


Article

# Proactive and Reactive Approaches towards Sustainable Practices in Manufacturing Companies: Emerging Economies Perspective

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**Abstract:** This study aims to analyse the two competing conceptual models driving the relationships of external pressure, sustainable practices, and sustainability performance. The understanding of such relationships is important in enabling manufacturers to strategically manage external pressure and engage in sustainable transition. Using a sample of 202 plants from the Sixth International Manufacturing Strategy Survey (IMSS-VI), this research tests two hypotheses: (1) the role of sustainable practices in mediating the relationship between external pressure and environmental and social performance, and (2) the role of external pressure in moderating the link between sustainable practices and environmental and social performance. These hypotheses are tested through the hierarchical regression analysis and bootstrapping method. The findings show the mediating role of sustainable practices in the relationship between external pressure and environmental performance, suggesting a reactive approach to environmentally oriented sustainable practices adoption. Furthermore, the results show the moderating role of external pressure on the relationship between sustainable practices and social performance, indicating that plants take a proactive approach to the adoption of socially oriented sustainable practices for improving social performance of the buying firms, whereas there is no moderating effect for environmental performance. Studies addressing the relationships between external pressure, sustainable practices, and sustainability performance in the context of emerging economies (China and India) are limited, so there is a need to address these relationships in this context for generalisation. Studies that address the sustainability outcomes consisting of both environmental and social performance of the reactive and proactive approaches to sustainability initiatives in emerging economies are lacking. This research adds to the literature by investigating the sustainability outcomes of reactive and proactive methods in two emerging countries, China and India. The distinction between reactive and proactive approaches has important implications for sustainability performance in the context of emerging economies, as the rapid growth of these economies raises a number of sustainability issues.

**Keywords:** external pressure; sustainable practices; reactive and proactive approaches; performance; China; India



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## 1. Introduction

Sustainability issues have increased dramatically in the previous 20 years as a result of environmental and societal difficulties, such as greenhouse gas emissions, ecological depletion, and social inequity, caused by unsustainable organisational expansion [1]. Stakeholders are increasingly pressing businesses to include environmental and social

issues in their activities (e.g., [2–5]). As a result, firms from all over the world are increasingly emphasising the importance of adopting sustainable management practices (e.g., [6,7]). Therefore, companies must reassess their sustainability strategies/responses in order to respond to external pressures, which has an impact on their environmental and social performance.

Firms' responses to external pressures may be split into two types: (1) reactive strategic responses and (2) proactive strategic responses [1]. Firms that take a reactive approach to sustainable practices are only able to meet the bare minimum of stakeholder demands by acting when pressures arise (e.g., [1,8]). Sustainable practices are still not specifically developed, and they are not part of the entire business plan [9]. Firms that take a reactive approach anticipate meeting the bare minimum of sustainability prerequisites in order to function, but they are unlikely to benefit from better sustainability performance [8]. Firms that take a proactive approach, on the other hand, participate in voluntary activities that go beyond the legal minimum to support social and environmental development as well as economic growth [10]. The existing literature therefore suggests that companies with a proactive approach possibly perform better in terms of sustainability outcomes (e.g., [10,11]). In this study, the full mediation effect of sustainable practices between external pressure and sustainability performance reflects the reactive approach, while the moderating effect of external stakeholder pressure on the link between sustainable practices and sustainability performance shows the proactive approach towards the adoption of sustainable practices.

Although the effect of stakeholder demands on sustainable corporate practices have been thoroughly studied, few researchers have examined this connection in emerging and developing countries [12]. The continuous rise in industrial output in the emerging economies raised worries concerning the environmental effects of industrial production in those countries [13]. For example, in the four rapidly developing countries, Brazil, Russia, India, and China, the increase in emissions of greenhouse gases is projected to double that of developing countries [13]. By 2030, emissions from these four countries will roughly equal the combined emissions of the 30 developed countries (ibid) that are members of the Organisation for Economic Co-operation and Development (OECD). In addition, the environment for emerging countries to explore organisational response to sustainability problems because of poor institutions and immature regulatory structures is substantially different (e.g., [3,12]). Understanding the influence of stakeholder pressure can improve managers' abilities to manage sustainability in developing economies more strategically [14]. To generalise the findings of theory and practice, scholars recognise the need for studies to address sustainability drivers in emerging economies [3].

Considering the context mentioned above, this study is based on manufacturers in two emerging economies, i.e., China and India. The growing industrial growth and consequent sustainability effects in China and India are well documented [13]. Thus, the pressure on manufacturers in those countries to adopt sustainable practices is increasing. This study investigates the mediating role of sustainable practices in linking external pressures and sustainability performance. The full mediation effect of sustainable practices in this study reflects the reactive approach to the adoption of sustainable practices. Reactive strategies refer to cases where organisations engage in sustainability only for responding to stakeholder pressure. Under the reactive approach, a firm only engages in sustainability when there is pressure from stakeholders to do so. Also, organisations do not recognise that sustainability practices per se may be beneficial to strategic objectives. Further, this study examines the moderating effect of external pressure on the relationship between sustainable practices and sustainability performance, which shows the proactive approach towards the adoption of sustainable practices. In this approach, sustainability practices are supposed to contribute to an organisation's sustainability performance, but stakeholder pressure is perceived as playing a moderating role on the sustainability practices and sustainability performance relationship. In this perspective, a greater degree of sustainability practices is necessary if stakeholder pressure is high. Thus, an organisation may

still have motivation for sustainability practices other than mere stakeholder pressure, but it may foresee that stakeholder expectations will need to be integrated into the sustainability practices once pressure is exerted. The distinction between reactive and proactive approaches towards the adoption of sustainable practices has implications for sustainability performance. In the context of emerging economies (China and India), this differentiation is more important, as the rapid growth of these economies raises a number of sustainability issues (i.e., environmental and social), which demands an active stance and systematic efforts. Therefore, both practitioners and academia are interested in the sustainability performance of sustainable practice adoption by firms through either the proactive or the reactive approach, which could lead to different sustainability outcomes. We investigate these approaches using two theories, including institutional theory and the resource-based view (RBV). Sarkis [15] suggested institutional theory to be relevant to the understanding of environmental practices through external pressure, while the RBV is important to understand the influence of the capabilities and resources related to internal sustainability development on corporate performance. According to Zhu et al. [16], organisations need to understand the significance of achieving competitive advantage by changing in accordance with external pressure for sustainable practices. Given the different institutional environments of the emerging economies mentioned earlier, it is important to know whether firms from the two emerging economies reactively or proactively respond to the stakeholder pressures by adopting sustainability initiatives and whether these approaches lead to different sustainability outcomes. Previous research mainly shows either the effect of stakeholder pressure on sustainability practices adoption or the effect of sustainability practices on performance. However, prior research rarely reflects the mediation effect (full) of sustainability practices between external pressure and sustainability performance, which shows the reactive approach towards the adoption of sustainability practices. Further, scant studies address the moderating effect of external pressure on the link between sustainability practices and sustainability performance showing the proactive approach towards sustainability practices adoption. To our knowledge, there is no study, which addresses the sustainability outcomes consisting of both environmental and social performance of the reactive and proactive approaches to sustainability initiatives in emerging economies. Given the different institutional environments in developing countries and the nature of environmental and social practices, it is crucial to know whether the reactive and proactive approaches to sustainability practices adoption lead to different sustainability outcomes. Thus, this study formulates the following questions: (1) Does external pressure solely lead to the adoption of sustainable practices and, in turn, affect sustainability performance? (2) Do sustainability practices affect sustainability performance, and does external pressure strengthen this relationship?

This study contributes to the literature on sustainability practices and the environmental and social outcomes by investigating the sustainability outcomes of reactive and proactive approaches to the adoption of sustainability practices, as studies that address the sustainability outcomes of reactive and proactive approaches to sustainability have received little attention in the emerging economies perspective. The existing literature suggests that companies with a proactive approach possibly perform better in terms of sustainability outcomes (e.g., [10,11]). However, it is not clear whether a proactive approach to sustainability initiatives enhances both environmental and social performances or only one of these performances. The study results show the different environmental and social performances resulting from the adoption of sustainability practices via reactive and proactive approaches.

The paper has the following organisation. Section 2 discusses the theory and hypotheses. Section 3 describes the methodology. Section 4 shows the analysis results. Section 5 discusses the results, and Section 6 concludes the paper.

## 2. Theory and Hypotheses

“Sustainable development is meeting current generations’ needs while not jeopardising future generations’ ability to meet their own needs” [17]. Sustainable development consists of environmental, social, and economic dimensions. Due to extensive research on the economic aspect [18] and data availability from the IMSS survey, this study solely looks at the environmental and social aspects. The strong form of sustainability consists of environmental, social, and economic dimensions. However, many studies that address the two elements (environmental and social) or only one element (environmental or social) besides the economic dimensions also call this sustainability. Given this logic, we call the two elements, including environmental and social dimensions, indicators of sustainability in our study. Environmental and social concerns must be taken into account by organisations that are vulnerable to institutional pressures. Organisations can reduce pressures by implementing sustainable practices that improve environmental and social performance [18].

### 2.1. Theoretical Perspectives

To examine the link between external pressure, sustainable practices, and sustainability performance (environmental and social), we use institutional theory and the resource-based view (RBV).

#### 2.1.1. Institutional Theory

According to this theory, organisational success is determined by conforming to the institutional environment, which results in more homogeneous organisations. “A firm’s institutional environment context includes its internal culture as well as broader influences from society and inter-firm relationships that define socially acceptable behaviour ([19], p. 697)”. Organisations that fail to conform to the established institutionalised standards negatively affect organisational legitimacy and survival for the long-term (e.g., [20,21]). According to DiMaggio and Powell [20], there are three kinds of institutional pressure: normative, mimetic, and coercive. Government and regulatory authorities, as well as other pressure groups, are the main sources of coercive pressure. Mimetic pressure refers to competitors’ replication of their most successful competitors’ behaviours. Finally, normative pressures come from the business world and professional organisations. Organisations are subject to all three forces when it comes to sustainability [22]. Given the external pressures, institutional theory explains why manufacturing firms adopt sustainable practices (e.g., [23,24]). According to Haleem et al. [25], studies that investigate the influence of stakeholder pressure on sustainability practices should use the institutional theory to frame their research.

#### 2.1.2. The Resource-Based View (RBV)

The RBV posits that organisations can develop specific resources and competencies that can be used to improve their level of performance and competitiveness [26]. According to the RBV, the resources and competencies to be leveraged are valuable, rare, inimitable, and non-substitutable, and the ability to effectively leverage these resources is what leads to competitive advantage [27].

Shang et al. [28] proposed that RBV theory is a relevant theory for gaining a competitive advantage in the context of sustainability. Shang et al. [28] highlighted the applicability of the RBV in understanding the relationship between green supply chain management (GSCM) capability and organisational performance in the context of green practice implementation. Furthermore, Shi et al. [29] stated that RBV theory is used in several studies to better understand the relationship between GSCM practices and organisational performance improvement. In a study of GSCM boundaries and flow, Sarkis [15] suggested that both institutional theory and the RBV are applicable in understanding relationships and performance. It was further suggested that institutional theory is relevant in understanding

the adoption of green practices due to external pressure, whereas the RBV is relevant to understanding the impact of internal capability and resource development.

As this paper aims to examine the relationships between stakeholder pressure, sustainable practices adoption, and sustainability performance, this study uses the above-mentioned theories to frame this research.

## 2.2. External Pressure, Sustainable Practices, and Sustainability Performance

The importance of external pressure on firms to implement sustainable practices is growing (e.g., [30,31]). Organisations are subject to legislation (coercive pressure) that helps to reduce the pollution impact of their products and processes [32]. Non-governmental organisations (NGOs), customers, and investors are identified as sustainability drivers [20]. Lee [31] reported the influence of suppliers in driving sustainability. External pressure is proposed to incorporate social pressure and responsible behaviour in firms, which are both key components of sustainability (e.g., [33,34]). Given the institutional pressures, the institutional theory argues that organisations should adopt sustainable practices. Organisations face considerable external pressures for their operations to be sustainable. Regulatory agencies and customers, for example, could encourage sustainable practices in firms by reducing pollution emissions and promoting recycling [35]. Social pressures could likewise promote corporate responsibility (e.g., [33,36]). Thus, external pressure can encourage firms to adopt sustainable practices. External pressure and the adoption of sustainability practices, including internal and supplier-related practices, have been extensively researched. The majority of research shows positive relationships (e.g., (e.g., [37–40])), whereas a few studies show no relationship (e.g., [18]).

Several studies have also looked into whether sustainable practices improve the environmental and social performance of a company or not. Previous research (e.g., [16,40–45]) has established a link between firms' internal and supplier-related sustainable practices and environmental performance. Assessing and collaborating with suppliers in sustainable practices have a positive effect on environmental performance [42]. The effect of collaboration on environmental performance is positive and significant, whereas assessment has an indirect impact through collaboration [45]. The impact of internal environmental practices on environmental performance is inconclusive [37]. The majority of researchers (e.g., [16,41,44]) demonstrate positive findings, whereas others report no effect (e.g., [46,47]). Social practices are an important component of sustainability, but they have not yet received the same level of attention as the environmental aspect. Carter and Rogers [48], who associated social practices with social performance, claimed that better working environments boost motivation. The practice of occupational safety and health leads to improved employee safety, higher sales, and productivity of employees [49]. Organisations' fair acts toward stakeholders have a favourable impact on their employees' attitudes [50]. These favourable attitudes encourage employees to be more satisfied at work and to stay with the company. In this regard, Gualandris et al. [51] reported on the positive impact of sustainable supply chain practices on buying firms' social performance. Li et al. [52] showed the positive and significant effect of sustainable practices on both environmental and social performance.

Some research (e.g., [16,18,40,53]) has examined the influence of stakeholder pressure on the adoption of sustainable practices as well as the performance outcomes of these activities. Wolf [18], for example, did not identify the mediation effect for external sustainability practices in the relationship between external stakeholder pressure and sustainability performance (environmental and social). Internal sustainable practices include human capital management, the working environment and health and safety, and the management of environmental impact and natural resources inside the firm, while external sustainable practices include relationships with external stakeholders (suppliers, consumers, and communities), among others [37]. In this study, external sustainable practices relate only to suppliers and include monitoring, training, and collaboration with suppliers to disseminate the concept of sustainability in the upstream supply chain. That is why we cover only suppliers' sustainability practices as external sustainable practices



in our study. External pressures, according to Zhu [40], firstly influence firms' internal sustainable practices, which then affect firms' external sustainable practices, improving economic and environmental performance. Additionally, Zhu et al. [16] demonstrated that competitive and regulatory pressures boosted awareness about the environment in Chinese firms but did not provide results in the adoption of sustainable supply chain practices. Adebajo et al. [11] demonstrated the mediation effect of sustainable practices in the relationship between external pressure and environmental performance. Similarly, Yang et al. [53] found that external pressure leads a firm to more successful implementations of green purchasing, which, in turn, results in improved operational and environmental performances. The full mediation effect of sustainable practices between the link of external pressure and sustainability performance shows a reactive approach (model) towards the adoption of these practices, whereas firms adopt these practices only when responding to external pressures. According to the reactive approach, firms only engage in sustainable practices if there is a demand from stakeholders to do so [18]. As a result, businesses fail to see how sustainable practices could help them achieve their strategic goals. Firms will invest in sustainable practices when stakeholders greatly hold companies responsible for their actions (e.g., [54,55]). Firms that take a reactive approach to sustainable practices are only able to meet the bare minimum of stakeholder demands by acting when pressures arise [1,8]. Sustainable practices are still not specifically developed, and they are not part of the entire business plan [9]. Firms that take a reactive approach anticipate meeting the bare minimum of sustainability prerequisites in order to function, but they are less likely to benefit from better sustainability performance compared to the proactive approach [8]. Both institutional theory and the RBV argue for the reactive approach towards the adoption of sustainable practices, which, in turn, improve environmental and social performance. Under this approach, firms adopt sustainable practices as resources only in response to stakeholder pressure and these practices improve the environmental and social performance. We posit that external pressure on businesses to address sustainability concerns may lead to the adoption of sustainable management activities, allowing for environmental and social outcomes. Therefore, we hypothesise:

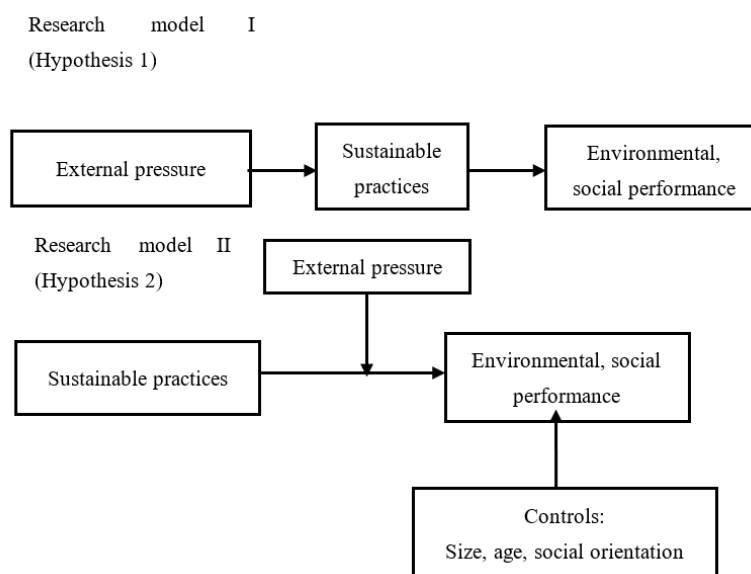
**H1.** *Sustainable practices mediate the relationship between external pressure and environmental and social performance.*

On the other hand, the RBV and institutional theory both also argue for a proactive strategy for the adoption of sustainable practices. In this paradigm, sustainable practices contribute to environmental and social performance, while external pressure plays a moderating role in the link between sustainable practices and environmental and social performance. According to this logic, firms need a greater level of sustainable practices given the high external pressure. Organisations in this case have higher motivation besides only the external pressure, and they integrate the external pressure into sustainable practices as they face the external pressure from stakeholders. Firms that take a proactive approach participate in voluntary activities that go beyond the legal minimum to support social and environmental development as well as economic growth [10]. The existing literature therefore suggests that companies with a proactive approach possibly perform better in terms of sustainability outcomes (e.g., [10,11]). However, it is not clear whether a proactive approach to sustainability initiatives enhances both environmental and social performance or only one of these performances. Few studies have investigated the moderating effect of pressure on the link between sustainable practices and performance. For example, both market and non-market forces moderate the link between environmental practices and performance (e.g., [56,57]). According to these authors, coercive pressures increase environmental practices, whereas mimetic forces boost economic performance. However, Ketikidis et al. [58] showed no influence of external pressures. Similarly, Wolf et al. [18] found no effect of stakeholder pressure on the relationship between sustainable management practices and corporate sustainability performance. Therefore, in the presence of scarce and conflicting studies in the literature, we posit the following hypothesis:

**H2.** *External pressure moderates the relationship between sustainable practices and environmental and social performance.*

These hypotheses are depicted in the following diagram.

Figure 1 shows the research models embedded with the above-formulated hypotheses.



**Figure 1.** The relationship between external pressure, sustainable practices, and sustainability performance.

### 3. Research Methods

#### 3.1. Data and Sampling

This study used data from the sixth iteration of the International Manufacturing Strategy Survey (IMSS-VI). The IMSS is a group of 20 business schools, which was founded in 1992 and steered by the London Business School and Chalmers University of Technology. This research network is now managed by Politecnico di Milano (Italy), with the goal of developing a standard survey approach for data gathering in the global study of manufacturing management. The data was collected between June 2013 and June 2014, with the entire dataset being reported in September 2014. Certainly, the data was collected some time ago, and this counts as one of the limitations of this study. COVID-19 was a special event and has had an unexpected influence on company behaviours. Klymenko and Lillebrygfjeld Halse [59] claim that the epidemic has prompted the creation of brand-new business practices that have the potential to alter institutional norms. Through challenges and supportive programs, the variety of institutional contexts can, on the one hand, drive sustainability transitions, but, on the other hand, also impede the advancement of sustainability thinking. The COVID-19 pandemic has had a tremendous impact on contemporary operations and supply chains, which has led to a re-evaluation of academic theories and ontology. The paper contends that businesses prioritised immediate choices and financial concerns during the COVID-19 pandemic. On the other hand, at the cluster level, there is now more of a long-term focus on sustainability. Sarkis [60] shows that while long-term consequences are still unknown, sustainability implications include short-term environmental improvements. It is unclear whether immediate adjustments and responses will lead to a new “normal” adjustment to the theories in use today or whether fresh theoretical advancements may be required [60].

We obtain environmental performance from external pressures if we adopt sustainability practices by only responding to the external pressures (reactive approach). We proved this theory, as we obtain environmental performance by adopting sustainability practices in response to only these pressures. Further, we prove our theory as we obtain social performance by adopting sustainability practices not only by responding to stakeholder

pressure but also due to the strategic importance of the sustainability (proactive approach). If firms have external pressures and if they do not implement sustainability practices, we do not think that these companies will likely achieve environmental performance or social performance. We have shown this to be theoretically likely. Therefore, we think our results are just as valuable today. Studies such as [61] and Haleem et al. [62] use data from the same survey (IMSS-VI). These articles address the stakeholder pressure and the adoption of sustainability practices and sustainability outcomes, which proves that these data are still relevant in the post-COVID era. A single questionnaire was prepared in English and then translated into multiple languages by researchers in various countries in order to ensure consistent sampling in different nations. Managers of industrial plants with over 50 people and ISIC codes (25–30) were the focus of the study.

In total, 7167 firms were chosen from 22 countries in Europe, North America, and Asia. A total of 2586 questionnaires were sent out to people in various nations given their ease of selection. With a 36 percent response rate (931/2586), the IMSS–VI final dataset included 931 observations. The IMSS survey’s depth and breadth reduced power difficulties in detecting effect sizes. The content validity of the IMSS survey was ensured through several cycles of testing and verification by many researchers (e.g., [20,63]). A number of researchers have successfully used IMSS–VI data in their research studies (e.g., [64–66]). The total number of firms in the IMSS–VI sample was 931. As this study focuses on sustainable practices in emerging economies (China and India), only Chinese and Indian data was considered for the analysis. We considered only those plants wherein required information was available for our analysis. Thus, out of 931, only 202 plants were used in this study. The useable response rate for this study was 22% (202/931). The unit of analysis in this study was the manufacturing plant level. To prevent bias, we used a chi-square test to compare the independent and dependent variables of the two groups of respondent manufacturers (China and India). The test results indicated that there was no difference between the two groups with respect to both independent and dependent variables at a 5% level of significance. Therefore, integrating data from both countries was appropriate for this study. Table 1 shows the characteristics of these plants, including industry, country, and sample size.

**Table 1.** Descriptive statistics (country, size, and industry) for the selected sample.

Countries	N	Percent
India	89	44.1
China	103	55.9
<b>Total</b>	<b>202</b>	<b>100</b>
<b>Size (employees)</b>		
Small companies (<250)	72	35.6
Medium companies (251–500)	42	20.8
Large companies (>500)	88	43.6
<b>Total</b>	<b>202</b>	<b>100</b>
<b>Industry</b>		
Fabricated metal products, except machinery and equipment	34	16.8
Computer, electronic, and optical products	51	25.2
Electrical equipment	30	14.9
Machinery and equipment not elsewhere classified	44	21.8
Motor vehicles, trailers, and semi-trailers	31	15.3
Other transport equipment	12	5.9
<b>Total</b>	<b>202</b>	<b>100</b>



### 3.2. Measures

Table 2 shows four constructs related to external pressure (EPr), sustainable practices (SPR), environmental performance (EP), and social performance (SP). Two items, including environmental and social pressure, measure EPr. Environmental pressure is operationalised as “stakeholders call[ing] for environmentally friendly products and processes” [67]. Social pressure is operationalised as “stakeholder pay[ing] attention to companies’ commitment to ethical issues, human rights respect, and labour conditions” [68]. SPR is operationalised as a firm’s efforts to implement (1) “environmental certification”, (2) “social certification”, (3) “formal sustainability-oriented communication, training programs and involvement”, (4) “energy and water consumption reduction programs”, (5) “pollution emission reduction and wastes recycling programs”, (6) “life-work balance policies”, (7) “occupational health and safety management systems” (e.g., [69–71]), (8) “suppliers’ sustainability performance assessments through formal evaluation, monitoring and auditing using established guidelines and procedures”, (9) “training/education in sustainability issues for suppliers’ personnel”, and (10) “joint efforts with suppliers to improve their sustainability performance” [72]. EP is operationalised as a firm’s performance over the last three years, taking into account (1) “materials, water, and energy consumption” and (2) “pollution emission and waste production levels”. These items are based on Rao [73] and Zhu and Sarkis [74]. SP is operationalised as a firm’s performance over the previous three years by including (1) “workers’ motivation and satisfaction” and (2) “health and safety conditions” (e.g., [41,75]).

**Table 2.** Evaluation of validity and reliability.

Factors	Loadings	CR	AVE	MSV	Cronbach Alpha
<b>External pressure (EPr)</b>		0.727	0.572	0.104	0.727
EPr1. Social pressure	0.745				
EPr2. Environmental pressure	0.767				
<b>Sustainable practices (SPR)</b>		0.928	0.565	0.173	0.934
SPR1. Environmental certification	0.663				
SPR2. Social certification	0.728				
SPR3. Sustainability-focused formal communication, training, and participation	0.790				
SPR4. Water and energy usage reduction programs	0.806				
SPR5. Programs to reduce pollution emissions and waste recycling	0.750				
SPR6. Occupational health and safety system	0.758				
SPR7. Policies that promote a work–life balance	0.714				
SPR8. Evaluating suppliers’ sustainability via monitoring and auditing	0.773				
SPR9. Training and education in sustainability issues for suppliers	0.760				
SPR10. Collaboration with suppliers to enhance their sustainability performance	0.764				
<b>Environmental performance (EP)</b>		0.830	0.717	0.179	0.821
EP1. Consumption of materials, water, and energy	0.756				
EP2. Levels of pollution and waste production	0.922				
<b>Social performance (SP)</b>		0.825	0.704	0.179	0.813
SP1. Workers’ motivation and satisfaction	0.741				
SP2. Health and safety	0.927				

We controlled some variables, including size [76], social orientation [77], and plant age [78]. The natural logarithm of the number of employees was used to compute the size. Social orientation was measured as “the percentage of the revenue invested in sustainability initiatives (e.g., sustainability, servitisation, and globalisation)”.

### 3.3. Reliability and Validity

We used exploratory factor analysis and obtained the factors stated above using varimax rotation. We performed confirmatory factor analysis to validate these factors (see Table 2). The loadings of all the individual elements of the constructs is greater than 0.70, showing high loadings. The Cronbach alpha of all the constructs is greater than the minimum level of 0.50, which ensured the reliability of these constructs. The average variance explained (AVE) is above 0.50, indicating convergent validity. Composite reliability (CR) is greater than 0.70, showing composite reliability. Maximum shared variance (MSV) is smaller than the AVE, and the square root of the AVE is greater than the correlation between the constructs, ensuring discriminant validity [79]. Thus, the constructs’ reliability and validity are guaranteed. The measuring model’s indices ( $C_{min}/df = 1.7553$ ;  $p$ -value of the model  $> 0.05$ ; CFI = 0.964  $> 0.90$ ; GFI = 0.914  $> 0.90$ ; RMSEA = 0.0431  $< 0.05$ ; PCLOSE = 0.535  $> 0.05$ ) indicated that the model was well fitted [80].

Self-reported data in survey research may artificially inflate observed connections, affecting their validity [37]. The principles from Malhotra et al. [81] were used to create the IMSS questionnaire to minimise common method variance (CMV). We also used Harman’s one common factor to check for the existence of CMV statistically [82]. All dependent and independent variables were forced to make a single factor, which explains 43.13 percent of the total variance. This shows that CMV was confirmed to be absent from our data. CMV was also assessed using the common latent factor technique. The difference in standardised regression weights with and without the common latent factor is less than 0.20 [37], indicating that CMV was not a factor. In addition, before compiling the IMSS-VI dataset, non-response bias and late-respondent bias tests were run and verified. Each country coordinator was obliged to conduct a non-response bias test using the sales, employee count, and SIC code data for responders and non-respondents. Each coordinator was obliged to conduct  $t$ -tests and chi-square tests for late-response bias using data on sales, employee counts, and SIC codes for early and late respondents. As a result, before being included in the IMSS dataset, all two country samples utilized in this study were examined and validated for non-response bias and late-response bias.

### 3.4. Endogeneity

The absence of endogeneity of stakeholder pressure—both an independent and moderating variable in this study—was ensured using the approach of [83], which assessed the endogeneity of the stakeholder pressure given the same dataset. Furthermore, many studies utilizing the same concept and dataset have investigated and validated the reliability of the stakeholder pressure (e.g., [11,83]). Overall, it seems that endogeneity and reliability should not be issues with the construct of stakeholder pressure in our study.

## 4. Data Analysis and Results

Table 3 shows the summary statistics and correlation analysis. The individual items of each of the four constructs, SPR, EPr, SP, and EP, were averaged to obtain scores for these constructs.

We further tested Hypothesis 1, i.e., the mediating effect of sustainable practices (SPR) in the relationship between external pressure and social and environmental performance, via the bootstrapping method (Table 4), which is a more rigorous and powerful test for detecting mediation [84]. The analyses were carried out using AMOS version 23. This approach is appropriate when data is large and normal and the aim is to test theory [85]. The data in this study is normal, contained a large number of firms, and is used to test theory. Therefore, we used the AMOS software. According to this method, the presence

of an indirect effect shows the existence of a mediation effect. Table 4 demonstrates that the direct effect of external pressure on social performance is significant ( $\beta = 0.336$ ,  $p < 0.001$ ), that the effect of including sustainable practices as mediator is insignificant ( $\beta = 0.187$ ,  $p < 0.01$ ), and that the indirect effect is significant ( $\beta = 0.150$ ,  $p < 0.01$ ). This implies the partial mediating role of sustainable practices in the link between external pressure and social performance [84]. Concerning the environmental performance, the direct effect of external pressure is significant ( $\beta = 0.161$ ,  $p < 0.05$ ), the effect after including the mediating variable (sustainable practices) is insignificant ( $\beta = 0.138$ ,  $p > 0.05$ ), and the indirect effect ( $\beta = 0.092$ ,  $p < 0.01$ ) is significant, showing the full mediation [84]. This reflects a reactive approach towards the adoption of sustainable practices and, in turn, the positive effect on environmental performance. Hence, Hypothesis 1 presented in this research is supported.

**Table 3.** Descriptive statistics and correlations.

Factors	Mean	Standard Deviation	Correlation			
			SPR	EPr	SP	EP
Sustainable practices (SPR)	3.1391	0.7891	1			
External pressure (EPr)	2.6977	0.6997	0.387 **	1		
Social performance (SP)	3.3668	0.5800	0.264 **	0.336 **	1	
Environmental performance (EP)	2.8375	0.7495	0.459 **	0.154 **	0.472 **	1

\*\*  $p$ -value, 0.01.

**Table 4.** Mediation results obtained through the bootstrapping method.

Relationships (Paths for Detecting Mediation via Bootstrapping Method)	Direct Beta without Mediation	Direct Beta with Mediation	Indirect Beta	Type of Mediation
External pressure → Sustainable practices → Social performance	0.336 (0.000)	0.187 (0.005)	0.150 (0.001)	Partial mediation
External pressure → Sustainable practices → Environmental performance	0.161 (0.020)	0.138 (0.063)	0.092 (0.005)	Full mediation
Other Direct Paths				
External pressure → Sustainable practices	0.243 (0.000)			
Sustainable practices → Environmental performance	0.208 (0.005)			
Sustainable practices → Social performance	0.340 (0.000)			

Hypothesis 2 in this research was tested using hierarchical regression. Hierarchical regression is a popular method used to analyse the effect of a predictor variable after controlling for other variables [86]. This “control” is achieved by calculating the change in the adjusted  $R^2$  at each step of the analysis; thus, accounting for the increment in variance after each variable (or group of variables) is entered into the regression model (ibid). Specifically, we used hierarchical multiple regression to firstly check the effect of the control variables, then the independent (main) variables, and finally the interaction of the main variables on the dependent variables. First, in the regression model, the control variables, including plant size, age, and social orientation, were added (Model 0 in Tables 5 and 6). Second, the primary independent variables were incorporated into the regression equation, namely, sustainable practices (SPR) and external pressure (EPr) (Model 1 in Tables 5 and 6). We introduced the interaction term (SPR  $\times$  EPr) in Model 2 (Tables 5 and 6). An increase in  $R^2$  with the significant interaction term demonstrates the presence of a moderation effect. To resolve the issue of multicollinearity, we also mean-centred the independent

variables [87]. Among the control variables, size and social orientation has positive and significant effects on environmental performance (Model 0, Table 5). In Model 1 (Table 5), after including the independent variables, SPR and EPr have positive and significant effects ( $\beta = 0.205, p < 0.01$ ;  $\beta = 0.017, p < 0.05$ ) on environmental performance. The non-significant coefficient of the interaction term  $\text{SPR} \times \text{EPr}$  ( $\beta = 0.037, p > 0.05$ ) did not confirm the positive interaction effect between SPR and EPr (Model 2, Table 5). Table 6 (Model 0) shows the positive and significant effect of social orientation on social performance. After including the independent variables, SPR and EPr have significant and positive effects ( $\beta = 0.222, p < 0.001$ ;  $\beta = 0.063, p < 0.05$ ) on social performance (Model 1, Table 6). The significant interaction effect of the interaction term  $\text{SPR} \times \text{EPr}$  ( $\beta = 0.142, p < 0.05$ ) demonstrating a positive interaction effect between SPR and EP is presented in Model 2, Table 6. The  $R^2$  value 0.304 (Model 2, Table 6), which is appropriate, keeping in mind the literature studies in this area (e.g., [25,52]). Thus, Hypothesis 2 is largely supported.

**Table 5.** Hierarchical regression results for environmental performance.

	Model 0	Model 1	Model 2
Constant	1.498 ***	1.966 ***	1.999 ***
Plant age	−0.086	−0.166	−0.166
Size	0.198 *	0.175 *	0.172 *
Social orientation	0.134 *	0.050	0.046
SPR		0.205 **	0.203 *
EPr		0.017 *	0.020
$\text{SPR} \times \text{EPr}$			0.037
$R^2$	0.054	0.093	0.093
$\Delta R^2$	0.054	0.034	0.001
F for $R^2$ change	4.084 ***	3.697 *	0.170
Adjusted $R^2$	0.044	0.069	0.065

\*  $p$ -value, 0.05, \*\*  $p$ -value, 0.01, and \*\*\*  $p$ -value, 0.001.

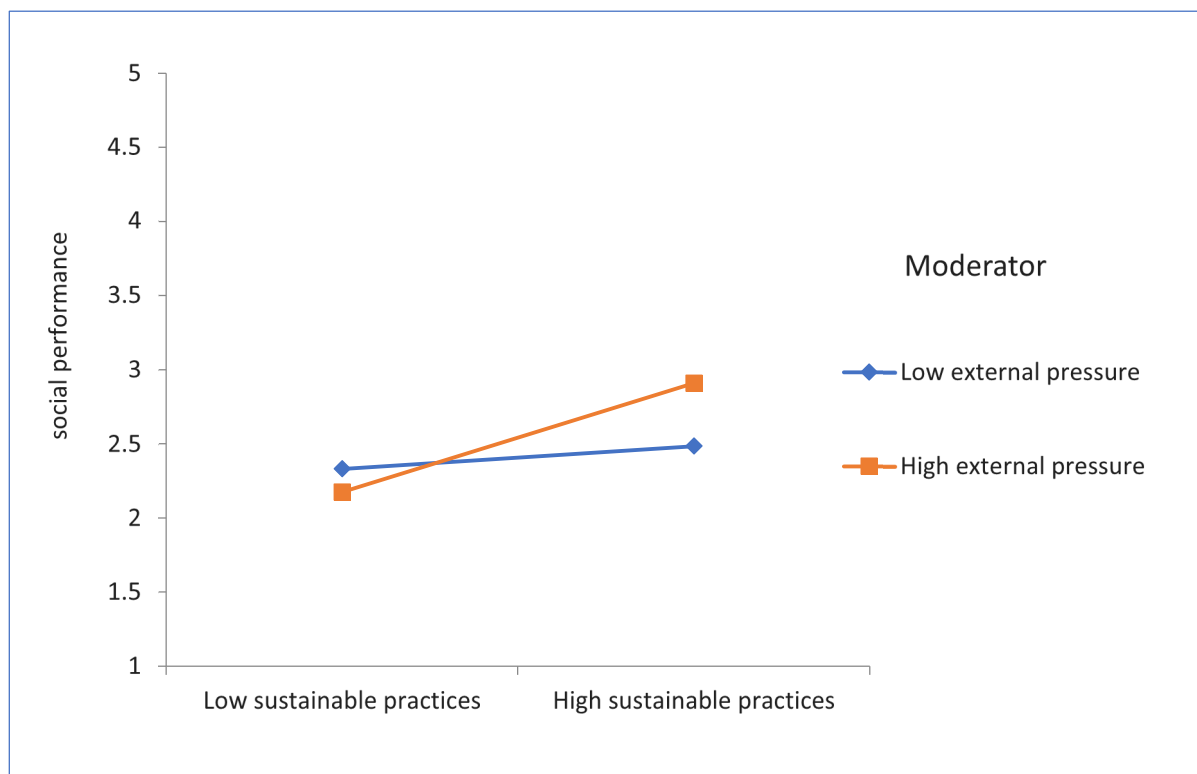
**Table 6.** Hierarchical regression results for social performance.

	Model 0	Model 1	Model 2
Constant	2.475 ***	2.058 ***	1.953 ***
Plant age	−0.033	−0.112	−0.114
Size	0.004	0.055	0.066
Social orientation	0.265 ***	0.158 **	0.172 **
SPR		0.222 ***	0.230 ***
EPr		0.063 *	0.049 *
$\text{SPR} \times \text{EPr}$			0.142 *
$R^2$	0.214	0.289	0.304
$\Delta R^2$	0.214	0.075	0.016
F for $R^2$ change	17.964 ***	10.320 **	4.351 *
Adjusted $R^2$	0.202	0.271	0.283

\*  $p$ -value, 0.05, \*\*  $p$ -value, 0.01, and \*\*\*  $p$ -value, 0.001.

The coefficient of the interaction terms was significant, which demonstrated the presence of an interaction effect. However, it is not certain that the interaction effect is valid for all the values of the moderating variable. This can be ensured by finding the

marginal effect of the independent variable (in this case, SPR) on the dependent variable (in this case, SP) for various values of the moderating variable (external pressure) [87]. Examining the effect of the independent variable (i.e., SPR) on the dependent variable (i.e., SP) for low, medium, and high values of the moderating variable (EPr) is a useful strategy [88]. “Low values are one standard deviation below the mean, medium values as at mean, and high values as one standard deviation above the mean” [52]. Figure 2 shows the effect of sustainable practices (SPR) on social performance (SP) for the low and high values of the moderating variable EPr, hence demonstrating that external pressure enhances the relationship between SPR and SP.



**Figure 2.** Relationship between social performance and sustainable practices in the presence of external pressure.

## 5. Discussion

Despite the fact that many studies focus on sustainability in developed countries, research on sustainability in developing economies is at the early stages [89]. Given the growing sustainability concerns linked with their large-scale production, addressing sustainability in this emerging context is vital. The majority of the existing literature suggests that manufacturing firms adopt sustainable practices only when reacting to external pressure from stakeholders. Another line of research claims that sustainable practices can help a firm in ways other than reducing stakeholder pressure. Sustainable practices, for example, could help to develop capabilities and resources [55] and provide a strong competitive advantage [90]. This approach indicates that firms could benefit from more than just meeting the expectations of external stakeholders. One motivation could be that manufacturing companies want to improve their reputation as a “good citizen” in order to boost their legitimacy. The adoption of sustainability initiatives under the above approaches could lead to different sustainability performances. However, studies addressing the varied sustainability outcomes resulting from the reactive and proactive approaches is lacking in the emerging countries context. The question of firms’ adopting sustainable practices solely as a result of external pressure (reactive approach) or as a result of other motivations and incorporating external pressure as it arises (proactive approach),



leading to different sustainability outcomes (environmental and social), was examined in this study. This study suggested two hypotheses to illustrate the relationship between external pressure, sustainable practices, and environmental and social performance. The proposed hypotheses were tested using data from 202 firms in the assembly industries from China and India, two emerging economies. According to our research, there are two distinct explanations, including reactive and proactive approaches, for the manufacturing firms' varied contributions to sustainability performance (environmental and social) under stakeholder pressures.

#### 5.1. Reactive Approach (Mediation Effects)

From an institutional theory perspective, institutional pressures can lead to the adoption of sustainable practices. From the RBV perspective, sustainable practices as resources can act as mediator to positively influence the improved sustainability outcomes. When it comes to the role of sustainable practices in mediating the link between external pressure and environmental and social performance, our findings demonstrate a partial mediation effect for social performance and a full mediation effect for environmental performance. The partial mediation effect for social performance indicates that the firms in the sample of this study, including firms from China and India, implement social-oriented sustainable practices not only due to external pressures, but also due to internal motivations that contribute to social performance. The results demonstrate the full mediating role of sustainable practices in the link between external pressure and environmental performance. In the sample of this study, firms take a reactive strategy/approach by implementing sustainable environmental practices that lead to environmental performance in terms of enhanced pollution and waste reduction. This could be because the environmental aspect of sustainability is more apparent, easier to quantify with regard to performance, and comparable to environmental regulations in connection with reducing pollution and maximising resource utilisation (e.g., [37,91]). Firms achieve a competitive advantage by implementing environmental practices that reduce costs and enhance efficiency [92] and differentiate via social activities [93]. This result is in agreement with Adebajo et al. [11], who found the mediating effect of sustainable management practices in the link between external pressure and environmental performance based on data from assembly industries from three Asian countries (China, India, and Malaysia). Our findings further support Zhu et al. [40], who found that sustainable management practices mediate the link between external pressure and environmental performance in Chinese manufacturing firms. Our results are also consistent with Yang et al. [53], demonstrating that external pressure leads firms to implement green purchasing practices and, in turn, results in improved environmental and operational performance in Chinese manufacturing firms. Similarly, Roy et al. [94], in the context of Indian apparel manufacturing firms, showed that a reactive approach, which is termed a "firefighting approach", towards the adoption of sustainability practices leads to only fragmented benefits, including improved environmental performance. The findings of Sz'asz et al. [61], who used data from automotive manufacturing firms in 22 countries, including China and India, are consistent with those of our study. They found that external stakeholder pressure has a positive effect on the inclusion of sustainability criteria in strategies, which results in the implementation of sustainability practices and improved environmental performance. Nevertheless, our findings are in contrast to Wolf's [18], who found no mediating role of sustainable practices related to suppliers in the link between external pressure and sustainability performance. One obvious reason for the difference could be the operationalisation and the large sample. For instance, Wolf [18] utilised data of 1621 manufacturing firms from 32 countries (both developed and developing) and operationalised sustainable supply chain management through three items, including social supply chain standards, monitoring systems, and green procurement. Three factors were used to measure stakeholder pressure: (1) events and controversies relating to social supply chains, (2) controversies and events relating to operations and products, and (3) controversies and incidents relating to environmental supply chains.

### 5.2. Proactive Approach (Moderating Effects)

Given the institutional theory and RBV perspective, under the proactive approach, firms firstly adopt sustainable practices as a strategic resource for their benefits and develop sustainability capabilities and later on incorporate the external pressures in the sustainable practices adoption when these pressures arise. In this proactive approach, the effect of sustainable practices on social performance is greater when the external pressure occurs. Our findings reveal that external pressure moderates the relationship between sustainable practices and social performance in a positive way, but it has no influence on the link between sustainable practices and environmental performance. This demonstrates that the organisations regard the adoption of sustainable practices focusing on the social component as strategic rather than merely reacting to external pressure. This can be because the social dimension of sustainability is complex and hard to quantify [95] and because it is challenging to determine a clear measure of evaluation (e.g., [37,91]) as well as to achieve compliance across a whole supply chain. Furthermore, tackling such concerns across different regions is challenging due to differences [96], and strategies aimed at addressing social issues have no direct impact on economic performance. Social concerns are dynamic, context-dependent, and time-dependent, and can be dramatically different in different locations.

Furthermore, governing structures and enabling processes differ depending on social norms [89]. This study shows that companies not only respond to stakeholder pressure to put socially oriented, sustainable practices into practice. Instead, companies implement socially oriented sustainability practices because of their strategic benefits and internal motivation as opposed to responding to stakeholder pressure only. Therefore, a proactive approach which relies on the deliberate and rigorous efforts of organisational members to implement sustainability practices focusing the social dimension leads to improved social performance. This contrasts with Wolf [18], who did not find the influence of the external pressure on the link between sustainable supply chain practices and sustainability performance (environmental and social performance). This study is also in contrast with Zhu and Sarkis [57], who, in the context of China, using data from 341 manufacturing firms, found that external pressure positively influences the relationship between sustainable practices and environmental performance. However, these authors operationalised sustainable practices via internal environmental management, green purchasing, eco-design, and investment recovery, with environmental performance being measured using six items and pressure measured as market (two items), regulatory (two items), and competition pressure (two items). Recall our operationalisation: sustainable practices were measured using items addressing energy, water consumption and pollution reduction, waste recycling, occupational health and safety management, work–life balance policies, supplier sustainability performance assessment and training, and collaborative sustainability performance improvement. Sustainability performance was measured in terms of materials, water and/or energy consumption, pollution emission and waste production levels, workers' motivation and satisfaction, and health and safety conditions. The difference in terms of measurement could possibly have contributed to the difference between the findings of Zhu and Sarkis [57] and those of our study. Sz'asz et al.'s [61] findings that external stakeholder pressures in automotive manufacturing firms from 22 countries, including China and India, first affect the inclusion of sustainability criteria in their strategies, which, in turn, lead to the implementation of sustainability practices resulting in improved social performance, are also in contrast to those of our study.

## 6. Conclusions

### 6.1. Theoretical Contribution

Sustainability has recently gained traction among academics and practitioners. From the standpoint of a developed economy, most scholars have made great progress on sustainability [89]. Scholars acknowledge the necessity for research that addresses sustainability in emerging economies in order to generalise theoretical and practical results (e.g., [89,97]).

Manufacturing firms in emerging economies, including China and India, are increasingly facing pressures from stakeholders to demonstrate compliance with the sustainability practices. The relationship between the adoption of sustainable practices and performance is a complex one given the stakeholder pressure. Studies addressing these relationships have limited presence in the literature in the context of emerging countries. To bridge this gap, this research used institutional theory and the resource-based view (RBV) to show how manufacturing firms adopt sustainable practices given the external pressure and the resulting environmental and social outcomes in emerging economies (China and India). The adoption of sustainability initiatives under the reactive and proactive approaches could lead to different sustainability performances. However, studies addressing the sustainability outcomes resulting from the reactive and proactive approaches is lacking in the emerging countries context. We highlighted proactive and reactive approaches to the adoption of sustainable practices and the sustainability outcomes of these approaches in emerging economies, including China and India. Our research suggests that there are two explicit approaches, reactive and proactive, for explaining manufacturing firms' contributions to sustainability performance under stakeholder pressures. The reactive approach to sustainable practices leads to improved environmental performance, while the proactive approach to socially oriented sustainable practices, given the complex nature of social issues, leads to social performance.

### *6.2. Managerial Implications*

This study gives industrial managers an overview of proactive and reactive approaches to sustainability practices in manufacturing firms from emerging economies, including China and India, as well as their potential effects. Manufacturing firms in the emerging economies, particularly those from China and India, must not ignore the pressure from stakeholders in shaping the uptake of their sustainability initiatives. These pressures are crucial triggers for firms toward sustainability. Manufacturing firms, however, must try to build on such triggers to generate either proactive or reactive sustainability responses at the firm level. For example, a proactive approach towards the adoption of sustainable management practices leads to social performance in terms of improved worker safety and motivation. If managers from manufacturing firms aim to improve their social performance in emerging economies, they can take a proactive approach that requires rigorous and deliberate efforts toward the adoption of sustainable practices, given the complex and varied issues of social performance. A manufacturing firm's reactive approach, on the other hand, results in environmental performance (reduced pollutant emissions and resource utilisation). This understanding will be helpful for managers from manufacturing firms in the above emerging economies who aim to improve the environmental performance of their firms to take even a reactive approach to the adoption of sustainable management practices.

### *6.3. Limitations and Further Research*

There are various limitations to this study that could lead to further research directions. This study looked at combined external pressure from stakeholders in relation to environmental and social pressures, ignoring demands from various types of stakeholders, including the government, customers, and non-governmental organisations (NGOs). Differentiating between other types of stakeholders, such as suppliers, customers, the government, local communities, the media, non-governmental organisations, and employees, may offer further depth to this research. In addition, this study employed conventional and subjective environmental and social performance measures. Future research could employ more sophisticated and objective measures. Given that our data were cross-sectional, further studies could use longitudinal data to study the causation. This study focused primarily on the performance of buying firms, but future research might also look into the performance from suppliers' perspectives. We did not analyse the effects of sustainable practices on business performance. Extending the research to include business performance

is obviously important to make an even stronger case for the benefits of taking sustainability seriously. The data used in this study were collected in the year 2014. New data should be collected to understand the influence of the current contextual realities. Finally, future research for SME size categories based on the number of employees could use the EU limits (10, 50, and 250) for better comparability with European studies.

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