

IMPLICATIONS OF MASLOW'S HIERARCHY OF NEEDS THEORY ON HEALTHCARE EMPLOYEES' PERFORMANCE*

Simona Cătălina ȘTEFAN
Ștefan Cătălin POPA
Cătălina Florentina ALBU

Simona Cătălina ȘTEFAN (corresponding author)

Lecturer, PhD, Management Department,
Faculty of Management,
Bucharest University of Economic Studies, Bucharest, Romania
Tel.: 0040-721-423.269
E-mail: simona.stefan@man.ase.ro

Ștefan Cătălin POPA

Teaching Assistant, PhD Student,
Management Department, Faculty of Management,
Bucharest University of Economic Studies, Bucharest, Romania
E-mail: popacatalinstefan@yahoo.com

Cătălina Florentina ALBU

Teaching Assistant, PhD Student,
Management Department, Faculty of Management,
Bucharest University of Economic Studies, Bucharest, Romania
E-mail: albuatalinaflorentina@yahoo.com

* **Acknowledgments:** This study was conducted through the doctoral and post-doctoral advanced research programs, management field, The Bucharest University of Economic Studies.

Abstract

The purpose of this study is to provide a new perspective of the motivation-performance link, and the influence of satisfying each basic human needs, described by Maslow's hierarchy of needs, on employees' professional performance. We assumed that the positive relationship between each dimension of motivation and professional performance is mediated by work satisfaction. The proposed conceptual model was operationalized by seven latent constructs (the five dimensions of motivation, inspired by the Maslow's hierarchy of needs, job satisfaction and the professional performance), each of them measured by several observed indicators. The survey conducted for this occasion, was filled in by 824 employees from Romanian health organizations.

Based on the research results, we can state that the Romanian health system employees are mostly motivated by meeting the needs of higher level, especially the need of self-actualization, and to a lesser extent by meeting the lower level ones. Those findings may serve as useful insights for health system policy makers and managerial practices in designing and implementing the most effective motivational strategies, able to generate increased professional performance.

Keywords: Maslow, motivation, professional performance, satisfaction.

1. Introduction

Nowadays, the healthcare sector is facing stiff competition and increasing needs and expectations from the patients (Hee and Kamaludin, 2016). To meet these challenges, healthcare organizations must develop and expand continuously to be able to provide high quality health care as their ultimate objective. Health sector policy makers and health facilities managers must recognize the importance of work motivation in reaching sector and organizational goals, and they must understand the links between their current policies and worker motivation (Van Lerberghe *et al.*, 2002).

Health workers' motivation can potentially impact the health services delivery (Mbilinyi, Daniel and Lie, 2011) and it is therefore important to make workforce development one of the priorities of health policy and consider it an essential public health function (Dussault and Dubois, 2003). The motivation of healthcare workers will undoubtedly reflect in their performance and, of course, in job satisfaction, which in turn impacts the quality of health services, their equity, efficiency, efficacy, accessibility and viability (Bennet and Franco, 2000; Dussault and Dubois, 2003).

However, despite the increased attention grounded in motivation and its individual and organizational implications, there are still some underlying aspects which are not well understood, one of the reasons being the lack of an appropriate instrument for measuring motivation (Borghi *et al.*, 2018; Lohmann *et al.*, 2017). Even if motivation and job satisfaction have been both mentioned as critical determinants of health workers performance and retention, they are abstract concepts which cannot be directly measured (Mbindyo *et al.*, 2009).

Moreover, although there are studies suggesting clear links between motivation and job performance (Alhassan *et al.*, 2016; Grant, 2008; Kuvaas, 2006; Sato *et al.*, 2017), other studies which established a relationship between job satisfaction and job performance (Petty, McGee and Cavender, 1984), and others which indicated a relationship between motivation and job satisfaction (Oguz *et al.*, 2016), a clear connection between all the three terms mentioned above was not yet found.

This study aims to investigate the motivation level of employees in the Romanian healthcare system, based on the five levels of motivation, according to the Maslow's hierarchy of needs (1943): physiological needs, safety, love and belonging, esteem and self-actualization. The study also attempts to evaluate the impact of satisfying each of these needs on performance and job satisfaction. The novelty and relevance of the paper stem from the creation of a model that highlights the intimate mechanism explaining the relationship motivation-satisfaction-performance and providing empirical evidences to support it. The paper also offers a new perspective on the motivation-performance relationship, taking into account every basic human need described by the Maslow hierarchy, and assumes that the relationship between each dimension of motivation and performance is mediated by professional satisfaction. At the same time, the novelty of the paper is also supported by the study of the above described relations within a domain with distinct features, that of health services, which is also considered to be of major interest.

Based on the review of the relevant literature (section 2), a conceptual model and five research hypotheses were developed. The methodological section (3) provides the overall study design, research instrument and the main methods of data analysis. The main results, which include also the validation of research hypotheses, are comprehensively presented and discussed in section 4 of the paper. In the conclusions part, limitations and future lines of research are outlined.

2. Literature review

Motivation is a process that influences and directs behavior in order to satisfy a need. Maslow (1943) developed a theory of how all dimensions of motivation are interrelated, based on the idea that human behavior is determined by a limited number of developing fundamental needs which emerge and operate in a sequential order (Sengupta, 2011). He called his theory a 'need hierarchy'. Maslow's hierarchy of needs consists of five levels/dimensions of motivation: physiological needs, safety, love and belonging, esteem and need for self-actualization. When a lower level need is met or overtaken by a higher level one, people tend to be no longer motivated by satisfying that need (Suyono and Mudjanarko, 2017). Furthermore, people will try to meet the needs of the next level. Maslow's theoretical tenet indicate that it is necessary for prepotent needs to be satisfied before the next level need emerges and the person becomes concerned by satisfying it (Taormina and Gao, 2013).

Maslow's model was studied in various disciplines: in social sciences, psychology, sociology and education (including adult learning) and was used as a model to understand the individuals' needs, while in business it was approached as a model to explain employees' motivation (Benson and Dundis, 2003). Since it was first formulated, Maslow's theory was further developed by Maslow itself or by other researchers – i.e. Alderfer (1969) ERG theory. The theory was also subjected to empirical testing and criticism (Berl, Williamson and Powell, 1984; Hall and Nougaim, 1968; Lawler III and Suttle, 1972; Soper, Milford and Rosenthal, 1995) that contested its empirical basis and applicability within an organizational context. In sum, Maslow's theory highly influenced the way of thinking and subsequent research (Alderfer, 1969) and became the most well-known theory that attempted to explain the mechanisms of human motivation.

Human resources motivation is primordial in all sectors of activity, especially in the healthcare system, where the need for high quality services is in a continuous grow, because it has become an essential condition in creating and maintaining high performance, both in terms of each employee and overall organizational performance. In the healthcare system, motivational factors can be differentiated into many categories. For instance, in a study conducted in Pakistan, motivating factors were intrinsic and social cultural factors, like serving people, respect and career growth were also important (Malik *et al.*, 2010).

As it is stated by Daft (2010) motivation can lead to behaviors reflecting high performance within an organization, therefore, it is the manager's responsibility to de-

sign the right combination of motivational tools and incentives able to simultaneously satisfy employees need and encourage high performance. In terms of job performance, in most hospitals are used various performance evaluation methods as a means of monitoring and evaluating the individual and organizational objectives. Motivation is considered a strong predictor to job performance (Hee and Kamaludin, 2016, p. 343).

Previous studies addressed the issues of motivation-performance relationship, providing theoretical and empirical arguments to support a positive influence of motivation on professional performance. Studies suggested both a direct effect (Alhassan *et al.*, 2016; Sato *et al.*, 2017), but also a mediating role of motivation for other determinant factors of performance (Deci, Olafsen and Ryan, 2017; Rowe *et al.*, 2005; Taghipour and Dejban, 2013).

The results of several studies indicate a correlation between motivation and job performance (Grant, 2008; Van Knippenberg, 2000). Other studies further demonstrated that employees with higher levels of motivation potentially have better professional performance (Kuvaas, 2006). Looking at the connection between motivation and performance, one may see that it is a relationship of mutual conditioning since, when the individual expectations and organizational demands overlap, there are high chances of fostering professional performance. Therefore, in the work process, motivation is the driving factor of performance and links the individual and organizational interests (Gılmeanu, 2015, p. 70). Taghipour and Dejban (2013) state that employees' motivation is one of the most effective managers' strategies to enhance effective workers job performance within their organizations.

Job satisfaction should be considered an important factor in healthcare settings. Atefi *et al.*, (2014) identified three main factors influencing nurses' job satisfaction: (1) work environment factors (benefit and rewards, working conditions, team cohesion, available medical resources, responsibilities, patient and doctor perceptions, leadership skills), (2) spiritual feeling (involvement in patient care and help giving), and (3) motivation (task requirement, clinical autonomy and professional development).

Even motivation and job satisfaction are two independent concepts, they are also interrelated to each other (Oguz *et al.*, 2016), involving cognitive, affective, and behavioral processes (Mutale *et al.*, 2013). Thus, Oguz *et al.* (2016) reported a strong positive correlation between job satisfaction levels, motivation and organizational commitment of healthcare professionals who work in the public healthcare sector in Turkey. As a result of the analysis, it was found that both job satisfaction and motivation had a significant effect on organizational commitment. These two factors can significantly influence labor productivity, labor fluctuation or absenteeism, or in a word, performance (Lefter *et al.*, 2012, p. 129).

There are also strong empirical evidences supporting a causal relationship between job satisfaction, quality of health care and patient safety (Alhassan *et al.*, 2013; Berenson and Rice, 2015). In the healthcare system, the job satisfaction of physicians is in the interest of the entire healthcare context (DeVoe *et al.*, 2002) and has important effects on physician productivity, the quality of medical care, and the supply of

physicians available to meet the medical care needs of population (Malik *et al.*, 2010). Conversely, a lower healthcare staff job satisfaction will lead to increased brain drain, poor work performance and lower healthcare outcomes (Wang *et al.*, 2017).

However, the job satisfaction – job performance relationship was perhaps one of the most controversial topics of research on employee behavior (Petty *et al.*, 1984). Following an extensive literature review regarding the extent to which high employees' satisfaction leads to enhanced performance, Kim (2002) found mixed results, ranging from no relationship to a strong and positive impact. Thus, in spite of considerable efforts, the controversy on satisfaction-performance relationship remained unsolved (Petty *et al.*, 1984).

3. Materials and methods

3.1. Conceptual model and hypotheses

In the first step, the conceptual model was set-up, based on the theoretical approach of motivation–satisfaction–performance relationships presented above. Motivation was conceptualized as a multidimensional construct, made-up by five dimensions inspired by Maslow's theory of needs (Maslow, 1943): physiological needs, safety, love and belonging, esteem and self-actualization. However, no relationship or hierarchy was assumed between the five dimensions, as in Maslow's theory. Since we intended not only to measure the motivation level of healthcare professionals, but also to investigate the impact of each dimensions on work satisfaction and professional performance, the conceptual model included two additional latent constructs. The conceptual model is presented in Figure 1, alongside with the research hypotheses, denoted by H1-H5:

- Hypothesis 1 (H1): There is an underlying construct of motivation, made up of five dimensions inspired by the Maslow's hierarchy of needs: physiological needs, safety, love and belonging, esteem and self-actualization;
- Hypothesis 2 (H2): Motivation of employees in the health system by meeting the higher-level needs (esteem and self-actualization) according to Maslow's hierarchy of needs is positively associated with professional performance;
- Hypothesis 3 (H3): Motivation of employees in the health system by meeting the lower level needs (physiological needs, safety, love and belonging) according to Maslow's hierarchy of needs is not associated with professional performance;
- Hypothesis 4 (H4): The relationships between each dimension of motivation and professional performance of healthcare employees is mediated by work satisfaction; and
- Hypothesis 5 (H5): There are differences between private and public health organization in terms of the intensity of mediation of satisfaction on the relationship between motivation dimensions and performance.

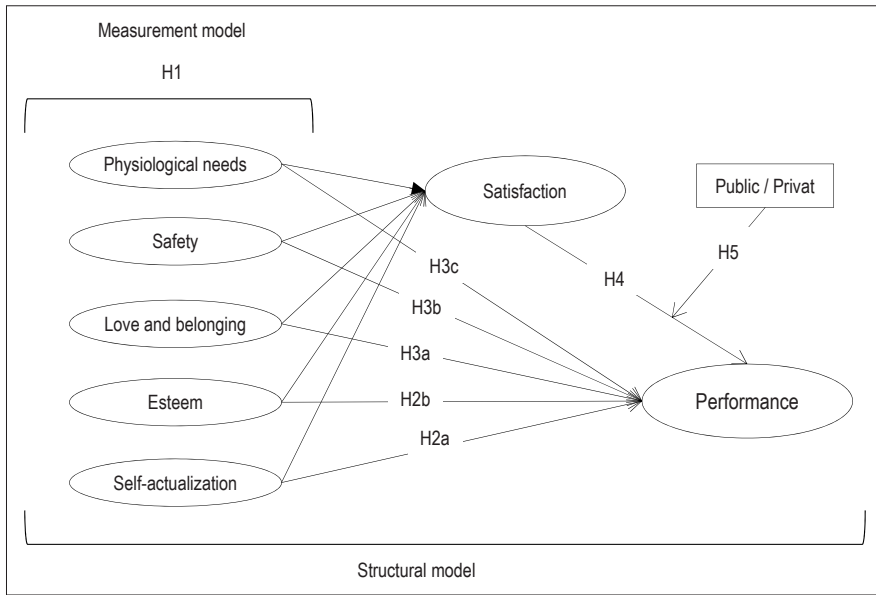


Figure 1: Conceptual model and hypotheses

Source: Authors' work

3.2. Overall research design

Considering that the present study attempts to evaluate the motivation level of employees in the healthcare system, based on the theoretical support of the Maslow's pyramid of needs (Maslow, 1943) and the impact of satisfying each of these needs on employees' performance, the survey was addressed by employees within the Romanian health system (inclusion criteria). Since we were interested in motivation primarily as an organizational process, in the study population (and consequently, in the sample) we did not include dentists and family doctors, healthcare professional which work mostly in their own private practice, rather than within an organization (exclusion criteria). To ensure both a satisfactory response rate, and access to a sufficiently large geographical area, the questionnaire was distributed and completed, both on paper and online format, using the snowball sampling procedure.

The research was approved by the Research and Innovation Management Department of the Bucharest University of Economic Studies (approval no. 1420/29.11.2016). The respondents were informed of the objectives of the study and that the data resulted will be used only for this purpose. Moreover, no personal data was collected through the survey, the respondents' participation being strictly anonymous; the respondents were also informed that their participation is voluntary, having the opportunity to withdraw at any time.

The final sample of the study included 824 respondents, employees within Romanian healthcare organizations, who completed and returned valid questionnaires measuring work motivation, work satisfaction and professional performance. The best

represented development region was the Bucharest-Ilfov region (27.55%), while fewer respondents came from West (10.92%). According to the property of health organizations, 68.81% of respondents come from public institutions, while 31.19% were employed in private healthcare organizations. Chi-square goodness to fit tests revealed no statistically significant differences between the shares of two key characteristics within the total population (National Institute of Statistics, 2018) and the sample: geographical distribution ($\chi^2_{(5)} = 10.738$, ns) and property ($\chi^2_{(2)} = 0.923$, ns), thus supporting the sample representativeness.

Considering the individual characteristics, most of the respondents were women (77.31%), with an average age of 36.87 years. Since we assumed differences in motivation, within the sample were nurses (37.86%), physicians (27.31%), pharmacists (14.44%), but also auxiliary medical staff (9.71%), as well as non-medical staff (10.68%), most of them (79.98%) were in non-managerial positions. With respect to the health organizations they are employed, more than half of the respondents (55.83%) came from hospitals, but also from pharmacies (19.82%), specialized medical care centers (12.86%) and emergency units (11.89%). In terms of the organization size, since hospitals employees were best represented in our survey, it was expected that the respondents coming from organizations with more than 250 employees to represent a similar share (58.62%).

3.3. Research instrument and variables

The research instrument was designed following an extensive literature review on the topic of motivation, job satisfaction and professional performance (Babic, Kordic and Babic, 2014; Charles, *et al.*, 2018; Lambrou, Kontodimopoulos and Niakas, 2010; Maslow, 1943; Mutale *et al.*, 2013; Porter, 1961), as well as own previous research (Ștefan, Popa and Dobrin, 2016). The proposed conceptual model was operationalized by seven latent constructs, each of them measured by several observed variables.

The five dimensions of motivation, inspired by Maslow's hierarchy of needs were assessed by 15 items (Babic, Kordic and Babic, 2014; Burduș and Popa, 2016; Lambrou, Kontodimopoulos and Niakas, 2010; Maslow, 1943; Porter, 1961), asking the respondents how motivated they are in their professional activity by: (1) salary, other material benefits and work schedule – corresponding to the physiological needs dimension; (2) working conditions, organization staff policy, workplace safety and health and pension insurance – corresponding to the safety dimension; (3) relations with colleagues and teamwork – corresponding to the love and belonging dimension; (4) possibility to assume responsibilities, performance recognition by colleagues and performance recognition by superiors – corresponding to the esteem dimension, and (5) possibilities to value skills, the possibilities to always learn new things and career development possibilities – corresponding to self-actualization. A 5-point Likert scale, ranging from 1 (not at all) to 5 (to a very large extent) was used for measurement.

Job satisfaction was measured by only one question, asking the respondents (on a 5-point Likert scale, where 1 = not at all and 5 = to a very large extent), how satisfied

they are with their present professional activity (Charles *et al.*, 2018; Lambrou, Kontodimopoulos and Niakas, 2010; Mutale *et al.*, 2013).

Three items were designed to measure professional performance (Ştefan, Popa and Dobrin, 2016), asking the respondents to assess (on a 5-point scale, where 1 = much worse, 5 = much better) their professional performances compared with the objectives set, with those of colleagues and with their own performance from five years ago.

The first form of the conceptual model and the items included in the questionnaire for each of the seven constructs were reviewed both by management researchers and by healthcare managers. Because we assumed that different individual and organizational characteristics can potentially influence the motivation level of healthcare employees, a set of such questions has been included in the questionnaire. As recommended (Borghetti *et al.*, 2018; Lohmann *et al.*, 2017), in the case of developing a new (or modified) measurement scale, the measuring instrument has been pretested.

3.4. Data analysis

Statistical and econometric analyses included descriptive statistics, t-tests, ANOVA, factor analysis (FA) and structural equation modeling (SEM). The main method of confirmatory factor analysis (CFA), measurement and structural model validation and testing the hypothetical relationships among latent constructs, was SEM. SEM is a combination of statistical techniques including FA, path analysis and regression. Due to its distinct ability to estimate error variations from complicated measurement components and their structures, SEM is the ideal solution for development and testing a theory, as a whole (Wang *et al.*, 2015). The procedure followed a three-step scenario: (1) preliminary examination of data; (2) construction of the measurement model, which allowed to test the first research hypothesis, and (3) construction of the structural model, which enabled the mediation and moderated mediation analyses and testing hypotheses 2 to 5. For the purpose of data analysis, we created a database which was exploited by means of IBM SPSS Statistics software package, version 25.0 (IBM Corp., 2017) and IBM SPSS Amos, version 25.0 (Arbuckle, 2017).

4. Results and discussions

4.1. Preliminary examination of data

Since survey-based studies are commonly associated with biases (Jakobsen and Jensen, 2015), which potentially affect the accuracy of their results, we considered the appropriate methods able to diminish as much as possible their effects. To control for the common method bias and non-response bias, along with procedural measures, we performed a Harman's single factor test for all the 19 observed variables and independent sample t-tests for each variable, comparing the means obtained in the first wave with the second one (Armstrong and Overton, 1977). In both cases, no evidence of such biases was found.

Missing data is another element that could potentially cause difficulties in data analysis (i.e., some SEM options are only available for a complete dataset) or could

have a considerable impact on research results (Hair *et al.*, 2010). The nonsignificant value of Little's MCAR test ($\chi^2 = 46.510$, $df = 36$, $p = 0.113$) suggests that the process of estimating and replacing missing values in this research should consider the Expectation-Maximization (EM) algorithm.

The normality of data distribution and univariate and multivariate outliers were assessed for this dataset. Since no absolute value of skewness greater than 1.0 was found, we concluded that all variables are normally distributed. As concern the outliers, a few cases presented univariate or multivariate outliers (Mahalanobis distance greater than the critical value). However, for datasets larger than 200 and normally distributed, it is suggested that there is no necessity to examine Mahalanobis Distance.

4.2. Construction of the measurement model

4.2.1. Exploratory factor analysis (EFA)

Construction of a new scale, or adapting an existing one to a new context, assumes that researchers seek to identify meaningful dimensions and assign the observed variables to those dimensions based on their intercorrelations. Hence, EFA was performed on the 15 observed variables measuring motivation and three variables of professional performance to give us a first impression of how they are grouped together. Since we assumed that motivation dimensions are related (Borghi *et al.*, 2018), Principal Axis Factoring extraction method and Promax rotation (which allows the factors to be correlated) were selected. Following the above procedure, from the 15 observed variables measuring motivation, five factors were extracted, which account for 56.07% of their variance, while from the three variables measuring professional performance we extracted only one factor. The analysis revealed that the items of the two scales reached good convergent and construct validity and construct and internal consistency reliability (see Table no. 1).

Table 1: Descriptive Statistics

Construct	Items	Mean	SD	Loadings	Cronbach's alpha
Physiological needs	3	3.100	0.928	0.512 - 0.807	0.700
Safety	4	3.655	0.775	0.409 - 0.817	0.740
Love and belonging	2	3.847	0.879	0.743 - 0.784	0.798
Esteem	2	3.651	0.934	0.589 - 0.905	0.788
Self-actualization	4	3.873	0.780	0.503 - 0.903	0.841
Professional performance	3	3.768	0.706	0.700 - 0.771	0.788
Work satisfaction	1	3.823	0.816	-	-

Source: Authors' work with IBM SPSS Statistics 25.0 (IBM Corp., 2017)

Table 1 also presents a brief descriptive statistic on the five dimensions of motivation resulting from the exploratory phase of analysis, as well as for work satisfaction and professional performance (to be included in the structural model). As one can see, the Romanian health system employees are mostly motivated by meeting the needs of

higher level, especially the need of self-actualization ($M = 3.873$, $SD = 0.780$), and to a lesser extent the satisfaction of safety ($M = 3.655$, $SD = 0.775$) and especially physiological ones ($M = 3.100$, $SD = 0.927$).

4.2.2. Confirmatory Factor Analysis – Testing hypotheses H1

Once the theoretical approach was strengthened by the results of EFA, and we had a strong assumption on the dimensionality of the scales and the relationships among variables, the next logical step was the CFA. The main method of CFA, was SEM, performed using the graphical interface of AMOS 25.0 (Arbuckle, 2017).

To validate the measurement model, it was assessed in term of fit indices, unidimensionality, validity and reliability. The structural validity analyses aimed to confirm that the scale measures the motivation dimensions as intended (Lohmann *et al.*, 2017). After the first iteration, examining the modification index (MI), two error terms of the same factor (physiological needs) were allowed to covariate. Moreover, one of the variables of factor 2 (safety) with exhibited insufficient loading was dropped out. Consequently, the fit indices reached satisfactory levels, meaning the measurement model fit the data well: $\chi^2_{(54)} = 4255.657$, $p = .000$, $\chi^2/df = 5.554$, CFI = 0.944, NFI = 0.933, GFI = 0.948, AGFI = 0.912 and MRSEA = 0.074.

Three criteria were used to assess the convergent validity of the measurement model: standardized loadings between each observed variable and its factor, composite reliability (CR) and Cronbach’s alpha values for each construct and average variance extracted (AVE). As one can see in Table 1 and 2, except for the AVE of safety, all values meet the recommended thresholds, supporting the convergent validity of the constructs (Hair *et al.*, 2010; Kline, 2015; Nunnally and Bernstein, 1994). To assess the discriminant validity, we checked (1) if the square root of AVE is larger than the inter-construct correlation for each construct and (2) if each variable loads higher on the factor which it was intended to measure than every other factor (Barclay, Thompson and Higgins, 1995; Hair *et al.*, 2010; Kline, 2015). The data presented in Table 1 and 2 also support the discriminant validity.

Table 2: Convergent and discriminant validity of the measurement model

Constructs	CR	AVE	(1)	(2)	(3)	(4)	(5)
Esteem	0.788	0.650	0.807				
Self-actualization	0.838	0.565	0.725	0.752			
Safety	0.734	0.481	0.603	0.538	0.693		
Physiological needs	0.710	0.551	0.273	0.171	0.499	0.742	
Love and belonging	0.799	0.665	0.691	0.631	0.590	0.200	0.815

Source: Authors’ work with Amos 25.0 (Arbuckle, 2017), Excel StatTools (Gaskin, 2016)

The first research hypothesis assumed that there is an underling construct of motivation, made up by five dimensions inspired by Maslow’s hierarchy of needs (Maslow, 1943): physiological needs, safety, love and belonging, esteem and self-actualization.

The five dimensions of motivation were operationalized by five latent constructs, while the intercorrelations among them were evaluated through a CFA. The final form of the measurement model was assessed in term of fit indices, unidimensionality, validity and reliability and the results presented above were all in acceptable intervals, thus giving support for the first hypothesis.

4.3. The structural model

A first SEM was implemented to account for the relationships among latent variables representing the five levels of motivation according to Maslow’s hierarchy of needs and professional performance (model 1). Moreover, into a second model (model 2) a supplementary observed variable (measuring work satisfaction) was introduced to assess the mediating role of satisfaction on the motivation-performance relationship; as presented in Table 3, all fit indices were found to be in acceptable range for both models.

Table 3: Fit indices of the structural models

	χ^2	<i>p</i>	χ^2/df	CFI	NFI	GFI	AGFI	MRSEA
Model 1 (no mediation)	321777	0.000	3.742	0.956	0.952	0.955	0.929	0.058
Model 2 (with mediation)	356078	0.000	3.709	0.955	0.940	0.954	0.926	0.057

Source: Authors with Amos 25.0 (Arbuckle, 2017)

4.3.1. Testing hypotheses H2 and H3

The structural models were also evaluated in terms of squared multiple correlations coefficients (R^2), as they account for the variability of all the independent variables explained by the dependent construct (professional performance). Overall $R^2 = 0.36$ indicates that all five latent constructs representing dimensions of motivation (physiological needs, safety, love and belonging, esteem and self-actualization) are able to explain 36% of the variation of professional performance.

It was assumed that professional performance of employees in the health system is positively associated with motivation by meeting the higher-level needs according to Maslow’s hierarchy (esteem and self-actualization) – H2, and not associated with lower levels of Maslow’s hierarchy – H3. In Table 4 we reported all standardized path coefficients (β) between the five explanatory latent constructs and performance, alongside with their standard errors, p-values and 95% confidence intervals obtained through a percentile bootstrap method. The results suggest that esteem and self-actualization are positively and significantly associated with professional performance ($\beta = 0.206$, $p < 0.05$; $\beta = 0.377$, $p < 0.001$), thus giving support for hypothesis 2. Moreover, the nonsignificant path coefficients between the latent constructs representing the lower motivation dimensions and professional performance ($\beta = 0.056$, ns; $\beta = 0.046$, ns; $\beta = 0.013$, ns) support hypothesis 3.

Table 4: Analysis of structural model 1 – testing hypotheses H2 and H3

Paths	Estimate	SE	95% C.I.	Decision (association)
Physiological needs → Prof. perf.	0.056	0.059	-0.038, 0.157	No
Safety → Prof. perf.	0.046	0.106	-0.124, 0.232	No
Love and belonging → Prof. perf.	0.013	0.084	-0.128, 0.148	No
Esteem → Prof. perf.	0.206*	0.095	0.046, 0.355	Yes (+)
Self-actualization → Prof. perf.	0.377***	0.074	0.260, 0.502	Yes (+)

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: Authors' work with AMOS 25.0 (Arbuckle, 2017)

The Maslow's Needs-Hierarchy Theory has been used as a basis for one study of motivation of health care employees (Benson and Dundis, 2003); in the aforementioned study we remark the idea that only if an individual's basic needs have been met, the higher levels of pyramid become relevant, as physiological needs are the most basic human component. By comparison, the current study brings a wider vision, by studying not only the motivation of the healthcare system, but also by providing a new perspective of the motivation-performance relationship and emphasizing the influence of satisfying each basic human needs, described by Maslow's hierarchy of needs, on employees' professional performance and emphasizing the positive influence of meeting higher-order needs (esteem and self-actualization).

4.3.2. Mediation – Testing hypothesis H4

In the context of mediation analysis, a mediator is an intermediate variable that helps explain the relationship between an independent variable and the dependent one (Gunzler *et al.*, 2013). In this case, it was assumed that the relationships between each dimension of motivation and professional performance of healthcare employees are mediated by work satisfaction (H4). Therefore, to test this hypothesis, starting from model 1, a new model (model 2) was estimated by introducing a new variable as a mediator and the bias-corrected bootstrapping method (available in AMOS program) was employed to produce 95% confidence interval for the indirect effects.

This time, the research results obtained were not entirely as expected and the fourth hypothesis was partially validated (see Table 5):

- As far as the relationship between physiological needs and love and belonging and performance is concerned, mediation cannot take place since the direct relationship (in the absence of the mediator) was not statistically significant ($\beta = 0.056$, ns; $\beta = 0.013$, ns) (Cheung and Lau, 2008).
- For Safety – Performance relationship, there was evidence only of an indirect effect ($\beta = 0.062$, CI 95% [0.022, 0.121]), which occurred when satisfaction was introduced into the model, even the direct effect prior the introduction of mediator was not significant, probably due to the higher influence of satisfying the health care employees' need of safety on their satisfaction ($\beta = 0.252$, $p < 0.05$) than on performance ($\beta = 0.046$, ns) (Rucker *et al.*, 2011; Evans *et al.*, 2016).

- The bootstrapping procedure provided also evidences for the full mediation of satisfaction on the relationship between esteem and performance, since the indirect effect is statistically significant ($\beta = 0.087$, CI 95% [0.049, 0.142]), while the direct effect is not ($\beta = 0.119$, ns). Furthermore, the significant direct ($\beta = 0.149$, $p < 0.001$), and indirect ($\beta = 0.047$, CI 95% [0.019, 0.088]), effects of satisfaction on the relationship between self-actualization and performance support its partial mediation. That means that esteem and self-actualization, as motivational factors, have a positive impact on satisfaction, which, in turn, has a positive influence on performance. However, in the presence of a mediator, only self-actualization has a direct effect on professional performance.

Table 5: Analysis of structural model 2 (mediation) – testing hypothesis H4

Paths	Direct Effect	Indirect Effect		Decision
		Estimate	95% CI	
Physiological needs → Prof. perf.	0.066	-0.011	-0.037, 0.015	No mediation
Safety → Prof. perf.	0.200	0.062*	0.022, 0.121	Indirect effect
Love and belonging → Prof. perf.	-0.001	0.012	-0.023, 0.049	No mediation
Esteem → Prof. perf.	0.119	0.087***	0.049, 0.142	Full mediation
Self-actualization → Prof. perf.	0.334***	0.047**	0.019, 0.088	Partial mediation

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: Authors' work with AMOS 25.0 (Arbuckle, 2017)

4.3.3. Moderated mediation – Testing hypotheses H5

Further, we were interested (hypothesis 5) whether or not the mediation effect of satisfaction remains the same (constant) across two groups of respondents, defined by the property of their employer (private or public).

The moderated mediation effect or conditional indirect effect was identified by Preacher, Rucker and Hayes (2007) when the strength of the indirect effect depends on the respondents belonging to one or another of the defined groups. To validate the fifth research hypothesis, we employed the multigroup approach, which involved the specification and estimation of multiple models, accordingly to the number of categories of variables considered as moderator (Ryu and Cheong, 2017), in this case: group 1 – respondents employed in private health organizations and group 2 – respondents employed in public health organizations. According to Fairchild and MacKinnon (2009), if the indirect estimates are statistically different from one another across groups, the moderation of the indirect effect is significant, and the mediated effect is moderated by group membership. Therefore, we applied heterogeneity tests with z-statistics for each indirect effect across the two groups.

As shown in Table 6, for the first relationship, the indirect unstandardized estimates ($B_{\text{Private}} = 0.066$, $SE = 0.037$, $p < 0.05$; $B_{\text{Public}} = -0.016$, $SE = 0.013$, ns) are statistically different across groups ($z = 2.091$, $p < 0.05$). Thus, there were evidences for the moderated mediation effect, while for the other four relationships the effect could not

be observed. That means that the property of the health organization in which the respondents are employed moderates only the mediation effect of satisfaction on the physiological needs – performance relationship, respectively the mediation effect can only be shown for the group of respondents employed in private health organizations. Considering above, the fifth hypothesis was partially supported.

Table 6: Conditional indirect effects (private/public) – testing hypothesis H5

Path	Characteristic	Indirect effect		Heterogeneity test (z-score)	Decision (Moderated mediation)
		Estimates	SE		
Physiological needs → Prof. perf.	Private	0.085*	0.037	2.091*	Yes
	Public	-0.018*	0.013		
Safety → Prof. perf.	Private	0.019	0.064	0.568	No
	Public	0.056*	0.037		
Love and belonging → Prof. perf.	Private	0.020	0.037	0.111	No
	Public	0.009	0.026		
Esteem → Prof. perf.	Private	0.082*	0.048	0.071	No
	Public	0.072*	0.030		
Self-actualization → Prof. perf.	Private	0.042	0.044	0.079	No
	Public	0.041	0.025		

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: Authors' work with AMOS 25.0 (Arbuckle, 2017) and Excel StatTools (Gaskin, 2016)

5. Conclusions

The link between motivation and the professional performance of healthcare employees was one of the most debated topics of research in the last decades. Therefore, the goal of this study was to investigate and depict the mechanism beyond this relationship, in order to provide theoretical and empirical evidences able to support managerial policies and practices able to balance the most effective motivational interventions with the limited available resources. Considering the aim of the study and based on theoretical approach, past empirical evidences and own experience, a conceptual model was developed, and five research hypotheses were formulated and validated through appropriate methods. A summary of validation of the research hypotheses is presented in Table 7. The main results of the research fully supported validation for tree research hypotheses and partial validation for the other two.

Table 7: Summary of hypothesis validation

Hypothesis	Method	Decision
H1	CFA	Supported
H2	SEM – Path Analysis	Supported
H3	SEM – Path Analysis	Supported
H4	SEM – Mediation	Partially supported
H5	SEM – Moderated mediation	Partially supported

Source: Authors' work

The first hypothesis (H1) assumed that there is an underlying construct of motivation, made up by five dimensions inspired by the Maslow's hierarchy of needs. The measurement model was assessed in term of fit indices, unidimensionality, validity and reliability, their results providing support in the fully validation of hypothesis H1.

Hypothesis H2 assumed that professional performance of employees in the health system is positively associated with motivation by meeting the higher-level needs according to Maslow's hierarchy (esteem and self-actualization), and hypothesis H3 assumed that it is not associated with lower levels of Maslow's hierarchy (physiological needs, safety and love and belonging). Within the structural model, the path analysis results provided support for hypotheses 2 and 3, suggesting that high levels of health workers' professional performance could be associated only with the fulfilment of their higher-level need (i.e., esteem and self-actualization).

Mediation analysis provided support for the partially validation of hypotheses 5. The hypothesis assumed that the relationships between each dimension of motivation and professional performance of healthcare employees is mediated by work satisfaction. The mediation analysis suggested not only that satisfaction fully or partially mediate the relationships between the fulfilment of higher-order needs and performance, but, furthermore, an indirect effect of satisfaction on the safety-performance relationship could be noticed. It should be mentioned that (among the five dimensions) only self-actualization is directly associated with performance. The results suggest that, except for self-actualization, the fulfilment of all the other category of needs has a positive effect on professional performance only if the employees are satisfied with their jobs, thus supporting the essential role of satisfaction in the motivation-performance relationship.

H5 assumed that there are differences between private and public health organization in terms of the intensity of mediation of satisfaction on the relationship between motivation dimensions and performance. The moderated mediation (multigroup analysis) results revealed statistically significant differences only for the indirect effect of satisfaction on the relationship between physiological needs and performance (i.e., positive indirect effect in the model including respondents employed in private healthcare organizations and negative indirect effect in the model including respondents employed in public sector).

The real practice of the medical health system can use the results of the research in order to improve the work processes and professional performances. By admitting there is an underlying construct of motivation, made up of five dimensions inspired by Maslow's hierarchy of needs, the research suggests that higher-order motivational factors (self-esteem and self-actualization) should be integrated into the specific healthcare policies. Moreover, effective means of enhancing healthcare professionals' work satisfaction should be further considered, since the research results suggest its positive mediating effect on the motivation-performance relationship.

The present study represents an important step forward in understanding how different dimensions of motivation are related to job satisfaction and professional per-

formance and found empirical evidences for the mediating role of work satisfaction in three of those relationships. Moreover, in view of the increasing number of private medical centers in Romania, as well as efforts to modernize the public sector (including human resources management) the differences in the mechanism described above between the respondents employed in the two types of health organizations were also investigated. Those findings may also serve as useful insights for health system policy makers and managerial practices in designing and operationalizing the most effective means of action able to generate increased professional performance.

Even the above results may provide important theoretical and practical implications, certain limitations should be also addressed. First, despite the effort deployed to design a sampling procedure able to support the representativeness, not all conditions were met (i.e., the random selection of respondents). Thus, the results may not be generalized. Second, since the motivation and performance scores were self-reported, it raises the issue of social-desirability bias (Donaldson and Grant-Vallone, 2002). Third, our conceptual model did not consider other possible mediating factors of the motivation–performance relationship, nor other moderators. Finally, the research had a trans-sectional character which meant that data on which both the independent and dependent variables were defined was collected simultaneously. Addressing those limitations may shape some interesting future research directions.

References:

1. Alderfer, C.P., ‘An Empirical Test of a New Theory of Human Needs’, 1969, *Organizational Behavior and Human Performance*, vol. 4, no. 2, pp. 142-175.
2. Alhassan, R.K., Nketiah-Amponsah, E., Spieker, N., Arhinful, D.K. and de Wit, T.F., ‘Assessing the Impact of Community Engagement Interventions on Health Worker Motivation and Experiences with Clients in Primary Health Facilities in Ghana: A Randomized Cluster Trial’, 2016, *PLOS ONE*, vol. 11, no. 7, pp. 1-19.
3. Alhassan, R.K., Spieker, N., van Ostenberg, P., Ognik, A., Nketiah-Amponsah, E. and de Wit, T.F., ‘Association between Health Worker Motivation and Healthcare Quality Efforts in Ghana’, 2013, *Human Resources for Health*, vol. 11, no. 1, art. no. 37.
4. Arbuckle, J.L., *IBM SPSS Amos (Version 25.0)*, Chicago: IBM SPSS, 2017.
5. Armstrong, J.S. and Overton, T.S., ‘Estimating Nonresponse Bias in Mail Surveys’, 1977, *Journal of Marketing Research*, vol. 14, no. 3, pp. 396-402.
6. Atefi, N., Abdullah, K.L., Wong, L.P. and Mazlom, R., ‘Factors Influencing Registered Nurses Perception of Their Overall Job Satisfaction: A Qualitative Study’, 2014, *International Nursing Review*, vol. 61, no. 3, pp. 352-360.
7. Babic, L., Kordic, B. and Babic, J., ‘Differences in Motivation of Health Care Professionals in Public and Private Centers’, 2014, *Singidunum Journal of Applied Sciences*, vol. 11, no. 2, pp. 45-53.
8. Barclay, D., Thompson, R. and Higgins, C., ‘The Partial Least Squares (PLS) Approach to Casual Modeling: Personal Computer Adoption and Use as an Illustration’, 1995, *Technology Studies*, vol. 2, no. 2, pp. 285-309.

9. Bennet, S. and Franco, L.M., 'Health Worker Motivation and Health Sector Reform', 2000, PHR Primer for Policy Makers, [Online] available at <http://www.phrplus.org/Pubs/pp3.pdf>, accessed on August 20, 2018.
10. Benson, S.G. and Dundis, S.P., 'Understanding and Motivating Health Care Employees: Integrating Maslow's Hierarchy of Needs, Training and Technology', 2003, *Journal of Nursing Management*, vol. 11, no. 5, pp. 315-320.
11. Berenson, R.A. and Rice, T., 'Beyond Measurement and Reward: Methods of Motivating Quality Improvement and Accountability', 2015, *Health Services Research*, vol. 50, no. S2, pp. 2155-2186.
12. Berl, R.L., Williamson, N.C. and Powell, T., 'Industrial Salesforce Motivation: A Critique and Test of Maslow's Hierarchy of Need', 1984, *Journal of Personal Selling & Sales Management*, vol. 4, no. 1, pp. 32-39.
13. Borghi, J., Lohmann, J., Dale, E., Meheus, F., Goudge, J., Oboirien, K. and Kuwawenaruwa, A., 'How to Do (or Not to Do) ... Measuring Health Worker Motivation in Surveys in Low- and Middle-income Countries', 2018, *Health Policy and Planning*, vol. 33, no. 2, pp. 192-203.
14. Burduş, E. and Popa, I., *Reproiectarea managementului organizației* (Redesigning Organizational Management), Bucharest: Pro Universitaria, 2016.
15. Charles, J.A., Ahnfeldt-Mollerup, P., Søndergaard, J. and Kristensen, T., 'Empathy Variation in General Practice: A Survey among General Practitioners in Denmark', 2018, *International Journal of Environmental Research and Public Health*, vol. 15, no. 3, art. no. 433.
16. Cheung, G.W. and Lau, R.S., 'Testing Mediation and Suppression Effects of Latent Variables: Bootstrapping With Structural Equation Models', 2008, *Organizational Research Methods*, vol. 11, no. 2, pp. 296-325.
17. Daft, R.L., *Management*, Jakarta: Salemba Empat, 2010.
18. Deci, E.L., Olafsen, A.H. and Ryan, R.M., 'Self-determination Theory in Work Organizations: The State of a Science', 2017, *Annual Review of Organizational Psychology and Organizational Behavior*, vol. 4, no. 1, pp. 19-43.
19. DeVoe, J., Fryer, G.E., Hargraves, J.L., Philips, R.L. and Green, L.A., 'Does Career Dissatisfaction Affect the Ability of Family Physicians to Deliver High-quality Patient Care?', 2002, *The Journal of Family Practice*, vol. 51, no. 3, pp. 223-228.
20. Donaldson, S.I. and Grant-Vallone, E.J., 'Understanding Self-report Bias in Organizational Behavior Research', 2002, *Journal of Business and Psychology*, vol. 17, no. 2, pp. 245-260.
21. Dussault, G. and Dubois, C.A., 'Human Resources for Health Policies: A Critical Component in Health Policies', 2003, *Human Resources for Health*, vol. 1, no. 1, pp. 1-16.
22. Evans, S., Paine, L.A., Seldman, L., Lung, K., Zeltzer, L. and Tsao, J.C., 'Maternal Anxiety and Children's Laboratory Pain: The Mediating Role of Solicitousness', 2016, *Children*, vol. 3, no. 2, art. no. 10.
23. Fairchild, A.J. and MacKinnon, D.P., 'A General Model for Testing Mediation and Moderation Effects', 2009, *Prevention Science*, vol. 10, no. 2, pp. 87-99.
24. Gaskin, J., 'Excel StatTools', 2016, [Online], available at http://statwiki.kolobkreations.com/index.php?title=Main_Page, accessed on August 2, 2018.
25. Gilmeanu, R., 'Theoretical Consideration on Motivation at the Work Place, Job Satisfaction and Individual Performance', 2015, *Valahian Journal of Economic Studies*, vol. 6, no. 3, pp. 69-80.

26. Grant, A.M., 'The Significance of Task Significance: Job Performance Effects, Relational Mechanisms, and Boundary Conditions', 2008, *Journal of Applied Psychology*, vol. 93, no. 1, pp. 108-124.
27. Gunzler, D., Chen, T., Wu, P. and Zhang, H., 'Introduction to Mediation Analysis with Structural Equation Modeling', 2013, *Shanghai Archives of Psychiatry*, vol. 25, no. 6, pp. 390-394.
28. Hair, J.F., Black, W.C., Bobin, B.J. and Anderson, N.E., *Multivariate Data Analysis*, Upper Saddle River: Pearson Education, 2010.
29. Hall, D.T. and Nougaim, K.E., 'An Examination of Maslow's Need Hierarchy in an Organizational Setting', 1968, *Organizational Behavior and Human Performance*, vol. 3, no. 1, pp. 12-35.
30. Hee, O.C. and Kamaludin, N.H.B., 'Motivation and Job Performance Among Nurses in the Private Hospitals in Malaysia', 2016, *International Journal of Caring Sciences*, vol. 9, no. 1, pp. 342-347.
31. IBM Corp., *IBM SPSS Statistics for Windows, Version 25.0*, Armonk: IBM Corp, 2017.
32. Jakobsen, M. and Jensen, R., 'Common Method Bias in Public Management Studies', 2015, *International Public Management Journal*, vol. 18, no. 1, pp. 3-30.
33. Kim, S., 'Participative Management and Job Satisfaction: Lessons for Management Leadership', 2002, *Public Administration Review*, vol. 62, no. 2, pp. 231-241.
34. Kline, R.B., *Principles and Practice of Structural Equation Modeling*, New York: Guilford Publications, 2015.
35. Kuvaas, B., 'Work Performance, Affective Commitment, and Work Motivation: The Roles of Pay Administration and Pay Level', 2006, *Journal of Organizational Behavior*, vol. 27, no. 3, pp. 365-385.
36. Lambrou, P., Kontodimopoulos, N. and Niakas, D., 'Motivation and Job Satisfaction among Medical and Nursing Staff in A Cyprus Public General Hospital', 2010, *Human Resources for Health*, vol. 8, no. 26, pp. 1-9.
37. Lawler III, E.E. and Suttle, J.L., 'A Causal Correlational Test of the Need Hierarchy Concept', 1972, *Organizational Behavior and Human Performance*, vol. 7, no. 2, pp. 265-287.
38. Lefter, V., Deaconu, A., Manolescu, A., Marinaş, C.V., Marin, I., Nica, E., Bogdan, A. and Igruş, R.Ş., *Managementul resursei umane* (Human Resource Management), Bucharest: Pro Universitaria, 2012.
39. Lohmann, J., Souares, A., Tiendrebéogo, J., Houlfort, N., Robyn, P.J., Somda, S.M.A. and De Allegri, M., 'Measuring Health Workers' Motivation Composition: Validation of a Scale Based on Self-Determination Theory in Burkina Faso', 2017, *Human Resources for Health*, vol. 15, no. 33, pp. 1-12.
40. Malik, A.A., Yamamoto, S.S., Souares, A., Malik, Z. and Sauerborn, R., 'Motivational Determinants among Physicians in Lahore, Pakistan', 2010, *BMC Health Services Research*, vol. 10, no. 1, art. no. 201.
41. Maslow, A.H., 'A Theory of Human Motivation', 1943, *Psychological Review*, vol. 50, no. 4, pp. 370-396.
42. Mbilinyi, D., Daniel, M.L. and Lie, G.T., 'Health Worker Motivation in the Context of HIV Care and Treatment Challenges in Mbeya Region, Tanzania: A Qualitative Study', 2011, *BMC Health Services Research*, vol. 11, no. 1, art. no. 266.

43. Mbindyo, P.M., Blaauw, D., Gilson, L. and English, M., 'Developing a Tool to Measure Health Worker Motivation in District Hospitals in Kenya', 2009, *Human Resources for Health*, vol. 7, no. 1, art. no. 40.
44. Mutale, W., Ayles, H., Bond, V., Mwanamwenge, M.T. and Balabanova, D., 'Measuring Health Workers' Motivation in Rural Health Facilities: Baseline Results from Three Study Districts in Zambia', 2013, *Human Resources for Health*, vol. 11, no. 1, art. no. 8.
45. National Institute of Statistics, 'San104a - Medical-Sanitary Staff, by Categories, Ownerships, Gender, Macroregions, Development Regions and Counties', 2018, [Online], available at <http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=en&ind= SAN104A>, accessed on July 20, 2018.
46. Nunnally, J.C. and Bernstein, I.R., *Psychometric Theory*, New York: McGraw-Hill, 1994.
47. Oguz, I., Ozgur, U., Salih, M., Mustafa, K. and Serap, T., 'The Effect of Job Satisfaction and Motivation of Health Care Professional on Their Organizational Commitment: The Case of Turkey', 2016, *TAF Preventive Medicine Bulletin*, vol. 15, no. 1, pp. 9-18.
48. Petty, M.M., McGee, G.W. and Cavender, J.W., 'A Meta-analysis of the Relationship between Individual Job Satisfaction and Individual Performance', 1984, *The Academy of Management Review*, vol. 9, no. 4, pp. 712-721.
49. Porter, L.W., 'A Study of Perceived Need Satisfaction in Bottom and Middle Management Jobs', 1961, *Journal of Applied Psychology*, vol. 45, no. 1, pp. 1-10.
50. Preacher, K.J., Rucker, D.D. and Hayes, A.F., 'Addressing Moderated Mediation Hypotheses: Theory, Methods, and Prescriptions', 2007, *Multivariate Behavioral Research*, vol. 42, no. 1, pp. 185-227.
51. Rowe, A.K., Savigny, D., Lanata, C.F. and Victora, C.G., 'How Can We Achieve and Maintain High-Quality Performance of Health Workers in Low-Resource Settings', 2005, *The Lancet*, vol. 366, no. 9490, pp. 1026-1035.
52. Rucker, D.D., Preacher, K.J., Tormala, Z.L. and Petty, R.E., 'Mediation Analysis in Social Psychology: Current Practices and New Recommendations', 2011, *Social and Personality Psychology Compass*, vol. 5, no. 6, pp. 359-371.
53. Ryu, E. and Cheong, J., 'Comparing Indirect Effects in Different Groups in Single-Group and Multi-Group Structural Equation Models', 2017, *Frontiers in Psychology*, vol. 8, no. 1, art. no. 747.
54. Sato, M., Maufi, D., Mwingira, U.J., Leshavari, M.T., Ohnishi, M. and Honda, S., 'Measuring Three Aspects of Motivation among Health Workers at Primary Level Health Facilities in Rural Tanzania', 2017, *PLOS ONE*, vol. 12, no. 5, art. no. e0176973.
55. Sengupta, S.S., 'Growth in Human Motivation: Beyond Maslow', 2011, *Indian Journal of Industrial Relations*, vol. 47, no. 1, pp. 102-116.
56. Soper, B., Milford, G. and Rosenthal, G., 'Belief When Evidence Does Not Support Theory', 1995, *Psychology and Marketing*, vol. 12, no. 5, pp. 415-422.
57. Ştefan, S.C., Popa, I. and Dobrin, C.O., 'Towards a Model of Sustainable Competitiveness of Health Organizations', 2016, *Sustainability*, vol. 8, no. 5, art. no. 464.
58. Suyono, J. and Mudjanarko, S.W., 'Motivation Engineering to Employee by Employee - Abraham Maslow Theory', 2017, *Journal of Education, Teaching and Learning*, vol. 2, no. 1, pp. 86-92.
59. Taghipour, A. and Dejban, R., 'Job Performance: Mediate Mechanism of Work Motivation', 2013, *Procedia-Social and Behaviour Sciences*, vol. 84, pp. 1601-1605.

60. Taormina, R. and Gao, J., 'Maslow and the Motivation Hierarchy: Measuring Satisfaction of the Needs', 2013, *The American Journal of Psychology*, vol. 126, no. 2, pp. 155-157.
61. Van Knippenberg, D., 'Work Motivation and Performance: A Social Identity Perspective', 2000, *Applied Psychology*, vol. 49, no. 3, pp. 357-371.
62. Van Lerberghe, W., Conceicao, C., Van Damme, W. and Ferrinho, P., 'When Staff Is Underpaid: Dealing with the Individual Coping Strategies of Health Personnel', 2002, *Bulletin of the World Health Organisation*, vol. 80, no. 7, pp. 581-584.
63. Wang, J.Y., Li, Y.S., Chen, J.D., Liang, W.M., Yang, T.C., Lee, Y.C. and Wang, C.W., 'Investigating the Relationships among Stressors, Stress Level, and Mental Symptoms for Infertile Patients: A Structural Equation Modeling Approach', 2015, *PLOS ONE*, vol. 10, no. 10, art. no. e0140581.
64. Wang, H., Tang, C., Zhao, S., Meng, Q. and Liu, X., 'Job Satisfaction among Health-Care Staff in Township Health Centers in Rural China: Results from a Latent Class Analysis', 2017, *International Journal of Environmental Research and Public Health*, vol. 14, no. 10, art. no. 1101.