Gender Differences in Managerial Effectiveness and the Role of Transformational Leadership and Intellectual Humility

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Abstract

Prompted by the findings of gender differences in leadership outcomes, in this study we set out to explore gender differences in managers' leadership style and behavior (transformational leadership and expressed intellectual humility) as rated by their subordinates, as well as in work attitudes (perceived organizational support and work engagement) of their subordinates. Our results indicated that female managers are perceived by their subordinates as being significantly more transformational and intellectually humble than male managers. However, there were no differences in work attitudes between subordinates of female and male managers. Still, the mediation analysis showed that both perceived transformational leadership and intellectual humility of managers mediated the relationship between gender and subordinates' work attitudes. We argue that transformational leadership style and intellectual humility might be the basis of women's, but not men's, managerial efficacy and call for additional research of gender differences in leadership styles, behaviors and effectiveness.

Keywords: gender, transformational leadership style, intellectual humility, perceived organizational support, work engagement

Introduction

Leaders oversee organizational resources and coordinate other employees' work activities, thus playing a key role in achieving business goals – research shows that between 14% and 45% of an organization's performance can be explained by

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executive leadership (Day & Lord, 1988; Joyce et al., 2003). All the more worrying is the fact that organizational leaders are not particularly successful in their roles; more than 50% of managers make decisions that lead to unwanted outcomes (Hogan & Kaiser, 2005; Kaiser et al., 2008; Nutt, 2002) and majority of leaders perform their role unsuccessfully (over 50%; Hogan et al., 2010).

However, more recent studies show that men and women are not equally (un)successful in management roles. Numerous studies link higher percentage of women in comparison to men in company's top management positions with positive organizational results (Catalyst, 2007; Eagly et al., 2003; Krishnan & Park, 2005; Desvaux et al., 2007; Perryman et al., 2016; Post & Byron, 2015; Roth et al., 2012; Wilson & Atlantar, 2009). It is important to emphasize here that it is still unclear what lies at the root of these correlations. One possibility is that companies with more women on their boards are generally more successful, so they invest more in achieving gender equality. A further possibility is that these companies are, simply, more open to new experiences, which results in diversity hiring and additionally makes them more successful in adapting to different market challenges. Finally, it is also possible that male and female managers, in fact, do act somewhat differently (e.g., Eagly et al., 1995). In our paper, we explore the last explanation.

What do Women do Differently Than Men That is Associated with Leadership Success?

One of the more consistent findings in the literature on gender differences in leadership is higher ratings of female leaders with the transformational leadership style (Burke & Collins, 2001; Eagly & Johannesen-Schmidt, 2001; Eagly et al., 2003; Hajnel & Vučenović, 2014). Transformational leadership style includes several components: idealized influence that stems from a leader openly sharing his/her views on important issues, inspirational motivation that includes providing a vision and explaining the purpose of team and individual activities, intellectual stimulation that refers to encouraging employees to look differently at their work tasks and questioning usual ways they are being performed, and finally, individual consideration that consists of giving individualized approach to each of the subordinates. Research shows that the transformational leadership style is associated with a number of positive organizational outcomes. Employees whose managers exhibit transformational leadership style are generally more engaged, more satisfied, more efficient, more loyal to the organization, more often show responsible organizational behavior, as well as greater trust and satisfaction with their superiors (Dumdum et al., 2013; Hoch et al., 2018; Judge & Piccolo, 2004; Wang et al., 2011). This was also confirmed in Croatian context where, for example, manager's transformational leadership predicted higher identification with the organization (Jakopec et al., 2013), higher job satisfaction and organizational commitment (Pomper & Malbašić, 2016).

At the same time, men in leadership role more often than women express a *laissez-faire* leadership style (Eagly et al., 2003) that is generally associated with avoiding any managerial responsibilities. In sum, leadership styles more prevalent in women are positively associated with management effectiveness, while those more prevalent in men are not associated or are negatively associated with management effectiveness. These findings strongly suggest that the presence of women in management positions might have positive organizational effects and that one of the potential reasons is a stronger inclination of women managers to use transformational leadership style.

Besides transformational leadership, an additional construct that has gained increased research attention lately, and which could underlie gender differences in leadership effectiveness, is expressed intellectual humility (Owens & Hekman, 2012). It is defined as a characteristic related to interpersonal relationships that manifests itself in the desire of an individual to: a) accurately evaluate own capabilities, b) appreciate others' strengths and contributions, and c) learn and be open to new ideas and feedback (Owens et al., 2013). This theoretical groundwork was established by Owens and Hekman (2012), considering that an intellectually humble manager is the one who is "down-to-earth" and represents a stronghold for the development of others. Managers' respectful demeanor encourages subordinates to do their best, which ultimately results in greater team productivity. This theory is supported by a number of findings emphasizing a positive correlation between managers' intellectual humility and subordinates' work results (Ou et al., 2015; Owens & Hekman, 2015; Owens et al., 2013; Porter & Schumann, 2018; Zmigrod et al., 2019).

Owens et al. (2013) found that leaders' intellectual humility positively correlated with job engagement of their team members, and negatively with employee turnover. Additionally, their findings showed that intellectual humility was a better predictor of both individual and team results than managers' individual characteristics such as conscientiousness or general intelligence. Other, real-life findings show that CEOs' humble behavior affects the behavior of top executive teams in a way that they become more inclined to cooperate, exchange information, make joint decisions, and are committed to the same vision (Ou et al., 2015). Leaders' humble behavior, in fact, facilitates the collective humility of the employees, further encouraging interpersonal cooperativeness which, in turn, improves the team's work performance (Owens & Hekman, 2015). Such findings are additionally supported by the multicultural research carried out in organizations in China, Singapore, and Portugal – the managers' expressed intellectual humility advanced team results through the increase in psychological capital (efficacy, optimism, hope, and resilience) and more effective task allocation (Rego et al., 2019). Despite being more and more recognized as an important component of managers' effectiveness, intellectual humility is still in its 'scientific infancy', as much more empirical evidence is needed.

Previous studies have implied the possibility that women are generally humbler than men and that these differences persist in different cultures (Furnham et al., 2001). The pattern seems to exist in managerial positions as well. For example, female managers give lower grades when self-assessing their work performance than their male colleagues do, and those grades also tend to be lower than the grades given to them by their superiors (Wohlers & London, 1989) or colleagues (Herbst, 2020). This suggests that female managers are humbler in this regard and that intellectual humility might as well be an additional important component of greater managerial efficiency of women in comparison to men (Chamorro-Premuzic, 2019).

Current Study

The aim of this study was to examine gender differences in the indicators of good leadership, as well as in subordinates' work attitudes. Specifically, we aimed to assess the differences between men and women in their tendencies towards transformational leadership style and intellectual humility and examine whether their subordinates differ in their job engagement and perceived organizational support. Additionally, we wanted to investigate whether eventual differences in engagement and experience of organizational support between employees with male vs. female manager would be driven by differences in managers' transformational leadership style and humility. Stated differently, we were interested to see whether leadership styles and humility would mediate the relationship between managers' gender and subordinates' work attitudes.

Considering the fact that self-assessment is subjected to *self-serving bias* and results in generally overestimation of oneself (Mount & Scullen, 2001), we measured both transformational leadership and intellectual humility of managers through subordinate ratings. Subordinate ratings seem to be a suitable approach considering the nature of managerial work because managers actually perform their role through the work activities of their subordinates, thus their efficiency is reflected in the motivation and work behavior of their subordinates (Sutton, 2010). In other words, satisfied, engaged, and motivated employees are, in fact, indicators (among other things) of good management. This is why we asked subordinates, in addition to evaluating their superiors based on the above-mentioned traits, to evaluate their own job engagement and perceived organizational support.

Job engagement refers to how involved individuals are in the work they do, and how passionate and enthusiastic they are about their job (Schaufeli, 2013). A large study, including 8,000 business units in 36 different organizations, showed that the departments in which employees expressed high above-average job engagement performed better in various studied parameters – productivity, customer satisfaction, profitability, turnover, and accidents at work (Harter et al., 2002). Perceived organizational support is a construct that reflects how assured employees are that the organization values their attribution and cares for their overall welfare (Eisenberger

et al., 2020). It encourages employees' stronger emotional connection with the company and its expectations, which leads to their greater willingness to invest additional effort in achieving business goals (Eisenberger et al., 1986). Therefore, it makes sense to measure these employee-level outcomes as a good proxy for positive outcomes at organizational level.

Method

Participants

137 managers participated in the present study ($M_{\text{(age)}} = 45.16$, SD = 10.47; 51% female) who work full time and supervise at least 3 employees. The range of work experience in the sample ranges from 1 to 46 years (M = 21.15, SD = 10.00). Regarding the level of education, 26.8% of the surveyed managers had a secondary education, 11.4% had a higher education, 53.7% had a university degree, and 8.1% had a doctorate degree. The number of subordinates varied from 2 to 1,400. Majority (55.7%) of managers had between 2–10 subordinates with and 6.6% having more than 100 subordinates. 56.3% of managers worked in a domestically-owned private company, 22.3% in a foreign-owned private company, 4.5% in a mixed-owned private company, 12.5% in a state-owned company, and 4.5% in a public institution. 16.1% of surveyed managers worked in a company with 10 employees, 23.4% in a company with between 10 and 50 employees, 13.7% in a company with between 50 and 100 employees, 10.5% in a company with between 100 and 500 employees, and 36.3% in a company which had more than 500 employees. In our sample, 81% of managers have been rated by two of their subordinates, 11% by one, 6% by three, and 2% by four subordinates. Prior to further analyses, for managers who had more than one subordinate rating, we calculated their average subordinate rating. Due to the preservation of anonymity, no demographic data was collected for subordinates.

Procedure

The study was conducted online. Managers were approached by psychology students who helped with the recruitment. If they agreed to participate, they were forwarded the link to an online survey that contained a set of questionnaires, some of which are not reported in this study (the total time to complete the whole questionnaire was between 45 minutes and one hour). To ensure managers' anonymity, managers participated under the unique code that they themselves created at the beginning of the questionnaire and that could in no way be linked to their identity. Managers were incentivized for their participation and honest responding with a 50kn [6.64 EUR] gift certificate and a possibility of getting personalized feedback about their score. Managers were also asked to recruit a minimum of two of their subordinates and to forward them a link to another survey

that contained questionnaires on which subordinates rated their managers and their own attitudes toward work (e.g., job engagement and perceived organizational support). In addition to the link, managers provided their subordinates their unique code which subordinates entered at the beginning of their questionnaire, which allowed us to link managers' responses to their subordinates' responses. Importantly, only the authors had access to both managers' and subordinates' responses and there was no way for managers to see the responses of their subordinates or vice versa. When giving personalized feedback to managers, this was only related to the scores on questionnaires that they themselves completed, and not the ones their subordinates filled in. Subordinates were reassured that their responses were completely confidential and that their managers will not have access to the data and asked to be completely honest in their responses. To additionally increase their sense of security and anonymity, we did not ask subordinates for any personal information, including socio-economic data.

Instruments

Global Transformational Leadership Scale (Carless et al., 2000). The scale consists of seven items indicative of a transformational leadership style (e.g., "Exhibits a clear and positive vision of the future"). The task of the subordinates was to assess on a five-point scale (1 = never, 5 = very often) how much the statements refer to their supervisor, that is, how often their supervisor engages in the described behavior. The total score on the scale was calculated as the average of the assessments on all seven items.

Expressed Humility Scale (Owens et al., 2013). Intellectual humility was measured with the expressed humility scale consisting of nine items, three measuring each expressed intellectual humility dimension – willingness to view oneself accurately (e.g., "This person actively seeks feedback even if it is critical."), appreciation of other strengths (e.g., "This person shows appreciation for the unique contribution of others."), and teachability ("This person is willing to learn from others."). Participants rated the degree to which each of the item describes their manager on a five-point scale (1 = completely disagree, 5 = completely agree). The total score was calculated as an average of ratings on all of the items.

Utrecht Work Engagement Scale (Schaufeli et al., 2006) was used to capture job engagement. The scale contains nine items that measure three dimensions (three items for each dimension) of work engagement, energy, dedication, and immersion. An example item for the energy dimension states: "At my job I feel like I'm bursting with energy." Subordinates responded to each particle on a scale of 0-6 where 0 means "I never feel that way" and 6 means "I always feel that way". The total result is the average of the assessments on all nine particles.

Perceived Organizational Support Scale (Eisenberger et al., 1986). Perceived organizational support represents a set of global beliefs concerning the extent to

which an organization values contribution of its employees and cares about their well-being. We measured it with eight items, where participants indicated their level of agreement with the statements (e.g., "This organization really cares about my well-being") on a seven-point scale (1 = completely disagree, 7 = completely agree). We calculated total score as an average level of agreement on these eight items.

Results

Prior to conducting correlational analysis to investigate the relationship between gender and other variables of interest, we are providing descriptive statistics of our focal variables in Table 1.

Table 1Descriptive Statistics of Our Focal Variables

Variable	Mean	SD	Min	Max	Cronbach α	Skewness	Kurtosis
TL	4.09	0.67	1.57	5	.95	-1.24	1.83
Int. hum.	4.26	0.73	1.22	5	.96	-1.73	3.83
Work eng.	4.17	0.62	2.56	6	.87	0.60	-0.20
POS	4.71	1.00	2.63	7	.76	0.23	0.15

Note. TL = Transformational leadership; Int. hum. = Intellectual humility; Work eng. = Work engagement; POS = Perceived organizational support.

Two things are evident from Table 1. First, all our measures are negatively asymmetric, meaning that subordinates tended to rate their managers quite positively on transformational leadership and intellectual humility. Similarly, they rated their own job engagement and perceived organizational support also quite high. Second, each of our measures exhibited a fairly good reliability in terms of internal consistency (range .76 to .95). To answer our main research question about gender differences in indicators of good leadership and subordinate work attitudes, we conducted a correlational analysis, with particular interest in the correlation between gender and outcomes. Although relatively low values of skewness and kurtosis indicate that our data did not show extreme departures from a normal distribution (e.g., Kline, 2015), both Kolmogorov-Smirnov and Shapiro-Wilk tests for normality of distributions of total scores were significant for all the variables except perceived organizational support, indicating their significant deviation from the normal distribution. Therefore, we report the bootstrapped Pearson's correlations (bootstrapping was done by creating 5000 bootstrap samples and using them to estimate standard errors and confidence intervals), a method robust to violations of normality in the data (e.g., Field & Wilcox, 2017). The results of this analysis are shown in Table 2.

 Table 2

 Correlations among Our Focal Variables

	Gender	TL	Int. hum.	Work eng.	POS
Gender	1	.25*	$.20^{+}$.00	.02
TL		1	.76**	.32**	.02 .39**
Int. hum.			1	.33**	.42**
Work eng.				1	.45**
POS					1

Note. TL = Transformational leadership; Int. hum. = Intellectual humility; Work eng. = Work engagement; POS = Perceived organizational support. p = .055; p < .05; p < .05; p < .01.

Positive correlations between gender and transformational leadership and intellectual humility indicate that subordinates perceived that their female managers showed more transformational leadership and expressed greater intellectual humility than their male counterparts. At the same time, leader's transformational style and intellectual humility were positively related with employee's job engagement and perceived organizational support. It must be noted that, though in expected direction, the correlations were relatively small (.25 and .20). Given that female gender was positively related to employees' perceptions of their managers and these perceptions were positively related with engagement and perceived organizational support, it was somewhat surprising to see a complete lack of correlation of gender with engagement and perceived support.

However, manager's gender and employee outcomes could and probably are related through many different mechanisms that operate in different direction and the lack of "total effect" (i.e., a correlation between gender and engagement/perceived organizational support) does not imply necessary the lack of indirect effect (e.g., Hayes, 2017; Zhao et al., 2010). In other words, it is still possible that female managers, because they are perceived as more transformational and humbler, have more positive effects on their subordinates' work and organizational attitudes compared to their male counterparts. Stated differently, even though the total effect of gender on engagement and perceived organizational support is not significant, it is still possible that indirect effect (mediated through transformational leadership or intellectual humility) might be significant. Therefore, we have conducted a mediation analysis using a PROCESS macro for SPSS (Hayes, 2017) to see whether perceptions of transformational leadership and intellectual humility mediate the relationship between gender and employee engagement and perceived organizational support. PROCESS macro allows for testing many models of different levels of complexity for estimating moderation and mediation effects between variables. In our case, we tested the simplest mediation model with one antecedent variable (X), one mediator (M) and one consequent variable (Y). In essence, this model tests two linear regressions:

$$M = iM + aX + eM$$
$$Y = iY + c'X + bM + eY$$

where iM and iY are constants, eM and eY are errors in the estimation of M and Y, respectively, and a, b, and c' are the unstandardized regression coefficients given to the antecedent variables in the model in the estimation of the consequents (Hayes, 2017). This allows us to estimate the direct effect of X on Y (c^{2}) , as well as an indirect effect through the mediator (the product of a and b; $a \times b$). In this simple mediation model, the total effect is a sum of direct and indirect effect, and it represents the bivariate relationship between the variables. The significance of indirect effects is calculated based on confidence intervals obtained with bootstrapping procedure on 5000 samples. If confidence interval does not include 0, the effect is considered to be significant.

With these criteria, based on 95% confidence interval, transformational leadership was a significant mediator of relationship between gender and both employee engagement (axb = .10, 95% CI [.01, .22]) and perceived organizational support (axb = .20, 95% CI [.04, .42]). Unlike indirect effects, direct effects of gender on engagement (c' = -.10, 95% CI [-.35, .15]) and perceived organizational support (c' = -.16, 95% CI [-.55, .21]) were non-significant. Intellectual humility was a significant mediator only when looking at 90% confidence intervals, meaning that we are somewhat less certain in these effects compared to the previous. The indirect effects of gender through intellectual humility were axb = .08, CI [.01, .16] for employee engagement and axb = .17, 90% CI [.03, .34] for perceived organizational support. The direct effects were again non-significant (c' = -.09, 90% CI [-.28, .12] for engagement and c' = -.14, 90% CI [-.45, .18] for perceived organizational support).

Discussion

In the present study, subordinates reported that their female managers more frequently used transformational leadership style as well as expressed greater intellectually humility compared to their male colleagues. Given the fact that both studied constructs are related to managerial performance, it would be expected that subordinates with female superiors were more satisfied at work and more engaged. However, the results of the present study do not fully support this expectation. In our sample, subordinates were equally engaged and perceived equal levels of organizational support irrespective whether their supervisor was male or female. Nevertheless, the results of the indirect effect still show that transformational leadership and intellectual humility can be significant mediators of leadership efficiency, leading to positive outcomes in women, but not in men. Therefore, those two characteristics of female managers could be responsible for their subordinates

feeling more engaged and generally more satisfied at work, but it remains unexplained which characteristics of male managers affect their subordinates' satisfaction. According to these findings, we can assume that men and women in leadership position reach the same goal in different ways.

We shall focus on the transformational leadership style first and address why the given results might be expected. In their meta-analysis, Judge and Piccolo (2004) found a strong correlation between transformational and transactional leadership styles, which indicates that the two are not the opposite poles of the same dimension. Jex and Britt (2014) concluded that certain meta-analyses prefer one style over the other, depending on the type of tasks that employees are asked to perform, and that a good theoretical framework of the components of each individual style is needed. Nevertheless, there is a possibility that the transformational leadership style is not suitable in all situations, or that the transactional leadership style, which men are more inclined to adopt, is sometimes desirable for achieving a business goal. Along those lines, in their meta-analysis, Judge and Piccolo (2004) showed that contingent reward, a component of transactional leadership leads to favorable organizational outcomes to the similar extent as transformational leadership.

When it comes to intellectual humility, there are some indications that women use it as a tool for achieving their own aims as it promotes better judgment and making higher quality decisions. Intellectual humility, especially its openness to new ideas and feedback aspect, strongly resembles the actively open-minded thinking construct (Baron, 2000). The core characteristic of actively open-minded thinking is an active search for and fair treatment of arguments, proofs, and ideas that might overthrow our current beliefs or conclusions, as well as the resistance towards overconfidence in one's own conclusions and decisions (Baron, 2018, 2019). Research has shown that active open-minded thinking is the closest to the so-called rational thinking and that individuals more inclined to this way of thinking make better judgments and decisions. In particular, they are less prone to cognitive errors and biases that result in worse judgments (Erceg, Galić, et al., 2022; Stanovich et al., 2018), they less often believe in unprovable claims of conspiracy theories and superstitions (Erceg, Ružojčić, et al., 2022; Pennycook et al., 2012), are better at predicting future events (Mellers et al., 2015), and are better at distinguishing fake news from true news (Bronstein et al., 2019). As decision-making is considered one of the most important managerial competencies in most competency models (e.g. Bartram, 2005; Borman & Brush, 1993; Dierdorff & Rubin, 2006; Guenole et al., 2011; Hogan & Warrenfeltz, 2003; Katz, 1974; Mumford et al., 2007; Tett et al., 2000; Yukl et al., 2002), it is possible that women, being more intellectually humble, make better business decisions and thus achieve better management results.

The question persists, what do men do then to make their subordinates equally engaged and to make them feel similar organizational support as employees led by women. Chamorro-Premuzic (2019) believes that male managers tend to be more confident. So, one possibility is that, with their assertiveness, men can achieve a

better position in the organization and thus ensure better conditions for their team. Financial and other benefits may be able to compensate for the lack of measured characteristics and enable equally successful achievement of business goals. This might be the missing path that leads to observed total.

The results of the present study should be considered with caution for the several reasons. First, the analyzed sample was relatively small which might mean that some of the effects we obtained are imprecise, but also that we missed some of the effects due to the lack of statistical power to detect them. We tried to circumvent this by sometimes increasing a cut-off p-value for a significant effect from .05 to .10 (or looking at 90% confidence interval), which reduces the chance of false negatives (and effectively increases statistical power), but increases the chance of false positives, so it is not an ideal solution. Furthermore, one potential methodological disadvantage is related to the fact that managers themselves recruited their subordinates for participation which could affect subordinates' responses and skew data. Perhaps, managers recruited subordinates whom they liked and who would rate them favorably on our questionnaire. This could decrease the range of responses and affect the distribution, which could potentially diminish the effect sizes. Furthermore, we had a convenience sample, with respondents that were available to us at the time, thus we cannot claim our sample to be representative. Finally, we were measuring desired traits cross-sectionally without the possibility of controlling other variables. Considering these shortcomings, there is a possibility that we accidentally collected a sample in which men and women differed in the studied constructs, and then attributed differences of interest to transformational leadership style and intellectual humility, and that these findings would not generalize to managerial population. Therefore, our findings are strictly indicative and call for further research on the topic.

Conclusion

Our analyses of managers and their subordinates showed that there exist significant differences in leadership style and behavior between female and male managers - female managers were rated to be more transformational and more intellectually humble than males. Although these traits have been shown to be related to many employee and organizational benefits, in our sample there were no differences in work attitudes between subordinates of female and male managers. Nevertheless, notwithstanding methodological limitations, our findings imply that transformational leadership and intellectual humility could be among the links connecting gender to different employee and organizational outcomes and call for future studies in this direction. One straightforward practical implication that follows from this is that it would be beneficial for companies and their employees to cultivate and develop transformational leadership style and intellectual humility among their current or future leaders and/or select their managers based on their propensity to these traits.

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Rodne razlike u uspješnosti menadžera te uloga transformacijskoga vodstva i intelektualne poniznosti

Sažetak

Potaknuti nalazima o rodnim razlikama u ishodima vođenja, u ovome smo istraživanju ispitali razlikuju li se procjene podređenih o ponašanju i stilovima vođenja nadređenih im menadžera (transformacijsko vodstvo i intelektualna poniznost) te razlikuju li se stavovi o radu podređenih (percipirana organizacijska podrška i radna angažiranost) s obzirom na rod menadžera. Naši su rezultati pokazali da podređeni procjenjuju menadžerice značajno višima na transformacijskome vodstvu i intelektualnoj poniznosti nego menadžere. Međutim, nije bilo razlika u stavovima o radu podređenih ovisno o rodu nadređenih im menadžera. Ipak, medijacijska je analiza pokazala da procijenjeno transformacijsko vodstvo i intelektualna poniznost menadžera posređuju u odnosu između roda menadžera i stavova o radu podređenih. Rezultati upućuju na to da bi transformacijsko vodstvo i intelektualna poniznost mogli biti u osnovi menadžerske učinkovitosti žena, ali ne i muškaraca, uz potrebu za dodatnim istraživanjima rodnih razlika u stilovima, ponašanjima i učinkovitosti vođenja.

Ključne riječi: rodne razlike, transformacijsko vodstvo, intelektualna poniznost, percipirana organizacijska podrška, radna angažiranost

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