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**HEALTHCARE PROFESSIONAL
MOTIVATION IN POLAND AND
UKRAINE: THE ROLE OF
PROFESSION, GENDER, AND
COUNTRY****Anatoliy G. Goncharuk**

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ABSTRACT. The purpose of this study was to examine the differences in intrinsic vs. extrinsic motivation among medical students, doctors, and nurses in two countries – Ukraine and Poland. As a secondary aim, gender differences were considered as well. During 2019, until the beginning of 2020, before the COVID-19 pandemic started, healthcare professionals from two hospitals and medical students from one university in Poland and healthcare professionals from two hospitals and medical students from one university in Ukraine were recruited to participate in the study. The Wilcoxon test for paired samples was used to compare each participant's score on the intrinsic vs. extrinsic motivation sub-scales. Differences were examined by country, gender, profession, and combinations of these factors. In Poland, 142 doctors, nurses, and medical students were recruited. In Ukraine, 126 doctors, nurses, and medical students were recruited. Respondents completed an anonymous paper-and-pencil survey that required minimal socio-demographic information (age, gender, profession, and years of experience) so that the respondent would remain unidentifiable. The results show that male doctors were more extrinsically vs. intrinsically motivated ($p=0.003$), while female doctors and students were more intrinsically vs. extrinsically motivated in both Ukraine and Poland ($p=0.023$). Male students and nurses from both countries were equally motivated by both intrinsic and extrinsic factors. Polish female doctors were more intrinsically vs. extrinsically motivated than Ukrainian ones ($p=0.001$), whereas Ukrainian and Polish male doctors were more extrinsically vs. intrinsically motivated ($p=0.002$). There were statistically different motivational patterns concerning gender, occupation, and nationality, which may have important implications for the construction of motivational systems in both organizational and healthcare systems.

JEL Classification: J28, C8,
I11

Keywords: intrinsic motivation, extrinsic motivation, healthcare professionals, Poland, Ukraine

Introduction

Motivation is a fundamental component of any human activity and can be considered to be a central constituent of healthcare systems (Franco et al., 2002). One definition of motivation is “a multidimensional phenomenon defined as the energy and intention behind an action” (Korlén et al., 2017). However, motivation is quite complex [see (Ryan & Deci, 2000)]. Motivation in the psychological literature is often divided into extrinsic or intrinsic (Flamholtz, 1996; Cerasoli et al., 2014). When people behave in a certain way because they are interested in something, and the behavior arises from within the individual because it is naturally satisfying, in other words, the behavior is driven by internal rewards – motivation is considered to be intrinsic. When people engage in a particular behavior due to the rewards they expect to receive from others (e.g., praise, pay) – motivation is considered to be extrinsic and the term incentive is used if the reward does indeed increase future frequency of the behaviour.

Some performance studies suggest that extrinsic motivators, especially financial ones, in which participants are rewarded for how many tasks they complete, are positively associated with the number of tasks completed but not necessarily with their quality (Ferreira & Otley, 2009). Higher quality of task completion, for instance, as assessed by a supervisor of the tasks, has been shown to be related to intrinsic motivation (Cerasoli et al., 2014). Quality can also be the result of an external incentive if the individual expects verbal praise or some other form of public recognition of their quality work. In fact, some evidence suggests that any incentive, regardless of whether it consists of tangible and objective extrinsic rewards (e.g., based on quantitative, third-person evaluated measures) or subjective self-reported evaluations, tends to undermine intrinsic motivation for rewarded behavior (Deci et al., 1999; Levy et al., 2017) and has a significant impact on results through Performance Management Systems (Lewandowski & Cirella, 2022). Incentives, including monetary rewards, prizes, directives, surveillance, negative performance feedback, deadlines, and threats of punishment have been shown to decrease one’s intrinsic motivation for carrying out an activity. In contrast, external factors such as providing positive performance feedback, offering choice, and acknowledging people’s feelings have been found to enhance their intrinsic motivation, resulting in better performance (Deci & Ryan, 2010).

The division between extrinsic and intrinsic motivation is complex because it is based on an individual’s perception and is difficult to objectively measure. Different people may interpret the same external factors (e.g., rewards, feedback, and deadlines) differently (Ryan & Deci, 2000; Goncharuk et al., 2020). When a reward is introduced as a consequence of a given behavior, it can control the behavior and convey information about competence. If some people perceive rewards primarily as a controlling force, then, regardless of the intention of the individual offering the reward, it may hurt the person’s sense of autonomy and undermine his or her intrinsic motivation. However, when the informational aspect of communicating competency, for instance, is more prominent, it can affirm people’s effort and results, and can enhance their intrinsic motivation. Whether the controlling or the informational aspect of the reward is more prominent depends on the situation and the person. Intrinsic motivation is less important to performance when incentives are directly related to performance and is more important when incentives are indirectly related to performance, however, incentives and intrinsic motivation are not necessarily antagonistic and are best considered simultaneously (Cerasoli et al., 2014).

While there is a general understanding of how motivation may influence performance, little is known about what motivates individuals working in healthcare, or about the potential factors that might influence their motivation. A more nuanced understanding of healthcare professionals' motivations is important, given the COVID-19 pandemic and the fact that many

countries, even pre-COVID, lack qualified, trained healthcare professionals (Clark et al., 2006). Many healthcare professionals are quitting their jobs (Zhang et al., 2022) and many young people are choosing not to study medicine or care sciences (Ali et al., 2021). Enhanced knowledge about the motivators for students and current healthcare professionals may help to attract and retain these professionals in the future. Furthermore, as healthcare systems seek to increase performance, managers require more information about possible incentives for healthcare staff that could function as rewards. Not surprisingly, individual physicians have been found to vary in how they respond to incentives (Roland & Dudley, 2015).

Research across many countries coincides in that investing in building healthcare professionals' intrinsic motivation is more efficient than using extrinsic motivators such as monetary incentives. Some countries citing these findings include Ukraine (Goncharuk, 2018), (Smilianov et al., 2017), Cyprus (Lambrou et al., 2010), Greece (Tsounis, 2014), China (Xie & Su, 2011), Nigeria (Bhatnagar et al., 2017), Benin, and Kenya (Mathauer & Imhoff, 2006). However, there are between country differences. Financial incentives are considered to be important, but not sufficient, motivators in some developing countries (Willis-Shattuck et al., 2008) and in Bangladesh, specifically (Darkwa et al., 2015). In Russia, the literature is less straightforward. Some studies suggest that intrinsic incentives were valued over financial incentives (Leontieva et al., 2017; Berdyaeva, 2012; Kabachek, 2006), while financial incentives prevail in others (Polejaev, 2006; Vitenko, 2012).

The purpose of this study was to examine the differences in intrinsic vs. extrinsic motivation among medical students, doctors, and nurses in two countries – Ukraine and Poland. Being neighboring countries, the health care systems of these countries have a huge difference in efficiency (Lo Storto and Goncharuk, 2017): Poland is among the leaders in Europe, while Ukraine lags behind (Canolle et al., 2022). Therefore, it is interesting to study how high a difference in the motivation of healthcare professionals is in terms of intrinsic and extrinsic motivation, as well as their groups including medical students, who shape the future of healthcare. As a secondary aim, gender differences were considered as well.

1. Materials and methods

During 2019, until the beginning of 2020, before the COVID-19 pandemic started, healthcare professionals from two hospitals and students from one university in Poland and healthcare professionals from two hospitals and students from one university in Ukraine were recruited to participate in the study. Respondents completed an anonymous paper-and-pencil survey that required minimal socio-demographic information (age, gender, profession, and years of experience) so that the respondent would remain unidentifiable. The study protocol was approved by the ethics committee of Voivodeship Rehabilitation Hospital for Children (Ameryka, Poland). All participants completed the Motivators for Healthcare Professionals Questionnaire. This 20-item questionnaire measures the intrinsic and extrinsic motivators for healthcare professionals based on a prior similar questionnaire used in a Ukrainian sample (Korlén et al., 2017). It was translated into Polish and back-translated for accuracy for administration in the Polish sample. The scale captures 8 intrinsic motivators and 12 extrinsic motivators rated on a Likert scale of 0 to 5 (where 0 represented “not at all” and 5 represented “very strongly”) to the question ‘How much does each of the following motivate you in your work?’. The scale consists of intrinsic motivation (IM) and extrinsic motivation (EM) sub-scale scores calculated by adding the scores of the individual items. See Table 1. for the individual items and their categorizations.

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Table 1. Motivators for healthcare professionals questionnaire

Item	Motivator	Intrinsic (IM) or Extrinsic (EM) Motivator
1	Working to help others / Altruistic motives	IM
2	Interesting work	IM
3	Working closely with people/youth	IM
4	Challenging work	IM
5	Ability to make a strong contribution to society	IM
6	Exciting work	IM
7	Responsibility in job	IM
8	Opportunities for creativity and originality	IM
9	Job security	EM
10	Social benefits	EM
11	Opportunities for travel	EM
12	Community respect for your occupation	EM
13	Potential to combine work & family	EM
14	Flexible hours of work	EM
15	Future earnings potential	EM
16	Opportunities for promotion/advancement	EM
17	Pleasant working conditions	EM
18	Professional prestige / high status	EM
19	Current salary	EM
20	Demand for the profession / Job opportunities	EM

Source: *own compilation*

The data for the questionnaire sub-scales and total score were non-normally distributed. Thus non-parametric statistical tests were performed. The Wilcoxon test for paired samples was used to compare each participant's score on the intrinsic vs. extrinsic motivation sub-scales. Differences were examined by country, gender, profession, and combinations of these factors.

2. Results

In Poland, 142 doctors, nurses, and medical students were recruited. In Ukraine, 126 doctors, nurses, and medical students were recruited. See Table 2. for the socio-demographic information on these samples. The composition of the whole sample was: 22% doctors, 39% nurses, and 39% medical students.

Table 2. Sample socio-demographic characteristics

Profession	Poland				Ukraine			
	Female	Male	Sum	Mean age (SD)	Female	Male	Sum	Mean age (SD)
Doctor	30	16	46	47.8 (12.1)	3	11	14	28.4 (6.8)
Nurse	68	2	70	48.3 (6.7)	34	0	34	34.6 (14.3)
Medical student	23	3	26	20.2 (0.77)	64	14	78	20.5 (1.95)
Total	121	21	142		101	25	126	

Source: *own calculation*

Differences by country

Polish healthcare professionals had significantly higher IM scores than EM scores (Wilcoxon=6,048; $p=0.008$; with 92 positive differences, 46 negative differences, and 4 ties), whereas Ukrainian healthcare professionals scored similarly on IM and EM sub-scales (Wilcoxon=3,885; $p=0.980$).

Differences by gender

Male healthcare professionals had significantly lower IM scores than EM scores (Wilcoxon=215; $p=0.003$; with 13 positive differences, 29 negative differences, and 4 ties), whereas female healthcare professionals had significantly higher IM scores than EM scores (Wilcoxon=15,493; $p<0.001$; with 145 positive differences, 75 negative differences, and 2 ties).

Differences by profession

Students had significantly higher IM scores than EM scores (Wilcoxon=3,924; $p<0.001$; with 72 positive differences, 32 negative differences, and 0 ties), whereas doctors and nurses scored similarly on IM and EM sub-scales (Wilcoxon=660; $p=0.260$ and Wilcoxon=2,877; $p=0.403$ respectively).

Differences by gender by country

Ukrainian males had significantly higher EM scores than IM scores (Wilcoxon=71; $p=0.041$; with 8 positive differences, 15 negative differences, and 2 ties) and Polish females had significantly higher IM scores than EM scores (Wilcoxon=75,098; $p<0.001$; with 87 positive differences, 32 negative differences, and 2 ties). IM and EM scores were similar for Polish males and Ukrainian females.

Differences by profession by country

Polish students and Ukrainian students had significantly higher IM scores than EM scores (Wilcoxon=321; $p<0.001$ with 22 positive differences, 4 negative differences and 0 ties and Wilcoxon=2,027; $p=0.015$ with 50 positive differences, 28 negative differences and 0 ties), while Ukrainian doctors had significantly higher EM scores than IM scores (Wilcoxon=0 with 0 positive differences and 12 negative differences and 2 ties). Polish doctors and nurses and Ukrainian nurses had similar IM and EM scores.

Differences by profession by gender

Female doctors and female students had significantly higher IM scores than EM scores (Wilcoxon=408; $p=0.023$ with 26 positive differences, 7 negative differences, and 0 ties and Wilcoxon=2,812; $p<0.001$ with 63 positive differences, 24 negative differences, and 0 ties), while male doctors had significantly higher EM scores than IM scores (Wilcoxon=5 with 2 positive differences and 21 negative differences and 4 ties). Male and female nurses and male students had similar IM and EM scores.

Differences by country by gender by profession

When examining differences in intrinsic vs. extrinsic motivation in sub-groups by country, gender, and profession, six groups had similar IM and EM scores: Polish male and female nurses, Polish and Ukrainian male students, and Ukrainian female doctors and nurses. In contrast, five groups had significantly different IM and EM scores.

Polish and Ukrainian male doctors had significantly higher EM scores than IM scores (Wilcoxon=3 and $p=0.002$ with 2 positive differences, 12 negative differences and 2 ties; Wilcoxon=0 and $p=0.008$ with 0 positive differences, 9 negative differences and 2 ties respectively).

Polish and Ukrainian female students had higher IM scores than EM scores (Wilcoxon=363 and $p<0.001$ with 21 positive differences, 2 negative differences and 0 ties; Wilcoxon=1,385 and $p=0.021$ with 42 positive differences, 22 negative differences and 0 ties respectively).

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Polish female doctors also had significantly higher IM scores than EM scores (Wilcoxon=397; $p=0.001$; with 26 positive differences, 4 negative differences and 0 ties).

In summary, a visual representation of the results of the present study can be found in Figure 1.

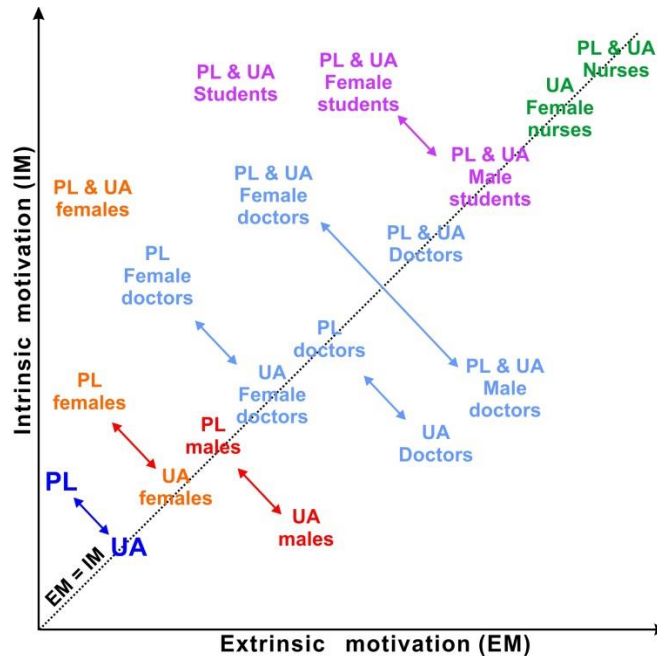


Figure 1. The position of particular groups of medical professionals in relation to the equilibrium between intrinsic and extrinsic motivation

Note: The diagonal position indicates the equilibrium between intrinsic and extrinsic motivation.

Source: own calculation

3. Discussion

This study has three key findings. Specifically, male doctors from both Ukraine and Poland reported more extrinsic motivation, while female students from both Ukraine and Poland reported more intrinsic motivation, as did Polish female doctors. In particular, the country does not seem to influence extrinsic vs. intrinsic motivation if you are a male doctor or a female student, but does matter if you are a Polish female doctor.

Findings that female medical students are more intrinsically motivated is supported by at least one study (Vallerand & Blssonnette, 1992). In a sample of more than 1,000 Quebec students, women were more intrinsically motivated, integrated, and less susceptible to external regulation and motivation than male students. In this study, females also demonstrated higher levels of behavioral persistence than male students. This suggests that higher intrinsic vs. extrinsic motivation in female vs. male students may not only be characteristic of medical students in Poland and Ukraine, but also of students studying other professions in other countries. Moreover, studies in the USA (Carrothers et al., 2000) and Great Britain (Yates et al., 2009) also showed significant gender differences in the motivation of medical students.

The gender difference in intrinsic vs. extrinsic motivation could be explained by the earlier maturation of females, who at the age of 18 surpass males by an average of 3 years (Westenberg, 2008). However, according to Steinberg & Cauffman, (1996), the maturation process is completed and gender aligned by 24 years of age. Kusrkar et al., (2011) showed that maturity affects the strength of motivation of medical students, which varies with age and

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gender. Therefore, a student's age, due to different maturity level, may result in different motivational factors for female and male medical students. This may explain the higher intrinsic vs. extrinsic motivation of students from both countries, since the majority of our student sample are female.

Considering various aspects of first-year medical student activity, Ommering et al., (2018) noted that female students are more highly motivated - both in terms of intrinsic and extrinsic motivation - for research activity, while male medical students scored significantly higher than female students in general self-efficacy. It is possible that these findings might also be explained by different maturity levels for different genders of students.

Although the results of previous studies in other countries generally confirm our findings, e.g., research in the Netherlands (Kusurkar et al., 2013), Denmark (Heiligers, 2012), and Switzerland (Buddeberg-Fischer et al., 2003), there are studies that contradict our results. Recent findings from a Thai university with 140 students indicated that male medical students had lower extrinsic motivation than female students. Wu et al., (2020) also found that Chinese male medical students had higher intrinsic motivation than female ones in a large sample of 1,930 medical students in China. This may suggest differing gender perspectives among European vs. Asian medical students, or perhaps gender inequality in the Asian continent (Hansatit, 2014), which gives rise to the increased extrinsic motivation of females (Kang & Kaplan, 2019). However, Lambrou et al., (2010) also found, in Cyprus, that female physicians are significantly more motivated by external rewards than their male counterparts.

Ultimately, country and related-cultural factors may influence these gender differences, especially as students move from being students and students to being independent physicians. In the present study, Ukrainian doctors were more extrinsically than intrinsically motivated, whereas Polish doctors had similar intrinsic and extrinsic motivation. Neittaanmäki et al., (1999) found that the personal values of Finnish doctors are similar to the values of their culture in general and support our results. It is possible that many Polish doctors, compared to Ukrainian doctors, have opportunities to work in higher-paid countries in Europe. Perhaps, as a result of having significantly fewer opportunities to work in the EU countries, the majority of Ukrainian doctors may be more extrinsically vs. intrinsically motivated.

In particular, in our study we found that Polish female doctors were more intrinsically vs. extrinsically motivated, while Polish male doctors were more extrinsically vs. intrinsically motivated. The reason for the different motivations of female doctors and male ones in Polish hospitals may be related to the fact that female doctors have a significantly less advantageous position than males in terms of employment or career advancement. Despite better education, females make up the majority of the unemployed in Poland and on average earn 17% less than males (Kałużna, 2007). Under such conditions, it is reasonable to go abroad for the most extrinsically motivated Polish female doctors. This might help to explain why, in Polish hospitals, female doctors were predominantly intrinsically motivated. The finding coincides with Neittaanmäki et al., (1999), who found that female doctors pay more attention than male doctors to universal human values, health, and success (success in work or study, helping others, good work) and ideologies (faith in God, fatherland), which can be considered to be much closer to intrinsic motivation.

Conclusion

The present study's findings should be interpreted given a number of caveats. The sample may not be representative and therefore not generalizable to the whole population. Additionally, the questionnaire may not capture all possible motivators. Item categorization as intrinsic vs. extrinsic may not necessarily be perceived by the individual as such. Therefore additional

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research (especially qualitative research) will allow a better understanding of the influence of nationality, gender, and occupation on intrinsic and extrinsic motivation. Furthermore, age may be an important cofounder. The sample shows a significant discrepancy in average age between Polish and Ukrainian doctors and nurses. This may be due to the differences in educational systems, since young people in Ukraine are enrolled in university at an earlier age than in Poland. In Poland, young people start their medical studies around age 19, while, in Ukraine usually they start around age 17. Nurses in Poland can start their professional career at the age of 22 (earning a bachelor's degree), or two years later with master's degree. Doctors study for 6 years and then complete a one-year residency, so they start work at the age of 26. In Ukraine, study at a medical university lasts 5 to 6 years, depending on the specialty. Then they complete 2 to 3 years of residency. Hence, to fully treat patients in Ukraine, a doctor must study for 7 to 9 years. Thus, young Ukrainian doctors can start work no earlier than age 24. Since the maturation process is completed by 24 years of age (Kusurkar et al., 2011), this may mitigate the negative effect in doctors, but not nurses, and it would still be seen in students.

The results of the research may have important implications for managers and policymakers since it contributes to knowledge to support the creation of motivational systems for medical staff both at the levels of medical organizations and healthcare systems. The results concerning medical students can help to effectively motivate young people not only to enroll in medical studies, but also for doctors and nurses not to drop out of their professions and undertake different jobs other than in healthcare after graduation.

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References

- Ali, S. R., Loh Garrison, Y., Cervantes, Z. M., & Dawson, D. A. (2021). Sociopolitical Development and Healthcare Career Interest, Self-Efficacy, and Outcome Expectations Among Rural Youth. *The Counseling Psychologist*, 49(5), 701–727. <https://doi.org/10.1177/00110000211007440>
- Berdyeva, I. A. (2012). *Medico-social characteristics of doctors of the Amur Region*. PhD thesis, Khabarovsk.
- Bhatnagar, A., Gupta, S., Alonge, O., & George, A. S. (2017). Primary health care workers' views of motivating factors at individual, community and organizational levels: A qualitative study from Nasarawa and Ondo states, Nigeria: Primary Health Care Workers' Views of Motivating Factors. *The International Journal of Health Planning and Management*, 32(2), 217–233. <https://doi.org/10.1002/hpm.2342>
- Buddeberg-Fischer, B., Klaghofer, R., Abel, T., & Buddeberg, C. (2003). The influence of gender and personality traits on the career planning of Swiss medical students. *Swiss Medical Weekly*, 133(39–40), 535–540.
- Canolle, F., AntoniĆ, D., Nova, A. C., Goncharuk, A., Melo, P., Raposo, V., & Vinot, D. (2022). Advancement of efficiency evaluation for healthcare. In *Intelligent systems for sustainable person-centered healthcare* (pp. 91-118). Cham: Springer International Publishing.

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- Carrothers, R. M., Gregory, S. W. J., & Gallagher, T. J. (2000). Measuring Emotional Intelligence of Medical School Applicants. *Academic Medicine*, 75(5), 456–463.
- Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin*, 140(4), 980–1008. <https://doi.org/10.1037/a0035661>
- Clark, P. F., Stewart, J. B., & Clark, D. A. (2006). The globalization of the labour market for health-care professionals. *International Labour Review*, 145(1-2), 37-64.
- Darkwa, E. K., Newman, M. S., Kawkab, M., & Chowdhury, M. E. (2015). A qualitative study of factors influencing retention of doctors and nurses at rural healthcare facilities in Bangladesh. *BMC Health Services Research*, 15(1), 344. <https://doi.org/10.1186/s12913-015-1012-z>
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627–668.
- Deci, E. L., & Ryan, R. M. (2010). Intrinsic Motivation. In I. B. Weiner & W. E. Craighead (Eds.), *The Corsini Encyclopedia of Psychology* (p. corpsy0467). John Wiley & Sons, Inc. <https://doi.org/10.1002/9780470479216.corpsy0467>
- Ferreira, A., & Otley, D. (2009). The design and use of performance management systems: An extended framework for analysis. *Management Accounting Research*, 20(4), 263–282.
- Flamholtz, E. (1996). Effective organizational control: A framework, applications, and implications. *European Management Journal*, 14(6), 596–611.
- Franco, L. M., Bennett, S., & Kanfer, R. (2002). Health sector reform and public sector health worker motivation: A conceptual framework. *Social Science & Medicine*, 54(8), 1255–1266. [https://doi.org/10.1016/S0277-9536\(01\)00094-6](https://doi.org/10.1016/S0277-9536(01)00094-6)
- Goncharuk, A. G. (2018). Exploring a motivation of medical staff. *The International Journal of Health Planning and Management*, 33(4), 1013–1023. <https://doi.org/10.1002/hpm.2555>
- Goncharuk, A. G., Lewandowski, R., & Cirella, G. T. (2020). Motivators for medical staff with a high gap in healthcare efficiency: Comparative research from Poland and Ukraine. *The International Journal of Health Planning and Management*. <https://doi.org/10.1002/hpm.3037>
- Hansatit, P. (2014). *A study on gender inequality in Thailand: Career experience of Thai female managers*. Southern Cross University.
- Heiligers, P. J. (2012). Gender differences in medical students' motives and career choice. *BMC Medical Education*, 12(1), 82. <https://doi.org/10.1186/1472-6920-12-82>
- Kabachek, N. I. (2006). *The state and ways of optimization of the personnel supply of rural health of the South of Russia*. PhD thesis, St. Petersburg.
- Kałużna, K. (2007). Pozycja kobiet na polskim rynku pracy. Uwarunkowania prawne i rzeczywistość. *Środkowoeuropejskie Studia Polityczne*, 1, 73. <https://doi.org/10.14746/ssp.2006.1.06>
- Kang, S. K., & Kaplan, S. (2019). Working toward gender diversity and inclusion in medicine: Myths and solutions. *The Lancet*, 393(10171), 579–586. [https://doi.org/10.1016/S0140-6736\(18\)33138-6](https://doi.org/10.1016/S0140-6736(18)33138-6)
- Korlén, S., Essén, A., Lindgren, P., Amer-Wahlin, I., & von Thiele Schwarz, U. (2017). Managerial strategies to make incentives meaningful and motivating. *Journal of Health Organization and Management*, 31(2), 126–141. <https://doi.org/10.1108/JHOM-06-2016-0122>

INTERDISCIPLINARY APPROACH TO ECONOMICS AND SOCIOLOGY

- Kusurkar, R. A., Ten Cate, Th. J., van Asperen, M., & Croiset, G. (2011). Motivation as an independent and a dependent variable in medical education: A review of the literature. *Medical Teacher, 33*(5), e242–e262. <https://doi.org/10.3109/0142159X.2011.558539>
- Kusurkar, R. A., Ten Cate, Th. J., Vos, C. M. P., Westers, P., & Croiset, G. (2013). How motivation affects academic performance: A structural equation modelling analysis. *Advances in Health Sciences Education, 18*(1), 57–69. <https://doi.org/10.1007/s10459-012-9354-3>
- Lambrou, P., Kontodimopoulos, N., & Niakas, D. (2010). Motivation and job satisfaction among medical and nursing staff in a Cyprus public general hospital. *Human Resources for Health, 8*(1), 26. <https://doi.org/10.1186/1478-4491-8-26>
- Leontieva, L. S., Khalilova, T. V., Galochkina, M. V., Symaniuk, E. E., & Spirchagova, E. N. (2017). Factors of motivation in the professional activity of medical staff. *Revista ESPACIOS, 38*(33). <http://www.revistaespacios.com/a17v38n33/17383312.html>
- Levy, A., DeLeon, I. G., Martinez, C. K., Fernandez, N., Gage, N. A., Sigurdsson, S. Ó., & Frank-Crawford, M. A. (2017). A quantitative review of overjustification effects in persons with intellectual and developmental disabilities: Overjustification and Intellectual Disabilities. *Journal of Applied Behavior Analysis, 50*(2), 206–221. <https://doi.org/10.1002/jaba.359>
- Lewandowski, R. A., & Cirella, G. T. (2022). Performance management systems: Trade-off between implementation and strategy development. *Operations Management Research. https://doi.org/10.1007/s12063-022-00305-4*
- Lo Storto, C., & Goncharuk, A. G. (2017). Efficiency vs effectiveness: A benchmarking study on European healthcare systems. *Economics & Sociology, 10*(3), 102–115.
- Mathauer, I., & Imhoff, I. (2006). Health worker motivation in Africa: The role of non-financial incentives and human resource management tools. *Human Resources for Health, 4*(1), 24. <https://doi.org/10.1186/1478-4491-4-24>
- Neittaanmäki, L., Gross, E. B., Virjo, I., Hyppölä, H., & Kumpusalo, E. (1999). Personal values of male and female doctors: Gender aspects. *Social Science & Medicine, 48*(4), 559–568. [https://doi.org/10.1016/S0277-9536\(98\)00375-X](https://doi.org/10.1016/S0277-9536(98)00375-X)
- Ommering, B. W. C., van Blankenstein, F. M., Waaijer, C. J. F., & Dekker, F. W. (2018). Future physician-scientists: Could we catch them young? Factors influencing intrinsic and extrinsic motivation for research among first-year medical students. *Perspectives on Medical Education, 7*(4), 248–255. <https://doi.org/10.1007/s40037-018-0440-y>
- Polejaev, K. L. (2006). *Motivation of labor of doctors of a large versatile hospital.*
- Roland, M., & Dudley, R. A. (2015). How Financial and Reputational Incentives Can Be Used to Improve Medical Care. *Health Services Research, 50*(S2), 2090–2115. <https://doi.org/10.1111/1475-6773.12419>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78.
- Smilianov, V. A., Smilianova, O. I., Gruzieva, T. S., Vygivska, L., & Rudenko, L. A. (2017). Study of motivational factors in doctors in respect of healthcare quality improvement. *Wiadomosci Lekarskie (Warsaw, Poland: 1960), 70*(1), 27–31.
- Steinberg, L., & Cauffman, E. (1996). Maturity of judgment in adolescence: Psychosocial factors in adolescent decision making. *Law and Human Behavior, 20*(3), 249–272. <https://doi.org/10.1007/BF01499023>
- Tsounis, A. (2014). Motivation among Physicians in Greek Public Health-Care Sector. *British Journal of Medicine and Medical Research, 4*(5), 1094–1105. <https://doi.org/10.9734/BJMMR/2014/6821>

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- Vallerand, R. J., & Blssonnette, R. (1992). Intrinsic, Extrinsic, and Amotivational Styles as Predictors of Behavior: A Prospective Study. *Journal of Personality*, 60(3), 599–620. <https://doi.org/10.1111/j.1467-6494.1992.tb00922.x>
- Vitenko, N. V. (2012). *Medico-social research of the state and formation of human resources of doctors in modern conditions*, PhD thesis, St. Petersburg
- Westenberg, P. M. (2008). De jeugd van tegenwoordig! *Diesoratie (Verkort) Uitgesproken Door Prof.Dr. P.M. Westenberg Hoogleraar Psychologie, in Het Bijzonder Onwikkelingspsychologie Tijdens de 433e Dies Natalis*. <https://hdl.handle.net/1887/19613>
- Willis-Shattuck, M., Bidwell, P., Thomas, S., Wyness, L., Blaauw, D., & Ditlopo, P. (2008). Motivation and retention of health workers in developing countries: A systematic review. *BMC Health Services Research*, 8(1), 247. <https://doi.org/10.1186/1472-6963-8-247>
- Wu, H., Li, S., Zheng, J., & Guo, J. (2020). Medical students' motivation and academic performance: The mediating roles of self-efficacy and learning engagement. *Medical Education Online*, 25(1), 1742964. <https://doi.org/10.1080/10872981.2020.1742964>
- Xie, X. Q., & Su, X. H. (2011). Research on Public Hospital Reform and Medical Staff Incentive Mechanism in China. *Applied Mechanics and Materials*, 55–57, 737–741. <https://doi.org/10.4028/www.scientific.net/AMM.55-57.737>
- Yates, J., Smith, J., James, D., & Ferguson, E. (2009). Should applicants to Nottingham University Medical School study a non-science A-level? A cohort study. *BMC Medical Education*, 9(1), 5. <https://doi.org/10.1186/1472-6920-9-5>
- Zhang, S. X., Chen, J., Jahanshahi, A. A., Alvarez-Risco, A., Dai, H., Li, J., & Patty-Tito, R. M. (2022). Succumbing to the COVID-19 Pandemic—Healthcare Workers Not Satisfied and Intend to Leave Their Jobs. *International Journal of Mental Health and Addiction*, 20(2), 956-965.