

Stakeholder pressures, country context and sustainability in manufacturing: A global perspective

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Abstract

This paper tries to further contribute to the topic of the effect of stakeholders' pressures in the adoption of sustainability practices considering the country development context (emerging vs developed countries). This research has used a multi-country and multi-sector sample of 330 manufacturing plants and ordinary least squares multiple regression. The results confirm that there is a positive association between stakeholders' pressures and the adoption of sustainability practices in the full sample and in both emerging and developed contexts, although it is interesting to stress that the importance of individual stakeholder's pressures vary with the country context.

Keywords: Stakeholders, Sustainability Practices, Country context, Emerging and developed countries, HPM project.

1. Introduction

The problem of climate change has been in the spotlight of the politics, organizations, media and the society as a whole for years and especially in the last decade. In this context of growing concern for the environment worldwide, regions and countries around the world have adopted different strategies aimed to reduce environmental damages related with both economic and social activities (Chen, Nginedema and Li, 2018). At company level, the adoption of sustainable practices has becoming a global concern that plays a strategic role for the competitiveness (Villena & Gioia, 2018).

However, evidence suggest that in spite of the benefits of sustainability orientation of companies on performance (e.g. Abdul-Rashid, et al., 2017), only some companies moves away from a traditional profit-focused approach to a more balanced aligned with the triple botton line (TBL), looking for economic benefits, environmental and social reputation to create greater business value (Bansal and DesJardine, 2014).

Previous studies analyzing drivers for sustainability show that external pressures from regulation, customers or competitors are important drivers for sustainability proactivity in manufacturing (Danese et al, 2018). According with Freeman (1994), managers usually interpret differently stakeholders' pressures, which in turn may result in that some companies are more/less implicated in sustainability than others.

Sustainability is in the core of problems addressed by stakeholder theory (Frynas and Yamahaki, 2016), however, the effects of stakeholder on sustainability actions have received little attention from the operations management literature (Dal Maso, Liberatore and Mazzi, 2017). This paper aims to analyze how managers' perceptions of different stakeholders' pressures affect the adoption of sustainability practices. In addition, in an attempt to improve the understanding of the reasons behind the adoption of different levels of sustainability in manufacturing firms (Starik and Kanashiro, 2013), this paper also considers the role of the development context on stakeholder pressures in emerging and developed countries.

Empirically, this study analyzes the impact of stakeholders' pressures on the adoption of different sustainability practices adopted for 315 manufacturing plant concentrated in three industry sectors and located both emerging and developed countries. Thus, evidence shed a broad picture of the phenomena considering a large number of companies worldwide.

2. Theoretical Background

Organizations should consider the expectations and claims of diverse internal and external stakeholders (Surroca et al., 2013), which can demand and help companies to adopt and implement sustainability practices. As a result, managers are responsible for complying with stakeholders' demands and not only with the shareholders welfares (Alvarez-Gil et al., 2007). However, little attention has been paid to the analysis of

sustainability activities of manufacturing firms from the perspective of stakeholder theory.

Business's major stakeholders are employees, owners, managers, customers, the community, government, competitors, and the natural environment (Caroll, 2004), which conceive the business as a coalition of all the formers actors (Buysse and Verbeke 2003). They act by pressing firms guided by a process of isomorphism in accordance with their own value systems, rules and laws, allowing them to achieve a certain legitimacy and reputation.

Government and regulations accounts with several mechanism to pressure firms to engage in environmental protection (Kassinis and Vafeas, 2006). *Customers* are considered as the most impactful of stakeholders in relation to a company's adoption of sustainability practices (Lee and Klassen, 2008). As a result, firms have incentives to adopt sustainability practices to achieve market performance and to satisfy customer demands. At a business-to-business level, customers demand suppliers to have certain environmental certifications; e.g ISO 14000 (Delmas and Montiel, 2008). *Community and non-governmental organizations (NGOs)*, which are very active denouncing the non-care of the environment (Hoffman, 2000). Regarding *shareholders*, their pressure regarding sustainability proactivity is not clear. On the one hand, they can support sustainability practices looking for enhanced reputation and competitive positioning of firms. Shareholders may pressure for efficiency and cost reduction in the short run, acting as a barrier for the adoption of sustainability actions which effects are not immediately observed (Mirás et al., 2018). *Managers* are important internal stakeholders for sustainability. Their support and leadership is key to give direction to the whole organization to be committed with environmental issues (Buysse and Verbeke, 2003) A lack of top management support leads to higher resistance from the organization to adopt green practices and therefore their support is vital for environmental practices to be succeed (Sarkis, Gonzalez-Torre, Adenso-Diaz, 2010). Finally, *employees* are a very important stakeholders group. Whithout employee participation and support the organization cannot survive (González-Benito and González-Benito, 2006).

In accordance with the above arguments, we can formulate the first research's hypothesis as follows:

H1.- There is a positive relationship between Stakeholders pressures on the adoption of Sustainability Practices (SP) in Manufacturing

In addition, this paper tries to further contribute to the topic considering the joint effect of stakeholders' pressures and the country context, specifically the derivative of the degree of development (that is: Emerging vs Developed countries), on the adoption of sustainability practices. The convergence perspective (Ralston et al., 1997) states that the growing global transfer of technology and organizational systems will lead to similar behaviors in different countries to the detriment of national cultures (Dore, 1973; Form, 1979). Following this perspective, we could formulate the second hypothesis as follows:

H2. There is a positive relationship between Stakeholders pressures on the adoption of Sustainability Practices in Manufacturing in different country contexts (emerging and developed countries)

3.Methodology

3.1 Data

The database used in this study includes 330 manufacturing plants from three major industries (mechanical (123 plants), electronics (122 plants), and transportation equipment (85 plants) that participated in the fourth round of the High Performance Manufacturing (HPM) project. More than 25 research groups from 15 countries across Europe, America, and Asia are involved in the project (Finland, Italy, Spain, Germany, Sweden, China, Korea, Japan, Israel, Brazil, the UK, Vietnam, Taiwan, Australia, and the USA).

A set of 12 questionnaires specific to different operational management areas was administered through interviews with a number of plant managers. One of these sets of questionnaires was specific to sustainability issues. Scales and items integrating all of the questionnaires had previously been used and validated in several OM studies. The questionnaires in each functional area were completed by two managers. Asking to a more than one respondent in each plant to fill in a questionnaire allows for triangulation of information helping to prevent common method bias (CMB) problems (Podsakoff et al., 2003).

3.2. Measures, Statistical Treatment and Descriptives

The questionnaire sections including questions related to environmental affairs are considered for the purpose of this study. Between them, it is possible to distinguish internal sustainability practices (ISP) from external sustainability practices (ESP). The exploratory factor analysis shows unidimensionality since the items of each scale dimension loaded on a single factor, and adequate reliability through according with Cronbach Alpha in all cases higher than 0.85 (except in one case that is 0.74) and composite reliability (CR) higher than 0.85. Furthermore, confirmatory factor analysis shows values of RMSEA, NFI, FRI, CFI and TLI all of them with acceptable values of fit according with Hair et al., (1995). No error correlations or cross-loading problems were detected. Next, we created the respective additive indexes for each scale. Processing of the data sample shows that ISP are on average adopted largely in manufacturing plants, on average 3,926 on a 1-5 scale, while ESP achieve on average a value of 3.006, close to the point of indifference in the scale. For a more comprehensive picture of our data, we run a cluster analysis distinguishes considering the level of adoption of sustainability practices by manufacturing plants. The analysis shows three groups: Full adopters, Medium Adopters and Low Adopters, with statistical differences between groups related to SP adoption.

Regarding, stakeholders, the questionnaire includes six multi-items constructs related with both internal and external stakeholders (Schrettle et al., 2014): Top Managers, Employees, Shareholders, Customers, Government and ONGs. Except for the case of ONGs pressures (on average 2.567), all stakeholders pressures are higher than 3.000. Top Management (3.733), Customers (3.615), Governments/Regulation (3.991) and Shareholders (3.910) shows the higher levels of pressure for sustainability.

Three variables, labelled as Industry, Development, and Size have been taken into account as control variables.

4. Results

We estimated the effects of stakeholders pressures on the adoption and implementation of sustainability initiatives using ordinary least squares multiple regression (OLSMR). We used robust standard errors to avoid non-normality and heteroscedasticity problems in the residuals (Hayes, 2009). In addition, we have conducted a Harman's single-factor test to detect potential CMB problems. Finally, a full collinearity test based on Variance

Inflation Factor (FIV) allowed us to reject the existence of both multicollinearity and CMB problem since FIV were lower than 3.3 confirming the absent of both vertical and lateral collinearity.

The adoption and implementation of sustainability is measured, in a first step, with the Sustainability Index (SI), which averages the different initiatives regarding sustainability in manufacturing plants. The estimation shows that top management, employees and customers are the most important stakeholders for sustainability in manufacturing plants. *These results confirm that there is a positive association between stakeholders pressures and the adoption of sustainability practices as stated in hypothesis 1. The estimations also confirm that there is a positive relationship between the stakeholders' pressures and the adoption of sustainability practices in both emerging and developed contexts, in line with the statements of hypothesis 2.* However, it is interesting to stress that the importance of different stakeholder's pressures vary with the country context. In particular, we observed that, in developed countries, the most important pressures are those that come from employees, managers and customers, while in emerging countries these come from customers.

Additionally, we have performed a a more detailed analysis, considering the effects of different stakeholders on internal and external sustainability practices. The results show that top managers and customers are very important drivers for the adoption and implementation of both kind of practices in emerging and developed countries. It was also observed that employees' pressures were important for the adoption of sustainability initiatives, both internal and external, but only in plants located in developed countries.

In order to analyse this issue, we ran a model considering the individual and interaction effects of stakeholder pressures and the development context. Estimation results does not show statistical significance in most of the interaction effects, which means that the size of the effects of stakeholders pressures on sustainability practices/initiatives of manufacturing plants operating in developed countries is not different to the the size of the effects of stakeholders pressures in emerging ones.

5. Discussion and Conclusions

This study analyzes the effect of stakeholders's pressures on the adoption and implementation of different sustainability initiatives in different country development contexts. According to the theoretical analysis based on stakeholder theory, the results

confirm that the sustainability actions developed by manufacturing companies are partly driven by the pressure from different stakeholders. It should be stressed that different stakeholders play a different role in the adoption and implementation of practices, contributing to the open debate regarding the convenient balance of stakeholder's pressures. The results have confirmed for our sample that some stakeholders are more important than others.

This study also considers the divergent / convergent hypothesis in relation to sustainability practices in manufacturing plants in different country development contexts (emerging vs developed countries) . In this sense, our results suggest, on the one hand, an agreement with the convergence hypothesis in the sense that in both contexts there is a positive relationship between the stakeholders' pressures on the adoption of Sustainability Practices in Manufacturing in different country contexts (emerging and developed countries). However, on the other hand, at a more granular level of analysis there is a certain divergence regarding the importance of the effects of particular stakeholders's pressures. In this sense, pressures from customers, top managers and employees are more important drivers in plants operating in developed countries , while those operating in developing countries are more driven by regulation and customers, which usually are located in developed countries.

This study has some implications for academia, policymakers and managers. For the academy, evidence highlights the importance of stakeholder theory to improve the understanding of sustainability in operations despite not being usually considered in OM. In addition, the evidence obtained from an analysis made at a granular level, considering the importance of the pressures of the individual stakeholders, suggest the existence of divergences depending on the level of country development. This is a call for further research to consider the convenience of seeking explanations for sustainability strategies in manufacturing at the intersection of different theories such as stakeholders and contingency.

For practitioners, the results indicate that there are the importance of the different stakeholders' pressures differs with the country development context. Therefore, although the responsible strategy of companies is usually set at the headquarter level for all the organization, it is important that local managers have some flexibility to respond

appropriately to the most important pressures depending on the respective context where plants are operating.

Finally, advancing in sustainable manufacturing requires continuous support from the institutions. Currently all countries are trying to re-boost the economic activity after the COVID pandemic with a very important focus on sustainability. This study shows that while some stakeholders seem to have less influence (e.g. owners, NGOs) on the adoption of sustainability practices in manufacturing, there are some other stakeholders with more capacity to influence and that their influence differs with the degree of development of the environment. As a result, policymakers face the challenge to design incentives considering the peculiarities of different countries, but at the same time, they should try to involve all important stakeholders in order to advance in the same direction.

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