



THE EFFECTS OF JOB DEMANDS AND JOB RESOURCES ON JOB PERFORMANCE IN VIETNAMESE AUDITING FIRMS: THE MEDIATING ROLE OF INNOVATIVE WORK BEHAVIOR

¹ Mai.T.P.Nguyen, ² Thu.T.Le, ³ Thao.T.P.Tran, ⁴ Loan.T.T.Nguyen, ⁵ Hien.T.T.Phan

¹PhD, ²MSc, ³PhD, ⁴PhD, ⁵PhD

¹Faculty of Accounting and Auditing,

¹Foreign Trade University, Hanoi, Vietnam

Abstract: The ability to continuously innovate and improve products, services, and work processes is nowadays crucial for organizations. Innovative work behavior in a business depends on the characteristics of the working environment, including job demands and job resources, and has a significant impact on job performance. Through empirical research involving 252 auditors from 42 auditing firms, this research explores the relationship between working environment characteristics (job demands and job resources) and job performance in association with the mediating role of innovative work behavior. The research results indicate that the total impact of job demands and job resources on job performance was statistically significant at 5%, with job demands having a negative impact on job performance and job resources improving job performance. The result also shows that the intermediate role of innovative work behavior is relatively effective. Job demands do not directly affect job performance but wholly mediate through the innovative work behavior, while job resources both directly affect job performance and mediate through the innovative work behavior. In addition, the moderating role of the experience of auditors is revealed.

Index Terms - Job demands; Job resources; Job performance; Innovative work behavior

I. INTRODUCTION

With the continuous development of science and technology in the context of fierce competition today, the ability to innovate is one of the key factors determining the success of businesses. Many studies have proven that innovation in products and business processes has a positive impact on improving the performance efficiency of workers (Gong et al., 2009; Gilson et al., 2005), thereby increasing the efficiency of business operations (Jiménez-Jiménez and Sanz-Valle, 2011; Thornhill, 2006; Damanpour, 1991). However, employees' innovation depends on many factors of the working environment. The meta-analysis of Bos-Nehles and Jansen (2017) shows that many elements of human resource management policy have an impact on employees and business innovation. For example, the company's training and development policies have a direct and positive effect on the innovative behavior of employees through increasing knowledge, skills, and experience (Knol and van Linge, 2009; Ong et al., 2003; Pratoom and Savatsomboon, 2012) or through positive attitudes (Sanders et al., 2010). The financial and non-financial rewards associated with performance efficiency can negatively impact and reduce employees' motivation for improvement and creativity as employees focus on doing their work according to old instructions instead of facing the risk of improvement (Fernandez and Moldogaziev, 2012). On the contrary, employees are more likely to actively innovate when the rewards are not tied to the results of innovation but are commensurate with their contribution to the innovation process (Fernandez and Moldogaziev, 2012).

Unlike other manufacturing and service industries, independent auditing is a service industry with an auditing process standardized in circulars, decrees, and legal regulations. Such industry characteristics create major obstacles, limiting the creativity and innovation of employees (Gilson et al., 2005). However, creativity and innovation remain capacities that should be encouraged to develop for auditors. Carpenter (2007) argues that team-level brainstorming makes the audit risk assessment process more effective. The Herron (2021) study, conducted with the participation of 73 auditors from 2 major international audit firms, 2 regional audit firms, and a number of other manufacturing and trading companies, demonstrated that the creativity of auditing contributes to improving the efficiency of identifying and responding to audit risks. Westermann (2019) reports that some auditors feel inactive in their profession because oversight by the Public Company Accounting Oversight Board (PCAOB) causes them to spend too much time on compliance risk (e.g., completing checklists) instead of spending time on increased services. Moreover, in the context that the fourth industrial revolution is taking place at a rapid pace, the requirements for innovation in businesses in general and at

auditing companies in particular are inevitable. However, research on the innovative behavior of auditors around the world is limited.

The purpose of this study is to explore how job demands and job resources in the audit profession affect the job performance of auditors. The second purpose is to test if associations between (a) job demands and job resources and (b) job performance are mediated through innovative work behavior.

The research paper consists of 5 parts.

Part 1. Introduction

Part 2. Literature review

Part 3. Research methodology

Part 4. Research findings and discussion

Part 5. Implication and conclusion

2. LITERATURE REVIEW

Job demands and job resources

The job demands-resources model classifies work characteristics into two groups: pressure at work and resources in the work environment (Demerouti et al., 2001). In particular, the aspects of the work and the work environment that may be stressful are often termed stressors by some researchers (e.g., Betoret 2006) or job demands by other researchers (Demerouti et al. 2001). Pressure at work is the physical, social, or organizational aspect of the job that requires employees to make efforts to maintain both physical and mental strength. We will refer to these aspects of the work as job demands. Job demands that have been identified in previous research include time pressure (also termed work overload), conflicts with colleagues, lack of administrative support, value conflicts, and role ambiguity (Betoret and Artiga 2010; Collie et al. 2012; Fernet et al. 2012, 2013; Friedman 1995; Hakanen et al. 2006; Klassen and Chiu 2010; Kokkinos 2007; Shernoff et al. 2011; Skaalvik and Skaalvik 2011). These aspects were found to be associated with stress, emotional exhaustion, lower levels of commitment and job satisfaction, lower self-efficacy, and motivation to leave the profession. (Betoret 2009; Betoret and Artiga 2010; Collie et al. 2012; Fernet et al. 2012, 2013; Hakanen et al. (2006); Skaalvik and Skaalvik (2011a, 2015, 2017a).

Another work characteristic is job resources, representing job aspects functional in achieving work goals, reducing job demands, or stimulating personal growth and development (Bakker & Demerouti, 2014). Therefore, pressure at work has the opposite effect on resources in the work environment. In other words, different work pressures and resources in different work environments can affect employee productivity differently.

According to the job demands-resources model, the impact of job demands and job resources on job performance arises through relatively autonomous "dual processes": While job resources primarily influence work engagement through a "motivational process" related to the satisfaction of basic psychological needs of autonomy, relatedness, and competence, job demands primarily influence stress through a "health impairment process" related to exerted effort and energy (Bakker & Demerouti, 2014; Hakanen et al., 2006; Mudrak et al., 2018; Schaufeli & Bakker, 2004; Zábrodská et al., 2018).

We included three job demands in the present study: (a) quantitative demands, which refer to workload and time to complete all tasks; (b) job insecurity, referring to being unemployed, being replaced by new technology, and having difficulties finding a new job; and (c) work-life conflict, presenting the negative effects of work on private life. Seven potential job resources were also included in the present study: influence at work, recognition, role clarity, quality of leadership, support from colleagues, support from supervisors, and community at work.

Innovative work behavior

Due to the fast-changing environment, innovation has become a crucial component impacting the success and growth of companies (Campo et al., 2014; Rodgers, 2007). There are various levels of innovation in a company; however, this study only focuses on innovation behavior at work from the employees' perspective. Employee innovative behavior is the lynchpin of corporate innovation among the many levels of innovation (Janssen et al., 2004). It is crucial for corporate success in service sectors in general and in the auditing profession in particular and has been examined by many researchers (Yuan and Woodman, 2010; Calantone et al., 2002).

Innovative work behavior is the deliberate actions of individuals to generate and implement new and useful ideas that benefit individuals, groups, and organizations. (Crossan and Apaydin, 2010). Tidd et al. (2001) assert that innovative work behavior is expected to generate innovative output and thereby benefit individuals, teams, and organizations. From the employees' point of view, innovative behavior is an outgrowth of their inner creativity. It is a way for developing creative products as well as a process through which employees produce and apply new ideas to improve performance or address work-related difficulties (Janssen et al., 2004; Zhou and George, 2001). Individual behaviors that lead to the production, introduction, and application of positive novelty at multiple levels are included in employee innovative behavior (West, 2002). It is closely related to employee creativity, but unlike the latter, the former must result in final products and genuine advantages (Larson, 2011). Most scholars see employee innovative behavior as a multi-step process, with innovation expressed in the first stage (Janssen, 2000). An employee first sees difficulties at work and develops new ideas (Larson, 2011); then, he or she mobilizes support from others for the new idea(s) (Janssen, 2000); finally, the employee executes the idea(s) and makes them a reality by creating a new prototype or model (Scott and Bruce, 1994). Each step of the process includes a variety of behaviors that, when combined, might result in a new method, product, market, or organizational structure (Orfila-Sintes and Mattsson, 2009). Employees' purposeful introduction of new products or services or new methods of doing things through the process of idea generation and implementation is referred in this research. Through this process, innovative work behavior is positively related to task performance (Dörner, 2012).

Based on the job demands–resources model and the expected relationship between innovative job behavior and job performance, we established the following research hypotheses:

H1: Job demands reduce the job performance of auditors.

H2: Job resources increase the job performance of auditors.

H3: Job demands reduce the job performance of auditors indirectly through their innovative behavior.

H4: Job resources increase the job performance of auditors indirectly through their innovative behavior.

H5: More experienced auditors will be less susceptible to job demands that reduce job performance.

H6: More experienced auditors will make better use of job resources to increase job performance.

The proposed research model is shown in Figure 1.

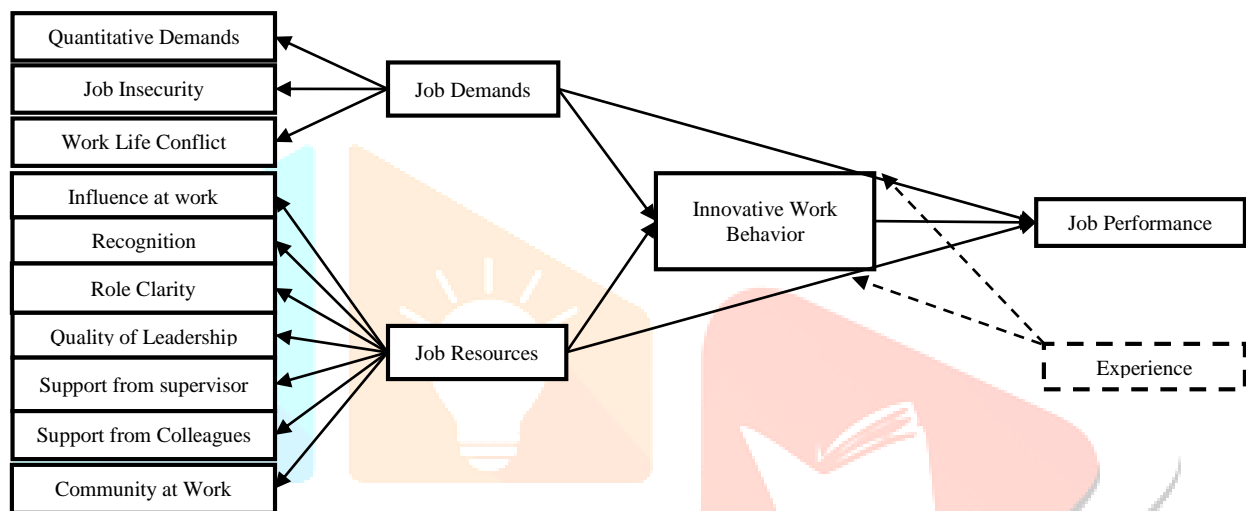


Figure 1: Research model

3. RESEARCH METHOD

Participants and procedures

This study was conducted at 42 auditing firms in Vietnam. Up to the time of the study, in Vietnam, there were 210 auditing companies, of which 23 companies are members of international auditing firms, 13 companies are members of associations, and one company is a liaison agent. We approach active audit firms through the list published on the website of the Vietnam Association of Practicing Auditors (VACPA). The research sample accounts for 20% of the total number of auditing firms operating in Vietnam.

Auditing firms operating in developing countries such as Vietnam are not entirely under heavy pressure to innovate but still appreciate the efforts of auditors in initiating and implementing their innovative ideas. The main reason for choosing audit firms to study is because the industry offers knowledge-based services. Therefore, job performance is quite sensitive to the capacity and innovative behavior of auditors. In the context of increasing information technology and its strong impact on the field of accounting and auditing, innovation in the activities of auditors, when combined with new information technology achievements, is likely to significantly increase job performance.

Before being submitted, the questionnaire was discussed with researchers and human resources experts to identify any loopholes and logistical problems that may occur during and after collecting data from respondents. We approached these auditors through an email sent from the human resources department of the auditing firms between June 2022 and August 2022. In the emails, we describe the study and provide a link to a web-based electronic questionnaire. Auditors were informed that the purpose of this study was to find out their perceptions of working conditions, innovative behavior at work, work experience, and job performance. In addition to this, respondents were also informed that the survey was voluntary and anonymous. To facilitate the anonymity of respondents, we did not record the email addresses and company names the auditors were working with. In total, 350 auditors responded to the survey, and 252 responses were included in the analysis, reaching a rate of 72%

Measurement**Job demands**

In this study, three scales inherited from Mudrak's study (2022) were used to measure the job demands variable. These scales were selected by Mudrak, J., et al. (2022) from the Copenhagen Psychosocial Questionnaire II (COPSOQ II, Kristensen et al., 2005). We added some items for updating to The Copenhagen Psychosocial Questionnaire III (COPSOQ III, Burr, H. et al., 2019) for each scale. The final scales include: quantitative demand (four items abbreviated as QD1 to QD4; Cronbach's alpha = 0.723), job insecurity (three items named JI1 to JI3; Cronbach's alpha = 0.857), and work-life conflict (five items named WLC1 to WLC5; Cronbach's alpha = 0.689). Job demands perception rates on a scale of 5 from 1 (never or to a very small extent) to 5 (always or to a very large extent).

Job resources

To measure perception of job resources, we use several scales inherited from the study of Mudrak, J. et al. (2022), including: influence at work, recognition, role clarity, quality of leadership, support from colleagues, support from supervisors, and community at work. Just like the scale of job demands, we selected and supplemented items from the Copenhagen Psychosocial Questionnaire III (COPSOQ III, Burr, H. et al., 2019). Finally, the number of items on each scale is as follows: influence at work (six items abbreviated as IN1 to IN6; Cronbach's alpha = 0.728), recognition (three items named RE1,2,3; Cronbach's alpha = 0.812), role clarity (four items named RC1,2,3,4; Cronbach's alpha = 0.713), quality of leadership (QL1 to QL4; Cronbach's alpha = 0.898), support from colleagues (SC1,2,3; Cronbach's alpha = 0.659), support from supervisors (SS1,2,3; Cronbach's alpha = 0.692), and community at work (CW1,2,3; Cronbach's alpha = 0.803). Aspects of job resources are also measured on a 5-point scale from 1 (never or to a very small extent) to 5 (always or to a very large extent).

Innovative work behavior

A scale of ten items (IWB1 to IWB10) from the study of De Jong and Den Hartog (2010) was used in this study to measure innovative work behavior. Surveyors are asked to score how often they exhibit innovative behaviors at work on a 5-point scale from 1 (never) to 5 (all the time). The questions were rewritten accordingly, such as "In your job, how often do you pay attention to issues that are not part of your daily work?" "In your job, how often do you wonder how things can be improved?" and so on.

Job performance

Performance of auditors is measured by seven scales (JP1 to JP7) inherited from the research of Williams and Anderson (1991). Of the three scale groups proposed by Williams and Anderson (1991), we used items that assessed the performance of in-role behavior as they were predicted to be the most impacted by innovative work behavior. These items measure the completion of directly assigned tasks, the tasks described in the job description as well as the tasks anticipated, and other factors that affect an individual's performance evaluation. In addition, two reverse scales are used to measure neglect and failure to perform essential duties. Behaviors were rated on a 5-point scale from 1 (never) to 5 (all the time).

All these scales met various validity criteria in the original validation studies (Kristensen et al., 2005; Schaufeli et al., 2006). Then, they were translated into Vietnamese using a standard back-translation procedure (Mudrak, J. et al., 2022).

4. RESEARCH FINDINGS AND DISCUSSION

This study used the PLS-SEM method to analyze quantitative data. This method is suitable for studies with small sample sizes using higher-order structures (Hair et al., 2017). The main stages include: measurement model evaluation, structural model evaluation, and hypothesis testing (Hair et al., 2017).

Measurement model

To evaluate the measurement model for higher-order structures, the quality of the items must first be checked (Hair et al., 2017). This can be assessed through external loading with a suitable minimum threshold of 0.7 (Henseler et al., 2009). As a result, items IN1, IN6, QL4, QD4, IWB2, IWB3, IWB4, and JP3 were removed from the study because the outer loading was less than 0.7 as proposed by Hair et al., 2021. After removing the above items, the first-order structures will be evaluated according to aspects including intrinsic consistency, convergent validity, discriminant validity, and multi-collinearity. (Hair et al., 2017). The criteria for evaluation are shown in Table 1.

Table 1: Criteria for evaluating measurement model

	Criteria	Threshold	References
Intrinsic consistency	Cronbach's Alpha	> 0.7	Nunnally & Bernstein, 1994
	Composite reliability	> 0.7	Hair et al., 2021
Convergent validity	Indicator reliability	> 0.7	Henseler et al., 2009
	AVE	> 0.5	Hair et al., 2021
Discriminant validity	HTMT	< 0.9	Henseler et al., 2015
Multi-collinearity	Outer VIF	< 5	Hair et al., 2021

The results showed that the first-order structures all met the above criteria, and there were no adjustments made to the model at this step. Then, first-order structures will be standardized to values through the weighted average method (Hair et al., 2017). As a result, first-order structures now become items, and second-order structures become first-order structures. The process of examining the new model after standardizing the first-order structures remained the same as above. As a consequence, the QL variable (quality of leadership) was removed as the outer loading was less than 0.7, while the rest of the elements were retained.

Structural model

After evaluating the measurement model, the study proceeded to evaluate the structural model with criteria including multi-collinearity, model fit, R-square coefficients, and f-square coefficients (Hair et al., 2017). Multi-collinearity in the structural model was evaluated based on Kock's Inner VIF (2015), with an acceptable maximum threshold of 3.3. The results showed that the inner VIF coefficients were all less than 3.3, satisfying Kock's (2015) proposal. In terms of model fit, the SRMR coefficient can be used (Hair et al., 2017), with a maximum threshold of 0.08 (Hu and Bentler, 1999). The results showed that the SRMR coefficient was less than 0.08, satisfying the proposal of Hu and Bentler (1999), thereby indicating that the selection model was appropriate and usable. According to Hair et al. (2017), the R-square coefficient represents how much the model's interpretation of a variable, namely that levels 0.67, 0.33, and 0.19 would be strong, medium, and weak, respectively. The results showed that the study model explained 33.6% of innovative work behavior volatility and 20.1% of job performance volatility. This result, although only average according to the assessment of Hair et al. (2021), is relatively consistent with reality. Indeed, this study focused on the application of the job demands and resources model and omitted a number of other factors affecting innovative work behavior and job performance. According to Hair et al. (2017), the f-square coefficient represents the effect size of the relationships in the model, with the corresponding levels being very negligible ($f\text{-square} < 0.02$), mean ($0.02 < f\text{-square} < 0.15$) and very significant ($f\text{-square} > 0.15$). The results showed that the direct relationship between job demands and innovative work behavior was very close, with an f-square of 0.371, but the direct relationship between job demands and job performance was relatively lackluster, with an f-square of 0.003.

Hypothesis test

The results of testing the effects of the model are shown in Table 2. The total impact of job demands and job resources on job performance was statistically significant at 5%, with job demands having a negative impact on job performance and job resources improving the job performance of auditors. Therefore, the two hypotheses H1 and H2 are supported. This result demonstrates that, for auditors in general, when faced with the pressures of work created by job demands, their productivity decreases. On the contrary, when there is support from resources at work, work productivity is greatly improved.

Discussing the relations through the intermediate variable more closely, it can be seen that job demands do not directly affect job performance but wholly mediate through innovative work behavior, while job resources both directly affect job performance and mediate through innovative work behavior. Thus, it can be seen that the intermediate role of innovative work behavior is relatively effective, and it can be concluded that the two hypotheses H3 and H4 are supported. The influence of job demands on innovative work behavior is very strong, with an impact factor of -0.512, suggesting that if there are pressures at work, the innovative behavior of auditors also faces significant obstacles and thereby degrades their performance. This is clearly seen by the fact that the audit profession requires expertise and a high level of concentration for the work. When faced with the problems created by the job demands, it is difficult for both the psychological and physical well-being of the auditors to meet the above requirements. On the other hand, job resources also have an impact on innovative work behavior to a lesser extent, with an impact factor of 0.174, indicating that resource constraints also have some influence on the auditor's innovative behavior. With resource support, auditors will have a basis for implementing innovative behaviors in the workplace. In addition to improving innovative work behavior, improving job resources also directly helps them work more efficiently with a variety of resources.

Table 2: Hypothesis test

Direct effect	Path coefficient	P-Values	Statistics Significant (5%)	Direct effect	Path coefficient	P - Value	Statistics Significant (5%)
IWB → JP	0.262	0.000	Yes	IWB → JP	0.298	0.000	Yes
JD → JP	-0.055	0.375	Full	JD → JP	-0.076	0.184	Full
JD → IWB	-0.512	0.000	Yes	JD → IWB	-0.512	0.000	Yes
JD → IWB → JP (H3)	-0.134	0.000	Yes	JD → IWB → JP	-0.152	0.000	Yes
JR → IWB	0.174	0.000	Yes	JR → JP	0.256	0.000	Yes
JR → JP	0.257	0.000	Yes	JR → IWB	0.174	0.000	Yes
JR → IWB → JP (H4)	0.045	0.008	Yes	JR → IWB → JP	0.052	0.004	Yes
Total effect				EXP → JP	0.435	0.000	Yes
JD → JP (H1)	-0.189	0.000	Yes	Moderating JD (H5)	0.084	0.027	Yes
JR → JP (H2)	0.302	0.000	Yes	Moderating JR (H6)	-0.102	0.015	Yes
<i>Excluding moderating variable</i>				<i>Including moderating variable</i>			

The results also showed that work experience moderates the effect of job demands and job resources on job performance. This means that the H5 and H6 hypotheses are both supported. Specifically, as shown in Figure 2, it can be seen that with more experienced auditors, despite the pressures at work, they can still maintain productivity thanks to the available experience. As for less experienced auditors, they will have more difficulty encountering job demand problems, and productivity will also decrease. Even so, these difficulties can be improved by providing them with more resources. Indeed, the regulatory role of work experience on the influence of job demands on job performance suggests that less experienced employees who are supported with resources are greatly improved and may approach the productivity of those with long work experience.

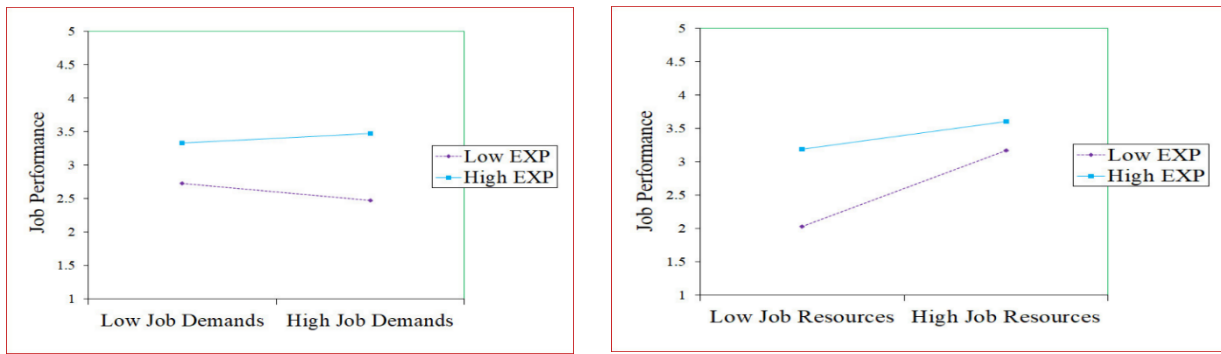


Figure 2: Moderating role of experience

5. IMPLICATIONS AND CONCLUSION

Based on the job demands and job resources model and the survey data of 252 auditors, the study pursued three goals in investigating the relationship between job demands, job resources, innovative work behavior, and job performance in the auditing profession. Firstly, we set out to test how job demands and job resources influence job performance. We measured the auditor's perceptions of three job demands (quantitative demand, job insecurity, and work-life conflict) and seven job resources (influence at work, recognition, role clarity, quality of leadership, support from colleagues, support from supervisors, and community at work). In line with previous theories and research, we predicted and found that job demands have a negative impact and job resources have a positive impact on the job performance of auditors. These findings align with those of Bakker & Demerouti (2014), Hakkanen et al. (2006), Mudrak et al. (2018), Schaufeli & Bakker (2004), and Zábrodská et al. (2018).

Secondly, to enrich the insights into the factors that promote job performance, we reveal the importance of innovative work behavior for job performance. In other words, the association between job demands, job resources, and job performance was mediated through innovative work behavior. A possible explanation is that job demands lead to depressed moods and exhaustion, which again reduce the innovative work behavior and job performance of auditors, while providing enough resources can lead to innovative behavior at work.

Thirdly, we considered the impact of individual experiences as a moderating variable on the relationship between job demands, resources, and job performance. When auditors have more experience, they are willing to handle work innovatively and maintain high performance.

Theoretical Implications

The present study investigates the impact of job demands and resources on the job performance of a group of auditors working in Vietnam. The important role of organizing work for employees and building an effective working environment has been mentioned in many previous studies. However, most of the previous papers examined the relationships in the education sector, the telecommunications sector, and the industrial sector. There are few studies investigating the relationships in audit firms. The study has contributed to the literature on job demands and resource models in a specialized service industry—independent audit services.

Managerial Implications

The audit industry is a labor-intensive industry, demanding highly skilled professionals to provide auditing and assurance services. This study provided evidence that mobilizing job resources and limiting job demands can be valuable for employees to develop their innovative behavior, thereby improving job performance.

Our findings highlight the fact that auditors are more innovative when they receive more resources and fewer demands. Exposure to extreme pressure and beyond one's ability can impede innovative behavior and affect job performance. Therefore, audit firms should explore a variety of ways of organizing work effectively, creating a resourceful work environment among staff to encourage their innovative working behavior.

Experienced auditors are proven to remain effective under high pressure. This is explained by the fact that experienced auditors have more skills and understand the work better than inexperienced auditors. Therefore, the audit firm should encourage the sharing of working experiences and skills to help new auditors quickly adapt to the work.

Limitations and Future Research

The most significant limitation of the paper is that we only rely on 252 auditor opinions collected in Vietnam. Further studies may overcome this limitation with more samples from different countries or different professions, such as lecturers, doctors, lawyers, etc. Hence, the comparisons of the results from different samples could lead to new conclusions.

In addition, we identify innovative work behavior as a mediating variable of the impact of job demands and job resources on job performance and the personal experience variable as a moderating factor in the research model. There may exist many other mediating and moderating variables affecting this relationship that need to be studied further, such as the working environment or other personal characteristics...

Different job demands or job resources may differ in their relevance to innovative work behavior and job performance. In our research, we measured only three job demands and seven job resources to analyze the relationships. Other scholars may use different types of job demands, such as emotional pressure, which is the problem with work. and job resources, such as job control or autonomy. In addition, there is a need to study which job demands and job resources were most strongly associated with innovative work behavior and job performance.

Finally, the measures used in the study are all perceived and self-assessment measures. As a result, responses can be very subjective. Other studies may use objective measures of innovative work behavior and job performance, such as surveys from supervisors.

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