

Enhancing Security Workforce Efficiency: Investigating Stress, Attitudes, and Performance Dynamics

ABSTRACT

Aims: This study examines factors influencing performance variability among security guards employed by government entities in Metro Manila. It focuses on the relationships between performance outcomes and age, work hours, stress levels, attitude, and job satisfaction.

Study Design: A cross-sectional quantitative and qualitative study design was utilized to identify performance determinants.

Place of Study: Data was collected from 405 security guards across multiple government agencies in Metro Manila.

Methodology: Surveys and interviews were conducted to gather data on demographics, job conditions, stress, attitudes, and job satisfaction. Statistical analyses included tests for outliers, data collinearity, normal distribution of errors, homoscedasticity, linearity, and non-zero variances. Bivariate correlation analysis assessed relationships between performance and key factors, while bootstrap regression analysis explored causal links. Slope tests determined the moderating role of job satisfaction.

Results: Bivariate correlation analysis revealed significant relationships between performance and variables such as age, attitude, work stress, hours worked daily, and job satisfaction at the 0.001 or 0.01% levels. Bootstrap regression analysis confirmed causal relationships between performance and these factors, significant at the 0.002 or 0.02% level.

Job satisfaction emerged as a significant moderator, influencing the effect of age, attitude, work stress, and hours worked on performance. These moderating effects were validated at the 0.002 or 0.02% significance levels, confirming job satisfaction's critical role.

Conclusion: The study demonstrates that age, attitude, work stress, hours worked daily, and job satisfaction significantly impact security guard performance. Job satisfaction plays a vital moderating role, highlighting its importance in improving job performance and addressing workplace challenges effectively.

Keywords: Security guard performance, age, attitude, work stress, work hours, job satisfaction, bootstrap regression analysis, bivariate correlation

1. INTRODUCTION

Factual Background

Security guards play a pivotal role in maintaining the safety and security of public and private spaces. Their duties extend from monitoring and surveillance to managing emergencies and enforcing regulations. However, the performance of security guards can vary significantly due to a multitude of factors, including age, attitude, work hours, and work stress. In an era where the demand for heightened security continues to grow, understanding these factors is crucial for optimizing the performance of security personnel and ensuring public safety.

Clearly Defined Problem

Despite the critical role of security guards, their performance is often hindered by issues such as excessive work hours, high stress levels, and varying degrees of job satisfaction. These challenges not only compromise the effectiveness of security measures but also lead to high turnover rates and decreased morale among security personnel. Unfortunately, there is a lack of comprehensive studies that explore how these factors interact and influence performance in real-world scenarios.

Proposed Solution

This research seeks to address this gap by examining the interplay between age, attitude, work hours, and work stress in determining the performance of security guards. The study also investigates the moderating role of job satisfaction in mitigating the negative impacts of these factors. By identifying the key determinants of performance, the research aims to provide actionable insights for employers, policymakers, and training institutions to enhance the efficiency and well-being of security personnel.

Brief Literature Survey

The success of any business or corporate organization is closely tied to the performance of its employees (Werdhiastutie et al., 2020). Employee performance is influenced by several factors, with workplace attitudes playing a pivotal role. Key elements such as job satisfaction, organizational commitment, and job involvement significantly impact performance. Positive attitude-related aspects, including motivation, dedication, and constructive communication, enhance employee outcomes and highlight the need for effective staff development, retention strategies, and personality growth programs (Cabrera & Estacio, 2022).

In addition to attitudes, demographic and environmental factors also contribute to employee performance. Straus et al. (2022) identified a substantial positive relationship between age and work productivity, suggesting that age can enhance performance outcomes. Conversely, workplace stress has a detrimental effect on performance. Stress, which varies in intensity based on individual perceptions, reduces motivation and hampers employees' ability to complete tasks effectively (Chen, Wang, Li, & Liu, 2022).

Moreover, the prevalence of long working hours in many organizations' further compounds challenges to employee performance. Extended hours, which include primary tasks, related duties, commuting, and work-related travel, can negatively impact workers' health, both directly and indirectly, diminishing overall productivity (Wong, Chan, & Ngan, 2019).

Finally, job satisfaction emerges as a critical factor in boosting employee performance. Fitria et al. (2022) found that higher levels of job satisfaction, driven by fair compensation, a positive work environment, and opportunities for growth and development, are strongly linked to improved performance outcomes. Together, these findings emphasize the importance of addressing workplace attitudes, stress, working hours, and job satisfaction to foster optimal employee performance and organizational success.

Scope and Justification

The scope of this research is centered on security guards employed in urban environments where high-stress scenarios are more prevalent. By focusing on this demographic, the study aims to provide targeted insights that are both practical and applicable. The justification for this work lies in its potential to fill a significant knowledge gap and contribute to the development of strategies that enhance the performance and job satisfaction of security personnel. This, in turn, has broader implications for public safety and organizational efficiency.

2. METHODOLOGY

Before doing the parametric procedures, the researcher made sure that the data was suitable for multiple linear regression analysis. The researcher tested for six main assumptions that deal with outliers, collinearity of data, random normal distribution of errors, homoscedasticity, linearity of data, and non-zero variances (see appendix A). Ferrante et al. (2012), Trenti et al. (2018), Chikere et al. (2019), and Pammi et al. (2021) mentioned that the diagnostic tests for data quality are essential to guarantee accuracy, consistency and completeness of data.

2.1 Outliers:

The standardized residuals in the context of statistical analysis, were used to identify outliers or unusual observations in a dataset. Standardized residuals are calculated by dividing the residuals (the differences between observed and predicted values) by an estimate of their standard deviation. In this case, the standardized residuals range from -1.703 to 2.024, which means that the residuals are within this range. The standard value of ± 3.29 is often used as a threshold to identify outliers. If the standardized residuals fall within this range, it suggests that there are no extreme outliers in your data. Since both the minimum and maximum standardized residuals were within the range of ± 3.29 , it indicates that all residuals are within the expected range and there are no significant outliers in the dataset. This is generally a good sign, suggesting that the model fits the data well.

2.2 Collinearity:

The researcher tested for violation of multicollinearity. If the variance inflation factor (VIF) value is greater than 10, or the Tolerance is less than 0.1, then there was a violation of multicollinearity. Based on the results provided (See Appendices), all the variables have VIF values well below the threshold of 10. This indicates that there was no significant multicollinearity among the predictors in the model. The VIF values for each variable: Age: 1.015, Attitude: 1.327, Work stress: 1.010, Hours daily: 1.032, and Job Satisfaction (JobSat): 1.343. These low VIF values suggest that each predictor variable is not highly correlated with the others, which is a good sign for the stability and reliability of the regression model

2.3 Normality (Random normal distribution of errors):

The study tested for normality using the Shapiro-Wilk Test which is suitable for sample sizes as large as 2000. The null hypothesis is that the data is normally distributed. If the p-value is less than the significance level (usually 0.05), then the study rejects the null hypothesis and conclude that the data was not normally distributed. If the p-value is greater than the significance level, then study fail to reject the null hypothesis and conclude that the data was normally distributed.

Based on the Shapiro-Wilk test results provided (see Appendices), all the variables (Age, Attitude, Work stress, Hours daily, and Job Satisfaction) have p-values of 0.001. Since these p-values are less than the threshold of 0.05, there was no sufficient evidence to support the null hypothesis that the data for these variables were normally distributed.

2.4 Homoscedasticity or homogeneity:

Homogeneity in regression refers to the assumption that the variance of errors is constant across all levels of the predictor variable. In other words, it means that the variance of residuals is equal across all levels of the independent variable. Homogeneity of variance is important because it affects the validity of statistical tests such as t-tests and ANOVA. If the resulting p-value of Levene's test is less than the significance level (0.05), the null hypothesis of equal variances is rejected and it is concluded that there is a difference between the variances in the population.

Based on the threshold of ($\rho = 0.05$) for the homogeneity test (Levene's test), Age ($\rho = 0.620$): Since $\rho > 0.05$, the variances are homogeneous. Attitude ($\rho = 0.005$): Since $\rho < 0.05$, the variances are not homogeneous. Work stress ($\rho = 0.379$): Since $\rho > 0.05$, the variances are homogeneous. Hrs daily ($\rho = 0.004$): Since $\rho < 0.05$, the variances are not homogeneous. JobSat ($\rho = 0.202$): Since $\rho > 0.05$, the variances are homogeneous. In summary, the variances for Age, Work stress, and JobSat are homogeneous, while the variances for Attitude and Hrs daily are not.

2.5 Linearity of data:

A correlation coefficient is a number between -1 and 1 that tells the strength and direction of a relationship between variables. It reflects how similar the measurements of two or more variables are across a dataset. The Pearson correlation coefficient (r) is the most common way of measuring a linear correlation (Schober 2018). Based on the threshold of ($\rho < 0.05$) for significance in a Pearson correlation test, none of the variables listed show a significant linear relationship. A summary of the results showed the following; Age: ($\rho = 0.313 > 0.05$), Attitude: ($\rho = 0.155$, P-value > 0.05), Work stress: ($\rho = 0.655$, ρ -value > 0.05), Hours daily: ($\rho = 0.343$, ρ -value > 0.05), and Job Satisfaction (JobSat): ($\rho = 0.650$, ρ -value > 0.05). Since all the P-values are greater than 0.05, there were no sufficient evidence to reject the null hypothesis, which means there was no significant linear relationship between these variables and the dependent variable in the study.

2.6 Non-zero variances:

Variance is a measure of how spread out a data set. A zero variance indicates that all values in the data set are identical. A non-zero variance indicates that there is some variation in the data set. Every positive number indicates a non-zero variance since a square value cannot be negative. On Appendix A, the heading Variance, indicates the values are over zero and the assumption is met. Variance measures how spread out the values in a data set are. A zero variance means all values are identical, while a non-zero variance indicates some variation.

Given the variances provided: Age: 78.435, Attitude: 0.440, Work Stress (Wstress): 1.024, Hours per Day (Hrs(day)): 1.644, and Job Satisfaction (JobSat): 0.525. Since the threshold level is zero, all these variances indicate that there was some variation in each of these data sets. The higher the variance, the more spread out the values are. For example, the variance for Age (78.435) is much higher than that for Attitude (0.440), indicating that the ages in your data set are more spread out compared to the attitudes.

3. RESULTS AND DISCUSSION

This section was presented in four subsections. 1. The perceived level of performance, age, attitude, work stress, hours worked daily, and job satisfaction; 2. The relationships between performance and factors such as attitude, age, work stress, and work hours and job satisfaction; 3. The causal effects of attitude, age, work stress, work hours, and job satisfaction on job performance; and 4. The effect of the focal predictor (age, attitude, work stress, and hours worked daily) on performance at different levels of the moderator (job satisfaction).

Results

3.1 How do the respondents perceive their level of performance, attitude, work stress, hours worked daily, and job satisfaction?

Table 1 shows the level of performance, attitude, work stress, hours work daily, and job satisfaction. On the average, a respondent can be described as 40 years old or a millennial (Gen Y) that was born between 1981-1996 (ages 28-43), rated as excellent (≈ 5) in performance and attitude, approximately working 11 hours daily, with a high work stress (≈ 4), but satisfied with his/her job (≈ 5).

Table 1. The level of performance, attitude, work stress, hours work daily, and job satisfaction of the respondents.

	Perform	Age	Attitude	Wstress	Hrs(day)	JobSat
N	405	405	405	405	405	405
Minimum	4	21	2	1	4	2
Maximum	6	70	6	6	12	6
Mean	5	40	5	4	11	5
Std. Deviation	0.61	8.86	0.66	1.01	1.28	0.72
Level	Excellent	Millennial	Excellent	High	> 8 hrs	Satisfied

Scoring guide:

Scale	Performance	Attitude	Level of stress	Job Satisfaction
6	Outstanding	Outstanding	Extremely high	Very Satisfied
5	Excellent	Excellent	Very High	Satisfied
4	Very Satisfactory	Very Satisfactory	High	Somewhat Satisfied
3	Satisfactory	Satisfactory	Moderate	Somewhat Dissatisfied
2	Fair	Fair	Mild	Dissatisfied
1	Poor	Poor	Low	Very Dissatisfied

3.2 What are the relationships between performance and factors such as attitude, age, work stress, and work hours and job satisfaction?

Performance \leftrightarrow age, attitude, work stress, hours work daily, and job satisfaction

Due to the incidence of nonlinearity, the study used the bootstrap estimate of bivariate correlation at 95% confidence interval discussed on the works of Ruscio (2008), Wagstaff (2009), and Shan et al. (2021). The bootstrap estimate of bivariate correlation at a 95% confidence interval using survey data in SPSS involves resampling 405 data multiple times (30,000 times) to create a distribution of the correlation coefficient. Table 2 exhibits the relationships between the outcome variable (performance) and the factors (age, attitude, work stress, hours work daily, and job satisfaction).

The strength of relationship between performance and the factors (age, attitude, work stress, hours work daily, and job satisfaction) were highly significant but very weak.

Table 2. The relationships between the outcome (performance) and factors.

	Pearson Correlation	Sig. (2-tailed)	95% Confidence Intervals (2-tailed)	
			Lower	Upper
Perform - Age	0.050	0.001	0.050	0.051
Perform - Attitud	0.071	0.001	0.070	0.071
Perform - Wstress	-0.022	0.001	-0.023	-0.022
Perform - Hrs(day)	-0.047	0.001	-0.048	-0.047
Perform - JobSat	0.023	0.001	0.022	0.023
Age - Attitud	-0.044	0.001	-0.045	-0.043
Age - Wstress	0.049	0.001	0.048	0.049
Age - Hrs(day)	-0.105	0.001	-0.106	-0.105
Age - JobSat	-0.027	0.001	-0.027	-0.026
Attitud - Wstress	0.023	0.001	0.022	0.023
Attitud - Hrs(day)	0.112	0.001	0.111	0.112
Attitud - JobSat	0.493	0.001	0.493	0.494
Wstress - Hrs(day)	0.007	0.001	0.006	0.007
Wstress - JobSat	0.085	0.001	0.085	0.086
Hrs(day) - JobSat	0.136	0.001	0.136	0.137

The analysis shows that performance and age have a very weak positive correlation ($r = 0.050$), indicating minimal impact. Performance and attitude also have a weak positive relationship ($r = 0.071$), suggesting a slight improvement in performance with a better attitude. Conversely, performance and work stress ($r = -0.022$) and performance and hours worked per day ($r = -0.047$) show weak negative correlations, implying that increased stress and longer hours slightly reduce performance. Performance and job satisfaction exhibit a very weak positive correlation ($r = 0.023$), showing a marginal improvement with higher satisfaction.

Among the factors, age correlates weakly with attitude ($r = -0.044$), work stress ($r = 0.049$), hours worked per day ($r = -0.105$), and job satisfaction ($r = -0.027$), indicating slight variations in these relationships. Attitude has a moderate positive correlation with hours worked ($r = 0.112$) and a strong positive correlation with job satisfaction ($r = 0.493$), highlighting its significant role in satisfaction. Work stress shows minimal correlation with hours worked ($r = 0.007$) and a weak positive relationship with job satisfaction ($r = 0.085$). Hours worked and job satisfaction have a moderate positive correlation ($r = 0.136$), suggesting a slight satisfaction increase with longer hours.

Hypothesis test on the relationships between performance and factors such as attitude, age, work stress, and work hours and job satisfaction.

H_0 : $r = 0$, there is no relationship between performance and the factors (age, attitude, work stress, hours worked daily and job satisfaction).

H_a : $r \neq 0$, there is relationship between performance and the factors (age, attitude, work stress, hours worked daily and job satisfaction).

The results of the bivariate correlation proved that the relationship between performance and the factors (age, attitude, work stress, hours worked daily and job satisfaction) were significant at 0.001 or 0.01%, providing enough evidence to support the alternative hypothesis ($H_a: r \neq 0$) that “*there is relationship between performance and the factors (age, attitude, work stress, hours worked daily and job satisfaction)*” at 5% level of significance.

3.3 What are the causal effects of attitude, age, work stress, work hours, and job satisfaction on job performance?

Determining the appropriate model for the study), a bootstrap regression was used to determine the causal effect of the factors (age, attitude, work stress, work hours daily, job performance (moderator) on job performance. The BCA bootstrap method adjusts for both bias and skewness in the distribution of bootstrap estimates. This means that the confidence intervals derived from the BCA method are more accurate and reliable, especially when the data distribution is not perfectly normal. Bias Correction: This adjustment corrects for any systematic bias in the bootstrap estimates. Acceleration: This adjustment accounts for the skewness in the bootstrap distribution. By using the BCA method, you can be more confident that the intervals around your regression coefficients are accurate, providing a more robust interpretation of the relationships between your variables (Carmona-Benitez et al., 2015, Jung et al., 2019, and Iba et al. 2021).

Table 3 reveals the results of Bootstrap Bca nonlinear regression Constant (2.530): The intercept of the regression model represents the expected value of the dependent variable (Perform) when all independent variables are zero. It means, the average performance of a respondent when age, attitude, work stress, hours worked daily, and job satisfaction were not known.

Table 3. The causal effects of the factors on job performance

Model coefficients			Sig. (2-tailed)	BCa 95% Confidence Interval	
	B	Std. Error		Lower	Upper
(Constant)	2.53	0.00061	0.0002	2.53	2.531
Age -> Perform	-0.0002	0.00001	0.0002	-0.000194	-0.00015
Attitude -> Perform	-0.037	0.00021	0.0002	-0.0375	-0.03664
Work Stress -> Perform	0.011	0.00013	0.0002	0.011	0.012
Hours worked daily -> Perform	0.003	0.00003	0.0002	0.0032	0.0033
Job Satisfaction -> Perform	-0.016	0.00017	0.0002	-0.0164	-0.0157
Age x Job Satisfaction	0.00005	0.000002	0.0002	0.00004	0.00005
Attitude x Job Satisfaction	0.008	0.00002	0.0002	0.00781	0.0079
Work stress X Job Satisfaction	-0.002	0.00003	0.0002	-0.00195	-0.00184
Hours Work Daily x Job Satisfaction	-0.001	0.00001	0.0002	-0.001472	-0.00145
perform ²	0.101	0.000002	0.0002	0.101355	0.10136

The analysis highlights complex relationships between factors and job performance. The constant ($B = 2.53$) reflects the baseline performance. Age has a slight negative impact ($B = -0.0002$), and attitude significantly reduces performance ($B = -0.037$). Conversely, work stress ($B = 0.011$) and hours worked daily ($B = 0.003$) positively influence performance, though marginally. Surprisingly, job satisfaction negatively affects performance ($B = -0.016$), suggesting indirect effects.

Interaction effects reveal that age and job satisfaction ($B = 0.00005$) and attitude and job satisfaction ($B = 0.008$) positively influence performance. However, work stress and job

satisfaction ($B = -0.002$) and hours worked daily and job satisfaction ($B = -0.001$) show slight negative effects. Lastly, **perform2** strongly enhances performance ($B = 0.101$), reflecting cumulative impacts. These results underscore the nuanced interplay of factors in shaping job performance.

Hypothesis test on the causal effects of age, attitude, work stress, work hours, and job satisfaction on job performance.

H₀: $B = 0$, there is no causal effect between performance and the factors (age, attitude, work stress, hours worked daily and job satisfaction).

H_a: $B \neq 0$, there is a causal effect between performance and the factors (age, attitude, work stress, hours worked daily and job satisfaction).

The results of the bootstrap regression proved that the causal effect between performance and the factors (age, attitude, work stress, hours worked daily and job satisfaction) were significant at 0.002 or 0.02%, providing enough evidence to support the alternative hypothesis (H_a: $B \neq 0$) that “there is a causal effect between performance and the factors (age, attitude, work stress, hours worked daily and job satisfaction)” at 5% level of significance.

3.4 How does job satisfaction moderate the relationship between these factors and job performance?

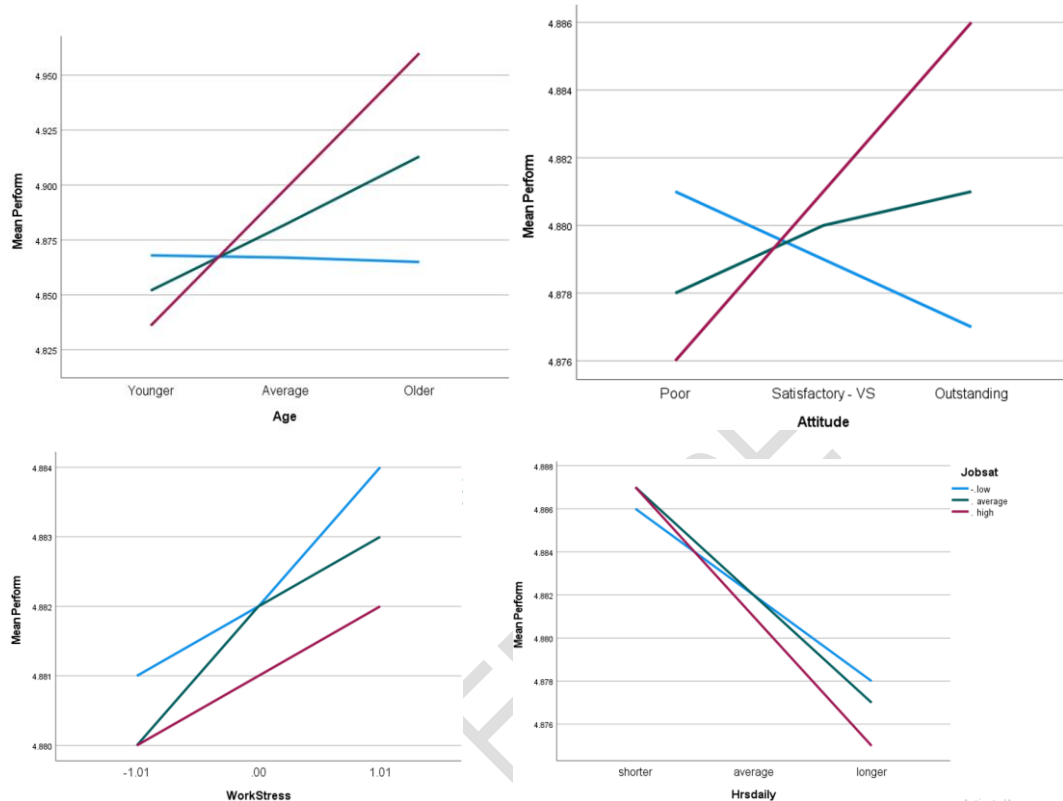
Age's impact on performance is moderated by job satisfaction. A negligible positive Age x Job Satisfaction interaction (0.00005) indicates minimal overall effect. At low job satisfaction (-0.725), performance slightly decreases with age. At moderate (0.000) and high (0.725) job satisfaction, performance increases with age, more significantly at higher levels. Thus, enhancing job satisfaction may amplify age's positive effect on performance, particularly benefiting older employees. Older guards at low job satisfaction show declining performance, while those at high job satisfaction demonstrate noticeably better performance. This suggests a positive age-performance relationship is contingent on high job satisfaction.

Table 4. The effect of the focal predictor (age, attitude, work stress, and hours work daily) on performance at different levels of the moderator (job satisfaction)

Age	Jobsat	Perform	Attitude	Jobsat	Perform
-8.856	-0.725	4.868	-0.664	-0.725	4.881
0.000	-0.725	4.867	0.000	-0.725	4.879
8.856	-0.725	4.865	0.664	-0.725	4.877
-8.856	0.000	4.852	-0.664	0.000	4.878
0.000	0.000	4.882	0.000	0.000	4.880
8.856	0.000	4.913	0.664	0.000	4.881
-8.856	0.725	4.836	-0.664	0.725	4.876
0.000	0.725	4.898	0.000	0.725	4.881
8.856	0.725	4.960	0.664	0.725	4.886

Work Stress	Jobsat	Perform	Hrsdaily	Jobsat	Perform
-1.012	-0.725	4.881	-1.282	-0.725	4.886
0.000	-0.725	4.882	0.000	-0.725	4.882
1.012	-0.725	4.884	1.282	-0.725	4.878
-1.012	0.000	4.880	-1.282	0.000	4.887
0.000	0.000	4.882	0.000	0.000	4.882
1.012	0.000	4.883	1.282	0.000	4.877
-1.012	0.725	4.880	-1.282	0.725	4.887
0.000	0.725	4.881	0.000	0.725	4.881

Figure 1. The effect of the focal predictor (age, attitude, work stress, work hours - daily) on performance at different levels of the moderator (job satisfaction).



A positive Attitude x Job Satisfaction interaction (0.008) indicates that a positive attitude significantly enhances job satisfaction, which in turn positively influences job performance. At low job satisfaction (-0.725), performance slightly decreases as attitude increases. At average (0.000) job satisfaction, performance remains stable regardless of attitude changes. At high job satisfaction (0.725), performance increases as attitude increases. This suggests that job satisfaction moderates the attitude-performance relationship. High job satisfaction amplifies the positive effect of attitude on performance, while low job satisfaction diminishes its impact.

The interaction between work stress and job satisfaction reveals a negative relationship, indicating that higher work stress slightly reduces job satisfaction, which negatively impacts job performance. At low job satisfaction (-0.725), performance remains stable with values of 4.881 at low work stress, 4.882 at average work stress, and 4.884 at high work stress. Similarly, at average job satisfaction (0.000), performance values are nearly identical: 4.880 with low work stress, 4.882 at average, and 4.883 at high. At high job satisfaction (0.725), performance values are again consistent: 4.880 with low work stress, 4.881 at average, and 4.882 at high.

Interestingly, while work stress appears to have a slight positive effect on performance across all job satisfaction levels, the increase is minimal. Moreover, job satisfaction does not significantly alter the relationship between work stress and performance, as performance remains relatively stable regardless of job satisfaction levels.

A negative Hours Worked Daily x Job Satisfaction interaction (-0.001) suggests that longer working hours slightly decrease job satisfaction, leading to a minor negative impact on performance. At low, average, and high job satisfaction levels, increasing daily work hours results in a slight decrease in performance. This trend suggests that working more hours may not necessarily lead to better performance, regardless of job satisfaction levels. It implies that there might be an optimal number of hours for maintaining performance, and exceeding this threshold could lead to diminishing returns.

Additionally, a positive coefficient for Perform² (0.101) indicates a significant quadratic effect. This means that as job performance increases, the rate of improvement in performance also increases. The overall significance level of 0.002 indicates that these results are statistically significant, meaning the observed effects are unlikely due to chance.

Hypothesis test on the moderating (interaction) effect of job satisfaction on the relationship of the outcome variable (performance) and the factors (age, attitude, work stress, work hours, and job satisfaction on job performance)

H₀: B = 0, There are no effects of the focal predictors (age, attitude, work stress, and hours worked daily) on performance at different levels of the moderator (job satisfaction).

H_a: B ≠ 0, there are effects of the focal predictors (age, attitude, work stress, and hours worked daily) on performance at different levels of the moderator (job satisfaction).

(Referring to Table 3, Figure 1), the results of the bootstrap regression and slope test proved that the effects of the focal predictors (age, attitude, work stress, and hours worked daily) on performance at different levels of the moderator (job satisfaction) were significant at 0.002 or 0.02%, providing enough evidence to support the alternative hypothesis (H_a: B ≠ 0) that “there are *“effects of the focal predictors (age, attitude, work stress, and hours worked daily) on performance at different levels of the moderator (job satisfaction)”* at 5% level of significance. Therefore, job satisfaction moderates the association between job performance and the factors (age, attitude, work stress, and hours worked daily).

4. CONCLUSION

The research reveals a complex web of relationships between age, attitude, work stress, work hours, and job satisfaction, all influencing security guard performance in nuanced ways. Despite generally weak correlations, the statistical significance of these findings underscores their reliability, offering valuable insights into performance dynamics.

Age demonstrates a slight positive influence on performance, moderated by job satisfaction. When satisfaction is high, older guards tend to perform marginally better. Similarly, a positive attitude correlates with improved performance, reinforcing the need for fostering supportive work environments. However, a negative attitude diminishes productivity, emphasizing the impact of morale on output.

Work stress presents a paradoxical relationship. While moderate stress can enhance performance by driving urgency, excessive levels hinder productivity. Job satisfaction acts as a crucial buffer, mitigating stress's adverse effects. Conversely, longer work hours exhibit a mild negative impact on performance, particularly when satisfaction wanes, highlighting the necessity of balanced schedules to prevent burnout.

The role of job satisfaction as a moderator is profound. It amplifies positive traits like age and attitude while cushioning against negatives such as stress and extended hours. Surprisingly, the research also identifies unconventional patterns, such as the slight negative association

between job satisfaction and performance, potentially pointing to complacency at higher satisfaction levels.

These findings illuminate the intricate interplay of factors shaping security guard performance. By leveraging insights into job satisfaction's moderating power and addressing the delicate balance of stress, hours, and morale, organizations can devise strategies to foster a more productive and resilient workforce.

CONSENT

All authors declare that 'written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editorial office/Chief Editor/Editorial Board members of this journal.

ETHICAL APPROVAL

The research surveys involving human respondents conducted as part of this study were reviewed and approved by the ethics committee of the graduate school of University of Sto. Tomas. The study adhered to the ethical guidelines and protocols set forth by the committee to ensure the protection and confidentiality of all participants.

Approval was granted on August 30, 2024, with reference number GS2024-057.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

REFERENCES

- Werdhiastutie, A., Suhariadi, F., & Partiw, S. G. (2020). Achievement Motivation as Antecedents of Quality Improvement of Organizational Human Resources. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 3(2), 747–752. <https://doi.org/10.33258/birci.v3i2.886>
- Cabrera, W., & Estacio, D. (2022). Job Attitude as a Factor on Employees Performance. *International Journal of Economics Development Research (IJEDR)*, 3(1), 13–35. <https://doi.org/10.37385/ijedr.v3i1.254>.
- Straus, E., Uhlig, L., Kuhnel, J., & Korunka, C. (2022). Remote workers' well-being, perceived productivity, and engagement: Which resources should HRM improve during COVID-19? A longitudinal diary study. *The International Journal of Human Resource Management*, 1-31. Link: <https://www.tandfonline.com/doi/full/10.1080/09585192.2022.2075235>
- Chen, B., Wang, L., Li, B., & Liu, W. (2022). Work stress, mental health, and employee performance. *Frontiers in Psychology*, 13, 1006580. <https://doi.org/10.3389/fpsyg.2022.1006580>
- Wong, K., Chan, A. H. S., & Ngan, S. C. (2019). The Effect of Long Working Hours and Overtime on Occupational Health: A Meta-Analysis of Evidence from 1998 to 2018. *International journal of environmental research and public health*, 16(12), 2102. <https://doi.org/10.3390/ijerph16122102>
- Fitria, F., Surajiyo, S., Aprianto, R., Idayati, I., Mulyono, H., & Ningmas, R. (2022). Quality of Work Life and Work Motivation on Employee Performance with Job Satisfaction as Moderating Variable. *Adpebi International Journal of Multidisciplinary Sciences*, 1(1), 340-353. <https://journal.adpebi.com/index.php/AIJMS/article/view/307/368>
- Ferrante di Ruffano L, Hyde C J, McCaffery K J, Bossuyt P M M, Deeks J J. (2012). Assessing the value of diagnostic tests: a framework for designing and evaluating trials *BMJ* 2012; 344 :e686 doi:10.1136/bmj.e686
- Trenti, T. & Plebani, M. (2018). Diagnostic test accuracy: a valuable tool for promoting quality and patient safety. *Diagnosis*, 5(4), 175-178. <https://doi.org/10.1515/dx-2018-0091>
- Chikere, Chinyereugo M. Umemneku; Kevin Wilson; Sara Graziadio; Luke Vale; and A. Joy Allen. (2019). Diagnostic test evaluation methodology: A systematic review of methods employed to evaluate diagnostic tests in the absence of gold standard – An update. Published: October 11, 2019. <https://doi.org/10.1371/journal.pone.0223832>
- Pammi, M., Takwoingi, Y. (2021). Systematic Reviews of Diagnostic Test Accuracy. In: Patole, S. (eds) *Principles and Practice of Systematic Reviews and Meta-Analysis*. Springer, Cham. https://doi.org/10.1007/978-3-030-71921-0_15

Schober P, Boer C, Schwarte LA. Correlation Coefficients: Appropriate Use and Interpretation. *Anesth Analg*. 2018 May;126(5):1763-1768. doi: 10.1213/ANE.0000000000002864. PMID: 29481436.

Ruscio, John. (2008). Constructing Confidence Intervals for Spearman's Rank Correlation with Ordinal Data: A Simulation Study Comparing Analytic and Bootstrap Methods. *Journal of Modern Applied Statistical Methods* Copyright © 2008 JMASM, Inc. November 2008, Vol. 7, No. 2, 416-434 1538 – 9472/08/\$95.00, 416

Wagstaff, D.A., Elek, E., Kulis, S. et al. (2009). Using a Nonparametric Bootstrap to Obtain a Confidence Interval for Pearson's r with Cluster Randomized Data: A Case Study. *J Primary Prevent* 30, 497–512 (2009). <https://doi.org/10.1007/s10935-009-0191-y>

Shan, G., Zhang, H., Barbour, J. et al. Bootstrap confidence intervals for correlation between continuous repeated measures. *Stat Methods Appl* 30, 1175–1195 (2021). <https://doi.org/10.1007/s10260-020-00555-1>

APPENDIX

Appendix A. Summary of Diagnostic test for suitability of data

Test	Result	Std	Remark
Std Residual	Min = -1.703, Max = 2.024	± 3.29	No outliers
Collinearity	Age: VIF = 1.015	VIF < 10	No violation
	Attitude: VIF = 1.327	VIF < 10	No violation
	Work stress: VIF = 1.010	VIF < 10	No violation
	Hrs daily: VIF = 1.032	VIF < 10	No violation
	JobSat: VIF = 1.343	VIF < 10	No violation
Normality	Age: S-W = 0.001	S-W < 0.05	non-normal
Shapiro-Wilks	Attitude: S - W = 0.001	S-W < 0.05	non-normal
	Work stress: S - W = 0.001	S-W < 0.05	non-normal
	Hrs daily: S - W = 0.001	S-W < 0.05	non-normal
	JobSat: S - W = 0.001	S-W < 0.05	non-normal
Homogeneity	Age: $\rho = 0.620$	$\rho > 0.05$	Homogenous
Levene's test	Attitude: $\rho = 0.005$	$\rho < 0.05$	Heterogenous
	Work stress: $\rho = 0.379$	$\rho > 0.05$	Homogenous
	Hrs daily: $\rho = 0.004$	$\rho < 0.05$	heterogenous
	JobSat: $\rho = 0.202$	$\rho > 0.05$	Homogenous
Linearity correlation	Age: $\rho = 0.313$	$\rho > 0.05$	non-linear
	Attitude: $\rho = 0.155$	$\rho > 0.05$	non-linear
	Work stress: $\rho = 0.655$	$\rho > 0.05$	non-linear
	Hrs daily: $\rho = 0.343$	$\rho > 0.05$	non-linear

	JobSat: $\rho = 0.650$	$\rho > 0.05$	non-linear
Variance	Age: var = 78.435	Var > 0	non-zero
non-zero	Attitud: var = 0.440	Var > 0	non-zero
	Wstress: var 1.024	Var > 0	non-zero
	Hrs(day): var = 1.644	Var > 0	non-zero
	JobSat: var = 0.525	Var > 0	non-zero

UNDER PEER REVIEW