Received: 6 March 2020 | Revised: 17 April 2020 | Accepted: 1 May 2020

DOI: 10.1002/bse.2526

RESEARCH ARTICLE

Business Strategy and the Environment

WILEY

Stakeholder pressure for sustainability: Can 'innovative capabilities' explain the idiosyncratic response in the manufacturing firms?

Suresh Kumar Jakhar[1] | Arijit Bhattacharya[2] | Himanshu Rathore[1] | Sachin Kumar Mangla[3]

[1]Indian Institute of Management Lucknow, Lucknow, India

[2]Norwich Business School, University of East Anglia, Norwich, UK

[3]Plymouth Business School, University of Plymouth, Plymouth, UK

Correspondence
Arijit Bhattacharya, Norwich Business School, University of East Anglia, Norwich NR4 7TJ, UK.
Email: a.bhattacharya@uea.ac.uk; arijit.bhattacharya2005@gmail.com

Abstract

This study explores role of innovative capabilities in determining a manufacturing firm's response to stakeholder pressure for adopting sustainable practices. Drawing on the theory of conservatism, we delineate that the firm's response is idiosyncratic and undergirded in the nature of its innovative capabilities. Our empirical investigation reveals that the response to the stakeholder pressure is mediated by the nature of the firm's innovative capabilities. Indian manufacturing firms are identified as unit of analysis for this study. The individual manufacturing facilities implement the environmental practices. The findings suggest that the manufacturing firm's exposure to exploitative/exploratory innovative capabilities triggers sustainable behaviours with ephemeral focus and enduring focus. Further, the exploratory/exploitative innovation is capable of explaining idiosyncratic behaviour for the firms' sustainability practices adoption. The findings delineate, with analysis, that unlike China, regulatory stakeholder pressures in India inhibit the adoption of sustainable practices with enduring focus in manufacturing firms.

KEYWORDS

ambidexterity, innovative capabilities, manufacturing firms, stakeholder pressure, sustainability practices, theory of conservatism

1 | INTRODUCTION

Proliferating economic activity and exalting levels of societal consciousness have brought firms under tremendous pressure from various environmental activist groups, non-governmental organisations (NGOs), regulatory bodies and consumers (Tang & Tang, 2018; Zhang & Zhu, 2019). These groups, which voice the issues pertaining to environment and society, are the stakeholders of a business organisation (Miles, Munilla, & Darroch, 2006). These stakeholders influence the corporate bodies by advocating the cause of environmentally responsible behaviour. The organisational responses to stakeholder pressures are idiosyncratic within a specific industry, which is governed by the same regulations (Shevchenko, Lévesque, & Pagell, 2016). How manufacturing firms respond to the stakeholder pressures with regard to being environmentally sustainable is a contentious issue.

Researchers (Chithambo, Tingbani, Agyapong, Gyapong, & Damoah, 2020; Hall & Wagner, 2012; Sharma & Henriques, 2005) have deliberated the interactions between the stakeholder pressure and firm's sustainability practices adoption by examining various

exogenous and endogenous factors as mediating and moderating variables. Researchers have examined the capabilities, resources, ownership structure and governance of the firm in determining the response of a firm to stakeholder pressure for adopting sustainable practices. Factors such as industry growth, corporate identity, managerial discretion of individual managers, the role of chief executive officer, cultural value, ethical leadership, environmental training and board composition have been investigated. Despite such exhaustive efforts, the riddle, as to why similar firms behave differently to a given stakeholder pressure in manufacturing firms, remains unsolved (Delmas & Toffel, 2008).

Until now, researchers have examined the aforementioned factors as mediating/moderating variables but have left out on factors such as innovation, which have become increasingly relevant in this era of ferment. Christmann (2000) found that the firms that gained cost advantage from the implementation of sustainability practices have one factor in common and that is 'innovativeness'. Berrone, Fosfuri, Gelabert and Gomez-Mejia (2013) also suggested that the level of attention sustainability practices will receive from business managers depends on associated performance benefits from environmental innovations. Therefore, we posit that the key to understanding a firm's response to stakeholder pressures in terms of adoption of sustainability practices is undergirded in a firm's experience with its innovative capabilities. Matos and Silvestre (2013) also emphasise building up of innovative capabilities for rendering sustainable business solutions. Moreover, extant literature suggests that the implementation of sustainability practices depends on environmental innovations (Goodman, Korsunova, & Halme, 2017; Rathore, Jakhar, Bhattacharya, & Madhumitha, 2020). Shevchenko et al. (2016) find that the firms lacking in innovation capabilities face difficulties to grow as sustainable. This research investigates how the nature of innovative capability affects the environmental response strategy of a manufacturing firm when faced with stakeholder pressures.

This research contributes to the extant literature by exploring in-depth intricacies of the relationship between innovative capabilities and the sustainability practices adoption in the wake of the stakeholder pressure in manufacturing firms. This research establishes that a firm's response to the stakeholder pressure is path dependent and mediated by the nature of innovative capabilities, namely, exploitative and exploratory. The response manifests in two forms: (a) sustainability practices with ephemeral focus and (b) sustainability practices with enduring focus. We demonstrate that the key to understanding a manufacturing firm's response to the stakeholder pressure in terms of sustainability practices adoption is undergirded in a firm's experience with its innovative capabilities. The firms that have had an exposure to exploitative innovative practices respond to the stakeholder pressures by adopting sustainability practices with ephemeral focus, whereas the manufacturing firms that thrive upon exploratory innovative capabilities respond to the stakeholder pressures by adopting sustainable practices with enduring focus. The mediating effect of the innovative capabilities on the sustainability practices adoption is demonstrated empirically through data from Indian manufacturing firms. Under the purview of Kuran's (1988) work on conservatism in decision making, we fortify our proposition of path dependence and ratify based on empirical investigation that a firm's response to the stakeholder pressure regarding adoption of sustainability practices is a path-dependent function of a firm's innovative capabilities developed over time.

The research questions addressed in this work are as follows: Why organisational responses for stakeholder pressure on sustainability are quite idiosyncratic even within a specific industry governed by regulation that is equally applicable to all firms? Can innovation capabilities explain this heterogeneity? It is noteworthy to state that innovative practices and environmental innovative practices are used interchangeably. We juxtapose our findings with the findings of Kang and He (2018), Ruan, Hang and Wang (2014) and Yi, Hong, Hsu and Wang (2017) that unlike China, regulatory stakeholder pressures in India inhibit the adoption of sustainable practices with enduring focus and analyse the reasons thereof.

1.1 | Theory of conservatism

For a long time, numerous social scientists have tried to explain how societies adapt to changing conditions. Kuran (1988) posits that individuals and firms show a level of 'stickiness' or conservatism in decision making, which is path dependent on an individual's or firm's past choices or experiences. Kuran (1988) also discusses how personal and collective 'conservatism' brings in inertia to a firm, in an economy or society and digress it from following the path of functionalism and optimisation. The view on conservatism has gained traction with the surge of socio-behavioural sciences like marketing and behavioural operations where researchers have shifted away from the prevailing positivist paradigm to take into account human tendencies in decision making. Li (2001) furthers the work of Kuran (1988) by extending the theory of conservatism to optimal conservatism. Hirshleifer and Welch (2002) second Kuran's (1988) work by validating that the inertia in firms is a pertinent issue in decision making. This conservatism and inertia make an organisation stick to its current course for a little bit longer time before changing it in the future or let its past have an effect on its present. This is the path dependency phenomena that we subscribe to in our work.

A firm capitalises on its experience of innovative capabilities that it has developed over time and adopts the sustainable practices in line with the underlying principles of its innovative capabilities. A firm that has developed its capabilities in the exploitative principles of refinement, efficiency and implementation respond to the stakeholder pressure in the same vein even if exploration is optimally functional. And, because these sustainable practices are developed with the principles of exploitation, which the firm has had an exposure to (conservatism), they have short-term focus from the perspective of making gains, a typical attribute of exploitative practices. Thus, we call this category of response to stakeholder pressure as sustainable practices with ephemeral focus. Similarly, firms that have had an exposure to exploratory principles of search, variation and risk-taking respond to the stakeholder pressures by venturing into sustainable practices that

have a long-term focus from the perspective of making gains, a typical characteristic of exploratory activities. We call this category of response as sustainable practices with enduring focus.

Thus, our proposition that firms would respond to the stakeholder pressures by developing sustainable practices firmly undergirded in an organisation's experience with innovative capabilities is well grounded. Like Kuran (1988), we do not segregate between personal and collective conservatism, that is, we assume that both individuals and collective bodies such as firms can be boundedly rational. We contend that a firm's response to stakeholder pressure is path dependent and mediated by the nature of innovative capabilities, namely, exploitative and exploratory, and manifests in two forms: (a) sustainability practices with ephemeral focus and (b) sustainability practices with enduring focus.

1.2 | Literature review and hypotheses

Extant literature has established that the pressures from external constituents such as customers, regulators, media, shareholders, competitors, local communities and NGOs have persuaded firms to adopt sustainability practices (Delmas & Toffel, 2008). These external constituents are defined as stakeholders of the firm (Freeman, 1984). Stakeholders have been known to influence a firm's sustainability initiatives by various mechanisms such as pressure through government regulations, consumer requirements, successful competitors, pressure from investor, employees' commitments, values of owners and managers, collaboration initiatives of suppliers and attention from NGOs (Melander, 2017; Shubham & Murty, 2018). Pedersen and Gwozdz (2014) and Miles et al. (2006) report that conformance to the stakeholder pressure is the dominant organisational response on corporate social responsibility. An interesting study by Roy, Silvestre and Singh (2020) suggest that stakeholder pressure to adopt sustainable supply chain management practices generates reactive pathways to sustainability implementation at the firm level. Moreover, they also show that reactive pathways appear to be less effective than proactive ones. For detailed discussion on firm-intrinsic view of stakeholder salience for sustainable supply chain management, readers are requested to refer the recent study of Roy et al. (2020). Rebs, Thiel, Brandenburg and Seuring (2019) find that intensities of stakeholder influence determine the level of sustainability practices adoption in a firm. Whether this influence has been encouraging or discouraging is a contentious issue (Tang & Tang, 2018). However, the general opinion prevails that stakeholders are primary drivers behind proactive sustainability practices (e.g., Darnall, Henriques, & Sadorsky, 2010). Sarkis, Gonzalez-Torre and Adenso-Diaz (2010) have testified further that a firm's stakeholder pressure and sustainability practices are positively related. However, Sharma and Henriques (2005) point out that customers and economic stakeholder groups may have a negative effect on sustainability practices in certain contexts. Similarly, Tang and Tang (2018) and Yu, Lo and Li (2017) also suggest that powerful and incongruent stakeholder pressure may result in insignificant improvement in environmental performance.

1.2.1 | Sustainability practices

The nature of sustainability practices adopted by the business organisations vary significantly (Etzion, 2007; Roy, Schoenherr, & Charan, 2018, Roy, Schoenherr, & Charan, 2020). It was first noticed by Carroll (1979) and Wartick and Cochran (1985). They classify the form of corporate social responsibility in four approaches, namely, reactive, defensive, accommodative and proactive. Likewise, Sharma and Henriques (2005) contribute by indexing sustainable practices in two broad categories, namely, reactive and proactive. The reactive sustainability practice leads to compliance with regard to environmental regulation implemented through pollution control measures to avoid penalties. The second approach focusses more on pollution prevention such as reduction at source, designing new product and process through environmental innovations (Demirel & Kesidou, 2019; Hart, 1995; Russo & Fouts, 1997).

In the extensive panoply of all the classifications of sustainable practices that the firms adopt in response to stakeholder pressures, we observe a concatenating thread of the role played by the firm's management. The management decides in which of the aforementioned categories (i.e., reactive and proactive) the firm's sustainable practices should fall. The management's vision and focus decide how the firm would respond to such stakeholder pressures. Almost all the sustainability practices fall in either of the two perspectives of the firm. Managerial strategies like 'reactive', 'defensive', 'accommodative', 'beginner', 'firefighter', 'concerned citizen' and 'pragmatist' (Hunt & Auster, 1990) fall under the short-term perspective or the ephemeral focus of a firm, nevertheless to varying degrees. Reactive and 'the concerned citizen' could be said to be the most extreme ends of the way of adopting sustainability practices with ephemeral focus. Similarly, proactive, proactivist, commercial and environmental excellence, leading edge, total environmental quality response, product stewardship and environmental leadership would come under the umbrella of adopting sustainable practices with a long-term perspective or enduring focus. Thus, we classify the ways in which a firm adopts sustainable practices based on a firm's vision and focus in the following two categories, namely, (a) sustainable practices with ephemeral focus and (b) sustainable practices with enduring focus.

As in Russo and Fouts (1997) and Sharma and Henriques (2005), we include the following practices in the first category (i.e., sustainability practices with ephemeral focus): (a) sustainability practices that control wastes and emissions, (b) sustainability practices that develop eco-efficient strategies for optimal utilisation of resources and energy and (c) sustainability practices that adopt environmental management system such as ISO 14001 (Delmas & Toffel, 2008).

In the second category, namely, sustainable practices with enduring focus, following sustainable practices are included: (a) source reduction (King & Lenox, 2002; Russo & Fouts, 1997; Sarkis et al., 2010), (b) recirculation and ecosystem stewardship (Hart, 1995; Sharma & Henriques, 2005), (c) eco-design (Hart, 1995) and (d) business redefinition (Halt & Milstein, 1999; Sharma & Henriques, 2005).

Each of these sustainability practices signifies substantial investment in bringing about the necessary infrastructural changes that are needed to carry out these practices.

1.2.2 | Innovations, sustainability practices and research agenda

As discussed above, organisational responses to stakeholder pressure regarding adoption of sustainable practices can be diverse on the operational level but fall under two broad categories at the strategic level. Literature explores how various factors affect or mediate these organisational responses. Literature reports the following exogenous and endogenous factors: growth rate of the industry and traits of business managers (Lewis, Walls, & Dowell, 2014), cultural value and ethical leadership (Zhu, Sun, & Leung, 2014), chief executive officer's reputation (Konadu et al., 2020), trust and identity (Kostova & Roth, 2002), environmental training (Sarkis et al., 2010), sustainability control systems (Wijethilake & Upadhaya, 2020), firm ownership (Han & Zheng, 2016) and board composition, and location of an organisation (Davis & Greve, 1997). We did not find any study that discussed the mediating role of innovations on the firm's response regarding adoption of sustainable practices under the impact of stakeholder pressure. Several empirical evidence support that stringent environmental regulations (a form of stakeholder pressure) enhance innovation (Brunnermeier & Cohen, 2003). A little more specific study is found in Berrone et al. (2013) when they posit that greater stakeholder pressure increases a firm's tendency to get involved in environmental innovation. Complementarily, innovation also serves to reduce environmental impacts and enhance sustainability (Etzion, 2007). Dai, Cantor and Montabon (2015) and Schaltegger and Wagner (2011) emphasise the importance of environmental innovations to the success of today's firms. In the context of Swedish fashion industry, Pedersen, Gwozdz and Hvass (2018) conclude that innovation and sustainability are intertwined in the sense that they have the same origin and guiding principles.

Arguments above set the stage for our study by establishing primarily the following two points: First, innovation does affect adoption of sustainability practices and may manifest in the form of environmental innovation under stakeholder pressure. Environmental innovation, subsequently, may set forth the genesis of a lot more sustainability practices. Second, innovations have not been explored in their capacity as a mediating/moderating variable that manipulates the link between stakeholder pressure and sustainability practices implementation behaviour.

Exploitative and exploratory (He & Wong, 2004; March, 1991) are two types of bifurcation of innovations that has been the most extensively used categorisation. Exploitative innovations draw on the same technological trajectory and try to make such changes that promise gains with very less uncertainty. These innovations can be accomplished under the given infrastructural apparatus without investing much. Exploitative innovations involve the improvement of existing processes and products to achieve better efficiency (Sharma & Henriques, 2005). For example, BP (a multinational oil and gas company headquartered in London, England) has reduced its emissions of greenhouse gases 10% below their level in 1990 by implementing an internal tradable permit mechanism (Reinhardt, 2001); Stefan and Paul (2008) mentioned that Dow Chemical's WRAP (Waste Reduction Always Pays) award programme account for the reduction of 230,000 tons of waste, 13 million tons of wastewater, and 8 trillion BTUs of energy, and the (net) value of this projects totals roughly $1 billion. GM's Flint plant in Michigan is saving approximately 174,299 kWh energy per year by shutting down plant during holidays (El Bizat, 2006). Statoil injects 1 million tons of CO_2 a year beneath the seabed of the North Sea, to avoid the Norway carbon tax (Stefan & Paul, 2008).

Exploratory innovations, on the other hand, dig into varied technological trajectories with a significantly different and better way of conceptualising a product or a process. They cannot be accomplished without inducting considerable changes in the infrastructural components of the firm and hence need sufficient investment. They are uncertain and bear results in the long run. The other characteristics of exploitative and exploratory innovations are in line with the principles of exploitative and exploratory activities, such as refinement, resource conservation, efficiency, search, variation, risk taking, and uncertainty respectively (March, 1991). Exploratory environmental innovation practices include eco-design (more fundamental design changes in their products and processes; see Johansson, Widheden & Bergendahl, 2001, who reported 10 eco-design related commercial success stories), ecosystem stewardship (firm takes responsibility for the environmental and social impacts of its operations on the carrying capacity of ecosystems) and business redefinition (development of new products and services for customers at the bottom of the pyramid and visualising of a business future with no negative impacts on the environment and the society). For example, Abbott Labs experienced rapid growth largely through its ability to open up several new product markets through disruptive innovation. Abbott Labs utilised its disruptive innovation capabilities by developing the lower end alternatives of the expensive medical procedures and medicines particularly in diagnostics and nutritional products (Collins, 2001). 'Many of those new customers are in remote clinics or villages and are thus able to enjoy access to an increasing variety of health services that were formerly out of reach' (Ahlstrom, 2010, p. 19). Hahn, Preuss, Pinkse and Figge (2014) provided the examples for exploratory environmental innovations for firms like Patagonia, Ciba Geigy, General Electric and Alcan. Another example of an exploratory innovation that has the potential to create a new growth business and has a positive impact on people's well-being is the new water filter technology of Hindustan Unilever and Tata (Ahlstrom, 2010). A prominent example of business redefinition and ecosystem stewardship is Interface's redefinition of its product as 'floor comfort' via leasing of carpets. Interface is responsible for the product life cycle, including the takeback and recycling of fibre (Halt & Milstein, 1999).

On the basis of above discussion, we contend that innovations not only affect the adoption of sustainability practices under the impact of stakeholder pressure, but they do so in a path-dependent way. Our contention that a firm with exploitative innovative capabilities would have a short-term, ephemeral focus while adopting sustainability practices. Accordingly, we hypothesise

Hypothesis 1. A firm having exploitative innovative capabilities responds to stakeholder pressure by adopting sustainable practices with ephemeral focus.

A firm with exploratory innovative capabilities would have a long-term, enduring focus, whereas adopting sustainability practices is undergirded in the theory of conservatism. Accordingly, we hypothesise

Hypothesis 2. A firm having exploratory innovative capabilities responds to stakeholder pressure by adopting sustainable practices with enduring focus.

We have not yet considered a plausible scenario where a firm could possibly be having, both, exploitative and exploratory innovative capabilities. This phenomenon has been witnessed, and such firms are termed as ambidextrous (He & Wong, 2004; Jansen, Tempelaar, van den Bosch, & Volberda, 2009). Gupta, Smith and Shalley (2006) discuss ambidextrous innovative behaviour of Cisco and other firms in the semiconductor industry. The other example is Toyota's product development system where Knott (2002) observes that exploration and exploitation coexist. The Toyota Fuel Cell System is an excellent example that includes fuel cell technology (eco-efficiency) and hybrid technology (eco-design) based sustainability practices (Toyota, 2015). The recent development of ambidexterity as an innovation strategy stems from the recognition that exploration generates opportunities that a firm can later exploit. In such firms, which have both types of innovative capabilities, we posit that they would choose sustainable practices in a way that is optimally functional for them, that is, they would adopt sustainable practices that would have aspects from ephemeral and enduring focus. Based on this discussion, we hypothesise

Hypothesis 3. A firm, which is ambidextrous in nature in terms of its innovative capabilities, responds to stakeholder pressure by adopting sustainable practices having aspects of both ephemeral and enduring focus.

2 | METHOD

This study uses structural equation modelling approach with maximum likelihood method of estimation to empirically test the proposed hypotheses (Figure 1). Maximum likelihood does not require prior knowledge of data distribution and makes global adjustment of measurement model by employing the diverse statistics (Arbuckle, 2010).

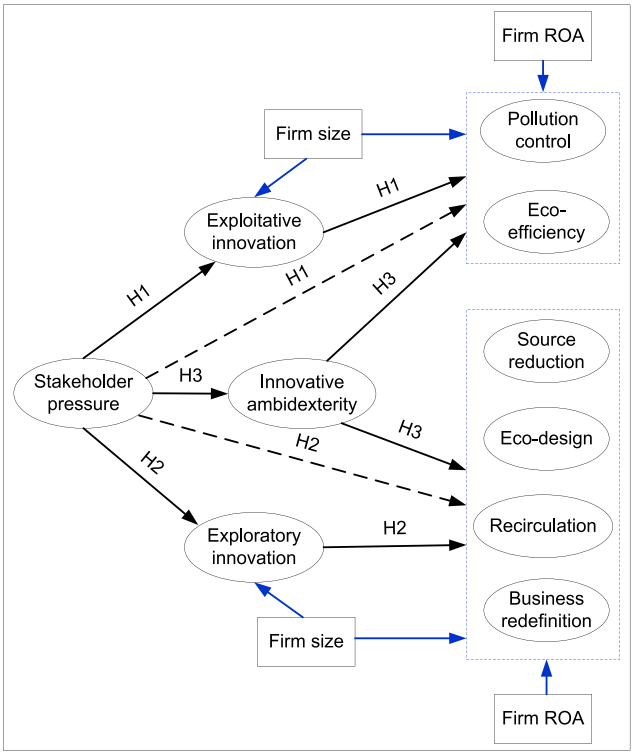

FIGURE 1 Research model (dotted lines indicate direct path, whereas solid black lines indicate mediated path) [Colour figure can be viewed at wileyonlinelibrary.com]

2.1 | Study sample

Numerous studies in the extant literature (e.g., Kortmann, Gelhard, Zimmermann, & Piller, 2014) have expressed the need for empirical studies from developing countries such as India to gain more insights on existing phenomenon or develop new models. Specifically, with respect to environmental emission, being one of the fastest growing economy, India may reveal new insights.

Our research is hosted in the context of manufacturing facilities located in India. We chose manufacturing facility as a unit of analysis for this study as the implementation of the environmental practices is accomplished at the level of the individual manufacturing facility. Business managers dealing with environmental issues were considered as potential respondent for questionnaire on stakeholder pressure and sustainability practices. We considered senior managers at business unit level to gather information on innovation capabilities. The development of innovation capabilities is a strategic issue, and usually, people at strategic team are responsible for it. Moreover, by having different respondent. we minimised the risk of common method bias.

Exploratory innovation projects may last long for 3 years (He & Wong, 2004). Additionally, small start-ups may not get involved with the sustainability management initiatives in their initial phases. The requirement of data restricted sample to 1,471 publicly traded companies only from Prowess database. Manufacturing facilities that have

been operational for at least 10 years and that have at least 100 employees were considered in the study sample.

2.2 | Instrument development

We reviewed and analysed the existing scales to obtain business manager's perception for 'stakeholder pressure' for sustainability. We chose the scale from Buysse and Verbeke (2003) as it covers most measures present in other scales. Moreover, its reliability and validity are already established by using the primary survey data from manufacturing facilities. Responses were collected on a 5-point Likert scale ranging from *no influence* to *very high influence*.

Growing needs in the sustainability literature necessitates to propose a new scale for sustainability practices considering the new trends. First, we collected all the existing scales, considered the existing pool of items and included new items to the existing pool. Second, we organised a preliminary test with an expert panel consisting of leading scholar on sustainability area, business consultants and managers dealing with sustainability issues and government official at environmental ministry dealing with environmental policy and regulations. We asked the expert panel to analyse the proposed scale based on following dimensions:

i whether all dimensions of sustainability are captured and
ii how easier for them to comprehend it.

We asked the business manager the following question: 'What is status of sustainability practices adoption at your facility?'

We collected their responses on a Likert scale with five categories with lowest level of *currently not considered* to highest level of *fully implemented*.

We used an established scale from Jansen et al. (2009) to capture the responses on the ability of the business unit to conduct radical (exploratory) and incremental (exploitative) innovations.

2.3 | Control variables

In this empirical study, the possible confounding effects are controlled by including firm size and financial performance as control variables, both of which are common predictors of environmental performance (King & Lenox, 2002).

2.4 | Data collection

We collected primary survey data from two different respondents in the same organisation: one for stakeholder pressure and sustainability practices and the other for exploratory and exploitative innovation capabilities. The reason for the same (as explained in Section 1.2.1) is that the managers responsible for implementing sustainability practices are usually different from the managers who deal with innovation capability development issues. Managers in the latter category are usually more experienced and at a higher corporate cadre. We used Dillman's (2000) 5-point contact protocol to collect responses. To enhance response rate, we used two modes of data collection: The first is online filling of responses where web link was emailed and the second is field visits with prior appointments.

We also added one item at the end of questionnaire to assess the confidence with which a respondent was able to answer the questions. On a 10-point Likert scale, responses with less than six were discarded from the final sample. We collected 418 and 392 responses on two stages, respectively.

We combined the responses by considering only those firms for which data were available in both the categories, namely, stakeholder pressure and sustainability practices and exploratory and exploitative innovation capabilities. An industry wise classification (based on four-digit SIC code) of the sample is provided in Table A1.

This type of data could be biased, because of the respondents' or their organisations' socially desirable images on sustainability practices. In addition to the questionnaire survey, sustainability practice data for 40 randomly selected manufacturing facilities were also collected exclusively from secondary sources published in 2015–2016. This included annual reports, media reports and company statement related to environmental issues, and company websites. The corporate annual reports usually report financial data at aggregate business unit level; however, it is mandatory for them to present environmental emission and steps undertaken to improve it at individual facility level. To analyse the contents of annual reports, environmental reports and company websites, an approach similar to the one followed by Sharma and Henriques (2005) was used (see Sharma & Henriques, 2005, for a complete description). This additional data were compared with questionnaire responses to check whether social desirability bias is a serious concern or not; *t*-tests showed no significant differences between questionnaire responses and secondary source data in terms of model variables ($p < 0.05$). Although we cannot say that social desirability bias is totally absent, it provides us reasonable assurance that social desirability bias is not a serious concern.

We compared respondent and nonresponding firms using *t*-test on annual sales, industry type and annual return on assets (ROA) data. We also compared responses of two survey methods (web-based survey vs. field visits) in terms of demography of respondent and survey items using chi-squared test of independence. No statistically significant difference ($p < 0.05$) in both tests was found. The representation of various industries was not equal as shown in Table 1 (it was as low as 2.87% to as high as 7.89%). Therefore, we conducted an analysis of variance test to check whether this difference in representation percentage could skew the outcome. We observed no statistically significant difference among them ($F = 0.02$).

Because the data for stakeholder pressure and sustainability practices were collected from single respondent, common method variance might be an issue. We used Harmon's single factor test by entering all self-reported items into a single factor to see whether a single factor was able to explain the most of covariance. We used

TABLE 1 Measurement model analysis

Measurement paths	Unstandardised regression weight	Standard error	Critical ratio	Standardised regression weight*	Item reliability
External primary stakeholders					
Domestic customers	1.00	Fixed		0.83	0.69
International customers	1.62	0.19	11.24	0.85	0.72
Domestic suppliers	1.61	0.16	13.74	0.78	0.61
International suppliers	1.69	0.23	9.10	0.79	0.62
Secondary stakeholders					
Domestic rivals	1.00	Fixed		0.86	0.77
International rivals	1.59	0.28	9.39	0.78	0.68
International agreements	1.51	0.24	9.42	0.80	0.66
ENGOs	1.54	0.26	10.62	0.78	0.60
Media	1.41	0.21	13.04	0.82	0.62
Internal primary stakeholders					
Employees of the firm	1.00	Fixed		0.87	0.77
Shareholders of the firm	1.89	0.29	11.04	0.83	0.71
Landing financial institutions	1.81	0.26	11.87	0.86	0.74
Regulatory stakeholders					
Central and state government	1.00	Fixed		0.91	0.83
Local regulatory authorities	1.58	0.24	12.67	0.87	0.76
Pollution control					
Compliance to environmental regulations and standards (such as ISO 14001)	1.00	Fixed		0.91	0.83
Removal of toxic contents from air and water release	1.87	0.29	10.61	0.83	0.69
Eco-efficiency					
Reduction in material use	1.00	Fixed		0.85	0.71
Reduction in material use	1.68	0.18	13.57	0.89	0.79
Reduction In waste generated	1.79	0.23	10.46	0.79	0.62
Source reduction					
Reduction in the different types of raw material used in products	1.00	Fixed		0.84	0.71
Optimal utilisation of raw material	1.61	0.22	11.30	0.86	0.74
Minimisation of harmful material use	1.72	0.27	9.42	0.80	0.64
Eco-design					
Designing product for easy disassemble or reuse	1.00	Fixed		0.87	0.76
Product life-cycle analysis	1.93	0.29	13.92	0.89	0.79
Recirculation					
Durable design	1.00	Fixed		0.77	0.59
De-packaging	1.68	0.07	14.59	0.82	0.67
Internal recycling	1.73	0.16	13.85	0.80	0.64
Business redefinition					
Investment for developing products for bottom of pyramid	1.00	Fixed		0.85	0.72
Introduce new product with environmental consideration	1.73	0.19	12.37	0.83	0.69
Goals for sustainable technology leadership	1.80	0.15	13.47	0.72	0.52
Exploratory innovation					

(Continues)

TABLE 1 (Continued)

Measurement paths	Unstandardised regression weight	Standard error	Critical ratio	Standardised regression weight*	Item reliability
Our organisation accepts demands that go beyond existing products and services	1.00	Fixed		0.87	0.76
We commercialise products and services that are completely new to our organisation	2.12	0.18	11.58	0.83	0.69
We frequently utilise new opportunities in new markets	2.34	0.26	14.59	0.78	0.61
Our organisation regularly uses new distribution channels	2.02	0.15	10.08	0.88	0.77
Exploitative innovation					
We frequently make small adjustments to our existing products and services	1.00	Fixed		0.85	0.72
We improve our provision's efficiency of products and services	1.98	0.19	13.64	0.83	0.69
We increase economies of scales in existing markets	2.08	0.21	12.61	0.89	0.79
Our organisation expands services for existing clients	2.36	0.28	9.87	0.91	0.83

*Statistically significant at $p < 0.01$.

TABLE 2 Psychometric properties of measurement scale

Latent variables	Average value	Variance	Number of measures	Cronbach's alpha	Composite reliability (ρc)	AVE (ρ_{ave})
External primary stakeholder	0.23	0.04	4	0.76	0.86	0.68
Secondary stakeholders	0.19	0.06	5	0.93	0.94	0.73
Internal primary stakeholder	0.31	0.02	3	0.78	0.89	0.72
Regulatory stakeholders	0.21	0.06	2	0.77	0.87	0.68
Pollution control	0.34	0.03	2	0.77	0.88	0.70
Eco-efficiency	0.30	0.02	3	0.80	0.85	0.73
Source reduction	0.24	0.04	3	0.86	0.89	0.69
Eco-design	0.26	0.05	2	0.76	0.86	0.67
Recirculation	0.31	0.01	3	0.81	0.87	0.62
Business redefinition	0.22	0.05	3	0.88	0.91	0.72
Exploitative innovation	0.36	0.03	4	0.93	0.94	0.73
Exploratory innovation	0.30	0.02	4	0.91	0.93	0.73

Note. ρc = [(Σ standardised loading)^2/[(Σ standardised loading)^2 + Σϵj], the error in measurement is represented by ϵj. ρ_{ave} = Σ (standardised loading^2)/[Σ (standardised loading^2) + Σϵj].

principle component analysis method and observed that a single factor was not able to explain majority of covariance among items.

To investigate reliability issues pertaining to single informant data for exploratory and exploitative innovations, we contacted one additional member of the 392 responding manufacturing facilities. Participants in leadership positions in their organisational units were asked appraise their unit's exploratory and exploitative innovation capabilities. In this follow-up survey, we obtained 78 responses, which is 20% of the final sample. The median interrater agreement scores r_{wg} for exploratory innovation and exploitative innovation were found to be 0.91 and 0.89, respectively.

3 | RESULTS

3.1 | Measurement model

In this study, we measured 12 constructs from 38 items. Further, we tested the measurement model's reliability and validity. The results of the various tests are presented in Tables 1 to 3. Table 1 illustrates that the individual item loading value ranges from 0.52 to 0.83. These are statistically significant ($p < 0.01$). The values indicate that the level of variance captured by its construct is significantly higher than the variance because of the error in the measurement (Fornell &

TABLE 3 Correlations between latent variables (square root of average variance extracted in the diagonal)

Latent variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	0.82													
2	0.14	0.85												
3	0.19	0.45**	0.85											
4	0.05	0.31*	0.55**	0.82										
5	0.48**	0.23*	0.43**	0.61**	0.84									
6	0.39**	0.07	0.37**	0.41**	0.62**	0.85								
7	0.16	0.19	0.58**	−0.27*	0.12	0.26*	0.83							
8	0.25*	0.10	0.21	−0.16	0.58**	0.05	0.49**	0.82						
9	0.45**	0.16	0.15	−0.19	0.19	0.26*	0.30*	0.24*	0.79					
10	0.11	0.29*	0.04	−0.42**	0.23*	0.11	0.15	0.44**	0.23*	0.85				
11	0.42**	0.52**	0.25*	0.03	0.37**	0.20	0.24*	0.29*	0.29*	0.44**	0.85			
12	0.39**	0.35**	0.38**	−0.29*	0.22	0.69**	0.29*	0.19	0.17	0.37**	0.29*	0.85		
13	0.17	0.13	0.09	0.05	0.02	0.45**	0.18	0.23*	0.22	0.31*	0.34**	−0.01	—	
14	0.20	0.19	0.13	0.17	0.06	0.34*	0.21	0.04	0.30*	0.20	0.08	−0.19	0.36**	—

Note. (1) External primary stakeholder; (2) Secondary stakeholder; (3) Internal primary stakeholder; (4) Regulatory stakeholder; (5) Pollution control; (6) Eco-efficiency; (7) Source reduction; (8) Eco-design; (9) Recirculation; (10) Business redefinition; (11) Exploitative innovation; (12) Exploratory innovation; (13) Firm size; (14) Firm ROA.
*$p < 0.05$ (two-tailed).
**$p < 0.01$ (two-tailed).

Larcker, 1981). This establishes item reliability. As shown in Table 1, item reliability for suppliers is lower as compared with customers for the measurement of the construct 'External primary stakeholders'. The possible reason could be the data used to test the reliability. The data have been collected from manufacturing firms. The customer related items correlate more with this latent construct as compared with suppliers related items. This indicates that for manufacturing firms, the items domestic and international customers reflect the external primary stakeholders more than their supplier. The customers for the manufacturing firms are the distributors and retailers. They are more closely located with the end user. There is a growing awareness regarding environment emission for the final product among the end customers. Moreover, the firms that assembles and sells the final product have more visibility as compared with their raw material and component suppliers. Furthermore, the supply chain ownership is shifting downstream in a supply chain and the firms located close to end customers are becoming more powerful over time. These reasons may explain the lower loading for items related to suppliers as compared with their customers for manufacturing firms.

We used two approaches to verify the internal consistency of the latent variables: (a) Cronbach's alpha and (b) composite reliability. We standardised the item values with mean equals to zero and variance equals to 1 to calculate the Cronbach's alpha. The standardisation approach helped to establish that the reliability of the scale is based on the sum of standardised variables. The Cronbach's alpha values were found to be more than 0.7 (threshold value) (Table 2). We used the formula indicated at the bottom of Table 2 to calculate the value of composite reliability (ρc). The ρc value ranged from 0.86 to 0.94. The result of above tests establishes the internal consistency of the measurement scale. The calculated value of average variance extracted (AVE) was ranged from 0.62 to 0.73, which was greater than 0.5 (Table 2, formula is given at the bottom of the table). This value confirms the convergent validity of the measurement scale.

In this study, we employed Fornell and Larcker's (1981) criterion to assess the discriminant validity. The discriminant validity ensures that the latent constructs used to test the theoretically postulated relationships are truly distinct from each other. In other words, a latent construct should explain the variance of its own indicator better than the variance of other latent constructs. Therefore, the square root of each construct's AVE should have a greater value than the correlations with other latent constructs. The squared correlation values between all latent variables are illustrated in Table 3. The diagonal

TABLE 4 Goodness-of-fit indices of the structural models

Indices	Recommended	Model 1	Model 2	Model 3
Chi-squared (χ^2)	—	1,152	1,084	1,169
Degrees of freedom (*df*)	—	588	565	582
χ^2/df	Less than 3	1.96	1.92	2.01
GFI	Greater than 0.8	0.91	0.92	0.91
RMSEA	Less than 0.1	0.052	0.048	0.061
CFI	Greater than 0.9	0.93	0.94	0.91
IFI	Greater than 0.9	0.92	0.95	0.91

Note. The value of chi-squared (χ^2) is statistically insignificant at $p > 0.05$. This indicates that the covariance observed from the study sample is able to explain the estimated value from the structural model.

TABLE 5 Structural model

Antecedent variable	Consequent variable	Unstandardised regression weight	Standard error	Critical ratio	*p* value	Standardised regression weight	% change[b]
(a) Structural Model 1 paths							
External primary stakeholders	Pollution control	0.74	0.07	7.69	0.003	0.45	41.1
Secondary stakeholders	Pollution control	0.72	0.13	6.54	0.003	0.37	40.0
Internal primary stakeholders	Pollution control	0.68	0.24	5.87	0.005	0.34	37.8
Regulatory stakeholders	Pollution control	1.02	0.27	11.24	0.001	0.53	56.7
External primary stakeholders	Eco-efficiency	0.87	0.06	4.78	0.006	0.43	62.1
Secondary stakeholders	Eco-efficiency	0.63	0.04	5.02	0.005	0.32	45.0
Internal primary stakeholders	Eco-efficiency	0.69	0.16	6.02	0.004	0.41	55.0
Regulatory stakeholders	Eco-efficiency	0.61	0.20	3.98	0.006	0.38	42.1
External primary stakeholders	Source reduction	0.42	0.09	5.47	0.004	0.55	36.5
Secondary stakeholders	Source reduction	0.39	0.11	4.93	0.006	0.29	33.9
Internal primary stakeholders	Source reduction	0.53	0.18	4.32	0.006	0.31	46.1
Regulatory stakeholders	Source reduction	−0.37	0.21	−3.68	0.007	−0.27	−32.2
External primary stakeholders	Eco-design	0.58	0.14	6.12	0.004	0.39	46.4
Secondary stakeholders	Eco-design	0.61	0.17	5.47	0.005	0.41	48.8
Internal primary stakeholders	Eco-design	0.49	0.08	6.14	0.005	0.47	39.2
Regulatory stakeholders	Eco-design	−0.55	0.19	−4.95	0.005	−0.35	−44.0
External primary stakeholders	Recirculation	0.42	0.10	4.56	0.005	0.31	27.1
Secondary stakeholders	Recirculation	0.38	0.21	5.12	0.005	0.28	24.5
Internal primary stakeholders	Recirculation	0.49	0.19	6.58	0.004	0.37	31.6
Regulatory stakeholders	Recirculation	−0.41	0.14	−5.01	0.004	−0.31	−26.5
External primary stakeholders	Business redefinition	0.36	0.25	3.85	0.006	0.25	32.7
Secondary stakeholders	Business redefinition	0.43	0.17	4.03	0.007	0.32	39.1
Internal primary stakeholders	Business redefinition	0.28	0.11	4.29	0.007	0.28	25.5
Regulatory stakeholders	Business redefinition	−0.25	0.08	−6.40	0.004	−0.19	−22.7
Firm size	Pollution control	0.34	0.19	5.68	0.005	0.25	18.9
Firm size	Eco-efficiency	0.42	0.23	6.15	0.004	0.33	30.0
Firm size	Source reduction	0.15	0.12	2.34	0.08	0.11	–

TABLE 5 (Continued)

Antecedent variable	Consequent variable	Unstandardised regression weight	Standard error	Critical ratio	*p* value	Standardised regression weight	% change[b]
Firm size	Eco-design	−0.17	0.08	−1.98	0.14	−0.09	–
Firm size	Recirculation	−0.02	0.09	−1.18	0.27	−0.03	–
Firm size	Business redefinition	−0.13	0.04	−1.36	0.16	−0.12	–
Firm ROA	Pollution control	0.35	0.12	5.24	0.005	0.22	19.4
Firm ROA	Eco-efficiency	0.41	0.18	4.68	0.005	0.34	29.3
Firm ROA	Source reduction	0.19	0.13	3.01	0.08	0.08	–
Firm ROA	Eco-design	0.15	0.07	2.63	0.10	0.11	–
Firm ROA	Recirculation	0.08	0.01	1.67	0.12	0.02	–
Firm ROA	Business redefinition	0.21	0.10	2.06	0.05	0.17	–
(b) Structural Model 2 paths							
External primary stakeholders	Exploitative innovation	0.43	0.14	5.01	0.004	0.29	24.2
Secondary stakeholders	Exploitative innovation	0.41	0.07	5.03	0.004	0.22	22.3
Internal primary stakeholders	Exploitative innovation	0.43	0.21	4.01	0.006	0.30	25.2
Regulatory stakeholders	Exploitative innovation	0.39	0.19	4.34	0.006	0.35	23.1
External primary stakeholders	Exploratory innovation	0.29	0.05	3.28	0.007	0.33	19.3
Secondary stakeholders	Exploratory innovation	0.25	0.13	3.64	0.007	0.21	16.7
Internal primary stakeholders	Exploratory innovation	0.26	0.07	4.01	0.006	0.21	17.3
Regulatory stakeholders	Exploratory innovation	−0.31	0.18	−4.25	0.006	−0.25	−20.7
Exploitative innovation	Pollution control	0.56	0.12	5.81	0.005	0.42	31.1
Exploitative innovation	Eco-efficiency	0.63	0.18	6.02	0.004	0.45	45.0
Exploratory innovation	Source reduction	0.38	0.07	4.93	0.005	0.28	33.0
Exploratory innovation	Eco-design	0.43	0.11	4.25	0.006	0.30	34.4
Exploratory innovation	Recirculation	0.39	0.06	3.87	0.006	0.25	25.2
Exploratory innovation	Business redefinition	0.50	0.19	4.08	0.005	0.39	45.5
External primary stakeholders	Pollution control	0.17	0.06	1.93	0.09	0.08	–
Secondary stakeholders	Pollution control	0.14	0.03	2.04	0.14	0.09	–
Internal primary stakeholders	Pollution control	0.06	0.02	1.15	0.21	0.04	–
Regulatory stakeholders	Pollution control	0.11	0.07	1.38	0.32	0.05	–
External primary stakeholders	Eco-efficiency	0.21	0.12	2.13	0.15	0.12	–
	Eco-efficiency	0.14	0.07	1.27	0.11	0.08	–

(Continues)

TABLE 5 (Continued)

Antecedent variable	Consequent variable	Unstandardised regression weight	Standard error	Critical ratio	*p* value	Standardised regression weight	% change[b]
Secondary stakeholders							
Internal primary stakeholders	Eco-efficiency	0.09	0.05	1.49	0.23	0.04	—
Regulatory stakeholders	Eco-efficiency	0.13	0.08	2.03	0.21	0.06	—
External primary stakeholders	Source reduction	0.15	0.05	1.28	0.14	0.10	—
Secondary stakeholders	Source reduction	0.12	0.07	1.67	0.20	0.06	—
Internal primary stakeholders	Source reduction	0.17	0.11	1.85	0.18	0.11	—
Regulatory stakeholders	Source reduction	0.09	0.02	1.17	0.23	0.02	—
External primary stakeholders	Eco-design	0.10	0.05	1.16	0.17	0.04	—
Secondary stakeholders	Eco-design	0.07	0.04	1.54	0.39	0.06	—
Internal primary stakeholders	Eco-design	0.12	0.06	1.27	0.31	0.07	—
Regulatory stakeholders	Eco-design	−0.13	0.05	−1.37	0.18	−0.10	—
External primary stakeholders	Recirculation	0.06	0.04	1.48	0.41	0.01	—
Secondary stakeholders	Recirculation	0.14	0.09	2.04	0.27	0.05	—
Internal primary stakeholders	Recirculation	0.06	0.04	1.56	0.36	0.03	—
Regulatory stakeholders	Recirculation	−0.03	0.01	−1.16	0.58	−0.05	—
External primary stakeholders	Business redefinition	0.12	0.07	1.79	0.17	0.06	—
Secondary stakeholders	Business redefinition	0.08	0.04	1.31	0.35	0.04	—
Internal primary stakeholders	Business redefinition	0.04	0.02	1.41	0.51	0.02	—
Regulatory stakeholders	Business redefinition	−0.06	0.03	−1.49	0.42	−0.05	—
Firm size	Exploitative innovation	0.29	0.12	4.02	0.005	0.21	16.1
Firm size	Exploratory innovation	−0.15	0.06	2.09	0.11	0.09	—
Firm ROA	Exploitative innovation	0.34	0.17	−3.96	0.006	0.28	18.9
Firm ROA	Exploratory innovation	−0.18	0.08	−1.95	0.13	−0.12	—
Firm size	Pollution control	0.31	0.15	4.15	0.005	0.24	17.2
Firm size	Eco-efficiency	0.35	0.19	4.52	0.005	0.27	25.0
Firm size	Source reduction	0.14	0.05	1.87	0.17	0.05	—
Firm size	Eco-design	−0.08	0.03	−1.92	0.24	−0.03	—
Firm size	Recirculation	−0.12	0.05	−1.58	0.19	−0.07	—

TABLE 5 (Continued)

Antecedent variable	Consequent variable	Unstandardised regression weight	Standard error	Critical ratio	*p* value	Standardised regression weight	% change[b]
Firm size	Business redefinition	−0.14	0.08	−2.01	0.09	−0.06	—
Firm ROA	Pollution control	0.36	0.14	4.52	0.005	0.27	20.0
Firm ROA	Eco-efficiency	0.29	0.10	3.93	0.006	0.21	20.7
Firm ROA	Source reduction	0.06	0.02	1.86	0.34	0.02	—
Firm ROA	Eco-design	−0.11	0.06	−1.54	0.15	−0.05	—
Firm ROA	Recirculation	−0.17	0.10	−1.68	0.17	−0.08	—
Firm ROA	Business redefinition	−0.09	0.03	−1.96	0.26	−0.03	—
(c) Structural Model 3[a] paths							
External primary stakeholders	Innovative ambidexterity	0.35	0.14	4.53	0.005	0.41	21.2
Secondary stakeholders	Innovative ambidexterity	0.41	0.17	5.02	0.004	0.37	24.8
Internal primary stakeholders	Innovative ambidexterity	0.33	0.13	4.37	0.005	0.29	20.0
Regulatory stakeholders	Innovative ambidexterity	0.21	0.14	3.51	0.06	0.18	—
Innovative ambidexterity	Pollution control	0.30	0.12	4.12	0.005	0.23	16.7
Innovative ambidexterity	Eco-efficiency	0.34	0.14	4.27	0.005	0.29	24.3
Innovative ambidexterity	Source reduction	0.42	0.18	4.64	0.004	0.35	36.5
Innovative ambidexterity	Eco-design	0.37	0.09	4.06	0.005	0.30	29.6
Innovative ambidexterity	Recirculation	0.33	0.14	4.13	0.005	0.31	21.3
Innovative ambidexterity	Business redefinition	0.45	0.16	4.51	0.004	0.37	40.9

[a]In this model, we have controlled the impact of firm size and firm ROA on sustainability practices.
[b]The calculation indicated the rate of increase/decrease in consequent variable with a unit antecedent variable. For more details, please refer to Section 4.
$^{*}p < 0.01$.

elements of Table 3 are square root of AVE. As shown in Table 3, the AVE values range from 0.79 (for Recirculation) to 0.85 (for Secondary and Internal primary stakeholders, Eco-efficiency, Business redefinition, Exploitative and Exploratory innovations). The strongest positive correlation value in Table 3 is 0.69 (Eco-efficiency and Exploratory innovation), and the strongest negative correlation value is −0.42 (Regulatory stakeholder and Business redefinition). This indicated that there is some degree of cross-loading between indicator of these latent constructs. However, these correlation values are less than their AVE: Eco-efficiency (0.85), Exploratory innovation (0.85), Regulatory stakeholder (0.82) and Business redefinition (0.85). Moreover, the all other diagonal elements (square root of AVE) are significantly higher than all other elements (correlation values) in every column of Table 3, which demonstrates the discriminant validity of the scale (conceptually similar concepts are distinct).

3.2 | Structural model

We proposed three structural models in this study. The first model estimates the direct relationship between antecedent (stakeholder pressure) and consequent (sustainability practices) variables. The second and third models incorporate exploratory/exploitative innovation and ambidexterity as mediating variable between stakeholder pressure and sustainability practices, respectively.

To establish the fitness of our prosed structural model, we used various fit indices based on absolute, parsimonious and noncentrality measures. The estimated value of various fit indices is given in Table 4, which indicates overall good fitness of the proposed model.

The path coefficient values for Structural Model 1 are positive. These are statistically significant ($p < 0.01$) except for a path from regulatory stakeholder to sustainability practices with enduring focus

(negative and statistically significant) (Table 5a). The results of Model 1 confirm that the stakeholders influence the sustainability practices adoption but not all in the same direction. Some of the stakeholders influence sustainability adoption positively and some negatively. A positive and statistically significant path exists between a firm's ROA and sustainability practices with ephemeral focus (hereinafter referred to as EPF). This indicates that a firm with a higher financial performance tends to adopt more of EPF. Similarly, a positive and statistically significant path exists between the firm size and EPF. However, a negative but statistically insignificant path is present between the firm size and sustainability practices with enduring focus (hereinafter referred to as ENF), except for source reduction where the path is positive, but this is also statistically insignificant. This signifies that larger firms tend to adopt the EPF, whereas, for the ENF, this relationship is not significant.

As depicted in Table 5b, the statistically significant relation between the stakeholder pressure and EPF becomes insignificant in the presence of mediator variable exploitative innovation. Moreover, the relation between the stakeholder pressure and exploitative innovation is significant ($p < 0.01$) and positive. This confirms a completely mediated relationship where Hypothesis is firmly supported.

The relation between the stakeholders, except regulatory stakeholders, and exploratory innovation (Table 5b, Figure 1) is statistically significant ($p < 0.01$) and positive, whereas the relation between the regulatory stakeholder and exploratory innovation is statistically significant and negative. In the presence of exploratory innovation, the relation between the stakeholder pressure and ENF becomes statistically insignificant, which indicates complete mediation. This result indicates that regulatory stakeholder pressure inhibits the propensity to adopt an ENF in manufacturing firms. Thus, the result strongly supports Hypothesis .

Structural Model 3 (Table 5c) illustrates that the relation between the stakeholder pressures and innovative ambidexterity is positive and significant, as $p < 0.01$ (except for regulatory stakeholder and innovative ambidexterity where the relationship is positive but is statistically insignificant as $\beta = 0.21$ and $p = 0.06$). Further, the path between innovative ambidexterity and sustainability practices (both ephemeral and enduring focuses) is also positive and significant as $p < 0.01$. Finally, the innovative ambidexterity being a mediator, the direct path between the stakeholder pressures and sustainability practices (both ephemeral and enduring focus) become statistically insignificant as $p > 0.01$. These results evidence the mediating role of the innovative ambidexterity in the relationship between the stakeholder pressures and sustainability practices adoption. Hence, Hypothesis is supported.

4 | DISCUSSION

In this paper, we categorise the stakeholders into four categories: external primary, secondary, internal primary and regulatory stakeholders. We classify the sustainability practices into two categories, namely, sustainability practices with ephemeral and enduring focus. Further, we propose a valid and reliable scale to measure these sustainability practices. We also validate the existing scale on exploitative and exploratory innovations.

In this article, we contribute to extant literature by extending the debate on the following research question: Why organisational responses for stakeholder pressure on sustainability are quite idiosyncratic even within a specific industry governed by regulation that is equally applicable to all firms? Our main aim is to help reorient sustainability research away from the long-fought battle for replicable empirical findings of the organisational response to stakeholder pressure and to move towards a quest for a deeper understanding of the underlying mechanism as to why different firms responds differently to stakeholder pressure on sustainability issues. We argue that firm tends to respond to 'sustainable' stakeholder pressures through 'sustainable' innovations and that differences in their exploratory/exploitative innovative capabilities engender heterogeneous responses to similar pressures. We explore in-depth intricacies of the relationship between innovative capabilities and stakeholder pressures for adopting sustainability practices. It also casts light on whether there is a need for governments to impose regulation to curb global environmental issues. The research outcomes point out that under regulatory stakeholder pressure, firms with exploratory innovation capabilities seem to steer away from adopting sustainable practices with enduring focus. This indicates a negative impact of government intervention on adoption of sustainable practices with enduring focus. The findings are incongruous with the claims of Menguc, Auh and Ozanne (2010) showing that government intervention may not be inhibiting. Moreover, an empirical study of the manufacturing firms operating in China also finds that institutional forces (i.e., regulative, public and industrial) positively influence the environmental management strategy (Kang & He, 2018). Furthermore, a meta-analysis of 68 studies by Liu, Guo and Chi (2015) also conclude that in China, regulations have a significantly positive influence on proactive environmental strategies. Our findings and analyses (Tables A2 and A3) also contradict the claims of Yi et al. (2017) and Ruan et al. (2014) that government interventions facilitate the development of exploratory innovative capabilities in Chinese firms and thus lead them on the path of sustainable business for a long term.

In order to contextualise our findings with respect to sustainable innovation in emerging economies, we compare and contrast our findings with other studies on innovations. For example, Ruan et al. (2014) discuss the impact of government regulations for the development of Chinese electric bike industry. They conclude that government regulation can be an important tool for fostering disruptive innovations for sustainability. Based on firm level data of Chinese manufacturing firms, Yi et al. (2017) report that state regulation positively influences firms for higher investment in research and development. However, Yi et al. (2017) and Ruan et al. (2014) report that to foster government regulatory pressures for sustainable innovation on firms, it is important that (a) the state/government has a stake in the firm and (b) the industry is a priority area for the government. State's ownership helps the firm to secure critical resources in the market and reduces risk. A prioritised industry sector avails itself of the benefits of reasonable

regulations and sufficient infrastructure support provided by the government. For instance, by banning motorcycles in cities, Chinese government inadvertently wiped out the competition faced by electric bike industry (Ruan et al., 2014). In light of the above observations, we project that unlike China, India is not a statist economy. Moreover, our analysis is based on private firms with no state ownership. Also, unlike China, Indian policy-making is not about taking categorical and strict stands, even if they are warranted. It is more about tweaking the market forces, levying taxes and adopting the 'middle path approach'. Outright 'banning' seems to be implausible. Thus, the difference in the socio-political construct of the two economies could be a reason for the incongruity in the results. Further, observing the regulatory mechanism in India also allows us to deliberate on a few more insights discussed below.

4.1 | Policy implications

Unlike the European Union where the regulatory mechanism is market based, India follows the command and control mechanism where government mandates the level of pollution control every firm needs to achieve. Sustainability practices with enduring focus are risky and uncertain yielding results in the long run. Now, there are two plausible cases that could occur: (a) either a firm has been fairly successful in its endeavours and has already upgraded to a better environmental practice or (b) it has been waiting for the big leap of success and carrying on with the current technological trajectory. In the first case, we can safely assume that a successful exploratory firm is ahead of the industry standards where regulatory pressures would not inhibit its conservative behaviour. Thus, the firm can carry on the same thing they have been doing. On the other hand, if the firm's exploratory efforts do not yield positive results but still operating at the current industry standards, then it is quite likely that under regulatory pressure, the firm would be adversely affected in terms of its conservatism. In such a scenario, a firm would be propelled towards adopting sustainable practices with ephemeral focus, which give quick and certain results and, thus, respite from regulatory bodies. Moreover, Indian regulation policy of command and control seizes a firm's motivation, which is required for adopting sustainable practices with enduring focus.

Sustainable practices with enduring focus entail high returns for high risks taken by a firm. Unlike market-based regulatory mechanism, where firms get incentivised for better environmental performance in terms of unused permits/credits it can auction under the pollution permit/credit trading programme (Kayden, 1991), Indian firms have no incentive if their performance lies above the required baseline. This plausibly discourages the Indian firms to adopt sustainable practices with enduring focus as there would only be high risks but 'no high returns'. In Indian context, the regulatory pressures can easily be overcome using symbolic gestures or superficial efforts without entailing much costs. This is an alternative way of explaining the adverse impact of regulatory pressures on the adoption of sustainability practices with enduring focus. If the 'easy' ways persist in an economy, then it might act as a demotivating factor in terms of adopting sustainability practices with enduring focus. Even in the United States, the German automaker Volkswagen was found to be cheating the emission tests by installing a 'defeat device' in their engines (Hotten, 2015). The company suffered huge losses due to direct result of the scandal. The relation between the regulatory pressure and sustainability practices adoption with enduring focus is found to be symbiotic in other countries. For example, in some European countries, for example, Germany, the government regulations require firms to internalise the entire life cycle cost of their products and to bear the environmental costs associated with product disposal. In such situations, advanced level environmental practices can lead to cost advantages such as extended producer liability and litigation. For example, Volkswagen's diesel scandal costed it around $30 billion in total. In fact, the company had to pay more than $7.4 billion for buying back about 350,000 vehicles. In 1990, BMW, a German multinational company, achieved a competitive advantage in terms of cost leadership due to its product stewardship strategy (Hart, 1995). The incident has important policy implication for the Indian government for formulating its regulatory framework in stimulating sustainability practices adoption with a long-term enduring focus.

5 | CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

Organisational responses to stakeholder pressures in terms of adopting sustainability practices are quite idiosyncratic. This study provides important theoretical and empirical contributions to better understand how firms adopt different types of environmental practices. This study discerns firm's sustainability practices from the perspective of conservatism to detect and determinate the presence of path dependence phenomena in a firm's experience with innovative capabilities. Thus, it establishes causal linkage between exploitative/exploratory innovative capabilities and firms that adopt sustainability practices with ephemeral/enduring focus. It finds sufficient support for the claims and thus establishes that firms respond to stakeholder pressures in idiosyncratic way. This study extends path dependence to ambidextrous firms for adopting sustainability practices that encompass principles of exploitative and exploratory innovative capabilities. Given the dynamic market scenario of the industries, we suggest that the adoption of sustainability practices should be observed in the light of the innovative capabilities of a firm. This article sets the stage for including innovations as a mediator variable in other theoretically robust models that have received ambiguous empirical support. Moreover, this study paves the way for further studies based on the theory of conservatism that is extremely under-researched in the domain of sustainability management.

The present study also has several limitations. The main limitation is that the cross-sectional analyses is incapable to shed light on changes in the sustainability practices over time. Thus, a longitudinal study within an industry will help to understand the differences in

responses among firms under similar situations. Moreover, we have only deliberated on whether the firms would be conservative or not and how it would affect their focus or policy in terms of sustainability practices adoption. However, it is also important to discern as to how long does a firm take to come out of inertia or conservatism in its behaviour. What are the factors that are responsible for determining the timespan of conservative behaviour in a firm? Such issues can be explored in a longitudinal study.

ORCID

Arijit Bhattacharya https://orcid.org/0000-0001-5698-297X
Sachin Kumar Mangla https://orcid.org/0000-0001-7166-5315

REFERENCES

Ahlstrom, D. (2010). Innovation and growth: How business contributes to society. *The Academy of Management Perspectives*, *24*(3), 11–24. https://doi.org/10.5465/amp.24.3.11

Arbuckle, J. (2010). *Amos 19 user's guide*. Crawfordville, Florida: Amos Development Corporation.

Berrone, P., Fosfuri, A., Gelabert, L., & Gomez-Mejia, L. R. (2013). Necessity as the mother of 'green' inventions: Institutional pressures and environmental innovations. *Strategic Management Journal*, *34*(8), 891–909. https://doi.org/10.1002/smj.2041

Brunnermeier, S. B., & Cohen, M. A. (2003). Determinants of environmental innovation in US manufacturing industries. *Journal of Environmental Economics and Management*, *45*(2), 278–293. https://doi.org/10.1016/S0095-0696(02)00058-X

Buysse, K., & Verbeke, A. (2003). Proactive environmental strategies: A stakeholder management perspective. *Strategic Management Journal*, *24*(5), 453–470. https://doi.org/10.1002/smj.299

Carroll, A. B. (1979). A three-dimensional conceptual model of corporate social performance. *Academy of Management Review*, *4*(4), 497–505. https://doi.org/10.2307/257850

Chithambo, L., Tingbani, I., Agyapong, G. A., Gyapong, E., & Damoah, I. S. (2020). Corporate voluntary greenhouse gas reporting: Stakeholder pressure and the mediating role of the chief executive officer. *Business Strategy and the Environment, Early View*, *29*, 1666–1683. https://doi.org/10.1002/bse.2460

Christmann, P. (2000). Effects of "best practices" of environmental management on cost advantage: The role of complementary assets. *Academy of Management Journal*, *43*(4), 663–680. https://doi.org/10.5465/1556360

Collins, J. (2001). *Good to great: Why some companies make the leap and others don't*. New York: Harper Business.

Dai, J., Cantor, D. E., & Montabon, F. L. (2015). How environmental management competitive pressure affects a focal firm's environmental innovation activities: A green supply chain perspective. *Journal of Business Logistics*, *36*(3), 242–259. https://doi.org/10.1111/jbl.12094

Darnall, N., Henriques, I., & Sadorsky, P. (2010). Adopting proactive environmental strategy: The influence of stakeholders and firm size. *Journal of Management Studies*, *47*(6), 1072–1094. https://doi.org/10.1111/j.1467-6486.2009.00873.x

Davis, G. F., & Greve, H. R. (1997). Corporate elite networks and governance changes in the 1980s. *American Journal of Sociology*, *103*(1), 1–37. https://doi.org/10.1086/231170

Delmas, M. A., & Toffel, M. W. (2008). Organizational responses to environmental demands: Opening the black box. *Strategic Management Journal*, *29*(10), 1027–1055. https://doi.org/10.1002/smj.701

Demirel, P., & Kesidou, E. (2019). Sustainability-oriented capabilities for eco-innovation: Meeting the regulatory, technology, and market demands. *Business Strategy and the Environment*, *28*(5), 847–857. https://doi.org/10.1002/bse.2286

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method* (Vol. 2). New York: Wiley.

El Bizat, K. (2006). *EMS and ISO 14001 selected topics for discussion*. HEC Montreal: Mimeo.

Etzion, D. (2007). Research on organizations and the natural environment, 1992-present: A review. *Journal of Management*, *33*(4), 637–664. https://doi.org/10.1177/2F0149206307302553

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50. https://doi.org/10.2307/3151312

Freeman, E. (1984). *Strategic management: A stakeholder approach*. Massachusetts: Pitman, Marshfield.

Goodman, J., Korsunova, A., & Halme, M. (2017). Our collaborative future: Activities and roles of stakeholders in sustainability-oriented innovation. *Business Strategy and the Environment*, *26*(6), 731–753. https://doi.org/10.1002/bse.1941

Gupta, A. K., Smith, K. G., & Shalley, C. E. (2006). The interplay between exploration and exploitation. *Academy of Management Journal*, *49*(4), 693–706. https://doi.org/10.5465/amj.2006.22083026

Hahn, T., Preuss, L., Pinkse, J., & Figge, F. (2014). Cognitive frames in corporate sustainability: Managerial sensemaking with paradoxical and business case frames. *Academy of Management Review*, *39*(4), 463–487. https://doi.org/10.5465/amr.2012.0341

Hall, J., & Wagner, M. (2012). Integrating sustainability into firms' processes: Performance effects and the moderating role of business models and innovation. *Business Strategy and the Environment*, *21*(3), 183–196. https://doi.org/10.1002/bse.728

Halt, S. L., & Milstein, M. B. (1999). Global sustainability and the creative destruction of industries. *Sloan Management Review*, *41*(1), 23–33.

Han, Y., & Zheng, E. (2016). Why firms perform differently in corporate social responsibility? Firm ownership and the persistence of organizational imprints. *Management and Organization Review*, *12*(3), 605–629. https://doi.org/10.1017/mor.2016.9

Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, *20*(4), 986–1014. https://doi.org/10.5465/AMR.1995.9512280033

He, Z. L., & Wong, P. K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization Science*, *15*(4), 481–494. https://doi.org/10.1287/orsc.1040.0078

Hirshleifer, D., & Welch, I. (2002). An economic approach to the psychology of change: Amnesia, inertia, and impulsiveness. *Journal of Economics and Management Strategy*, *11*(3), 379–421. https://doi.org/10.1111/j.1430-9134.2002.00379.x

Hotten, R. (2015). *Volkswagen: The scandal explained*. BBC News. http://www.bbc.com/news/business-34324772 Accessed 29 February 2020

Hunt, C. B., & Auster, E. R. (1990). Proactive environmental management: Avoiding the toxic trap. *Sloan Management Review*, *31*(2), 7–18.

Jansen, J. J. P., Tempelaar, M. P., van den Bosch, F. A. J., & Volberda, H. W. (2009). Structural differentiation and ambidexterity: The mediating role of integration mechanisms. *Organization Science*, *20*(4), 797–811. https://doi.org/10.1287/orsc.1080.0415

Johansson, G., Widheden, J., & Bergendahl, C. G. (2001). Green is the colour of money commercial success stories from eco-design. Green pack report 2001–02, Nordic Industrial Fund.

Kang, Y., & He, X. (2018). Institutional forces and environmental management strategy: Moderating effects of environmental orientation and innovation capability. *Management and Organization Review*, *14*(3), 577–605. https://doi.org/10.1017/mor.2017.56

Kayden, J. S. (1991). Market-based regulatory approaches: A comparative discussion of environmental and land use techniques in the United States. *Boston College Environmental Affairs Law Review*, *19*(3), 565–580.

King, A., & Lenox, M. (2002). Exploring the locus of profitable pollution reduction. *Management Science*, *48*(2), 289–299. https://doi.org/10.1287/mnsc.48.2.289.258

Knott, A. M. (2002). Exploration and exploitation as complements. In N. Bontis, & C. W. Choo (Eds.), *The strategic management of intellectual capital and organizational knowledge: A collection of readings* (pp. 339–358). New York: Oxford University Press.

Konadu, R., Owusu-Agyei, S., Lartey, T., Danso, A., Adomako, S., & Amankwah-Amoah, J. (2020). *CEO reputation, quality management and environmental innovation: The roles of stakeholder pressure and resource commitment*. https://doi.org/10.1002/bse.2504

Kortmann, S., Gelhard, C., Zimmermann, C., & Piller, F. T. (2014). Linking strategic flexibility and operational efficiency: The mediating role of ambidextrous operational capabilities. *Journal of Operations Management*, *32*(7–8), 475–490. https://doi.org/10.1016/j.jom.2014.09.007

Kostova, T., & Roth, K. (2002). Adoption of an organizational practice by subsidiaries of multinational corporations: Institutional and relational effects. *Academy of Management Journal*, *45*(1), 215–233. https://doi.org/10.5465/3069293

Kuran, T. (1988). The tenacious past: Theories of personal and collective conservatism. *Journal of Economic Behavior & Organization*, *10*(2), 143–171. https://doi.org/10.1016/0167-2681(88)90043-1

Lewis, B. W., Walls, J. L., & Dowell, G. W. (2014). Difference in degrees: CEO characteristics and firm environmental disclosure. *Strategic Management Journal*, *35*(5), 712–722. https://doi.org/10.1002/smj.2127

Li, H. (2001). A theory of conservatism. *Journal of Political Economy*, *109*(3), 617–636. https://doi.org/10.1086/321018

Liu, Y., Guo, J., & Chi, N. (2015). The antecedents and performance consequences of proactive environmental strategy: A meta-analytic review of national contingency. *Management and Organization Review*, *11*(3), 521–557. https://doi.org/10.1017/mor.2015.17

March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, *2*(1), 71–87. https://doi.org/10.1287/orsc.2.1.71

Matos, S., & Silvestre, B. S. (2013). Managing stakeholder relations when developing sustainable business models: The case of the Brazilian energy sector. *Journal of Cleaner Production*, *45*, 61–73. https://doi.org/10.1016/j.jclepro.2012.04.023

Melander, L. (2017). Achieving sustainable development by collaborating in green product innovation. *Business Strategy and the Environment*, *26*(8), 1095–1109. https://doi.org/10.1002/bse.1970

Menguc, B., Auh, S., & Ozanne, L. (2010). The interactive effect of internal and external factors on a proactive environmental strategy and its influence on a firm's performance. *Journal of Business Ethics*, *94*(2), 279–298. https://doi.org/10.1007/s10551-009-0264-0

Miles, M. P., Munilla, L. S., & Darroch, J. (2006). The role of strategic conversations with stakeholders in the formation of corporate social responsibility strategy. *Journal of Business Ethics*, *69*(2), 195–205. https://doi.org/10.1007/s10551-006-9085-6

Pedersen, E. R. G., & Gwozdz, W. (2014). From resistance to opportunity-seeking: Strategic responses to institutional pressures for corporate social responsibility in the Nordic fashion industry. *Journal of Business Ethics*, *119*(2), 245–264. https://doi.org/10.1007/s10551-013-1630-5

Pedersen, E. R. G., Gwozdz, W., & Hvass, K. K. (2018). Exploring the relationship between business model innovation, corporate sustainability, and organisational values within the fashion industry. *Journal of Business Ethics*, *149*(2), 267–284. https://doi.org/10.1007/s10551-016-3044-7

Rathore, H., Jakhar, S. K., Bhattacharya, A., & Madhumitha, E. (2020). Examining the mediating role of innovative capabilities in the interplay between lean processes and sustainable performance. *International Journal of Production Economics*, *219*, 497–508. https://doi.org/10.1016/j.ijpe.2018.04.029

Rebs, T., Thiel, D., Brandenburg, M., & Seuring, S. (2019). Impacts of stakeholder influences and dynamic capabilities on the sustainability performance of supply chains: A system dynamics model. *Journal of Business Economics*, *89*(7), 893–926. https://doi.org/10.1007/s11573-019-00940-7

Reinhardt, F. L. (2001). *Global climate change and BP Amoco. (Harvard Business School case study no. 9–700-106)*. Cambridge: Harvard Business School.

Roy, V., Schoenherr, T., & Charan, P. (2018). The thematic landscape of literature in sustainable supply chain management (SSCM). *International Journal of Operations & Production Management*, *38*(4), 1091–1124. https://doi.org/10.1108/IJOPM-05-2017-0260

Roy, V., Schoenherr, T., & Charan, P. (2020). Toward an organizational understanding of the transformation needed for sustainable supply chain management: The concepts of force-field and differential efforts. *Journal of Purchasing and Supply Management*, 100612. https://doi.org/10.1016/j.pursup.2020.100612

Roy, V., Silvestre, B. S., & Singh, S. (2020). Reactive and proactive pathways to sustainable apparel supply chains: Manufacturer's perspective on stakeholder salience and organizational learning toward responsible management. *International Journal of Production Economics*, *227*, 107672. https://doi.org/10.1016/j.ijpe.2020.107672

Ruan, Y., Hang, C. C., & Wang, Y. M. (2014). Government's role in disruptive innovation and industry emergence: The case of the electric bike in China. *Technovation*, *34*(12), 785–796. https://doi.org/10.1016/j.technovation.2014.09.003

Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, *40*(3), 534–559. https://doi.org/10.5465/257052

Sarkis, J., Gonzalez-Torre, P., & Adenso-Diaz, B. (2010). Stakeholder pressure and the adoption of environmental practices: The mediating effect of training. *Journal of Operations Management*, *28*(2), 163–176. https://doi.org/10.1016/j.jom.2009.10.001

Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: categories and interactions. *Business Strategy and the Environment*, *20*(4), 222–237. https://doi.org/10.1002/bse.682

Sharma, S., & Henriques, I. (2005). Stakeholder influences on sustainability practices in the Canadian forest products industry. *Strategic Management Journal*, *26*(2), 159–180. https://doi.org/10.1002/smj.439

Shevchenko, A., Lévesque, M., & Pagell, M. (2016). Why firms delay reaching true sustainability. *Journal of Management Studies*, *53*(5), 911–935. https://doi.org/10.1111/joms.12199

Shubham, C. P., & Murty, L. S. (2018). Secondary stakeholder pressures and organizational adoption of sustainable operations practices: The mediating role of primary stakeholders. *Business Strategy and the Environment*, *27*(7), 910–923. https://doi.org/10.1002/bse.2041

Stefan, A., & Paul, L. (2008). Does it pay to be green? A systematic overview. *The Academy of Management Perspectives*, *22*(4), 45–62. https://doi.org/10.5465/amp.2008.35590353

Tang, Z., & Tang, J. (2018). Stakeholder corporate social responsibility orientation congruence, entrepreneurial orientation and environmental performance of Chinese small and medium-sized enterprises. *British Journal of Management*, *29*(4), 634–651. https://doi.org/10.1111/1467-8551.12255

Toyota. Powering the future (2015). http://www.toyota-global.com/innovation/environmental_technology/fuelcell_vehicle. Accessed 5 March 2019.

Wartick, S. L., & Cochran, P. L. (1985). The evolution of the corporate social performance model. *Academy of Management Review*, *10*(4), 758–769. https://doi.org/10.5465/AMR.1985.4279099

Wijethilake, C., & Upadhaya, B. (2020). Market drivers of sustainability and sustainability learning capabilities: The moderating role of sustainability control systems. *Business Strategy and the Environment*. https://doi.org/10.1002/bse.2503

Yi, J., Hong, J., Hsu, W.-C., & Wang, C. (2017). The role of state ownership and institutions in the innovation performance of emerging market enterprises: Evidence from China. *Technovation*, *62–63*, 4–13. https://doi.org/10.1016/j.technovation.2017.04.002

Yu, J., Lo, C. W.-H., & Li, P. H. Y. (2017). Organizational visibility, stakeholder environmental pressure and corporate environmental responsiveness in China. *Business Strategy and the Environment*, *26*(3), 371–384. https://doi.org/10.1002/bse.1923

Zhang, F., & Zhu, L. (2019). Enhancing corporate sustainable development: Stakeholder pressures, organizational learning, and green innovation. *Business Strategy and the Environment*, *28*(6), 1012–1026. https://doi.org/10.1002/bse.2298

Zhu, Y., Sun, L.-Y., & Leung, A. S. M. (2014). Corporate social responsibility, firm reputation, and firm performance: The role of ethical leadership. *Asia Pacific Journal of Management*, *31*(4), 925–947. https://doi.org/10.1007/s10490-013-9369-1

How to cite this article: Jakhar SK, Bhattacharya A, Rathore H, Mangla SK. Stakeholder pressure for sustainability: Can 'innovative capabilities' explain the idiosyncratic response in the manufacturing firms? *Bus Strat Env*. 2020;1–19. https://doi.org/10.1002/bse.2526

APPENDIX A

TABLE A1 Survey sample details

Four-digit SIC code	Description	Number of responses in stage 1[a] (%)	Number of responses in stage 2[b] (%)
2221	Broadwoven fabric mills, manmade fibre and silk	25 (5.98)	23 (5.87)
2300	Apparel	21 (5.02)	21 (5.36)
2510	Household furniture	23 (5.5)	22 (5.61)
2522	Office furniture (no wood)	33 (7.89)	29 (7.40)
2540	Partitions, shelving, lockers, office and store fixtures	13 (3.11)	12 (3.06)
2621	Paper mills	27 (6.46)	25 (6.38)
2673	Plastics, foil and coated paper bags	31 (7.42)	28 (7.14)
2821	Plastic materials, synth resins and nonvulcan elastomers	15 (3.59)	15 (3.83)
2833	Medicinal chemicals and botanical products	24 (5.74)	22 (5.61)
2851	Paints, varnishes, lacquers, enamels and allied prods	12 (2.87)	12 (3.06)
2911	Petroleum refining	15 (3.59)	15 (3.83)
3011	Tires and inner tubes	21 (5.02)	18 (4.59)
3310	Steel works, blast furnaces, and rolling and finishing mills	31 (7.42)	30 (7.65)
3334	Primary production of aluminium	18 (4.31)	16 (4.08)
3420	Cutlery, hand tools and general hardware	16 (3.83)	16 (4.08)
3444	Sheet metal work	22 (5.26)	22 (5.61)
3510	Engines and turbines	12 (2.87)	12 (3.06)
3540	Metalworking machinery and equipment	17 (4.07)	17 (4.34)
3562	Ball and roller bearings	17 (4.07)	17 (4.34)
3590	Misc. industrial and commercial machinery and equipment	25 (5.98)	20 (5.10)
Total responses		418 (100)	392 (100)
Response rate (% of 1,471)		28.4	26.6

- Average operational years = 24.
- Average sales/annum = $1,520 million
- Employees (average number) = 9,000
- Respondents experience (years) min: 10; max: 32
- Managers (36%), Senior Managers (41%), Associate Vice President and above (23%)

[a]Responses on stakeholder pressure and sustainability practices.

[b]Responses on exploratory/exploitative innovation.

TABLE A2 Relationship between sustainability practices, innovative capabilities and ambidexterity

	Exploitative innovative capabilities	Exploratory innovative capabilities	Ambidextrous
Sustainability practices with enduring focus	Mismatch	Match	Match
Sustainability practices with ephemeral focus	Match	Mismatch	Match

TABLE A3 Relationship between sustainability practices and disparate regulatory mechanisms

	Control and command regulatory mechanism	Market-based regulatory mechanism
Sustainability practices with enduring focus	Mismatch	Match
Sustainability practices with ephemeral focus	Match	Mismatch