Stress and Work Performance Among Public Servants in Ghana

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Abstract: *The health literature has often emphasized the negative impact of stress on work performance among health workers. However, the impact of stress and its key predictors on work performance among public sector staff in developing countries remains unknown. This study has examined the influence of stress and its main predictors on work performance among public servants in an African country. Using Ghana's public sector as a case, 157 staff of the Office of the Head of Civil Service (OHCS) and its aligned institutions responded to a self-administered survey. Results indicate that matching income to expenses was the most significant predictor of stress. Also, while stress generally negatively impacted work performance, a minimum level of stress was found to have a positive impact on work performance. The findings reinforce the importance of improved remuneration for reducing work stress towards improved work performance among public sector departments in developing countries.*
Keywords: *stress; work performance; public servants.*

Introduction

The impact of stress on employees' work and health has been copiously documented in the occupational stress literature (Thielmann, Zavgorodnii, Zub, & Böckelmann, 2021). While academic literature often uses 'occupational stress' to describe this condition, job stress or work stress have often been used interchangeably within organizational settings (Abu, 2004). Work-related stress is a pattern of physiological, emotional, cognitive and behavioral reactions to some extremely taxing aspects of work content, work organization and work environment (Bang & Kim, 2014). Stressed employees may suffer negative consequences like anxiety, headache, stomach distress and cardiovascular disease (Hegg-Deloye *et al.*, 2014). Various effects of stress have been documented in

studies, including reduced productivity, increase in mistakes and accidents at work, lower morale, increase conflict with others as well as physical and emotional problems (Pflanz & Ogle, 2006) and poor life satisfaction (Pawar & Rathod, 2007). Effects of stress are physiological, emotional, cognitive and behavioral reactions to some extremely taxing aspects of work content, work organizations and work environment. Work-related stress may lead to sleep deficiency and increase one's level of anxiety. Also, accumulated stress can lead to more frequent sickness, exposure to the risk of ailments such as diabetes, as well as mood swings influencing absenteeism from work (Burns, Sun, Fobil, & Neitzel, 2016). Less stress, on the other hand, is found to improve the individual's concentration and creativity and is

associated with happier healthier lives (Mustafa *et al.*, 2015). Beyond the individual's health, stress also affects organizations as it lowers organizational productivity.

Various scholars have discussed the nature of stress and responses among health workers in especially developed countries (Lindegård et al 2014; Thielmann, Zavgorodnii, Zub, & Böckelmann, 2021). They document that while stress harms health workers' health, the impact has mainly been on their productivity and work-life imbalance (Pawar & Rathod, 2007). However, the effect of stress on work performance among public sector administrative workers in developing countries remains less understood. Scholars such as Kortum and Leka (2014) and Razak, Yusof, Azidin, Latif, and Ismail (2014) have analyzed stress-productivity relations in developing countries. Yet, the relationship between the individual's social characteristics, nature of stress experienced and the effects on work performance among public sector workers was unexamined. However, there is a lack of awareness of work-related stress, and a shortage of resources to deal with it in developing countries (Wazqar, 2019).

Various conceptual frameworks are often applied in stress-related research (Cooper & Marshall, 1976; Lee & Akhtar, 2007). A dominant framework adopted in this research is by Cooper and Marshall (1976). Cooper and Marshall (1976)'s work-related stress model highlights the essential sources of stress variables at work. An essential occupational stress factor that is employed in this study is 'intrinsic to the job', which includes factors such as poor physical working conditions, work overload or time pressure. The related factors are classified in these categories; namely, working conditions, hours worked, and work under load/overload. The principles of job satisfaction and motivation are closely linked to each other, and an effective and productive workplace (Lindegård et al., 2014).

Another occupational stress factor - 'role in Organization' - has always been an important variable in occupational performance research in general (Kinicki & Kreitner, 2007). The role of ambiguity which refers to situations when an individual does not have clear information about his or her work objectives, work scope, or supervisors, which leads to higher job-related stress becomes a key variable. According to Lee and Akhtar (2007), managers in an organization need to monitor given tasks to determine the extent of execution according to the set plans.

A further variable is 'relationships at work' in the model. Regular team meetings are said to help clarify relationships, role conflicts and role ambiguity between work units and staff (Lee & Akhtar, 2007). The final variable is "Organizational structure and climate". Bang and Kim (2014) have argued that performance measurement and the overall organizational culture can influence outcomes of staff performance substantially.

The scholarship on Ghana indicates that eeconomic volatility has increased pressure on Ghanaian workers with many reporting its impact on their health and wellbeing (Burns et al., 2016). While organizations in Ghana can change this trend and improve their productivity, no research has been conducted to ascertain the effect and predictors of stress, especially in Ghana's public sector. This is against the backdrop that the effectiveness of the public sector in Ghana will depend on an effective administrative and professional corpse in the civil service. Two questions arise as a result:

1. What is the extent of the incidence of stress among public sector workers in Ghana? and

2. Which factors best predict stress among public sector workers in Ghana?

This paper provides answers to these two research questions. It has an aim to analyse the extent of influence of stress and its main predictors on work performance.

Method

The design of this study involved the identification of variables that are measured to test a hypothesis on a selected case. Case studies are often preferred when a phenomenon has to be studied in its real-life context (Yin, 2013). This approach is adopted since the research participants work in the same public service department and the results of the study reflect their real-life context.

Development of the hypotheses for this study involved literature review. The two hypotheses developed are:

1. The extent of the incidence of stress among public sector workers determines their level of work performance.
2. Social and workplace factors have different levels of influence on stress on an individual's work performance among public sector workers.

Testing of the hypotheses involved preparing questionnaire and data collection through a self-administered questionnaire. The survey sought to include the different parts and different categories of staff and institutions in the study. A survey sample was determined using the formula:

as $n = \dfrac{Z^2 \times p\,(1-p)/(\alpha)^2}{1+(Z^2 \times p\,(1-p)/(\alpha)^2 N)}$

where Z = z-score for a given confidence level at 95% interval in this case. P is the proportion of the population often considered at 50 percent to maximise sample; α is confidence interval (6.78). N is the estimated population (estimated at 11,000) based on available reports.

Out of the expected 200 sample size, 157 staff responded to the survey, representing a 79% response rate. Respondents were drawn from the Professional and Sub-Professional Classes in the Office of Head of Civil Service (OHCS) and its aligned institutions, namely Public Records Archives and Administrative Department (PRAAD), Civil Service Training Center (CSTC), Management Services Department (MSD), Institute of Technical Services (ITS), and Ghana Secretarial School (GSS) in the Ghana Civil Service.

Three major analyses were conducted in this study: univariate, bivariate and multivariate analyses. Univariate analysis was important to establish the broader population characteristics and involved descriptive statistics. Bivariate analysis was also required to determine the empirical relationships between variables and to test for simple hypotheses of their association. This analysis also checked the extent to which it becomes easier to know and predict a value for the dependent variable if we know a case's value of the independent variable. Multivariate analysis where multiple relations between multiple variables are examined simultaneously was also employed.

Results And Discussion
Demographic Profile of Respondents

Of the 157 study respondents, fifty-three percent (53%) were 30-39 years of age, 28% were 20-29 years of age, 16% were 40-49 years of age, and 3% were 50 years and above. In terms of gender, 52% of respondents were and 48% were female. The gender disparity in this study is a reflection of gender participation in Ghana's public service.

Professional profiles of respondents

The study respondents are categorized according to professional and sub-Professional categories. The analysis indicates that 79% of respondents were in the Professional category and 21% in the Sub-Professional category. Also,28% of staff were in the (define Assistant Director 2Bfirst [AD2B]) and analogous grade, 20% were in the define AD2A first (AD2A) and analogous grades, 12% of respondents in the define AD1 first (AD1) and analogous grades, 7% and 1% for the Deputy Director and Director and their analogous grades respectively while 32% of staff were in the "Other staff category". The analysis on Institutions indicates that 44% of staff were from OHCS, 21% from PRAAD, 13% from GSS and 10%, 6% and 6% of staff were from MSD, ITS, and CSTC respectively.

Stress Incidence and Causes of Stress

Several factors were reported as accounting for an individual's level of stress. The analysis indicates that 43% of the staff experience work-related stress whiles 57% did not experience any work-related stress. Of the 157 respondents, 33% also reported stress was caused by the volume of work, while 26% said it is by the nature of the job and its responsibilities, whiles 24%, 11% and 6% were caused by the physical environment, personal health issues and others respectively.

Bivariate Analysis

Further analysis of the relationships between the respondents' demographic and socio-economic characteristics affects the incidence of stress was done. This analysis involved bivariate analysis presented in this section.

Grade of Staff and Stress
## Figure 1 Grade of Staff and Stress
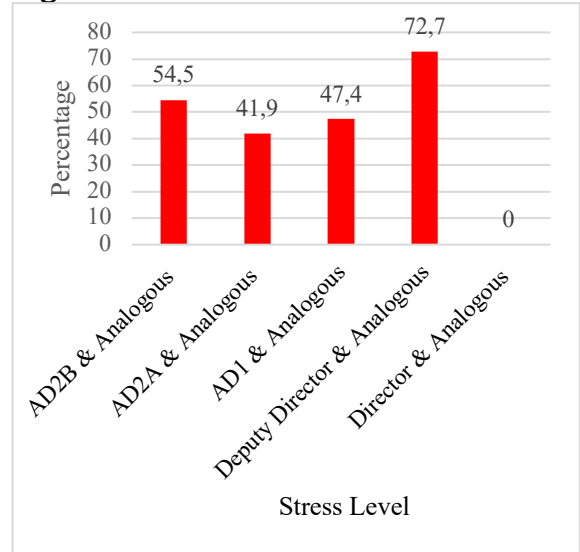
Source: Authors' construct

Figure 1 depicts that, AD2B and Analogous grades had 54.5% stress, the stress level then reduces at AD2A and Analogous grades with 41.9%, then increases again at AD1 and Analogous grades with 47.4% and finally reaches its highest peak at Deputy Director and Analogous grades with 72.7%. There is a statistically significant relationship between grade of staff and stress, which indicates that grade of staff influences a staffs' stress level.

## Institution and Stress
Figure 2 Institution and Stress
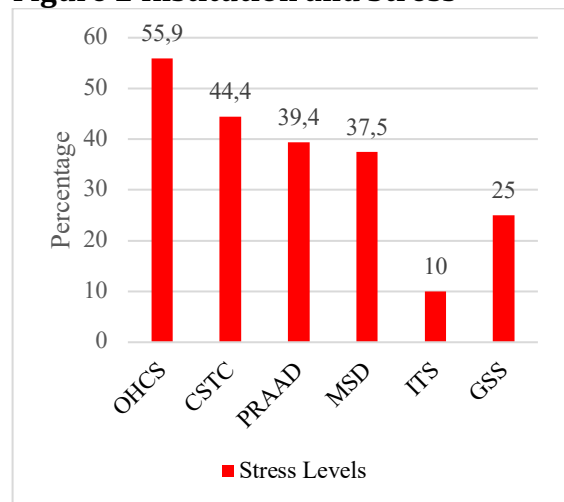
Source: Authors' construct

Figure 2 shows that staff at OHCS reported the highest incidence of stress

with 55.9% followed by CSTC with 44.4%. The staff at PRAAD reported the third-highest stress incidence with 39.4%, followed by 37.5%, 25.0%, and 10% for MSD, GSS, and ITS respectively. This finding may be due to the psychosocial environment, the volume of work and the nature of the job and its responsibilities. Respondents in some institutions may perform the task that may trigger their stress levels compared to other institutions. The relationship between Institution and stress shows a statistically significant association. This finding implies that institutions influence a staffs' stress level.

Matching Income to Expenses and Stress
**Figure 3 Income to Expenses and Stress**
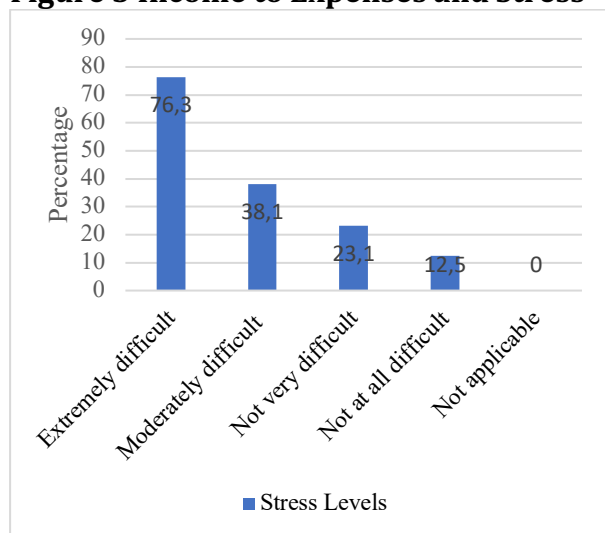
Source: Authors' construct

Figure 3 shows that staff who find it extremely difficult to match their income to expenses have the highest stress incidence with 76.3%, followed by staff who find it moderately difficult with 38.1% and continues to decrease to its lowest peak at no percentage for respondents who reported not applicable. There is a highly statistically significant relationship between matching income to expenses and stress. This implies that matching income to expenses plays a critical role in stress levels amongst staff.

Healthy Work-life balance and Stress

Figure 4 shows that staff who have a healthy work-life balance reported less stress incidence with 28.3% compared to staff who did not have a healthy work-life balance with a 74.0% incidence of stress. There is a strong statistical relationship between work-life balance and stress. This also implies that, healthy work-life balance influences staff stress levels.

Figure 4 Healthy Work-life balance and Stress
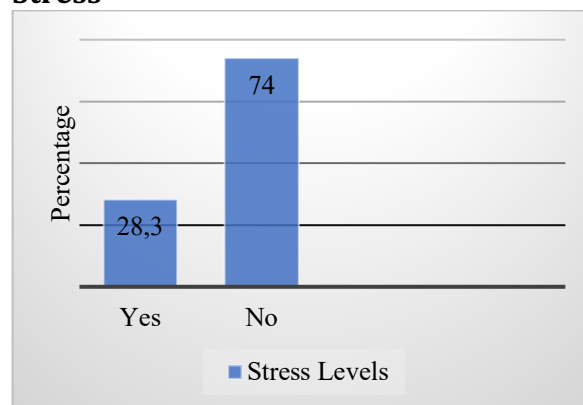
Source: Authors' construct

Quality of Work and Stress

Figure 5 shows that, staff whose quality of work is poor most of the time reported the highest stress incidence with 77.8%, followed by staff who reported some of the time, with 59%, then a little of the time with 34.9% and 33.3% and 32.4% for all of the time and none of the time respectively. There is a significant relationship between quality of work and stress.

Figure 5 Low Quality of work and Stress
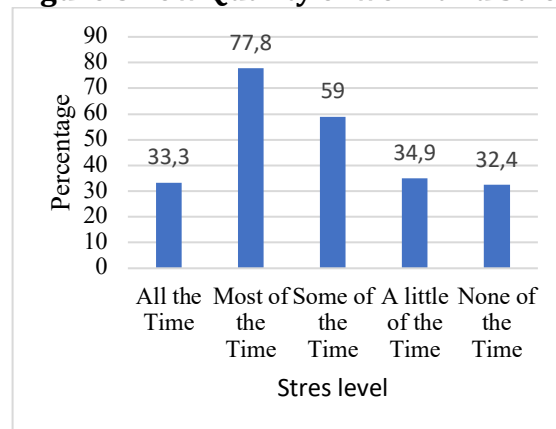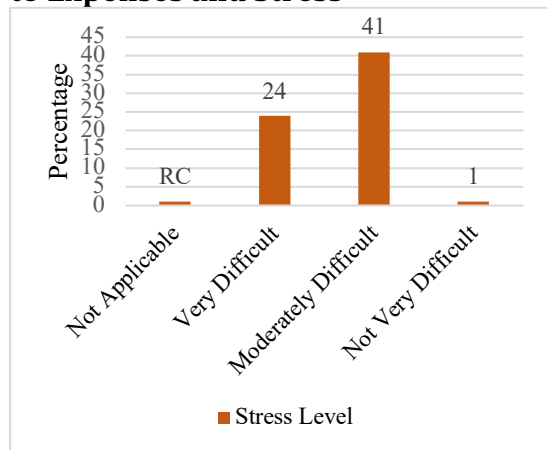

Source: Authors' construct

Multivariate analysis of the relationship between stress and performance

Binary logistic regression was employed to examine the joint effects of the various independent variables and stress. Binary logistic regression determines the impact of multiple independent variables presented simultaneously to predict the membership of one or other of the two dependent variable categories (Windle et al., 2018).

The utilization of a binary logistic regression model is justified by the fact that the dependent variable is measured by the stress incidence of staff, which is dichotomous (whether staff has stress or not).

The significant predictors for stress were matching income to expenses and healthy work-life balance. Other variables that were significant at the bivariate level that had lost their significance were grade of staff, institution, low quality of work, and causes of stress.

**Figure 6 Odds Ratio – Matching Income to Expenses and Stress**

Source: Authors' construct

The model indicates that staff who find it *very difficult* and *moderately difficult* in matching income with expenses have 24% and 41% chances respectively to experience stress compared to staff who reported *not applicable*. Also, staff who find it *not very difficult* to match income with expenses have a 1% chance to

experience stress compared to the reference category (not applicable); and staff who find it *not at all difficult* to match income with expenses have an equal chance with the reference category to experience stress. This finding could be attributed to the high cost of living and loans contracted by staff from banks with high interest and deduction rates, making it difficult to match income to expenses or upkeep. Chronic financial-related stress is detrimental to mental and physical health and impedes interpersonal relationships, ultimately contributing to poorer job performance and quality of work outcomes.

**Figure 7 Odds Ratio – Healthy-work life balance and Stress**
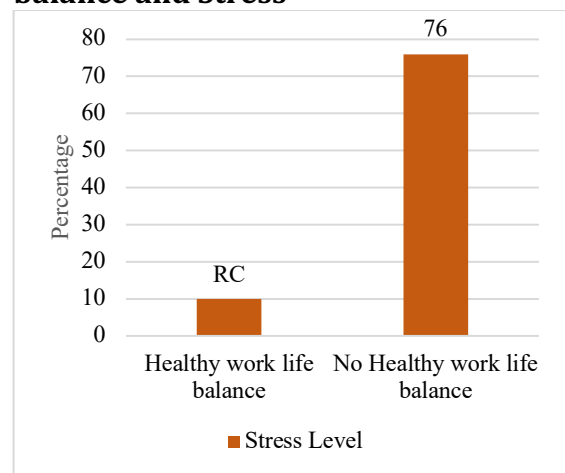
Source: Authors' construct

Figure 7 shows the relationship between a healthy work-life balance and stress. It shows that staff who do not have a healthy work-life balance have 76% chance to experience stress compared to their colleagues who have a healthy work-life balance.

This may be explained by the fact that, in the quest to achieve set targets, staff work longer hours, and may also forfeit their mandatory leave. Other socio-economic challenges and unhealthy lifestyles could also affect a healthy work-life balance. When staff are stressed and over-worked, there is the risk of exposure to a variety of symptoms which can affect

wellbeing and consequently affect a staffs' job performance or quality of work.

**Figure 8 Odds Ratio – Quality of work and Stress**
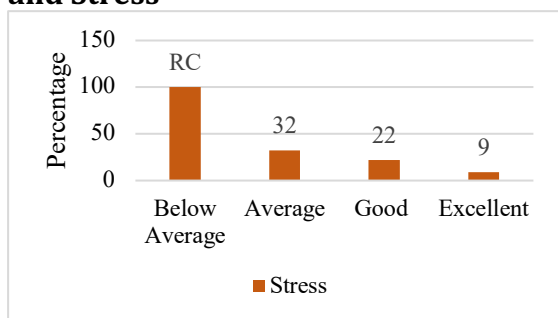
Source: Authors' construct

Furthermore, figure 1.8 indicates that staff who performed excellently had a probability of 9% stress compared to staff who performed below average. Staff who performed well had a probability of 22% stress, whereas staff with average performance had a probability of 32% stress compared to below average. This implies that increased stress level was associated with poor performance and reduced stress level was associated with excellent performance as depicted in Figure 8.

It is also worth noting that, stress occurred at all levels of quality of work. This may be explained by the fact that; some level of stress is experienced by staff in their line of duty. However, with a certain level of stress, staff were able to surmount their stressors and perform better, whiles with higher levels of stress, staff were not able to cope and hence perform below average.

Figure 9 Odds Ratio – Causes of Stress
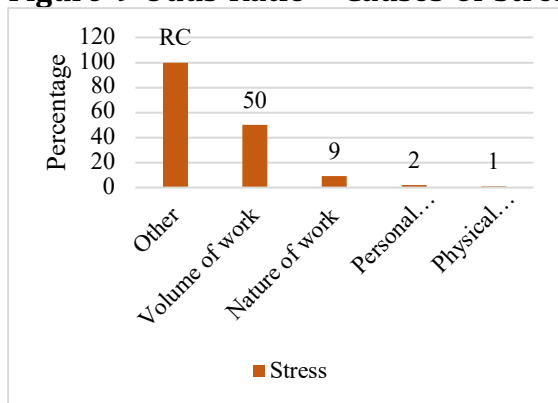
Source: Authors' construct

Finally, the model indicates that the volume of work causes a probability of 50% stress among staff. Also, a probability of 9%, 2%, and 1% of stress was caused by nature of work, personal health issues and physical environment respectively if compared to the reference category (other). This shows that a staff's stress may be caused by various combinations of factors within the working environment and it's dependent on the institution staff is located.

The study identified the relationship between work performance and stress-related factors of employees. Overall, the model considered only the variables that showed a significant statistical relationship with stress at the bivariate level.

Matching income to expenses and healthy work-life balance remained significant when all other variables were not statistically significant in this study. Some variables were significant at the bivariate level but lost their significance at the multivariate. These were grade of staff, institution, quality of work, and causes of stress. They inform research on stress and work performance as well as the field of human resource management that although stress negatively affects work performance, a certain degree of stress is also good for high performance.

Findings of our study indicate that, staff who find it difficult in matching income with expenses experienced stress compared to staff who did not. High cost of living and loans contracted by staff from banks that are difficult to repay ultimately contribute to poor job performance and quality of work outcomes. Yet, our study also highlights staff that are stressed have a risk of exposure to a variety of life-impacting ailments that affect their performance or quality of work. This finding supports others who highlight the important role income plays in staff performance stress. Dysvik, Kuvaas, and Buch (2014) reported this finding and

suggested that while continuing education had the potential to enhance personal economic gains, in the long run, it also tended to trigger stress. Increased incomes tend to be accompanied by increased supervisor expectations (Dysvik et al., 2014). Therefore, while possible increases in salaries have been identified as capable of reducing stress levels, the study does so while bearing in mind the overall effects of such policy intervention discussed in other studies.

Previous research on the effects of continuing education on productivity has concentrated mainly on medical and related professions (Bang & Kim, 2014; Lindegård et al., 2014; Topcic, Baum, & Kabst, 2016). Topcic, Baum, and Kabst (2016) show that nurses showed a greater need for continuing education among the study participants. Other scholars such as Thielmann, Zavgorodnii, Zub, & Böckelmann, (2021) have also discussed the impact of stress on staff wellbeing outside of the sector. However, this study focusing outside of health has empirically investigated the relationship between education and skills, and on performance level from the often-neglected public sector. The study thus adds the influence of a new context to the scholarship on stress and staff performance.

Results of this study also support existing knowledge that staff who do not have a healthy work-life balance have a high chance to experience stress compared to their colleagues who have a healthy work-life balance (Hill et al., 2001). Hill et al. (2001) found that paid working hours and work-family balance was strongly and negatively correlated in their study. The more time people spend working, the more they tend to have an imbalance work-family life. This work-family conflict leads to stress. Our findings further show that the employees in their quest to achieve set targets worked longer hours, and did forfeit their mandatory leave affecting their health and productivity.

Our study's findings also support existing knowledge about the negative influence of stress and work productivity (e.g Pflanz and Ogle 2006). For instance, Pflanz and Ogle (2006)'s study shows, that stressed individuals displayed poorer work performance. However, we also highlight the often-overlooked minimal influence of stress on productivity. With a certain level of stress, staff were able to surmount their stressors and perform better although higher levels of stress affected staff performance below average in our study.

Finally, the study found that staff's stress may be caused by various combinations of factors within the working environment. While several studies discuss the influence of multiplicity of contextual factors on individual performance, our study clearly shows the influence of staff's employing institution as a major influencing factor on their stress levels.

Conclusion

The objective of this study was to analyze the influence of social variables on stress and productivity. The study revealed that matching income to expenses, and healthy work-life balance were the main predictors (7/10) of stress among the staff of OHCS and its aligned institutions. These results were consistent with findings from scholarship on productivity, added the perspective of public sector performance to this scholarship. However, the 71% variation of stress and performance generated by this model indicates that there may be other relevant predictors of stress and performance that may be missing in this study due to some limitations of the study. Therefore, future studies may examine the influence of the wider range of personal and work environment-related mediating

factors on an individual's stress and work performance.

Acknowledgement

The Authors would want to express their gratitude to all parties, both colleagues and tutors, who have provided guidance so that this paper can be completed properly.

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