

An organizational culture for all seasons? How cultural type dominance and strength influence different performance goals

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ABSTRACT

The New Public Management wave pressured the management of services mainly toward structural changes to improve performances. However, organizational culture might influence results, especially in settings characterized by strong professional control and political influence on decision-making.

This study tests how organizational culture influences performances and investigates whether a specific culture type is most effective in fostering organizational results in a universal and tax-based health system where clinicians are involved in the governance of health organizations.

We assess organizational culture through the Competing Values Framework and use multivariate regression analysis to test the relationship between dominant culture type and two dimensions of organizational performance: competitiveness and financial results.

In all, 529 senior managers from 59 healthcare organizations responded. Dominant rational and hierarchical culture types are associated, respectively, with higher competitiveness and better financial results.

Enhancing a specific performance dimension might require cultural changes aimed to align the dominant cultural values with the targeted results.

Keywords: organizational culture, performance management, pluralistic organizations, public healthcare, Italy

INTRODUCTION

Since the 1990s, New Public Management theories and policies have pressured public services management toward efficiency and effectiveness. In healthcare, an important wave of reforms focused on changes of structures and target systems (Anessi Pessina and Cantù 2006, Lega, Prenestini and Spurgeon 2013, Mannion, Davies and Marshall 2005, Scott, Mannion, Marshall and Davies 2003) to enhance the efficient and effective delivery of health care services. Since some performance dimensions, such as efficiency, are not priorities for health professionals, an implicit objective of these policies has been to increase the control of professional behaviors and reduce professionals' dominance in decision-making (Lega, Prenestini and Spurgeon 2013). In principle, this should shift the power balance between administrative and professional staff and foster alignment between organizational performance and system-level goals.

In such circumstances, however, research showed evidence that conflicts between administrative and professional norms are likely to arise. This conflicting relationship hampers performance improvements, unless the top management engages professionals in decision-making and tune the rationale of relevant changes with their orientation (Denis, Langley and Rouleau 2007, Lega, Prenestini and Spurgeon 2013).

In this respect, another relevant change has been moves to co-opt professionals, such as doctors and nurses, into the management of services (Numerato, Salvatore and Fattore 2012). Recent studies found evidence that involving clinicians in the strategic direction of health care organizations – or, in other words, nurturing clinical leadership in management – improve performances (Veronesi, Kirkpatrick and Altanlar 2015, Veronesi, Kirkpatrick and Vallascas 2013).

Although the participation of clinical managers in the governance of health organizations makes a difference in terms of performance, Veronesi, Kirkpatrick and Altanlar (2015) warn that a ‘hierarchical culture’ – focused mainly on the financial viability of the organization and compliance with immediate performance targets – may hamper clinical leadership’s capacity to influence decisions toward longer term strategies targeting patient care. This raises questions about the role of cultural change as a success factor for health organizations and, at the system level, policies aiming to reform health services (Hyde and Davies 2004, Mannion, Davies and Marshall 2003).

The organizational culture is indicative of the typical way of orienting organization members towards common goals. This concept has drawn the attention of many management scholars, especially with regard to its influence on organizational performances and the success of new practices implementation and (Berson, Shaul and Dvir 2008, Canato, Ravasi and Phillips 2013, Detert, Schroeder and Mauriel 2000, Hogan and Coote 2014, Marcoulides and Heck 1993). Despite the number of definitions and instruments regarding the concept (Allaire, Mihaela and Firsirotu 1984, Jung, Scott, Davies, Bower, Whalley, McNally and Mannion 2009), there is general agreement on its important role in organizational decision-making, together with formal aspects (e.g., structure, strategy) and environmental contingencies (Allaire, Mihaela and Firsirotu 1984, Alvesson 2002, Rindova, Dalpiaz and Ravasi 2011). However, the literature shows a lack of attention on the peculiarities of organization culture’s role in pluralistic organizations.

Such settings are characterized by multiple (divergent) objectives, diffuse power, and knowledge-based work processes (Denis, Langley and Rouleau 2007, Jarzabkowski and

Fenton 2006). Arts organizations, hospitals, and universities are notable examples. In particular, healthcare organizations have been described as “negotiated orders”, because physicians have the power to block decisions and they must be engaged in a change process or in a new strategy for it to succeed (Ferlie, Fitzgerald, Wood and Hawkins 2005). In addition, in the public sector power is also diluted by the strong influence of outside agencies (Denis, Lamothe and Langley 2001). Such pluralism hampers the identification of a clear, shared strategic orientation and prioritization of goals (Calciolari, Cantù and Fattore 2011). In this respect, public healthcare is an interesting setting to investigate the role of organizational culture.

The Italian National Health System (INHS) is a universal, tax-funded health system organized in three tiers: the central government, 21 regional governments (henceforth referred to as “regions”), and a network of local providers/purchasers – comprising local health units (each responsible for the health of the entire population in a given area, henceforth referred to as “LHUs”) and public hospitals (Calciolari, Cantù and Fattore 2011). The INHS has a highly pluralistic nature (Cuccurullo and Lega 2013) because politicians have a significant formal and informal influence at all levels of the health organizations within the system. In fact, on one hand, each region appoints the general manager of each INHS organization in its territory to implement its health policy (formal influence). On the other hand, health professionals often use their networks of relationships with politicians to orient top managers’ decisions towards their professional orientation (Lega 2008, Lega 2012). In addition, health professionals enjoy high discretion because they are granted tenured positions by employment law.

Therefore, mismanagement of expected performance is not likely to be a strong reason for their termination or replacement.

Interestingly, the strategic bodies of public health organizations – called Councils of Directors, see hereafter for details) involve professionals by institutional design. This makes the INHS a favorable context in which to analyze the relationship organizational culture and performance, because one can observe the influence of organizational culture in entities whose governance, in general, see clinicians with a significant influence over strategic decision-making.

The INHS has been experiencing a period of austerity and was successful in reducing the overall deficit over recent years — from a deficit of 4.1% to a surplus of 0.7% of the almost stable public funding in 2006 and 2013, respectively (Armeni and Ferrè 2014). As a consequence of austerity, public healthcare organizations engaged cost containment practices and competitive strategies aimed to attract more patients from other Regions (because the reimbursement mechanisms allow money to follow patients). Despite institutional pressures and structural changes (e.g., imposition of budgets on the general practitioners, mergers of LHUs, creation of clinical and organizational networks) aiming to improve efficiency and effectiveness, performances have greatly varied among public healthcare organizations (Nutti and Bonini 2014, Osservasalute 2013). One might wonder whether organizational culture has a role in such a variation and whether any culture type excels in different performance dimensions.

This study has two aims: (a) to test whether any culture type is most effective to enhance two different performance dimensions (competitiveness – or market share gain – and financial performance) in organizations involving clinicians in their governance;

and (b) to investigate whether, given any culture type, the cultural strength influences such performance dimensions.

CONCEPTUAL FRAMEWORK

In the last 20 years, empirical studies have shown that a relationship exists between organizational culture and performance in public and health organizations (Brasil, Wakefield, Cloutier, Tennen and C.B 2010, Davies, Mannion, Jacobs, Powell and Marshall 2007, Gerowitz, Lemieux-Charles, Heginbothan and Johnson 1996, Jacobs, Mannion, Davies, Harrison, Konteh and Walshe 2013, Mannion, Davies and Marshall 2005, Prenestini and Lega 2013, Xue, Zhou, Bundorf, Huang and Chang 2013, Zhou, Bundorf, Chang, Huang and Xue 2011).

Organizational culture concerns the values, attitudes, and beliefs shared by the members of an organization (Davies, Mannion, Jacobs, Powell and Marshall 2007, Davies, Nutley and Mannion 2000, Schein 2004, Scott, Mannion, Davies and Marshall 2003) and is able to create expectations, shape behaviors, and guide interpretations of facts. Such a complex and abstract construct has been conceptualized and operationalized in different ways in the literature (Ashworth 2010, Schein 2004, Scott, Mannion, Davies and Marshall 2003). We selected the Competing Value Framework (CVF), because it is a quantitative approach characterized by a solid theoretical basis (Scott, Mannion, Davies and Marshall 2003) that allows any organization to exhibit a variety of cultures, rather than assuming culture as a monolithic concept. In addition, the CVF was adopted in several studies testing the link between performance and organizational culture (Cameron and Freeman 1991, Davies, Mannion, Jacobs, Powell and Marshall 2007, Gerowitz 1998, Gerowitz, Lemieux-Charles, Heginbothan and Johnson 1996, Zhou,

Bundorf, Chang, Huang and Xue 2011). The operationalization of the CVF was validated in several international studies in various fields (Cameron and Freeman 1991, Quinn and Rohrbaugh 1983). In particular, it has been frequently applied to healthcare in different national contexts (Argote 1989, Davies, Mannion, Jacobs, Powell and Marshall 2007, Gerowitz 1998, Gerowitz, Lemieux-Charles, Heginbothan and Johnson 1996, Jackson 1997, Shortell, Jones, Rademaker, Gillies, Dranove, Hughes, Budetti, Reynolds and Huang 2000) and, with a modified version, it was applied also to the public sector (Moynihan and Pandey 2006).

The CVF defines four culture types, each associated with different values and attitudes: clan, developmental, hierarchical, and rational (Table 1).

Insert Table 1 about here

Clan culture is internally focused, and its processes are based on relationships. It is cohesive and participatory, casting the organization as a second family. Leaders are viewed as mentors, and their actions support and facilitate teamwork and group interaction. Members bond with their organizations through loyalty and tradition. Developmental culture focuses on satisfying external stakeholders and adapting the organization to push for innovation. Its leaders are risk takers and visionaries, who require the same characteristics in their organizational members. The structure of such an organization is flexible and can change in relation to the ideas developed to meet dynamic external demand. Hierarchical culture emphasizes an internal focus and the enforcement of rules and regulations that influence how an organization works. Organizational effectiveness is defined in terms of predictability, control, and stability. Top managers tend to be conservative. Rational culture focuses on achieving predefined

goals and facing external competition; thus, leaders are goal oriented. The second column of Table 1 summarizes the culture types' values and features.

As already mentioned, the CVF assumes that culture is not absolute. An organization does not have a single, monolithic type of culture, but has competing values. Consequently, each organization demonstrates a combination of the cultural types, but with one dominant archetype (Cameron and Freeman 1991, Gerowitz 1998). In this respect, the CVF accommodates for the notion of culture as a multidimensional construct.

According to the CVF, specific aspects of performance are related to each dominant cultural type (Table 1). In particular, the literature suggests that hierarchical cultures focus primarily on financial results and efficiency, while rational cultures focus mainly on external stakeholders' satisfaction and market reputation (Davies, Mannion, Jacobs, Powell and Marshall 2007, Gerowitz, Lemieux-Charles, Heginbothan and Johnson 1996, Quinn and Rohrbaugh 1983, Wicks and St. Clair 2007).

Based on the extant literature, we expect organizations with dominant hierarchical cultures to perform better in the financial dimension. Meanwhile, we expect organizations with dominant rational cultures to perform better in terms of improving the market share. Evidence on this relationship would shed light on the role of organizational culture in balancing macro-level targets in a single-payer system.

Our study, however, makes a step further by better operationalizing the concept of "cultural dominance" to refine our analytical approach. The dominant culture refers to the (typified) set of values and attitudes most commonly shared among the organization members: it is assumed to facilitate goal alignment toward preferred performances (Alvesson 2002). However, two organizations can share the same dominant culture but

with different levels of “dominance strength”. In other words, the extent to which the same cultural type is dominant may vary across the organizations sharing it. In this respect, one would expect that the stronger the dominance of a cultural type, the better are the performances generally associated with such culture. However, this might not be the case for any type of goal in pluralistic organizations, because they are characterized by a strong professional control.

Davies et al (2000) state that professionals are primarily loyal to patients and their medical discipline rather than to strategic goals of their organizations. In particular, health professionals are expected to stand strongly for the individual patient health, care effectiveness, and evidence-based medicine practices, thus showing lower predisposition to care about, for instance, cost control (Lega, Prenestini and Spurgeon 2013). Such attitude might lead them to support goals aligned with their professional values and counteract strong pressures toward, for instance, economic targets (Davies and Harrison 2003, Degeling, Maxwell, Kennedy and Coyle 2003, Drife and Johnston 1995, Freidson 1994). Therefore, following the example, health professionals might pay more attention to financial results in a dominant hierarchical culture than in a developmental one, provided that the dominance strength of the former culture type is not excessive. Otherwise, their counterreaction – aimed to preserve their professional values – may lead to a financial performance lower compared with organizations with a moderately dominant hierarchical culture. In other words, the interactions between, on the one hand, strategic orientation and, on the other hand, professional control, can lead to outcomes that are at odds with the intuition that strongly dominant cultures lead to better performances, irrespectively of the congruence between professional control and the performance dimensions associated with such cultures. This phenomenon might be

even magnified in a context where politicians are influential and health professionals use their political networks to orient top managers towards their perspective.

Of course, structural and production characteristics influence organizational performance and they may also be associated with organizational culture (as it is sometimes the case according to Table 5), thus influencing the relationship between our predictor and criterion variable. Therefore, it is important to rule out the main alternative explanations of observed performance variation by controlling for such aspects. Following the approach of previous studies (Davies, Mannion, Jacobs, Powell and Marshall 2007, Jacobs, Mannion, Davies, Harrison, Konteh and Walshe 2013), we consider three main categories of control factors: (a) structural characteristics; (b) level of specialization, in terms of multidisciplinary level; and (c) production features, such as the level of day-hospital service offer, the variety and complexity of clinical cases, or the staffing strategy. The first category of factors regards organizational size, the distinction between LHUs and hospitals, and whether an organization had undergone a merger in its recent past: the first variable (i.e., number of beds) is correlated with production volumes – that influence economies of scales, the capacity to meet the demand, and indirectly (through the cumulated experience gained by clinicians) with care quality (Amato, Colais, Davoli, Ferroni, Fusco, Minozzi, Moirano, Sciattella, Vecchi, Ventura and Perucci 2013); the second variable concerns the different production functions of the two types of organizations, that are also differently financed in the INHS; while the last variable identifies a radical change that have strong institutional and financial implications for the involved organizations (Carbone, Del Vecchio, Lega and Prenestini 2015). The second category of factors might be influential because organizations managing a great variety of disciplines (and eventually modest

volumes per discipline) may be the less attractive at the national level or have different cost/revenue structures (e.g., different capacity of cross-financing DRG reimbursements characterized by different margins) compared with highly specialized health organizations. The last category of factors distinguishes hospitals managing cases more various or with above average complexity (which might be better technologically equipped and/or have higher costs compared with hospitals dealing with simple cases), those organizations offering many treatments in day-hospital regime (that is less expensive for the organization and can be attractive for several patients because of its care appropriateness), or adopting different labor intensity or skill mix to perform their activities (with consequential impact on the organization cost structure and the quality of care).

Finally, an important remark concerns the fact that our study relies on the concept of senior management team culture. We assimilated the organizational culture to the culture characterizing the members of the senior management team. This approach is followed by Davies and colleagues (2007) and Gerowitz and colleagues (1996). In this respect, upper echelons theory states that what an organization does and the way it behaves can be explained, partly at least, by the characteristics of its top management (Chaganti and Sambhary 1987). In other words, the managerial background (e.g. psychological traits of the upper echelons) are determinants of strategic choices (Hambrick and Mason 1984). Therefore, senior management team culture might strongly influence strategic orientation, which, in turn, determines priorities and the appropriate means for achieving shared goals in the organization.

STUDY HYPOTHESES AND OBJECTIVES

We test whether the dominant culture of the senior management team has a systematic influence on two different performance dimensions of public healthcare organizations, controlling for relevant structural features and without assuming strict causality between culture and performance.

We expect that dominant hierarchical cultures, focused on efficiency and control, achieve better financial performance.

Hypothesis 1: *Hierarchical dominant cultures are associated with better financial results, everything else being equal.*

In contrast, we expect that rational cultures, focused on external stakeholder satisfaction and market legitimation, are associated with better results in terms of attracting patients from other regions within the diagnosis-related group–based reimbursement mechanism of the INHS.

Hypothesis 2: *Rational dominant cultures are associated with better competitiveness, everything else being equal.*

As far as dominant clan cultures are regarded, the strong value of loyalty to the organization and the charismatic role of the leader/s commit every member to be personally involved in the fortunes of the organization (as it was a second family). Therefore, since the accomplishment of financial targets ensures the survival and

autonomy of the organization, we expect that such organizations do not underperform on financial performances compared to those with a different dominant culture.

Hypothesis 3: *Dominant clan cultures do not underperform on financial performances compared to other cultures, everything else being equal.*

Moreover, dominant developmental cultures are entrepreneurial and focused on external success in terms of customer/patient satisfaction. This orientation might push such organizations towards high levels of competitiveness.

Hypothesis 4: *Dominant developmental cultures do not underperform on competitiveness compared to other cultures, everything else being equal.*

Finally, based on the argument of possible health professionals' counterreactions to strong dominant cultures fostering values not aligned with their professional oath (i.e., professional control), we explore the influence of the level of competition between values (belonging to the different cultures identified by the CVF) on performance. In fact, the existence of a plurality of relevant perspectives in decision-making processes (i.e., weak/moderated cultural dominance), as opposed to a single, congruent perspective (i.e., strong cultural dominance), may influence the pressure associated with the definition and prioritization of goals. Senior management teams with strongly dominant cultures are likely to exert a stronger pressure on their organization members, compared with teams characterized by weakly dominant cultures. As previously mentioned, we expect that a strongly dominant culture facilitates the accomplishment of

goals which are compatible with the values of professional control (patient satisfaction and reputation), while it is associated with attrition for goals which threaten professional values. Therefore, we propose two additional hypotheses to explore the influence of the cultural dominance strength on performance.

Hypothesis 5A: *The higher the cultural dominance strength of any organizational culture, the better is competitiveness (everything else being equal).*

Hypothesis 5B: *The higher the cultural dominance strength of any organizational culture, the worse are financial results (everything else being equal).*

RESEARCH METHODS

Study design

A survey was administered by e-mail to the Chief Executive Officers (CEOs) of the sampled organizations in three different periods. We received answers between January 2010 and January 2012, though the time span between the first and last response received from any of the five Regions lasted less than three months. Following the approach of Gerowitz, Lemieux-Charles, Heginbothan and Johnson (1996), each CEO was asked to forward our questionnaire to the senior management team of her/his organization. This indirect approach is motivated by the fact that an official contact list of senior management team members is not publicly available. However, before we send the request the authors either met or spoke by phone with each the CEO to explain the study and the importance of a reliable data collection. In addition, our official e-mail included a few instructions specifying that answers should be provided by senior management team members in person – and we actually received the questionnaires from the personal email addresses of the responding senior managers.

The senior management team was identified as the members of the Council of Directors (“*Collegio di Direzione*”). The Council of Directors defines the organizational priorities, strategies, and policies of an organization. Consequently, it is the most influential decision-making body. The Council of Directors is generally composed of the CEO, the Medical Director, the Administrative Director, the Social Care Coordinator, the Nursing Manager (if present), the directors of hospital directorates or departments, and the directors of the community health districts. Therefore, this strategic body involves heavily professionals with hybrid roles. LHUs are organized into health districts. The health districts are geographical divisions in charge of organizing and delivering health services to the population in the catchment area. They are designed to meet the different health needs of the catchment area: orographic configuration, demographics, presence of industrial sites, and so forth.

Sample

This study was conducted in five regions of Italy (Tuscany, Emilia-Romagna, Lombardy, Piedmont, and Veneto), which contain 27.5 million people (approximately 45% of the Italian population) and 126 public health organizations (about 52% of the national public health organizations). The regions were purposively sampled because the development of managerial practices is above the Italian average in these regions. Moreover, they are relatively homogeneous in terms of strategic priorities (i.e., financial sustainability and clinical governance), programming practices, and experience in performance measurement and control and have a tradition of assigning objectives to the general manager of each organization in the regional NHS (Lecci and Vendramini 2011, Nuti, Seghieri and Vainieri 2013, Nuti, Seghieri, Vainieri and Zett 2012, Prenestini 2008). We excluded from the sample the LHUs of Lombardy that do not

provide directly secondary, tertiary, and quaternary care, but contract such individual health services with public or accredited private hospitals. This structural characteristic distinguishes them from the other LHUs of the other four regions: in particular, in terms of variables that we can associate to them. As a consequence, the sampling frame of the study identifies 112 healthcare organizations.

We received 529 valid questionnaires from senior managers of 59 different public health organizations, with a response rate equal to 52.7%. We performed a test for nonresponse bias to check whether our results were affected by unknown factors that systematically distinguished responding from non-responding organizations (Pedhazur and Pedhazur 1991). We compared the means of the two groups for the structural variables used in the study as covariates: we found no sign of a nonresponse bias. Previous studies considered three responses to be sufficient to define the dominant organizational culture type (Davies, Mannion, Jacobs, Powell and Marshall 2007, Gerowitz 1998, Gerowitz, Lemieux-Charles, Heginbothan and Johnson 1996, Jacobs, Mannion, Davies, Harrison, Konteh and Walshe 2013, Mannion, Harrison, Jacobs, Konteh, Walshe and Davies 2009). At least three senior managers (8.97 on average) responded from each sampled organization. We found no sign of a response bias according either to organizational type (LHU vs. hospital) or organizational size (number of beds and/or catchment area).

Variable measurement

Senior management team culture was measured using a questionnaire designed according to the CVF. The version of the CVF used in this paper follows the model proposed by Davies, Mannion, Jacobs, Powell and Marshall (2007). The questionnaire was translated into Italian and tested with Italian interlocutors for understandability.

The CVF questionnaire offers respondents a set of four possible descriptions of an organization, corresponding to the different types of culture. The questions cover five organizational aspects: i) general characteristics, ii) leadership, iii) cohesion, iv) emphasis, and v) rewards. Within each group of four descriptions, the respondents allot 100 points to the descriptions that best fit their organization (see Appendix). The highest score for each culture type defines an individual's dominant culture type. The dominant culture type for an organization results from aggregating the scores provided by its respondents. In addition, we measured cultural dominance strength using the standard deviation resulting from the CVF scores of the four culture types.

As already mentioned, this study focuses on two dimensions of organizational performance: financial performance and competitiveness. Therefore, we collected data on two performance measures: (a) the net income without sterilization of depreciation – the reason of this correction is because the adoption of the adjusting entry “*sterilizzazione degli ammortamenti*” varies from region to region – and (b) the proportion of patients hospitalized in an organization who are settled in a region different from the one where they live (or patient mobility). . Patient mobility (“*mobilità sanitaria*”), is an important indicator of clinical excellence and reputation, which generally should be a relevant concern for health professionals.

We controlled for the following factors: (a) number of beds and employees (as proxies for organizational size); (b) number of medical disciplines (level of specialization); (c) whether the organization is a LHU or an autonomous hospital, proportion of day-hospital beds, and proportions of staff professions (production features); (d) case mix index and entropy index (complexity and variety of cases, respectively); and (e) whether the organization witnessed a merger in the previous five years.

We retrieved the data for the performance measures and control variables of our models from the INHS official database (available at www.salute.gov.it/servizio/datisis.jsp). We used data regarding 2010 for the organizations sampled in Tuscany (because their data collection occurred entirely in that calendar year), while we used data concerning 2011 for the other organizations. It is important to notice that, during the data collection period, we observed no changes in the senior management teams of the sampled organizations: this stability fosters the comparability of the gathered information.

Analytical approach

We test our hypothesis by means of multivariate regression analysis. With regard to the financial performance, we used a log-linear OLS model to account for the overdispersion and the long right tails characterizing the distributions of the dependent variable. While we analyzed patient mobility with three different models that can handle a dependent variable expressed in terms of proportion: (i) a truncated regression model with lower limit equal to zero and upper limit equal to one; (ii) a Tobit model with lower limit equal to zero and upper limit equal to one; (iii) a generalized linear model based on a logit link function and a binomial distribution. All statistical analyses were performed using the software package STATA 12.0 (StataCorp, College Station, TX, USA).

RESULTS

Table 2 shows the descriptive statistics of the variables used in our models. Six organizations were identified as dominant clan cultures, four were dominant developmental cultures, 21 were dominant rational cultures, and 28 were hierarchical cultures. The prevalence of hierarchical culture is attributed to the prevalence of both

internal orientation and the organization of work strictly based rules and procedures, which are strongly diffused in the Italian public sector (Del Vecchio and De Pietro 2011).

Insert Table 2 about here

Table 3 shows the results of our first model, which tests the influence of organizational culture on financial performance. The table shows whether each dominant culture type is associated with a significantly different financial performance compared with a reference culture type. Dominant hierarchical and clan cultures are associated with better financial performance (at the 99% and 95% confidence level, respectively) compared with dominant rational cultures. Therefore, our first hypothesis is confirmed. However, the results for clan culture must be considered with caution, because few organizations show dominance of this cultural type in our sample. As expected, cultural dominance strength is negatively associated with this performance measure.

Insert Table 3 about here

Table 4 shows the results of our models testing the influence of organizational culture on competitiveness. As already mentioned, we ran three models. With each model, we conducted three comparisons by excluding the dominant organizational culture considered to be a reference category.

Insert Table 4 about here

Dominant rational culture is consistently associated with better competitiveness compared to the other organizational culture types, with the exception of clan culture,

which does not have a statistically significant coefficient. Therefore, our second hypothesis is confirmed. In addition, cultural dominance strength is positively associated with patient mobility. Differently from the previous performance dimension, in this case the goal is aligned with the values of health professional control, thus the stronger is the cultural “brand”, the better the performance measure. Therefore, considering the results of all the models, also our last two hypotheses are confirmed.

One may argue that our results hide a relationship between organizational culture and structural variables and that a change in structure might be considered an easier avenue through which to enhance performance. In this respect, we used a multinomial logit model to test the influence of the structural characteristics of organizations (our control variables) on the likelihood of showing one specific dominant culture compared to another. Table 5 provides the comparisons between all possible pairs of dominant culture types.

Insert Table 5 about here

The results do not support the argument that structural variables influence the likelihood of showing a specific culture type, with the exception of the comparison between rational and hierarchical cultures. Here, the higher are the number of employees, the proportion of non-medical staff, and the case mix index, the more likely an organization is to have a dominant hierarchical culture instead of a rational culture. On the contrary, the lower is the level of specialization (in terms of number of acute disciplines), the less likely an organization is to have a dominant hierarchical culture instead of a rational culture. In other words, small and highly specialized organizations are more likely to have a hierarchical culture, compared with large, multidisciplinary structures dealing

with complex cases. These findings suggest that only radical structural interventions, typically governed at the system level rather than by senior public managers, are likely to influence organizational culture. However, organizational culture plays also an independent role in explaining performances.

DISCUSSION AND PRACTICAL IMPLICATIONS

The findings of our study suggest that health organizations should reconsider the importance of assessing and investing in senior management cultural development/realignment according to the specific organizational goals and priorities.

The results support this approach by confirming our expectations. Regarding the first hypothesis, dominant rational cultures do not excel in terms of financial results because their strategic orientation is more balanced toward achieving a full range of different targets (e.g., clinical excellence, quality of care, satisfaction) and caring for multiple stakeholders. Rather, they foster market reputation and competitiveness. From this perspective, financial results are not the strategic focus of these organizations, and thus they are suitable for negotiation. In other words, the senior management team might be willing to live with a financially stressed organization (perhaps within negotiated limits of politically acceptable financial deficit) if better performance in other dimensions can be achieved.

By contrast, as suggested by Veronesi, Kirkpatrick and Altanlar (2015), dominant hierarchical cultures are mostly concerned with financial performance: the financial deficit is perceived as the main problem in these organizations, whose senior management team is willing to fully cope with eventual austerity measures. In the short run, if financial performance is the main issue, hierarchical cultures might comfortably

fit the circumstances. The better financial performances of healthcare organizations with dominant clan cultures, compared with rational ones, have two possible explanations. First, as any symptom of financial crisis can put organizational autonomy at risk, clan cultures prefer complying with imposed targets to avoid direct external control. Second, clan cultures are suitable for promoting medical engagement (Prenestini and Lega 2013), which is a crucial factor for legitimating effective cost containment strategies (Lega, Prenestini and Spurgeon 2013). The two explanations are rather speculative and not mutually exclusive.

With regard to the second hypothesis, the results show a significant positive relationship between rational culture and competitiveness. This finding supports the idea that performance dimensions regarding clinical excellence and reputation, such as patient mobility, are better pursued by a culture keen to meet the demands of external stakeholders.

The results concerning cultural dominance strength confirm our last two hypotheses (5a and 5b) and suggest that there is an implicit threshold for the extent to which senior management can limit the legitimate expectations (e.g., minimum degree of autonomy, innovation) of tenured professionals. When senior managers push performances not aligned with professional priorities, this might increase the intensity of their pressures but not the effectiveness of their steering efforts because professionals predominantly share the same set of values and beliefs and tend to pursue them cohesively. Hence, efficiency priorities can be stressed if they connect with the improvement of patient experience (e.g., patient flow logistics) or until they do not interfere with strictly clinical priorities. While stressing such priorities beyond a certain level may backfire, unless – we speculate – it lasts for a short period of time and in recognized circumstances of

“crisis management”. In the medium-long term, this approach will most likely result in a conflict of values and a consequent disengagement of clinicians. On the contrary, when the senior managers push performances aligned with professional priorities, the more congruent such a culture is, the better performances tend to be. In our case, meeting the demands of external stakeholders (e.g., attracting patients) better matches the normative assumptions of health professionals compared with merely enhancing financial performance.

Our results have some managerial implications. First, the focus on particular performance goals call for different senior management team culture. Therefore, since leadership plays a key role in the success of any cultural transformation (Schein 2004, Scott, Mannion, Davies and Marshall 2003), the selection and appointment of top/senior managers should take into account the styles of leadership more apt to foster a specific culture in the senior management team according to the priorities pursued by the organization. The appointment of general directors and senior managers should be made based on the best match between the culture and the primary organizational/system needs. Further, the same senior management could be called – and supported – to adapt its leadership style according to the stage in the life cycle of the organization (e.g., development, consolidation) or the contingent circumstances (e.g., financial distress). For instance, downsizing and respecting financial constraints are likely to be met by a hierarchical or clan culture, while competitiveness and consolidation of reputation might benefit from a rational culture. However, while the latter type of objectives is likely to find health professionals’ support, the effectiveness of pressure toward the former kind of goals is conditioned on the limits (more or less explicitly) defined by health professionals’ priorities.

Currently, politicians appoint the top managers (i.e., General Director, Administrative Director, and Medical Director) of INHS organizations following the typical logic of a spoils system: political affiliation. However, the aforementioned suggestions could be more likely accomplished through open competition selecting candidates based on recognized abilities, attitudes, and leadership traits. In this respect, even a pure merit system, where appointments are mainly based on technical skills, rather than on leadership traits and attitudes, does not seem to be an adequate selection system.

In an effective selection process, if priority is given to performances preferred by health professionals (e.g., reputation), it makes sense establishing criteria aimed at ensuring that the majority of the appointed managers share leadership aptitudes and credos strongly oriented toward such performances. While, if the targeted performance dimensions are different (e.g., financial results), such an approach can be detrimental to success, because the typical orientation of influential organizational members toward external stakeholders (e.g., patients) can only limitedly coincide with strong institutional constraints pushing the organization to focus on internal processes. In this specific case, an option could be the appointment of pairs of managers and vice-managers with distinct leadership credo but reciprocal professional or personal esteem: this could create a “balanced” co-direction while keeping power conflict under control.

In addition, training of senior and top managers – including top doctors – should be strategically used to understand which leadership aptitudes are consistent with an organizational culture that supports the expected performance and, consequently, to reinforce or shape the desired aptitudes. In fact, reducing the idiosyncrasies between different cultures might help to better meet organizational targets even when they are not fully aligned with professional norms. Through selection and training based on clear

key principles, it should be possible to effectively shape the core strategic orientation of a health organization in both the short and the long term, thus responding to diverse needs emerging in different stages of the organizational life cycle. This might be facilitated by the fact that in many health organizations senior management positions are subject to a spoil mechanism or rotation.

Our results are likely to be linked with the context of a public, single-payer health system, especially when facing the significant challenge of financial sustainability, where clinicians are involved in the governance of health organizations. Therefore, any generalization should consider this context. However, evidence suggests that the performance variation observed across public healthcare organizations is not fully explained by structural (or hard) factors. Rather, the analyzed soft aspect discloses new avenues to significantly influence practices toward desired performances. As a corollary, research on clinical leadership should take into account how organizational culture can orient strategic decision-making toward different performance dimensions. In addition, the cross-sectional nature of our data cannot provide strong evidence of causal relationships. However, the results provide interesting, coherent insights and may provide a basis for further, focused empirical studies.

CONCLUSIONS

Traditionally, public health organizations have tried to accommodate pressures toward higher efficiency and effectiveness through structural changes and co-optation of professionals in their governance. However, evidence suggests that health organizations should reconsider the importance of fostering coherence between cultural development and their performance goals.

Establishing and following clear criteria aimed to appropriately select and train senior management represent an important avenue to effectively shape the core strategic orientation of health organizations according to performance priorities. However, the senior management should be aware that pushing toward performance dimensions not aligned with clinical norms is an exercise that require careful tactics to respect and eventually negotiate trade-offs within the limits imposed by circumstances and the necessity of professional engagement in pluralistic organizations (Cuccurullo and Lega 2013).

Future research could explore and compare the influence of organizational culture and its dominance strength on different dimensions of performance to better triangulate limitations and points of strength for each culture type. Testing the influence of organizational culture on performance trends would be interesting, because this could help to analyze the causality of the relationship and because the variability of performance may be as relevant as performance level (Sørensen 2002). Finally, analyzing the primary dynamics behind decision-making processes might confirm hypothesized explanations of unexpected results or suggest new, interesting insights about the nature of pluralistic organizations and the strategies that can effectively influence such dynamics in planned directions (Cuccurullo and Lega 2013).

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Table 1

Culture types and associated expected performances

Dominant culture type	Values & Features	Expected Performance
Clan	Cohesion, participation, tradition, loyalty <i>Internal focus (unity)</i> <i>Relationship-based processes</i>	<ul style="list-style-type: none"> - Staff satisfaction - Low vacancy and turnover rates - Development of professional competences (e.g., through training initiatives)
Development	Innovation, dynamism, entrepreneurship <i>Focus on external environment</i> <i>Relationship-based processes</i>	<ul style="list-style-type: none"> - Satisfaction of external stakeholders (especially patients) - Reduced waiting times - High degree of innovation (e.g., development of new services) - Perceived quality of care
Hierarchical	Control, discipline, order, stability <i>Internal focus (unity)</i> <i>Rule-based processes</i>	<ul style="list-style-type: none"> - Financial performance - Operating efficiency - Good data quality
Rational	Competitiveness, goal-setting, merit <i>Focus on external environment</i> <i>Rule-based processes</i>	<ul style="list-style-type: none"> - Market share gains - Great access to external financing - Satisfaction of external stakeholders (especially financing and goal setting subjects – e.g., public authorities) - Reputation improvement (e.g., excellence in accreditation systems, better recruiting of physicians)

Adapted from Prenestini & Lega (2013), Quinn & Rohrbaugh (1983); Gerowitz et al. (1996), Davies et al. (2007), Wicks & St. Clair (2007).

Table 2*Descriptive statistics*

Variable	N	Mean	Std. Dev.	Min	Max
Dominant OC: ^a					
Clan	6	-	-	-	-
Development	4	-	-	-	-
Hierarchical	28	-	-	-	-
Rational	21	-	-	-	-
Dominant culture strength ^b	59	7.56	4.06	1.96	24.49
LHU/hospital (LHU = 1) ^c	59	0.58	0.50	0	1
Merger	59	0.07	0.25	0	1
Average N. beds	59	524	376	112	1,789
Proportion day-hospital beds	59	0.13	0.04	0.07	0.31
Case Mix index	59	1.05	0.15	0.86	1.48
Entropy index	59	2.17	0.20	1.45	2.39
N. Employees	59	2,736	1,210	765	5,894
Proportion of Clinic staff	59	0.15	0.02	0.11	0.21
Proportion of Nursing staff	59	0.41	0.04	0.27	0.49
Proportion of Administrative staff	59	0.11	0.03	0.07	0.21
Proportion of Allied health staff	59	0.19	0.04	0.11	0.29
N. Disciplines	59	23.46	8.65	4.00	42.00
Net income (without sterilizations) ^d	59	8,674	11,493	-36,917	29,750
Attractivity index	59	0.25	0.16	0.07	0.74

^a OC = Organizational culture

^b LHU = Local health unit

^c Standard deviation of the culture type score

^d Data in thousand-Euro units

Table 3

Influence of organizational culture on financial performance

	Coef.	Std. Err.	P-value
Organization culture variables			
Dominant OC: C	2.894	1.319	0.034
Dominant OC: D	1.557	1.520	0.312
Dominant OC: H	3.390	0.903	0.001
Dominant OC: R --- <i>reference category</i>	-	-	-
Cultural Dominance strength	-0.240	0.093	0.013
Dominant OC: C	-0.496	1.279	0.700
Dominant OC: D	-1.833	1.570	0.250
Dominant OC: H --- <i>reference category</i>	-	-	-
Dominant OC: R	-3.390	0.903	0.001
Cultural Dominance strength	-0.240	0.093	0.013
Dominant OC: C	1.337	1.834	0.470
Dominant OC: D --- <i>reference category</i>	-	-	-
Dominant OC: H	1.833	1.570	0.250
Dominant OC: R	-1.557	1.520	0.312
Cultural Dominance strength	-0.240	0.093	0.013
Control factors			
LHU/hospital (LHU = 1)	-3.046	0.955	0.003
Merger	-4.069	1.895	0.038
Ln(Average N. beds)	-1.231	0.721	0.095
Proportion day-hospital beds	20.159	11.537	0.088
Case Mix index	-5.302	3.607	0.149
Entropy index	0.705	2.623	0.789
Ln(N. Employees)	1.612	1.182	0.180
Proportion of Clinic staff	-44.361	29.298	0.137
Proportion of Nursing staff	-46.427	15.372	0.004
Proportion of Administrative staff	-50.733	26.835	0.066
Proportion of Allied health staff	-34.323	15.318	0.030
N. Disciplines	0.082	0.061	0.184
<hr/>			
Adj R-squared	0.333		
Prob. > F	0.004		

C = Clan; D = Development; H = Hierarchical; R = Rational

Note: We run three times the same regression except for excluding a different dominant culture type (reference category) each time. Since the coefficients associated to the “control factors” do not change in the regressions, we indicated them only once.

Table 4

Influence of organizational culture on competitiveness

Dependent variable:	Attraction index (%)			Attraction index (%)			Attraction index (%)			
	MODEL:	Truncated regression			Tobit model			GLM (logit, binomial)		
		Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value
Organization culture variables										
Dominant OC: C		-0.035	0.035	0.315	-0.033	0.034	0.326	-0.222	0.239	0.353
Dominant OC: D		-0.104	0.042	0.012	-0.101	0.039	0.012	-0.615	0.141	0.000
Dominant OC: H		-0.041	0.024	0.086	-0.040	0.023	0.090	-0.210	0.125	0.092
Dominant OC: R -- (reference category)		-	-	-	-	-	-	-	-	-
Cultural Dominance strength		0.005	0.002	0.066	0.004	0.002	0.072	0.024	0.011	0.030
Dominant OC: C		0.006	0.034	0.861	0.007	0.032	0.842	-0.012	0.239	0.961
Dominant OC: D		-0.063	0.043	0.142	-0.061	0.040	0.131	-0.405	0.142	0.004
Dominant OC: H -- (reference category)		-	-	-	-	-	-	-	-	-
Dominant OC: R		0.041	0.024	0.086	0.040	0.023	0.090	0.210	0.125	0.092
Cultural Dominance strength		0.005	0.002	0.066	0.004	0.002	0.072	0.024	0.011	0.030
Dominant OC: C		0.069	0.050	0.163	0.068	0.047	0.153	0.393	0.241	0.103
Dominant OC: D -- (reference category)		-	-	-	-	-	-	-	-	-
Dominant OC: H		0.063	0.043	0.142	0.061	0.040	0.131	0.405	0.142	0.004
Dominant OC: R		0.104	0.042	0.012	0.101	0.039	0.012	0.615	0.141	0.000
Cultural Dominance strength		0.005	0.002	0.066	0.004	0.002	0.072	0.024	0.011	0.030
Control factors										
LHU/hospital (LHU = 1)		-0.074	0.026	0.004	-0.071	0.024	0.005	-0.388	0.160	0.016
Merger		0.190	0.051	0.000	0.180	0.048	0.001	1.110	0.232	0.000
Ln(Average N. beds)		0.048	0.020	0.016	0.044	0.018	0.021	0.279	0.087	0.001
Proportion day-hospital beds		0.636	0.306	0.038	0.595	0.293	0.048	3.802	1.446	0.009
Case Mix index		0.624	0.095	0.000	0.616	0.092	0.000	3.120	0.382	0.000
Entropy index		-0.352	0.069	0.000	-0.354	0.067	0.000	-1.528	0.291	0.000
Ln(N. Employees)		-0.051	0.032	0.112	-0.050	0.030	0.107	-0.329	0.190	0.084
Proportion of Clinic staff		-0.790	0.777	0.310	-0.707	0.744	0.347	-6.045	3.802	0.112
Proportion of Nursing staff		0.080	0.408	0.844	0.066	0.391	0.866	0.316	1.949	0.871
Proportion of Administrative staff		0.033	0.713	0.963	0.042	0.682	0.952	-1.276	3.450	0.711
Proportion of Allied health staff		-0.238	0.404	0.557	-0.235	0.389	0.549	-1.915	1.859	0.303
N. Disciplines		-0.005	0.002	0.003	-0.005	0.002	0.003	-0.026	0.009	0.006
	Sigma =	0.065	0.006	0.000	0.063	0.006		AIC =	1.277	
	Prob > χ^2 =	0.000			0.000			BIC =	-170.100	

C = Clan; D = Development; H = Hierarchical; R = Rational

Note: For each model, we run three times the same regression except for excluding a different dominant culture type (reference category) each time. Since the coefficients associated to the “control factors” do not change in a model, we indicated them only once.

Table 5

Relationships between organizational culture and structural variables

	CLAN		DEVELOPMENTAL		HIERARCHICAL	
	Coef.	p-value	Coef.	p-value	Coef.	p-value
DEVELOPMENTAL						
LHU/hospital (LHU = 1)	3.658	0.416				
Merger	-4.681	1.000				
Ln(Average N. beds)	1.244	0.676				
Proportion day-hospital beds	-20.719	0.635				
Case Mix index	-1.494	0.924				
Entropy index	-13.186	0.162				
Ln(N. Employees)	-3.842	0.350				
Proportion of Clinic staff	71.319	0.553				
Proportion of Nursing staff	40.646	0.451				
Proportion of Administrative staff	75.239	0.399				
Proportion of Allied health staff	168.690	0.038				
N. Disciplines	-0.090	0.714				
HIERARCHICAL						
LHU/hospital (LHU = 1)	0.387	0.908	-3.271	0.293		
Merger	-27.149	0.996	-22.469	0.997		
Ln(Average N. beds)	-0.170	0.945	-1.414	0.436		
Proportion day-hospital beds	38.140	0.124	58.860	0.139		
Case Mix index	-5.041	0.439	-3.546	0.810		
Entropy index	-7.350	0.294	5.836	0.395		
Ln(N. Employees)	-3.643	0.151	0.199	0.954		
Proportion of Clinic staff	-61.647	0.333	-132.966	0.212		
Proportion of Nursing staff	16.529	0.663	-24.117	0.560		
Proportion of Administrative staff	57.064	0.381	-18.175	0.784		
Proportion of Allied health staff	57.849	0.260	-110.841	0.075		
N. Disciplines	0.030	0.859	0.120	0.552		
RATIONAL						
LHU/hospital (LHU = 1)	2.082	0.550	-1.576	0.610	1.695	0.170
Merger	-7.531	0.999	-2.851	1.000	19.618	0.996
Ln(Average N. beds)	-0.545	0.827	-1.789	0.341	-0.376	0.644
Proportion day-hospital beds	17.528	0.518	38.247	0.335	-20.612	0.277
Case Mix index	8.248	0.318	9.742	0.514	13.289	0.034
Entropy index	-10.733	0.143	2.453	0.728	-3.383	0.313
Ln(N. Employees)	-0.708	0.785	3.134	0.357	2.935	0.032
Proportion of Clinic staff	-1.520	0.982	-72.839	0.485	60.127	0.109
Proportion of Nursing staff	62.586	0.110	21.940	0.582	46.057	0.016
Proportion of Administrative staff	110.963	0.103	35.724	0.584	53.899	0.097
Proportion of Allied health staff	98.208	0.063	-70.482	0.253	40.359	0.020
N. Disciplines	-0.200	0.248	-0.110	0.569	-0.229	0.027
N = 59						
LR chi2(36) = 52.19						
Prob > χ^2 = 0.0396						
Pseudo R ² = 0.389						

Appendix

The version of the CVF instrument used in this study is based on the questionnaire included in the research report “Changing Management Cultures and Organisational Performance in the NHS (OC2)” (Mannion et al., April 2010) and used with NHS Hospital Trusts. Below, we report the part of the questionnaire dedicated to assess the organizational culture – that we translated into Italian and tested with local interlocutors for understandability (for instance, we replaced the term “trust” with “organization” – i.e., “azienda” in Italian).

Evaluating the culture of your Trust

There are **5 questions** below. Each question is about a different aspect of your TRUST; for example, its leadership or its reward system.

Please, distribute **100 points** among the four descriptions depending on how similar the description is to your TRUST. For each question please use **all 100 points**. Please, answer according to what you think, not what others in your organisation think and don't think too hard – we want your gut reactions.

For example, in Question 1 if TRUST A seems very similar to yours, B seems somewhat similar and C and D do not seem similar at all, you might give 70 points to A, 30 to B and none to C and D. Question 1 and other examples might look as follows:

Question 1	Question 2	Question 3	Question 4
A 70	A 25	A 80	A 0
B 30	B 25	B 10	B 0
C 0	C 25	C 0	C 100
D 0	D 25	D 10	D 0
Total 100	Total 100	Total 100	Total 100

Please answer according to what you think that your TRUST is like now. There are no **right** or **wrong** answers! None of the descriptions are any better than the others – they are just different. Don't think too hard – we want your gut reactions.

QUESTION 1: TRUST characteristics <i>(please distribute all 100 points)</i>		
	points	
A		TRUST A is a very personal place. <i>It's like an extended family.</i>
B		TRUST B is a very dynamic and entrepreneurial place. <i>People are willing to take risks.</i>
C		TRUST C is a very formalised and structured place. <i>Bureaucratic procedures influence how things are done.</i>
D		TRUST D is very task orientated. <i>The main concern is getting the job done and people aren't very personally involved.</i>
total		

QUESTION 2: TRUST leadership <i>(please distribute all 100 points)</i>		
	points	
A		The leaders in TRUST A are warm and caring. <i>They seek to develop their staff members' full potential.</i>
B		The leaders in TRUST B are risk takers. <i>They encourage risk taking and innovation from their staff.</i>
C		The leaders in TRUST C are rule enforcers. <i>They expect staff to follow rules, policies and procedures.</i>
D		The leaders in TRUST D are co-ordinators and facilitators. <i>They encourage staff to meet the organisation's objectives.</i>
total		

QUESTION 3: TRUST cohesion <i>(please distribute all 100 points)</i>		
	points	
A		The glue that holds TRUST A together is loyalty and tradition. <i>Staff commitment to the organisation is high.</i>
B		The glue that holds TRUST B together is a commitment to innovation and development. <i>PCT B likes to lead the way.</i>
C		The glue that holds TRUST C together is formal rules and policies. <i>Maintaining a smooth running operation is important.</i>
D		The glue that holds TRUST D together is an emphasis on accomplishing tasks and goals. <i>People want to get jobs done.</i>
total		

QUESTION 4: PCT emphasis		
<i>(please distribute all 100 points)</i>		
	points	
A		TRUST A puts a strong emphasis on <i>cohesion and staff morale</i> .
B		TRUST B puts a strong emphasis on <i>growth and readiness to meet new challenges</i> .
C		TRUST C puts a strong emphasis on <i>permanence and stability</i> .
D		TRUST D puts a strong emphasis on <i>competitiveness and achievement</i> .
total		

QUESTION 5: TRUST 'rewards'		
(By 'rewards' we mean praise, acknowledgement of success etc, as well as resources and financial incentives)		
<i>(please distribute all 100 points)</i>		
	points	
A		TRUST A distributes its rewards fairly among staff members. <i>Everyone is treated equally.</i>
B		TRUST B distributes its rewards based on individual initiative. Those who are most productive are most rewarded.
C		TRUST C distributes its rewards based on rank. <i>The higher you are the more you get.</i>
D		TRUST D distributes its rewards based on the achievement of objectives. <i>Those who achieve their objectives are rewarded.</i>
total		

THAT'S ALL! Thank you for taking the time to complete this questionnaire.

We very much appreciate your help with this research. Please do not hesitate to contact us with any queries or questions. If you would like to see the results of our analysis please give your contact details below:

*You should be reassured that all information that we receive will be **anonymised**, with no comments or responses attributed to any individual or organisation. [...]*