Abstract

Purpose – The purpose of this paper is to ascertain the green-purchasing capabilities required to ensure the successful implementation of green-purchasing practices under the forces of institutional pressure. Specifically, this paper explores the green-purchasing capabilities of buyer firms under the influence of institutional pressures in supplier selection, development, collaboration and evaluation in support of environmental purchasing.

Design/methodology/approach – Questionnaire survey method was used to gather data from 163 ISO 14001-certified manufacturing firms in Malaysia. Partial least squares was used for hypotheses testing.

Findings – Green-purchasing capabilities, such as manufacturing, financial, intraorganisational and integration capabilities, have a significant positive effects on green-purchasing practices. However, innovation capabilities have no significant effect on green-purchasing practices. Regulation, customer and competitor pressure positively moderate the relationships between green manufacturing capabilities and practices.

Practical implications – The paper highlights the importance of green-purchasing capabilities in enhancing the green-purchasing practices of firms. The findings that pertain to moderating effect could be used to assist policy makers, particularly in setting appropriate policies and strategies to improve green purchasing.

Originality/value – Although more studies on green purchasing have been conducted in recent years, issues, such as the effect of green-purchasing capabilities on green-purchasing practices, are still unspecified. Besides, this study considers institutional pressure as the moderator when a model is constructed to exemplify the relationship between green-purchasing capabilities and practices.

Keywords Green-purchasing capabilities, Green-purchasing practices, Institutional pressure, Manufacturing, Supply chain

Introduction

Environmental challenges, such as exploitation of natural resources, loss of biodiversity, climate change and issues in reusing and recycling of wastes, have attracted the attention of various stakeholders, especially parties who focus their efforts on sustainable practices. Tate et al. (2012) recognised that environmental issues have dramatically increased the awareness of consumers regarding environmental problems. According to Carter et al. (1998), Min and Galle (2001) and Zsidisin and Siferd (2001), organisations have adhered to proactive environmental management, such as cost reduction, promoting the recycling and reusing of waste, down gauging programmes and substitution of materials in the purchase of inputs to improve their environmental performance.

Preuss (2002) and Carter et al. (1998) commented that purchasing is placed at the starting point of the flow of materials within an organisation. Therefore, purchasing can be used as the gatekeeper to ensure the incoming flow of materials to promote the green products and
activities for the sustainability of a firm. Green purchasing mainly deals with controlling the environmental performance of suppliers (Eltayeb et al., 2011).

Shaharudin et al. (2015) suggested that the high cost of adopting green supply chains, lack of capabilities and regulations, low customer pressure and less attention to the consideration of social responsibility are reported as the main challenges in adopting green supply chain management practices.

Firms are “forced” to be more transparent in addressing and managing environmental and social issues due to the increasing awareness amongst the general public and stakeholders (Chen, 2005; Lannelongue and González-Benito, 2012). Carter and Jennings (2004) and Zhu et al. (2013) found that firms that adopted sustainable practices in setting their business strategies would be affected by the pressure of the institutional environment. Furthermore, Sarkis et al. (2010) found that firms should react to the pressure from their stakeholders to improve their environment management. Klassen and Vachon (2003), Zhu et al. (2013) and Cai and Zhou (2014) further found that institutional pressure, such as pressure from competitors, have caused organisations to reconsider their internal eco-design development, to examine the regulatory pressure, such as ISO 14001 environmental management system compliance and to monitor their external green practices to ensure the recovery of investments for firm performance.

Huang et al. (2015) and Liu et al. (2010) urged researchers to examine supply chain management issues from the perspectives of the institutional theory because this area of research, where the use of institutional pressure should provide sound theoretical underpinnings for further examination in green environmental purchasing, has been unexplored to date. A review of past studies revealed that the moderating effect of institutional pressure on the green capabilities and practices in the Malaysian context has yet to be investigated.

Thus, this study aims to investigate the moderating effect of institutional pressure on green capabilities and practices. Institutional pressures from government agencies, customers and competitors influence organisations to implement green initiatives (Kumari and Patil, 2019; Schmidt et al., 2017; Lee, 2008). One example is to obtain ISO 14001 certifications for clean production. This study should provide a logical understanding about the effect of pressures from outside the firms, such as the regulation, competitor and consumer pressure, on its internal practices for sustainable green performance.

Literature review and development of hypothesis

Green-purchasing capabilities

Green capabilities are the key independent variables in this paper. Kaya and Erden (2008) defined capability as the collection of complex individual skills, assets and knowledge that enable a firm to plan its activities and resources to achieve its objectives. Five main capabilities, namely, manufacturing, finance, innovation, intraorganisational and integration, were found to be the most frequently used constructs from 1992 to 2015 based on the extensive review of previous studies. Table I summarises the analysis of the capabilities.

Manufacturing capabilities allow an enterprise to use resources to generate profit through its products and services (Amit and Schoemaker, 1993), where the development of such capabilities is a success factor and a major task of the manufacturing strategy (Slack and Lewis, 2002). Financial capability is the capability of an organisation to make environmental investments, such as green technology and green initiatives (Murillo-Luna et al., 2011), for financial success. Intraorganisational capability relates to the capability of an organisation to allocate, empower individuals and coordinate its resources effectively and efficiently at all levels within the organisation (Chang et al., 2007; Pressey et al., 2009).

Innovation is the capability to design, invent and develop new or altered products and services that create new value, low cost and higher revenue for the firm (Santolaria et al., 2011;
Green-purchasing practices

Zailani et al. (2012) advocated that the purchasing organisation could use its strategic function as a powerful agent of change to improve the impact on the natural environment. The role of procurement has become a significant element in promoting profitability and future survival of an organisation (Lee and Shin, 2010). Table II shows that green-purchasing practices can be broadly classified into four activities, namely, green supplier selection, development, collaboration and evaluation. All these four components are used in this paper.

Tate et al. (2012) stressed that supplier selection related to environmental purchasing management is one of the main drivers of organisational sustainability. Quayle (2002) suggested that proactive commitment amongst suppliers on a long-term basis would create a win–win philosophy for continuous improvement. Supplier development in clean technologies requires knowledge and expertise from both ends to implement new tasks.

<table>
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No. of occurrences 8 9 9 7 8 3 2 3
Overall percentages 16.5 18.5 18.5 14 16.5 6 4 6

Notes: MC, manufacturing capabilities; SC, intraorganisational capabilities; FC, financial capabilities; DC, innovative capabilities; IC, integration capabilities; SG, strategic capabilities; RS, resource base capabilities; IF, Information sharing capabilities

Table I. Green-purchasing capabilities
Besides contributing to the buying firm, the evaluation process also provides evaluation feedback on the buying firm’s expectations and provides direction to their suppliers for future improvement (Prajogo et al., 2012; Talluri and Sarkis, 2002). Hald and Ellegaard (2011) and Sahu et al. (2012) emphasised that in today’s business environment, performance measurement is not only focussed on economic impact but also on business sustainability efforts to reduce environmental impact and improve societal well-being.

**Theoretical framework**

Resource-based view (RBV) theory implies that the concept of capabilities results from the capability of a firm to create value by using existing resources (Grant, 1991). Firms need specific capabilities to implement green-purchasing practices, namely, selection, development, collaboration and evaluation of the supplier.

Institutional pressures will affect the responsiveness of a firm in crafting their capabilities to implement green-purchasing practices that can lead to its competitiveness. Nevertheless, the effect of external forces on internal capabilities in green supply chain management should be investigated further (Sarkis et al., 2011). Thus, this paper has identified institutional pressures as the moderating variable between green-purchasing capabilities and practices.

The institutional theory explains three key institutional pressures, namely, government, customers and competitors, as the main forces for a firm to adopt green initiatives.
(Shi et al., 2012). The government and customers’ pressures will continue pushing businesses towards sustainability (Guide et al., 1998; Longoni and Cagliano, 2018).

Figure 1 illustrates the theoretical framework of the study.

**Green-purchasing capabilities and practices**

Ordanini and Rubera (2008) highlighted that in view of the RBV theory, capabilities can sometimes be more valuable when combined. The synergistic effect from different capabilities is crucial for RBV analysis (Mata et al., 1995), where the effects of such combinations often prevent imitation by their competitors. It allows a firm to exploit its resources more effectively (Dierickx and Cool, 1989; Black and Boal, 1994), thereby leading to a synergistic effect on firm performance (Barney, 2001).

Talbot et al. (2007) indicated that the scope of manufacturing capabilities includes the ability for cost reduction, introduction of new technology and enhancement of work environment. Organisations can improve their performance through environmentally friendly production, not only within their own factories but also throughout the entire production chain (Größler and Grübner, 2006). Thus, the first hypothesis is as follows:

**H1a.** Green manufacturing capabilities have a positive effect on green-purchasing practices.

Pressey et al. (2009) highlighted that strategic purchasing objectives require proactiveness in controlling the supply base and continual evaluation and appraisal. Purchasing departments should use their intraorganisational capabilities to establish purchasing plans with their key suppliers. The second hypothesis is as follows:

**H1b.** Green intraorganisational capabilities have a positive effect on green-purchasing practices.

**Green-integration capabilities and green-purchasing practices**

Flynn et al. (2010) stated that internal integration refers to the different departments within a firm that operates as part of an integrated process. Wong and Boon-itt (2008) emphasised
that internal integration is regarded as an important system from the point of procurement to distribution within a firm to achieve customer satisfaction. The third hypothesis is as follows:

\[ H1c. \]  Green-integration capabilities have a positive effect on green-purchasing practices.

Firms must discover innovative ways to recover value on the use of capital, technology and workforce to reduce costs (Richey et al., 2005). Murillo-Luna et al. (2011) agreed that financial capabilities enhance the capability of firms to make environmental investments such as those in green technology. The fourth hypothesis is as follows:

\[ H1d. \]  Green financial capabilities have a positive effect on green-purchasing practices.

Enhanced innovation capabilities could eventually lead to greater collaboration and performance (Richey et al., 2005). The innovation of products and processes can be improved in the long term when key suppliers have close involvement with the company. The fifth hypothesis is as follows:

\[ H1e. \]  Green innovation capabilities have a positive effect on green-purchasing practices.

**Institutional pressure**

External pressures, such as those from governments and customers, have an impact on internal purchasing practices (Sarkis et al., 2011). Jennings and Zandbergen (1995) argued that institutional pressures, specifically governmental regulations influence the adoption of environmental practices. Wu et al. (2012) and Wong and Boon-itt (2008) stressed that many companies are forced to adopt proactive environmental initiatives because of institutional pressures.

**Regulation pressure and green-purchasing capabilities and practices**

Regulatory pressure refers to the coercive mechanisms that induce obligations or incentives to perform a specific practice (Scott, 2001; Zhu and Sarkis, 2007). It refers to legislation, standards and rules, which include the elements of obligations and incentives set by local or foreign governments, international organisations or parent companies that influence manufacturing firms to practice green initiatives. Businesses must comply with environmental regulations to avoid legal penalties and fines from the regulators and authorities (Rivera, 2004). Freeman (1984), Wong and Boon-itt (2008) and Backer (2007) identified governmental or regulatory pressure as the main external driver that instigates firms to adopt green environmental initiatives. Thus, the following hypotheses were formulated:

\[ H2a. \]  Regulatory pressure moderates the impact of green manufacturing capabilities on green-purchasing practices.

\[ H2b. \]  Regulatory pressure moderates the impact of green-integration capabilities on green-purchasing practices.

\[ H2c. \]  Regulatory pressure moderates the impact of green financial capabilities on green-purchasing practices.

\[ H2d. \]  Regulatory pressure moderates the impact of green innovation capabilities on green-purchasing practices.

\[ H2e. \]  Regulatory pressure moderates the impact of green intraorganisational capabilities on green-purchasing practices.

**Customer pressure and green-purchasing capabilities and practices**

The increasing concern of customers on products with environmental impact has strong influence on a firm (Handelman and Arnold, 1999; Waddock and Bodwell, 2002), whereas
customers’ demand has significantly driven innovation in organisations (Rojsek, 2001), Preuss (2002) found that customers’ requirements had affected the purchasing decisions of firms. Customers’ pressure could directly impact firms’ adoption of green-purchasing initiatives (Yen and Yen, 2012). Clement (2005) stated that the increased desire of customers to purchase from responsible companies determined the environmental standards for compliance of firms with specific green initiatives indirectly:

\( H3a. \) Customer pressure moderates the impact of green manufacturing capabilities on green-purchasing practices.

\( H3b. \) Customer pressure moderates the impact of green-integration capabilities on green-purchasing practices.

\( H3c. \) Customer pressure moderates the impact of green financial capabilities on green-purchasing practices.

\( H3d. \) Customer pressure moderates the impact of green innovation capabilities on green-purchasing practices.

\( H3e. \) Customer pressure moderates the impact of green intraorganisational capabilities on green-purchasing practices.

Competitor pressure and green-purchasing capabilities and practices
Aerts et al. (2006) found that pressure from competitors would most likely force an organisation to imitate the business model and strategy of their competitors. Bhakoo and Choi (2013) found that when organisations are faced with an uncertain environment, they may benchmark their actions against that of successful organisations. Furthermore, Wu et al. (2012) found that competitive pressure cause companies to use their internal organisational resources more efficiently. Chung and Wee (2008) mentioned that organisations would pursue internal eco-design initiatives when challenged by competitive pressure. John et al. (2001) found that firms sometimes implement environmentally friendly programmes and new technology due to competitive pressure, especially when organisations are operating in intensely competitive and uncertain situations:

\( H4a. \) Competitor pressure moderates the impact of green manufacturing capabilities on green-purchasing practices.

\( H4b. \) Competitor pressure moderates the impact of green-integration capabilities on green-purchasing practices.

\( H4c. \) Competitor pressure moderates the impact of green financial capabilities on green-purchasing practices.

\( H4d. \) Competitor pressure moderates the impact of green innovation capabilities on green-purchasing practices.

\( H4e. \) Competitor pressure moderates the impact of green intraorganisational capabilities on green-purchasing practices.

Methodology
A five-point Likert scale survey was developed. A pre-test involving two academics and four practitioners who hold senior positions in companies with ISO 14001 certifications was conducted for content validity. Slight modifications were made to the questionnaire based on the pre-test inputs.
The study focussed on ISO 14001-certified manufacturing firms in Malaysia because this sector had a higher level of green initiative adoption compared with other sectors (Low et al., 2015). The manufacturing sector is more likely to adopt and implement green procurement (Darnall et al., 2008; Zhu et al., 2010).

A total of 708 questionnaires were sent to all ISO 14001-certified firms listed in Standards and Industrial Research Institute of Malaysia and Federation of Malaysian Manufacturers directories, via post and e-mail, targeting managers in purchasing and supply chain functions. Partial least squares technique was used to test the hypotheses.

Results
The study used a single-respondent-per-firm approach. A total of 163 usable responses (response rate of 23 per cent) were received. The major responses were received from the food and food-related packaging industries (23.9 per cent), followed by electrical and electronics industries (22.7 per cent) and rubber and plastic products (9.8 per cent). Majority of the firms had operated for more than 20 years (82 per cent) and are large firms with 500 to more than 1,000 employees (41.7 per cent). An almost equal percentage is observed between local and local joint venture firms (48.5 per cent) and MNCs (43.6 per cent).

Assessment of measurement model
Validity and reliability criteria were used to test the integrity of the measures. The results showed that Cronbach’s α values ranged from 0.80 to 0.95. The composite reliability for each construct was above 0.7 and provided strong evidence for the scale reliability of the reflective constructs.

Convergent validity indicates the degree to which theoretically similar constructs are highly correlated with one another. In this case, most of the items were significantly highly loaded on their proposed factors with loadings above 0.7. The average variance extracted (AVE), which reflects the overall amount of variance in the indicators, accounted for the latent construct and exceeded the recommended value of 0.5 (Hair et al., 2010). The AVE for all constructs shown in Table III exceeded the recommended value of 0.5, indicating that latent constructs could account for at least 50 per cent of the variance in the items, and the measurement scale had adequate convergent validity (Hair et al., 2006).

The square root of the AVE for each construct and its correlation with other constructs were compared to examine the discriminant validity (Chin, 1998). The findings in Table IV show that the square roots of the AVE values ranged from 0.77 to 0.88, proving that all the AVE values were greater than the recommended value of 0.50. The AVE loading greater than 0.5 implies that the construct accounts for at least 50 per cent of the measurement variance.

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<th>Construct</th>
<th>Initial model</th>
<th>Modified model</th>
<th>AVE</th>
<th>Composite reliability</th>
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<tr>
<td>Competitor pressure</td>
<td>0.851</td>
<td>0.851</td>
<td>0.724</td>
<td>0.940</td>
<td>0.924</td>
</tr>
</tbody>
</table>
The AVE for each construct was significantly greater than any correlation between the constructs (as shown diagonally and in boldface), indicating that the variance explained by the respective construct was larger than the measurement error variance (Fornell and Bookstein, 1982). In this case, the discriminant validity of the measurement instrument was validated.

The loadings and cross-loadings indicated that all the measurement items that are loaded on their own latent construct are higher than those on the other constructs.

Path model analysis

*Effect of green-purchasing capabilities on green-purchasing practices*

Table V shows the effect of green-purchasing capabilities on green-purchasing practices. Green manufacturing capabilities, green-integration capabilities, green financial capabilities and green intraorganisationals capabilities had significant positive effects on green-purchasing practices, whereas green innovative capabilities did not affect green-purchasing practices. Thus, H1a–H1d are supported, whereas H1e is not.

*Moderating effect of regulation pressure on green capabilities and practices*

Table VI shows that regulatory pressure moderates the impact of green manufacturing capabilities on green-purchasing practices ($z = 2.183, p < 0.05$). Regulatory pressure has no moderating effect on the relationship among the other four capabilities, namely, green-integration capabilities ($z = -0.716, p > 0.05$), green innovation capabilities ($z = 0.353, p > 0.05$), green intraorganisationals capabilities ($z = -0.300, p > 0.05$) and green financial capabilities ($z = -1.417, p > 0.05$). Thus, $H2a$ is supported, whereas $H2b–H2e$ are rejected.
Moderating effect of customer pressure on green capabilities and practices
Table VII shows that the relationship between green manufacturing capabilities and green-purchasing practices ($z = 1.854, p > 0.05$) and the relationship between intraorganisational capabilities and green-purchasing practices ($z = -2.268, p < 0.05$) were significantly moderated by customer pressure. This phenomenon means that firms have a significant positive inclination to respond to their manufacturing and intraorganisational capabilities with high levels of customer pressure toward these capabilities. However, customer pressure does not appear to have any moderating effect on the relationship among the other three green-purchasing capabilities, namely, green innovation ($z = 0.917, p > 0.05$), finance ($z = 0.009, p > 0.05$), integration ($z = -0.083, p > 0.05$) and green-purchasing practices. Thus, $H3a$ and $H3e$ are supported, whereas $H3b$–$H3d$ are rejected.

Moderating effect of competitor pressure on green-purchasing capabilities and practices
Table VIII shows that competitor pressure has a significant moderating effect on the impact of green manufacturing capabilities on green-purchasing practices ($z = 2.896, p < 0.05$). Competitor pressures have no significant moderation effect on the relationship among the other four green-purchasing capabilities and green-purchasing practices, namely, green-integration capabilities.
(z = −1.566, p > 0.05), green innovation capabilities (z = −0.025, p > 0.05), green intraorganisational capabilities (z = −0.028, p > 0.05) and green financial capabilities (z = −1.126, p > 0.05). Thus, H4a is supported, whereas H4b–H4d and H2c5 are rejected.

Discussion and conclusions

The results show that green manufacturing capabilities, green intraorganisational capabilities, green-integration capabilities and green financial capabilities have a significant positive effect on green-purchasing practices, namely, supplier selection, development, collaboration and evaluation. This result is consistent with the findings of Größler and Grübner (2006) who highlighted that a “fit” between internal capabilities and external requirements from competition and the environment is required for an organisation to achieve success. Uncertainties in the environment lead firms to imitate practices of successful firms (Delmas and Toffel, 2004; DiMaggio and Powell, 1983; Kumari and Patil, 2019). In the long run, integrative environmental activities with suppliers play a crucial role in eliminating environmentally harmful materials or processes (Vachon and Klassen, 2008). Financial capabilities ranked the lowest in terms of significant effects on the adoption of green practices. The possible reason could be the high cost of adopting green purchasing and the economic benefit is less visible from the manufacturers’ perspective (Min and Galle, 2001).

The study shows that green innovation capability has no significant effect on green-purchasing practices. This contradicts with the findings of Liu and Chen (2008) that innovation capability is a common capability of a successful organisation. As Größler (2010) concluded, not all the capabilities can be maximised and interacted with optimally. Firms tend to focus on their upstream activities of green purchasing that less effort is made to stir innovative capabilities to support green-purchasing practices (Lee et al., 2014).

The results indicate that institutional pressures, such as regulation, customer and competitor positively moderate the relationships between green manufacturing capabilities and green-purchasing practices, namely, green supplier selection, development, collaboration and evaluation. This is consistent with the results of Handfield et al. (1997), Min and Galle (1997) and Walton et al. (1998), that the major driver that affected green purchasing was regulatory pressure. Firms are forced by regulations to adopt green initiatives to ensure a continuous supply of green inputs to produce green products and prevent regulators from taking action for non-compliance.

This study found that regulation and customer and competitor pressure have no significant moderating effect on the relationships among green capabilities, namely, integration, financial, innovative, intraorganisational capabilities and green-purchasing practices, except that customer pressure was found to have a significant positive moderating effect on the relationship between intraorganisational capabilities and green-purchasing practices in Malaysia (except that customer pressure had a significant positive moderating effect on the relationship between intraorganisational capabilities and green-purchasing practices). Woo et al. (2016) highlighted that the intraorganisational capabilities of firms include collaborative processes amongst supply chain partners and strategic alignment to increase organisational performance. Carter et al. (1998) and Walker and Preuss (2008) agreed that customers could exert significant pressure on firms to comply with environmental purchasing. The involvement of the purchasing function in corporate social responsibilities ensued from increasingly expressed environmental concerns of customers (Brown and Dacin, 1997; Carter and Jennings, 2004).

Green-purchasing practices can be considered as an emerging concept in Malaysian firms compared to those in developed countries. The findings revealed that firms in Malaysia are proactive in their organisational strategies, adopting environmental management practices without institutional pressures playing a major role. Generally, Malaysian firms have the tendency to react to pressure imposed by...
regulators, customers and competitors with respect to green manufacturing capabilities as compared with other capabilities.

**Theoretical implications**
This study reflects the holistic view of the sustainability and performance of a firm achieved through green-purchasing capabilities and practices with institutional pressure being a moderator. This study contributes to future research in green purchasing as it has presented the various capabilities and practices in green purchasing.

**Practical implications**
The findings of this study indicate that benefits that arise from green-purchasing capabilities in enhancing the purchasing practices of firms cannot be ignored. Managers or firms need to focus on improving firm capabilities. They can look into developing a specific set of strategic capabilities that could manage resources amongst various departments and across functions or business units effectively for success of an organisation, in a changing environment (Gratton and Ghoshal, 2005). The findings of this study provide a clear picture and improved idea of the need to work with a reliable pool of suppliers for the sustainability of a firm.

Findings that pertain to moderating effect could be used to assist policy makers in emerging countries, such as Malaysia, particularly in setting appropriate policies and strategies to improve green purchasing. Practitioners could rely on these findings to implement considerable evaluations and benchmark the efforts of firms in green purchasing. Long-term and systematic supporting programmes can implemented to facilitate the integration of green procurement practices in the firms by addressing the various institutional pressures encountered. This would lead to firm sustainability through green-purchasing capabilities and practices. Purchasing function could influence environmental design and significantly affect environmental performance and improve the economic position of firms (Min and Galle, 1997). Supply chain managers can should emphasis on institutional pressures that could affect the strategic perspective of firms and look into tactics to tap into the purchasing capabilities of professionals for the performance and sustainability of a firm.

Companies should use their resources sensibly and commit themselves to environmental practices appropriately in response to their stakeholders, under institutional pressures for the competitive advantage of the firm (Darnall et al., 2008; Sarkis et al., 2010). Overall, this study revealed that the institutional pressures have weak moderating effects on the relationship between green capabilities (except for green manufacturing capabilities) and practices in a developing country, Malaysia. The Malaysian Government is committed to improving green government procurement, as outlined in the 10th Malaysia Plan, to minimise environmental degradation. However, this concept is relatively new and no policy or regulation exists at this time. Identification of critical barriers can be useful, to analyse and prioritize green initiatives (Gopal et al., 2018).

With continued commitment from the Malaysian Government, the green concept is gradually receiving attention from various stakeholders. Increasing pressure from key institutional stakeholders, such as government regulators, customers and competitors, are forcing firms to change their business performance, focusing on ecological value creation besides quality and cost. Firms have to improve their proactive environmental management practices, such as reducing sources of waste, promoting recycling, reuse, reduction and substituting materials in their purchasing of inputs, to handle institutional pressure. Being located at the beginning of the forward flow of materials within an organisation, purchasing professionals should integrate green capabilities, expand their sensitivity and be proactive in implementing sustainable purchasing. Coordinating with internal and external stakeholders, especially with suppliers, is vital for improved environmental performance and firm sustainability.
**Directions for future research**

This study focussed on the perspectives of buying firms without considering the perspectives of suppliers or sub-suppliers. Future research could examine the perspective of suppliers and provide insights into determinants and challenges of adopting green practices to meet the requirements of buying firms.

**References**


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