

Study on the job performance of Chinese physicians: a moderated mediation model

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Abstract

Background:To explore the mechanisms between achievement motivation and job performance among physicians of public hospitals in China, this article researched the influence of different personality traits on physicians' job performance.

Methods: A survey conducted in 2017, containing samples of 1,523 physicians from eight tertiary grade A hospitals in Harbin, China. A cross-sectional study was applied to data collection about physicians' achievement motivation, job performance, organizational commitment, personality traits and other demographic variables. This paper also analyzed the relationships between physicians' job performance and achievement motivation using a moderated mediation model. Independent t-test and ANOVA were applied to describe and compare the demographic data. Pearson correlation coefficients were used to examine the correlation among the variables. To test the correlation of the eight variables, moderated mediation analysis was performed in this study.

Results:Achievement motivation directly affects job performance of Chinese physicians, and organizational commitment partially mediates the direct effects of achievement motivation on job performance. Additionally, we also found that agreeableness and conscientiousness moderate the strength of the relationships between achievement motivation and job performance mediated by organizational commitment.

Conclusions:Managers in Chinese public hospitals should pay attention to increase physicians' level of achievement motivation, and we recommend to enhance organizational commitment through a reasonable compensation system and active organizational culture. And they should also tend to be conscientiousness or agreeableness in the arrangement. **Key Words** job performance; hospital management; achievement motivation; psychology; moderated mediation model

Background

With China's economy growing, China's medical system is gradually improving, but there still exists severe issues. Based on the data from National Bureau of Statistics of the People's Republic of China, the number of physicians per 1000 people in China in 2013 was 1.9, which was lower than that of the United States—2.5, 3.9 in Germany, and 4.3 in Russia. The problems of Chinese physicians are pressing, which causes a gap among China and high-income countries. Physicians' work nature and characteristics are special because it involves human life and health. Chinese physicians are handed over multiple tasks such as routine diagnosis, clinical teaching, and scientific research[1]. At the same time, the practicing environment of Chinese physicians is not ideal. Frequent occurrence of medical injury cases influence doctors' work attitude at multiple levels, resulting in a decline in the doctor's work motivation and attitude. These reasons will lower doctor's devotion to work, then their efficiency, which in turn affect the overall job performance. The decrease of physicians' performance will injure patients' treatment execution, patients' satisfaction and so on. Job performance refers to the performance of all employees' attitude, behaviors and tasks completion level, which can be divided into individual performance and organizational performance[2]. Individual performance refers to the evaluation from superiors and peers[3]. Organizational performance is in terms of quantity, quality and efficiency of assigned tasks. Generally speaking, organizational performance will also improve accordingly with the improvement of individual performance. Therefore, physicians' job performance has undoubtedly become the focus of hospital administrators and scholars' researches.

Achievement motivation has become one of the important organizational behaviors that affect job performance. The psychologists, Yerkes and Dodson, found that within a certain range, the work efficiency will be enhanced as the motivation intensity increases [4]. At the same time, according to McClelland's achievement needs theory, people with high achievement motivation tend to be more devoted to work and achieve higher performance for enjoying adventurous work environment through positive feedback. Miller put forward that the innovative employees with high job performance are more eager to be motivated in the workplace[5]. Tyagi's research showed that intrinsic motivation positively influenced the job performance of the salesmen[6]. We found that physicians and salesmen share similarities in the aspects of work intensity and work nature. By the inference, the following hypothesis are issued:

H1: There is a positive correlation between physicians' achievement motivation and job performance.

Although some researches have proven that achievement motivation has a positive effect on job performance, the underlying mechanisms of this relationship are still unknown. Is there any other intermediate variable that plays a crucial role?

In the past few decades, organizational commitment has been the focus of enterprises. Organizational commitment can be defined as the relative strength of individuals' recognition and participation in a particular organization[7]. A large amount of researches of Allen & Meyer discovered that the employees with high organizational commitment had a strong sense of identity and belonging to their organizations. They were proud of being a member of the organizations, and were willing to make sacrifices for the group benefits[8]. At the same time, the theory of social exchange also holds that employees with highly organizational commitment have a great sense of participation and dedication, which will lead to better performance[9]. A meta-analysis of Rickett confirms that there is a strong positive link between emotional commitment and job performance[10]. Meanwhile, Jaramillo also proved this strong link in a meta-analysis to salesmen[11]. Because of the unique nature of their job, physicians will devote more time and energy to their work, so they are more likely to have emotional attachment to the hospital.

In addition, Miller believes that employees with high achievement motivation will be more connected with the organization[5]. In their meta-analysis, Mathieu and Zajac also provided evidence to support that achievement motivation, as a motivating factor, is significantly associated with organizational commitment[12]. Adeyemo investigated the relationship between motivation and organizational commitment, and came to the conclusion that motivation has a significant impact on the degree of personal commitment to work[13]. Achievement motivation can be seen as the predecessor of organizational commitment, which in turn can be seen as an antecedent variable for key work outcomes. In a study of bank employees, Panagiotis confirmed that the organizational commitment mediated the effects of achievement motivation on job performance[14]. Based on this reference, the following assumptions are made:

H2: The doctor's organizational commitment mediates the effect of achievement motivation on job performance.

Personality is the internal tendency of individual behaviors. It is manifested in the integration of individual needs, motivation, attitude, personality, and performance when the people adapts to environments. With the adaptation to society, a stable personality will be formed. Personality psychology believes that people with different personalities will show different needs, attitudes, characters, and performances when adapting to organizations and society, which would impact their learning, life, and work. In the literature review on organizational behavior, we found that personality played the role of moderator in the effect of antecedent variables of job performance. For example, in a study of 451 insurance sales employees, Uppal, Nishant found that openness and conscientiousness played a positive moderating role in prior related work experience and current job performance, while neuroticism caused a negative moderation effect[15]. In a study of 167 Malaysian service providers, AK Othman found that regulation of emotion interacted with neuroticism, thus affecting peer evaluation of job performance[16]. Zhou also found personality will moderate coping styles to influence the Chinese physicians anxiety symptoms[17]. We wonder that whether personality plays the same role in this study. Does personality also moderate the mediating effect of organizational commitment on job performance? Therefore, this study uses personality as the moderator and proposes the third hypothesis:

H3: Personality moderate the mediating effect of organizational commitment on job performance.

Method

Participants and procedure

This cross-sectional survey was performed in Harbin city, Heilongjiang Province, which is located in the northeast of China. There are 13 'tertiary grade A hospitals' in Harbin City, which have a bed number over 500 and provide both comprehensive and specialized medical care with a high level of medical educational and research functions[18]. With random number table, we selected eight hospitals. Cluster sampling procedure was used to recruit a total of 1600 physicians from eight tertiary grade A hospitals in Harbin city.

We have received 1523 questionnaires from the above hospitals(response rate = 95.1%). After excluding invalid and missing data, 1509 questionnaires were valid (94.3%). Participated physicians whose age are within 24~60, and doctors in training had

been excluded. Here the term 'physician' in this manuscript includes medical practitioners from different clinical sections such as Surgery, Obstetrics and Gynecology, Pediatrics, etc. The participants were 769 male(50.96%),740 female(49.04%),age M=36.67,SD=7.78. From the sample characteristics, the sample coverage is relatively wide, and the samples are representative.

Job performance

Job performance of the physicians were measured by Job Performance Scale, which was introduced by Motowidlo, Borman and Scotte, as revised by Qiang Lin et al [19], which was developed in 2009 to assess the level of job performance. The scale includes 33 items, with each item scored on a 5-point scale (1, never and 5, always). A high score indicates a high level of job performance. The Chinese version of the scale has been widely used in Chinese populations and has good validity and reliability (Cronbach's alpha = 0.96) .

Achievement motivation

The 30-item Achievement Motivation Scale, as revised by Ye et al. [20], was applied to measure the level of achievement motivation in physicians. The scale consists of two subscales (pursue success, avoid failure), and each subscale has 15 items. And each item is scored from 1 (Completely non conforming) to 4 (completely conforming). A high score indicates a high level of achievement motivation. The Cronbach's alpha values for the two independent dimensions were 0.89 and 0.91, respectively.

Organizational commitment

We used the Organizational Commitment Questionnaire to measure organizational commitment. It was revised by Lin et al.[21]. It includes 18 items and each item is scored on a 5-point scale, where 1 means 'strongly disagree' and 5 means 'strongly agree'. A higher score indicates a high level of organizational commitment. The questionnaire is highly reliable and suitable for the Chinese population. It has high reliability and validity (Cronbach's alpha =0.91), and is suitable for the Chinese cultural background.

Personality

Personality was measured using the NEO Personality Inventory ,which was introduced by the American psychologists Costa and McCrae in 1987, as revised by Zhang et al. [22]. There are 25 items , and the five-point scale of 1 ~ 5 points is used to divide into five subscales, including: neuroticism, extraversion, openness, agreeableness and conscientiousness. The items of neuroticism are reverse-scored. The scale is suitable for the Chinese population and has good validity and reliability; the internal reliability of each subscale has been measured by Cronbach's alpha (range 0.66–0.84)[23]and the Cronbach's alpha is 0.84 in this study.

Statistical analyses

Preliminary analyses.

Descriptive analysis, one-way analysis of variance (ANOVA), and an independent t-test were used to describe and compare the demographic data (sex, age, education level, marital status and professional qualifications). The correlations between the study variables were examined using Pearson correlation coefficients. Correlational analyses of the eight variables were performed using SPSS 22.0 for Windows. Statistical significance was defined as a two-tailed p-value of <0.05.

Mediation and moderation analyses.

The hypothesized moderated mediation model was tested by means of the Process macro 2(model 58) developed for SPSS[24] (Hayes, 2013).This macro uses a bootstrapping procedure to estimate the conditional indirect effects of an independent variable (achievement motivation) through a mediator (organizational commitment) on a dependent variable (job performance) at five dimensions of a moderator (personality). We used 5000 bootstrap samples in the present study and determined the mediating effect of the 95% confidence interval. And we shows this effect by forest graph using Stata[25]. In order to better display the moderation effect, we followed Aiken and West's[26] procedures and the conditional indirect effects were examined at one SD

above the mean, at the mean, and at one SD below the mean for the personality values used as the moderator variable of interest.

Results

Descriptive Statistics and Preliminary Analyses

The means, standard deviations and intercorrelations for all included study variables are presented in Table 1. Achievement motivation were positively associated with job performance($r = .138$ $p < .01$) and positively associated with organizational commitment($r = .061$; $p < .01$). In the same vein, organizational commitment was positively related to job performance($r = .429$; $p < .01$) and neuroticism, extraversion, openness, agreeableness, conscientiousness all have a positively relationship with job performance. The results showed that the higher the achievement motivation, the greater the organizational commitment of physicians, and the higher the job performance. According to the analysis of job performance, demographic variables also affect employee performance. Considering that job performance may be related to sex, age, marital status and other demographic variables. We analyzed the correlation between job performance and gender, age, and family socioeconomic status (this study is based on education level). The results showed that only age was significantly related to job performance. Therefore, in the subsequent analysis, age was used as control variables.

Moderated Mediation Analyses

When moderated mediation analysis was performed, organizational commitment appeared to be significant mediators. Table 2 shows the results of the moderated mediation analysis when treating organizational commitment as the mediator, and when the five dimensions in the personality scale[22] were used as moderators in the relationship between achievement motivation and job performance. The results suggested that the interaction between organizational commitment and the agreeableness dimension and conscientiousness dimension was significant for job performance. Thus, the effect of organizational commitment on job performance was moderated by the agreeableness dimension and conscientiousness dimension in the personality inventory of NEO-FFI [22]; however, the other three dimensions are not significant.

In order to clarify the direction and trend of adjustment, we draw the agreeableness dimension and conscientiousness dimension in the personality adjustment effect diagram according to the method recommended by Aiken and West[26]. Figure 2 shows that when agreeableness dimension and conscientiousness dimension are high, organizational commitment increases the job performance. To further investigate the regulatory effect, a simple slope analysis was carried out. The results show that the regression slope are 0.612(conscientiousness),0.606(agreeableness), $p < 0.05$ when the level of agreeableness dimension and conscientiousness dimension is below than 1SD deviations, and the regression slope are 0.319(conscientiousness),0.269(agreeableness), $p < 0.05$ when the level of agreeableness dimension and conscientiousness dimension is above than that of 1SD deviations. Figure 2 shows organizational commitment moderated by the agreeableness dimension and conscientiousness dimension in the personality inventory of the NEO-FFI.

To evaluate the conditional indirect effects of the level of achievement motivation on job performance via organizational commitment, as a function of different ranges of the agreeableness dimension and conscientiousness dimension, we used the bootstrap method for analysis. Indirect effects at three levels of the agreeableness dimension and conscientiousness dimension were examined by using the 95% CIs of the bootstrap method. As shown in Fig 3, the conditional indirect effect on job performance arose from burnout via organizational commitment. This effect changed according to the range of the agreeableness dimension and conscientiousness dimension and was weakest at 1 SD above the mean of the agreeableness dimension and conscientiousness dimension. These results indicate that the more points on agreeableness dimension and conscientiousness dimension a physician has, the low the organizational commitment mediating effect of achievement motivation on job performance. The final moderated mediation model is displayed in Figure 1(b).

Discussion

This study investigated the job performance among in Chinese physicians and explored a model of the relationship among achievement motivation, personality traits, organizational commitment, and job performance via a moderated mediation analysis. We found that achievement motivation directly affects job performance of Chinese physicians, and organizational commitment partially mediates the direct effects of achievement motivation on job performance, mediated by organizational commitment. We found that only agreeableness and conscientiousness moderate the strength of the relationships between achievement motivation and job performance. These coincide with the need for more cooperation in medical activities. Previous studies are limited to the direct effect of achievement motivation and job performance and ignored the mechanism of this effect. Therefore, this study reveals the mechanism of achievement motivation and job performance, so as to provide better suggestions for the hospital managers to improve the doctor's performance and to realize the social benefits of the hospital.

Our results showed that there is a strong positive correlation between achievement motivation and job performance in physicians; this is generally consistent with the results of previous studies[27]. Based on Harackiewicz's study, achievement goal can affect the way a person performs a task and represent a desire to show competence[28]. According to McClelland's achievement needs theory (1985), he posits that achievement motive refers to the desire to do well relative to the standard of excellence. Workers with high achievement motivation will thus tend to be more realistic in their career aspirations and consequently work harder and better than their counterparts with low achievement motivation. Physicians are high-knowledge groups, they have received advanced professional education, have a clear career goal, have a higher expectation of life value and pay more attention to individual development. In our study, physicians with high achievement motivation levels were more motivated to succeed, more efficient at work compared to doctors with a rather low level of achievement motivation, so that their job performance would be higher.

Achievement motivation not only had a direct effect on job performance in physicians, but also indirect influence via mediation by organizational commitment. The study also found organizational commitment had a strong positive relationship with job performance. Furthermore, the results showed that the organizational commitment partially mediated the association between achievement motivation and job performance. The results share similarities to previous study[29, 30]. Physicians are trained long-termly and continuously to acquire professional knowledge and clinical practice skills. They have a clear career goal and a higher level of achievement motivation. Physicians with high achievement motivation are highly recognized and willing to devote more time and energy to work and their organizations with high enthusiasm, hence the higher their organizational commitment. People with high organizational commitment also have high levels of emotional input to their organizations. In such an organizational environment, employees not only devote themselves to the work arranged by the organization, but also take on responsibilities. And they could actively offer help to others considering the interests of their organizations, which is conducive to improving the performance of employees.

In particular, our integrated moderated mediation analyses demonstrated general support for our H3. The results indicate that agreeableness and conscientiousness moderate the mediated effect of achievement motivation to job performance. The moderate point is in the second half of the mediation chain, that is, 'the personality of the physicians affects the relationship between organizational commitment and job performance'. While neuroticism, extraversion, openness has no significant effect in this relationship. The explanation may be that agreeableness and conscientiousness focus more on teamwork, which is consistent with the characteristics that medical activities need to be completed jointly by many departments[31]. Conversely, openness, extraversion and neuroticism are more important in personal performance, and will be more prominent in the sales industry[32]. Figure 2 and Fig. 3 reveal the relationship of agreeableness and conscientiousness with organizational commitment and job performance. Agreeableness and conscientiousness enhance the relationship between organizational commitment and job performance. The moderator role of conscientiousness personality is consistent with previous studies[33, 34]. High conscientiousness physicians are more self-disciplined, planned and organized. They devote themselves to every patient, have a comprehensive treatment plan, so that the prognosis and prognosis of patients are better, which enhances the strength of organizational commitment and job performance. Unlike previous studies[35, 36], we found that agreeableness personality also plays a moderator role in job performance. The reason may be that the previous research group is concentrated on the sales staff[32], and they need more competition to get higher job performance, and because of the complexity and uncertainty of the disease, physicians often need consults and cooperation of multiple disciplinary teams. Physicians with high agreeableness score are more willing to help others, pay more attention to cooperation and the realization of organizational

interests[37]. Therefore, physicians with high agreeableness personality score will have higher cure rate and higher job performance.

Based on the above analysis, our research results can provide some suggestions for hospital managers to improve the performance of physicians. Firstly, hospital managers should pay more attention to the individual development of physicians. Because high achievement motivation is not natural, it is cultivated in practical activities. Therefore, organizations and managers should try to create favorable conditions to train doctors with high achievement needs. Secondly, Hospital managers may build a positive organizational culture, improve the sense of organizational policy fairness, construct a reasonable salary system, implement transformational leadership and offer a complete staff career plan to improve the organizational commitment of employees and thus improve job performance and achieve organizational goals[38, 39]. Finally, hospital managers should formulate appropriate strategies for human resource management. And Talents with higher conscientiousness or agreeableness should be tended to when arranging posts (such as the chief of department) who have great pressure or strong work intensity. There are still some limitations in this study, which we leave to future research. First of all, cross sectional design is used in this study. It can't infer the causal relationship between variables. In the future, we can use traced design to test the findings of this study. Secondly, because of the large sample size of this study, the variable measurement adopts the self-reporting method, which may had a lead method effect. In the future, third-party evaluation of work performance and other more objective methods could be used to collect data. In addition, we only sampled the top three hospitals in Harbin. Whether the research results can be extended to other parts of China still need to be tested. Future research will bring hospitals of wider levels into the study.

Conclusion

This is the first model using the moderated mediation model to reveal the association between achievement motivation and job performance among Chinese physicians. There was no clear connection between the level of job performance and sex among physicians. Organizational commitment partially mediated the association between achievement motivation and job performance. Finally, possession of agreeableness and conscientiousness personality moderated the strength of the relationship between achievement and job performance, mediated by organizational commitment; the mediated relationship is stronger in those with a high agreeableness and conscientiousness score than those a lower agreeableness and conscientiousness score.

Declarations

Ethics approval and consent to participate

All procedures involving human subjects will be approved by the Ethics Committee of the Public Health College of Harbin Medical University. The study obtained the consent of all participants and signed an informed consent form prior to the investigation.

Consent for publication

Not applicable.

Availability of data and material

The datasets and/or analyses from the current study will be available from the corresponding authors upon reasonable request.

Competing interests

The authors declare that they have no competing interests" in this section.

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Authors' contributions

BG and BQ participated in study design and conception, data acquisition, data analysis, manuscript drafting, and funding acquisition. BG participated in data analysis and manuscript drafting. JZ, HC, and YX participated in data acquisition. QX participated in data analysis. DW participated in discussion and manuscript revision. QZ, XS, and EZ participated in the design and conceptualization of the study, acquisition of data, and data interpretation. YY and DC participated in the design and conceptualization of study, acquisition of data, revising of the manuscript, acquisition of funding, and supervision. All authors were involved in the manuscript's revision and approved this final version.

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References

1. Analysis of Long-term Overload Work among Medical Staffs in the Tertiary Hospitals. Hospital Management Forum 2013.
2. Lee TW, Mitchell TR, Sablinski CJ, Burton JP, Holtom BC: The Effects of Job Embeddedness on Organizational Citizenship, Job Performance, Volitional Absences, and Voluntary Turnover. *Academy of Management Journal* 2004, 47(5):711-722.
3. Huckman RS, Pisano GP: The Firm Specificity of Individual Performance: Evidence from Cardiac Surgery. *Management Science* 2006, 52(4):473-488.
4. Calabrese EJ: Converging concepts: Adaptive response, preconditioning, and the Yerkes–Dodson Law are manifestations of hormesis. *Ageing Research Reviews* 2008, 7(1):8-20.
5. Miller JF: *Motivating People*. Executive Excellence 2002.
6. Tyagi PK: Relative Importance of Key Job Dimensions and Leadership Behaviors in Motivating Salesperson Work Performance. *Journal of Marketing* 1985, 49(3):76-86.
7. Steers RM: Antecedents and outcomes of organizational commitment. *Administrative Science Quarterly* 1977, 22(1):46-56.
8. Allen NJ, Meyer JP: The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology* 1990, 63(1):1-18.
9. Meyer JP, Paunonen SV, Gellatly IR, Goffin RD, Jackson DN: Organizational commitment and job performance: It's the nature of the commitment that counts. *Journal of Applied Psychology* 1989, 74(1):152-156.
10. Riketta M: Attitudinal organizational commitment and job performance: a meta-analysis. *Journal of Organizational Behavior* 2002, 23(3):257–266.
11. Jaramillo F, Mulki JP, Marshall GW: A meta-analysis of the relationship between organizational commitment and salesperson job performance: 25 years of research. *Journal of Business Research* 2005, 58(6):705-714.
12. Mathieu JE, Zajac DM: A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin* 1990, 108(2):171–194.
13. Adeyemo D.A: Relative Influence of gender and working experience on job satisfaction of primary school teachers. 2001.
14. Trivellas P: Work motivation and job performance of frontline employees: The mediating role of organizational commitment. In: *IEEE International Conference on Industrial Engineering and Engineering Management: 2011*; 2011: 1878-1882.
15. Uppal N, Mishra SK, Vohra N: Prior Related Work Experience and Job Performance: Role of personality. *International Journal of Selection & Assessment* 2014, 22(1):39–51.
16. Othman AK, Daud NM, Kassim RSR: The Moderating effect of Neuroticism on the relationship between Emotional Intelligence and job performance. *Australian Journal of Basic & Applied Sciences* 2011, 5(6):801-813.
17. Zhou J, Yang Y, Qiu X, Yang X, Hui P, Bo B, Qiao Z, Lin W, Wang W: Relationship between Anxiety and Burnout among Chinese Physicians: A Moderated Mediation Model. *Plos One* 2016, 11(8):e0157013.
18. Wang W, Fu C, Zhuo H, Luo J, Xu B: Factors affecting costs and utilization of type 2 diabetes healthcare: a cross-sectional survey among 15 hospitals in urban China. *Bmc Health Services Research* 2010, 10(1):244.

19. Van Scotter JR: Relationships of Task Performance and Contextual Performance with Turnover, Job Satisfaction, and Affective Commitment. *Human Resource Management Review* 2000, 10(1):79-95.
20. Liu D, Ning LU, University S: The Relationship between Achievement Motivation and Internet Addiction of College Students: The Mediating Effects of Immature Defense Style and Career Decision-making Difficulty. *Chinese Journal of Clinical Psychology* 2017.
21. Li-Sha LI, Zhang YQ, Yang Y, Chen CP, Bao L: Correlation Study on Structural Empowerment and Organizational Commitment of Clinical Nurses. *Nursing Journal of Chinese Peoples Liberation Army* 2011.
22. Mccrae RR, Jr PTC: A contemplated revision of the NEO Five-Factor Inventory. *Personality & Individual Differences* 2004, 36(3):587-596.
23. Yao R, Liang L: Analysis of the application of simplified neo-ffi to undergraduates. *Chinese Journal of Clinical Psychology* 2010.
24. Hayes AF: Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. *Journal of Educational Measurement* 2013, 51(3):335-337.
25. Avorn J: Antidepressant use in pregnancy and the risk of cardiac defects.[J]. *New England Journal of Medicine* 2014, 370(25):2397-407.
26. Aiken LS, West SG: Multiple regression: testing and interpreting interactions - Institute for Social and Economic Research (ISER). *Journal of the Operational Research Society* 1991, 45(1):119-120.
27. Dobre O: Employee motivation and organizational performance. *Review of Applied Socio-Economic Research* 2013;5:53-60.
28. Harackiewicz JM, Barron KE, Carter SM, Lehto AT, Elliot AJ: Predictors and consequences of achievement goals in the college classroom: Maintaining interest and making the grade. *Journal of Personality & Social Psychology* 1997, 73(73):1284-1295.
29. Bashaw RE, Grant ES: Exploring the Distinctive Nature of Work Commitments: Their Relationships with Personal Characteristics, Job Performance, and Propensity to Leave. *Journal of Personal Selling & Sales Management* 1994, 14(2):41-56.
30. Benkhoff B: Ignoring Commitment Is Costly: New Approaches Establish the Missing Link Between Commitment and Performance. *Human Relations* 1997, 50(6):701-726.
31. Lehrmann S, Schlieter H, Burwitz M: *Conceptual Modeling for Cooperation-Based Evolution of Medical Treatment*: Springer International Publishing; 2015.
32. Klang A: The relationship between personality and job performance in sales: A replication of past research and an extension to a Swedish context. *Psychology* 2012.
33. Vinchur AJ, Schippmann JS, Switzer Iii FS, Roth PL: A meta-analytic review of predictors of job performance for salespeople. *Journal of Applied Psychology* 1998, 83(4):586-597.
34. Hertz GM, Donovan JJ: Personality and job performance: the Big Five revisited. *J Appl Psychol* 2000, 85(6):869-879.
35. Jiang C, Wang D, Zhou F: Personality traits and job performance in local government organizations in China. *Social Behavior & Personality An International Journal* 2009, 37(4):451-457.
36. Barrick MR, Mount MK, Judge TA: Personality and Performance at the Beginning of the New Millennium: What Do We Know and Where Do We Go Next? *International Journal of Selection & Assessment* 2001, 9(1-2):9-30.
37. Digman JM: Personality structure: Emergence of the five-factor model. *Psychology* 2003, 41(1):417-440.
38. Nabirye RC, Brown KC, Pryor ER, Maples EH: Occupational stress, job satisfaction and job performance among hospital nurses in Kampala, Uganda. *Journal of Nursing Management* 2011, 19(6):760.
39. Zhou P, Bundorf K, Chang JL, Huang JX, Xue D: Organizational culture and its relationship with hospital performance in public hospitals in China. *Health Services Research* 2011, 46(6pt2):2139-2160.

Tables

TABLE 1 Means, Standard Deviations, and Correlations for All Study Variables(N=1509)

Variable	M	SD	1	2	3	4	5	6	7	8	9
1.Age	36.67	7.78	1								
2.Achievement motivation	3.03	10.270	.019	1							
3.Organizational commitment	63.32	10.751	.061*	.429**	1						
4.Neuroticism	15.23	3.251	-.046	.200**	.706**	1					
5.Extraversion	16.40	3.247	-.032	.179**	.135**	-.255**	1				
6.Openness	18.66	3.580	-.002	.443**	.597**	.117**	.161**	1			
7.Agreeableness	18.49	4.062	-.043	.225**	.109**	.019	.637**	.257**	1		
8.Conscientiousness	18.00	3.918	-.015	.233**	.110**	.003	.574**	.232**	.808**	1	
9.Job performance	126.72	18.160	.138**	.410**	.483**	.187**	.232**	.574**	.388**	.384**	1

Note. n = 1509. *p ≤ .05.**p ≤ .01.

TABLE 2 Moderated Mediation analysis for All Study Variables.(N=1509)

Moderators	Predictor		B	SE	t	p
Neuroticism	Mediator model	Constant	58.9375	1.6978	34.7134	.0000
		X	.6670	.1137	5.8685	.0000
		X × Neuroticism	-.0138	.0071	-1.9551	.0508
	Dependent variable model (Y)	Constant	50.6047	11.4926	4.4033	.0000
		X	.4155	.0428	9.7070	.0000
		M	.8861	.1727	5.1297	.0000
		M × Neuroticism	-.0178	.0114	-1.5531	.1206
Extraversion	Mediator model	Constant	55.8219	1.8127	30.7953	.0000
		X	.4422	.1208	3.6588	.0003
		X × Extraversion	-.0003	.0072	-.0478	.9619
	Dependent variable model (Y)	Constant	41.5878	11.8896	3.4978	.0005
		X	.4136	.0421	9.8229	.0000
		M	.9502	.1820	5.2220	.0000
		M × Extraversion	-.0213	.0109	-1.9471	.0517
Openness	Mediator model	Constant	31.4483	1.6125	19.5023	.0000
		X	.2118	.0946	2.2397	.0253
		X × Openness	.0002	.0048	.0355	.9717
	Dependent variable model (Y)	Constant	47.7285	8.5660	5.5719	.0000
		X	.2986	.0410	7.2780	.0000
		M	.4837	.1429	3.3849	.0007
		M × Openness	-.0110	.0076	-1.4547	.1460
Agreeableness	Mediator model	Constant	58.0986	1.7456	33.2821	.0000
		X	.5454	.1124	4.8517	.0000
		X × Agreeableness	-.0053	.0058	-.9220	.3567
	Dependent variable model (Y)	Constant	-24.4985	9.9787	-2.4551	.0142
		X	.3578	.0396	9.0278	.0000
		M	1.7831	.1524	11.7024	.0000
		M × Agreeableness	-.0661	.0084	-7.9172	.0000
Conscientiousness	Mediator model	Constant	58.2893	1.7347	33.6027	.0000
		X	.5565	.1160	4.7972	.0000
		X × Conscientiousness	-.0060	.0061	-.9824	.3261
	Dependent variable model (Y)	Constant	-9.4796	10.1047	-0.9381	.3483
		X	.3501	.0402	8.7038	.0000
		M	1.5676	.1537	10.1969	.0000
		M × Conscientiousness	-.0550	.0086	-6.3840	.0000

Figures



Figure 1

(a). The moderated mediation model applied in this study. Fig1(b).The final moderated mediation model. The link associating the achievement motivation and organizational commitment with job performance is moderated by personality traits.

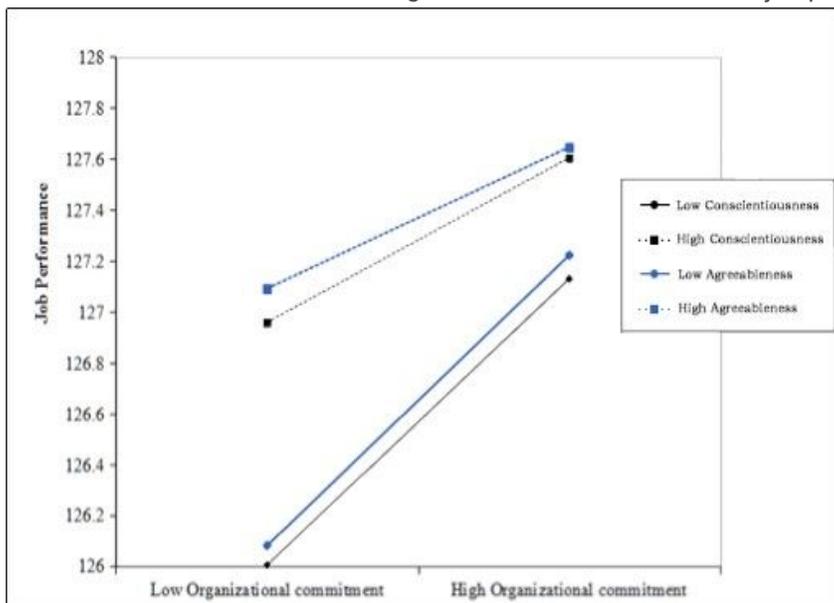


Figure 2

Moderating effect. Agreeableness dimension and conscientiousness dimension moderates the relationship between organizational commitment and job performance among Chinese physicians.

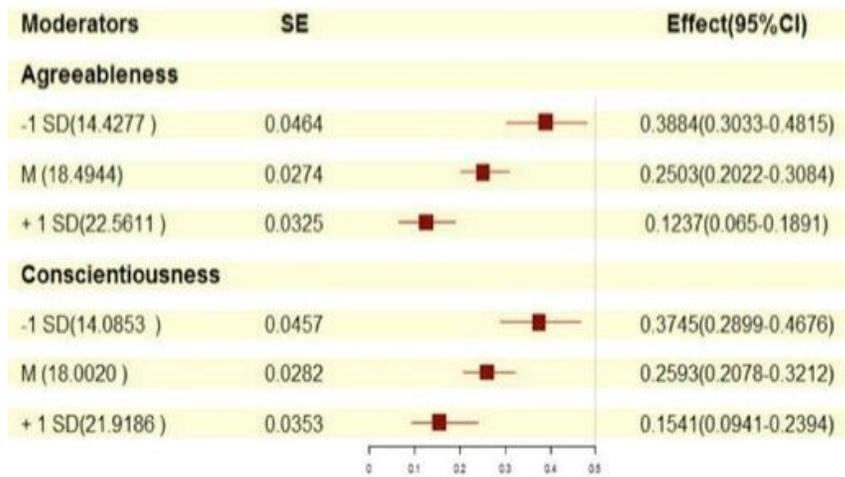


Figure 3

Conditional indirect effect at specific levels of the moderator when treating organizational commitment as a mediator (N = 1509)

Supplementary Files

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