Strategic CSR for innovation in SMEs: Diversity matters

Rachel BOCQUET
Université Savoie Mont Blanc, IREGE
Rachel.bocquet@univ-smb.fr

Christian LE BAS
ESDES Business School of UCLyon
clebas@univ-catholyon.fr

Caroline MOTHE
Université Savoie Mont Blanc, IREGE
Caroline/mothe@univ-smb.fr

Nicolas POUSSING
LISER – CREM
nicolas.poussing@liser.lu

Abstract

Both corporate social responsibility (CSR) and diversity determine firms' value creation, yet their relationship and their link to innovation remain uncertain, especially among small to medium-sized enterprises (SMEs). Anchored in a strategic and business case perspective, we show, using a sample of 1348 SMEs from Luxembourg, that CSR strategies might be vehicles for promoting SMEs gender and nationality diversity, which in turn triggers innovation. Thus, only strategic CSR, through the genuine integration of diversity, can help SMEs achieve value-in-diversity and benefit from positive returns on technological innovation.

Keywords: CSR, diversity, gender, nationality, innovation.

1. INTRODUCTION

Despite their importance for small and medium-sized enterprises' (SMEs) business strategies and long-term planning, corporate social responsibility (CSR) and diversity continue to be issues seemingly reserved for large firms (European Observatory of SMEs, 2013). Notwithstanding the growing attention granted to CSR and diversity, little is known about how SMEs might benefit from diversity through increased innovation. Few authors acknowledge the potential of CSR to contribute to diversity in SMEs (Grosser, 2009; Grosser and Moon, 2005), help firms retain their qualified employees (Donate and Guadamillas, 2011), and improve their innovative capacity (Surocca et al., 2010). Yet all these goals are crucial for SMEs to maintain competitive positions. The difficulty of devoting simultaneous attention to social responsibility and innovation has been put forward, such that CSR involvement might weaken the effect of R&D due to conflicts of interest or managerial attention (Mithani, 2017).

In addition to scarce studies of SMEs, the literatures on CSR and diversity tend to be notably separated. On the one hand, the CSR literature on the relationship between CSR and innovation underline the mechanisms that link the two dimensions (e.g. Bocquet et al., 2013, 2015; McWilliams and Siegel, 2000; Wagner, 2010). While SMEs can benefit from CSR strategies (Perrini et al., 2007), especially in terms of innovation, it has been shown that, to do so, SMEs must adopt a proactive strategic behavior (Chang, 2015; Jenkins, 2009; Martinez-Conesa et al., 2017; Torugsa et al., 2012). Such studies do not however consider diversity, even though a lack of resources and the recruitment and retention of high quality staff members are crucial issues for SMEs (Freel, 2000) to which diversity could provide solutions (Ruiz-Jiménez and Fuentes-Fuentes, 2016). On the other hand, the diversity literature affirms that diversity provides a key source of value creation, especially through creativity and innovation (Bantel and Jackson, 1989; Joshi and Roh, 2009; Herring, 2009; Ruiz-Jiménez and Fuentes-Fuentes, 2016). However, we know little about drivers of diversity and there is still a number of key challenges that need to be overcome to understand in which way CSR can yield positive outcomes in terms of diversity (Kato and Kadoma, 2018).

This article therefore seeks to build a bridge between these two strands of literature to understand whether and under what conditions CSR strategies might serve as a vehicle for promoting SMEs' diversity and enhancing their innovation capacity. Our research questions can be formulated as follows: Do CSR strategies drive SME's technological innovation

through diversity? If so, under what conditions do such positive benefits on innovation occur? We propose a theoretical framework that integrates the strategic business case CSR perspective (McWilliams and Siegel, 2001; McWilliams et al., 2006; Porter and Kramer, 2006, 2011) and the diversity literature in the SMEs context, especially research regarding diversity as a driver for learning and innovation (Dass and Parker, 1999, Cox and Taylor, 1991). This value-in diversity perspective is aligned with the resource-based view, in that the value of human capital, employees, can be enhanced by diversity (Singh and Point, 2004). We focus here on two types of diversity: gender and nationality, called surface-level diversity.

The empirical test uses SME data from Luxembourg for three reasons. First, Luxembourg is part of a group of European countries that occupy an intermediate position in terms of CSR: 50–61% of SMEs are engaged in CSR activities (European Observatory of SMEs, 2013). Second, Luxembourg has interesting features relative to diversity. Its companies suffer what Cox and Blake (1991, p. 45) call the inevitability of diversity, in the sense that "competitiveness is a priori affected by the need (because of national and cross-national workforce demographic trends) to hire more women, minorities, and foreign nationals." The question of whether and how some SMEs overcome this constraint and recognize diversity as a source of value creation (value-in-diversity) is very important in this setting. Third, we have access to rich data from a unique Luxemburgish survey about sustainability issues during 2011–2013, as well as objective, official data about diversity.

With a sample of 1348 SMEs, we performed a two-step econometric procedure. First, we estimate the effect of two types of CSR strategies (strategic / responsive) on two types of surface-level diversity (i.e., relative differences in gender and nationality among SMEs). Second, we assess the predicted effect of the two types of diversity (gender and nationality) on SMEs' technological innovation (product or process). With this two-step procedure, we account for the potential endogeneity biases traditionally observed in equations that link CSR to outcomes.

Accordingly, we contribute to CSR and diversity literatures in four main ways. First, the results enrich a strategic CSR perspective, revealing the differentiated effects of CSR strategies on diversity. By identifying the crucial influence of CSR on diversity, we respond to the need for a better understanding of antecedents that contribute to diversity efforts at the organizational level (Shore et al., 2009). Indeed, while the benefits of employing a diverse workforce have long been documented (e.g. Cox and Blake, 1991; Díaz-García et al., 2014;

Harrison and Klein, 2007; Jehn and Bezrukova, 2004; Kristinsson et al., 2016), the drivers of diversity are much less analyzed. Second, studies that consider different types of diversity are scarce, despite their likely different effects across organizations (Richard et al., 2013). We therefore introduce two types of surface-level diversity (gender and nationality diversity), using similar measures based on proportions. Third, following Shore et al.'s (2009, p. 127) recommendation, we explore diversity from a more positive and proactive standpoint than existing studies that mainly emphasize negative discrimination or victimization elements. In demonstrating its key role for SMEs' innovation, we contribute to the learning approach of diversity (Dass and Parker, 1999) or value-in-diversity hypothesis (Cox and Blake, 1991), providing empirical arguments for the business case for diversity (Singh and Point, 2004). At the same time, we provide an illustration of the dark side of diversity when CSR is not incorporated in the core business strategy.

We first present our theoretical framework and hypotheses, followed by details of the econometric methodology. After, we present the results, discuss them and conclude.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.1. RELATIONSHIP BETWEEN CSR AND INNOVATION

We attempt to address a key weakness of extant European CSR research and respond to demands for a better theoretical and empirical understanding of the relationships between CSR, diversity and innovation, as driving innovation is a primary benefit of CSR (European Commission, 2011, p. 28). Our research resonates with the European Commission's (2011) seventh Framework Program agenda, which seeks to clarify the connections between CSR and innovation. This demand is particularly pertinent for SMEs, which lack sufficient insights into CSR and diversity (European Commission, 2013).

From strategic management perspective, there are different types of CSR leading to differentiated impacts. This stream of research has its origins in works from Porter and Kramer (2006, 2011) but, before that, Burke and Logsdon (1996) already had applied a CSR strategic approach to assert that engaging in social, societal, and/or environmental actions provides opportunities for value creation, innovation and performance. Their framework explicitly introduces the strategic dimension of CSR (measured through five dimensions: centrality, proactivity, voluntarism, visibility, and specificity) as a means to understand the extent to which CSR leads to value creation and innovation. It characterizes firms according

to their CSR practices: strategic or responsive scores. Firms therefore can be placed on a continuum between very strategic and proactive CSR approaches to responsive actions (to the legislation).

As explained by Porter and Kramer (2006, p. 85), who provide many examples of large US firms which are in either one or the other type of CSR strategy, "responsive CSR comprises two elements: acting as a good corporate citizen, attuned to the evolving social concerns of stakeholders, and mitigating existing or anticipated adverse effects from business activities. On the other hand, "strategic CSR moves beyond good corporate citizenship and mitigating harmful value chain impacts to mount a small number of initiatives whose social and business benefits are large and distinctive (ibid, p. 88).

In such a perspective, firms can do nothing, react to and comply with legislation, or be proactive and take actions to manage CSR (and its different components: the social, environmental, and/or economic). Strategic CSR requires an alignment between CSR and the firm's strategy, which creates a virtuous circle that allows various activities, including innovation, to develop. Such strategic CSR approach highlights that adopting a CSR does not automatically generate advantages, such that proactive and responsive CSR strategies do not lead to the same types of benefits. Most of the empirical research however focuses on environmental strategies (e.g. Bocquet et al., 2013; Chang, 2015; Martinez-Conesa et al., 2017).

No empirical study, to the best of our knowledge, tests the CSR--innovation link in an SME context. Torugsa et al. (2012) look at the CSR–performance link and note the importance of proactive CSR for SMEs' financial performance. Bocquet et al. (2013) find that only strategic CSR is linked to technological innovation, regardless of firm size. Chang (2015) also highlights the importance of proactive CSR for green production innovation performance (but not responsive CSR). Although Martinez-Conesa et al. (2017) do not distinguish the type of CSR and focus exclusively on SMEs, their results suggest a partial mediation effect by innovation on the relationship between CSR and firm performance, such that the influence of CSR on firm performance shrinks with the addition of innovation performance to their model. Stoian and Gilman (2017) also adopt a strategic approach to CSR to analyze in which ways aligning CSR activities with the SME's competitive strategy enhances its growth. In line with these studies, we assert that strategic CSR is a key driver that a SME can use to integrate social and environmental aspects into its corporate activities.

As social aspects tend to be under researched, we seek to clarify the relationship between CSR, diversity and innovation

2.2. CSR AND DIVERSITY

No consensus exists regarding the definition of diversity, but the concept commonly refers to differences (or similarities) among the members of a unit on some common attribute (Williams and O'Reilly, 1998; Harrison and Klein, 2007). It integrates different types of diversity, classified in different categories such as social-category differences, differences in knowledge and skills, differences in values or beliefs, personality differences, organizational or community-status differences, differences in social and network ties (see Mannix and Neale, 2005 for a review). The most common classification divides diversity types into two groups, the "surface-level diversity" and the "deep-level diversity", according to the visibility of the attribute (Milliken and Martins, 1996; Harrison, Price and Bell, 1998; Williams and O'Reilly, 1998; Richard, 2000; Shore et al., 2009). We focus here on the surface-level diversity (Harrison, Price, and Bell, 1998) with respect to two observable attributes: gender and nationality. Indeed, the recent literature considers gender and nationality as two crucial attributes of diversity. In fact, there are the most studied attributes of diversity, with age.

CSR has not been documented as a suitable vehicle for diversity, with the exception of the very recent study of Kato and Kodama (2018). Based on a sample of 1,492 publicly traded firms in Japan over 2006–2014, they find a direct impact of CSR (measured by a summary metrics[1]) on gender diversity. Their findings are robust to the inclusion of controls capturing the mediating effects of various work–life balance practices. Grosser and Moon (2005) provide potential reasons for this shortcoming. First, corporations may resist gender mainstreaming, just as they might reject the business case for CSR. Second, corporations could view CSR in a traditional way, through a philanthropic lens, rather than as a way to initiate good business practices. These authors argue that though CSR may be a tool for improving gender equality, the relevant processes are still being developed. Given apparent resistance to diversity agendas, Thorpe-Jones et al. (2010) propose an alternative strategy that incorporates diversity and equality within the CSR agenda. The transformative potential of CSR offers a route through which diversity principles could be enacted within the industry and thereby attract, retain, and develop a diverse workforce. Such a position represents a

[1] They conducted a factor analysis at the firm-level panel based on three variables describing if the firm has 1) a formal CSR department, 2) an executive in charge of the CSR department and 3) an official document describing the firm's fundamental attitude and policy towards CSR activities

departure from most literature, which treats these issues as separate, enacted agendas. To contribute to research on the link between CSR and diversity, we anchor our research in the strategic approach of CSR, in the business case for diversity. This positioning leads us to consider that diversity in terms of gender and nationality can be valued through strategic CSR. In line with the-value in diversity or the learning approaches (Dass and Parker, 1999, Cox and Taylor, 1991), managing differences and similarities in human capital offers wide-ranging opportunities but also incurs costs (Singh and Point, 2014). For the benefits to outweigh the costs, it is not just a matter of valuing differences between employees, but of making everyone learn from others to achieve a common goal. For Singh and Point (2014, p. 298), "the strategic response should be proactive" in order to guarantee "a stronger and wider business case for diversity, particularly important in terms of recruitment of the best talents". This is all the more true in a country like Luxembourg which, because of a very constrained labor market, is obliged to hire a diverse workforce, especially in terms of nationality. Hence, in such type of country where the foreign population represents a large majority of the total employment, one could think that without such a proactive response, diversity could lead to increase costs without apparent benefits.

Prior literature mainly focuses on large firms, without considering strategic approaches to CSR for SMEs (cf. Stoian and Gilman, 2017) or the potential effects of diversity for these firms. This gap is surprising; SMEs account for 99% of all business in the EU (European Commission, 2015), and they often struggle to recruit and retain a qualified workforce, which could constrain their innovation activities (Perrini et al., 2007). That is, SMEs' characteristics, which distinguish them from large corporations (generally independent, cash-limited, based on informal relationships), mean they often lack resources, labor, information and knowledge, and management and marketing skills (Freel, 2000), such that they are more constrained in their day-to-day operations. They must seek other means to increase their performance than large firms, beyond conventional R&D investments or highly skilled staff, and diversity could be one option. If SMEs consider CSR as core to their activity (strategic CSR), they likely privilege diversity as a means to achieve organizational performance and innovation. SMEs usually implement CSR strategies that entail a high degree of involvement of their employees (Perrini et al., 2007). Thus SME managers, in their search for performance, should make the most effective use of their firm's capabilities. Because SMEs can maximize their financial returns when they are proactive in their strategy

and CSR (Torugsa et al. 2012), those firms engaged in strategic CSR should be the ones to adopt optimal staff recruitment practices (Castelo et al., 2006) and CSR activities related to the workforce (Stoian and Gilman, 2017), by promoting and valuing diversity.

In line with these predictions and a strategic CSR perspective, we argue that an SME engaged in strategic CSR relies on its workforce diversity. As Jenkins (2009, p. 27) recognizes: "as difference is necessary to success, no one person or perspective is adequate to respond to the complexity of today's world/CSR issues." This demand should be even stronger for SMEs, which should even more rely on diversity to innovate. We hypothesize:

Hypothesis 1. *SMEs engaged in strategic CSR are more likely to have a diverse workforce, in terms of (a) gender and (b) nationality, than SMEs engaged in responsive CSR.*

2.3. CSR, DIVERSITY, AND INNOVATION

Diversity tends to produce more effective creative operations and greater innovation (Cox and Blake, 1991; Mannix and Neale, 2005). Diverse teams outperform homogenous ones (Shen et al., 2009). For example, Bjornali et al. (2016) show that diversity and cohesion among team members increase their effectiveness. Diversity leads to the contestation of different ideas (Herring, 2009), so more creativity emerges. Moreover, superior solutions to problems result from team diversity. Diversity in turn is the complex product of multiple experiences that enrich individual and collective learning capacity (Bantel and Jackson, 1989; Joshi and Roh, 2009). Thus, diversity becomes an intangible firm asset. Finally, diversity yields better outcomes because progress and innovation depend less on lonely thinkers with high intelligence than on diverse groups (Herring, 2009). Increasing research thus considers the relationship between diversity and innovation. Diversity is a source of creativity and innovation that can provide a basis for competitive advantages (Bassett-Jones, 2005). Ruiz-Jiménez and Del Mar Fuentes-Fuentes (2016) find a positive effect of gender diversity on the relationship between management capabilities and SMEs' innovation performance, and Díaz-García et al. (2014) support the finding that gender diversity within R&D teams generates technological solutions leading to radical innovation (though not incremental innovation).

Yet this positive association between diversity and innovation is not "automatic." In a review of 80 studies of the effects of diversity on group processes and performance, Williams and O'Reilly (1998) conclude that there is no main effect of demographic diversity on performance and instead that "diversity appears to be a double-edged sword, increasing the

opportunity for creativity as well as the likelihood that group members will be dissatisfied and fail to identify with the group" (p. 403). Frosch's (2011) review of research into the effects of age on innovative performance, at individual and firm levels, also indicates inconclusive results. Østergaard et al. (2011) reveal a positive relation between diversity in education and gender on the likelihood of introducing an innovation and a positive relationship between an open culture toward diversity and innovative performance. However, they also find a negative effect of age diversity and no significant effect of ethnicity on a firm's likelihood to innovate. Firms that employ a more diverse foreign workforce may be more innovative, particularly in terms of product innovations, but firms in which foreigners account for a relatively large share of employment are somewhat less innovative (Ozgen et al., 2011). Focusing on gender diversity, Quintana-Garcia and Benavides-Velasco (2016) also find a significant negative relationship between gender diversity in executive management and initial public offering success in the biotechnology industry, though innovation capabilities counterbalance this negative influence.

Thus, there may be a dark side to diversity. It can be a recognizable source of creativity and innovation, providing a competitive advantage, or diversity can be a cause of misunderstanding, suspicion, and conflict in the workplace that promotes absenteeism and lowers members' satisfaction (Williams and O'Reilly, 1998; Mannix and Neale 2005). To make the relationship work, three aspects should be taken into account. First, contextual conditions may exert influences (Joshi and Roh, 2009), necessitating a contingency approach to the relationship between various types of diversity and different measures of firm performance (e.g., Carpenter, 2002; Dwyer et al., 2003). Second, most studies focus on one type of diversity, which makes it difficult to evaluate the "global" effect of diversity on firm performance (Horwitz and Horwitz, 2007). Third, specific diversity management is needed to manage the paradoxical situation that diversity creates within organizations: "If they embrace diversity, they risk workplace conflict, and if they avoid diversity, they risk loss of competitiveness" (Bassett-Jones, 2005 p. 169). Cox and Blake (1991) establish the foundations for rethink the link between proactive strategy and diversity. Because short-term progress depends on conflict and communication (e.g., Shen et al., 2009), literature on diversity offers a range of responses to the challenges (Dass and Parker, 1999). Moore (1999) specify four main responses: hostile, blind, naïve, and integrationist.

The value-in-diversity hypothesis suggests that work team heterogeneity promotes creativity and innovation (Cox and Blake, 1991). Dass and Parker (1999) elaborate a learning perspective related to a firm's proactive strategic response, which encourages active participation to find more efficient compliance options, beyond legally mandated ones, resulting in more efficiency, innovation, and change. These authors do not explicitly consider CSR in their model, but, as mentioned before, the relationship with CSR is suggested.

In SMEs, top management and its managerial capabilities, as derived through diversity, strongly affect organizational performance. With a sample of Spanish technology-based SMEs, Ruiz-Jiménez and Fuentes-Fuentes (2016) show that management capabilities exert greater influences on both product and process innovation when the management team is more balanced by gender, such that gender diversity positively moderates the capabilities–innovation relationship. Yet Shehata et al. (2017), with a large sample of U.K. SMEs (34,798 firms), uncover significant negative associations of gender diversity and age diversity with firm performance, possibly due to the lack of a proactive CSR strategy. If diversity and CSR are not planned or incorporated into the firm's strategy, the effect on performance may be negative (Bocquet et al., 2013). However, SMEs that are proactive in their CSR activities are often the best performing companies. Battaglia et al. (2014), in a survey of 213 SMEs in the fashion sector, find a strong and positive correlation between CSR and innovation. Martinez-Conesa et al. (2017) note that the effect of CSR on firm performance improves through increased innovation, which positively moderates the relationship. We thus hypothesize:

Hypothesis 2. *SMEs for which (a) gender and (b) national diversity are the result of their strategic CSR are more likely to innovate than SMEs for which such diversities are the result of responsive CSR*

3. EMPIRICAL METHODOLOGY

To understand how CSR strategies can drive SMEs' diversity, with potential effects on innovation, we adopt an empirical methodology based on a two-step procedure to deal with endogeneity concerns. First, with a Tobit model with instrumental variables, we analyze the effects of strategic and responsive CSR on gender and nationality diversity. Second, we introduce the predicted diversity variables in a probit model to analyze the effect of diversity on SMEs' innovation.

Data

We based our empirical estimation on data from a unique survey conducted by the Luxembourg Institute of Socio-Economic Research in 2013, complemented with administrative data. In terms of CSR, Luxembourg represents an intermediate nation in Europe, but compared with other European countries, it has the highest share of foreign residents (44.5% in 2013[2]), largely due to its small size. It is bordered by Belgium, France, and Germany, and commuters from those countries and foreign residents have come to represent 44.1% and 24.1% of the workforce, respectively.[3] Women do not participate in the labor market to the same degree as men; the female employment rate is 18.9 percentage points lower than the male employment rate (9.5% in 2013).[4] These features suggest that Luxembourg is a special case for workforce diversity and raise the question of whether diversity manifests itself in Luxembourgish firms as a response to workforce demographic constraints (inevitability) or as a driver of innovation (value-in-diversity hypothesis) (Cox and Blake, 1991).

The survey spans Luxemburgish firms with more than 15 employees, belonging to multiple economic sectors. Among this population, the survey administrators constructed a stratified random sampling (by firm size and economic sector) of 2819 firms. The questionnaire, written in French and German and also available in English, was sent to these enterprises in the second week of January 2013. After a reminder in February, the data collection stopped in July; it produced 1569 responses, for a response rate of 56.25%. Among these respondents, we retained 1348 firms with fewer than 250 employees and applied a weighting procedure, based on the inverse of the response rate per stratum, to obtain representative results for the target SME population.

The survey gathered details about the general characteristics of the SMEs (size, activity, group membership, workforce qualification, organizational structure) and rich

[2] See http://www.statistiques.public.lu/stat/TableViewer/tableView.aspx?ReportId=12858&IF_Language=fra&MainTheme=2&FldrName=1

[3] As of 2013. See http://www.statistiques.public.lu/stat/TableViewer/tableView.aspx?ReportId=12916&IF_Language=fra&MainTheme=2&FldrName=3&RFPath=92

[4] See http://www.statistiques.public.lu/stat/TableViewer/tableView.aspx?ReportId=12918&IF_Language=fra&MainTheme=2&FldrName=3&RFPath=92

information about their CSR strategies and practices, innovation activity, use of information and communication technologies (ICT), and competitive economic context. To enrich this data set, we merged these survey data with administrative data from the social security administration,[5] which break down employees by gender and nationality at the firm and sectoral levels.

3.1. ANALYZING THE EFFECT OF CSR STRATEGY ON DIVERSITY (TOBIT MODEL)

The diversity variables, *gender* and *nationality*, measure the distributions of gender and nationality within each firm. Thus, they capture how diverse the workforce is with regard to gender and nationality. In line with previous research (Harrison et al., 1998; Richard, 2000; Richard et al., 2004; Mohammed and Angell; 2004; Richard et al., 2013), we use the Blau index (1997):

$$1 - \sum p_i^2,$$

where p is the proportion of a specific group of employees (e.g., male), and i is the number of different groups of employees according to the feature studied (e.g., two groups for gender). If the population is homogeneous with regard to gender (all employees are male), the Blau index equals 0; if the proportions of male and female employees are the same, the Blau index is 0.5. The highest value of the Blau index thus depends on the number of groups in the population. For gender diversity, as shown, the maximum value is 0.5, but for nationality diversity, we consider seven different nationalities: Luxembourgish employees, employees from the three border countries (Germany, France, and Belgium), and foreign employees whose nationalities also are common in Luxembourg (Portuguese, Italian, and other). The maximum value of the Blau index for nationality diversity thus is 0.86. To normalize the index, we use a technique proposed by Solanas et al. (2012) and divide the index by its maximum value.

For the independent variable, we differentiate SMEs according their CSR strategies to assess the effects on gender and nationality diversity (Hypothesis 1). This classification procedure consists of two steps.[6] First, we conducted a principal component analysis with the

[5] http://www.mss.public.lu/acteurs/igss/

[6] We do not present the results of the principal component analyses here, because they constitute merely preparatory stages for the cluster analyses. These results are available on request.

15 binary variables related to five CSR dimensions (centrality, proactivity, voluntarism, visibility, specificity) proposed by Burke and Logsdon (1996). The Kaiser-Meyer-Olkin score (0.79) and Bartlett's test of sphericity ($p < .000$) show satisfactory results. Three factors summarize the SMEs' CSR strategies (43% of the total variance). Second, we performed a non-hierarchical cluster analysis, based on the scores revealed by the factor analysis. To determine the final number of clusters, we use three criteria: statistical accuracy, measured by the ratio of within-cluster to between-clusters variance (Fisher's test); the number of firms per cluster; and the economic significance of the clusters identified. Two clusters emerge as the best version. To interpret them, we calculate the mean of each CSR indicator in each cluster[7] (see Appendix A).

Cluster 1 comprises poor CSR adopters. Mainly concerned with environmental issues, these SMEs have initiated contacts with their main stakeholders (public actors, shareholders, suppliers, customers) (voluntarism). However, their CSR is mostly rhetoric, and they have not implemented any specific practices, except for describing their CSR strategy on their website. These elements suggest a responsive CSR strategy. Cluster 2 instead includes SMEs that are very active, with high scores on the centrality, proactivity, specificity, and visibility dimensions of CSR. Their CSR is well-anchored in their values, and they favor economic and social aspects (centrality). They dedicate specific resources to sustain their CSR strategy, define priorities, formalize procedures, establish a precise timetable, and evaluate the actions and the choices taken (proactivity, specificity). They are accountable for their actions to their shareholders through dedicated CSR reports (visibility), and CSR practices are at the heart of their strategy. We also introduce a dummy variable for SMEs that do not implement any CSR practices (*no_CSR*).

For the control variables, we follow prior literature. SMEs engaged in CSR activities related to the workforce likely cope better with recruitment and retention challenges, at lower costs (Castelo Branco, Rodrigues, 2006). We thus include two dummies for the perceived difficulties of hiring non-qualified (*NQ_difficulties*) or qualified (*Q_difficulties*) workers. Consistent with Richard et al.'s (2013) recommendation, we include gender diversity (*diversity_gend*) as a control variable when considering nationality diversity, and vice versa. For firm size, we introduce two dummy variables (*Small_size* and *Medium_size*) to

[7] For all comparisons of variances, Fisher's test is significant at the 0.000 level and indicates a good differentiation of the firms. In the discriminant analysis, the classification matrix indicates that 96.3% of the observations are correctly classified.

differentiate small SMEs (15–49 employees) from medium SMEs (50–249 employees). Small SMEs suffer from a lack of resources, which can affect their socially responsible decisions (Perrini et al., 2007; Stoian, Gilman, 2017); Woodhams and Lupton (2006) confirm that the smallest SMEs do the least. We also control for SMEs' belonging to a foreign-based group (*Foreign_Group*). With their greater openness and additional resources, these SMEs likely are more diverse. We include firm age *(Age)* to account for the maturity of the firms, linked to their diversity practices (Withisuphakorn and Jiraporn, 2016). Finally, we control for seven economic sectors in which SMEs operate (manufacturing, finance, construction, transport, ICT, trade, and other). Variations in diversity practices exist between firms operating in different sectors (Herring, 2009).

When we estimate the effects of strategic and responsive CSR on diversity, we could encounter endogenous regressors, such that our estimations would measure only the magnitude of association, rather than a causal relation. To deal with this problem and obtain consistent parameter estimates, we used instrumental variables from our administrative data set. As suggested by Martin (2017), the instrumental variables refer to the sector level, which avoids the potential correlation between diversity and the error terms of the innovation equation. A suitable instrument to analyze gender diversity is the percentage of women in each economic sector (*Diversity_gend_sect*). When we estimate the determinants of nationality diversity, we use the percentage of cross-border workers in each economic sector (*Diversity_front_sect*).

3.2. ANALYZING THE EFFECT OF DIVERSITY ON INNOVATION (PROBIT MODEL)

With the dummy variable *Inno*, we identify whether the SME has introduced a technological (process or product) innovation. This variable is similar to those used in the Community Innovation Surveys (CIS).[8]

[8] The survey asked two questions: During the last three years, did your enterprise introduce new or significantly improved goods (product or services)? (Yes or No). During the last three years, did your enterprise introduce new or significantly improved processes (methods of manufacturing, logistics, delivery or distribution methods, supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing? (Yes or No).

We introduce the predicted diversity variables from the diversity equation (first step of our procedure) as independent variables. Predicted gender and predicted nationality diversity are denoted, respectively, *Diversity_gend_pred* and *Diversity_nat_pred*.

In accordance with the resource-based view, firm capabilities are key determinants of innovation (Teece and Pisano, 1994). Because R&D expenditures are not available in our database, we introduced the dummy variable, R&D, that indicates whether SMEs have internal R&D expenses. To capture the level of education of firms' workforce, we include a dummy variable *Human_capital*. Furthermore, ICT tools can help firms assimilate and exploit knowledge (Chiaroni et al., 2010), so we include an enterprise resource planning (ERP) variable. With the dummy variable *Exports*, we acknowledge that exports may enhance firms' innovation, through a learning effect (Cassiman and Golovko, 2011). Resource constraints have a negative impact on firms' innovation propensity (Damanpour, 1991), leading us to introduce the dummy variable *Growth* in our estimation. It indicates whether firms' turnover has increased more than 5% in the previous three years. The external environment has an effect on SMEs' innovation practices, and firms operating in a fast changing environment innovate more frequently (Covin and Slevin, 1989), so we also include the variable *Uncertainty*, which reflects the threats that the SME perceives in its competitive environment: newcomers, product/service obsolescence, rapid product changes, and demand uncertainty. According to Wagner (2010), firms' capacity to innovate depends on their size. With *Small_size* we refer to SMEs with 10–49 employees, and *Medium_size* indicates SMEs with 50–249 employees. Again, we take the sector of activity into account with seven dummies: manufacturing, transport, finance, construction, ICT, trade, and other. Appendix B contains the definitions and summary statistics for all these variables.

4. RESULTS

Table 2 contains the results related to the determinants of the two types of surface-level diversity (gender and nationality). As expected, the two main explanatory variables (strategic and responsive CSR) exert differentiated effects. Strategic CSR positively and significantly affects the diversity index, regardless of its type. Responsive CSR drives only gender diversity, at a low level of significance (10%), in support of Hypothesis 1. By including the variables representing the difficulties of hiring non-qualified and qualified personnel, we also can isolate pure CSR effects and demonstrate that some nationality diversity is due to SMEs' difficulties with hiring qualified people.

Among the control variables, firm age and group membership have negative effects on both types of diversity. The estimated coefficients for sector variables are also significant. Compared with the trade sector, the remaining sectors exhibit negative effects on nationality diversity, except for the "other sector" group, for which the effect was not significant. Considering gender diversity, the finance sector needs to broaden its talent base; manufacturing, construction, and transport reveal significant negative effects. Finally, the estimated coefficients for the two instrumental variables (*Diversity_gend_sect* and *Diversity_front_sect*) are positive, reinforcing the consistency of our estimations.

Table 1. Relationship between CSR strategies and workforce diversity (Tobit model)

	Diversity_nat	Diversity_gend
Strategic_CSR	0.0422457** (0.0206398)	0.0450473** (0.0210182)
Responsive_CSR	0.0020014 (0.0225409	0.0412639* (0.0231105)
No_CSR	Ref.	Ref.
NQ_difficulties	-0.0067363 (0.0284827)	0.0109273 (0.0325605)
Q_difficulties	0.0376821** (0.0170716)	-0.0091382 (0.0192785)
Diversity_gend	0.1016125*** (0.0277702)	/
Diversity_nat	/	0.1080981*** (0.0293937)
Small	-0.0779706*** (0.0184018)	-0.0167569 (0.0208186)
Medium_size	Ref.	Ref.
Foreign_group	-0.0562273*** (0.0177935)	-0.0282546 (0.0196083)
Age	-0.0588571*** (0.0144533)	-0.0331685** (0.014734)
Manufacturing	-0.0675998*** (0.0249802)	-0.1506742*** (0.0311653)
Finance	-0.0153299 (0.0262981)	0.2225339*** (0.022957)
Construction	-0.1201086*** (0.0223679)	-0.2973885*** (0.0270533)
Transport	-0.1215518*** (0.0283239)	-0.2677287*** (0.033074)
ICT	-0.0605044** (0.0303272)	-0.0129463 (0.0339108)
Other_Sect	0.0138848 (0.0214943)	-0.0412663 (0.0288273)
Trade	Ref.	Ref.
Diversity_front_sect	0.0020263*** (0.0006766)	/
Diversity_gend_sect	/	0.00194*** (0.0006215)
Constant	0.5840038***	0.5466279***

	Diversity_nat	Diversity_gend
	(0.0429293)	(0.0406568)
Nb. obs.	1,348	1,348
Pseudo R2	1.5739	0.9856
Log pseudo-likelihood	60.98743	-9.7961446

The results in Table 3 come from the probit model to assess the predicted effect of the two types of diversity (gender and nationality) on technological innovation (product or process). We expect a positive effect of diversity on SMEs' capacity to innovate, because the diversity variables include the effect of SMEs' CSR strategy. The results corroborate Hypothesis 2 and the positive effects of both types of diversity indexes on SMEs' technological innovation, after we control for traditional drivers of innovation such as R&D expenditures, ERP, and firm size. Past firm growth has a positive effect, suggesting innovative persistence processes. Similarly, SMEs operating in environments with high levels of uncertainty exhibit a higher probability of introducing technological innovations. The control variables for the sector effect are never significant, even though some sectors "by nature" should be inclined to innovate. The results also indicate that nationality diversity has a stronger impact on technological innovation than does gender diversity, consistent with the positive effect of diversity in nationality on innovation in manufacturing businesses in Ireland (McGuirk and Jordan, 2012) and Danish firms (Østergaard et al., 2011).

Table 2. Relationship of predicted workforce diversity and technological innovation (Probit model)

	Inno	Inno
Diversity_nat_pred	2.201532*** (0.713837)	/
Diversity_gend_pred	/	2.028299** (0.8297219)
R&D	0.4154915*** (0.0909453)	0.4348419*** (0.0906778)
Human_capital	0.0003919 (0.1201433)	-0.053098 (0.1200224)
ERP	0.2706593*** (0.0813348)	0.2693745*** (0.081275)
Exports	0.0593263 (0.2034578)	0.056778 (0.2010442)
Growth	0.3048734*** (0.0772006)	0.296916*** (0.0770614)
Uncertainty	0.1515767*** (0.0372483)	0.1490166*** (0.0372685)
Small_size	-0.2943206** (0.1298676)	-0.4220485*** (0.118002)
Medium_size	Ref.	Ref.
Manufacturing	0.1237403	0.3866074

	Inno	Inno
	(0.1395972)	(0.2164916)
Construction	0.0824895 (0.1561968)	0.5259874 (0.3378605)
Transport	0.0985677 (0.1810153)	0.4921873 (0.3375135)
ICT	0.1693132 (0.1955794)	0.1411104 (0.1986968)
Other_sect	0.1446041 (0.1390112)	0.2032112 (0.139726)
Trade	Ref.	Ref.
Constant	-2.215248*** (0.5689412)	-1.958312*** (0.6108672)
Nb. obs.	1,348	1,348
Pseudo R2	0.0890	0.0868
Log pseudo-likelihood	-1315.6274	-1318.744

5. DISCUSSION AND CONCLUSION

With this study, we integrate three important elements: CSR, diversity, and innovation, to derive an integrated approach to sustainable firms' conduct. Our research provides a major theoretical contribution by combining a strategic approach to CSR (Porter and Kramer, 2006) on the one hand with a diversity approach based on the value-in-diversity hypothesis (Cox and Blake, 1991) on the other. Furthermore, we focus on SMEs, which have been understudied in relation to CSR and diversity, despite the increasing demands they face from their stakeholders (including regulators).

5.1. THEORETICAL IMPLICATIONS

Overall, our findings show that strategic and responsive CSR have distinct effects on both types of diversity (gender and nationality). Only SMEs for which CSR is an integral part of their strategy can benefit from diversity in terms of innovation. This relationship arises, regardless of the type of diversity involved. In line with a strategic perspective on CSR, we conceive of CSR as a multidimensional construct (Rasche et al., 2017) to reflect its dynamic, strategic nature accurately. Our conceptualization shows that CSR can be viewed as an investment in intangible resources, which may affect SMEs' diversity management and ability to innovate (McWilliams and Siegel, 2001). In line with Jenkins (2009), we show that SMEs can take advantage of the opportunities related to CSR by integrating CSR into their core strategy. If SMEs develop a strategic CSR response, they achieve better results, in terms of gender and national diversity, than those that only react. This ability is especially worthwhile for SMEs that are constrained in their staff recruitment efforts (European Commission, 2009). By developing strategic CSR, SMEs can attract diverse, talented people who contribute significantly to their innovation capacity.

This study also provides strong support for the value-in-diversity hypothesis (Cox and Blake, 1991) by clarifying the mechanism by which diversity leads to innovation by SMEs. Previous studies indicate a link between demographic attributes and innovation (Østergaard et al. (2011); we go a step further by showing that diversity, when fully considered in the firm's CSR strategy, is a powerful lever of SMEs' technological innovation. Thus, it is not diversity itself that is important but rather SMEs' ability to integrate this diversity into their CSR strategic management (Bruna and Chauvet, 2010; Cox and Blake, 1991; Jehn and Northcraft,

1999; Mannix and Neale, 2005). In Dass and Parker's (1999) terms, SMEs' strategic responses are proactive; their exploitation of gender and nationality differences create a productive environment that contributes to fostering innovation. As Østergaard et al. (2011, p. 508) recommend, we offer new insights into the relationship between diversity and innovation by "look[ing] at not only at the demographic composition, but also consider[ing] other factors that make the human capital composition of a firm to a success." Our results highlight the importance of strategic CSR for the effects of diversity and suggest ways that SMEs can integrate diversity to foster their innovation capacity. No previous study includes the relationships of CSR, diversity, and innovation,except the very recent study of Kato and Kadoma (2018) based on a panel of large Japanese firms for which a direct comparison is not possible. While they find a direct and robust impact of CSR on gender diversity at the organizational level (and not only the board), they do not operationalize CSR as differentiated strategies and the link with innovation is ignored. . Yet our findings are in line with research and theory that highlight the need to develop a well-defined diversity strategy tied to business results (Jayne and Dipboye, 2004).

We also offer an explanation for the mixed empirical findings that have emerged from studies of the diversity–performance/innovation relationship, by showing that the positive value-in-diversity hypothesis is supported among firms that adopt strategic CSR. The contradictions in previous literature might be explained by an overly simplistic view of diversity as either positive or negative. The value-in-diversity hypothesis instead suggests that diverse groups provide superior solutions to organizational problems and may increase organizational efficiency, effectiveness, and profitability. Therefore, diversity may become a source of competitive advantage, if work team heterogeneity favors innovation (Cox and Blake, 1991). Yet organizational demography research (Pfeffer, 1985) also indicates that social similarity is important for interaction and communication, which are essential for performance. A diverse workforce thus could generate communication problems, low cohesion, and high turnover (Milliken and Martins, 1996), which would impede organizational performance. Barriers that prevent the successful implementation of diversity initiatives often relate to the work environment (competing agendas, size, firm complexity) or employees (who may not value diversity). These contrasting arguments also align with social categorization and social identity theories and the similarity–attraction paradigm (Byrne,

1971), which suggest that diversity instigates ingroup–outgroup distinctions and negative social processes, such that it can compromise group and organizational performance.

In a similar sense, an overwhelming majority of research is enthusiastic about the benefits of CSR, without considering its dark side, such as the necessary trade-off between investments in CSR and investments in the firm's (more) strategic competencies, such as innovation (Luo and Bhattacharya, 2006). Highly innovative firms can generate positive market value from CSR though, because their stakeholders' needs already have been satisfied. Luo and Bhattacharya (2009) show that the simultaneous pursuit of CSR, R&D, and advertising may be financially detrimental, because pursuing all these goals simultaneously is difficult, if not impossible, within inherent resource limits—a much more crucial problem for SMEs. We provide evidence that the positive sides of both diversity and CSR are closely related, such that strategic CSR favors value-in-diversity, but responsive CSR has no significant relationship with diversity. Regarding potential value creation and innovation through strategic CSR (Porter and Kramer, 2006), we find that SMEs adopting such a strategy not only are more engaged in surface-level diversity but also have the highest probability of introducing technological innovations.

5.2. MANAGERIAL IMPLICATIONS

The results also indicate that SME are not necessarily less advanced in organizing CSR than large firms. Small firms possess several organizational characteristics that favor the implementation of CSR-related practices in core business functions (Baumann-Pauly et al., 2013). Our analysis provides new insights on the complex relation between CSR and innovation in SMEs, by stressing the role of diversity and thus revealing an area in which SMEs might gain competitive advantages. They should look beyond legislative requirements and take a value-added approach toward long-term performance. Building support for a diversity initiative requires a clearly defined strategy based on organizational values, in favor of social aspects of CSR (centrality). To be effective, a diversity initiative must become a business reality. Specific managerial and organizational resources (proactivity, specificity, and visibility) need to be developed to capitalize on the insights and competences of diverse gender and national identities.

5.3. LIMITATIONS AND AVENUES FOR FURTHER RESEARCH

This study has several limitations but has also paved the way for further research. First, the paper builds around the business case for diversity and the value-in hypothesis. Future research should also consider that the business case for diversity, while frequently used, is not the only rationale for diversity. Consideration should also be given to the social justice and moral case for diversity, which fit nicely with CSR. Second, we did not seek to differentiate different types of technological innovations (e.g., product vs. process, technological vs. managerial innovations) or the goals of innovative efforts (e.g., for environmental purposes). Third, with our database we cannot account for the role of the founder, even though the personal beliefs of SME founders (often the firm owner and manager) tend to be even more influential than those of managers of large firms (Rasche et al., 2017). Relevant extensions thus might study the effects of managers' leadership styles. Fourth, the notion of diversity integrates different types. Most researchers study one or two types, and nationality and gender are popular choices (Haas and Shimada, 2010). But other types of diversity, especially those that reflect deep-level diversity (Harrison et al., 1998), deserve greater attention from research that addresses diversity in values, skills, knowledge, personality, or organizational tenure, for example. Finally, this research relies on a cross-sectional research design. More research is needed to consider the possibility of an evolving and dynamic relationship between CSR, diversity and innovation over time.

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Appendix A. Interpretation of CSR clusters (*)

	Mean														
	StakeP	StakeS	StakeSC	Doc	Agenda	Plan	ComR	ComDR	EmployD	ObjectiveD	Eco	Env	Soc	StakeNGO	ComWeb
Cluster 1 : Responsive CSR (n=132)	**.73**	**.52**	**.89**	.49	.15	.12	.17	.14	.42	.33	.46	**.93**	.45	.31	.33
Cluster 2: Strategic CSR (n=190)	.54	.32	.64	**.82**	**.66**	**.70**	**.27**	**.25**	**.74**	**.64**	**.64**	.85	**.64**	**.35**	**.41**
Total	.61	.40	.74	.68	.45	.46	.23	.20	.61	.51	.57	.88	.56	.34	.37

(*) The mean values in bold are significantly higher in the considered cluster.

Appendix B. Variable definitions and summary statistics

VarName	Label	Mean (SD)
Diversity_nat	Normalized Blau's index of heterogeneity (val. Max) based on 7 categories of nationality (French, German, Portuguese, Belgium, Italian, Luxemburgish, other nationalities)	0.61 (0.25)
Diversity_gend	Normalized Blau's index of heterogeneity (val. Max) based on 2 categories of gender (female and male)	0.57 (0.32)
Inno	=1 if the SME has introduced process or product innovation in the last 3 years, 0 otherwise	0.32 (0.47)
Strategic_CSR	= 1 if the SME belongs to strategic CSR cluster profiles, 0 otherwise	0.13 (0.34)
Responsive_CSR	= 1 if the SME belongs to responsive CSR cluster profiles, 0 otherwise	0.09 (0.29)
No_CSR (ref.)	= 1 if the SME has not adopted or doesn't plan to adopt CSR, 0 otherwise	0.78 (0.41)
NQ_difficulties	= 1 if the SME perceives difficulties to hire non-qualified workers, 0 otherwise	0.06 (0.24)
Q_difficulties	= 1 if the SME perceives difficulties to hire qualified workers, 0 otherwise	0.15 (0.36)
Diversity_gend_sect	Percentage of females in each economic sector	29.5 (21.46)
Diversity_front_sect	Percentage of cross border workers in each economic sector	54.43 (11.53)
Small_size	= 1 if the SME has 10 to 49 employees, 0 otherwise	0.81 (0.39)
Medium_size (ref.)	= 1 if the SME has 50 to 249 employees, 0 otherwise	0.10 (0.30)
Foreign_Group	= If the SME belongs to a group whose is headquarters located in a foreign country, 0 otherwise	0.24 (0.43)
Age	= 1 if the SME was created at least 15 years ago, 0 otherwise	0.33 (0.47)
Manufacturing	=1 if the SME operates in the manufacturing sector, 0 otherwise	0.12 (0.33)
Transport	=1 if the SME operates in the transport sector, 0 otherwise	0.10 (0.30)
Finance	=1 if the SME operates in the finance sector, 0 otherwise	0.13 (0.33)
Construction	=1 if the SME operates in the construction sector, 0 otherwise	0.22 (0.41)
ICT	=1 if the SME operates in the ICT sector, 0 otherwise	0.07 (0.25)
Trade (ref.)	=1 if the SME operates in the trade sector, 0 otherwise	0.24 (0.43)
Other_sect	=1 if the SME operates in other sectors, 0 otherwise	0.12 (0.32)

VarName	Label	Mean (SD)
R&D	If the SME undertakes internal R&D activity, 0 otherwise	0.26 (0.44)
Human_capital	= 1 if the percentage of employees with higher education (incl. post-secondary college and university) is greater than 25%, 0 otherwise	0.76 (0.43)
ERP	=1 if the firm uses Enterprise Resource Planning system, 0 otherwise	0.34 (0.47)
Exports	= 1 if the SME sells its products abroad	0.04 (0.19)
Growth	= 1 if the SME turnover has increased of 5% at least during the last 3 years, 0 otherwise	0.40 (0.49)
Uncertainty	Sum of the threats perceived as high by the SMU from its competitive environment: new comers, products/services obsolescence, rapid change in products, demand uncertainty (From 0 to 4).	0.84 (0.99)