Running Head: JOB TENURE, GMA, JOB STRESS, AND PERFORMANCE

Does Job Tenure increase Human Capital? How General Mental Ability and Low Job Stress jointly augment the Job Tenure – Job Performance Relationship

Andreas Wihler

The Business School. University of Exeter, United Kingdom

James A. Meurs

Coles College of Business. Kennesaw State University, GA, United States

Jochen Kramer

Department of Psychology, University of Bonn, Bonn, Germany

Gerhard Blickle

Department of Psychology, University of Bonn, Bonn, Germany

To be cited as:

Wihler, A., Meurs, J.A., Kramer, J., & Blickle, G. (2021). Does job tenure increase human capital? How general mental ability and low job stress jointly augment the job tenure – job performance relationship. In A. Akande, B. Adetoun, M. Adewuyi, Perrewé, P.L., & Ferris, G.R. (Eds.), *Emerging trends in global organizational science phenomena: Critical roles of entrepreneurship, cross-cultural issues, and diversity.* Hauppauge, NY: Nova Science Publishers.

Correspondence concerning this article should be directed to: Andreas Wihler, E-mail: a.wihler@exeter.ac.uk

Does Job Tenure increase Human Capital? How General Mental Ability and Low Job Stress jointly augment the Job Tenure – Job Performance Relationship

Abstract

The present study seeks to address the mixed results in the literature regarding the job tenure–job performance relationship by considering both individual resources and job context. General mental ability (GMA) is a strong predictor of knowledge acquisition. However, high job stress diminishes employee's ability to learn and to retrieve learned knowledge, thus, mitigating the positive effects of GMA. Based on human capital and conservation of resources theories, we hypothesize that the job tenure–job performance relationship will be stronger when both GMA is high and job stress is low. We tested this hypothesis with two samples (N_1 = 112 fire-fighters; N_2 = 106 employees from social and conventional jobs). Targets provided information on their job tenure and job stress and completed a GMA assessment. Other-raters rated the targets' job performance. In both studies, results confirmed our hypothesis job tenure is only positively related to job performance when GMA is high and job stress is low. Our research shows the importance of considering both individual and contextual moderators that affect the relationship between job tenure and job performance. Theoretical and practical implications as well as limitations are discussed.

Keywords:

Job tenure, GMA, job performance, human capital theory, conservation of resources theory; Personnel Selection; job design; Germany

Does Job Tenure increase Human Capital? How General Mental Ability and Low Job Stress jointly augment the Job Tenure – Job Performance Relationship

Job tenure is one of the most frequently examined variables in organizational and human resource management research. In the past, supported by the concept of boundaryless careers (Arthur & Rousseau, 1996), it was often assumed that organizations and employees alike are facing increasing demands of job mobility (Lam, Ng, & Feldman, 2012) and, thus, reduced job tenure was expected. However, empirical evidence from the United States of America and the European Union (Rodrigues & Guest, 2010) has not supported this expectation. Average job tenure actually slightly increased between 1992 and 2006. Baruch and Vardi (2016) noted that organizations wish to establish long-term contracts because they desired committed and loyal employees who identify with the organization and are engaged. This is in line with human capital theory which stipulates that increasing job tenure in organizations builds human capital (increased job knowledge, improved skills and competencies) that reflects an employee's value to the organization (Becker, 1964).

Although there are theoretical justifications for the role of human capital (Becker, 1964) and empirical evidence for the role of tenure in improving job performance (e.g., the accumulation of job knowledge and skills over tenure; Schmidt, Hunter, & Outerbridge, 1986), when tested as a focal variable of interest, linear effects of job tenure have shown mixed results on performance (Ng & Feldman, 2013). Thus, it becomes increasingly important to investigate under which conditions job tenure exerts its positive influence on organizational outcomes like job performance.

Human capital is built over the course of one's tenure, and having a heightened general mental ability (GMA) would seem to additionally enrich the accumulation of the skills and knowledge that influence learning potential (Becker, 1964). However, regarding GMA's role in

the tenure-performance relationship, results have been mixed (e.g. Hulin, Henry, & Noon, 1990; Schmidt & Hunter, 2004). Thus, whether and how GMA influences the tenure–performance relationship seems to depend on the work context.

The context of organizational behavior has often been underappreciated (Johns, 2006), and we believe an important context that influences whether GMA enhances the tenure–performance relationship is job stress. Heightened job stress decreases the ability to learn (Weiss, 1990) and to retrieve knowledge at work (Sonnentag & Frese, 2013). Thus, we contend that when in the presence of heightened job stress, individuals will direct their resources (e.g., GMA) to coping with the stressor (Hobfoll, 1989), thereby, diverting resources away from the strategic accumulation and application of job knowledge to work performance (Zellars, Perrewé, Hochwarter, & Anderson, 2006). Whereas, when experiencing low job stress, individuals with heightened GMA are able to continue to learn and to apply learning over time, such that tenure will evidence a positive relationship with job performance.

One contribution of our work is to refine job tenure research knowledge, specifying a context where tenure has a positive effect on performance. Additionally, we broaden the research on conservation of resource theory (Hobfoll, 1989), by relating experienced stress and an important personal resource (i.e., GMA) to the examination of a highly practically relevant workplace relationship (i.e., tenure's association with job performance). Lastly, a practical implication of our research is how organizations can better manage demographic changes. Workforces in many European economies have become increasingly older (Allmendinger & Ebner, 2006; Kulik, Ryan, Harper and George, 2014), and, thus, organizations need the knowledge and tools to translate longer tenure into benefits for both employees and organizations. Hence, our research provides organizations with insights on how to leverage the

positive potential of higher job tenure. Prior to discussing the expected interactive relationship, we will briefly review the theoretical foundations of the job tenure – job performance association.

Theoretical Background and Hypothesis Development

The Job Tenure–Job Performance Relation

Job tenure represents the length of time an employee occupies a particular position in an organization, being distinct from other forms of work tenure (e.g., organizational tenure and industry tenure). Human capital theory is one of the primary theories in the organizational sciences and human resource management that has been used to support the job tenure – job performance relationship. It postulates that skills, knowledge, and experience influence earning potential by increasing an employee's value for the organization (Becker, 1964). Since its introduction, human capital theory has drawn and is still drawing attention from researchers and practitioners alike (Jacobsen & Levin, 2002; Ng & Feldman, 2013; Strober, 1990). Recent investigations focusing on human capital investigated both entrepreneurial success (e.g. Unger, Rauch, Frese, & Rosenbusch, 2011) and organizational outcomes (e.g. Hayek, Thomas, Novicevic, & Montalvo, 2016; Riley, Michael, & Mahoney, 2017).

Based on human capital theory (Becker, 1964) longer job tenure should indicate a greater value of the individual in the labor market due to augmented skills and increased experience, leading to greater productivity, wages, and performance (Ehrenberg, & Smith, 2000; Jacobsen & Levin, 2002; Strober, 1990). Further, as tenure grows, employees become embedded by developing a stronger fit with job demands (Kristof-Brown, Zimmerman, & Johnson, 2005) and acquiring knowledge particular to their position in the organization (Tesluk & Jacobs, 1998). In short, from a human capital perspective, as individuals accumulate job tenure, their human capital grows, providing theoretical support for a positive linear job tenure – job performance association.

Empirically, a number of studies have examined whether and how job tenure influences job performance (see Ng & Feldman, 2013, for review). Some have argued for and found positive effects on job performance for the highly related construct of job experience, although the strength of these effects has been shown to decrease over time (Schmidt, Hunter, & Outerbridge, 1986). Nonetheless, more recent meta-analyses (i.e., Ng & Feldman, 2013; Sturman, 2003) of the job tenure–job performance relationship demonstrated only weakly positive direct effects.

In considering what influences the tenure–performance relation, context has been argued to be an important, but often overlooked, aspect of organizational behavior (Johns, 2006). Moreover, conservation of resources theory (Hobfoll, 1989) contends that resources (e.g., conditions and personal characteristics) are valued by individuals to offset their job demands. Consequently, we argue that important moderators of the tenure–performance relationship are resources that provide the ability (i.e., heightened GMA) and the contextual opportunity (i.e., low job stress) for continued learning and growth in a position as tenure increases.

Interplay of Job Tenure, General Mental Ability, and Job Stress on Job Performance

Tenure and GMA. GMA has been shown to be a predictor of training performance, job performance, and occupational attainment (Schmidt & Hunter, 1998, 2004). However, some studies did not replicate these findings (e.g. Blickle, Kramer, et al., 2011; Ferris, Witt, & Hochwarter, 2001). Specific to the occupational context of our study (i.e., fire-fighters), a meta-analysis of the relationship between GMA and job performance of fire-fighters by Barrett, Polomsky, and McDaniel (1999) showed GMA's predictive validity ($\rho = .42$, $SD = .35$). However, the lower bound of the respective credibility interval included zero, limiting the overall effect and, thus, moderators might be present that warrant further attention (Chaplin, 1991).

As indicated by human capital theory (Becker, 1964), tenure should lead to higher job-related knowledge and, therefore, should be positively influenced by GMA, leading to better and

quicker knowledge acquisition for those with higher mental ability. Empirically, Schmidt and Hunter (2004) showed that the relationship between GMA and performance was stronger with increasing work experience, and the results of one study (i.e., Judge, Klinger, & Simon, 2010) indicated that higher GMA enables a greater rate of learning.

On the other hand, there is also evidence that the influence of GMA on job performance decreases as tenure increases. The meta-analysis by Hulin and colleagues (1990) concluded that the predictive validity of cognitive ability decreases over time. Further, the meta-analysis by Keil and Cortina (2001) also found a decrease in validity of cognitive ability over time. Their results suggest that GMA may become less important to the job tenure–performance relationship as tenure increases because the routineness of one's job increases.

Overall, the results concerning the influence of GMA on the relationship between job tenure and job performance support both types of relationship (i.e., increasing and decreasing), which may lead researchers to doubt the relevance of GMA to human capital theory and the job tenure–performance association. However, we believe these results could indicate that this topic has not yet been sufficiently addressed. We contend that an important contextual element of jobs, particularly as tenure increases, is job stress, which influences the potential for employees to use their cognitive ability to learn and grow such that performance is improved.

Tenure, GMA, and Job Stress. The predominant view of job stress characterizes it as a condition where individuals perceive the demands of a situation to exceed their resources and threaten their well-being (Lazarus & Folkman, 1984). Conservation of resources theory (Hobfoll, 1989) argues that resources exist as a pool, such that they can reinforce and augment each other, and Zellars and colleagues (2006) explain that job stress influences the strategic use of available individual resources. More specifically, stress diverts effort from job performance and toward coping with the stressors (Gilboa, Shirom, Fried, & Cooper, 2008), and it produces physiological

responses that impede effective performance (S. Cohen, 1980). In general, empirical research shows negative effects of job stress on job performance and subjective well-being (Gilboa et al., 2008; Sonnentag & Frese, 2013).

Related to GMA, job stress hinders the effective functioning of memory (Sonnentag & Frese, 2013), the acquisition of knowledge and skills (Bradley, 2007), and the recollection of learned knowledge (de Quervain, Roozendaal, Nitsch, McGaugh, & Hock, 2000). In sum, although GMA potentially can increase the relationship between job tenure and job performance (e.g., through the acquisition of job-relevant knowledge), this effect can be counteracted by the contextual effects of high job stress.

It has also been argued that more manageable levels of stress can produce learning (Meurs & Perrewé, 2011), which is also greatly influence by GMA (Schmidt & Hunter, 1998). Heightened stress prevents the learning that those with higher GMA could acquire through the strategic allocation of resources (Zellars et al., 2006). However, low job stress allows for the proper use of GMA resources to augment learning, resulting in improved performance. Thus, in light of the above research indicating the roles of GMA and tenure when in the presence of increased and decreased job stress, we argue that heightened GMA and low job stress work jointly to strengthen tenure's positive relationship with job performance. In contrast, when job stress is high, there is no relationship between job tenure and job performance regardless of whether GMA is either high or low. Thus, we propose the following hypotheses:

Hypothesis 1: The relationship between job tenure and job performance is jointly moderated by general mental ability (GMA) and job stress. Job tenure is positively related to job performance when GMA is high and job stress is low. Even when GMA is high, job tenure will not be related to job performance when job stress is high.

Plan of Research

To test our hypothesis, we conducted two studies with different occupational types, as indicated by Holland (1997). We conducted an a priori power analysis using conventional values for a small to medium effect size ($f^2 = .075$, $\alpha = .05$, $\beta = .80$; 10 variables; J. Cohen, 1988). Calculations show that we would need a sample of 100 participants to be able to detect an effect of a three-way interaction.

In Study 1, we sampled male fire-fighters (i.e., realistic occupation) and, in Study 2, we constructively replicated (Lykken, 1969) our results with employees in social or conventional jobs (Holland, 1997). This research strategy has three advantages: First, by using two studies we strengthen our theoretical contribution by replicating our findings (Hochwarter, Ferris, & Hanes, 2011). Second, by relying on multiple occupations we are able to better generalize our results, and, thus, increase the practical contribution of our findings. Third, by focusing on both blue- and white-collar workers, we offer implications and conclusions for a broad range of job types.

Method – Study 1

Participants and Procedure

Our first study took place in the western part of Germany and focused on professional, public firefighters. In Germany, tenured contracts in this profession have a long tradition, because it is commonly believed that an experienced firefighter is a good firefighter (i.e., showing better job performance). However, we assume that long tenure alone will not be sufficient for high job performance. The job of firefighters can be complex, and they often face stressful demands, such as working under time pressure, dealing with unclear situations, managing emergency alerts, hazardous material, and other potentially life-threatening events (Perrow, 1984). In Germany, full-time firefighters complete, at minimum, a one-year-long vocational training where essentials of fire-fighting characteristics and general operating procedures are taught. The participants were invited via their supervisors to answer a questionnaire and take part in an online cognitive ability

test. Additionally, direct supervisors provided firefighters' job performance assessments. These data were returned to the researchers in prepared return envelopes. By providing a pseudonymous code, we were able to match the firefighter's responses with the supervisor ratings of job performance.

We contacted fire-stations via the respective station chiefs, and 139 potential participants agreed to answer the questionnaire. Of these, 112 participants provided complete data on the questionnaire and on the cognitive ability test. In addition, we matched all 112 participants with their respective 21 supervisors (overall response rate: 80.6%). Each supervisor rated an average of 5 firefighters (*SD* = 5.57). The firefighters were all male and, on average, 36 years old (*SD* = 8.59). They had worked in fire services for an average of 12 years (*SD* = 8.13, Min = 1.08, Max = 35.08).

Measures

Job tenure. Participants indicated how long they have been working in their current fire station. They reported an average job tenure of 10 years (*SD* = 8.11, Min = .17, Max = 34.25).

General mental ability (GMA). We assessed GMA with the German version of the General Aptitude Test Battery (GATB; U. S. Employment Service, 1970) by Schmale and Schmidtke (2001). The GATB test was administered online. Three scales (i.e., word knowledge, figure rotation, and basic calculations) of the GATB can be used to measure the g-factor of cognitive ability (Spearman, 1904). The GATB is a validated measure and widely used to assess general mental ability (Schmidt & Hunter, 1998). Van der Vijver and Harsveldt (1994) ompared online and paper-pencil version of the GATB and conclude that these differences do not affect criterion-related validity. The retest-reliability of the German version of the GATB reaches values between r = .88 and r = .93 (Schmale, 2004).

Job stress. Due to time constraints and to increase individual participation given the lengthy test of general mental ability, we asked participants to rate their overall job stress using one item similar to a one-item overall job stress assessment used by Fiedler (1995). The item reads "Please indicate how much stress your current job overall (e.g., work overload, working speed, missing information, many interruptions) caused in you in the last 3 months". The item was rated on a 7-point Likert-scale from *no stress* to *extreme stress.*

Because we measured the overall subjective experience of work stressors on the individual (i.e., job stress), we conducted an additional study with 130 participants from a wide range of occupations (including realistic, social, and conventional job). In addition to the one-item job stress measure, we measured the occurrence of work stressors, such as work interruptions, time pressure, uncertainty, and work-related problems (Semmer, Zapf, & Dunckel, 1995), as well as task and emotional conflict (Giebels & Janssen, 2005). We then regressed the overall rating of job stress on these specific job stress items. Thereby, we found a multiple *R* value of .76. We concluded that the overall job stress item is a sound and succinct indicator of perceived stress by work stressors. On average, the 112 participants of our main study indicated a job stress score of 3.51 (*SD* = 1.68).

Job performance. We used the six-item measure for job performance developed and validated by Blickle et al. (2008). This measure assesses overall job performance by averaging all six items with good psychometric properties (Blickle, Ferris, et al. 2011; Wihler et al., 2014, Study 2). The items read: ''(1) How fast does this person usually complete their tasks?; (2) How is the quality of this person's performance altogether?; (3) How successful is this person in dealing with unforeseen and/or unexpected events (disturbances, interruptions, losses/deficiencies, crises, stagnations) in their job activity generally?; (4) How well does this person adjust themselves to changes and innovations?; (5) How sociable does this person act in

co-operation with others?; (6) How reliably does this person meet work-related commitments and agreements?'' Anchors ranged on a 5-point Likert scale from *a great deal better than other persons in a comparable position* to *much worse than other persons in a comparable position.* The Cronbach's alpha internal consistency measure was $\alpha = .77$.

Control variables. We wanted to determine if the effect of tenure is actually driven by age, which, if neglected, would result in spurious findings. Thus, in our analyses, we controlled for age, which has been shown to influence job performance (Waldman & Avolio, 1986).

Data analysis

Because we had several supervisors ($N = 25$) who rated multiple firefighters, we used multilevel modeling (Hox, 2010) to analyze the data. Maas and Hox (2005) showed that the sample size on the higher level only affects the estimation of standard errors of the respective level, but not other estimators. Since our predictors are within-variables that do not systematically vary across the between-level, we decided to use the more conservative approach of multilevel modeling to avoid common fallacies that occur when ignoring nested data structures (Hox, 2010). Additionally, we concentrate on reporting the respective within-level results. We used a stepwise approach, adding different sets of variables in different models. Thus, in the first step, the main effects of our predictors were entered. Based on Cortina (1993), we added the quadratic effects in the second step. In the third step, the two-way interactions of the predictors were added. Finally, in the fourth step, the three-way interaction was entered. We standardized all variables prior to both computing the interaction terms and quadratic effects and to entering the predictors into the multilevel models. Our hypotheses would be confirmed, if the three-way interaction term of job tenure, GMA, and job stress was significant in the last step. Significant results would be plotted following the guidelines proposed by J. Cohen, P. Cohen, West, & Aiken (2003).

Results – Study 1

Table 1 reports the correlations of the study variables and the descriptive information. The multilevel analyses results are shown in Table 2 and confirmed the hypothesis. The three-way interaction of tenure, intelligence, and job stress had significant effects (γ = -.26, p < .01), accounting for 5% of additional variance (Complete Model: R^2 = .11).

[Insert Table 1 and 2 about here]

First, our hypothesis stated that job tenure is positively related to job performance when GMA is high and job stress is low. Figure 1a shows the plot of the three-way interaction under the low job stress condition. Only when GMA was high, job tenure was positively related to job performance (b = .37, p < .01). When GMA was low, job tenure was not related to job performance (b = -.05, *ns.*). These results provide support for our hypothesis.

Next, our hypothesis states that even when GMA is high, job tenure will not be related to job performance when job stress is high. Figure 1c shows the slopes under the condition that job stress is high. Job tenure was not significantly related to job performance when GMA was both low (b = .12, *ns.*) and high (b = -.04, *ns.*).

Finally, in Figure 1b, the plot of the three-way interaction under the condition that job stress is medium (equating to the two-way interaction between job tenure and GMA) is depicted. Job tenure was not significantly related to job performance when GMA was low (b = .04, *ns.*). However, when GMA was high, we found a significant relationship between job tenure and job performance (b = .17, p < .05). These findings support the importance of GMA to job performance.

[Insert Figures 1a, b, and c about here]

Methods – Study 2

Participants and Procedure

As in Study 1, this study took place in the western part of Germany. Potential participants were contacted via telephone and asked if they would participate in a study on individual differences at work. We focused on conventional and social jobs (Holland, 1997) as characterized by the International Standard Classification of Occupations (ISCO-88; International Labour Office, 1990). Individuals who agreed to participate in our study were sent a questionnaire comprised of questions about their current job, including tenure and job stress, and demographical variables. We also included an envelope that participants could use to return the questionnaire. Once we received this questionnaire, we contacted the participants again and administered a cognitive ability assessment by telephone based on previous supportive validating evidence of intelligence testing by telephone (Blickle, Kramer, & Mierke, 2010, Kliegel, Martin, & Jäger, 2007; Nesselroade, Pederson, McClearn, Plomin, & Bergeman, 1998). In addition, we sent another questionnaire to each participant, and asked them to give it to their supervisor and/or colleagues. This questionnaire inquired about the job performance of the target employee participant, as well as information about the work interrelatedness between target and rater.

Initially, we contacted 700 potential participants, and upon agreement of participation, we sent the first questionnaire. We received 294 completed questionnaires, and, in the follow-up invitation, 213 participants completed the cognitive ability test. Additionally, we received 198 other-ratings and were able to match the provided information of targets with 177 other-ratings of job performance. However, 71 targets received two performance ratings, and thus, our final sample consists of 106 dyads (response rate 15.1%). Fifty-nine of the participants were female (55.7%) and participants were, on average, 36 years old (SD = 8.59). On average, they were employed for 12 years (SD = 8.13).

Measures

Job tenure. Participants indicated how long they have been working in their current position. They reported an average job tenure of 8 years (*SD* = 7.76).

General mental ability. To assess participant GMA, we used the German version (e.g., Marcus & Schuler, 2004) of the Wonderlic Personnel Test (WPT; Wonderlic Inc., 1996). The WPT consists of 50 items with a time limit of 12 minutes. The WPT is also widely used and accepted in research in work and vocational and organizational psychology (Judge, Colbert; & Ilies, 2004).

Job stress. To shorten the overall length of our survey after the lengthy assessment of general mental ability and to increase individual participation, the same item as in Study 1 was used to assess perceived job stress (Fiedler, 1995). Participants could rate the item on a 7-point Likert-scale from *no stress* to *extreme stress.* On average, participants indicated a job stress score of 4.11 (*SD* = 1.56).

Job performance. This time, to evaluate job performance, a German adaption (Blickle, Kramer et al., 2011; Wihler et al., 2017, Study 3) of a measure developed by Ferris and colleagues (2001) was used. This measure consists of 15 items, capturing core task performance, interpersonal facilitation, and job dedication. Other-raters evaluated targets on a 5-point scale ranging from *much worse than other persons in a comparable position* to *a great deal better than other persons in a comparable position*. Previous studies showed that the performance dimensions can be aggregated to an overall job performance score (Wihler et al., 2017, Study 3).

Since participants could nominate two different raters, we calculated interrater agreement for multiple ratings of job performance. The intraclass correlation (ICC[1, 1]) specifies the proportion of variance by differences in targets, and, in this study, it was .21. Another, widely-used estimate of interrater agreement, r_{wg}, was provided by James, Demaree, and Wolf (1993). It can vary between 0 and 1 (LeBreton & Senter, 2008), with acceptable values above .70 (Lance,

Butts, & Michels, 2006). The mean r_{wg} of the ratings was .86. Both values justified aggregation. Consequently, and where applicable, we averaged the provided job performance ratings to get a more reliable estimate of job performance evaluations. Cronbach's alpha reliability of the aggregated measure in the present study was $\alpha = .92$.

Control variables. Again, we controlled for age to exclude the possibility that our effect is actually driven by age and not tenure of employees. In addition, we used a much more diverse sample in contrast to fire-fighters in Study 1. Since this study includes both female and male employees, we controlled for sex, as it could influence job performance (Roth, Purvis, & Bobko, 2012). We also controlled for the different job types (i.e., conventional vs. social), since different occupations can have different requirements of job performance or have different causes of job stress (e.g. uncertainty might be higher in conventional jobs, while interpersonal time pressure might be higher in social jobs). Also, while the fire-fighters in Study 1 have fixed working hours that apply to all, participants in Study 2 might have varying working hours. As Spector et al. (2004) found, the amount of work per week influences perceived job stress. Consequently, we included the average weekly working hours of targets as an additional control variable. Next, since fire-fighters work closely together in both emergency and non-emergency situations, supervisors many opportunities to observe subordinate job performance. However, this close working relationship might not characterize the co-worker – target employee relationship for the occupations in Study 2. Thus, we asked co-workers how much insight they had in the target's work, and included this item in our analyses.

Data analysis

We used hierarchical moderated regression analyses (Cohen et al., 2003). To avoid multicollinearity, we standardized job tenure, general mental ability, and job stress prior to both computing the interaction terms and quadratic effects (Cortina, 1993), and to entering the

predictors into the regression models. As in Study 1, our hypothesis would be confirmed, if the three-way interaction term was significant in the last step. If we find a significant result in the last model, we will plot the interaction following the guidelines proposed by Cohen et al.

Results – Study 2

Table 3 reports the correlations of the study variables and the descriptive information. Job tenure negatively correlated with general mental ability (r = -.35, p < .01) and, contrary to Ng and Feldman (2013), job performance (r = -.26, p < .01). As in Study 1, GMA was not related to job performance (r = .02, *ns*.), as was the case in some previous studies (e.g., Blickle, Kramer et al., 2011; Ferris et al., 2001; Hirsh et al., 1986; Vinchur et al., 1998). Also, job stress was not correlated with any other variable, including job tenure (r = .12, *ns*.), GMA (r = -.03, *ns*.), and job performance (r = -.13, *ns*.).

*** Insert Table 3 about here ***

The results of the hierarchical regression analyses are shown in Table 4. Our control variables had significant influence on job performance in the first step, explaining 30% of the variance (p < .01). But, job tenure, GMA, and job stress did not have significant direct effects on job performance in Step 2 (ΔR^2 = .03, *ns.*). The quadratic effects had no significant influence on job performance (step 3; ΔR^2 = .01, *ns.*), and none of the two-way interactions had a significant effect (ΔR^2 = .01, *ns.*). However, the three-way interaction, added in the fifth step, had a significant negative effect (β = -.26, p < .05), accounting for 3% of additional variance, with an overall variance explanation of 38% (p < .01).

*** Insert Table 4 and Figure 2 about here ***

The first part of our hypothesis states that job tenure is positively related to job performance when GMA is high and job stress is low. Figure 2a shows the plot of the three-way interaction under the low job stress condition. Only when GMA was high, was job tenure

positively related to job performance (b = .27, p < .05). When GMA was low, job tenure was not related to job performance (b = -.18, *ns.*).

The second part of our hypothesis states that even when GMA is high, job tenure will not be related to job performance when job stress is high. Figure 2c shows the slopes when job stress is high. Job tenure was not significantly related to job performance when GMA was either low (b = -.08, *ns.*) or high (b = .17, *ns.*).

Finally, in Figure 2b, the plot of the three-way interaction under the condition that job stress is medium (equating to the two-way interaction between job tenure and GMA) is depicted. Job tenure was not significantly related to job performance when GMA was either low (b = -.13, *ns.*) or high (b = .05, *ns.*).

Overall, the results of Study 2 also show support for our hypothesis. Thus, our results from Study 1 were constructively replicated and these findings strengthened our theoretical arguments.

Discussion

Our research highlights the importance of moderators in the relationship between job tenure and job performance. Extending previous nonsignificant meta-analytic results (Ng & Feldman, 2013), we introduce GMA and job stress as moderators. In line with prior research (Schmidt & Hunter, 2004), our results not only replicate previous findings of the interplay between job tenure and GMA at medium levels of job stress, but also highlights the crucial role job stress plays in this relationship. In two studies, we found that when job stress is low, GMA leads to an even stronger relationship between job tenure and job performance. However, under conditions when job stress is high, the positive effect of GMA on the job tenure-job performance relationship is mitigated. Thus, we show that GMA helps individuals to gain from heightened job tenure in terms of better job performance. Interestingly, and contrary to Barrett et al. (1999) and

Schmidt and Hunter (1998), GMA was not directly positively related to job performance. Our research suggests that these differences are related to the unique combination of job tenure, GMA, and job stress that jointly interact to affect job performance. In addition, we utilize conservation of resources theory (Hobfoll, 1989) to introduce job stress as an additional factor that needs to be considered when evaluating the role of job tenure on performance.

Thus, our research highlights the ongoing relevance of human capital theory (Becker, 1964) and also contributes to its understanding by showing that job tenure is beneficial for employees under certain circumstances, namely, when individuals are also high in GMA. But, our research also shows that although GMA helps in the building and use of job-relevant knowledge that can come with increased tenure, job stress undermines the positive effect of GMA on the job tenure–job performance relationship by drawing attention away from work and towards the protection of personal resources (Zellars et al., 2006).

Second, we also contribute to the growing body of research on conservation of resources theory (Hobfoll, 1989; Hobfoll & Shirom, 2000). Our research highlights how the focus on coping with job stressors negatively influences cognitive processes, and, as a consequence, tampers with the application of job learning to effective performance. Our research sheds new light on the fact that job stress not only causes physiological and psychological problems (Perrewé et al., 2004; Sonnentag & Frese, 2013), but also negatively affects job performance, thus, additionally, leading to severe negative consequences for organizations in terms of goal accomplishment.

Lastly, our research contributes to the job design literature and the challenges of demographic changes in workforces. Since the workforce is becoming older in important European economies (Allmendinger & Ebner, 2006; Kulik et al., 2014), organizations are expected to adapt to these changes. Thus, finding ways to increase the benefits for both

employees and organizations from an older (i.e., tenured) workforce will be crucial in future work environments. Here, our research helps to understand how job tenure can be translated into gains and identifies the influencing mechanisms by which employees and organizations can profit from longer job tenure. Contrary to recent beliefs (Ng & Feldman, 2013), we show that job tenure actually *matters* under certain circumstances. Thus, organizations are able to effectively adjust job designs to reduce job stress and to help employees use their cognitive abilities and job tenure for better job performance.

Strengths and Limitations

Our research has several strengths. Building on a strong theoretical foundation using research on individual differences in GMA (Schmidt & Hunter, 2004) and stress theory (conservation of resources; Hobfoll, 1989), we were able to better explain the fine-tuned interplay between job tenure and job performance. Also, we collected data from two samples and measured our independent and dependent variables from different data sources, thereby, avoiding a mono-source bias and excluding the likelihood of spurious findings. In addition, we used two different types of samples: a homogenous sample of fire-fighters and a sample with conventional and social jobs. Therefore, we both controlled for unknown extraneous sources of influence and constructively replicated our initial findings.

Our limitations include that our cross-sectional design precludes causal inferences. Additionally, since our data were collected in Germany, we cannot be certain whether our findings could be replicated in another cultural context (Erez, 2010). Another potential limitation concerns our measure of overall job performance. Although this measure has been successfully applied in several studies (i.e., Blickle et al., 2008; Blickle, Ferris et al., 2011; Wihler et al., 2014), it is possible that, with higher internal consistency, our effects would be even stronger and clearer. Also, our stress measure included only one item. Although we conducted a pre-study to

assess the validity of this item, we had to make this concession in our main study due to participant time constraints and the time already needed for the assessment of GMA. Finally, although we found significant effects for job stress moderation, those who suffered the most stress in their positions could have left their positions near the beginning of their employment (Schneider, 1987). Although we have no evidence of this phenomenon in our current findings, we cannot eliminate the possibility that, if our sample were to include such persons, the moderation effects of job stress could be stronger.

Directions for Future Research and Practice

Future research should continue to examine moderators of the job tenure – job performance relationship. Implicit in our theoretical model is the assumption that job tenure combined with higher GMA leads to learning that, in turn, relates to better job performance. Future studies should explicitly test the assumption that learning (e.g., job knowledge) mediates the relationship between job tenure and performance, as moderated by GMA in the first-stage and by job stress in the second stage (Edwards & Lambert, 2007). One study showed that GMA mainly helps in acquiring initial job knowledge in military training settings (i.e., Ree, Carretta, & Teachout, 1995). However, given the short time period (i.e., about 1 year) examined by Ree and colleagues, the long-term role of learning, tenure, and job stress in the link between GMA and performance remains unclear.

For practice, our results support the notion that organizations should take steps to utilize the gains of job tenure during mentoring (Eby, 2010) to provide a smoother transition for newcomers during onboarding (Bauer & Erdogan, 2010), perhaps by using the job knowledge of more experienced workers. Also, from a work design perspective, it is important for organizations to reduce job stress in order to profit from job tenure in an optimal way. Although likely not all sources of job stress can be reduced (e.g., the exposure of fire-fighters to high-risk

situations and hazardous materials is inherent to the job), it seems clear that without any actions, the positive effects of job tenure may vanish. Finally, training to reduce job stress provides utility for organizations, particularly in situations where job design cannot easily be changed.

Conclusion

In conclusion, the results of the present study indicate that job tenure is helpful to employee job performance for those with high GMA and low job stress. In their desire to establish long-term relationships with employees, organizations should use these results when selecting applicants and redesigning the stress level of jobs of those who have greater seniority in their positions. Consequently, the positive relationship between job tenure and job performance will increase.

References

Allmendinger, J., & Ebner, C. (2006). Arbeitsmarkt und demografischer Wandel: Die Zukunft der Beschäftigung in Deutschland. [Labor market and demographic change: The future of employment in Germany]. *Zeitschrift für Arbeits- und Organisationspsychologie, 50,* 227–239.

Arthur, M.B., & Rousseau, D.M. (1996). Introduction: The boundaryless career as a new employment principle. In M. B. Arthur & D. M. Rousseau (Eds.), *The boundaryless career* (pp. 3-20). New York: Oxford University Press

Barrett, G. V., Polomsky, M. D., & McDaniel, M. A. (1999). Selection tests for firefighters: A comprehensive review and meta-analysis. *Journal of Business and Psychology, 13,* 507–513.

Baruch, Y., & Vardi, Y. (2016). A fresh look at the dark side of contemporary careers: Toward a realistic discourse. *British Journal of Management, 27,* 355-372.

Bauer, T. N. & Erdogan, B. (2010). Organizational socialization: The effective onboarding of new employees. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (vol. 3, pp. 51–64). Washington, D.C.: APA.

Becker, G. (1964). *Human Capital: A theoretical and empirical analysis with special reference to education*. New York: Columbia University Press.

Blickle, G., Ferris, G. R., Munyon, T. P., Momm, T. D., Zettler, I., Schneider, P. B., & Buckley, M. R. (2011). A Multi-Source, Multi-Study Investigation of Job Performance Prediction by Political Skill. *Applied Psychology: An International Review, 60,* 449–474.

Blickle, G., Kramer, J. & Mierke, J. (2010). Telephone administered intelligence testing for research in work and organizational psychology? A comparative assessment study. *European Journal of Psychological Assessment, 26,* 151-158.

Blickle, G., Kramer, J., Schneider, P. B., Meurs, J. A., Ferris, G. R., Mierke, J., Witzki, A. H. & Momm, T. D. (2011). Role of political skill in job performance prediction beyond general mental ability and personality in cross-sectional and predictive studies. *Journal of Applied Social Psychology, 41,* 488-514.

Blickle, G., Meurs, J. A., Zettler, I., Solga, J., Noethen, D., Kramer, J., & Ferris, G. R. (2008). Personality, political skill, and job performance. Journal of Vocational Behavior, 72, 377–387.

Bradley, G. (2007). Job tenure as a moderator of stressor-strain relations: A comparison of experienced and new-start teachers. *Work & Stress, 21,* 48-64.

Chaplin, W. (1991). The next generation of moderator research in personality psychology. *Journal of Personality, 59,* 143–178.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, N.J: L. Erlbaum Associates.

Cohen, S. (1980). After-effects of stress on human performance and social behavior: A review of research and theory. *Psychological Bulletin, 88,* 82–108.

Cortina, J. M. (1993). Interaction, nonlinearity, and multicollinearity: Implications for multiple regression. *Journal of Management, 19,* 915-922.

de Quervain, D. J. F., Roozendaal, B., Nitsch, R. M., McGaugh, J. L., & Hock, C. (2000). Acute cortisone administration impairs retrieval of long-term declarative memory in humans. *Nature Neuroscience, 3,* 313–314.

Eby, L. T. (2010). Mentoring. In S. Zedeck (Ed.). *APA handbook of industrial and organizational psychology* (vol. 2, pp. 505 – 525). Washington, DC: APA.

Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods, 12*, 1–22.

Ehrenberg, R. G., & Smith, R. S. (2000). *Modern labor economics: Theory and public policy*. Reading, MA: Addison Wesley.

Erez, M. (2010). Cross-cultural and global issues in organizational psychology. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (vol. 3, pp. 807–854). Washington, DC: APA.

Ferris, G. R., Witt, L. A., & Hochwarter, W. A. (2001). Interaction of social skill and general mental ability on job performance and salary. *Journal of Applied Psychology, 86,* 1075–1082.

Fiedler, F. E. (1995). Cognitive resources and leadership performance. *Applied Psychology: An International Review, 44*, 5–28.

Giebels, E., & Janssen, O. (2005). Conflict stress and reduced well-being at work: The buffering effect of third-party help. *European Journal of Work and Organizational Psychology, 14*, 137-155.

Gilboa, S., Shirom, A., Fried, Y., & Cooper, C. (2008). A meta-analysis of work demand stressor and job performance: Examining main and moderating effects. *Personnel Psychology, 61*, 227–271.

Hayek, M., Thomas, C. H., Novicevic, M. M., & Montalvo, D. (2016). Contextualizing human capital theory in a non-Western setting: Testing the pay-for-performance assumption. *Journal of Business Research, 69*, 928–935.

Hobfoll, S. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*, 513-524.

Hobfoll, S. E., & Shirom, A. (2000). 'Conservation of resources theory: Applications to stress and management in the workplace', in R T Golembiewski (ed.), *Handbook of organization behavior* (2nd ed., pp. 57–81). New York: Dekker.

Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments*. Odessa, FL: Psychological Assessment Resources.

Hox, J. J. (2010). *Multilevel analysis. Techniques and applications* (2nd ed.). New York: Routledge.

Hulin, C. L., Henry, R. A., & Noon, S. L. (1990). Adding a dimension: Time as a factor in the generalizability and predictive relationships. *Psychological Bulletin, 107,* 328-340.

International Labour Office (1990). *International standard classification of occupations: ISCO-88*. Geneva: International Labour Office.

Jacobsen, J. P., & Levin, L. M. (2002). Calculation of returns on job tenure revisited. *Applied Economics Letters, 9,* 473–477.

James, L. R., Demaree, R. G., & Wolf, G. (1993). rwg: An assessment of within-group interrater agreement. *Journal of Applied Psychology*, *78,* 306–309.

Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of Management Review, 31*, 385−408.

Judge, T. A., Klinger, R. L., & Simon, L.S. (2010). Time is on my side: Time, general mental ability, human capital, and extrinsic career success. *Journal of Applied Psychology, 95*, 92-107.

Judge, T.A., Colbert, A. E., & Ilies, R. (2004). Intelligence and leadership. A quantitative review and test of theoretical propositions. *Journal of Applied Psychology, 89*, 542-552.

Keil, C. T., & Cortina, J. M. (2001). Degradation of validity over time: A test and extension of Ackerman's model. *Psychological Bulletin, 127,* 673-697.

Kliegel, M., Martin, M., & Jäger, T. (2007). Development and validation of the cognitive telephone screening instrument (COGTEL) for the assessment of cognitive function across adulthood. *The Journal of Psychology, 141*, 147-170.

Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individual's fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology, 58*, 281-342.

Kulik, C. T., Ryan, S., Harper, S., & George, G. (2014). ‚Aging Populations and Management'. *Academy of Management Journal, 57*, 929–935.

Lam, S. S. K., Ng, T. W. H., & Feldman, D. C. (2012). The relationship between external job mobility and salary attainment across career stages. *Journal of Vocational Behavior, 80*, 129–136.

Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria: What did they really say? *Organizational Research Methods, 92*, 202–220.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

LeBreton, J. M., & Senter, J. L. (2008). Answers to 20 Questions About Interrater Reliability and Interrater Agreement. *Organizational Research Methods, 11*, 815–852.

Maas, C. J., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology, 1*, 86–92.

Meurs, J. A., & Perrewé, P. L. (2011). Cognitive activation theory of stress: An integrative theoretical approach to work stress. *Journal of Management, 37*, 1043-1068.

Nesselroade, J. R., Pedersen, N. L., McClearn, G. E., Plomin, R. , & Bergeman, C. S. (1988). Factorial and criterion validities of telephone-assessed cognitive ability measures: Age and gender comparisons in adult twins. *Research on Aging, 10*, 220-234.

Ng, T. W. H., & Feldman, D.C. (2013). Does longer job tenure help or hinder job performance? *Journal of Vocational Behavior, 83,* 305–314.

Perrewé, P. L., Zellars, K. L., Ferris, G. R., Rossi, A. M., Kacmar, C. J., & Ralston, D. A. (2004). 'Neutralizing job stressors: Political skill as an antidote to the dysfunctional consequences of role conflict'. *Academy of Management Journal*, *47*, 141–152.

Perrow, C. (1984). *Normal accidents. Living with high-risk technologies*. New York: Basic Books.

Ree, M. J., Carretta, T. R., & Teachout, M. S. (1995). Role of ability and prior job knowledge in complex training performance. *Journal of Applied Psychology, 80*, 721-730.

Riley, S. M., Michael, S. C., & Mahoney, J. T. (2017). Human capital matters: Market valuation of firm investments in training and the role of complementary assets. *Strategic Management Journal*. Advanced Online publication. DOI: 10.1002/smj.2631

Rodrigues, R. A., & Guest, D. (2010). Have careers become boundaryless? *Human Relations, 63*, 1157-1175.

Roth, P. L., Purvis, K. L., & Bobko, P. (2012). A meta-analysis of gender group differences for measures of job performance in field studies. *Journal of Management*, *38*, 719–739.

Schmale, H. & Schmidtke, H. (2001). *Berufseignungstest (BET) [vocational aptitude test]* Tabellenband (4th ed.). Bern: Huber.

Schmale, H. (2004). BET. Berufseingungstest [vocational aptitude test]. In W. Sarges & H. Wottawa (Eds.), *Handbuch wirtschaftspsychologischer Testverfahren [Handbook of industrial psychological test procedures]* (2nd ed., pp. 115-118). Lengerich: Pabst Science Publishers.

Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124,* 262–274.

Schmidt, F. L., & Hunter, J. E. (2004). General mental ability in the world of work: Occupational attainment and job performance. *Journal of Personality and Social Psychology, 86,* 162–173.

Schmidt, F. L., Hunter, J. E., & Outerbridge, A. N. (1986). The impact of job experience and ability on job knowledge, work sample performance, and supervisory ratings of job performance. *Journal of Applied Psychology, 71,* 432–439.

Schneider, B. (1987). The people make the place. *Personnel Psychology, 40,* 437–453.

Semmer, N. K., Zapf, D., & Dunckel, H. (1995). Assessing stress at work: A framework and an instrument. In O. Svane & C. Johansen (Eds.), *Work and health - scientific basis of progress in the working environment* (pp. 105-113). Luxembourg: Office for Official Publications of the European Communities.

Sonnentag, S & Frese, M. (2013). Stress in Organizations. In N. W. Schmitt & S. Highhouse (Eds.), *Handbook of Psychology* (vol. 12, pp. 560-592). Hoboken, NJ: Wiley.

Spearman, C. (1904). “General Intelligence," Objectively determined and measured. *The American Journal of Psychology, 15,* 201-292.

Spector, P. E., Cooper, C. L., Poelmans, S., Allen, T. D., O'Driscoll, M., et al. (2004). A cross-national comparative study of work-family stressors, working hours, and well-being: China and Latin America versus the Anglo World. *Personnel Psychology, 57,* 119–142.

Strober, M. H. (1990). Human capital theory: Implications for HR managers. *Industrial Relations, 29,* 214–239.

Sturman, M. C. (2003). Searching for the inverted U-shaped relationship between time and performance: Meta-analyses of the experience/performance, tenure/performance, and age/performance relationships. *Journal of Management, 29,* 609-640.

Tesluk, P. E., & Jacobs, R. R. (1998). Toward an integrated model of work experience. *Personnel Psychology, 51,* 321-355.

U. S. Employment Service (1970). *General aptitude test battery (GATB)*. Washington, DC: U. S. Employment Service.

Unger, J. M., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing, 26,* 341-358.

Van de Vijver, F. J. R., & Harsveld, M. (1994). The incomplete equivalence of the paper-and-pencil and computerized versions of the general aptitude test battery. *Journal of Applied Psychology, 79,* 852–859.

Weiss, H. M. (1990). Learning theory and industrial and organizational psychology. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., vol. 1, pp. 171-221), Consulting Psychologists Press, Palo Alto, CA.

Wihler, A., Blickle, G., Ellen, B. P., III., Hochwarter, W. A., & Ferris, G. R. (2014). Personal initiative and job performance evaluations: The role of political skill in opportunity recognition and capitalization. *Journal of Management*. Advance online publication. doi: 10.1177/0149206314552451

Wonderlic, Inc. (1996). *Wonderlic Personal Test (WPT – German Version)*. Libertyville, IL: Wonderlic Personnel Test, Inc.

Zellars, K. L., Perrewé, P. L., Hochwarter, W. A., & Anderson, K. S. (2006). The interactive effects of positive affect and conscientiousness on strain. *Journal of Occupational Health Psychology, 11,* 281–289.

Table 1

Descriptive Statistics, Correlations, and Cronbach's Alpha Reliabilities – Study 1

	Variables	*M*	*SD*	1	2	3	4	5
1	Age	35.56	8.59	--				
2	Job Tenure	10.24	8.11	.80**	--			
3	GMA	104.70	7.65	-.05	-.01	--		
4	Job Stress	3.51	1.68	.26**	.25**	-.02	--	
5	Job Performance	3.39	0.49	-.06	.00	.00	-.18	*(.77)*

Note. N = 112; *GMA* = General Mental Ability;

*$p < .05$,

Table 2

Hierarchical Moderated Multilevel Analyses of the Predictors of Job Performance – Study 1

**$p < .01$	Overall Job performance				
	Step 1	Step 2	Step 3	Step 4	Step 5
Variable	γ	γ	γ	γ	γ
Age	-.05	-.10	-.12	-.14	-.08
Job Tenure		-.12	.21	.23	.22
GMA		-.03	-.02	-.02	.07
Job Stress		-.19*	-.16	-.14	-.14
Job Tenure²			-.11	-.06	.00
GMA²			.01	.01	.04
Job Stress²			-.08	-.05	-.06
Job Tenure *x* GMA				.05	.12*
Job Tenure *x* Job Stress				-.07	-.14
GMA *x* Job Stress				-.10	-.11
Job Tenure *x* GMA *x* Job Stress					-.26**
R^2	.00	.04	.05	.06	.11*
ΔR^2		.04*	.01	.01	.05**

Note. N = 112; *GMA* = General Mental Ability; standardized coefficients on the within-level are reported; job tenure, general mental ability, and job stress were standardized prior to analyses;

$^{+}p < .05$ (one-tailed),

*$p < .05$,

**$p < .01$.

Table 3

Descriptive Statistics, Correlations, and Cronbach's Alpha Reliabilities – Study 2

	Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9
1	Sex	1.56	0.50	--								
2	Age	43.03	8.86	-.16	--							
3	Job type (dichotomous)	0.51	0.50	.30**	.03	--						
4	Insight in work	3.88	0.63	.22*	-.09	.15	--					
5	Weekly working hours	41.98	6.37	-.23*	.19*	-.33**	.07	--				
6	Job Tenure	8.13	7.76	.03	.38**	.27**	-.09	-.14	--			
7	GMA	27.90	6.32	-.31**	-.11	-.36**	-.24*	-.02	-.35**	--		
8	Job Stress	4.11	1.56	.03	-.03	-.03	-.02	.06	.12	-.03	--	
9	Job Performance	3.75	0.50	.22*	-.35**	-.04	.38**	.14	-.26**	.02	-.13	*(.92)*

Note. $N = 106$; sex (1 = male; 2 = female); Job type (0 = conventional; 1 = social); *GMA* = General Mental Ability;

*$p < .05$, **$p < .01$.

Table 4

Hierarchical Moderated Multilevel Analyses of the Predictors of Job Performance – Study 2

	Overall Job performance				
	Step 1	Step 2	Step 3	Step 4	Step 5
Variable	β	β	β	β	β
Sex	.16	.19*	.20*	.19	.25*
Age	-.33**	-.32**	-.31**	-.30**	-.33**
Job type (dichotomous)	-.06	-.03	-.02	-.04	-.05
Insight in work	.31**	.32**	.32**	.32**	.32**
Weekly working hours	.20*	.23*	.22*	.20*	.21*
Job Tenure		-.03	-.05	-.07	-.08
GMA		.10	.09	.09	.12
Job Stress		-.15	-.13	-.14	-.22*
Job Tenure²			.02	.11	.19
GMA²			.02	.08	.05
Job Stress²			.08	.08	.09
Job Tenure *x* GMA				.10	.20
Job Tenure *x* Job Stress				-.04	-.10
GMA *x* Job Stress				-.06	-.20
Job Tenure *x* GMA *x* Job Stress					-.26*
R^2	.30**	.33**	.34**	.35**	.38**
ΔR^2		.03	.01	.01	.03*

Note. N = 106; sex (1 = male; 2 = female); Job type (0 = conventional; 1 = social); *GMA* = General Mental Ability; job tenure, GMA, and job stress were centered prior to analyses; *p < .05, **p < .01.

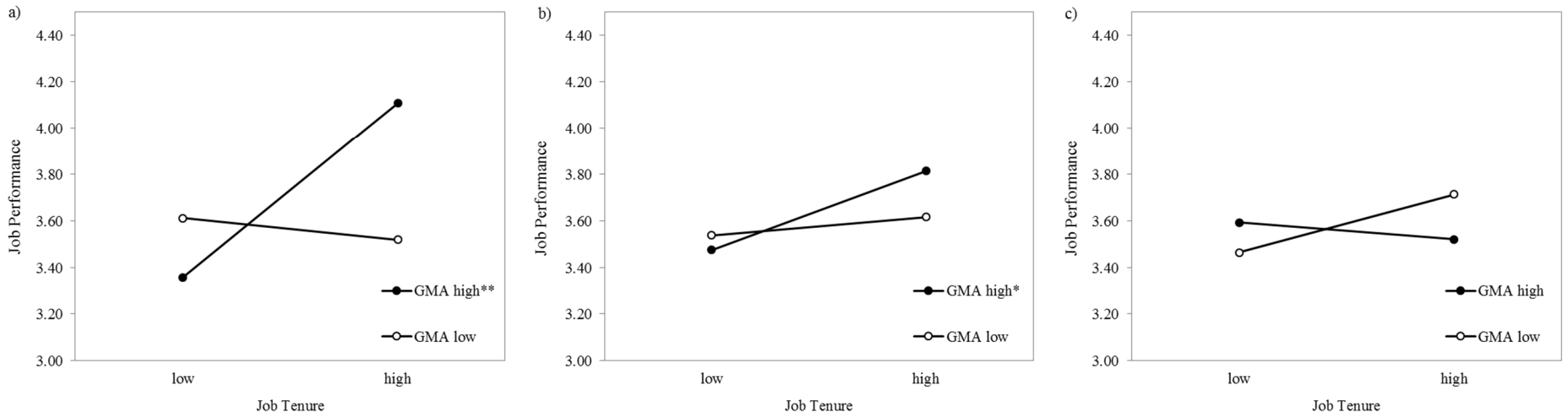

Figure 1. Study 1: Regression of job performance ratings on job tenure moderated by GMA at different levels of job stress.

Note. N = 112; a) job stress level = low; b) job stress level = medium; c) job stress level = high; *GMA* = General Mental Ability;

*$p < .05$,

**$p < .01$.

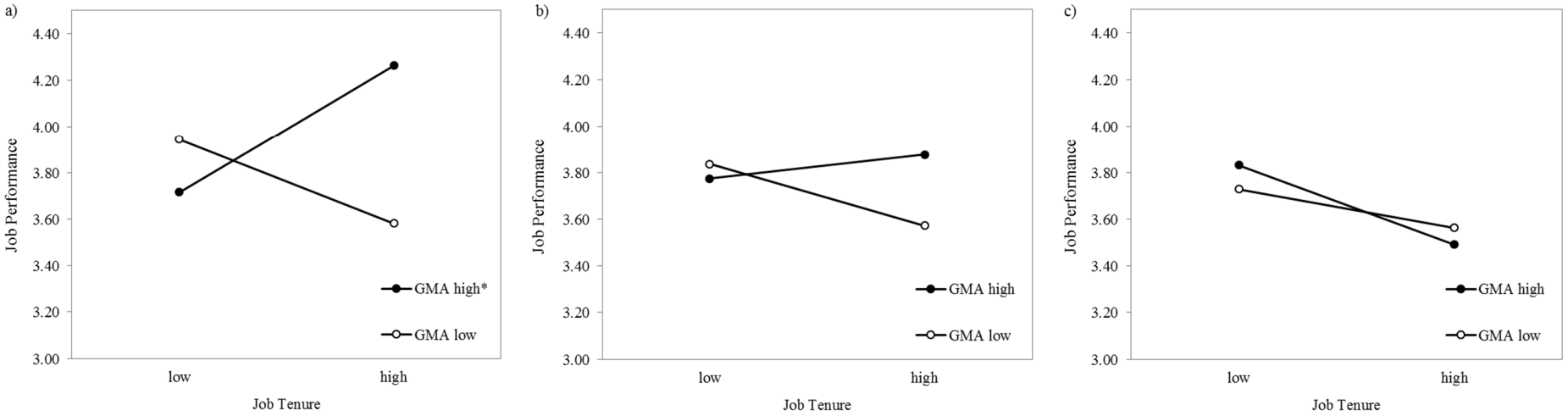

Figure 2. Study 2: Regression of job performance ratings on job tenure moderated by GMA at different levels of job stress.

Note. N = 106; a) job stress level = low; b) job stress level = medium; c) job stress level = high; *GMA* = General Mental Ability;

*$p < .05$.