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**Role of Organizational Values/Culture in Sustainable Environmental and Social Practices:
Evidences from Indian Small and Medium-Sized Enterprises**

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Role of Organizational Values/Culture in Sustainable Environmental and Social Practices: Evidences from Indian Small and Medium-Sized Enterprises

Prof. Subrata Mitra¹

Abstract

In this paper, we investigate the role of organizational values/culture in sustainable environmental and social practices of Indian small and medium-sized enterprises (SMEs), and observe that organizational values/culture positively affect waste disposal/recycling, and employee-related social practices. Further, employee-related social practices act as a mediating variable between organizational values/culture, and firms' environmental and community-related social practices. We also examine the moderating role of family influence and observe that for family SMEs, the effects of organizational values/culture on waste disposal/recycling and employee-related social practices are stronger than those for non-family SMEs. The paper concludes by highlighting the implications and limitations of the study, and possible directions for future research.

Keywords: Organizational values; Sustainable practices; Family influence; SMEs; India; Survey

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Role of Organizational Values/Culture in Sustainable Environmental and Social Practices: Evidences from Indian Small and Medium-Sized Enterprises

1. Introduction

Sustainability or sustainable development has been receiving increasing attention from academicians and practitioners with a view to protecting the environment and social equity. This has implications for businesses to focus not only on their economic objectives, but also on their engagement in sustainable environmental and social practices. It is argued in the literature that large businesses owing to their size and ability to access financial, technological and human resources are in a better position vis-à-vis small and medium-sized enterprises (SMEs) in terms of implementing sustainable practices. Further, it is argued that for large businesses, the environmental and social implications are much greater than the same for SMEs, and therefore, most of the earlier research has been devoted to studying the environmental and social practices of large businesses (Torugsa et al., 2012; Courrent et al., 2018; Lopez-Perez et al., 2018; Eweje, 2020; Sendlhofer, 2020). However, SMEs constitute more than 90% of businesses in a country (Hussey and Eagan, 2007), and although their individual environmental and social impacts may be insignificant, their collective impact is definitely significant (Eweje, 2020; Kariyapperuma and Collins, 2021). This has led to a growing trend in research on sustainable environmental and social practices of SMEs.

Although SMEs are resource-constrained, they have an informal culture and flexible structure, which put them at an advantage over large businesses in terms of quickly adopting sustainable practices (Torugsa et al., 2012, 2013; Sendlhofer, 2020). Moreover, SMEs' organizational values and beliefs, and owners'/managers' attitude and ethical orientation towards environmental and social issues, help them implement sustainable practices more easily and spontaneously than large businesses (Cordano et al., 2010; Roxas and Coetzer, 2012; Torugsa et al., 2012, 2013; Eweje 2020; Sendlhofer, 2020). Most of the SMEs are embedded in, and dependent on the requirements of, their local communities. They have a better opportunity than large businesses to engage in local area development and improve the quality of life of the local community, and therefore would be

more than willing to include social and environmental goals into their sustainability agenda (Lawrence et al., 2006; Williams and Schaefer, 2013; Rojas and Lorenzo, 2021).

This paper investigates the effect of organizational values/culture, and SME owners'/managers' attitude and ethical orientation, on firms' sustainable environmental and social practices in the context of Indian SMEs. It is mentioned in the literature that for small firms, owners'/managers' attitude reflects the organization's vision, values and beliefs. A positive attitude of owners/managers towards the natural environment shapes the environmental orientation of the firm. While formulating the environmental strategy of the firm, the top management should consider the motivations and intentions of owners/managers for pursuing pro-environmental strategies. Managerial characteristics such as beliefs, values and attitudes influence the strategic choices and thus the behaviour of the firm (Sharma and Sharma, 2011; Roxas and Coetzer, 2012; Dekker and Hasso, 2016). For sustainable environmental practices, we consider two dimensions – sustainable product and process design, and sustainable waste disposal management. Similarly, for sustainable social practices, we consider two dimensions – sustainable human resource management at the workplace and local community development. We also investigate the causal relationships among the different dimensions of environmental and social practices by developing and testing hypotheses.

The literature on sustainability in SMEs reveals the application of four main theoretical frameworks – resource-based view (RBV)/natural resource-based view (NRBV), stakeholder theory, institutional theory and theory of planned behavior – to explain the effect of organizational values and beliefs, and owners'/managers' positive attitude and ethical orientation, on firms' adoption of sustainable environmental and social practices. While studying the interrelationships among capabilities, proactive corporate social responsibility (CSR) and financial performance of SMEs, Torugsa et al. (2012, 2013), drawing on the RBV, note that the three dimensions of capability – shared vision, stakeholder management and strategic proactivity – are not only valuable, but their foundations are socially complex, causally ambiguous and deeply embedded in a firm. These capabilities are also firm-specific and costly to imitate. Courrent et al. (2018), based on the RBV, study the mediating role of sustainable environmental and social practices in the relationship between the entrepreneurial orientation of SMEs and their financial and non-financial performance. The authors mention that besides tangible assets, intangible assets, such as human

capital, innovation, reputation and brand image, are difficult to imitate or substitute by competitors, thus providing a competitive advantage. Bartolacci et al. (2020) note that according to the RBV, even SMEs have the potential to pursue sustainable business strategies if appropriate resources and capabilities are available and the natural environment is viewed as a competitive opportunity. The authors also note that the implementation of these strategies may help SMEs achieve a competitive advantage. Boakye et al. (2020) mention that the NRBV, which is an extension of the RBV where the natural environment is taken into consideration, may explain why firms' resources and capabilities with respect to the natural environment may provide them with a sustained competitive advantage. Based on the NRBV and the stakeholder theory, the authors explore the relationship between sustainable environmental practices and financial performance of SMEs. Gadenne et al. (2009), based on the stakeholder theory, study the interlinkages among external influences, environmental awareness and attitudes, and environmental practices in SMEs.

Roxas and Coetzer (2012), based on the institutional theory, examine the interrelationships among the regulatory, cognitive and normative dimensions of the institutional environment, owners'/managers' attitudes towards the natural environment, and the environmental sustainability orientation of SMEs. Singh et al. (2015) use the institutional theory to analyze the relationship between different dimensions of motivations – relational, innovational, operational and competitiveness – and SMEs' adoption of environmental management practices. Dekker and Hasso (2016) also note that the institutional theory is often used in explaining the environmental performance of SMEs since it can be influenced by non-financial objects such as institutional legitimacy and social acceptance.

Cordano et al. (2010) use the theory of planned behavior to examine how SME managers' positive attitudes influence their environmental decision-making process. Uhlaner et al. (2012) also comment that the theory of planned behaviour helps us understand the conditions under which SMEs adopt environment-friendly practices, and show that the endogenous factors – tangibility of sector, firm size, innovation orientation, family influence and perceived financial benefits from energy conservation – positively influence the level of SMEs' engagement in environmental management practices.

1.1 Family vs. non-family SMEs

In this study, we also examine the moderating role of family influence on the hypothesized relationships, i.e. whether the relationships are stronger (or weaker) for family SMEs than for non-family SMEs. In the literature, family firms have been defined in various ways in terms of family ownership, control, management and operations, governance and influence (See, for example, Sharma and Sharma, 2011; Lopez-Perez et al., 2018; Mamede and Allouche, 2018; Curado and Mota, 2021; Kariyapperuma and Collins, 2021). Broadly, firms may be classified into four types based on family involvement – family-owned and –managed, family-managed but ownership may be dispersed, family-owned but managed by a non-family member under family influence, and family non-involvement. For this research, the definition of family firms encompasses the first three classification types where the underlying families exercise significant control and influence on the management, operations and governance of their firms irrespective of the ownership structure.

Although family businesses account for almost 90% of the global GDP, face more complex issues than non-family businesses (Lopez-Perez et al., 2018), 37% of Fortune 500 companies are family-controlled and more than 75% of the global workforce is employed by family businesses (Kariyapperuma and Collins, 2021), Maheswari et al. (2018) note that the issue of sustainability in family firms has drawn inadequate attention from academicians and researchers. Rojas and Lorenzo (2021) also note that although in recent years, more attention has been paid to study social and environmental sustainability in SMEs, the analysis of family influence has remained understudied. The literature highlights the need for a comparison of family and non-family businesses in terms of their sustainability behaviour (Mamede and Allouche, 2018).

Lopez-Perez et al. (2018) note that family businesses are often committed to the local community, and they are more likely to pursue social and environmental goals, besides economic goals, than non-family businesses to protect their brand image and reputation. The authors mention two theories – stewardship theory and socio-emotional wealth theory – that are relevant in the context of family businesses. According to the stewardship theory, managers, irrespective of whether they belong to the family or not, are guided by family values, rather than by their individual aspirations, in the pursuit of social and environmental goals. The socio-emotional wealth theory, on the other hand, dictates that family businesses are driven by the desire to protect and preserve their socio-

emotional health, and would pursue social and emotional goals more than pure economic goals. Mamede and Allouche (2018) note that family SMEs have more close and consistent links with their surrounding communities than non-family SMEs. Based on the RBV, the authors argue that family SMEs possess unique resources, i.e. their ‘family-ness’, which are inimitable and non-substitutable, and provide greater competitive advantages compared to non-family SMEs. The authors also mention that the stewardship theory provides support for family SMEs’ greater focus on social performance and socio-emotional wealth generation for family shareholders and stakeholders.

Maheswari et al. (2018), based on the legitimacy theory and social capital theory, argue that firms need to obtain the society’s approval in order to survive, and hence must engage in local community development to improve their brand image and reputation. The authors refer to the organizational identity theory that explains the choice of non-financial goals by family firms motivated by the identity fit, i.e. the inseparable ties between the family and the firm. The authors also mention that the stewardship theory suggests owners/managers of family SMEs will invest in initiatives to maximize utility not only for themselves, but also for the benefit of all stakeholders. According to the authors, family firms are more likely to engage in sustainable social practices than non-family firms.

Curado and Mota (2021) refer to the socio-emotional wealth theory to explain why family firms focus not only on the economic goals but also on the environmental and social goals in order to build and maintain stakeholder relationships and a good reputation, and pass on the socio-emotional wealth to future generations. The authors, based on the RBV, note that for family firms, family values, family involvement, relationships among family members and a flexible organizational structure are intangible resources, and because they are difficult to imitate and replace, they may be considered a source of competitive advantage. The authors also mention the relevance of the stewardship theory in the context of family firms which proposes that individuals are motivated to make decisions for the benefit of others. The authors note that owners/managers of family SMEs will be driven by family values/culture, and will act accordingly to further family goals, even if it means sacrificing personal goals. According to the authors, for family firms, family values and organizational values are inseparable, and owners/managers of family SMEs, through a high level of commitment to the community, pursue organizational/family goals, at the cost of

their personal goals, to promote sustainable practices that explain the competitive advantage family firms enjoy over non-family firms. Rojas and Lorenzo (2021) also note that for family SMEs, family values and organizational values become inseparable. Family SMEs that pursue social and environmental goals, may not realize improved financial results in the short term; however, they would still divert resources from economic to non-economic goals to fulfil their societal obligations and increase their socio-emotional wealth for future generations.

1.2 Contributions

Following are the contributions of the present study:

- (a) To the best of the author's knowledge, research on sustainability in Indian SMEs has been rather limited. Mittal et al. (2012), Nair and Sodhi (2012), Nulkar (2014) and Singh et al. (2015) identify the major drivers, barriers, sustainable practices and performance measures for Indian SMEs. Thanki et al. (2016) develop an integrated framework for lean-green implementation practices in SMEs using the analytical hierarchy process (AHP) approach. Gandhi et al. (2018) use the TOPSIS method to rank the drivers of integrated lean-green manufacturing in SMEs. Shashi et al. (2018) examine the effect of sustainability orientation and supply chain integration on sustainable procurement and product and process design, and the effect thereof on SMEs' environmental and cost performance. Khurana et al. (2019) identify the determinants that strengthen the integration of sustainability with innovation, and Sajan and Shalij (2021) investigate the effect of lean implementation practices on sustainability performance for manufacturing SMEs. Singh et al. (2021) have developed an SME sustainability disclosure index for stock exchange-listed manufacturing SMEs. Nudurupati et al. (2022), based on case studies of manufacturing SMEs, discuss the drivers, barriers and benefits of the adoption of circular economy (CE), and Sahoo (2022) studies the effects of lean practices and organizational culture on the operational performance of manufacturing SMEs. However, none of these papers specifically investigates the effect of organizational values/culture, and owners'/managers' positive attitude and ethical orientation, on firms' adoption of sustainable environmental and social practices in Indian SMEs. The present study intends to fill this gap. Moreover, the role of family influence has not been studied in the context of sustainable practices in Indian SMEs so far. The present

study examines the moderating effect of family influence on the hypothesized relationships to distinguish between family and non-family Indian SMEs.

- (b) The measurement scale for the study has been developed based on the extant literature and inputs received from practitioners during the pilot study. The scales used in studies for other countries have been suitably modified to make them relevant for Indian SMEs. Since, as mentioned, no such study has existed in the Indian context so far, the development of the measurement scale may be considered to be a contribution of the present study, which may be replicated for similar future studies.
- (c) Most of the earlier research on sustainability in SMEs focussed on environmental sustainability, rather than on social sustainability. This may be due to the fact that the environmental impact of firms' activities, such as carbon emissions and waste disposal, is more easily measurable than their social impact, and also because of the adverse effect of global warming and climate change, environmental sustainability has been drawing more attention than social sustainability. However, the increased attention to environmental sustainability in no way diminishes the importance of social sustainability, and the recent research trend shows an increasing attention to social sustainability, besides environmental sustainability. In this study, we consider both the dimensions of social sustainability – employee-focus and community-focus, and incorporate both employee-related social practices and practices related to the local community for Indian SMEs.

The rest of the paper is organized as follows. Section 2 lists the constructs and items for the study, which is followed by the development of a conceptual framework and hypotheses, based on a review of the relevant literature, in Section 3. Sections 4, 5 and 6 present the research methodology, results of the study, and discussions and implications of the results, respectively. Finally, conclusions, limitations of the study and directions for future research are presented in Section 7.

2. Constructs and items

Constructs and items for the study have been developed based on the relevant literature and feedback received during data collection. As mentioned, scales used for other countries have been modified to suit the Indian context. Since in this paper, we are examining the effect of organizational values/culture, and owners'/managers' positive attitude and ethical orientation, on the implementation of sustainable environmental and social practices in Indian SMEs, the following 5 constructs have been taken into consideration:

- (a) Organizational values/culture and owners'/managers' approach towards sustainability
- (b) Sustainable product and process design
- (c) Sustainable waste disposal management
- (d) Sustainable human resource management
- (e) Local community development

While constructs (b) and (c) represent the sustainable environmental practices, constructs (d) and (e) represent the sustainable social practices of Indian SMEs in this study. Table 1 shows the 5 constructs and their associated 22 items. Table A1 in Appendix A lists the references from where the items have been gleaned.

Insert Table 1 about here

3. Conceptual framework and hypotheses

In this section, we develop a conceptual framework and hypotheses for the study based on a detailed review of the relevant literature.

3.1 Organizational values/culture and owners'/managers' approach towards sustainability, sustainable product and process design, and sustainable waste disposal management

Hussey and Eagan (2007), in their study of US SMEs, do not find support for the hypothesis that leadership has a positive influence on process and environmental management. Gadenne et al. (2009), while commenting that for some SMEs, treatment of the environment may be an ethical issue and their owners/managers are likely to act to reduce the environmental impact of their

business activities, also note that the literature reports mixed results, including no relationship between owners'/managers' positive environmental attitudes and positive environmental outcomes. The authors, in their study of Australian SMEs, do not find support for the hypothesis that owners/managers with positive environmental attitudes are more likely to engage in a relatively higher level of environmental conservation practices.

On the other hand, Cordano et al. (2010), in their study of SMEs in the US wine industry, observe that owners'/managers' attitudes, norms and ethical intentions strongly influence the adoption of environmental management programmes such as energy conservation and recycling practices. Roxas and Coetzer (2012) note that while some authors have reported strong positive associations between owners'/managers' norms, values, beliefs and attitudes, and firms' environmental sustainability orientation, other authors have commented that the associations may not be straightforward, and there may be other confounding variables that explain how managerial attitudes translate into actual environmental management practices. The authors, however, in their study of SMEs in the Philippines, find strong support for the hypothesis that owners'/managers' values, beliefs, attitudes, leadership and commitment towards the natural environment are associated with firms' adoption of higher levels of environmental management practices such as low-impact manufacturing technology, water and electricity conservation, and recycling of wastes.

Torugsa et al. (2012, 2013) study the relationships between the shared vision of SMEs and their proactive CSR strategies that support sustainable environmental and social practices. The authors note that SMEs' vision, shared with their members, results in common objectives and aspirations that lead to organizational learning and employee involvement in the pursuit of sustainable practices. The authors, in their study (2013) of Australian SMEs, find a positive association between the shared vision of SMEs and sustainable environmental practices. Dekker and Hasso (2016) also note from the literature that owners'/managers' positive attitudes towards the natural environment lead to a positive and proactive orientation of their firms towards environmental sustainability.

Chasse and Courrent (2018) highlight the link between SME owners'/managers' attitudes and personal values and the implementation of environmental practices. The authors, in their study of French SMEs, find a strong positive link between owners'/managers' personal sustainability

behaviour and the adoption of environmental practices such as product life cycle analysis, water and/or energy conservation, clean production technology and sorting of wastes.

Therefore, we posit the following hypotheses:

Hypothesis 1 (H1): Organizational values/culture and owners'/managers' approach towards sustainability are positively associated with sustainable product and process design in SMEs.

Hypothesis 2 (H2): Organizational values/culture and owners'/managers' approach towards sustainability are positively associated with sustainable waste disposal management in SMEs.

3.2 Organizational values/culture and owners'/managers' approach towards sustainability, sustainable human resource management, and local community development

Hussey and Eagan (2007) find support for the hypothesis that leadership has a positive influence on human resource focus. Also, Gadenne et al. (2009) find that owners'/managers' environmental attitudes are significantly associated with environmental support practices that include facilitating environmental activities in the local community, among others.

As already mentioned, although Torugsa et al. (2013) find a positive association between the shared vision of SMEs and sustainable environmental practices, no significant association between the shared vision of SMEs and sustainable human resource and community-related social practices has been observed. The authors, of course, find a strong positive relationship of the shared vision of SMEs with the interaction between the environmental and social dimensions of sustainability.

Chasse and Courrent (2018) highlight the causal link between owners'/managers' personal values and firms' sustainable social practices. The authors, in their study, find strong positive relationships of owners'/managers' personal sustainability behaviour with firms' workplace and community practices, the relationship with community practices being stronger than the relationship with workplace practices.

Eweje (2020) notes that owners'/managers' leadership abilities influence firms' environmental and social commitments, leading to the implementation of various environmental and social practices.

Based on the above discussions, the following hypotheses are proposed:

Hypothesis 3 (H3): Organizational values/culture and owners'/managers' approach towards sustainability are positively associated with sustainable human resource management in SMEs.

Hypothesis 4 (H4): Organizational values/culture and owners'/managers' approach towards sustainability are positively associated with local community development in SMEs.

3.3 Sustainable product and process design, sustainable waste disposal management, sustainable human resource management, and local community development

Courrent et al. (2018) find a strong positive association between the environmental innovations in SMEs in terms of eco-efficiency, cleaner production and eco-design, and their environmental practices such as sorting and recycling of wastes. It is expected that if SMEs make their product and process design environment-friendly, the same will automatically reduce the quantum of waste generated and facilitate waste segregation, disposal and recycling.

Therefore, we propose the following hypothesis:

Hypothesis 5 (H5): Sustainable product and process design is positively associated with sustainable waste disposal management in SMEs.

Since for local community development, we have considered scales such as sanitation and sewage facilities, hygiene and cleanliness, and services rendered towards local area development, it is expected that sustainable environmental practices in terms of waste disposal and recycling would have a positive effect on local community development, which leads us to propose the following hypothesis:

Hypothesis 6 (H6): Sustainable waste disposal management is positively associated with local community development in SMEs.

Torugsa et al. (2013) note that employee involvement and participation in the decision-making process helps SMEs reduce their ecological footprints. The authors note that employee engagement and providing them with training and development opportunities boost their commitment, awareness, knowledge and skills, thereby facilitating firms' adoption of environmental sustainability practices. Hu et al. (2015) also note that employee training, motivation, involvement

and participation are key success factors for implementing sustainable environmental practices in SMEs.

Wu et al. (2015), based on a case study of Chinese SMEs, find a strong positive relationship between employee-related social practices and environmental practices.

Fernandez and Camacho (2016) note that an improvement in the working environment at the workplace facilitates the institution of an ethical culture in the firm. The authors, based on the interviews of their study of Spanish SMEs, also note that employee involvement and participation in the decision-making process not only boost employee morale and motivation, but also help the firm pursue sustainable environmental and social practices.

According to Courrent et al. (2018), social practices in the workplace have a positive effect on the human capital, promoting a culture of continuous learning and the involvement of employees, who, with their knowledge and skills, contribute to the implementation of sustainable practices. Chasse and Courrent (2018) also note that workplace practices may improve employee motivation, which in turn may facilitate firms' engagement in sustainable environmental and community practices.

Eweje (2020), based on a case study of a Japanese SME, finds that the CEO/owner's decision-making process, motivation, philosophy and determination to adopt sustainability practices play a major role in garnering employee support for the firm's sustainability initiatives. The author notes that employees of an SME that pursues sustainability strategies will demonstrate loyalty and dedication, which in turn will have a positive impact on the firm's adoption of sustainable environmental and social practices. The author also notes that employee satisfaction is a significant performance indicator for a sustainable firm, and employee involvement in the decision-making process is a key to the firm's engagement in sustainability initiatives and practices.

Sendlhofer (2020) observes that there is a lack of research on employee involvement in sustainable practices in SMEs. The author, based on a case study of a Swedish SME, finds that employee motivation, coupled with their moral and ethical responsibility, drives sustainable practices in SMEs. The author also notes that in SMEs, besides owners'/managers' ethical orientation, the ethical behaviour of employees reflects firms' moral responsibility towards sustainable practices.

Based on the above discussions, we posit the following hypotheses:

Hypothesis 7 (H7): Sustainable human resource management is positively associated with sustainable product and process design in SMEs.

Hypothesis 8 (H8): Sustainable human resource management is positively associated with sustainable waste disposal management in SMEs.

Hypothesis 9 (H9): Sustainable human resource management is positively associated with local community development in SMEs.

3.4 Family influence as a moderating variable

Berrone et al. (2010), in the context of publicly-listed US SMEs, observe that family firms are more likely to voluntarily adopt sustainable environmental practices than non-family firms. Sharma and Sharma (2011) propose, based on the theory of planned behavior, that family SMEs, owing to their vision, values, beliefs and ethical orientation, are more likely to adopt proactive environmental strategies than non-family SMEs. The authors note that long-term involvement of family members, family name and reputation, willingness to generate socio-emotional wealth for future generations, embeddedness in local communities and low levels of relationship conflicts are some of the factors that make family SMEs more likely to voluntarily adopt environmental practices than non-family SMEs.

Nair and Sodhi (2012) note family ownership as one of the important drivers of CSR practices in SMEs. Uhlaner et al. (2012) note that family SMEs are generally embedded in their local communities, and are, on average, more environmentally and socially responsible than non-family SMEs. The authors, in their study of Dutch SMEs, find support for the hypothesis that for larger family ownership, and hence larger family influence, family SMEs are more likely to engage in environmental management practices. Dekker and Hasso (2016), on the other hand, in the context of private family firms based in Australia, find that family SMEs have a lower environmental focus than non-family firms; however, when firms are highly embedded in the local community, family SMEs have a higher environmental focus than non-family SMEs. Fernandez and Camacho (2016) also mention family influence as an accelerator for establishing an ethical infrastructure in an SME.

Mamede and Allouche (2018), who have conducted a study of Portuguese SMEs, note that governance and leadership abilities of owners/managers of family SMEs directly influence social orientation and choices through own vision and values.

Ahmad et al. (2020) comment that a firm must act in accordance with the expectations of the society, and actively participate in social causes, human development and environmental sustainability to fulfil its social obligations. The authors, in their study of SMEs based in Pakistan, find support for the hypothesis that family involvement in business positively affects firms' CSR in family SMEs.

Rojas and Lorenzo (2021) note that SMEs with higher levels of family influence pursue higher levels of environmental goals, and with higher levels of family influence, SMEs are better able to translate social goals into environmental goals. The authors, in their study of Spanish SMEs, find support for the hypotheses that social goals have a positive relationship with environmental goals, family influence positively affects the setting up of environmental goals, and family influence positively moderates the relationship between social and environmental goals in SMEs.

The above discussion leads us to propose the following hypothesis:

Hypothesis 10 (H10): Family influence positively moderates the relationships hypothesized in H1-H9 in SMEs.

4. Research methodology

The research methodology was based on primary data collection from Indian manufacturing SMEs located in the states of West Bengal, Bihar, Delhi/NCR, Haryana, Rajasthan and Maharashtra with leather, engineering, food and beverages, textiles and chemicals as the target sectors. A questionnaire was designed for the purpose based on the extant literature and practitioner inputs. Respondents were asked to rate the items, as mentioned before, based on a 5-point Likert scale where '1' meant 'strongly disagree' and '5' meant 'strongly agree'. The questionnaire was administered to a small group of respondents for a pilot study, and based on their feedback was suitably revised and rephrased for mass administration. We randomly selected and approached 236 SMEs with 250 employees or less, out of which 126 SMEs agreed to take part in the in-person, face-to-face survey, indicating a response rate of 53.4%. It may be noted that although we followed

the definition² of SMEs given by the Ministry of Micro, Small and Medium Enterprises (MSME) of the Government of India (GoI), which is based on the investment in plant and machinery/equipment and annual turnover, we selected SMEs with less than or equal to 250 employees based on the definition³ of the European Union (EU), to compare the results of our study with those for other countries. Data collection was affected due to the onset of COVID-19 in early 2020; however, a sample size of 126 is deemed to be adequate for multi-variate analysis (Hair et al., 2007; Hussey and Eagan, 2007), and compares well with the sample sizes for previous studies, e.g. Mamede and Allouche (2018), Rojas and Lorenzo (2021), Chasse and Courrent (2018), and Ahmad et al. (2020) with sample sizes of 65, 132, 135 and 150, respectively.

A brief profile of the respondents follows. Out of 126 respondents, 76 (60.3%) and 50 (39.7%) have identified themselves as small and medium-sized enterprises, respectively. The age of the firms varies from 6 months to 600 months with an average of 225.3 months. The firms have a minimum of 2 employees and a maximum of 250 employees with an average of 42.1 employees. Seventy eight firms (61.9%) call themselves family firms while 48 firms (38.1%) define themselves as non-family firms. The following sectors are represented by the respondents: leather (21 or 16.7%), engineering (30 or 23.8%), food and beverages (25 or 19.8%), textiles (24 or 19%) and chemicals (26 or 20.6%). Only 36 (28.6%), 6 (4.8%) and 13 (10.3%) respondents have mentioned that their firms have implemented ISO 9000, ISO 14000 and an Environment Management System (EMS), respectively. Annual turnovers of respondent firms could not be mentioned since most of the respondents did not reveal financial data.

Data collected were collated in MS Excel and analyzed using multi-variate techniques such as exploratory/confirmatory factor analysis and structural equation modelling. Content/face validity, unidimensionality and reliability were assessed through exploratory factor analysis. Confirmatory factor analysis was used to assess convergent and discriminant validity, construct reliability and the overall fit of the measurement model. Structural equation modelling was employed to test the proposed hypotheses. As far as the application packages are concerned, SPSS was used for exploratory factor analysis and SPSS AMOS was used for confirmatory factor analysis and structural equation modelling.

² <https://msme.gov.in/know-about-msme>

³ https://ec.europa.eu/growth/smes/sme-definition_en

5. Results

In this section, we present the results of exploratory/confirmatory factor analysis and structural equation modelling. We have followed Hair et al. (2007) for data analysis.

5.1 Factor analysis

For factor analysis, normality, linearity, homoscedasticity and homogeneity of the sample have been assumed. The sample size of 126 exceeds the minimum suggested sample size of 50. The ratio of the sample size (126) to the number of variables (22) exceeds the minimum suggested ratio of 5:1. Significant correlations have been found among many of the variables and partial correlations among most of the variables have been found to be insignificant. Bartlett's test of sphericity also shows statistical significance indicating sufficient correlations among the variables. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) is 0.829 and communalities of individual variables exceed 0.50. The absence of common method bias is confirmed by Harman's single factor test wherein it is found that no single factor accounts for more than 50% of the total variance.

Principal components analysis with varimax rotation is used for factor analysis. Factors with eigenvalues greater than 1 are taken into consideration. Thus 5 factors are identified that cumulatively explain 75.398% of the total variance. Factor loadings for all items that load on a factor are greater than 0.60. The non-existence of significant cross-loadings indicates unidimensionality. Cronbach's Alpha for each factor exceeds 0.70 confirming reliability. Table 2 shows the items with their descriptive statistics and factor loadings, and Cronbach's Alpha for each factor. Only significant factor loadings have been shown and items have been arranged in the decreasing order of their factor loadings.

Insert Table 2 about here

5.2 Confirmatory factor analysis

To ensure convergent validity and a better model fit, the following 6 items have been dropped:

- (i) Reduced material and energy consumption
- (ii) Separating hazardous and non-hazardous waste
- (iii) Fair compensation to employees
- (iv) Training and development of employees
- (v) Providing healthcare facilities to the local community
- (vi) Education and training for the local community

The measurement model is re-specified with 5 constructs and 16 items. Table 3 shows the constructs and items, standardized loading estimates and critical ratios for the items, and average variance extracted (AVE) and construct reliability (CR) for the constructs.

Insert Table 3 about here

It may be observed from the table that all the factor loadings are statistically significant and the standardized loading estimates exceed 0.70 (except for one that exceeds the threshold value of 0.50). Also, AVE and CR for the constructs are above their threshold values of 0.50 and 0.70, respectively, ensuring convergent validity. Discriminant validity is confirmed by checking that for any two constructs, the AVE for either construct exceeds the squared coefficient of correlation between the constructs. Also, the absolute values of standardized residuals are less than 2.50.

Following are the overall model fit statistics: Chi-square (χ^2) = 156.339, degrees of freedom (df) = 94, relative chi-square (χ^2/df) = 1.663 (< 3 recommended for a good fit), GFI = 0.873, AGFI = 0.816, CFI = 0.952, RMR = 0.043 and RMSEA: 0.073 (< 0.08), which indicate a reasonably good fit (Hair et al., 2007).

Table 4 shows the construct correlation matrix.

Insert Table 4 about here

5.3 Structural equation modelling

For structural equation modelling (SEM), maximum likelihood estimation (MLE) has been used. The overall model fit statistics for SEM are as follows: Chi-square (χ^2) = 165.354, degrees of freedom (df) = 97, relative chi-square (χ^2/df) = 1.705 (< 3 recommended for a good fit), GFI = 0.863, AGFI = 0.808, CFI = 0.948, RMR = 0.055 and RMSEA: 0.075 (< 0.08), which, again, indicate a reasonably good fit. Figure 1 shows the path diagram along with the standardized path estimates. Table 5 summarizes the results of hypothesis ($H1-H9$) testing.

Insert Fig. 1 and Table 5 about here

5.4 Family vs. non-family SMEs

To ascertain the effect of ownership and management of the firm on the structural relationships, the multi-group SEM approach has been followed with two groups – family SMEs and non-family SMEs. The same structural model is tested for the two groups to check for any significant difference between the groups with respect to each of the structural relationships. To do the same, the path estimates of each structural relationship for the groups are constrained to be equal, one at a time, to see if the difference in the χ^2 statistics is statistically significant. Only those structural relationships for which at least one of the groups has significant path estimates have been considered. Table 6 shows the results of the SEM multi-group analysis for the two groups.

Insert Table 6 about here

It may be observed from Table 6 that family influence positively moderates two of the structural relationships with differences between the groups significant at 0.10 level while for three of the structural relationships, although the unconstrained standardized path estimates for family SMEs are greater than the corresponding estimates for non-family SMEs, the differences are not

statistically significant. On the other hand, it is found that for two of the structural relationships, non-family SMEs have higher unconstrained standardized path estimates than family SMEs at a significance level of 0.05. Therefore, it cannot be certainly claimed that family influence always positively moderates the relationships hypothesized in *H1-H9*, and it can at best be said that *H10* is partially supported.

6. Discussions and implications

The results of the study indicate that organizational values/culture, and owners'/managers' positive attitude and ethical orientation, generally lead to a higher level of sustainable environmental and social practices in SMEs. No direct relationship is found between the constructs, *Org_Val* and *Pro_Des*. Roxas and Coetzer (2012) note from the literature that there may not be a direct relationship between owners'/managers' attitude and the environmental behaviour of small firms as owners/managers may find it difficult to translate their pro-environmental strategies into the actual behaviour of firms. Moreover, there could be other confounding variables, such as regulations, stakeholder expectations, collaboration with suppliers, and customer and competitive pressure, which might explain how managerial attitudes translate into actual environmental management practices. Hussey and Eagan (2007) and Gadenne et al. (2009) also do not find support for the hypothesis that owners'/managers' positive environmental attitudes necessarily lead to a higher level of environmental practices.

We do not find a direct relationship between the constructs, *Org_Val* and *Com_Dev*. Gadenne et al. (2009) also do not find any direct relationship between owners'/managers' environmental attitudes and community-related environmental support practices. However, we do find an indirect positive effect of *Org_Val* on *Com_Dev* through the mediating roles of the constructs, *Sus_HRM* and *Wst_Dis*. In fact, from Figure 1, it can be easily ascertained that the indirect effect of *Org_Val* on *Com_Dev* is 0.363, which is significant. Therefore, it can be said that the constructs, *Sus_HRM* and *Wst_Dis* mediate the relationship between *Org_Val* and *Com_Dev*.

We have tested the relationships between the constructs, *Pro_Des* and *Wst_Dis*, and also between the constructs, *Wst_Dis* and *Com_Dev*, which have not been specifically tested in the literature so far. A positive relationship between the constructs, *Pro_Des* and *Wst_Dis* indicates that environment-friendly product and process design does lead to sustainable waste disposal and

recycling activities. Similarly, a positive relationship between the constructs, *Wst_Dis* and *Com_Dev* indicates that environment-friendly waste disposal and recycling help in improving health, hygiene and the quality of life of the local community.

In the literature, there is also a dearth of research examining the role of workplace-related social practices in firms' adoption of sustainable environmental practices and community-related social practices (Sendlhofer, 2020). In this study, it is found that the association between the constructs, *Org_Val* and *Sus_HRM* is the strongest (standardized path estimate: 0.62), and the construct, *Sus_HRM* either fully or partially mediates the relationships between the construct, *Org_Val* and all other constructs related to sustainable environmental practices and community-related social practices. This is a significant observation and has a far-reaching implication for owners/managers of SMEs. Torugsa et al. (2013), Hu et al. (2015), Courrent et al. (2018), Chasse and Courrent (2018), and Eweje (2020) also note that a safe and healthy working environment, and employee training and involvement in the decision-making process not only boost employee morale and loyalty, but also garner employee support in firms' pursuit of sustainable environmental and community-related social practices.

For owners/managers of SMEs, it is apparent that besides maintaining a positive attitude towards the natural environment and an ethical orientation towards employees and the society, focus should be on elevating the level of engagement in environmental practices, and employee- and community-related social practices, especially in employee-related social practices since the same have been found in the study to mediate the relationships between organizational values/culture and owners'/managers' positive attitude and ethical orientation, and firms' environmental and community-related social practices. As far as the environmental practices are concerned, from Table 2, we observe that for the items, *Using Design-for-Environment (DfE) tools* and *Increased recycling of waste*, the mean ratings are less than 4, which indicate that there is scope for improvement in product and process design and recycling activities. For example, if products and packaging are designed with materials that have low environmental impacts, and are recyclable and bio-degradable, and processes are designed in such a manner that they lead to lower wastes, emissions and effluents, there will be a reduced requirement of waste management, and recycling activities will also pick up. From Table 2, we also find that although the average ratings for the items related to employee-related social practices are above 4, the average ratings for all the items

related to community-related social practices are well below 4, indicating that currently Indian SMEs do not focus as much on community development as on their own employees. However, it is argued that although investing in and engaging with the local community may not bring in immediate economic benefits, given that most of the SMEs are embedded in their local communities, the same is expected to build their brand image and reputation, and help them attain competitiveness and better financial results in the long run.

As far as the family influence is concerned, it is found that the same at best partially moderates the hypothesized relationships. From Table 6, it may be observed that for family SMEs, five of the relationships are stronger than for non-family SMEs while two of the relationships are stronger for non-family SMEs than for family SMEs. The significant difference in the path estimates between the constructs, *Org_Val* and *Wst_Dis* for family and non-family SMEs, the path estimate between the said constructs being strongly positive for family SMEs and the same being non-significant for non-family SMEs, corroborates the observations of Berrone et al. (2010), Sharma and Sharma (2011), and Dekker and Hasso (2016) that owners'/managers' values, beliefs, leadership, attitude and ethical orientation more strongly influence firms' adoption of sustainable environmental practices for family SMEs than for non-family SMEs. The same conclusion may be drawn for the relationship between the constructs, *Org_Val* and *Sus_HRM* that organizational values and owners'/managers' leadership and ethical orientation have a stronger effect on workplace-related social practices for family SMEs than for non-family SMEs since although the difference between the two groups is not significant, the path estimate between the said constructs is stronger for family SMEs than for non-family SMEs. Another important observation from the multi-group analysis is that while for the full sample, workplace-related social practices play a mediating role between organizational values and owners'/managers' attitude and ethical orientation, and environmental and community-related social practices, the same does not hold for waste disposal and recycling, and community-related social practices for the group of family SMEs as the path estimates become non-significant. It is found from the survey data that the mean rating of the construct, *Sus_HRM* is slightly lower for family SMEs (4.09) than for non-family SMEs (4.20), indicating that family SMEs would probably need to focus more on their employee practices than what they are currently doing. With respect to community-related social practices, the mean ratings of the construct, *Com_Dev* are low for both the groups, with the rating for family SMEs (3.32) being lower than that for non-family SMEs (3.50). As mentioned earlier, both family and non-

family SMEs need to step up their level of engagement with the local community as the same has a long-term effect on their brand image and reputation.

7. Conclusions, limitations and directions for future research

In this paper, we have studied the effect of organizational values/culture, and owners'/managers' positive attitude and ethical orientation, on firms' adoption of sustainable environmental and social practices in Indian SMEs. For environmental practices, we have considered product and process design, and waste disposal and recycling, and for social practices, we have considered employee practices and local community development. We have found that organizational values/culture, and owners'/managers' values, beliefs, leadership and ethical orientation have a positive impact on firms' waste disposal/recycling and workplace-related social practices. In fact, it has been found that workplace-related social practices mediate the relationship between organizational values/culture and owners'/managers' attitude and ethical orientation, and firms' environmental and community-related social practices, indicating the importance of human resource management at the workplace. It has also been found that waste disposal/recycling has a positive impact on community-related social practices as it leads to better health and hygiene and an improved quality of life of the local community. With respect to family influence, it has been observed that for family SMEs, the relationships between organizational values/culture and owners'/managers' positive attitude and ethical orientation, and waste disposal/recycling and employee-related social practices are stronger than for non-family SMEs. However, for family SMEs, the relationships between employee-related social practices, and waste disposal/recycling and community development have been found to be non-significant, which indicates that family SMEs need to focus more on their employee practices than what they are doing now. Finally, for community development, the responses have been found to be very low for both family and non-family SMEs compared to their responses for other practices, which signifies that SMEs require to pay increased attention to community-related social practices for reaping long-term benefits such as enhanced brand image, reputation and competitiveness, and better financial outcomes.

One of the limitations of the study is its small sample size although it has been mentioned that the sample size is still significant for multi-variate analysis. However, a larger sample size would provide more generalizability of results. Also, we have considered manufacturing SMEs since the general belief is that the manufacturing sector causes more environmental pollution than the

service sector. However, a study of SMEs belonging to the service sector would enable us to compare the results for these two sectors. Further, the present study is cross-sectional and data were collected in the pre- and early COVID-19 period. Therefore, a future longitudinal study would help us compare the results for pre- and post-COVID-19 periods.

In this study, we have not considered the impact of external factors such as regulations, supplier collaboration, and pressure exerted by customers, competitors and other stakeholders. Future studies addressing these factors would probably reveal new insights and implications for SME owners/managers. Also, we have not considered the impact of environmental and social practices on firms' financial and non-financial performance. It is largely perceived that many SMEs voluntarily adopt sustainable practices without any regard to their impact on firms' performance since they believe that adopting sustainable practices is an ethical thing to do and they must follow it. Moreover, benefits, if any, of adopting sustainable practices will not be realized immediately, and will materialize only in the long term. Nonetheless, a longitudinal study to assess the impact of sustainable environmental and social practices on firms' financial/non-financial performance could be a direction for future research.

The survey instrument may be administered in other developing countries and results compared with those of the present study, which might provide new insights for owners/managers of Indian SMEs. Similarly, a comparative study of SMEs and large businesses in terms of their sustainable practices could generate new learning for SME owners/managers, and could be another interesting direction for future research.

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Tables

Table 1: Constructs and items for the study

Construct	Item
(a) Organizational values/culture and owners'/managers' approach towards sustainability	(i) Organizational vision, values and beliefs
	(ii) Owners'/managers' leadership approach
	(iii) Owners'/managers' ethical orientation
	(iv) Owners'/managers' motivation and commitment
(b) Sustainable product and process design	(i) Reduced material and energy consumption
	(ii) Modular product design
	(iii) Using Design-for-Environment (DfE) tools
	(iv) Using Life Cycle Analysis (LCA) tools
(c) Sustainable waste disposal management	(i) Separating hazardous and non-hazardous waste
	(ii) Safe disposal of solid waste
	(iii) Treatment of effluents before discharge
	(iv) Increased recycling of waste
(d) Sustainable human resource management	(i) Safe and healthy working condition
	(ii) Fair compensation to employees
	(iii) Training and development of employees
	(iv) Encouraging participation and teamwork
	(v) Encouraging creativity and innovation
(e) Local community development	(i) Education and training for the local community

Construct	Item
	(ii) Improving sanitation and sewage facilities in the local community
	(iii) Maintaining hygiene and cleanliness in the local community
	(iv) Providing healthcare facilities to the local community
	(v) Services rendered towards local area development

Table 2: Results of factor analysis

Item	Item Mean	Item Std. Dev.	Factor				
			Organizational values/culture and owners'/managers' approach towards sustainability	Sustainable product and process design	Sustainable waste disposal management	Sustainable human resource management	Local community development
Organizational vision, values and beliefs	4.33	0.955	0.830				
Owners'/managers' leadership approach	4.39	0.912	0.829				
Owners'/managers' ethical orientation	4.33	0.945	0.809				
Owners'/managers' motivation and commitment	4.25	0.734	0.787				
Reduced material and energy consumption	4.29	0.581		0.799			
Using Design-for Environment (DfE) tools	3.59	1.037		0.790			
Using Life Cycle Analysis (LCA) tools	4.13	0.726		0.738			
Modular product design	4.16	0.843		0.724			
Treatment of effluents before discharge	4.13	0.748			0.825		
Increased recycling of waste	3.93	0.821			0.799		
Safe disposal of solid waste	4.10	.763			0.752		
Separating hazardous and non-hazardous waste	4.06	0.861			0.703		
Fair compensation to employees	4.07	0.931				0.852	
Safe and healthy working condition	4.10	0.907				0.850	
Encouraging participation and teamwork	4.24	0.774				0.815	
Encouraging creativity and innovation	4.13	0.697				0.748	

Item	Item Mean	Item Std. Dev.	Factor				
			Organizational values/culture and owners'/managers' approach towards sustainability	Sustainable product and process design	Sustainable waste disposal management	Sustainable human resource management	Local community development
Training and development of employees	4.13	0.966				0.689	
Improving sanitation and sewage facilities in the local community	3.32	1.093					0.851
Providing healthcare facilities to the local community	3.60	1.021					0.835
Services rendered towards local area development	3.37	1.049					0.802
Maintaining hygiene and cleanliness in the local community	3.37	0.953					0.800
Education and training for the local community	3.29	1.118					0.755
Cronbach's Alpha			0.911	0.787	0.878	0.917	0.903

Table 3: Results of confirmatory factor analysis

Construct	Construct Acronym	Item	Std. Loading Estimate	Critical Ratio	AVE	CR
Organizational values/culture and owners'/managers' approach towards sustainability	Org_Val	Owners'/managers' leadership approach	0.913	13.827	0.73	0.93
		Owners'/managers' ethical orientation	0.870	12.765		
		Organizational vision, values and beliefs	0.859	---*		
		Owners'/managers' motivation and commitment	0.766	10.320		
Sustainable product and process design	Pro_Des	Using Design-for Environment (DfE) tools	0.890	5.509	0.56	0.84
		Using Life Cycle Analysis (LCA) tools	0.794	5.554		
		Modular product design	0.518	---*		
Sustainable waste disposal management	Wst_Dis	Safe disposal of solid waste	0.877	---*	0.63	0.89
		Treatment of effluents before discharge	0.754	8.938		
		Increased recycling of waste	0.737	8.709		
Sustainable human resource management	Sus_HRM	Encouraging participation and teamwork	0.923	12.703	0.76	0.94
		Encouraging creativity and innovation	0.867	11.807		
		Safe and healthy working condition	0.830	---*		
Local community development	Com_Dev	Services rendered towards local area development	0.969	10.385	0.74	0.89

Construct	Construct Acronym	Item	Std. Loading Estimate	Critical Ratio	AVE	CR
		Maintaining hygiene and cleanliness in the local community	0.871	9.942		
		Improving sanitation and sewage facilities in the local community	0.731	---*		

Note: * indicates the items for which the factor loading estimates have been set to 1 by the application package (SPSS AMOS)

Table 4: Construct Correlation Matrix

Construct	Org_Val	Pro_Des	Wst_Dis	Sus_HRM	Com_Dev
Org_Val	1				
Pro_Des	<i>ns</i>	1			
Wst_Dis	0.496 ⁺⁺	0.396 ⁺⁺	1		
Sus_HRM	0.622 ⁺⁺	0.249 ⁺	0.552 ⁺⁺	1	
Com_Dev	0.381 ⁺⁺	0.276 ⁺⁺	0.463 ⁺⁺	0.476 ⁺⁺	1

Note: Superscript (++) represents significance at 0.01 level, superscript (+) represents significance at 0.05 level and *ns* represents non-significance

Table 5: Results of hypothesis testing

Hypothesis	Description	Result
<i>H1</i>	<i>Organizational values/culture and owners'/managers' approach towards sustainability are positively associated with sustainable product and process design in SMEs</i>	Not supported
<i>H2</i>	<i>Organizational values/culture and owners'/managers' approach towards sustainability are positively associated with sustainable waste disposal management in SMEs</i>	Supported
<i>H3</i>	<i>Organizational values/culture and owners'/managers' approach towards sustainability are positively associated with sustainable human resource management in SMEs</i>	Supported
<i>H4</i>	<i>Organizational values/culture and owners'/managers' approach towards sustainability are positively associated with local community development in SMEs</i>	Not supported
<i>H5</i>	<i>Sustainable product and process design is positively associated with sustainable waste disposal management in SMEs</i>	Supported
<i>H6</i>	<i>Sustainable waste disposal management is positively associated with local community development in SMEs</i>	Supported
<i>H7</i>	<i>Sustainable human resource management is positively associated with sustainable product and process design in SMEs</i>	Supported
<i>H8</i>	<i>Sustainable human resource management is positively associated with sustainable waste disposal management in SMEs</i>	Supported

H9 Sustainable human resource management is positively Supported associated with local community development in SMEs

Table 6: SEM multi-group analysis results for family and non-family SMEs

Direction of Causality		Unconstrained Standardized Path Estimate		Significant (S)/ Not Significant (NS)
From	To	Family SME	Non-Family SME	
Org_Val	Pro_Des	-0.435	NS	NS S
Org_Val	Wst_Dis	0.577	NS	($\Delta\chi^2 = 3.091, \Delta df = 1, p\text{-value} = 0.079$)
Org_Val	Sus_HRM	0.679	0.436	NS
Org_Val	Com_Dev	NS	NS	---
Pro_Des	Wst_Dis	0.451	NS	NS
Wst_Dis	Com_Dev	0.392	NS	NS S
Sus_HRM	Pro_Des	0.640	NS	($\Delta\chi^2 = 3.012, \Delta df = 1, p\text{-value} = 0.083$) S
Sus_HRM	Wst_Dis	NS	0.495	($\Delta\chi^2 = 3.842, \Delta df = 1, p\text{-value} = 0.050$) S
Sus_HRM	Com_Dev	NS	0.637	($\Delta\chi^2 = 4.059, \Delta df = 1, p\text{-value} = 0.044$)

Figure

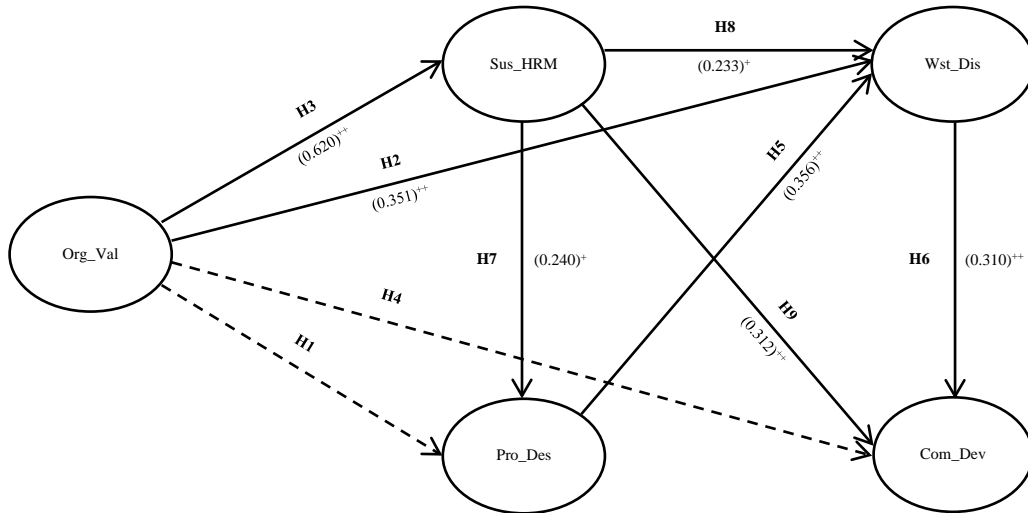


Fig. 1: Path diagram along with the standardized path estimates

Note: Solid lines represent the hypotheses that are supported. Dashed lines represent the hypotheses that are not supported. Figures within brackets represent the standardized path estimates. Superscripts (+) and (++) represent significance at 0.05 and 0.01 levels, respectively.

Appendix A

Table A1: Constructs, items and references

Construct	Item	Reference
(a) Organizational values/culture and owners'/managers' approach towards sustainability	(i) Organizational vision, values and beliefs	Lee and Klassen (2008); Sharma and Sharma (2011); Nair and Sodhi (2012); Roxas and Coetzer (2012); Torugsa et al. (2012, 2013); Uhlaner et al. (2012); Singh et al. (2015); Dekker and Hasso (2016); Fernandez and Camacho (2016); Witjes et al. (2017); Chasse and Courrent (2018); Gandhi et al. (2018); Lopez-Perez et al. (2018); Mamede and Allouche, 2018; Ahmad et al. (2020); Eweje (2020); Prashar and Sunder (2020); Kariyapperuma and Collins (2021); Rojas and Lorenzo (2021)
	(ii) Owners'/managers' leadership approach	Hussey and Eagan (2007); Sharma and Sharma (2011); Roxas and Coetzer (2012); Fernandez and Camacho (2016); Johnson and Schaltegger (2016); Gandhi et al. (2018); Mamede and Allouche, 2018; Eweje (2020); Prashar and Sunder (2020)
	(iii) Owners'/managers' ethical orientation	Lee and Klassen (2008); Gadenne et al. (2009); Cordano et al. (2010); Nair and Sodhi (2012); Sharma and Sharma (2011); Uhlaner

Construct	Item	Reference
	(iii) Using Design-for-Environment (DfE) tools	Hussey and Eagan (2007); Lee and Klassen (2008); Caldera et al. (2018)
	(iv) Using Life Cycle Analysis (LCA) tools	Hussey and Eagan (2007); Lee and Klassen (2008); Torugsa et al. (2012, 2013); Johnson and Schaltegger (2016); Caldera et al. (2018); Chasse and Courrent (2018); Courrent et al. (2018); Dey et al. (2020)
	(i) Separating hazardous and non-hazardous waste	Lee and Klassen (2008); Torugsa et al. (2012, 2013); Caldera et al. (2018); Chasse and Courrent (2018); Courrent et al. (2018); Dey et al. (2020)
	(ii) Safe disposal of solid waste	Tan et al. (2015); Wu et al. (2015); Caldera et al. (2018); Boakye et al. (2020); Dey et al. (2020)
(c) Sustainable waste disposal management	(iii) Treatment of effluents before discharge	Torugsa et al. (2012, 2013); Tan et al. (2015); Wu et al. (2015); Caldera et al. (2018)
	(iv) Increased recycling of waste	Hussey and Eagan (2007); Lee and Klassen (2008); Gadenne et al. (2009); Cordano et al. (2010); Roxas and Coetzer (2012); Torugsa et al. (2012, 2013); Tan et al. (2015); Wu et al. (2015); Caldera et al. (2018); Courrent et al. (2018); Boakye et al. (2020); Dey et

Construct	Item	Reference
		al. (2020); Eweje (2020); Rojas and Lorenzo (2021)
(d) Sustainable human resource management	(i) Safe and healthy working condition	Hussey and Eagan (2007); Cordano et al. (2010); Nair and Sodhi (2012); Torugsa et al. (2012, 2013); Tan et al. (2015); Wu et al. (2015); Fernandez and Camacho (2016); Johnson and Schaltegger (2016); Caldera et al. (2018); Chasse and Courrent (2018); Courrent et al. (2018); Gandhi et al. (2018); Eweje (2020); Rojas and Lorenzo (2021)
	(ii) Fair compensation to employees	Tan et al. (2015); Wu et al. (2015); Fernandez and Camacho (2016); Chasse and Courrent (2018); Courrent et al. (2018); Eweje (2020); Rojas and Lorenzo (2021)
	(iii) Training and development of employees	Nair and Sodhi (2012); Torugsa et al. (2012, 2013); Hu et al. (2015); Tan et al. (2015); Wu et al. (2015); Johnson and Schaltegger (2016); Chasse and Courrent (2018); Courrent et al. (2018); Gandhi et al. (2018); Dey et al. (2020); Eweje (2020)
	(iv) Encouraging participation and teamwork	Torugsa et al. (2012, 2013); Hu et al. (2015); Fernandez and Camacho (2016); Johnson and Schaltegger (2016); Witjes et al. (2017);

Construct	Item	Reference
		Caldera et al. (2018); Courrent et al. (2018); Gandhi et al. (2018); Ahmad et al. (2020); Sendlhofer (2020)
	(v) Encouraging creativity and innovation	Fernandez and Camacho (2016); Witjes et al. (2017); Caldera et al. (2018)
	(i) Education and training for the local community	Nair and Sodhi (2012); Courrent et al. (2018); Eweje (2020)
	(ii) Improving sanitation and sewage facilities in the local community	Nair and Sodhi (2012); Caldera et al. (2018); Eweje (2020)
	(iii) Maintaining hygiene and cleanliness in the local community	Caldera et al. (2018); Eweje (2020)
(e) Local community development	(iv) Providing healthcare facilities to the local community	Nair and Sodhi (2012); Caldera et al. (2018); Eweje (2020)
	(v) Services rendered towards local area development	Gadenne et al. (2009); Nair and Sodhi (2012); Torugsa et al. (2012, 2013); Uhlaner et al. (2012); Wu et al. (2015); Fernandez and Camacho (2016); Caldera et al. (2018); Chasse and Courrent (2018); Courrent et al. (2018); Ahmad et al. (2020); Eweje (2020); Rojas and Lorenzo (2021)