

Exploration of the mediating role of physicians' managerial attitude in the relationship between their self-efficacy and workplace performance

Physicians'
self-efficacy
and
performance

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Abstract

Purpose – Self-efficacy, or a person's belief in his/her ability to perform specific tasks, has been correlated with workplace performance and role adjustments. Despite its relevance, and numerous studies of it in the management literature, evidence regarding its function in professionals employed in hybrid roles, such as doctor-managers, is lacking. The aim of this study was to fill this gap by exploring the mediating effect of physicians' managerial attitude on the relationship between their self-efficacy and workplace performance.

Design/methodology/approach – Primary and secondary data from 126 doctor-managers were obtained from the Italian National Health Service. A structural equation modeling approach was used for analysis.

Findings – This study's results provide for the first time empirical evidence about a surprisingly little-analyzed topic: how physicians' managerial attitude mediates the relationship between their self-efficacy and workplace performance. The study offers important evidence both for scholars and organizations.

Practical implications – This study's results provide valuable input for the human resources management of hybrid roles in professional-based organizations, suggesting a systematic provision of feedback about doctor-managers' performance, the adoption of a competence approach for their recruitment, and a new design of doctor-managers' career paths.

Originality/value – The authors provide new evidence about the importance of managerial traits for accountable healthcare organizations, documenting that behavioral traits of physicians enrolled into managerial roles matter for healthcare organizations success.

Keywords Self-efficacy, Workplace performance, Managerial attitude, Hybrid role, Physician

Paper type Research paper

Introduction

Self-efficacy, defined as an individual's belief in his or her ability to achieve a designated performance level (Bandura, 1994), is among the most important psychological constructs. It has been studied in several contexts and work settings, and it is particularly relevant for the understanding of work-related decisions and dynamics due to its influence on professional



choices, individual performance, and career paths (Lunenburg, 2011). People usually engage in tasks that they perceive they can perform effectively and avoid activities that they believe they cannot perform.

Self-efficacy plays a vital role in the development of occupational interests: “the sense of effectiveness creates interests through involvement in certain activities and the satisfactions deriving from the achievement of personal goals; interest, in turn, promotes commitment which favors effectiveness” (Bandura, 1997). People with greater self-efficacy tend to consider more career opportunities, whereas those with less self-efficacy tend not to consider entire job categories (Bandura, 1997). According to Bandura (1991) and Latham and Locke (1991), individuals with high self-efficacy levels tend to set difficult goals for themselves, exert greater task-related effort, persist longer when facing obstacles, and have low levels of anxiety.

As affirmed by Al Wali *et al.* (2022), individuals with greater self-efficacy can display greater innovative behavior, a higher commitment, and work harder or longer to accomplish a task (performance) (Newman *et al.*, 2018). Self-efficacy has been in fact largely recognized as one of the most relevant factors that may determine performance achievement (Barrick *et al.*, 2005; Judge *et al.*, 2007; Stajkovic and Luthans, 1998; Tims and Bakker, 2010). Whereas some scholars maintain that self-efficacy and work performance are directly associated (Judge *et al.*, 2007; Yaakobi and Weisberg, 2018), others acknowledge the mediating roles of individual, behavioral, and organizational variables (De Clercq *et al.*, 2018; Stajkovic and Luthans, 1998), these mediated relationship as documented by Na-Nan *et al.* (2019), need to be further explored.

The aim of this paper is to contribute to the present debate in the literature by exploring self-efficacy and its impact on performance within healthcare organizations, where professionals' competencies, skills, and behaviors are of quintessential importance for the achievement of strategic and clinical goals (Sartirana, 2019). A large portion of healthcare employees are high-status professionals with power and autonomy, and these characteristics need to be balanced and integrated into the organizational processes and routines used to regulate the collective's goals and activities (Kippist and Fitzgerald, 2009).

Starting from the '90s in a wide number of Western countries, healthcare organizations have been profoundly reorganized and consequently the tasks and responsibilities assigned to clinicians. One of the most recognized changes concerned the introduction of multi divisional models, named clinical directorates, which profoundly changed the internal organization of hospitals (Mascia *et al.*, 2014). These new organizational arrangements have consequently led to the introduction of new managerial roles, assigned to clinicians, who have been enrolled as midlevel managers, and to whom has been asked to act as links between operational and strategic hospital levels (Kirkpatrick *et al.*, 2013). It is a fact that this reorganization has deeply changed both careers and job characteristics (Llewellyn, 2001), creating “doctor-managers” with new and challenging tasks and responsibilities (Elina *et al.*, 2006; Morandi *et al.*, 2021; Veronesi *et al.*, 2014), and that have become so central for the accountability of healthcare organizations (Morandi *et al.*, 2021).

Although the relationship between self-efficacy and workplace performance has already been explored in the healthcare context (Mascia *et al.*, 2015), we noticed a lack of studies that analyze such a relationship exploring a setting of medical managers in performing their functions. Specifically, given that self-efficacy impacts the willingness to take on challenging tasks, in this research, we intend to advance previous literature by demonstrating that it is valuable for the activation of doctor managers' managerial attitude, which concerns the bundle of managerial traits desirable for them (Di Vincenzo *et al.*, 2021). Managerial attitude is defined by Bhattacharyya (2014) and Suchman (1995) in terms of cognitive legitimacy and moral propriety. As documented by Sukmawati (2016), physicians who take financial goals into account and possess a managerial orientation contribute to the optimization of organizational performance. In line with this perspective, and with the aim to provide a contribution to the underexplored role of individual, behavioral, and organizational variables

(De Clercq *et al.*, 2018) in the mediated relationship between self-efficacy and work performance (Na-Nan *et al.*, 2019), this study is one of the first attempt which intend to demonstrate that physicians' managerial attitude mediates the relationship between self-efficacy and work performance. To our knowledge, no other empirical research has so far addressed this research gap in the healthcare context.

Hypotheses development

Work performance is an essential indicator for the achievement of strategic goals (Callea *et al.*, 2016). In the long-standing debate about the relevance of the self-efficacy construct to organizational life, the relationship between self-efficacy and performance has been of particular interest, and it has also recently attracted studies of organizational behavior and human resource management (Ardakani *et al.*, 2012; Carter *et al.*, 2018). The achievement of satisfactory performance can be attributed to several factors, including employees' abilities (Stajkovic and Luthans, 1998), work organization (Tims and Bakker, 2010), and employees' personality traits (Barrick *et al.*, 2005), but the prominent role of self-efficacy has been recognized by many scholars (Bandura and Locke, 2003; Rudolph *et al.*, 2017). The presence of a high level of self-efficacy increases the employees' conviction about their capacity to exercise control over their work, and the sense that their efforts can improve their working results (Bandura, 1997; De Clercq *et al.*, 2018).

Some scholars are not convinced that the relationship between self-efficacy and performance is causal, mainly because they cannot determine whether the relationship is direct in every case, only under certain circumstances, or in the presence of a mediating mechanism (Vancouver *et al.*, 2002). However, these studies were criticized due to the predominance of laboratory experiments in which students and not permanent employees were analyzed (i.e. Carter *et al.*, 2018). Other scholars are not convinced that high levels of self-efficacy are responsible for high performance levels, although low self-efficacy levels may lead to the achievement of lesser results (Bandura and Locke, 2003). Despite these differences, the existence of a direct relationship between self-efficacy and work performance is undeniable (Judge *et al.*, 2007), as also demonstrated by existing meta-analysis which find strong evidence for a positive relationship between employees' self-efficacy and job performance (Judge and Bono, 2001). Self-efficacy affects the individual's degree of confidence in engaging in particular behaviors to achieve desired outcomes, and higher confidence level is associated with a greater expectation of performing well and meeting or exceeding expectations (Bandura, 1997). For these reasons, we hypothesized that:

H1. Self-efficacy and work performance are positively associated.

Managerial self-efficacy positively influences individuals' motivation to lead, which is extremely important for the effective assumption of managerial positions (Savage *et al.*, 2020). Greater interest in one's role prompts greater effort to serve in that role, including more willingness to develop useful relevant skills. Moreover, managerial self-efficacy can be used to investigate people's need to assume new or innovative roles in a wide range of circumstances, including doctors' assumption of managerial roles in healthcare organizations; in this context, it is called the medical management perspective.

Medical management implies the construction of dual medicine- and management-related roles undertaken by single persons, who are thus in charge of managing healthcare delivery in addition to performing normal care activities (Lewellyn, 2001). Physicians may have trouble perceiving these hybrid roles due to role conflict and role ambiguity (Kippist and Fitzgerald, 2009; Sartirana, 2019). Role conflict refers to the difficulty to accomplish the role because tasks are unclear, complicated, or disagreeable (Vera and Hucke, 2009). Individuals suffering role conflict perceive two or more contrasting demands, finding themselves pulled in various

directions. Role ambiguity refers to the uncertainty about expectations, behaviors, and consequences associated with a given role that an individual perceives (Vera and Hucke, 2009). This is what happens to doctor-managers who perceive a conflict between what they would like to do (i.e. be a doctor) and what the managerial board expects them to do (i.e. be a manager) (Andersson, 2015). In addition, the tasks assigned to them represent a source of complexity, and they must acquire new managerial competencies and time management skills. Time pressure is generated by the time spent performing managerial tasks, which physicians perceive to be to the detriment of their clinical work (Thun *et al.*, 2018; Von Dem Knesebeck *et al.*, 2019).

Given these challenges, physicians' self-efficacy is of vital importance in the assumption of new and different responsibilities, and they do not need to experience every single task before forming their beliefs as a certain degree of transfer of self-efficacy from one domain to another is possible (Bandura, 1997). Physicians with high self-efficacy levels accept and fight to achieve difficult goals, exert greater task-related effort, and persist longer when facing obstacles (Latham and Locke, 1991; Shoji *et al.*, 2016). As showed by Mascia *et al.* (2015), physicians who are highly confident in their managerial capabilities are more motivated to choose and pursue managerial positions. Thus, we hypothesized that:

H2. Self-efficacy and physicians' managerial attitude are positively associated.

The increasing numbers of physicians that recently have been placed in managerial positions under certain circumstances are also known as "reluctant managers" (Berg *et al.*, 2017; Pollitt *et al.*, 1988) because they lack management education and skills (Kippist and Fitzgerald, 2009) and in some cases are not interested in business matters or managerial responsibilities (Mcggivern *et al.*, 2015). However, a large body of literature confirms that physicians on boards of directors can play key roles, defining and implementing effective strategies (Veronesi *et al.*, 2014). It is no coincidence that several highly performing hospitals have more doctors in managerial positions (Sarto and Veronesi, 2016). Few studies to date have focused on the abilities or orientations that physicians must demonstrate to positively affect the general performance of hospitals; most have examined the role determined by physicians' participation in decisional processes. However, the skills and attitudes that doctor-managers need to possess are of extreme importance. Managerial attitude affects the behavior of doctor-managers who pay more attention to their duties as managers (Mascia *et al.*, 2015). According to Vera and Hucke (2009), a doctor in a managerial position not only makes medical treatment decisions, but also influences resource consumption and must possess a managerial orientation, consisting in check, control, and plan the organizational activities, which is particularly valuable for hospital performance and strategic goal achievement in a competitive environment. As documented by the literature, doctor-managers equipped with a certain amount of managerial attitude manifest greater efforts to maintain the organizational equilibrium, thus contributing to the organizational performance (Morandi *et al.*, 2021). Based on this reasoning, we hypothesized that:

H3. Physicians' managerial attitude and performance are positively associated.

Combining the previously formulated arguments, we predict a mediating role of managerial attitude on the relationship between self-efficacy and performance, thus hypothesizing that:

H4. Physicians' managerial attitude mediates the relationship between self-efficacy and performance.

Methods

Sample and questionnaire design

This research was conducted as part of a project supported by the Abruzzo Regional Department of Health, Italy, undertaken to study managerial processes in regional public

hospitals. The Abruzzo healthcare system is part of the Italian National Health Service, which is funded publicly and provides universal coverage. The national government defines core benefit packages and oversees basic coverage for the country's entire population; regions are responsible for the administration and organization of community healthcare services.

Primary data were collected during 2014 by administering a written questionnaire. We identified all wards of public hospitals in the region using the hospitals' organizational charts. Each ward has a formally appointed director who is responsible for the organization of health services and has clinical and managerial responsibilities, including the negotiation of unit goals with the hospital's general manager. Data collection was made possible by the collaboration of a wide range of actors, including chief executive officers, medical directors, and regional representatives of unit head unions. The latter also enabled us to test and validate our questionnaire and the scales explored in our research model.

The questionnaire, developed in Italian specifically for this study, has three sections for the collection of personal data (age, hospital affiliation, tenure, gender, medical specialization, and career paths prior to the current assignment), doctor-managers' attitudes and behaviors, and perceived self-efficacy.

Heads of unit were asked to sign an informed consent, in accordance with applicable Italian data protection laws. If they did not sign the consent, the administration was automatically stopped. Of the 332 heads of unit operating in the 17 regional public hospitals, 126 agreed to fill out the questionnaire and comprised the final sample for statistical analysis (overall response rate, 37.95%). We follow the three criteria of [Hair et al. \(2016\)](#) to check if the sample size can bias our results. According to them, to assure a statistical power of 80% to our analysis, the sample size recommendation is 40 ([Hair et al., 2016](#)). Because we are well above this number, the sample size is not a concern for our study.

The sample was composed predominantly of male doctors (87.30%), aged 50–60 years (49.20%) who had been heads of unit for <5 years (37.19%) and were in charge of non-intensive wards (65.08%; [Table 1](#)).

Sample characteristics	<i>n</i>	%
Age		
<50 years old	7	05.56
50–60 years old	62	49.20
>60 years old	57	45.24
Tot	126	100.00
Gender		
Male	110	87.30
Female	16	12.70
Tot	126	100.00
Tenure		
<5 years	47	37.19
5–10 years	33	26.45
11–15 years	27	21.49
>15 years	19	14.87
Tot	126	100.00
Care units		
Intensive ¹	44	34.92
Non-intensive ²	82	65.08
Tot	126	100.00

Note(s):¹ Coronary care and cardiothoracic units, surgical and long-term intensive care units, and emergency and acceptance units

² Neonatal pediatric, oncology and radiology units

Table 1.
Characteristics of the study sample (*n* = 126)

Secondary data about hospital unit performance were extracted from the Abruzzo Health Agency's archives and yearly reports. This approach represents a methodological improvement over previous studies, in which performance as well as self-efficacy was self-assessed, as it allowed us to avoid same-source bias (Podsakoff *et al.*, 2012).

Measures

Dependent variable. The dependent variable was workplace performance, measured as the percentage of beds occupied by patients in a defined time period, usually a year (Harper and Shahani, 2002; Morandi *et al.*, 2021). Bed occupancy (or utilisation) is a measure of each ward-unit's workload and is calculated as the proportion of time that a bed is occupied:

$$\text{bed occupancy} = \frac{\text{number of bed days used}}{\text{number of bed days available}} \times 100\%$$

This measure is a key indicator routinely calculated by the regional and national Italian governments. Heads of units pay close attention to this indicator within the units they lead as the national government in 2014 approved the Ministerial Decree (law) n°70, which provides for the closure or merging of units with inadequate annual occupancy rates. Taking 2014 as a reference year, we have extracted the occupancy rates of the units led by each of the respondents from the archives of the Abruzzo Health Agency.

Independent variable. The independent variables were physicians' self-efficacy and managerial attitude. Self-efficacy was measured using the 6-item scale developed by Chen *et al.* (2001). We translated the original English items into Italian using a rigorous back-translation technique (Brislin, 1980). Responses to these items are structured by a 7-point Likert scale. Physicians' managerial attitude was measured based on 8 items developed according to Cicchetti's (2004) work concerning the bundle of managerial traits that is desirable for unit heads. Responses are structured by a 6-point Likert scale, with higher scores representing more intense managerial traits.

Control variables. We included control variables shown to be correlated with our variables of interest. Specifically, we controlled for physicians' gender (Bakken *et al.*, 2003), number of specializations (Bandura, 1992), tenure (Isaac *et al.*, 2015), and prior experience as heads of units. Gender was constructed as a dummy variable (male = 1, female = 0). The number of specializations possessed by each physician was a continuous variable. Tenure was a continuous variable representing the length of time (in years) for which each physician had been a head of unit. Prior experience as a unit head was a dummy variable (yes = 1, no = 0).

Data analysis

The analysis was performed using a deductive approach and quantitative techniques. Descriptive statistics were used to characterize the sample. Factor analysis was conducted to examine the self-efficacy and managerial attitude variables, and Cronbach's alpha values were used to examine factor reliability. We assessed convergent and discriminant validity. Partial least-squares (PLS) regression was employed to analyze data and test the hypotheses with the SmartPLS 3.3.2 software package. The PLS method is a form of structural equation modeling that enables the simultaneous consideration of the measurement and the theoretical structural model. It is appropriate for the analysis of small samples and an effective method for the detection and avoidance of multicollinearity (Benitez *et al.*, 2020).

Results

Construct reliability, validity, and characteristics

We conducted confirmatory factor analysis to validate the self-efficacy and managerial attitude scales. Data on the variables' convergent validity and reliability are provided in

Table 2. Both constructs had Cronbach's alpha values >0.6, indicating a medium/high degree of reliability (Lyberg *et al.*, 2012). The variance inflation factor (VIF) was used to control for multicollinearity and common method bias. Table 2 reports the VIF values of our variables that range between 1.119 and 3.460; values below 4 mean that our variables are almost uncorrelated and are not affected by method bias (Hair *et al.*, 2016; Kock, 2015). We also checked for common method bias by using the Podsakoff and Organ's (1986) partial correlation method. This method consists in adding the highest factor from the principal component factor analysis to the PLS model as a control variable over the dependent variable (in our model, we added item #5 of the self-efficacy scale). Again, no significant changes affected our model, suggesting no common method bias affected our data.

Scales' convergent and discriminant validity were examined using the average variance extracted (AVE). The values of our variables were beyond the required value (higher than 0.40) (Bagozzi and Yi, 1988). The convergent validity of the scales was also examined by calculating composite reliability values; all values were well above the acceptable threshold of 0.70

Construct	α	AVE	CR	VIF	Factor loadings	Weight
Self-efficacy scale (1: Strongly disagree, 5: Strongly agree)						
1 I will be able to achieve most of the goals that I have set for myself	0.905 ^{****}	0.679	0.927	1.978	0.773 ^{***}	0.176
2 When facing difficult tasks, I am certain that I will accomplish them				2.495	0.831 ^{***}	0.208*
3 I believe I can succeed at most any endeavor to which I set my mind				2.509	0.824 ^{***}	0.201*
4 I will be able to successfully overcome many challenges				2.221	0.828 ^{***}	0.240 ^{***}
5 I am confident that I can perform effectively on many different tasks				3.460	0.869 ^{***}	0.209 ^{**}
6 Even when things are tough, I can perform quite well				2.841	0.815 ^{***}	0.179*
Managerial attitude scale (1: Strongly disagree, 6: Strongly agree)						
1 I am typically a planner: I plan my activities well in advance and - if possible - also those of my collaborators	0.601 ^{****}	0.403	0.754	-	-	-
2 I'm prone to maintain a number of social and work interactions				1.105	0.616 ^{***}	0.383 ^{***}
3 I am led to "anticipate" events and in some way to induce them				1.147	0.538 ^{***}	0.234 [†]
4 When performing a task, I do not feel the need to have instant gratification for the work done. The results must be evaluated only in the long term even with the gratification of the patient, a relative, a colleague, or myself				1.119	0.572 ^{***}	0.341 ^{**}
5 I prefer to share goals and work with others: collaboration is at the basis of success				1.280	0.708 ^{***}	0.375 ^{***}
6 My work contributes to the achievement of overall goals				1.264	0.643 ^{***}	0.277 ^{**}
7 My concern is to carry out my work in compliance with the procedures and rules set by the organization				-	-	-
8 When I meet someone, I generally present myself as belonging to the institution I am currently working for				-	-	-

Note(s): $n = 126$ respondents

α = Cronbach's alpha, AVE = average variance extracted, CR = composite reliability, VIF = variance inflation factor

- = items excluded because they had factor loadings <0.3 (Field, 2013)

**** $p < 0.001$, *** $p < 0.01$, ** $p < 0.05$, † $p < 0.1$

Table 2. Convergent validity and reliability of the study constructs

(Fornell and Larcker, 1981). Table 2, also, shows factor loadings and weights for each item composing each construct. These weights reflect the relative contribution of an indicator to its construct, and the factor loadings represent the correlation between the indicator and the corresponding emergent variable (Benitez et al., 2020). All weight and composite loading estimates showed a positive correlation and were significant at the 10% level, except for the weight of the first item of the self-efficacy scale [0.176; composite loading, 0.773 (significant)]. Following the advice of Field (2013), we decided to exclude the items that score less than 0.3 in the empirical analysis to sustain the representativeness of the scales.

Also, we compared the discrepancy values (DC) and 95% quantiles (HI₉₅) of the corresponding reference distribution of our model to evaluate the saturated model's overall fit. Standardized root mean squared residual (SRMR) values are below the required value of 0.080 (0.076 DC – 0.079 HI₉₅), indicating an acceptable model fit (Benitez et al., 2020). Finally, to investigate the thresholds of the overall model, we consider two discrepancy measures – such as the squared Euclidean distance (d_{ULS}) and the geodesic distance (d_G). Both for the d_{ULS} and the d_G, the DC values are below those of HI₉₅ (0.695 < 0.754; 0.241 < 0.262, respectively), confirming the model fit.

Table 3 shows mean construct values and the correlation matrix. The elements in the matrix diagonals, representing the square roots of the AVEs, all exceed the off-diagonal elements in the corresponding row and column, thus supporting the discriminant validity of our variables.

Hypothesis testing

The path analysis results are summarized in Table 4 and Figure 1. The hypotheses were tested in several steps. First, the direct effects of doctor-managers' self-efficacy on their performance and managerial attitude were examined. Then, the direct effects of respondents' managerial attitude on their performance were assessed. Finally, the mediating effect of respondents' managerial attitude on the relationship between their self-efficacy and performance was examined using the bootstrapping method (a non-parametric resampling procedure) with 5,000 bootstrap samples (Hair et al., 2016).

The relationship between respondents' self-efficacy and performance was negative and not significant ($\beta = -0.196, p > 0.1$), allowing us to reject H1. Total effects were negative and not significant for the relationship between self-efficacy and performance ($\beta = -0.115, p > 0.1$), and positive and significant for the relationships between self-efficacy and managerial attitude ($\beta = 0.244, p < 0.05$) and between managerial attitude and performance ($\beta = 0.357, p < 0.001$), confirming the rejection of H1 and supporting H2 and H3. In the analysis of the mediating effect, the panel related to the indirect effect should be considered. Managerial attitude had a significant indirect effect on the relationship between self-efficacy

Latent variables	Mean	SD	1	2	3	4	5	6	7
1. PER	82.393	24.884	1						
2. SE	-0.001	0.952	-0.046	0.824					
3. MA	0.000	0.756	0.317	0.244	0.618				
4. # SP	0.595	0.493	-0.273	0.153	-0.012	1			
5. TEN	8.405	6.841	0.065	0.149	-0.107	-0.062	1		
6. GEN	0.873	0.333	0.006	0.005	-0.107	0.032	0.124	1	
7. PRI_EX	0.357	0.479	0.052	0.031	0.026	-0.055	-0.248	0.135	1

Note(s): n = 126 respondents

The square root of the AVE is on the diagonal

SD = standard deviation, PER = performance, SE = self-efficacy, MA = managerial attitude, #SP = number of specializations, TEN = tenure, GEN = gender, PRI EX = prior experience as head of unit Gender (1 = man, 0 = woman), PRI EX (1 = yes, 0 = no)

Table 3.
Construct correlation matrix

Path	Direct effect		Total effect		Indirect effect		H	Result
	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value		
SE → PER	-0.196	0.784	-0.115	0.930			H1	Not supported
SE → MA			0.244*	2.090			H2	Supported
MA → PER			0.357***	3.244			H3	Supported
SE → MA → PER					0.087†	1.824	H4	Supported
<i>Control variables</i>								
#SP → PER	-0.214*	2.037	-0.242*	2.417				
TEN → PER	0.079	0.974	0.116	1.480				
GEN → PER	-0.011	0.147	0.030	0.370				
PRI_EX → PER	0.052	0.548	0.057	0.688				

Note(s): n = 126 respondents

H = Hypothesis, SE = self-efficacy, PER = performance, MA = managerial attitude, #SP = number of specializations, TEN = tenure, GEN = gender, PRI_EX = prior experience as head of unit

***p < 0.001, *p < 0.05, †p < 0.1

Table 4. Path analysis results

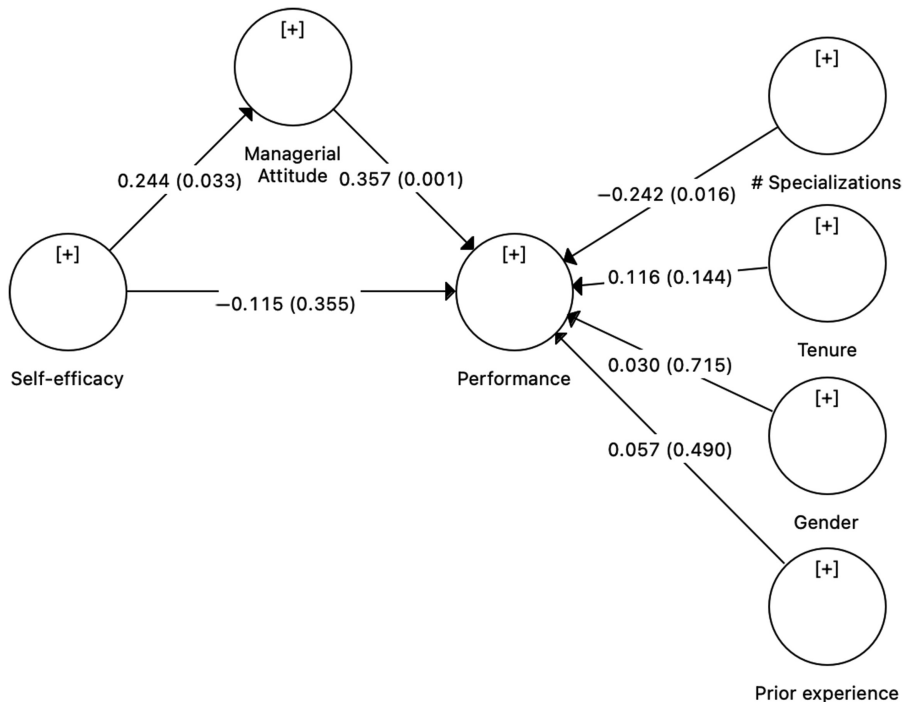


Figure 1. Path analysis results

and performance ($\beta = 0.087, p < 0.1$). This result shows that managerial attitude fully mediates the relationship between self-efficacy and performance, supporting H4.

Discussion and conclusion

Theoretical contribution

This research provides the first empirical evidence of how physicians' managerial attitude mediates the relationship between their self-efficacy and workplace performance. The focus

on doctor-managers allowed us to move beyond the formal role that an individual covers within the organization, in which the underlying behavior and the possession of the skills and competences suitable to fill the role are often taken for granted. In the present study, we explored managerial attitude in a sample of doctor-managers in the Italian National Health Service. Structural equation modeling enabled observation of the mediating effect that managerial attitude exerts on the relationship between self-efficacy and workplace performance while accounting for individual attributes and demographic characteristics. The results highlighted in our analyses provide three important contributions to the ongoing theoretical debate on the management of hybrid roles in healthcare organizations.

First, it is well known in the literature that self-efficacy predicts professional performance and successes, enabling achievement of higher performance levels based on individuals' fulfillment. Self-efficacy is relevant to the assumption of challenging responsibilities because it allows individuals to engage in particular behaviors, achieve desired outcomes, perform well, and meet or exceed expectations (Al Wali *et al.*, 2022; Bandura, 1997; Newman *et al.*, 2018). It is also well known in the literature that many factors such as personality traits, behaviors, skills, education, motivation, oversight styles and work engagement act as mediators in the relationship between self-efficacy and workplace performance (Iroegbu, 2015; Tian *et al.*, 2019). This research combines and advances these two lines of research by providing knowledge about a surprisingly little-analyzed topic, highlighting how managerial attitude matters in the relationship between self-efficacy and workplace performance.

A second contribution relates to the ample debate existing on accountable care systems, where healthcare organizations are expected to increase their levels of accountability to stakeholders at the individual (i.e. patient) and institutional (i.e. government) levels in terms of the quality, efficiency, and appropriateness of care provided (Addicott and Shortell, 2014). There are few evidence documenting the relationship between doctor managers' self-efficacy and performance. It is a fact that the more decentralized organizational models, such as clinical directorates with ward units, perform adequately only when their managers are equipped with appropriate managerial abilities and behavioral traits (Mascia *et al.*, 2015). Our study contributes to this literature providing new evidence about the importance of managerial traits for accountable healthcare organizations, documenting the impact of physicians' managerial attitude on the relationship between their self-efficacy and workplace performance.

Third, our paper also contributes to the strategic human resource management literature in healthcare (Fottler *et al.*, 2010). Unlike previous studies, which have focused mainly on top management figures such as hospital chief executive officers (Mascia and Piconi, 2013), we focused on individuals in middle-management positions, which in many organizations play strategic roles due to their responsibility for translating strategic inputs into operational tasks (Kippist and Fitzgerald, 2009). Middle managers have become increasingly relevant in modern healthcare systems because they have progressively been given all of the responsibilities that allow organizations to more properly achieve their goals (Morandi *et al.*, 2021). We add knowledge about the hiring phase and career development patterns of healthcare workforce. Doctor-manager selection continues to be based mainly on clinical competencies, rather than psychological traits, which contradicts researchers' demonstration that self-efficacy is an important determinant of individuals' motivation, behaviors, and successes (Al Wali *et al.*, 2022; Locke *et al.*, 1984). The same consideration should be made for the degree to which doctors who wish to assume managerial positions possess managerial attitude. The motivation to lead is important for covering such a position (Van Vianen, 1999), as it represents an individual's interest in the assumption of managerial responsibilities (Andersson, 2015; Vera and Huckle, 2009). The lack of a right amount of managerial attitude may drives some to perform as "reluctant managers" (Pollitt *et al.*, 1988), thus damaging hospital's success (Vera and Huckle, 2009).

Implications for practitioners

Our findings yield several implications for practitioners and managers involved into the human resources management of hybrid roles within professional-based organizations.

First, self-efficacy is a personal behavioral trait that can be increased through training and coaching. In both cases, individuals' confidence building is supported through their progressive mastery of new activities, and they are influenced through verbal persuasion from credible sources in terms of expertise and trustworthiness. Mastery experiences, in turn, increase efficacy.

Second, we suggest adopting new competence-based models of medical personnel management. Many healthcare organizations define their personnel needs using traditional quantitative models (e.g. based on "workforce" or "workloads") and not on models based on "skills" or "attitudes." As a result, they do not exploit the potential of using a competency-based model for personnel selection, allocation, assessment, and (planning of) training. Given the limited availability of medical training resources in public hospital system, attention tends to be focused on technical and professional training, leaving individuals to acquire managerial training on their own initiative. Our work supports the development of a strategic approach to human resource management in organizations that enables the identification, training, and selection of individuals with the right mix of knowledge and managerial attitude to assume middle management roles as complex as those of healthcare professionals. More formalized training programs should help doctor-managers to acquire managerial attitude and to act as leaders in their middle management positions. A transition to this new approach would require greater diffusion of managerial culture in the healthcare sector and on the creation of a suitable institutional and regulatory context.

Third, we recommend that excellent clinical professionals with inadequate managerial attitudes and skills should not be selected for managerial positions solely to allow them to progress along their development paths. A high-potential clinical professional with an inadequate level of (or interest in) managerial competencies actually could be "forced" to accept these responsibilities to gain career advancement. In many healthcare organizations, this problem has been addressed by creating dual professional and managerial career paths. Even with some cases that are certainly more relevant in the private sector, this approach is still not widespread in the public context. We recommend that future development at a policy making level could consider the dual ladder career model as a solution to avoid reluctant managers.

Limitations and directions for future research

Our findings should be interpreted in light of several limitations, each of which provides a clear direction for future research. First, our study sample had institution-specific characteristics, such as employment by public hospitals. Thus, the generalizability of the results to other healthcare contexts is limited. Future studies should explore, for example, whether similar results are obtained with doctor-managers from private hospitals and other institutions falling outside of Italy's National Health Service, which is known to have universalistic idiosyncrasies. Second, the cross-sectional nature of this study precluded us from determining the causality of relationships among the study variables. Longitudinal studies are needed to extend the validity of our results. Third, factors not included in our model or not covered by the data available to us may influence the relationship between self-efficacy and workplace performance. Recent findings suggest that individual and job-related factors affect doctor-managers' performance and behaviors in hospital organizations (Morandi *et al.*, 2021). In addition, national culture has been shown to affect physicians' perceptions and personality traits (i.e. Triantafillou *et al.*, 2020), and thus may influence their perceived levels of self-efficacy and managerial attitude. Further studies on these issues should seek to clarify whether these findings can be extended beyond the Italian setting. Fourth, male gender was predominant in our sample. Although the analyses were controlled for gender, this factor may have biased the findings. In the Italian National Health

Service, very few women are heads of units in hospitals. Finally, our workplace performance variable captured only a selected aspect of performance, which may correlate with other factors not directly observed in this study. Although the ward-unit bed occupancy rate is a crucial topic in the study setting, different results may be obtained with the use of other performance measures (e.g. quality of service, appropriateness of care). Despite these limitations, this study provides a deeper dive into the self-efficacy concept, how it has been studied in the literature, and its potential importance in terms of how a hybrid manager in healthcare might act.

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