Bureaucratization and Medical Professionals' Values: A Cross-National Analysis

Dr Girts Racko
Associate Professor
Warwick Business School
University of Warwick
Coventry CV4 7AL
U.K.
girts.racko@wbs.ac.uk

Accepted for publication in *Social Science and Medicine*.

Abstract

Understanding the impact of the bureaucratization of governance systems on the occupational values of medical professionals is a fundamental concern of the sociological research of healthcare professions. While previous studies have examined the impact of bureaucratized management, organizations, and healthcare fields on medical professionals' values, there is a lack of cross-national research on the normative impact of the bureaucratized systems of national governance. Using the European Social Survey data for 29 countries, this study examines the impact of the bureaucratization of national governance systems on the occupational values of medical professionals. The findings indicate that medical professionals who are employed in countries with the more bureaucratized systems of national governance are less concerned with openness to change values, that emphasize autonomy and creativity, and self-transcendence values, that emphasize common good. The findings also indicate that the negative effect of the bureaucratization of national governance on the openness to change values is stronger for medical professionals in more bureaucratized organizations with more rationalized administration systems.

Key words: bureaucratization, bureaucracy, public governance, professions, medical professionalism, values.

1. Introduction

A fundamental assumption underlying the sociology of professions is that bureaucratization undermines the occupational values of medical professionals (Freidson, 1970). Prior studies have demonstrated that medical professionals employed in bureaucratized work roles, organizations, and healthcare fields become less concerned with the occupational values of professionalism (e.g. Harrison & Smith, 2003; Kitchener, Caronnab & Shortell, 2005) or protect these values by resisting the bureaucratization process (e.g. Reay & Hinings, 2009; Currie, Finn & Martin, 2009). However, to the best of our knowledge, no cross-national research examined the effect of the bureaucratization of national governance systems on the occupational values of medical professionals.

Understanding this impact is important given that the bureaucratization of national governance is likely to undermine the occupational values of medical professionals by enforcing their commitment to the values of instrumentally rational administration that underpin the bureaucratization process (Freidson, 1970). Bureaucratized national governance enforces the values of instrumentally rational administration by regulating professional work in accordance with governmental performance targets, and by encouraging administrative and economic efficiency in accommodating these targets (Freidson, 2001; Harrison & Smith, 2003). Governmental regulation is likely to undermine the occupational values of medical professionals, that emphasize autonomy and creativity, by constraining their independent authority over specification, reproduction and innovation of medical expertise (McKinlay & Stoeckle, 1988; Ritzer, 1998; Timmermans & Berg, 2003). The enforcement of administrative and economic efficiency is likely to weaken medical professionals' concern with common good

by incentivizing the use of instrumentally rational strategies in which medical work, patients and colleagues are approached as means for meeting governmental performance targets (Harrison & Smith, 2003; Rosenberg, 2007; Tousijn & Giorgino, 2009).

This study tests a fundamental prediction that in countries with more bureaucratized systems of national governance medical professionals are likely to assign less importance to the occupational values of professionalism. We develop further understanding of the impact of national governance bureaucratization by examining how this impact can be moderated by the bureaucratization of organizations where medical professionals are employed. We predict that the negative impact of national governance bureaucratization on occupational values will be stronger for those professionals who are employed in more bureaucratized organizations, where professionals are likely to be more homogenously influenced by the values of an instrumentally rational administration (Weber, 1978; Racko, 2015). Medical professionals employed in bureaucratized organizations with more rationalized administrative systems are more likely to accommodate and legitimize their work in accordance with governmental performance targets (McKinlay & Marceau, 2002; Farrell & Morris, 2003; Lin, 2014).

The paper is structured as follows. The next section highlights the occupational values of medical professionals and offers the theoretical rationale for our predictions on the impact of the bureaucratization of national governance on these values. Sections 3 and 4 outline the methods and present the results of data analyses. Section 5 discusses the theoretical implications of our findings.

2. The occupational values of medical profession and the bureaucratization of national governance

Values are enduring normative standards that guide human actions (Rokeach, 1973; Schwartz, 1992). Values, as normative standards about the desirable modes of action, are irreducible to the properties of an object, such as statistical value or cost, or to a particular form of action, such as instrumentally rational action. In the empirical research on human values, the most methodologically rigorous approach to value conceptualization and measurement is Schwartz's (1992) taxonomy of human values, which at the more general level differentiates values into four categories: openness to change as opposed to conservation, and self-transcendence as opposed to self-enhancement (Hitlin & Piliavin, 2004; Racko, 2015). The measures of this value taxonomy have been validated in more than 60 countries worldwide (Schwartz, 2006; Davidov, Schmidt & Schwartz, 2008; Verkasalo et al., 2009). While Schwartz's value taxonomy has been rarely used to measure medical professionals' values, the occupational values of medical professionalism are typically conceived to emphasize (1) autonomy and creativity (Freidson, 1970; Harrison & Smith, 2003; Evetts, 2013), which in Schwartz's (1992) taxonomy represent the normative goals of openness to change values; and (2) common good (Wynia et al., 1999; Swick, 2000; Pattison & Pill, 2005), which for Schwartz (1992) represent the normative goals of self-transcendence values.

First, the pursuit of openness to change values, emphasizing autonomy and creativity, enables the medical profession to reproduce and revise its occupational knowledge (Freidson, 1970; Swick, 2000; Pattison & Pill, 2005). Medical professionals require autonomy to reproduce the indeterminate and untestable aspects of their knowledge in order to ensure its creative

refinement and inimitability. While professionals mobilize knowledge that is to some extent codified and repetitive, they also draw on the epistemological foundation of abstract concepts to emphasize the importance of discretionary judgements and creative solutions to complex and uncertain tasks (Southon & Braithwaite, 1998). The pursuit of autonomy and creativity is critical for the continuing acquisition and innovation of medical knowledge (Wynia et al., 1999).

Medical professionals pursue autonomy at the micro, mezzo, and macro levels (Harrison & Smith, 2003; Gross et al., 2007). At the micro level, they seek to maintain autonomy over the diagnosis of illness, prescription of treatments, evaluation of appropriateness of patient care, and specification of the character and extent of practitioner tasks and priorities. At the mezzo level, they maintain autonomy by seeking both statutory and non-statutory self-regulation that protects medical profession against governmental intervention. At the macro-level, medical autonomy is maintained by legitimizing the normative assumptions of the 'bio-medical model' that conceives ill-health as the pathology of individuals (Mishler, 1989; Marjoribanks & Lewis, 2003).

Second, the pursuit of self-transcendence values, emphasizing common good, enables the medical profession to elicit public trust in its work by prioritizing the welfare of patients, colleagues and society over self-interest (Freidson, 1970; Pattison & Pill, 2005). Medical professionals develop and refine their expertise to improve healthcare quality for the benefit of patients (Blumenthal, 1994). They adopt a compassionate approach to diagnose illnesses and maintain an honest, caring and empathetic attitude in their interactions with patients (Wynia et al., 1999). They protect themselves against unrestrained intra-occupational competition by developing collegial, respectful and trustworthy interactions with their professional peers. They

also fulfill their professional obligations to society by addressing the healthcare priorities of the communities in which they work (Parsons, 1939; Swick, 2000).

The occupational values of medical professionals are likely to be undermined by bureaucratization as a process of the transformation of work in accordance with the values of instrumentally rational administration (IRA) (McKinlay & Stoeckle, 1988; Ritzer & Walcak, 1988; Rosenberg, 2007). Bureaucratized systems of national governance enforce the values of IRA by developing a regulatory framework that enables these systems to increase administrative and economic efficiency in the utilization of public resources (Weber, 1978). Over the past decades, the bureaucratization of national governance systems has weakened medical professionals' commitment to their occupational values by regulating medical work using audit systems, accountability measures and performance incentives (Pollitt, 1993; Hunter, 1996; Power, 1999; Light, 2000; Harrison & Smith, 2003). Prior studies have demonstrated how the employment of medical professionals in bureaucratized work roles, organizations and healthcare fields weakens their occupational values (e.g. Harrison & Ahmad, 2000; Marjoribanks & Lewis, 2003; Potter & McKinlay 2005; Kitchener et al., 2005; Gross et al., 2007; Tousijn & Giorgino, 2009; Floriani & Schramm, 2012; Waring & Bishop, 2013; Lin, 2014; Toth, 2015). However, there is a lacuna of cross-national research on the normative impact of bureaucratized national governance that is likely to influence the priorities of medical work across distinct roles, work settings and fields of specialization. Moreover, most studies have examined the impact of bureaucratization on openness to change values that emphasize autonomy and creativity. Relatively little is known about the impact of bureaucratization on the self-transcendence values of medical professionals. Our contribution is to examine the impact of the

bureaucratization of national governance systems on both the openness to change and self-transcendence values of medical professionals.

2.1. Bureaucratization of national governance

In countries with more bureaucratized systems of national governance medical professionals are less likely to be concerned with openness to change values, emphasizing autonomy and creativity, because in these countries professional work is more likely to be regulated using the IRA values (Freidson, 1970; Hall, 1968). Bureaucratized national governance enforces IRA values by standardizing medical work in accordance with the service delivery rules and performance standards (Timmermans & Berg, 2003; Harrison & Smith, 2003). With bureaucratization, medical work has become increasingly regulated using standardized clinical practice guidelines that prescribe patient evaluation and treatment strategies (Toth, 2015) and audit systems that enforce compliance with the clinical guidelines (Pollitt, 1993; Power, 1999). Bureaucratization has transformed medical work into an assembly line production process where doctors are expected to process patients at a standardized pace (McKinlay & Marceau, 2002). Medical autonomy has been curtailed by governmental reforms that have increased the financial and administrative accountability of medical work (Power, 1999; Light, 2000; Tousijn & Giorgino, 2009), the responsiveness of medical work to service recipients (Hafferty & Light, 1995; Potter & McKinlay, 2005), and the proliferation of regulatory agencies tasked with the bureaucratic control of medical work (Midwinter & McGarvey, 2001).

The values of IRA that underpin bureaucratization in the most generic form emphasize calculation and utilization of the most effective means to attain a given end (Weber, 1978;

Racko, 2015). When actions of professionals conform to the values of IRA, their goals, choices and perceptions become standardized in accordance with the logic of rational calculation (Ritzer, 1998; Waring & Bishop, 2015). Bureaucratization thus triggers a fundamentally passive stance towards circumstances. By subjugating professional autonomy and creativity to the principles of rational administration, bureaucratization transforms professional actions into predictable responses to administrative rules and routines (Farrell & Morris, 2003). Bureaucratization thus undermines professional autonomy and creativity by increasing the predictability and control of work (Ritzer, 1998).

In countries with bureaucratized governance systems, medical professionals are also less likely to pursue self-transcendence values due to the administrative controls and hierarchies that regulate their work in accordance with the values of IRA. In these countries, medical professionals have become controlled, challenged or co-opted in administrative authority structures by managers without healthcare qualifications (Rosenberg, 2007; Tousijn & Giorgino, 2009; Toth, 2015). Bureaucratic governance systems have tightened their control over medical professionals by using performance measurement mechanisms that increase the predictability of professional work by differentiating it into quantifiable inputs, processes and outputs that can be compared, calculated and regulated (Ritzer, 1996). These systems also have tightened their control of professional work by introducing incentives and rewards that are contingent on meeting governmental performance targets (Harrison & Smith, 2003).

Because instrumentally rational action in the most generic form uses the most effective means to an end, the efficiency of this action logically depends on agent's ability to exercise control over necessary means (Weber, 1978; Racko, 2015). When the values of instrumental

rationality guide medical professionals, they tend to interact with their colleagues and patients in an instrumentally rational way and thus become less concerned with the well-being of others (Rosenberg, 2007). They are less likely to consider the ethical consequences of their actions and more likely to be become responsive to bureaucratic incentives and controls. Therefore, we predict that:

> Hypothesis 1.1. Medical professionals are likely to attribute less importance to openness to change values in countries with more bureaucratized systems of national governance.
>
> Hypothesis 1.2. Medical professionals are likely to attribute less importance to self-transcendence values in countries with more bureaucratized systems of national governance.

2.2. Interaction between the bureaucratization of national governance and organizational bureaucratization

We also propose that the negative effect of the bureaucratization of national governance on the occupational values of medical professionals is likely to be stronger for professionals employed in more bureaucratized organizations, as these professionals are likely to be more homogenously influenced by the values of IRA. Bureaucratized organizations enforce the values of IRA by developing administratively and economically rationalized systems of management that are regulated in accordance with formal rules and routines (Weber, 1978; Racko, 2015). These organizations have higher levels of standardization and routinization of work to accommodate the more functionally differentiated spans of administrative control (Blau, 1970). It is important to understand the moderator effects of organizational

bureaucratization, given that medical professionals are being increasingly employed in bureaucratized organizations (McKinlay & Marceau, 2002) that play an important role in the transmission and socialization of IRA values (Weber, 1978).

Organizational bureaucratization is likely to undermine the openness to change values of medical professionals by standardizing their work in accordance with administrative rules and routines (Farrell & Morris, 2003; Floriani & Schramm, 2012; Lin, 2014). It is also likely to weaken self-transcendence values by transforming collegial interactions between occupational peers into instrumentally rational forms of interaction, and extending the managerial control over medical work (Ritzer, 1998; Pattison & Pill, 2005). Freidson (2001) also notes that in countries with more bureaucratized governance, administratively rationalized organizations have increasingly supplemented the hierarchical managerial control with control based on the functionally interdependent work of professionals in flexible work forms (e.g. work teams, horizontal networks, and de-layered administrative hierarchies). This form of administrative control is likely to inhibit the pursuit of occupational values by exposing professionals to the interpersonal control of peers in interdependent work.

Medical professionals employed in bureaucratized organizations in countries with more bureaucratized national governance are less likely to pursue the occupational values because these professionals are more likely to legitimize their work in accordance with the values of governmental performance standards (DiMaggio & Powell, 1983). As organizations become more bureaucratized and embedded in a complex web of accountabilities to stakeholders, they tend to become more visible to the public, media and government and to receive more scrutiny from law enforcement agencies, and thus are more likely to seek stakeholder recognition

(Edelman, 1992). Because larger and more bureaucratized organizations tend to have more stakeholders, such as patients, governmental funding bodies, local authorities, private sponsors, and not-for profit organizations, they are likely to be under greater pressure to conform to external normative standards (Goodstein, 1994). Therefore, our hypotheses are:

Hypothesis 2.1. The negative effect of the bureaucratization of national governance on openness to change values is likely to be stronger for medical professionals who are employed in more bureaucratized organizations.

Hypothesis 2.2. The negative effect of the bureaucratization of national governance on self-transcendence values is likely to be stronger for medical professionals who are employed in more bureaucratized organizations.

3. Method

3.1. Sample

We tested the proposed hypotheses using the European Social Survey (ESS) data for 29 countries. The ESS, a bi-annual and nationally representative survey of European countries, is the only cross-national survey that includes the measures of openness to change and self-transcendence values examined in this study (the value measures are discussed in the next sub-section). The medical professionals included in this sample were the members of occupations classified under the sub-major categories 222 and 223 of the International Standard Classification of Occupations (ISCO-88). Because a relatively small number of medical professionals was included in each survey round, we used an aggregate data set comprising all six available survey rounds (2002 to 2012). We excluded data for Luxembourg, Croatia and

Turkey, because there were fewer than 30 surveyed medical professionals in each of these countries. To ensure that the measurement of the impact of the governance systems of European countries on the occupational values of medical professionals was not confounded with their self-selection by migration into these countries based on their prior values, we focused only on medical professionals who were born in the countries where they were surveyed, which was 97.5 percent of all the medical professionals.

The final sample had a total of 3,271 medical professionals from 29 countries. The distribution of medical professionals by country is presented in Table 1. The sample of medical professionals included 733 medical doctors, 91 dentists, 191 pharmacists, 1980 nursing and midwifery professionals, and 276 medical professionals of other specializations. Medical professionals were on average 48.9 years old; 80.6 percent were females; 82.8 percent were employed on permanent contracts; and 45.3 percent worked in public sector organizations.

Insert Table 1 about here

3.2. Measures

Values. Openness to change and self-transcendence values were assessed using Schwartz et al.'s (2001) Portrait Values Questionnaire (PVQ) that is included in the European Social Survey (ESS). The normative goal of openness to change values is to pursue autonomy and creativity, while the normative goal of self-transcendence values is to preserve social welfare and environment for common good (Schwartz, 1992). The PVQ included in ESS asks participants to rate the importance of statements about personal values on a six-point scale anchored from

"very much like me" (1) to "not like me at all" (6) (Schwartz, 2002: 284-286). The measures of openness to change and self-transcendence values have demonstrated reasonable meaning equivalence across cultures and good predictive validity (Davidov, Schmidt & Schwartz, 2008; Schwartz, 2006; Goodwin, Cost & Adonu, 2004). Due to the variations in cultural and individual response styles, we standardized the measurement by centering the value scores on the mean importance attributed to all value items, as indicated by Schwartz (1992). The measures of openness to change and self-transcendence values, comprised of 4 and 5 items, respectively, demonstrated adequate levels of scale reliability (Cronbach's alphas .65 and .74, respectively). Previous cross-national studies have identified similar levels of internal consistency for PVQ value measures (Davidov et al., 2008; Verkasalo et al., 2009; Racko, 2015). A Confirmatory Factor Analysis using the maximum likelihood estimation method in SOSS Amos 21 supported the two-factor model (SRMR = 0.064; RMSEA = 0.078; GFI = 0.963; $\chi 2/df = 19.61$).

Bureaucratization of national governance. We measured cross-national variations in the bureaucratization of national governance using the Worldwide Governance Indicator of Government Effectiveness provided by the World Bank (World Bank, 2008). This indicator measures the administrative and economic rationalization of national governance systems of countries worldwide. Specifically, it measures the extent to which governance systems are administratively rationalized using formal rules to ensure continuity and predictability of regulation as well as accountability and efficiency of policy formulation and implementation. It also measures the budgetary and financial rationalization of governance systems in terms of the extent to which they ensure efficient generation and utilization of financial resources. Table 1

differentiates the 29 countries according to the level of the bureaucratization of their national governance. The predictive validity of the indicator was supported by its very strong correlation with the measure of economic rationalization assessed in terms of the GDP per hour worked (World Bank, 2008) ($r = .78$, $p = .000$).

Organizational bureaucratization. Following a conventional practice in the research on bureaucracy, organizational bureaucratization was measured by organizational size (Blau, 1970; Kohn, 1971; Lin, 2014; Racko, 2015). Larger organizations have a higher degree of standardization and formalization of work to accommodate larger managerial spans of control and complexity (Blau, 1970). We used the available measure of organizational size that differentiates organizations in terms of the number of employees: (1) under 10, (2) 10-24, (3) 25-99, (4) 100-499, and (5) 500 or more. For the five categories, the percentages of medical professionals employed in organizations were 12.8, 15.0, 25.1, 22.0, and 25.0, respectively.

Controls. In the assessment of the effect of the national governance bureaucratization on the values of medical professionals, we controlled for the effects of the social- and the individual-level characteristics that are recognized as theoretically important predictors of human values (Rokeach, 1973; Weber, 1978; Inglehart & Welzel, 2005; Schwartz, 2006; Racko, 2015).

At the social level, we controlled for the effects of the technological rationalization and the dominant religion of countries, which in sociological research are widely recognized as the key antecedents of individual values (Weber, 1978; Inglehart & Welzel, 2005). The technological rationalization was measured in terms of the expenditures on research and development as a

percentage of GDP (World Bank, 2010). We focused on Catholicism and Protestantism as the two dominant religious denominations in European countries. Following a conventional practice in cross-national research (Racko & Burchell, 2013), countries were identified as predominantly Catholic or Protestant when at least half the population belonged to one of these religious denominations. Catholic or Protestant countries were coded as 1 and other countries were coded as 0. The social level data for 29 countries is presented in Table 1. We did not control for the effect of the economic rationalization of countries, assessed in terms of the GDP per hour worked, because of a very strong correlation of this measure with the measure of the bureaucratization of national governance ($r = .78$, $p = .000$) and therefore a high likelihood of collinearity between these two measures in regression analyses.

At the individual level, we included the following controls. Gender was measured using the dummy variable coded as 1 (female) and 0 (male). Age was measured as the actual age of participant. Level of education was measured on a 7-point ordinal scale of the International Standard Classification of Education ranging from 1 (less than lower secondary) to 7 (higher tertiary education). Hours worked were measured as the total hours normally worked per week in the main job, with overtime included. Permanent employment was measured using employment based on an unlimited contract coded as 1 (yes) and 0 (no). Employment in a public sector organization was measured using a dummy variable coded as 1 (yes) and 0 (no). Employment in another country was measured as employment abroad for more than 6 months during the last 10 years coded as 1 (yes) and 0 (no). Managerial span of control was measured as the number of supervisees for whom participants were responsible. We also controlled for the four types of specialization of medical professionals, i.e. medical doctors, dentists,

pharmacists, and nursing and midwifery professionals coded as 1 (specific specialization) and 0 (other specializations). These four types of specialization were selected due to a relatively high proportion of medical professionals in each of them.

3.3. Statistical tests

To disentangle the bivariate effects of national governance bureaucratization on medical professionals' values from the multivariate effects of predictors and controls, we investigated the hypothesized effects using both Pearson correlations and multilevel multiple regressions (MMR). MMR method is particularly suitable for the analysis of hierarchically clustered cross-national data where individual level characteristics, such as employment in bureaucratized organizations, are nested or embedded within the more generalized social level characteristics, such as the level of bureaucratization in a national governance system. The use of MMR enabled us to overcome the limitations of the conventional ordinary least squares (OLS) regression method that assumes an independence of observations and is thus likely to underestimate standard errors of predictors, which is particularly likely for the predictors of higher level constructs, such as cross-national variations in governance systems (Raudensbush & Bryk, 2002). The conventional OLS regression is also more likely to reject a null hypothesis, when it should be confirmed (Type I statistical error), particularly in the analysis of large data sets. We used statistical software SPSS 21 to analyze the raw, un-centered data, applying the maximum likelihood estimation method in the multilevel multiple regression. The significance level was set at 0.05.

4. Findings

Table 2 presents the correlation matrix of study variables. The results of the multilevel regression analyses are presented in Table 3.

Insert Table 2 about here

Insert Table 3 about here

Hypotheses 1.1. and 1.2. predicted that medical professionals in countries with a higher level of the bureaucratization of national governance are likely to attribute less importance to openness to change and self-transcendence values. The results of Pearson correlations indicated a significant and negative effect of national governance bureaucratization on openness to change values (r = -.198, p = .000) and self-transcendence values (r = -.288, p = .000). Similarly, the results of multilevel multiple regressions indicated a significant and negative effect of national governance bureaucratization on openness to change values (estimate = -.137, S.E. = .044, $p < .05$) and self-transcendence values (estimate = -.172, S.E. = .043, p = .000) beyond the effects of control variables.

Hypotheses 2.1. and 2.2. predicted that organizational bureaucratization will moderate the effect of the bureaucratization of national governance on openness to change and self-transcendence values, such that the negative effect of bureaucratization of national governance on occupational values will be stronger for those medical professionals who are employed in

more bureaucratized organizations. The results of moderated multilevel regression indicated a significant and negative effect of the interaction term of national governance bureaucratization and organizational bureaucratization on openness to change values (estimate = -.030, S.E. = .015, p = .045), but not on self-transcendence values (p = .364).

The conventional OLS regression method yielded similar results. The bureaucratization of national governance had a significant and negative effect on openness to change values (β = -.228, p = .000) and self-transcendence values (β = -.240, p = .000). A significant negative interaction effect emerged between the bureaucratization of national governance and the organizational bureaucratization on openness to change values (β = -.147, p = .040) but not on self-transcendence values (p > .05).

5. Discussion

Understanding the impact of bureaucratization on medical professionals' values has been a fundamental concern of the sociology of professions (Freidson, 1970; McKinlay & Marceau, 2002; Timmermans & Berg, 2003; Harrison & Smith, 2003). While the prior research demonstrates how the employment of medical professionals in bureaucratized organizations and healthcare fields undermines their occupational values, there is a lack of cross-national research on the normative impact of bureaucratized national governance. Our study addresses this research gap by examining the impact of the bureaucratization of national governance systems on the occupational values of medical professionals. Below we consider the theoretical implications of our findings.

5.1. Theoretical implications

Our findings support a theoretical prediction that the bureaucratization of national governance weakens the occupational values of medical professionals (Freidson, 1970). Our results indicate that medical professionals who are employed in countries with a more bureaucratized system of governance are more likely to attribute less importance to openness to change values that autonomy and creativity and self-transcendence values that emphasize common good. We suggest that the bureaucratization of national governance is likely to undermine medical professionals' concern with autonomy and creativity, by regulating their work in accordance with the values of instrumentally rational administration (IRA). In countries with more bureaucratized systems of national governance, medical professionals are more likely to be controlled by governmental performance targets and regulatory agencies that monitor and reward compliance to these targets. This is likely to limit the ability of professionals to exercise independent control over definition and innovation of medical knowledge, as well as over specification and transmission of norms, rules and ethical standards that legitimize medical autonomy (McKinlay & Stoeckle, 1988; Harrison & Smith, 2003). Moreover, when the principles of instrumental rationality begin to guide individuals, the freedom of their action, in the most generic form, is reduced to the selection of means that are useful to achieve a rationally defined end (Weber, 1978; Racko, 2015). Thus, internalization of the principles of instrumental rationality is likely to transform professional action into a passive a response to the necessities of bureaucratic regulation (Freidson, 2001; Waring & Bishop, 2015).

We also suggest that national governance bureaucratization is likely to weaken medical professionals' self-transcendence values by enforcing their commitment to IRA values using performance management and accountability mechanisms, which emphasize administrative and economic efficiency in meeting governmental performance targets (Ritzer, 1996; Harrison & Smith, 2003). Because in the most generic form instrumentally rational action is guided by the utilization of the most effective means to an end, the efficiency of this action is necessarily contingent on the ability of a rational agent to exercise power over necessary means (Weber, 1978; Racko, 2015). An instrumentally rational agent is not concerned with the ethical consequences of his or her actions as long as these consequences do not undermine the attainment of a rational end. Therefore, when medical professionals internalize IRA values they are more likely to use instrumentally rational strategies in relation to their colleagues and patients and less likely to worry about the ethical consequences of their actions. They are also more likely to seek advancement within the bureaucratic hierarchies of medical organizations by accommodating the implementation of governmental performance targets.

Our findings also suggest that organizational bureaucratization is likely to strengthen the negative effect of national governance bureaucratization on openness to change values. Specifically, in countries with more bureaucratized national governance, medical professionals are likely to experience a stronger decrease in openness to change values when they are employed in bureaucratized organizations. In these organizations, medical professionals are likely to be more homogenously influenced by the values of IRA, and thus more likely to conform to the performance targets of bureaucratized national governance. Large and bureaucratized organizations tend to reduce human autonomy and creativity by standardizing

work in accordance with administrative rules and routines (Weber, 1978). Moreover, because bureaucratized medical organizations are likely to be more interdependent with different stakeholders (such as patient organizations, funding organizations, national and local authorities, and charity organizations) and more likely to be inspected by regulatory agencies, they are also likely to experience stronger normative pressure to align their work with the values that underpin governmental performance targets (Racko, 2015).

Prior research has often linked organizational bureaucratization with the decrease of medical autonomy (Ritzer, 1998; Farrell & Morris, 2003; Lin, 2014). Our findings suggest that organizational bureaucratization is likely to weaken medical professionals' openness to change values only in countries with a more bureaucratized national governance. Our findings also suggest that organizational bureaucratization is unlikely to influence openness to change values beyond the effect of the bureaucratization of national governance. It is plausible that in countries with less bureaucratized systems of public governance, medical professionals are more willing and able to resist the normative pressures of the administrative systems of bureaucratized organizations and preserve their loyalty to their occupational values because their work is less regulated by governmental agencies.

5.2. Limitations and future research directions

Our study is not without limitations. We examined the impact of national governance bureaucratization on medical professionals' values in a sample of 29 European countries using the European Social Survey (ESS) data. We used the ESS data because it is the only cross-national survey that includes the items of Schwartz et al.'s (2001) Portrait Values Questionnaire

(PVQ) that measure openness to change and self-transcendences values. Future research could fruitfully examine the normative impact of national governance bureaucratization in other regions of the world, such as North America and Asia. Research could triangulate generic value measurements, such as PVQ or Schwartz Value Survey, with the value measures in medical work.

A typical challenge in the value transmission research is the difficulty of differentiating the measurement of the impact of an environment on the values of individuals from their self-selection into that environment based on their prior values. To exclude the possibility of the self-selection effect associated with the cross-national migration of medical professionals, we limited our sample to only those professionals who were born in the countries in which they were surveyed (97.5 percent of all medical professionals included in the initial sample). However, in the assessment of the moderator effects of organizational bureaucratization on the relation between the bureaucratization of national governance and the occupational values of medical professionals, it was impossible to control for the self-selection of professionals into the bureaucratized organizations based on their prior values. However, the finding that organizational bureaucratization did not have any influence on the values of professionals above and beyond the effects of social and individual level variables suggests that the measurement of the moderator effect of organizational bureaucratization is unlikely to be confounded by the possible self-selection of professionals into bureaucratized organizations based on their prior values.

Future research could develop a more nuanced understanding of cross-national differences in bureaucratization by measuring the impact of the bureaucratization of medical

governance, and investigating the interaction effects between different forms of bureaucratization. In addition, further studies could examine the interaction effects between the bureaucratization of national governance, bureaucratization of healthcare fields (e.g. primary care or secondary care), and bureaucratization of the management structures of healthcare organizations. Research could also examine the normative impact of distinct aspects of organizational bureaucratization, such as standardization, routinization, formalization or intensification of work. An interesting research direction would be to consider the normative impact of the commitment and resistance of medical professionals to the implementation of governmental performance targets.

An equally interesting research direction would be to examine the role of professional resistance to bureaucratization and commitment to non-instrumental goals and practices as well as non-bureaucratic organizational forms, such as networked or entrepreneurial organizations, in the reproduction of occupational values. Future research could also develop a more nuanced understanding of the impact of bureaucratization on medical professionals' values by triangulating the quantitative analysis of value change with the qualitative investigation of the meanings attributed to resistance, co-optation or internalization of the values that are associated with bureaucratization.

5.3. Conclusion

With the bureaucratization of national governance, the concern with the understanding of its effect on medical professionals' values has been increasing. This understanding is important because the occupational values of medical professionals enable them to reproduce

and revise their knowledge base, develop collegial relations with occupational peers, and most importantly, ensure the well-being of patients as a top priority of medical work. Our findings indicate that national governance bureaucratization undermines medical professionals' concern with openness to change values that emphasize autonomy and creativity and self-transcendence values that emphasize common good, above and beyond the effects of demographic, occupational, organizational, and social characteristics. We suggest that the bureaucratization of national governance is likely to weaken medical professionals' concern with these values by regulating their work in accordance with the values of instrumentally rational administration. In examining the impact of bureaucratization of national governance on medical professionals' values, we aimed to illuminate the value assumptions and effects of the bureaucratization process. In this way we aimed to contribute to the informed and responsible selection of governance mechanisms and increase the awareness of their intended and unintended consequences for professional work.

6. References

Abbott, A. (1988). *System of professions.* Chicago: University of Chicago Press.

Blau, P.M. (1970). A formal theory of differentiation in organizations. *American Sociological Review,* 35, 201-218.

Blumenthal D. (1994). The vital role of professionalism in health care reform. *Health Affairs*, 13(Part I):252–6.

Currie, G., Finn, R., & Martin, G. (2009). Professional competition and modernizing the clinical workforce in the NHS. *Work, Employment and Society,* 23(2), 267–84.

Davidov, E., Schmidt, P., & Schwartz, S.H. (2008). Bringing values back in: The adequacy of the European Social Survey to measure values in 20 countries. *Public Opinion Quarterly,* 72, 420–45.

DiMaggio, P.J. & Powell, W.W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review,* 48, 147–61.

Edelman, L.B. (1992). Legal ambiguity and symbolic structures: Organizational mediation of civil rights law. *American Journal of Sociology,* 97(6), 1531–76.

Evetts, J. (2013). Professionalism: Value and Ideology. *Current Sociology* 61(5-6):778-796.

Farrell, C. & Morris, J. (2003). The 'Neo-Bureaucratic' state: Professionals, managers and professional managers in schools, general practices and social work, *Organization,* 10(1), 129–56.

Floriani, C. A. & Schramm, F.R. (2012). Routinization and medicalization of palliative care: Losses, gains and challenges. *Palliative and Supportive Care*, 10(4): 295-303.

Freidson, E. (1970). *Profession of medicine*. Chicago: Chicago University Press.

Freidson, E. (2001). *Professionalism: The third Logic.* London: Polity.

Goodstein, J.D. (1994). Institutional pressures and strategic responsiveness: employer involvement in work-family issues. *Academy of Management Journal,* 37, 350–580.

Goodwin, R., Costa, P., & Adonu, J. (2004). Social support and its consequences: 'Positive' and 'deficiency' values and their implications for support and self-esteem. *British Journal of Social Psychology,* 43(3), 465-74.

Gross, R. Tabenkinc, H., & Brammli-Greenberga, S. (2007). Factors affecting primary care physicians' perceptions of health system reform in Israel: Professional autonomy versus organizational affiliation. *Social Science & Medicine,* 64, 1450–1462.

Hafferty, F.W., & Light, D.W. (1995). Professional dynamics and the changing nature of medical work. *Journal of Health and Social Behavior*, 35, 132-153.

Hall, R.H. (1968) Professionalization and bureaucratization. *American Sociological Review,* 33, 92-104.

Harrison, S. & Smith, C. (2003). Neo-bureaucracy and public management: the case of medicine in the national health service. *Competition & Change*, 7(4), 243-54.

Harrison, S., & Ahmad, W.I.U. (2000). Medical autonomy and the UK state 1975 to 2025, *Sociology – The Journal of the British Sociological Association*, 34(1), 129–146.

Harrison, S., & Pollitt, C. (1994). *Controlling health professionals*. Buckingham: Open University Press.

Hitlin, S, and Piliavin, J.A. (2004). Values: Reviving and dormant concept. *Annual Review of Sociology*, *30*, 359-93.

Hunter, D. (1996). The changing roles of health care personnel in health and health care management. *Social Science & Medicine*, 43(5), 799-808.

Inglehart, R, & Welzel, C. (2005). *Modernization, cultural change and democracy*. New York: Cambridge University Press.

Kitchener, M., Caronnab, C.A ., & Shortell, S.M. (2005). From the doctor's workshop to the iron cage? Evolving modes of physician control in US health systems. *Social Science & Medicine*, 60, 1311–1322.

Kohn, M. (1971). Bureaucratic man: A portrait and an interpretation. *American Sociological Review,* 36, 461-474.

Light, D. W. (2000). *The medical profession and organizational change: From professional dominance to countervailing power*. In C. E. Bird, P. Conrad, & A. M. Fremont (Eds.), Handbook of medical sociology (pp. 201–217). Upper Saddle River, NJ: Prentice Hall.

Lin, K.Y. (2014). Physicians' perceptions of autonomy across practice types: Is autonomy in solo practice a myth? *Social Science & Medicine*, 100, 21-29.

Marjoribanks, T. & Lewis, J. (2003). Reform and autonomy: Perceptions of the Australian general practice community. *Social Science & Medicine*, 56(10), 2229–2239.

McKinlay, J. B., & Stoeckle, J. D. (1988). Corporatization and the social transformation of doctoring. *International Journal of Health Services*, 18, 191-205.

McKinlay, J.B., & Marceau, L.D. (2002). The end of the golden age of doctoring. *International Journal of Health Services*, 32(2), 379–416.

Midwinter, A. & McGarvey, N. (2001). In search of the regulatory state: evidence from Scotland. *Public Administration,* 79(4), 825–849.

Mishler, E.G. (1989). Critical perspectives on the biomedical model. In: Brown, P. (Ed.), Perspectives in Medical Sociology. Belmont: Wadsworth.

Parsons, T. (1939). The professions and social structure. *Social Forces*, 17(4), 457-467.

Pattison, S. & Pill, R. (2005). *Values in professional practice*. Oxford: Radcliffe Medical Press.

Pollitt, C.J. (1993). *Managerialism and the public services, 2nd edn*. Oxford: Blackwell.

Potter, S.J., & McKinlay, J.B. (2005). From a relationship to encounter: an examination of longitudinal and lateral dimensions in the doctor–patient relationship. *Social Science & Medicine*, 61, 465–479.

Power, M. (1999). *The Audit Society*. Oxford: Oxford University Press.

Racko, G. (2015). Values of bureaucratic work. *Sociology - The Journal of the British Sociological Association*, published online on September 21, 2015, DOI: 0038038515604106.

Racko, G., & Burchell, B. (2013). The role of technical progress, professionalization and Christian religion in occupational gender segregation: A cross-national analysis. *Work, Employment and Society,* 27(4): 581-599.

Raudenbush, A.S., & Bryk, S.W. (2002). *Hierarchical linear models*. Thousand Oaks: Sage Publications.

Reay, T., & Hinings, C. R. (2009). Managing the rivalry of competing institutional logics. *Organization Studies* 26(3): 629-652.

Ritzer, G. (1996). *The McDonaldization of society: An investigation into the changing character of contemporary social life*. Thousand Oaks: Pine Forge Press

Ritzer, G., & Walcak, D. (1988). Rationalization and deprofessionalization of physicians. *Social Forces*, 67, 1-22.

Rokeach, M. (1973). *Nature of human values*. New York: Free Press.

Rosenberg, C.E. (2007). *Our present complain: American medicine, then and now*. Baltimore: The Johns Hopkins University Press.

Saks, M. (2015). *The professions, state and the market*. New York: Routledge.

Schwartz S (2002) A proposal for measuring value orientations across nations. European Social Survey (items of PVQ listed on pages 284-286). Accessible online: http://www.europeansocialsurvey.org/docs/methodology/core_ess_questionnaire/ESS_core_questionnaire_human_values.pdf

Schwartz, S. H. (2006). *Value orientations: Measurement, antecedents and consequences across nations*. In Jowell, R., Roberts, C., Fitzgerald, R. & Eva, G. (Eds.) Measuring attitudes cross-nationally - lessons from the European Social Survey (pp.169-203). London, UK: Sage.

Schwartz, S.H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 Countries. In: Zanna M (ed.) *Advances in Experimental Social Psychology (Vol. 25)*. New York: Academic Press.

Schwartz, S.H., Melech, G., Lehrnami, A., Burgess, S., Harris, M., & Owens, V. (2001). Extending the cross-cultural validity of the theory of basic human values with a different method of measurement, *Journal of Cross-Cultural Psychology,* 32, 519-42.

Southon, G., & Braithwaite, J. (1998). The end of professionalism. *Social Science & Medicine,* 46(1), 23-28.

Swick, H.M. (2000). Toward a normative definition of medical professionalism. *Academic Medicine*, 75(6), 612-616.

Timmermans, S., & Berg, M. (2003). *The gold standard: The challenge of evidence-based medicine and standardization in health care*. Philadelphia, PA: Temple University Press.

Toth. F (2015). Sovereigns under siege. How the medical profession is changing in Italy. *Social Science & Medicine*, 136-137, 128–134.

Tousijn, W., & Giorgino, V. (2009). The complexities of negotiating governance change: introducing managerialism in Italy. *Health Economics, Policy & Law*, 4 (3), 329-346.

Waring, J., & Bishop, S. (2013). McDonaldization or Commercial Re-stratification: Corporatization and the multimodal organisation of English doctors. *Social Science & Medicine*, 82, 147-155.

Waring, J., & Bishop, S. (2015). George Ritzer: Rationalisation, Consumerism and the McDonaldisation of Surgery, In F. Collyer ed. *The Palgrave Handbook of Social Theory in Health, Illness and Medicine* (pp. 488-503). Basingstoke: Macmillan.

Weber, M. (1978). *Economy and society.* Stanford: Stanford University Press.

World Bank (2008). Retrieved from the web link: http://data.worldbank.org/data-catalog/worldwide-governance-indicators

World Bank (2008). Retrieved from the web link: http://data.worldbank.org/indicator

World Bank (2010). Retrieved from the web link: http://data.worldbank.org/indicator

Wynia, M.K., Latham, S.R., Kao, A.C., Berg, J.W., & Emanuel, L.L. (1999). Medical professionalism in society. *New England Journal of Medicine*, 341, 1612–6.

Table 1. Sample size and social level data for 29 countries (sorted by the level of the bureaucratization of national governance)

Country	Number of participants	Bureaucratization of national governance	Technological rationalization	Catholic countries	Protestant countries
Denmark	178	2.19	3.07	0	1
Switzerland	78	2.06	2.87	0	0
Sweden	188	1.99	3.39	0	1
Finland	161	1.95	3.90	0	1
Norway	161	1.95	1.69	0	1
Netherlands	282	1.86	1.85	0	0
United Kingdom	98	1.74	1.80	0	1
Austria	39	1.71	2.79	1	0
Germany	133	1.65	2.80	0	0
Ireland	346	1.61	1.71	1	0
Iceland	45	1.58	2.65	0	1
France	86	1.54	2.24	1	0
Belgium	195	1.36	2.00	1	0
Israel	94	1.30	4.35	0	0
Cyprus	46	1.25	0.49	0	0
Estonia	109	1.15	1.63	0	0
Slovenia	63	1.09	2.11	1	0
Czech Republic	77	1.07	1.55	0	0
Portugal	91	1.05	1.59	1	0
Spain	111	0.99	1.39	1	0
Slovakia	105	0.76	0.63	1	0
Hungary	53	0.66	1.16	1	0
Lithuania	59	0.64	0.80	1	0
Greece	38	0.56	0.60	0	0
Poland	45	0.48	0.74	1	0
Italy	34	0.39	1.26	1	0
Bulgaria	79	0.10	0.60	0	0
Russia	187	-0.32	1.16	0	0
Ukraine	90	-0.60	0.83	0	0

Table 2. Means, standard deviations and correlations of study variables

	M	SD	1	2	3	4	5	6	7	8	9
1. Openness to change values	.17	.66									
2. Self-transcendence values	-.75	.53	- .14*								
3. Protestant countries	.25	.44	-.10***	-.20***							
4. Catholic countries	.38	.48	.05	.05	-.45***						
5. Technological rationalization	2.00	.96	-.11***	-.21***	.52***	-.32***					
6. Bureaucratization of national governance	1.32	.72	-.20***	-.29***	.52***	-.12***	.65***				
7. Gender	.81	.39	.07***	-.09***	-.03	.03*	-.03	-.01			
8. Age	48.91	15.75	.13***	-.15***	.05**	-.04*	.01	.01	.04*		
9. Level of education	4.50	3.27	.02	-.01	-.01	-.06***	-.08***	-.08***	-.02	-.04	
10. Hours worked	38.85	11.94	-.03	.07***	-.03	.05**	-.07**	-.15***	-.20***	.05	.03
11. Permanent employment	.83	.38	.07***	.02	.03	-.06**	-.05	-.08***	.04*	.18***	.04*
12. Managerial span of control	7.40	23.36	-.06**	-.06**	.09***	-.03	.09***	.11***	-.10***	.12***	-.03
13. Medical doctors	.22	.42	-.01	.05**	.01	-.10***	-.06**	-.17***	-.34***	-.04*	.11***
14. Dentists	.03	.16	-.03	.04*	.06**	-.06***	.03	-.03	-.04*	.01	.01
15. Pharmacists	.06	.23	-.01	.03	-.02	-.01	-.03	-.02	.00	-.02	.05**
16. Nursing and midwifery professionals	.61	.49	.04*	-.06***	-.03	.13***	.03	.15***	.32***	.07***	-.18***
17. Public sector organization	.45	.50	.06***	-.04*	.09***	-.11***	-.04	-.07***	.09***	.02	.20***
18. Work in another country	.06	.23	-.08***	.04*	-.01	.04*	-.02	.02	-.07***	-.11***	-.02
19. Organizational bureaucratization	3.31	1.34	-.05*	-.03	.08***	.02	.11***	.13***	-.08***	-.10***	.01
20. Bureaucratization of national governance x Organizational bureaucratization	4.56	3.17	-.18***	-.20***	.43***	-.11***	.50***	.77***	-.07***	-.06	-.05**

N = 3,271; *p <.05, **p <.01, ***p <.001.

Table 2 (continued). Means, standard deviations and correlations of study variables

Variables	10	11	12	13	14	15	16	17	18	19
1. Openness to change values										
2. Self-transcendence values										
3. Protestant countries										
4. Catholic countries										
5. Technological rationalization										
6. Bureaucratization of national governance										
7. Gender										
8. Age										
9. Level of education										
10. Hours worked										
11. Permanent employment	-.02									
12. Managerial span of control	.13***	.04								
13. Medical doctors	.25***	-.11***	.04*							
14. Dentists	-.02	.00	-.04*	-.09***						
15. Pharmacists	-.03	.03	-.02	-.13***	-.04*					
16. Nursing and midwifery professionals	-.15***	.09***	-.01	-.67***	-.21***	-.31***				
17. Public sector organization	.04*	.05**	-.04*	-.03	-.03	-.20***	.15***			
18. Worked in another country	.06**	-.05**	.01	.06***	.02	-.03	-.03	-.03		
19. Organizational bureaucratization	.11***	.00	.15***	.10***	-.12***	-.25***	.07***	.10***	.07***	
20. Bureaucratization of national governance x Organizational bureaucratization	-.03	-.06**	.18***	-.05**	-.09***	-.15***	.14***	.01	.06**	.67***

N = 3,271; *p <.05, **p <.01, ***p <.001.

Table 3. Multilevel multiple regression analyses predicting the values of medical professionals

	Openness to change				*Self-transcendence*			
	Estimate (S.E.)	Sig.	Estimate (S.E.)	Sig.	Estimate (S.E.)	Sig.	Estimate (S.E.)	Sig.
Country-level variables								
Protestant countries	.002(.088)	.984	.008(.086)	.959	-.141(.103)	.191	-.142(.100)	.189
Catholic countries	.020(.088)	.724	.016(.051)	.833	-.033(.058)	.572	-.031(.057)	.619
Technological rationalization	-.007(.033)	.848	-.011(.033)	.834	.000(.038)	.996	.002(.037)	.964
Bureaucratization of national governance	-.137(.044)	.047	-.045(.064)	.532	-.172(.043)	.000	-.204(.055)	.040
Individual-level variables								
Gender	.029(.036)	.421	.027(.036)	.446	-.103(.027)	.000	-.102(.027)	.000
Age	.005(.001)	.000	.005(.001)	.000	-.005(.001)	.000	-.005(.001)	.000
Level of education	.000(.004)	.915	.001(.004)	.901	-.001(.003)	.750	-.001(.003)	.741
Hours worked	-.003(.001)	.011	-.003(.001)	.012	.002(.001)	.080	.002(.001)	.081
Permanent employment	.075(.036)	.037	.073(.036)	.043	.049(.027)	.074	.049(.027)	.073
Managerial span of control	-.002(.001)	.000	-.002(.001)	.000	.000(.000)	.331	.000(.000)	.319
Medical doctors	.012(.052)	.813	.014(.052)	.785	.005(.039)	.905	.004(.039)	.926
Dentists	-.057(.089)	.525	-.063(.089)	.483	.094(.067)	.158	.096(.067)	.152
Pharmacists	.002(.068)	.978	.008(.068)	.903	.062(.051)	.222	.060(.051)	.243
Nursing and midwifery professionals	.014(.046)	.768	.015(.046)	.738	.039(.035)	.254	.039(.035)	.264
Public sector organization	.044(.027)	.105	.043(.027)	.115	-.046(.020)	.026	-.045(.021)	.028
Worked in another country	-.172(.055)	.002	-.171(.055)	.002	.049(.041)	.238	.049(.041)	.240
Organizational bureaucratization	.006(.010)	.586	.047(.023)	.042	-.002(.008)	.832	-.016(.017)	.367
Cross-level effect								
Bureaucratization of national governance x Organizational bureaucratization			-.030(.015)	.045			.010(.011)	.364
Log-Likelihood	4757.7		4753.7		3386.7		3385.4	
Akaike Information Criterion	4801.7		4799.7		3430.7		3432.4	

N = 3,271