**Implementation of** **sustainability tools in MSMEs: the contribution of awareness, external pressures, and stakeholder consultation**

**Abstract**

The objective of this article is to propose a framework for a better understanding of the factors that can influence the implementation of sustainability tools by MSMEs. To achieve this objective, a study was conducted among 431 Canadian enterprises. The results demonstrate the central role of stakeholder consultation on the implementation of sustainable management and communication tools. This consultation makes it possible to reduce the impact of internal constraints, particularly in terms of expertise and lack of knowledge. The findings of this study also demonstrate the indirect impacts of external pressures on the adoption of practices conducive to sustainable development and the way in which the awareness of managers affects this outcome. The study also has important managerial implications, particularly in terms of training for MSME managers.

1. **Introduction**

The rising pressure faced by organizations from their stakeholders to minimize the negative impact of their operations on the community and on the environment pushes them to reshape their decision-making strategies to recognize and integrate sustainability concerns (Kassinis & Vafeas, 2006). Organizations are increasingly aware that their profits and survival hinge on the creation of a long-term relationship with their stakeholders, and by understanding and enhancing this relationship, firms can gain a competitive advantage in terms of knowledge sharing practices, participative decision-making, effective governance, and complementary endowment of resources (Dyer & Singh, 1998; Morsing & Schultz, 2006). As a result, a growing number of firms have recognized and internalized the need to take proactive initiatives on the sustainability level, in order to meet the demands of their stakeholders in creating social good (Garcés-Ayerbe, Rivera-Torres, & Murillo-Luna, 2012; Boiral, Ebrahimi, Kuyken, & Talbot, 2019).

Despite the many potential benefits associated with the implementation of sustainable development practices and tools (Cantele & Zardini, 2020; Johnson, 2015; Testa, Boiral, & Iraldo, 2018), research has highlighted that small and medium enterprises (SMEs) are having more difficulty than large companies in integrating these practices into their business strategies (Chassé & Boiral, 2017; Collins, Roper, & Lawrence, 2010). Indeed, SMEs have less/limited slack resources, when compared to large companies, and face more stringent constraints in terms of time, budget, internal expertise, and available technology (Johnson & Schaltegger, 2016; Revell & Blackburn, 2007). Moreover, whereas large companies have long been the primary focus of stakeholders’ demands for sustainable development due to the size and scale of their operations (Andersson, Shivarajan, & Blau, 2005), SMEs have been subjected to less scrutiny and have experienced less of a pressing need to develop relationships with stakeholders, resulting in lower integration of sustainable development practices (Chassé & Boiral, 2017). Yet, by virtue of the widespread embeddedness of SMEs in the economic fabric of socieities and of local communities, they are faced with growing expectations to promote sustainable development in their activities (Perrini, 2006).

Surprisingly, few studies have attempted to investigate the implementation of sustainability tools in MSMEs and the factors that may affect such practices. As Cantele & Zardini (2020) point out, quantitative research is needed to better understand the indirect and mediating effects of factors that can influence SMEs to use sustainability as a framework for their organizations and their practices. Accordingly, the objective of this article is to propose an integrative framework which considers the role of external pressure and sustainability awareness on MSMEs’ sustainable tools, through stakeholder consultation. To meet this objective, we have studied the sustainability practices of 431 Canadian MSMEs in their implementation of management and communication tools, tools which enable the companies to develop internal and external measures for social good and ecological sustainability (Johnson, 2015; Schaltegger & Burritt, 2005). These measures have been used particularly to monitor and evaluate performance, as well as to maintain dialogue with stakeholders (Johnson, 2015). In this study, structural equation modeling was used to test an integrative conceptual framework. In the latter, We looked at/examined how external pressure and sustainability awareness promote stakeholder consultation and, in turn, the implementation of sustainability tools in MSMEs.

This article contributes to the literature by offering empirical results that highlight the role of sustainability awareness in the implementation of sustainability management practices that have been otherwise unknown or disregarded in MSMEs. Indeed, the link between awareness and management in regards to sustainability deserves more attention in the literature , in part to conciliate the knowledge and reverse the generalized lack of understanding that may surround the diversity, complexity, and multifaceted nature of sustainable development issues (Halila, 2007). The results also contribute to the literature by revealing the pivotal importance of stakeholder consultation in the integration of sustainability tools in MSMEs. In particular, this consultation makes it possible to reduce the impact of internal constraints, particularly with regard to expertise and lack of knowledge. As Hörisch, Freeman, and Schaltegger (2014) have highlighted, this role as an intermediary between the organization and its environment in the development of initiatives has been overlooked in stakeholder theory literature.

Moreover, this study has important managerial implications. In particular, it demonstrates the importance of developing effective communication strategies to inform MSME managers/owners about sustainable development. In particular, some actors, such as decision makers and those leading trade associations, could produce and distribute documents adapted to the reality of MSMEs, in order to inform their colleagues of the benefits of intervention. In addition, our findings demonstrate the importance of implementing consultation processes to mobilize a large number of stakeholders, despite the significant resources required for this activity.

The rest of the paper is organized as follows. First, the literature review and conceptual framework are presented. The next two sections present the methodological framework and results. Finally, the last section is devoted to a discussion of the implications of this study’s findings.

1. **Conceptual framework**

Stakeholder theory addresses the influence of stakeholders on the design and use of environmental management systems by organizations (Guenther, Endrikat, & Guenther, 2016). A considerable amount of research in sustainability management relies on the stakeholder theory, as it provides useful signals that may assist in identifying stakeholders (Mitchell, Agle, & Wood, 1997), thereby determining to which parties the organization is liable or holds responsibilities (Moir, 2001) and which parties should participate in the decision-making process. Freeman (1984) defines a stakeholder as “any group or individual who can affect or be affected by the achievement of the organizational objectives.” This theory emphasizes the dynamics and the complex nature of the interplay between the organization and its environment (Gray, Owen, & Adams, 1996) and comprises two branches. The first is the ethical branch that calls for the organization to act according to the best interest of all stakeholders, regardless of their power, and holds that all stakeholders possess intrinsic rights that shouldn’t be violated (Deegan, 2007). The second branch is the managerial branch which, conversely to the ethical branch, emphasizes stakeholder’s power levels when considering the management of stakeholder groups in working towards achieving organizational survival (Deegan, 2007). According to the stakeholder theory, organizations tend to implement sustainability tools, such as public-private partnership (e.g., multistakeholder initiatives) or sustainability reporting and dialogue, to strengthen the relationship with their internal (employees) and external stakeholders, who may comprise shareholders, clients, pressure groups, communities, etc. (Gadenne, Kennedy, & McKeiver, 2009). When stakeholders are dissatisfied, they can withdraw their financial contribution from the company, an action that serves to threaten the company’s persistence in pursuing goals/objectives/non-sustainable goals/goals that are part of the sustainability model and that do not meet with stakeholders’ approval (Frooman, 1999; Shevchenko, Lévesque, & Pagell, 2016). The company should respond to the external pressure requesting sustainability integration and consult with its multiple stakeholders, since its survival and legitimacy depend on stakeholders’ resources.

* 1. **External pressure, sustainability awareness and stakeholder consultation**

Stakeholder theory has emphasized the primary role and importance of external pressure exerted by stakeholders to push organizations to integrate sustainability practices in their business operations (e.g., Boiral et al., 2019; Hörisch et al., 2014). According to stakeholder theory, external pressure is perceived by organizations as one-dimensional, meaning that when one external party makes demands pertaining to sustainability, owners/managers will expect that other stakeholders advocate the same demand, thereby increasing its saliency (Murillo-Luna, Garces-Ayerbe, & Rivera-Torres, 2008; Doh & Guay, 2006). Both stakeholder and resource dependency theories highlight the need for organizations to comply with the requests of external stakeholders, since organizations rely on the social approval of relevant audiences in order to secure their “licence to operate” (Weber, 2008; Karadio & Talbot, 2020) and ultimately obtain the support and resources they need to survive and prosper (Carlos & Lewis, 2018). Despite their vital contribution to the economy, SMEs have a smaller scope of operations than do large companies. In addition, SMEs are highly resource dependent on a small number of customers and suppliers, making them more vulnerable to environmental threats from external stakeholders that could permanently compromise their means of existence (Eikelenboom & Jong, 2019).

External pressure can be exercised by stakeholders along the value chain, not least by customers, who are increasingly setting high standards for the environmental and social features of products and services (Li, Zhao, Shi, & Li, 2014). As a result, SMEs need to pay extra attention to clients’ expectations and to changes in their demands, at the risk of eroding their market shares (Agan, Acar, & Borodin, 2013). Examples abound of small companies being excluded from the supply chain of large companies that tend to transmit the pressure they face from consumers and communities up the value chain (Jenkins, 2006; Perry & Towers, 2009). External pressures can also come from upstream along the supply chain, where suppliers with a dominant position may play an influential role in orienting the decisions of SMEs’ owners/managers towards sustainable development (Gadenne et al., 2009). As a result and for adaptability and survival, the more SMEs face external pressures, the more they need to accommodate their business partners from both sides of the value chain. Examples from lean management have shown that when the survival and competitive advantage of the firm is at stake, stakeholders from the supply chain are more likely to consult each other, with a view to finding a collective solution (i.e., cost effective) that satisfies most partners (Souza & Alves, 2018; Tachizawa, Gimenez, & Sierra, 2015).

Furthermore, SMEs also face external pressures from public activists and nongovernmental organizations (NGOs), influential in focusing the public’s attention on the social and environmental impacts of business activities. Due to their public standing, activist groups act as a normative force for sustainability (Perez-Batres, Miller, & Pisani, 2011), making consultation with these activist groups vital for companies, such as SMEs, that may not have the resources to manage public relations. Consultation allows for solutions, for various stakeholders to participate in a concerted effort to manage actions and divert a course towards bad publicity. Therefore, based on the review of theory and research, we hypothesize the following:

H1. External pressure is positively related to stakeholder consultation.

According to the literature, in the absence of external pressure and due to the smaller scope of their operations, owners/managers of SMEs may perceive less of a need to tackle the harmful social and environmental impact of their activities (Gadenne et al., 2009). Moreover, whereas large companies strive to develop a strategic approach toward sustainability, with a view to improving their public image and reaping economic benefits, SMEs tend to rely chiefly on implementing practices that demonstrate compliance with regulations (Brammer, Hoejmose, & Marchant, 2012; Collins, Lawrence, Pavlovich, & Ryan, 2007). While this state of affairs can partly be explained by the financial constraints of SMEs, research findings point to the attitude and awareness of SME owners/managers as regards sustainability (Brammer et al., 2012). Indeed, it has been argued that SMEs, as opposed to larger companies, lack information about the benefits of environmental management, which therefore impedes the implementation of sustainability management tools and affects their operational performance (Hillary, 2004).

In SMEs, the personal motivations of owners/managers have a major influence in decision-making, and contribute to a great extent to the integration of sustainable development in organizational practices (Hamann, Habisch, & Pechlaner*,* 2009). According to the cognitive approach, the decisions of managers are based on their subjective perception, beliefs and attitudes on the issues affecting the firm (Garcés-Ayerbe et al., 2012). Consequently, managers who construe sustainability as an ethical issue tend to be more proactive, entrepreneurial, and sustainability-oriented, putting into place action plans in employee training, emphasizing concerns for health and safety, and developing dialogue with relevant stakeholders (Bos-Brouwers, 2010). Greater awareness among managers thus contributes to the implementation of participative mechanisms that may involve internal and external stakeholders, with the goal of adopting sustainability practices.

It should also be noted that while attitudes toward sustainability may be preconceived and influenced by age and education, increased knowledge in this area, through the course of business conduct, can raise managers’ awareness and eventually affect their attitude and decision-making toward sustainability (Fritzsche & Oz, 2007; Hsu & Cheng, 2012; Petts, Herd, & O’hEocha, 1998; Schaper, 2002). Indeed, managers with a good sustainability awareness recognize the importance of maintaining good business-community relationships. For example, a study by Shevchenko et al. (2016) demonstrates that sustainability awareness pushes managers to consult with different stakeholders and seek their advice and suggestions on the best ways to implement sustainability management practices and tools. SMEs that shift to sustainability are driven by an internal reading to change (Shevchenko et al., 2016), and it has been proven that sustainability awareness increases SMEs’ search for social legitimacy through improved relationships with direct transactional and broad stakeholders, who more often than not welcome the process, as they, themselves, are strong advocates of sustainability awareness. Thus, we hypothesize the following:

H2. Sustainability awareness is positively related to stakeholder consultation.

* 1. **Stakeholder consultation, management and communication tools**

On the internal level, firms implement management systems in order to integrate sustainability and to guide their employees toward organizational objectives (Merchant & Van der Stede, 2011). Since sustainability encompasses and addresses both environmental and social issues, it is subject to different and sometimes competing interpretations and rationales. Hence, before implementing sustainability management tools, the firm should first define its sustainability goals (Lueg & Radlach, 2016) and then address the reasons why it should be implemented (Collins et al., 2007).

To this end, consulting with stakeholders, including experts and industry peers (Johnson, 2015), allows for a better understanding of industry-specific issues and may lead to redesigning organizational processes as a response to stakeholders demands (Donaldson & Preston, 1995; Freeman, Harrison, & Wicks, 2007). Indeed, stakeholders can help the organization in implementing sustainability practises and programs if they are involved in alliances and support networks, which are defined as organizations or individuals offering assistance, advice or any type of support on issues such as trade associations, governmental agencies and employees (Collins et al., 2007). Research has shown that SMEs that work cooperatively in groups manage to find innovative solutions (Stephan, Andries, & Daou, 2019) to address the lack of required resources in adopting environmental management systems. SME clusters can facilitate access to information and reduce transaction costs(Biondi, Frey, & Iraldo, 2000), and the increased social capital and network learning that arise as a result can represent an avenue for change (Jämsä, Tähtinen, Ryan, & Pallari, 2011).

Johnson and Schaltegger (2016) attribute the reasons why SMEs are unable to implement sustainability management tools to internal shortcomings, such as a lack of awareness or expertise on sustainability matters and limited financial resources. External shortcomings are generally related to the complexity of international standards for local SMEs and the heterogeneity of the sector. To mitigate these challenges and to integrate sustainability goals into the organizational strategy, teaming up with stakeholders, from customers, to suppliers, to industry peers, to NGOs and policy makers is a key step. Hence, we advance the argument that stakeholders’ consultation and cooperation does mitigate any barriers faced when implementing sustainability management practices and tools.

H3. Stakeholder consultation is positively related to the implementation of sustainable management tools.

Based on H1 and H2, we further hypothesize:

H4. External pressure and sustainability awareness is positively related to the implementation of sustainable management tools.

Research on SMEs also highlights that engagement in sustainability accounting and reporting is generally low. Several reasons are advanced, some of which are contradictory. On the one hand, SMEs wish to avoid external scrutiny as much as larger companies do, especially when there is the sense that their level of sustainability performance is at odds with the institutional context (Ferri, Pedrini, & Pilato, 2016). On the other hand, the lack of formalization and public visibility of their communication reduces their ability to advertise their efforts (Bianchi & Noci, 1998, Bos-Brouwers, 2010). Nevertheless, the underlying motivating factor for companies to establish high quality reports is engaging the audience, wherein the continuous feedback of stakeholders contribute to improving the decision-making process and, therefore, the SMEs’ sustainability performance (WBCSD, 2014).

Sustainability accounting can be defined as a process through which information is reported and organized to serve the decision-making process of the management, in implementing corporate sustainability (Burritt & Schaltegger, 2010). There are several approaches to sustainability accounting. The outside-in approach focuses on meeting stakeholders’ expectations, defining management activities on the basis of publicly-discussed issues and providing information required by external parties, such as through stakeholder dialogues, rating agencies and media groups (Schaltegger & Wagner, 2006). Conversely, the inside-out approach is based on the strategies of the company, wherein managers identify sustainability weaknesses and then design solutions to solve them. A sustainability performance measurement system, as well as any indicator, is established, allowing for the company’s reporting of their actual situation and their achievements, along with future possible enhancements (Herzig & Schaltegger, 2011). Lastly, there is the “cluster approach,” wherein SMEs sharing similar business activities and characteristics cooperate in setting up specific cluster tools, such as those relating to communication, those within operational models and set out by specific guidelines. The cluster approach relies on the managerial and technological synergy between different companies operating in the same industry and acts to disseminate innovative elements to the local system (Battaglia, Bianchi, Frey, & Iraldo, 2010). For example, in a study of the fashion sector in Europe, Turker and Altuntas (2014) show that companies perceiving their suppliers as strategic partners and striving to establish a long-term relationship of trust and cooperation with these suppliers were more likely to use a common benchmark for their work standards and environmental practices, and to consider sustainability issues in their annual corporate report.

The different approaches to sustainability accounting and reporting all point out the need to consult with stakeholders, at least with those who are essential to the organization’s performance: customers and suppliers, for example. Such consultation serves as a means to align sustainability performance with the institutional context and communicate achievement resulting from participative decision making (Hall, Millo, & Barman, 2015). Consequently, we advance the following:

H5. Stakeholder consultation is positively related to reporting and communication.

Based on H1 and H2, we further hypothesize:

H6. External pressure and sustainability awareness is positively related to reporting and communication through stakeholder consultation.

1. **Method** 
   1. ***Sample***

In this study, the data used comes from a survey developed by the *ministère du Développement économique, de l’Innovation et de l’Exportation* (Ministry of Economic Development, Innovation and Export Trade), in collaboration with the *ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques* (Ministry of Sustainable Development, Environment and the Fight against Climate Change) (MDEIE, 2015). The original objective of this survey was to measure the evolution of the attention given by Quebec companies to sustainable development. The sample includes 1697 companies, randomly selected by taking into consideration the distribution of companies in the regions of Quebec (stratified method). A total of 711 companies responded to the telephone survey, for a 60.4% response rate. This database was obtained, in 2017, following an Access to Information request for research purposes. To meet the objective of this article, a subsample composed of all SMEs with 10–250 employees and very small enterprises with fewer than 10 employees were selected (N = 461 - MSME).

(TABLE 1 HERE)

* 1. ***Measures***

*External pressure*. Pressure from external stakeholders was measured with three statements assessing whether or not pressures from (1) contractors and suppliers, (2) international markets, and (3) consumers and society, in general, prompted the business executives to consider environmental and social issues by integrating changes to this effect in the conduct of their operation in the last two years. The statements were randomized to avoid possible order effects. Each statement could be answered either ‘yes’ or ‘no’ (yes = 1, no = 0). The index of external pressure was computed by adding the scores obtained to the three statements. Scores could vary between 0 and 3.

*Sustainability awareness*. Awareness and knowledge of sustainability was measured with three statements assessing whether or not the business executives construed corporate sustainability in terms of (1) economic and financial performance, (2) environmental impact, and (3) social impact of their company. Each statement could be answered either ‘yes’ or ‘no’ (yes = 1, no = 0). The statements were randomized to avoid possible order effects and thus reduce method bias. Responses related to the environmental and social impacts of the company were weighted by 2. The index of sustainability awareness was then computed by adding the scores obtained to the three statements. Scores could vary between 0 and 5.

*Stakeholder consultation*. Stakeholder consultation was measured with four statements assessing whether or not the actions or projects implemented in the last two years by the company to improve its economic performance were conducted in consultation with (1) employees, (2) suppliers, (3) customers, and (4) the community. The statements were randomized to avoid possible order effects. Each statement could be answered either ‘yes’ or ‘no’ (yes = 1, no = 0). The index of stakeholder consultation was computed by adding the scores obtained to the four statements. Scores could vary between 0 and 4.

*Sustainability management tools*. Sustainability management tools was measured using four statements assessing the extent to which the company implemented the following: (1) an environmental or social responsibility management system, (2) environmental and social criteria in purchasing decisions and supplier selection, (3) sustainable human resource management practices that take into account the development and well-being of employees, and (4) environmental targets for improving waste management. The statements were randomized to avoid possible order effects. Each statement was rated on a 5-point scale, ranging from 1 to 5 (1 = *not implemented*, 2 = *currently implementing*, 3 = *implemented*, 4 = *proactively implemented*, 5 = *exemplarily implemented*). The index of sustainability management tools was computed by averaging the scores obtained to the four statements. Scores could vary between 1 and 5.

*Reporting and communication*. The extent to which the business executives relied on reporting and communication to inform the public of their actions in corporate sustainability was measured with three statements assessing whether or not the following means were used by the company: (1) sustainability reports, (2) public presentations, and (3) the corporate website. The statements were randomized to avoid possible order effects. Each statement could be answered either ‘yes’ or ‘no’ (yes = 1, no = 0). The index of reporting and communication was computed by adding the scores obtained to the three statements. Scores could vary between 0 and 3.

*Control variables*. Organizational size, organizational age, industry sector, and the economic region were used to control for possible confounding effects on the association between the study variables. Organizational size and organizational age were continuous variables, ranging between 1 and 240 employees and between 0 and 190 years of existence, respectively. Dummy variables were created to control for differences between manufacturing and service industries (1 = *manufacturing and extraction*, 0 = *other*), and between the Greater Montreal area and the rest of Quebec (1 = *Greater Montreal*, 0 = o*ther*). Descriptive statistics are presented in Table 2.

(Table 2 here)

* 1. ***Data Analysis***

Statistical analyses were conducted with the Mplus structural equation modeling (SEM) program, based on the covariance matrix (Muthén & Muthén, 2012). SEM provides a strong statistical framework that allows for simultaneously testing multiple relationships by considering the structural model as a whole. To strengthen the robustness of the results, we also used a bootstrapping analysis (Shrout & Bolger, 2002). The bootstrap method is a nonparametric resampling procedure for statistical inference “that does not impose the assumption of normality of the sampling distribution” (Preacher & Hayes, 2008, p. 880). Bootstrap analyses were conducted using the estimates from 5,000 random replicates, with replacement from the full sample.

Goodness of fit was established by using the chi-square statistic (χ2), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). A non-significant chi-square and values greater than .95 for the CFI and lower than .05 for the RMSEA are indicative of good fit to the data (Hu & Bentler, 1999). Because our model was based on observed (as opposed to latent) variables, a test of the measurement model could not be performed. Goodness of fit statistics were only obtained from the full structural model. To test the significance of the indirect effects, the theoretical model (i.e., the fully mediated model) was tested on the basis of the saturated model, in order to control for the relative strength of the direct effects on the mediated paths, and reciprocally (Cheung & Lau, 2008; Preacher & Hayes, 2008).

1. **Results**

The results indicated that the theoretical model fit the data well, χ2 (12, *N*=431)=17.24, ns; χ2/*df*=1.44; CFI=.97; RMSEA=.03; test of RMSEA significance (PCLOSE)=.81. Results from the bootstrap analysis are reported in Table 3.

Hypotheses 1 and 2, respectively, predicted that external pressure and sustainability awareness would be positively related to stakeholder consultation. The results showed that both external pressure and sustainability awareness influenced the extent to which MSMEs had recourse to stakeholder consultation, thereby supporting Hypotheses 1 and 2. Effect sizes for both external pressure and sustainability awareness were of similar magnitudes (*β*=.31 and .25, respectively, with overlapping 90% confidence intervals).

Hypotheses 3 and 5, respectively, predicted that stakeholder consultation would be positively related to sustainability management tools, and to reporting and communication. The results indicated that stakeholder consultation influenced both sustainability management tools and reporting and communication, thereby supporting Hypotheses 3 and 5. Effect sizes were of similar magnitudes for both relationships (*β*=.15 and .20 for internalization and reporting and communication, respectively, with overlapping 90% confidence intervals).

Hypothesis 4 predicted that stakeholder consultation would mediate the positive relationships between both sustainability awareness and external pressure and with regards to sustainability management tools. The indirect effect of sustainability awareness on sustainability management tools yielded a standardized coefficient of .04, with a 99% confidence interval excluding zero (.02, .07). Similarly, the standardized indirect effect of external pressure on sustainability management tools was .05, and the 99% confidence interval excluded zero (.02, .09), thereby supporting Hypothesis 4.

Lastly, Hypothesis 6 predicted that stakeholder consultation would mediate the positive relationships between both sustainability awareness and external pressure and between reporting and communication. The standardized indirect effect of sustainability awareness on reporting and communication was .05, with a 99% confidence interval excluding zero (.02, .10). Similarly, the standardized indirect effect of external pressure on reporting and communication yielded a coefficient of .06 and the 99% confidence interval excluded zero (.03, .12), thereby supporting Hypothesis 6.

(Table 3 here)

1. **Discussion**

The objective of this article was to propose an integrative framework to better understand the factors that can influence MSMEs’ implementation of sustainability tools. The integration of several concepts into a single model has provided a more accurate picture of causal relationships in this area. This study has three main contributions to the literature. First, the proposed model tested many little-studied causal relationships. In particular, this model provides a better understanding of the relationship between sustainability awareness and the integration of sustainable development management and communication tools in MSMEs. The link between the integration of sustainable development management and the implementation of communication tools has received little attention from researchers (e.g. Cantele & Zardini, 2020; Halila, 2007). This study confirms the findings of Casselles and Lewis (2011): that there is a weak direct relationship between the awareness and actions of owner/managers in SMEs. However, awareness-raising does have an indirect impact on the implementation of management and communication tools for sustainable development. As well, this study is the first, to our knowledge, to have tested the mediating role of stakeholder consultation on the integration of management and communication tools, in general, and SMEs and micro enterprises, in particular. The lack of empirical studies on causal links had been identified as an important area of research (Cantele & Zardini, 2020; Guenther et al., 2016). Finally, this study contributes to the literature on stakeholder theory (Freeman, 1984) and highlights the pivotal role of stakeholder consultation in the implementation of sustainable tools. This relationship could be explained in particular by the positive impact of the consultation on the knowledge and awareness of managers. Such a process could reduce the risks and complexity of developing a vision that integrates sustainable development into the company's strategy (e.g. Johnnson & Schaltegger, 2016). The intermediary role of stakeholder consultation between the SME and its environment, in particular to develop new initiatives, has been little studied in the literature mobilizing stakeholder theory (Boiral et al., 2019; Hörisch et al., 2014).

This study also has important managerial implications. In particular, it demonstrates the importance of awareness and training activities to ensure that managers and owners understand sustainable development. In this context, it will be essential for public authorities and business associations to develop sensitization tools adapted to the reality of MSMEs, in order to promote the adoption of management tools in the field of sustainable development. In addition, it would be relevant to propose several models for consulting stakeholders in order to promote their integration into decision-making processes. These processes could promote the implementation of management practices and tools in the field of sustainable development.

This study has several limitations. First, the scales used to measure concepts come from a survey and have received only limited validation in the literature. It will be important in future research to try to combine these with other scales (e.g. Cantele & Zardini, 2020). For example, for the measurement of external pressures, the scales used by Henriques and Sadorsky (1999) could distinguish several components. Secondly, this study is based on a single data collection. As Revell, Stokes and Chen (2010) note, SMEs’ engagement to sustainable development may be influenced by the timing of the study. Therefore/Hence, it will be important in future research to plan several measures over time, to limit the influence of this element. Finally, it would also be relevant to consider the level of integration of sustainable development into management practices. Some concepts, such as the symbolic and substantial integration of management systems, could enrich the framework proposed in this study. Several studies have shown that companies tend to symbolically adopt management systems (Boiral, 2007; Christmann & Taylor, 2006). To this regard, it will be important to try to assess the concrete impact of these practices and tools on the performance of SMEs.

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| --- | --- | --- |
| Table 1. Characteristics of sample (*N* = 431) | | |
| Organizational size | 1 to 9 employees | 35.5% |
|  | 10 to 49 employees | 43.9% |
|  | 50 to 99 employees | 13.2% |
|  | 100 to 249 employees | 10.4% |
|  |  |  |
| Organizational age | 0 to 9 years | 7.0% |
|  | 10 to 24 years | 35.0% |
|  | 25 to 49 years | 46.6% |
|  | 50 years or more | 11.4% |
|  |  |  |
| Industry | Agriculture, forestry, fishing and hunting | 4.9% |
|  | Mining and oil and gas extraction | 1.4% |
|  | Utilities | 0.7% |
|  | Construction | 10.7% |
|  | Manufacturing | 25.8% |
|  | Accommodation and food services | 2.1% |
|  | Other services (e.g., Trade, transportation, finance, health care) | 54.5% |
|  |  |  |
| Region | Greater Montreal | 25.8% |
|  | Central regions | 52.2% |
|  | Resources regions | 22.0% |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 2. Summary statistics and zero-order correlations (*N* = 431) | | | | | | | | | | | | |
| Variable | Min-Max | *Mean* | *s.d.* |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1. Organizational size | 1-240 | 35.05 | 43.68 |  | — |  |  |  |  |  |  |  |
| 2. Organizational age | 0-190 | 30.51 | 19.92 |  | .30\*\* | — |  |  |  |  |  |  |
| 3. Industry (Mfg = 1, Serv = 0) | 0-1 | 0.27 | 0.45 |  | .01 | –.04 | — |  |  |  |  |  |
| 4. Region (Montreal = 1, Other = 0) | 0-1 | 0.26 | 0.44 |  | –.03 | –.09 | –.04 | — |  |  |  |  |
| 5. Sustainability awareness | 0-5 | 4.17 | 1.21 |  | –.04 | .02 | .05 | –.05 | — |  |  |  |
| 6. External pressure | 0-3 | 1.07 | 0.91 |  | .00 | .05 | .01 | .09 | –.01 | — |  |  |
| 7. Stakeholder consultation | 0-4 | 2.41 | 1.23 |  | –.04 | –.04 | –.07 | .07 | .24\*\* | .23\*\* | — |  |
| 8. Reporting and communication | 0-3 | 1.48 | 0.88 |  | .06 | .03 | –.04 | .04 | .11\* | .18\*\* | .32\*\* | — |
| 9. Sustainability management | 1-5 | 3.09 | 0.65 |  | .06 | .05 | –.01 | –.02 | .16\*\* | .08 | .30\*\* | .33\*\* |
| \* *p* < .05. \*\* *p* < .01. | | | | | | | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 3a | | | | | | | | | | | | |
|  |  | Stakeholder consultation | | |  | Internalization | | |  | Reporting and communication | | |
| Variable |  | *β* | *s.e.* | *t* |  | *β* | *s.e.* | *t* |  | *β* | *s.e.* | *t* |
| Control |  |  |  |  |  |  |  |  |  |  |  |  |
| Organizational size |  | .00 | .00 | –0.26 |  | .00 | .00 | 1.34 |  | .00 | .00 | 1.58 |
| Organizational age |  | .00 | .00 | –0.96 |  | .00 | .00 | 0.75 |  | .00 | .00 | 0.28 |
| Manufacturing industry |  | –.22 | .12 | –1.81 |  | .01 | .07 | 0.19 |  | –.05 | .09 | –0.57 |
| Montreal region |  | .16 | .13 | 1.24 |  | –.05 | .07 | –0.70 |  | .03 | .09 | 0.33 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Predictor |  |  |  |  |  |  |  |  |  |  |  |  |
| Sustainability awareness |  | .25 | .05 | 4.89\*\*\* |  | .05 | .03 | 1.51 |  | .03 | .04 | 0.86 |
| External pressure |  | .31 | .06 | 4.92\*\*\* |  | .01 | .03 | 0.40 |  | .10 | .05 | 2.26\* |
| Stakeholder consultation |  | — | — | — |  | .15 | .03 | 5.74\*\*\* |  | .20 | .04 | 5.82\*\*\* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Indirect effect |  |  |  |  |  |  |  |  |  |  |  |  |
| Sustainability knowledge |  | — | | |  | .04 | | |  | .05 | | |
| 99% bias-corrected CI |  | — | | |  | (LL = .02; UL = .07) | | |  | (LL = .02; UL = .10) | | |
| External pressure |  | — | | |  | .05 | | |  | .06 | | |
| 99% bias-corrected CI |  | — | | |  | (LL = .02; UL = .09) | | |  | (LL = .03; UL = .12) | | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| *R2* |  | .13 | | |  | .11 | | |  | .12 | | |
| a Standardized estimates based on 5,000 bootstrap resampling. CI, confidence interval; LL, lower limit; UL, upper limit.  \* *p* < .05; \*\* *p* < .01; \*\*\* *p* < .001. | | | | | | | | | | | | |