanjayaKuruppu, Wei Qian, and Carol Tilt. 2020. "Barriers for sustainability reporting: evidence from Indo-Pacific region". *Meditari Accountancy Research* 29 no. 2: 264-293. <https://doi.org/10.1108/MEDAR-01-2020-0703>
- [9] European Commission. n. d. "Corporate Sustainability Reporting". Accessed August 12, 2022. [https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting\\_en](https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en)
- [10] Javed, Fahad, Kong Yusheng, Najaf Iqbal, Zeeshan Fareed, and Farrukh Shahzad. 2022. "A Systematic Review of Barriers in Adoption of Environmental Management Accounting in Chinese SMEs for Sustainable Performance." *Front Public Health* 25, 10:832711. <https://doi.org/10.3389/fpubh.2022.832711>
- [11] Kwarteng, Amoako, Cletus Boateng, and Samuel Simpson. 2022. "The barriers to adapting accounting practices to circular economy implementation: an evidence from Ghana. *Journal of Global Responsibility* ahead-of-print, no. ahead-of-print. <https://doi.org/10.1108/JGR-12-2021-0102>
- [12] Lata, M., & Kumar, V. (2022). IoT network security in smart homes. *Cybersecurity in smart homes: architectures, solutions and technologies*, pp. 155-176.
- [13] Lata, M., & Kumar, V. (2023). "Challenges to IoT Security: Industry Perspective", 14th International Conference on Advances in Computing, Control, and Telecommunication Technologies, ACT 2023, *Grenze International Journal of Engineering and Technology (GIJET)*, Volume 9, Issues 1 & 2, pp. 61-67
- [14] Lee, Ki-Hoon. 2011. "Motivations, barriers, and incentives for adopting environmental management (cost) accounting and related guidelines: a study of the republic of Korea." *Corporate Social Responsibility and Environmental Management* 18: 39-49. <https://doi.org/10.1002/csr.239>
- [15] Luthra, Sunil, Vinod Kumar, Sanjay Kumar, and Abid Haleem. 2011. "Barriers to Implement Green Supply Chain Management in Automobile Industry Using Interpretive Structural Modeling Technique: An Indian Perspective." *Journal of Industrial Engineering and Management* 4, no. 2: 231–257. <http://dx.doi.org/10.3926/jiem.2011.v4n2.p231-257>
- [16] Mahmood, Zeeshan, Waris Ali, Javed Iqbal, and Sadaf Fatima. 2019. "Drivers and Barriers of Sustainability Practices in Emerging and Developing Economies." *Journal of Business and Social Review in Emerging Economies* 5 no. 1: 213-222. <https://doi.org/10.26710/jbsee.v5i1.683>
- [17] Mangla, S., J. Madaan, P. R. S. Sharma, and M. P. Gupta. 2014. "Multi-Objective Decision Modelling using Interpretive Structural Modelling for Green Supply Chains." *International Journal of Logistics Systems and Management* 17 no. 2: 125–142. <https://dx.doi.org/10.1504/IJLSM.2014.059113>
- [18] Palit, Suprita. 2018. "Emerging Significance of Sustainability Accounting and Reporting in India - A Conceptual Study." *International Journal of Accounting Research* 6, no. 2: 180. doi: 10.35248/2472-114X.18.6.180
- [19] Pirmana, Viktor, Armida Salsiah Alisjahbana, Rutger Hoekstra, and Arnold Tukker. 2019. "Implementation Barriers for a System of Environmental-Economic Accounting in Developing Countries and Its Implications for Monitoring Sustainable Development Goals" *Sustainability* 11, no. 22: 6417. <https://doi.org/10.3390/su11226417>
- [20] Saxena, J.P., Prem Vrat, and Sushil. 1990. "Impact of Indirect Relationships in Classification of Variables—A MICMAC Analysis for Energy Conservation." *System Research* 7, no. 4: 245–253. DOI:10.1002/sres.3850070404
- [21] Setthasakko, W. 2010. "Barriers to the development of environmental management accounting: An exploratory study of pulp and paper companies in Thailand." *EuroMed Journal of Business* 5 no. 3: 315-331. <https://doi.org/10.1108/14502191011080836>
- [22] Shen, Liyin, Xiangnan Song Ya Wu Shiju Liao and Xiaoling Zhang. 2016. "Interpretive Structural Modeling Based Factor Analysis on the Implementation of Emission Trading System in the Chinese Building Sector." *Journal of Cleaner Production* 127: 214–227. <https://doi.org/10.1016/j.jclepro.2016.03.151>
- [23] Tauringana, V. 2021. "Sustainability reporting challenges in developing countries: towards management perceptions research evidence-based practices." *Journal of Accounting in Emerging Economies* 11 no. 2: 194-215. <https://doi.org/10.1108/JAEE-01-2020-0007>
- [24] Tsalis, Thomas A, Kyveli E. Malamateniou, Dimitrios Koulouriotis, and Ioannis E. Nikolaou. 2020. "New challenges for corporate sustainability reporting: United Nations' 2030 Agenda for sustainable development and the sustainable

development goals.” *Corporate Social Responsibility Environmental Management* 27, no. 4: 1617– 1629. <https://doi.org/10.1002/csr.1910>

- [25] UN Environmental Programme. n. d. “Evaluating National Policies on Corporate Sustainability Reporting”. Accessed on August 10, 2022. <https://www.unep.org/resources/report/evaluating-national-policies-corporate-sustainability-reporting>