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Stakeholder pressure and the adoption of proactive environmental strategies in healthcare: the mediating effect of "green" HRM

Pressione degli stakeholder e adozione di strategie ambientali proattive in sanità: il ruolo di mediazione delle pratiche di gestione delle risorse umane "orientate alla sostenibilità ambientale"

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Healthcare managers have become progressively accountable for the environmental impact of healthcare processes because of the growing societal pressure. Their responsibility cannot be limited to the delivery of high quality, low-cost and safe care, but it should be extended to include environmental protection. Despite the numerous environmentally-friendly initiatives, results fell far short of expectations. Our study offers original evidence about the role that "green" Human Resource Management (HRM) plays in mediating the effect of the pressure exerted by stakeholders on the adoption of Proactive Environmental Strategies (PES). To test our conceptual framework, we collected data through a survey on healthcare organizations.

We found that stakeholder pressure is positively related to PES, and that "green" HRM system partially mediates the relationship between stakeholder pressure and PES. Our new evidence (i) shows that stakeholder demand for environmental protection triggers healthcare organizations to develop and implement PES; (ii) shows that establishing a "green" HRM system, which enhances hospital professionals' motivation, ability and opportunity to behave in such a way that will protect the environment, sustains the adoption of PES; and (iii) sheds light on the development and implementation of PES in organizational contexts, such as hospitals, that have been largely overlooked so far.

Key words: Stakeholder pressure, proactive environmental strategy, green strategy, human resource management, healthcare, hospital

I manager delle organizzazioni sanitarie devono sempre di più rendere conto dell'impatto ambientale dei processi sanitari, a causa della crescente attenzione al tema da parte della società. La loro responsabilità non può più essere limitata alla fornitura di servizi di elevata qualità, basso costo e sicuri ma dovrebbe anche estendersi alla protezione dell'ambiente. Nonostante le numerose iniziative intraprese sui temi ambientali, i risultati non sono in linea con quanto atteso. A tale riguardo, il nostro articolo offre risultati originali sul ruolo svolto dal sistema di gestione delle risorse umane orientato alla sostenibilità ambientale nel mediare l'effetto positivo che la pressione esercitata dagli stakeholder ha sull'adozione di una strategia ambientale proattiva. Per testare le ipotesi sviluppate, i dati sono stati raccolti per mezzo di un questionario inviato a un campione di organizzazioni sanitarie italiane. I risultati empirici mostrano che la pressione degli stakeholder è correlata positivamente con la strategia ambientale proattiva e che la presenza di un sistema di gestione delle risorse umane orientato alla sostenibilità ambientale media parzialmente tale relazione. Tali risultati: (i) mostrano che la richiesta degli stakeholder di maggior attenzio-

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ne ai temi ambientali stimola le organizzazioni sanitarie verso l'adozione e l'implementazione di una strategia ambientale proattiva; (ii) mostrano che un sistema di gestione delle risorse umane – che incrementa la motivazione, la conoscenza e le opportunità dei professioni sanitari sulla sostenibilità ambientale – favorisce la creazione di una strategia ambientale proattiva; (iii) fanno luce sullo sviluppo di strategie proattive sui temi ambientali in contesti organizzativi, quali quelli sanitari, che finora sono stati trascurati dalla ricerca.

Parole chiave: *Pressione degli stakeholder, strategia ambientale proattiva, strategia verde, gestione delle risorse umane, sanità, ospedale*

Background

Hospital managers have become progressively accountable for the environmental impact of hospital processes because of the growing societal pressure (Pinzone et al., 2015; Pinzone et al., 2016). Their responsibility cannot be limited, as previously, to the delivery of high-quality, low-cost and safe care, but it should be extended to include environmental protection and natural resources saving (Pencheon, 2013). As result, hospital managers are allocating more resources to environmentally-friendly initiatives, such as energy efficiency, recycling, water conservation, sustainable mobility and "green" procurement (McGain and Naylor, 2014). Despite the actions, results fell far short of expectations. Hospital managers experienced-and they are still experiencing-limitations in addressing environmental issues. A major challenge to cope with is the diffuse lack of awareness, skills and engagement among healthcare professionals (Pinzone et al., 2016).

Past research pointed out that any organisation is unlike to develop *Proactive Environmental Strategies* (PESs) that go far beyond what is prescribed by law and even expected by stakeholders (e.g., Gonzales-Benito and Gonzales-Benito, 2006) without managing its human resources (Hart, 1995) in such a way that employees aim at taking care of the environmental concerns of their stakeholders (Sarkis et al., 2010) and reaching the highest level of maturity in environmental protection (Jabbour, 2010).

Coherently to this awareness, "Green" Human Resource Management (HRM) – defined as the "HRM aspects of environmental management" (Renwick et al., 2013) – has emerged as salient field of research aimed at providing scholars and managers with more evidence about the adoption of environmental practices (e.g., Martínez-del-Río et al., 2012; Jackson et al., 2014; Renwick et al., 2016; Pinzone et al., 2016). Despite their undoubted value, past research leaves us with at least three major gaps that limit our understanding about the interplay between stakeholder pressure, "green" HRM practices and the adoption of PES by healthcare organizations.

First, past research is dominated by qualitative studies with the result that quantitative evidence about the role that "green" HRM actually plays in relation to PES in organizations is still missing (Renwick et al., 2016).

Second, past research has mostly investigated isolated "green" HRM practices rather than "bundles" of practices (Renwick et al., 2013). To the best of our knowledge, current evidence is limited to the contributions by Martin-Tapia et al. (2008) and Martínez-del-Río et al. (2012), who showed that HRM systems support PES adoption and implementation. The limited attention paid to bundles of practices is contrary to the well-established knowledge that "green" HRM practices are interdependent and reinforce each other (Combs et al., 2006).

Third, past research dealt mainly with manufacturing organisations, overlooking other organizational contexts, such as hospitals and other professional organizations, despite their impact on natural resources consumption and environment damage (McGain and Naylor, 2014; Sustainable Development Unit, 2016).

These main gaps inhibit managers and stakeholders from leveraging on "green" HRM successfully to stimulate and support the adoption of PES in hospitals as well as in other organizations.

In this study, our purpose is to contribute to fill in the above-mentioned gaps. We theorise and empirically test the role of "green" HRM in mediating the effect of the pressure exerted by stakeholders on the adoption of PES by hospitals. In doing so, we offer three main contributions to our current knowledge about PES in hospitals.

First, our study advances previous studies by gathering quantitative evidence about the simultaneous influences of stakeholder pressure and organisational capabilities in driving PES. This offers scholars and managers with a more accurate picture of drivers and mechanisms that affect PES, as required by many previous studies (e.g., Menguc et al., 2010).

Second, we offer new insights about "green" HRM. By embracing a "bundle" perspective on "green" HRM, as expected by Renwick et al. (2013) and Jackson et al. (2014), we extend previous results by pointing out the effect of an integrated environment-oriented HRM system on PES.

Third, we shed first light on environmental issues in hospitals, as called by an increasing number of researchers from different disciplines (Mohrman and Shani, 2012; Pinzone et al., 2012; McGain and Naylor, 2014).

Materials and methods

Conceptual framework and hypothesis development

Proactive environmental strategy

Past research agrees that the variety of "green" initiatives that managers might develop and implement can be placed along a *continuum* that ranges from the most reactive approaches, characterized by mere conformity to law, to the most proactive ones, that go beyond what law prescribes. Organisations with proactive approaches toward the environment im-

plement numerous environmental practices (e.g., Hart, 1995; Murillo-Luna et al., 2008), such as the development of environmental policies, the preference for products/services that pollute less than others, the selection of technologies/materials that limit pollution, the discretionary disclosure to stakeholders of environmental performances etc. Organizations that adopt such practices gain both tangible and intangible benefits (Daily et al., 2012), such as cost savings in operations, improvements in reputation and image, more satisfied internal and external stakeholders.

Stakeholder environmental pressure

Stakeholders can be defined as those individuals (or groups) that can affect an organisation's performance or that are affected by an organisation's actions (Freeman, 1984). Past research agrees that stakeholders' pressure towards environment-oriented initiatives triggers organisations to the development and the implementation of environmental strategies (Henriques and Sadorsky, 1999; Buysse and Verbeke, 2003; Gonzales-Benito and Gonzales-Benito, 2006; Murillo-Luna et al., 2008; Sarkis et al., 2010; Pinzone et al., 2015). Managers are pushed by the synthesis of the demands from different stakeholders (Murillo-Luna et al., 2008; Sarkis et al., 2010; Pinzone et al., 2015). This suggests that when managers perceive and respond to the pressure exerted by one stakeholder, they are likely to perceive and respond to the other ones as well. Based on this line of reasoning, we formalize the following hypothesis:

H1: There is a positive relationship between stakeholder environmental pressure and proactive environmental strategy

"Green" Human Resource Management System

"Green" HRM practices are defined as the HRM aspects of environmental management. Renwick et al. (2013) categorized the variety of "green" HRM practices according to the *Ability-Motivation-Opportunity* framework proposed by Appelbaum et al. (2000).

With respect to the *Ability* domain, training and education increase employees' environmental knowledge, skills and abilities. They make employees able of recognizing possible sources of pollution and environmental damages in their daily tasks and proposing solutions for the requests posed by stakeholders (Jabbour and Santos, 2008; Jabbour, 2015). Past studies report an increasing use of job descriptions and personnel specifications that emphasize environmental aspects during the recruitment and selection processes to produce superior human capital on environmental issues that ultimately facilitates the implementation and development of proactive responses to stakeholder pressures (Jabbour and Santos, 2008; Martínez-del-Río et al., 2012).

With respect to the *Motivation* domain, through the integration of traditional appraisal / reward systems with environmental KPIs, organisations are able to monitor progress toward achievement of sustainability targets as well as motivate employees driving their attention toward the desired environmental goals (Renwick et al., 2013; Pinzone et al., 2016).

With respect to the *Opportunity* domain, organisations can accelerate the creation of a shared environmental vision and diffuse an understanding of environmental challenges by involving employees and using suggestion schemes as well as other forms of communication with them, and, thus respond to or even prevent the demands raised by stakeholders. Furthermore, organizations can break down the boundaries among organizational silos by means of cross-functional teams that can develop radical improvements in term of environment protection (Daily et al., 2012).

Summarizing, past studies pointed out that organisations that develop a "green" HRM system, which improves employees' ability, motivation, opportunity to contribute to environmentally-oriented improvements, are better equipped to take into account stakeholders' concerns and develop PES (Rueda-Manzanares et al., 2008) to address them. Without an integrated "green" HRM system, stakeholders' demand on environmental issues may be overlooked (Sarkis, 2010). Based on this line of reasoning, we formulate the following hypothesis:

H2: "Green" HRM system partially mediates the relationship between stakeholder environmental pressure and proactive environmental strategy

Our conceptual framework is presented in Figure 1 (control variables are not displayed).

Methods

Sample

To test our conceptual framework, we collected data through a survey on hospitals located in the Northern and Central regions of Italy. The survey was administered from April to June 2012. The questionnaire has been sent to hospital medical directors. We chose medical directors because, as result of their organisational role, they are knowledgeable about the factors investigated in this study, i.e. stakeholder pressure on environmental issues, hospital environmental strategy and environment-related HRM practices. The questionnaire has been delivered to 462 hospitals. Seventy-four questionnaires were collected, but eleven were discarded because of the high number of missing values. The final response rate was thus 13.64%.

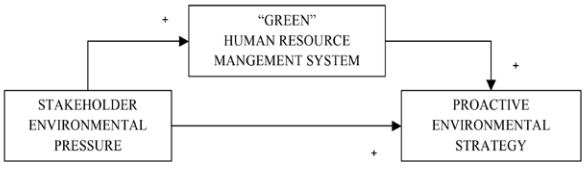

Figure 1. *Conceptual Framework.*

Measures

All constructs were measured using multiple-item scales, adapted from previous studies. Descriptive statistics of the measures and Cronbach's alphas, calculated to verify their internal consistency, are reported in Table I. All alphas were at acceptable levels.

- *Proactive Environmental Strategy.* We measured PES through a seven item scale adapted from Murillo-Luna et al. (2008). We covered (i) planning and organisational practices, (ii) communication practices, and (iii) operational practices, as recommended by Gonzalez-Benito and Gonzalez-Benito (2006). Each item was assessed on a 7-point Likert scale where 1 meant "strongly disagree" and 7 meant "strongly agree".
- *Stakeholder environmental pressure*. We adapted the group of stakeholders identified by Henriques and Sadorsky (1999), Buysse and Verbeke (2003) and Murillo-Luna et al. (2008) to the particular context of hospital in order to ask to medical directors to rate the "pressure" about environmental issues they perceive from different stakeholders; we considered 11 stakeholders: National Government, Regional Government, Local Health Units, Patients, Patient Associations, Suppliers, Employees, Professional Associations, Other Healthcare Organisations, Local Communities and the Media. The pressure intensity exerted by each of these stakeholders was rated on a 7-point Likert scale, where 1 meant "not at all important pressure" and 7 meant "extremely important pressure".
- *"Green" human resources management system*. Adopting the High Performance Work System approach, the "green" HRM system was measured through a set of practices derived from the scale used by Martin-Tapia et al. (2008). Medical directors were asked to indicate to what extent, where 1) 0%; 2) 1-25%; 3) 26-50%; 4) 51-70%; 5) 76-100%, these 9 "Green" HRM practices were implemented: i) multidisciplinary team-work, ii) involvement in improvement projects, iii) employee suggestion schemes, iv) employee empowerment, v) introduction of environmental responsibility in the job description, vi) use of rewards (monetary and not), vii) communication of organisational goals, viii) training, ix) feedbacks.
- *Control variables.* We controlled for *size* as the number of beds available in each organisation. We also controlled for the *geographic location* where each organisation operates and the *type of organisation* (differentiating between hospitals, local health authorities and nursing homes). In this regard, we created two categorical variables, one for the geographic location and another for the type of organisation. Furthermore, we asked medical directors to evaluate the *Profit-and-Loss Accounts* for the last 3 years on the basis of a 5-point scale ranging from "strongly negative" to "strongly positive". Finally, we controlled for the *social desirability* bias by adopting the 10-item scale developed by Strahan-Gerbasi (1972), because environment protection could potentially be susceptible to this bias.

Common method variance

Because data were collected from single respondents in a cross-sectional study, common method variance (CMV) might be a concern. Following Podsakoff et al. (2003), we took procedural measures to minimize the impact of CMV by guaranteeing anonymity and confidentiality to informants, emphasizing that there were no correct or incorrect answers and asking respondents to provide independent and honest answers. Furthermore, to evaluate the extent to which CMV may influence our empirical findings, we carried out the Harman's single-factor test on the items of the three key variables of our theoretical model. The outcome of this test showed that the highest variance accounted for by one factor was 30%, thus suggesting a minimal evidence of method bias (Harman, 1967).

Results

Our hypotheses have been tested through liner regression analysis, following the approach proposed by Baron and Kenny (1986). A bootstrap of 10,000 subsamples was applied to estimate the statistical significance of the relationships between the proposed variables, with the aim of increasing the robustness of the model (Preacher and Hayes, 2004).

Table I shows the means, standard deviations and pairwise correlations of the continuous variables analysed in our framework. Cronbach alphas are reported along the diagonal.

As first step to evaluate mediation, we verified that our independent variable (i.e., Stakeholder environmental pressure) influences the dependent variable (i.e., Proactive environmental strategy). In this regard, the direct effect relationship ($\beta = 0.45$) was significant at $p < 0.001$. Therefore, our first hypothesis is confirmed (Table II).

As second step for mediation evaluation, we analysed the direct relationship between the independent variable (i.e., Stakeholder environmental pressure) and the mediator (i.e., "Green" HRM system) to verify its level of significance. The relationship ($\beta = 0.19$) resulted significant at the $p < 0.01$ level (Table III).

The final step in testing for mediation needs to evaluate the relationship between the mediator (i.e., "green" HRM system) and the dependent variable (i.e., Proactive environmental strategy), while controlling for the independent variable (i.e., Stakeholder Environmental Pressure). In our case, the "green" HRM system is found to be positively and significantly related to PES ($\beta = 0.46$; $p < 0.05$), while stakeholder environmental pressure variable remained statistical significant ($\beta = 0.37$; $p < 0.001$), evidencing only the existence of a partial mediation (Table IV). Therefore, our second hypothesis is confirmed.

Finally, we performed the well-established Sobel test, Aroian test and Goodman test to verify the hypothesis of no difference between the total effect and the direct effect of stakeholder environmental pressure. All the tests were rejected at $p < 0.05$, meaning that the indirect effect of the "green" HRM system is significant. The proportion of the total effect of stakeholder environmental pressure that is mediated by "green" HRM system results equal to 19%.

Table I.
Summary statistics.

Variables	*Mean*	*Std. Dev.*	*1*	*2*	*3*	*4*	*5*	*6*
1. Proactive environmental strategy	3.25	1.07	0.84					
2. Stakeholder environmental pressure	3.08	1.38	0.63***	0.96				
3. "Green" HRM system	1.82	0.69	0.56***	0.44***	0.94			
4. Size	414.76	368	-0.008	0.13	0.19	-		
5. P&L accounts	2.79	0.78	0.20	0.02	-0.004	-0.31*	-	
6. Social desirability	5.95	1.84	-0.02	-0.0003	-0.03	0.09	-0.22†	-
N = 63; significant at the: † 0.10; * 0.05; ** 0.01; and *** 0.001 levels.								

Table II.
Testing mediation: results of step 1.

Proactive enviromental strategy	*Coefficient*	*Bootstrap Std error*	*P-value*
Size	0.00	0.00	
P&L accounts	0.14	0.18	
Social desirability	0.02	0.05	
Lombardy	0.16	0.33	
Tuscany	-0.01	0.39	
Piedmont	-0.27	0.38	
Emilia Romagna	0.69	0.34	*
Hospital	-0.65	0.38	†
Nursing home	-0.19	0.57	
Stakeholder pressure	0.45	0.09	***
Constant	1.78	0.71	
Adjusted R-squared = 0.4756			
N = 63; significant at the: † 0.10; * 0.05; ** 0.01; and *** 0.001 levels.			

Table III.
Testing mediation: results of step 2.

"Green" HRM system	*Coefficient*	*Bootstrap Std error*	*P-value*
Size	0.00	0.00	
P&L accounts	-0.05	0.15	
Social desirability	-0.02	0.05	
Lombardy	0.13	0.24	
Tuscany	-0.17	0.26	
Piedmont	0.13	0.33	
Emilia Romagna	0.37	0.29	
Hospital	-34	0.46	
Nursing home	-0.21	0.54	
Stakeholder pressure	0.19	0.07	**
Constant	1.57	0.74	*
Adjusted R-squared = 0.1625			
N = 63; significant at the: † 0.10; * 0.05; ** 0.01; and *** 0.001 levels.			

Conclusions

We investigated the role that "green" HRM practices play in making the organisation able of integrating and proactively responding to stakeholders' concerns about the environment. We developed and empirically tested a model in which the "green" HRM system mediates the relationship between the stakeholders' environmental pressure and the adoption of PES in hospitals.

We found that stakeholder pressure is positively related to

Table IV.
Testing mediation: results of step 3.

"Green" HRM system	*Coefficient*	*Bootstrap Std error*	*P-value*
Size	0.00	0.00	
P&L accounts	0.15	0.17	
Social desirability	0.03	0.05	
Lombardy	0.10	0.29	
Tuscany	0.06	0.34	
Piedmont	-0.33	0.33	
Emilia Romagna	0.52	0.31	†
Hospital	-0.49	0.39	
Nursing home	-0.07	0.53	
Stakeholder pressure	0.37	0.1	***
"Green" HRM system	0.46	0.2	*
Constant	1.06	0.85	
Adjusted R-squared = 0.5388			
N = 63; significant at the: † 0.10; * 0.05; ** 0.01; and *** 0.001 levels.			

PES. In addition, we found that "green" HRM system partially mediates the relationship between stakeholder pressure and PES.

First, our evidence shows that stakeholder demand for environmental protection triggers hospitals to develop and implement proactive strategies. In fact, hospital managers perceive this demand from stakeholders as a significant trigger to redesign current operations. Our results are thus coherent to previous findings from other industries (e.g., Murillo-Luna et al., 2008), showing that managers perceive a single environmental pressure from stakeholders and that the greater this environmental pressure, the more the organisation develop and implement environmental initiatives that go far beyond what law establishes, and even beyond what stakeholders expect actually.

Second, our results show that by establishing a "green" HRM system that enhances healthcare professionals' motivation, ability and opportunity to behave in such a way that will protect the environment, hospitals are likely to adopt a PES. In this regard, the "green" HRM system can improve employees' abilities to communicate with different stakeholders and to translate tacit knowledge into a better environmental decision-making (Wolf, 2013). Moreover, these practices help developing a human capital that is more aware of and proactive for environment protection, as long-term result of regular environmental education to employees, development of sophisticated and updated environmental knowledge, recruiting of champions and experts etc. A coherent approach to "green" HRM triggers and facilitates the creation of a shared vision and of an organizational culture that are conducive of an increased environmental sustainability and employees' motivation. All these elements affect positively the development and maintenance of PES and help reducing the potential resistance to change. Finally, the adoption of a "green" HRM system improves the communication and collaboration among the parts of the hospital facilitating the convergence towards a shared vision to environment protection. This contributes to go beyond the mere exploitation of existing knowledge to address environmental problems by exploring also new opportunities for improvement and innovation (Alt et al., 2015).

Third, our study contributes to shed first light on the development and implementation of PES in organizational contexts that have been largely overlooked in the sustainability literature so far. This is particularly relevant for healthcare organizations, where the attention paid by managers and professionals to environment-related issues might be interpreted as unethical, since it decreases the financial resources and the organizational efforts devoted to patients and their families, who remain the most relevant stakeholders (Pinzone et al., 2015).

Our findings provide managers with evidence-based recommendations for the adoption of PES. In this regard, they are expected to establish a "green" HRM system that facilitates the integration of stakeholders' demand in the ways care is delivered and thus offering advanced responses to environmental needs. This can be done if managers are committed to align and integrate a broad set of different environment-oriented practices that are directed to hospital employees. Practices that have to be integrated within the "green" HRM system are aimed at: (i) increasing employees' ability to tackle on environmental problems, by means of training and environmental responsibility in the job description; (ii) increasing employees' attitude toward the environment, by setting environmental goals for employees, appraising their environmental performance and using rewards and benefits that are connected to environmental targets; and (iii) providing employees with the opportunity to contribute to environment-oriented initiatives, by means of multidisciplinary "green" teams, involvement in environment-friendly projects, suggestion schemes and empowerment of employees in environmental issues.

Our findings should be interpreted taking into account the

limitations of this study, which we suggest should be addressed in future research.

First, our sample size is relatively small. Despite it is in line with other previously published study on PES (e.g., Murillo-Luna et al., 2011; Pinzone et al., 2015) and the number of observations is enough to test our hypotheses, future studies could improve the sample size in order to increase the robustness of results.

Second, our sample is just composed of Italian hospitals and, thus, future research could involve organisations from other Countries to verify the generalizability of our findings.

Third, because our questionnaire was filled-in by a single respondent, CMV might be a concern. Although we implemented a number of strategies to mitigate the single-source bias, and the Harman's test behaved well, future research relying on multiple respondents would be valuable.

Finally, it may be worth to further investigate "bundles" of environmental-related HRM practices and their relationship with the environmental performance of the organisation, as well as with the financial and social performances.

In conclusion, despite the limitations this study has, it is one of the first research works unfolding the inner mechanisms that might trigger and facilitate the adoption of PES in healthcare organizations.

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