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BOOSTING WORK PERFORMANCE IN THE DIGITAL ERA: THE CRUCIAL ROLE OF JOB SATISFACTION AT PT BRANTAS ABIPRAYA

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Abstract

The growing integration of smartphones and technology in both personal and professional life, which has brought both positive and negative consequences. This study aims to analyze the impact of work engagement and job satisfaction on the work performance of employees at PT Brantas Abipraya. Utilizing a quantitative-explanatory method, data were collected from 316 respondents who are permanent employees of the company. Data analysis was conducted using Structural Equation Modeling-Partial Least Squares (SEM-PLS). It applies Herzberg's dual-factor theory, which distinguishes between motivator and hygiene factors, to analyze how emotional well-being and work-life balance impact employees' performance. The findings indicate that work engagement has a positive and significant effect on work performance. Conversely, smartphone use at night has a significantly negative impact on both job satisfaction and work performance. Additionally, emotional exhaustion was found to negatively affect both work performance and job satisfaction. However, job satisfaction can mediate the relationship between smartphone use and emotional exhaustion on work performance. These findings provide practical implications for companies to regulate smartphone use outside of working hours and to offer adequate emotional support to employees to enhance their performance and well-being.

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INTRODUCTION

The technological revolution has made smartphones highly appealing and popular. They have become an essential part of everyday life for both children and adults. Smartphones are widely recognized as a key method of correspondence and communication, becoming a necessity in human life. However, excessive smartphone use can lead to health issues, including both biological and psychological problems. For instance, [Gugushvili et al., 2020] concluded that problematic or excessive smartphone use is negatively associated with users' emotional well-being. Using smartphones outside of work hours indirectly forces employees to continuously interact with their work. Moreover, obsessive smartphone use can lead to mental health symptoms such as sleep disorders and depression [Thomée et al. 2011; Lee et al., 2014]. Sleep routines affect performance [Dewald et al., 2010] in the human body, while sleep disturbances can cause many physical and psychological problems.

A growing trend in corporate environments is to require employees to leave their communication devices, especially smartphones, outside meeting rooms [Forbes, 2014]. This policy aims to create higher productivity by preventing employees from being constantly distracted by technology (e.g., checking and writing emails via smartphones). Although using smartphones at work has positive impacts on both employees and organizations, increasing research reports negative impacts of smartphone use, especially when used at night or after work hours.

Many target-oriented companies find achieving targets crucial as it relates to profits and the company's long-term sustainability. This

situation causes employees to no longer differentiate between work hours and rest hours. It has also changed work patterns as companies believe connectivity outside work hours can improve employee efficiency [Li - Lin et al 2019; Van Laethem et al., 2018]. Employees are required to continuously interact with work even outside working hours due to job demands and coordination that must be completed outside work hours [Lanaj et al., 2014]. This condition causes lack of sleep, which can weaken many cognitive functions, including memory, concentration, and focus, crucial for daily activities [Ellis et al., 2014]. In the long term, this situation can reduce employee performance. Fatigue, discomfort, and imbalance between office life and personal life can reduce work motivation, negatively impacting work results and ultimately harming the employee [Rehman et al., 2019]. The relationship between smartphone use outside work hours and employee productivity does not always yield the same findings. Some studies by Ashrafi et al. (2018) explain that employees who have a strong interest in their work do not mind connectivity outside work hours. These employees find it easier to monitor their work, especially when performing asynchronous tasks, allowing them to work more relaxed and flexibly, indirectly increasing employee productivity, even when they are not physically present in the office.

Setting targets not aligned with the company's human resources capacity causes a high workload. Employees are required to complete many responsibilities assigned by the company, sometimes beyond their duties. This condition leads to emotional exhaustion, even though employees can still physically complete their tasks [Balducci et al., 2021; Buruck et al., 2020]. When employees feel emotionally exhausted, it impacts their energy levels and motivation [Subandowo., 2022]. Employees become less motivated to complete given tasks and tend to procrastinate. Consequently, overall work productivity can decrease due to a lack of drive to perform productive actions [Yagil & Medler, 2017]. These findings are consistent with studies by De Costa, [2020]; Akeke et al. [2020] that found significant impacts of emotional exhaustion on work performance. However, employees with emotional intelligence can separate their emotional condition from the responsibilities they must complete. Emotionally, employees may feel exhausted, but physically, they must perform well to meet the company's targets. This is also in line with research by Khan et al. [2016], which found that employees with emotional intelligence can manage and understand emotions appropriately, preventing them from affecting their work performance.

Inconsistencies in research findings on the relationship between smartphone use and emotional exhaustion on work performance highlight gaps in this research area. To address these gaps, a mediating variable is needed to accommodate the relationships among these variables. In this study, the mediating variable used is Job Satisfaction. The use of job satisfaction as a mediating variable is based on Herzberg's motivation theory introduced in [1959]. Herzberg's dual-factor theory provides a useful framework for understanding how motivational and hygienic factors can interact to influence work engagement, job satisfaction, and employee work performance in the context of smartphone use outside work hours and emotional exhaustion. The use of job satisfaction as a mediating variable is also a novelty in this study, as similar constructs have not been widely used as mediating variables in previous research. Additionally, the novelty in this study is supported by the application of Herzberg's motivation theory in analyzing productivity-related phenomena.

This study aims to analyze the interrelated relationships between smartphone use at night after work hours and work-related fatigue on job satisfaction and work productivity. Furthermore, this study also seeks to analyze the relationship between work engagement and work performance. The findings of this study are expected to provide theoretical contributions to developing research on smartphone use at work by offering new or alternative theoretical perspectives on how smartphone use is related to job satisfaction and how employee work engagement characteristics within company performance impact outcomes.

LITERATURE REVIEW

The Dual-Factor Theory

The dual-factor theory identifies two main groups of factors that influence motivation and job satisfaction: motivator factors and hygiene factors. Motivator factors include elements such as achievement, recognition, responsibility, challenging work, and opportunities for growth. These factors are directly related to intrinsic job satisfaction and drive employees to achieve higher performance and optimal productivity levels. Motivator factors play a crucial role in promoting personal growth and a sense of accomplishment, ultimately enhancing overall job satisfaction [Herzberg, 1966]. Conversely, hygiene factors encompass aspects such as company policies, supervision, salary, interpersonal relationships, job security, and working conditions. These factors are associated with the work environment and, while their adequate presence does not increase job satisfaction, their absence or poor quality can cause significant dissatisfaction among employees. In other words, hygiene factors act more as dissatisfaction preventers rather than satisfaction promoters [Herzberg, 1966]. Herzberg concluded that to achieve

optimal levels of motivation and job satisfaction, companies should focus their efforts not only on improving work conditions related to hygiene factors but also on enhancing elements included in motivator factors. This approach allows organizations to create a work environment that not only avoids dissatisfaction but also promotes higher levels of satisfaction and motivation among employees.

Work Performance

Work performance refers to the level of achievement or the results of an individual's efforts in performing their job tasks at the workplace [Nguyen et al., 2019]. Individual work results are evaluated based on the quality and quantity of work, as well as the extent to which the employee meets or exceeds the performance expectations and standards set by the organization [Romero, G. D., 2017]. Employees who are satisfied with their job tend to maintain higher performance standards. Moreover, employees who feel involved are more likely to proactively seek solutions to problems, collaborate with colleagues, and contribute maximally to achieving organizational goals [Chaurasia & Shukla, 2014]. Additionally, employee engagement is associated with increased creativity, innovation, and adaptability in the workplace, which can sustain the company's competitiveness and success in a continuously evolving business environment.

H1: Work Engagement Positively and Significantly Affects Work Performance

Work Engagement

Work engagement is a positive psychological condition where individuals feel emotionally, cognitively, and behaviorally involved in their work [Rich et al., 2010]. Work engagement includes a profound sense of closeness to the job, high motivation, and strong focus on the tasks performed [Rich et al., 2010]. Employees who feel engaged in their work tend to exhibit high levels of motivation, strong dedication, and deep involvement in their tasks [Van Laethem et al., 2018]. They feel emotionally connected to their work and believe that their job holds significant meaning and value for them personally. Nguyen et al. [2019] in their study explain that a high level of work engagement is closely related to improved individual and organizational performance. Employees who feel engaged in their work tend to achieve better outcomes, including increased productivity, higher work quality, and lower absenteeism rates. The positive relationship between work engagement and work performance is supported by research conducted by Yao et al.

H2: Smartphone Use at Night Negatively and Significantly Affects Work Performance

Smartphone use at night, involving intensive interaction with mobile devices, has become increasingly common in modern society [Cheng, K. et al., 2021]. This phenomenon occurs largely due to the widespread adoption of this technology, which offers easy access to information, communication, and entertainment. In everyday life, smartphone use at night often takes place in bed or before sleeping, where individuals tend to interact with their devices for personal or work purposes [Cheng, K. et al., 2021]. Moreover, smartphone use at night often involves brain-stimulating activities such as reading news, checking social media, or watching videos. These activities can keep the mind alert and increase mental stimulation, which is counterproductive to efforts to relax and sleep. This is particularly relevant for individuals who have spent energy and time at work. McDaniel, B.T. et al. [2021] and Van Laethem et al. [2018] suggest that smartphone use at night can be related to job satisfaction, as it can indirectly extend work hours and reduce the rest time needed for physical and mental recovery. Furthermore, Román, S. et al. [2018] and Cheung et al. [2022] reveal that there is a positive relationship between smartphone use at night and job satisfaction. They found that for some individuals, especially those with jobs that allow time flexibility or who use smartphones for productivity-enhancing activities, nighttime smartphone use can extend their work reach and increase engagement in their work [Román, S. et al., 2018; Cheung et al., 2022].

H3: Smartphone Use at Night Negatively and Significantly Affects Job Satisfaction

Job Satisfaction

Job satisfaction is an individual's subjective evaluation of their experiences and perceptions of their job, encompassing how satisfied or dissatisfied they feel with various aspects of their work, including the work environment, compensation, relationships with colleagues, opportunities for growth, and work-life balance [Romero, 2017]. Employees who are satisfied with their job tend to perform better because they are more motivated, enthusiastic, and dedicated to their tasks [Rasool, S. F. 2019]. Job satisfaction helps create a positive work environment where employees feel valued and supported, thereby enhancing productivity and efficiency within the organization. Nguyen et al. [2019] support that organizations attentive to their employees' job satisfaction tend to have higher employee retention rates and better performance in

achieving business goals and providing customer service.

H4: Job Satisfaction Positively and Significantly Affects Work Performance

Recent studies propose the hypothesis that job satisfaction might act as a mediator in the relationship between nighttime smartphone use and work performance [Ellahi et al., 2021]. Smartphone use at night can provide faster and easier access to information and collaboration with colleagues, ultimately enhancing work efficiency and productivity [Thulin & Vihelmson, 2022]. Individuals who actively use smartphones at night may experience higher job satisfaction because they feel more effective in completing their tasks [Nauman et al., 2023]. This high job satisfaction can then mediate the relationship between nighttime smartphone use and improved work performance [Lin et al., 2021]. However, this relationship can also be influenced by other factors such as the intensity of smartphone use, the type of job, and individual preferences for human-technology interaction [Lin et al., 2021]. Therefore, further research is needed to gain a deeper understanding of the interplay between nighttime smartphone use, job satisfaction, and work performance.

H5: Job Satisfaction Mediates the Relationship Between Smartphone Use at Night and Work Performance

Emotional Exhaustion

Emotional exhaustion is a condition where an individual feels extremely emotionally and psychologically drained due to prolonged pressure, stress, or excessive workload [Bocheliuk et al., 2020]. Employees who are continuously exposed to high emotional demands in the workplace or daily life may experience a decline in their job performance [Gabriel, K. P., & Aguinis, H., 2022]. Chen et al. [2020] explain that emotional exhaustion can lead to a significant decrease in job performance. When someone experiences a high level of emotional exhaustion, they tend to have difficulties in concentrating, making decisions, and completing tasks efficiently. This can result in decreased performance, poor work quality, and even higher absenteeism [Chen et al., 2020]. On the other hand, a contradictory relationship between emotional exhaustion and work performance was proposed by Balducci et al. [2021], who argue that high levels of emotional exhaustion can actually increase job performance. Balducci et al. [2021] highlight that when someone is continuously triggered by pressure and stress, they might develop strategies to improve their efficiency and focus in completing tasks. Based on this explanation, the hypothesis formed in this study is:

H6: Emotional Exhaustion Positively and Significantly Affects Work Performance

Emotional exhaustion is a state where an individual feels continually drained of emotional and mental energy due to excessive pressure and demands, especially in the context of work or daily life [Cheung et al., 2022]. People experiencing emotional exhaustion may feel emotionally depleted, have difficulty concentrating, and feel unable to cope with the demands they face [Choi et al., 2014]. Individuals suffering from emotional exhaustion may experience decreased job satisfaction, reduced performance, and an increased risk of burnout [Cheung & Cheung, 2013]. Emotional exhaustion is closely linked to an individual's inability to handle stressors and a deep sense of emotional and mental fatigue. Lanaj et al. [2014] found that emotional exhaustion has a significant correlation with increased burnout levels among workers, leading to feelings of deep fatigue and a lack of motivation.

Employees experiencing emotional exhaustion tend to have lower job satisfaction. Supporting this, Alarcon, G. M. [2011] explains that prolonged emotional exhaustion makes them feel less motivated, dissatisfied with their work, and struggle to feel a sense of achievement or recognition for their efforts. Emotional exhaustion can also affect their perception of the work environment, making employees more prone to interpersonal conflicts and a lack of support from colleagues or supervisors [Rasool, S. F. 2019]. Consequently, employees suffering from emotional exhaustion tend to have low job satisfaction, which can impact productivity and employee retention in the long term.

H7: Emotional Exhaustion Positively and Significantly Affects Job Satisfaction

Previous research indicates that job satisfaction plays a mediating role in the relationship between emotional exhaustion and job performance [Awwad et al., 2022]. Emotional exhaustion, often resulting from sustained work pressure and a lack of balance between job demands and individual resources, can impair one's ability to perform optimally [Tome & van der Vaart, 2020]. Individuals with high levels of emotional exhaustion tend to feel less satisfied with their jobs because they feel mentally and emotionally drained. The link between emotional exhaustion and job satisfaction can then affect job performance [Alharbi et al., 2020]. Individuals who are satisfied with their jobs may be better able to cope with emotional exhaustion and remain productive in their tasks [Tome & van der Vaart, 2020]. However, this relationship is also

influenced by other contextual factors such as organizational support, work environment, and individual stress management strategies [Tome & van der Vaart, 2020]. Therefore, further research is needed to understand more deeply the role of job satisfaction in mediating the relationship between emotional exhaustion and job performance.

H8: Job Satisfaction Mediates the Relationship Between Emotional Exhaustion and Work Performance

METHOD

This study employs a quantitative-explanatory approach with the population comprising all permanent employees of PT Brantas Abipraya. The population in this study is precisely determined to be 1,500 employees. A probability sampling approach using the Slovin formula was utilized to determine the sample size. According to the formula described by Slovin, the total sample size was set at 315.78, approximately 316 respondents. Additionally, a comparative sample size calculation using the formula by Hair et al. [2019] was performed. This formula multiplies the number of variable categories by factors such as 5, 10, 15, and 20. Following this formula, the total sample size for this study was 310 respondents. Therefore, based on the comparison of the results from both formulas, the minimum sample size for this study was determined to be 316 respondents. The selection criteria for respondents include individuals who are at least 21 years old, permanent employees of PT Brantas Abipraya, and have been employed for at least one year. Data collection was conducted through an online questionnaire distributed via the Google Form platform, using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Data analysis was performed using descriptive statistical methods and Structural Equation Modeling-Partial Least Squares (SEM-PLS), supported by the SmartPLS 4 software.

The SEM-PLS analysis process involves two stages: the reflective model evaluation analysis and the structural model analysis [Hair et al., 2019]. In the reflective model evaluation analysis, testing is conducted by considering the Outer Loading value of at least 0.6, AVE value of at least 0.5, Composite Reliability value of at least 0.7, and Cronbach's Alpha value of at least 0.7. The evaluation also includes the assessment of the THMT value being less than 0.85. In the structural model testing stage, the main focus is on the R-Square, Q-Square, and SRMR values, while hypothesis testing employs the bootstrapping method in the SmartPLS application, considering a P-Value of no more than 0.05 and a t-statistic greater than 1.9. The operational definitions of the variables used in this study are shown in Table 1.

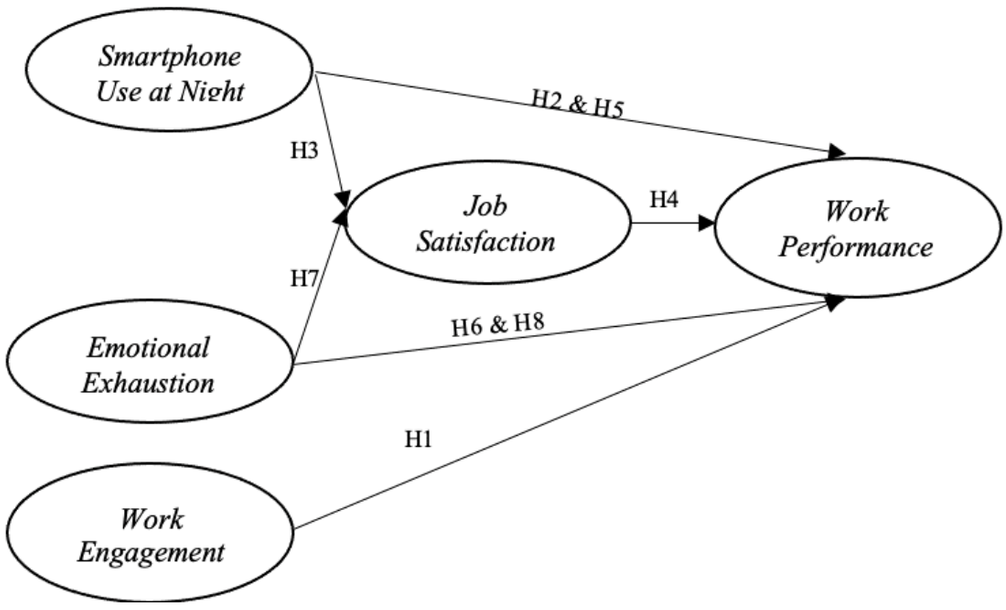

Figure 1. Research Model

Table 1. Definition of Operational Variable

Variable	Dimension	Code	Items Measurement	References
Work Performance	Task Performance	WP1	I successfully plan my work so that it is completed on time	(Nguyen, 2019)
		WP2	I can perform work optimally with minimal effort	
		WP3	I always consider the results that must be achieved in the work	
	Contextual Performance	WP4	I am willing to take on challenging tasks	
		WP5	I create creative solutions for new problems	
		WP6	I always strive to gain knowledge related to my current job	
Work Engagement	Physical Engagement	WE1	I work with high intensity in the company	(Rich et al., 2010)
		WE2	I spend a lot of energy to complete my work	
	Emotional Engagement	WE3	I spend a lot of energy to complete my work	
		WE4	I am enthusiastic about the work I do	
	Cognitive Engagament	WE5	At work, I pay close attention to my tasks	
		WE6	At work, my mind is focused on my tasks	
Smartphone Use at Night	Duration of Use	SU1	I use my smartphone after 9 PM	(Lanaj et al., 2014)
	Type of Activity	SU2	I use my smartphone at night for work, recreation, or other tasks	
	Time of Use	SU3	I spend every night using my smartphone	
Job Satisfaction	Job	JS1	I am satisfied with the tasks I complete	(Lottes., 2008; Romero., 2017)
		JS2	I get the job I want	
	Supervision	JS3	I am satisfied with the effective control system	
		JS4	I feel pressured working with people all day.	
	Salary	JS5	I receive a salary that matches the responsibilities given	
		JS6	I am satisfied with the salary provided	
	Promotion	JS7	The promotions given match my abilities	
		JS8	I am satisfied with the career opportunities available	
	Coworkers	JS9	I have good cooperation with my colleagues	
		JS10	I get motivation from my colleagues	
Emotional Exhaustion	Emotionally Exhausted	EE1	I feel emotionally drained by my work	(Choi et al., 2014)
		EE2	I feel tired at the end of the workday	
	Energy Depletion	EE3	I feel tired when waking up in the morning for work	
		EE4	I feel pressured working with people all day	
	Feeling Isolated	EE5	I feel like I'm working too hard on my tasks	
		EE6	I feel emotionally exhausted by the work I do	

RESULT AND DISCUSSION

Evaluasi Outter Model

The evaluation of the outer model in this research aims to analyze the level of validity and reliability by examining the correlations within the outer model. Four matrices are employed in the evaluation of the outer model in this study, namely convergent validity, discriminant validity, and composite reliability.

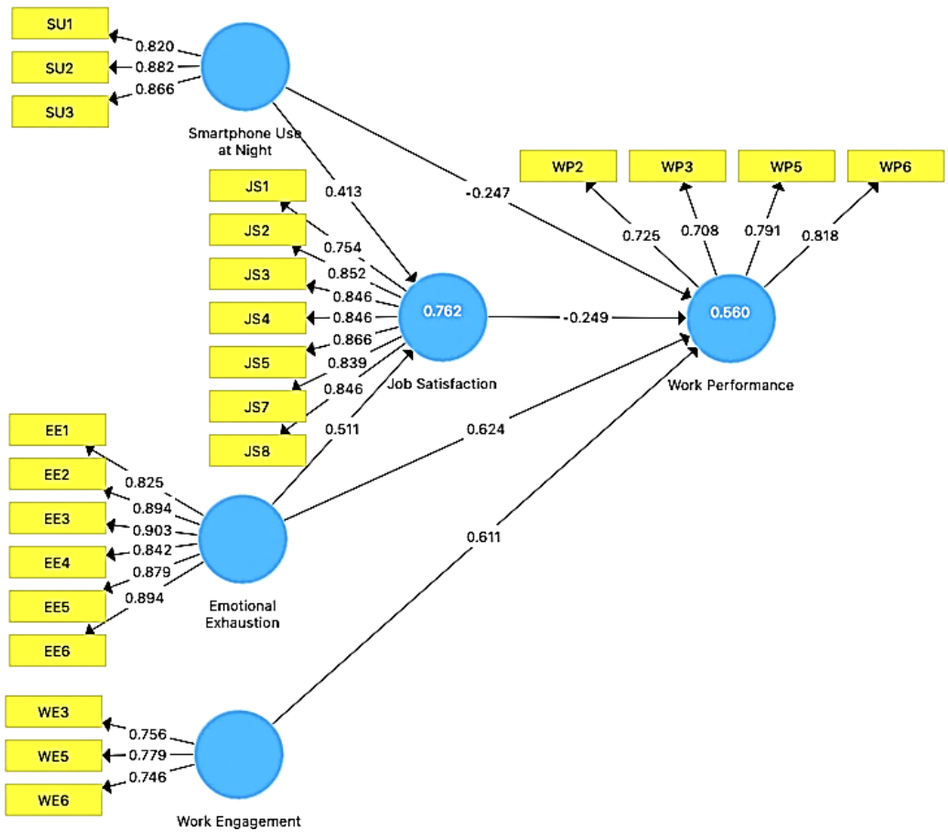

Figure 2. Loading Factor

Convergent Validity

The initial stage of PLS-SEM analysis involves evaluating the convergent validity of the research constructs. This process necessitates the utilization of measurement tools (indicators) to accurately assess the concepts. As stated by Hair et al. (2019), factor loadings of 0.7 or higher and AVE values of 0.5 or higher are considered valid. The detailed test results can be observed in Table 2.

Table 2. Results of Convergent Validity Through Loading Factor Test & AVE

Variable	Dimension	Code	Loading Factor	AVE	Result
Emotional Exhaustion	Emotional Exhausted	**EE1**	0.825	0.763	Valid
		EE2	0.894		Valid
	Energy Depletion	**EE3**	0.903		Valid
		EE4	0.842		Valid
	Feeling Isolated	**EE5**	0.879		Valid
		EE6	0.894		Valid
Job Satisfaction	Job	**JS1**	0.754	0.700	Valid
		JS2	0.852		Valid
	Supervision	**JS3**	0.846		Valid
		JS4	0.846		Valid

	Salary	**JS5**	0.866		Valid
	Pomotion	**JS7**	0.839		Valid
	Coworkers	**JS8**	0.846		Valid
Smartphone Use at Night	Duration of Use Smartphone	**SU1**	0.820	0.733	Valid
	Type of Activity	**SU2**	0.882		Valid
	Time of Use	**SU3**	0.866		Valid
Work Engagement	Emotional Engagement	**WE3**	0.756	0.578	Valid
	Cognitive Engagement	**WE5**	0.779		Valid
		WE6	0.746		Valid
Work Performance	Task Performance	**WP2**	0.725	0.580	Valid
		WP3	0.708		Valid
	Contextual Performance	**WP5**	0.791		Valid
		WP6	0.818		Valid

Each indicator in Table 2 demonstrates a loading factor exceeding 0.7, indicating that these indicators contribute significantly above the required minimum threshold of 60% to the measurement of the latent variable. The loading factor values were obtained from a sample of 320 respondents who completed the questionnaire. The results show that the indicators for emotional exhaustion, job satisfaction, smartphone use at night, work engagement, and work productivity all surpass the validity threshold of 0.7, thus confirming their validity. Among these variables, the indicator EE3 stands out with a loading factor of 0.903 for emotional exhaustion, specifically representing exhaustion related to energy depletion. The indicator JS5 with a loading factor of 0.866 represents job satisfaction in terms of salary. Similarly, SU3, with a loading factor of 0.866, signifies smartphone use at night in relation to time management. The indicator WE5, with a loading factor of 0.779, reflects work engagement in relation to cognitive engagement. Finally, WP6 with a loading factor of 0.818 is the most influential indicator of work productivity, reflecting contextual performance and knowledge enhancement in the workplace

Furthermore, to assess validity, it is crucial to verify that the factor loading values surpass the threshold of 0.7, as recommended by Hair et al. (2019). The factor loading values presented in Table 2 have met this criterion, thus confirming their validity. Table 2 demonstrates that all constructs within the research framework exhibit Average Variance Extracted (AVE) values exceeding 0.5. Although the WP construct has the lowest AVE value of 0.603, it still surpasses the established threshold.

The subsequent method employed in the validation process outlined in this research pertains to Table 2, which demonstrates that all variables have achieved an Average Variance Extracted (AVE) greater than or equal to 0.5. This indicates that the average variance explained by the indicators of each latent variable exceeds 50%, thus meeting the threshold for construct validity. Therefore, the results of the convergent validity assessment through AVE indicate that the indicators measuring all variables in this study are considered valid.

Discriminant Validity

In evaluating the construct validity of this research, an alternative approach can be used as a benchmark. Heterotrait-Monotrait Ratio (HTMT) values below 0.9 are generally considered satisfactory in ensuring construct validity, although this threshold may vary depending on the complexity of the model and the characteristics of the data used.

Table 3. Result of Heterotrait-Monotrait Ratio

	Emotional Exhaustion	Job Satisfaction	Smartphone Use at Night	Work Engagement	Work Performance
Emotional Exhaustion					
Job Satisfaction	0.894				
Smartphone Use at Night	0.890	0.830			
Work Engagement	0.825	0.811	0.859		
Work Performance	0.776	0.647	0.638	0.820	

Based on the findings presented in Table 3. the HTMT values for the variables of emotional exhaustion, job satisfaction, smartphone use at night, work engagement, and work productivity are below the threshold of 0.85.

This indicates that the construct validity of this research is considered satisfactory. Therefore, it can be concluded that the measurement tools used in this study have sufficient construct validity to assess the variables under investigation, namely job satisfaction, work stress, work productivity, and workload.

Composite Reliability

This research evaluates the degree of reliability by utilizing the Composite Reliability value. The reliability assessment examines the overall reliability of the block of indicators used to measure the construct.

Table 4. Result of Composite Reliability

Variable	Cronbach's Alpha	Composite Reliability	Result
Emotional Exhaustion	0.938	0.951	Reliable
Job Satisfaction	0.928	0.942	Reliable
Smartphone Use at Night	0.818	0.892	Reliable
Work Engagement	0.742	0.804	Reliable
Work Performance	0.760	0.846	Reliable

Additionally, besides assessing composite reliability, Table 4 can be used to determine the acceptability of values exceeding 0.7 (Hair et al., 2019). It is worth noting that the work engagement variable exhibits the lowest Cronbach's alpha value of 0.7422. The data presented in Table 4 demonstrates that all variables surpass the 0.7 threshold, indicating their reliability. Therefore, the evaluation of reliability can be conducted by analyzing both Cronbach's Alpha values and composite reliability.

Evaluation of Inner Model

Subsequently, an inner model analysis was conducted to evaluate the significance of the constructs and the R-Square of the research model. R-Square is a measure used to assess the extent of influence of independent variables on dependent variables. The effectiveness of a model is judged based on the R-Square value, where a value of 0.67 indicates a strong model, 0.33 a moderate model, and 0.19 a weak model.

Based on the findings presented in Table 5, the R-Square value for job satisfaction is 0.762, exceeding the threshold of 0.67 and indicating a strong model. This means that the job satisfaction variable is able to contribute 76.2% to the variance in work productivity. Similarly, work productivity shows an R-Square value of 0.560, exceeding the 0.33 threshold, indicating that emotional exhaustion, job satisfaction, smartphone use at night, and work engagement collectively explain 56% of work productivity.

Table 5. R-Square

	R Square	R Square Adjusted
Job Satisfaction	0.762	0.761
Work Performance	0.560	0.554

The Q2 coefficient is a crucial criterion for making reliable predictions with endogenous variables. To evaluate the prediction accuracy of each latent variable in the model, Q2 is calculated using the endogenous latent variables. The tabulated results for Q2, along with the parameter estimates and predictive values of the model, are detailed in Table 6.

Table 6. Q-Square

Q Square
0.895

Referring to Table 6, it is evident that the Q2 value is 0.895, indicating that 89.5% of the variance in the research data can be explained by the structural model. Conversely, a Q2 value of 0.895 indicates a predictive relevance of 89.5%. This signifies a significant magnitude of influence in terms of predictive validity. Therefore, the findings of this study can be considered adequate and satisfactory, given the proximity of the variables in this study to a value of 1.

Table 7. Result of Standardized Root Mean Square Residual

	Original Sample (O)	Sample Mean (M)	95%	99%
Saturated Model	0.089	0.044	0.050	0.055
Estimated Model	0.082	0.044	0.052	0.055

Model fit evaluation can be conducted using the Standardized Root Mean Square Residual (SRMR) in Structural Equation Modeling (SEM) analysis, as introduced by Hu and Bentler in 1999 for application in CB-SEM. SRMR calculates the average standardized residual between the empirical correlations and covariances of observed variables with the estimated population covariance. Table 7 presents the SRMR values indicating model fit, with a range of values between 0 and 1. Models with good fit typically have SRMR values below 0.08, while poorly fitting models will have values above 0.10. The model presented in this study has an SRMR of 0.089, falling within the range of 0.08 to 0.10, indicating a satisfactory fit. Based on Table 7, the estimated model values in this study range between 0.08 and 0.1, specifically at 0.0822, indicating a reasonably good model fit.

Hypothesis Testing

Table 8. Result of Direct Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Result
H1: WE → WP	0.611	0.605	0.092	6.641	0.000	Accepted
H2: SU → WP	-0.247	0.242	0.092	2.693	0.007	Accepted
H3: SU → JS	-0.413	0.419	0.068	6.066	0.000	Accepted
H4: JS → WP	0.249	0.248	0.091	2.741	0.006	Accepted
H6: EE → WP	0.624	0.630	0.086	7.259	0.000	Accepted
H7: EE → JS	0.511	0.506	0.070	7.298	0.000	Accepted

In this study, an analysis was conducted on six different hypotheses related to the interaction between EE, JS, SU, WE, and WP. The first hypothesis (H1) states that there is a positive correlation between WE and WP. The results of the direct relationship analysis reveal a positive relationship between WE and WP of 0.611. The p-value is 0.000, and the T statistic is 6.641, thus H1 is accepted. The next hypothesis (H2) states that SU has a negative and significant effect on WP. The results of the hypothesis test show that SU has a positive and significant effect on WP with a p-value of 0.007 and a T statistic of 2.693, thus H2 is accepted. The third hypothesis (H3) states that SU has a negative and significant effect on JS. Based on the analysis, SU has a direct effect on JS of - 0.413 with a p-value of 0.000 and a T statistic of 6.066, thus H3 is accepted. The fifth hypothesis (H4) is related to JS having a direct effect on WP. The results of this study show that JS has a negative and significant effect of -0.2249 with a p-value of 0.006 and a T statistic of 2.741, therefore H5 is accepted. The sixth hypothesis (H6) states that there is a positive and significant relationship between EE and WP. The results of this hypothesis test show that EE has a positive and significant effect on WP of 0.624, with a p-value of 0.000 and a T statistic of 7.259, thus H6 is accepted. Finally, the seventh hypothesis (H7) states that there is a positive and significant relationship between EE and JS. The results of this study show that EE has a positive and significant effect on JS of 0.511 with a p-value of 0.000 and a T statistic of 7.298, thus H7 is accepted.

Table 9. Result of Indirect Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Result
H5: SU → JS → WP	-0.103	0.105	0.045	2.307	0.021	Accepted
H8: EE → JS → WP	-0.127	0.125	0.047	2.690	0.007	Accepted

Referring to Table 9, which shows the results of the indirect hypothesis test or mediation relationship, it is revealed that JS can mediate the relationship between SU and WP by -0.103 with a p-value of 0.021 and a T statistic of 2.307, thus the fourth hypothesis (H4) is accepted. Furthermore, the results of the mediation hypothesis test show that JS can mediate the relationship between EE and WP by -0.127 with a p-value of 0.007 and a T statistic of 2.690, thus the eighth hypothesis (H8) is accepted.

Discussion

The results of this study indicate a significant relationship between work engagement and work performance. The structural model analysis reveals that work engagement has a significant and positive effect on work performance. This suggests that an increase in work engagement will directly improve employee work performance. This finding aligns with research by Yao et al. (2022) and Mazzetti & Schaufeli (2022), which states that high work engagement positively contributes to increased employee performance. Employees with high levels of engagement tend to show better productivity, stronger commitment to organizational goals, and the ability to work effectively in teams. In the context of PT Brantas Abipraya employees, this study's results show that high work engagement not only improves individual productivity but also positively impacts the overall efficiency of projects. This is supported by the highest indicator value in WE5, which discusses employee focus while at the office. This condition indicates that PT Brantas Abipraya employees have a high dedication to their tasks. The WE5 indicator reflects the high level of attention and involvement of employees in carrying out their work, which ultimately contributes to improving the quality of work results and project efficiency. Employees who are actively involved in their work tend to be more proactive in overcoming project challenges, more innovative in finding solutions, and have a higher work ethic. This aligns with Herzberg's (1959) two-factor theory, which states that two factors influence work motivation: motivator factors and hygiene factors. Motivator factors, such as achievement, recognition, and responsibility, can increase job satisfaction and employee engagement, which in turn improves work performance. Employees who feel engaged and motivated in their work tend to be more productive, proactive, and have a high commitment to their tasks. By creating a work environment that pays attention to these motivator factors, organizations can increase work engagement and employee performance. From a practical perspective, these findings suggest that organizations need to invest in strategies that can increase employee work engagement, including providing adequate support, providing career development opportunities, creating a positive work

environment, and promoting a healthy work-life balance.

Furthermore, the use of smartphones at night has become a common phenomenon in this digital age. Many individuals use their smartphones for various purposes, from communicating and accessing information to entertainment before bed. Work performance refers to the effectiveness and efficiency of an employee in carrying out their job tasks and responsibilities. The analysis results show that smartphone use at night has a negative and significant impact on work performance. This indicates that an increase in smartphone use at night will decrease employee work performance. Supporting the results of this study, Duraccio et al. (2021) revealed that poor sleep quality causes employees to feel more tired and less focused during working hours, ultimately reducing productivity and work effectiveness. Furthermore, the highest indicator value in SU3 contains the question "I spend every night using a smartphone." In the context of PT Brantas Abipraya employees, this finding indicates that excessive smartphone use at night is one of the main factors disrupting employee sleep quality. This affects the employees' inability to properly recover their energy during sleep, leading to continuous fatigue and decreased performance in the workplace. This finding can be explained using Herzberg's (1959) two-factor theory. This theory states that there are two factors that influence work motivation and performance: motivator factors (driving factors) and hygiene factors (maintenance factors). Motivator factors, such as achievement and recognition, can increase job satisfaction, while hygiene factors, such as working conditions and company policies, prevent dissatisfaction. Smartphone use at night can be classified as a hygiene factor that affects employees' working conditions. Smartphone use before bed often disrupts sleep quality, an essential factor for physical and mental recovery. Sleep disturbances can cause fatigue, decreased concentration, and reduced energy the following day, directly and negatively impacting work performance. According to Herzberg's theory, although hygiene factors like good sleep quality do not always increase motivation, the lack of good working conditions (such as disturbed sleep) can cause dissatisfaction and decreased performance. From a practical perspective, these findings suggest that companies need to consider policies and interventions that can reduce employee smartphone use at night. This could include education about the importance of quality sleep, providing wellness programs that support sleep health, and possibly setting time limits for work-related communication outside of working hours.

The use of smartphones at night has become a common habit in this digital era, where individuals often use their devices for communication, information access, or entertainment before sleep. Job satisfaction refers to the extent to which individuals feel satisfied with their jobs, encompassing various aspects such as work environment, salary, relationships with colleagues, and career development opportunities. The analysis results show that smartphone use at night has a negative and significant impact on job satisfaction. This indicates that increased smartphone use at night can decrease employee job satisfaction levels. These results align with research by McDaniel, B.T. et al. (2021) and Van Laethem et al. (2018), which shows that constant connectivity to work through smartphones can cause stress and fatigue, ultimately reducing job satisfaction. Furthermore, this is evidenced by SU3 as the highest indicator with the question "I spend every night using a smartphone," which implies a decrease in sleep quality and work-life balance. This finding can be explained using Herzberg's (1959) two-factor theory. This theory states that there are two factors that influence work motivation and job satisfaction: motivator factors and hygiene factors. Motivator factors, such as achievement, recognition, and responsibility, can increase job satisfaction, while hygiene factors, such as working conditions and company policies, prevent dissatisfaction. Smartphone use at night can be categorized as a hygiene factor that affects employees' working conditions. Smartphone use before bed often disrupts sleep quality, an important factor for physical and mental well-being. Poor sleep quality can cause fatigue, stress, and irritability, ultimately decreasing job satisfaction. According to Herzberg's theory, although hygiene factors like good sleep do not always increase job satisfaction, the lack of good working conditions (such as disturbed sleep) can cause dissatisfaction and negatively impact job satisfaction. These findings suggest that companies need to consider policies and interventions that can reduce employee smartphone use at night. This could include education about the importance of quality sleep, providing wellness programs that support sleep health, and possibly setting time limits for work-related communication outside of working hours.

The results of this study indicate a significant relationship between job satisfaction and work performance. The structural model analysis reveals that job satisfaction has a significant and positive effect on work performance. This finding demonstrates that an increase in job satisfaction will directly enhance employee work performance. This finding aligns with research by Rasool, S. F. (2019) and Nguyen et al. (2019), which states that high job satisfaction positively contributes to increased employee performance. Employees who are satisfied with their jobs tend to exhibit better productivity,

stronger commitment to organizational goals, and the ability to work effectively in teams. In the context of PT Brantas Abipraya employees, this study's results show that high job satisfaction not only improves individual productivity but also positively impacts the overall efficiency of projects. This is supported by the highest indicator value in JS5, which discusses fair wages commensurate with the responsibilities given. This condition indicates that PT Brantas Abipraya employees feel valued and recognized for their efforts and competencies, ultimately enhancing their motivation and performance. The JS5 indicator reflects the high level of employee satisfaction with the existing wage system, contributing to improved work quality and project efficiency. Employees who are satisfied with their jobs tend to be more proactive in overcoming project challenges, more innovative in finding solutions, and have a higher work ethic. This aligns with Herzberg's (1959) two-factor theory. Motivator factors, such as achievement, recognition, and responsibility, can increase job satisfaction and employee engagement, which in turn improves work performance. Employees who feel satisfied and motivated in their work tend to be more productive, proactive, and have a high commitment to their tasks. By creating a work environment that pays attention to these motivator factors, organizations can increase job satisfaction and employee performance.

The analysis results show a positive and significant relationship between emotional exhaustion and work performance. This finding suggests that emotional exhaustion positively affects work performance. In other words, an increase in emotional exhaustion is associated with an increase in work performance. This result is supported by research conducted by Chen et al. (2020), which explains that high levels of emotional exhaustion can improve job performance. They explain that individuals who are continuously triggered by pressure and stress may develop strategies to enhance their efficiency and focus on completing tasks. Employees experiencing high levels of emotional exhaustion may feel driven to improve their performance as a way to cope with the pressure and demands they face. Furthermore, indicator EE3 represents this relationship as the indicator with the highest factor loading with the question "I feel tired waking up in the morning when I have to work." This indicator shows that emotional exhaustion has a direct impact on employee well-being and their ability to start the workday with sufficient energy and motivation. This condition can trigger them to work harder and focus more on completing assigned tasks. Employees experiencing emotional exhaustion may have developed adaptation strategies to maintain or even improve their performance despite facing high stress. These strategies may involve better time management, clearer priorities, and extra effort in completing work. From Herzberg's (1959) perspective in The Theory of Dual Factor, motivational and hygiene factors influence motivation and work performance. Emotional exhaustion can be considered a hygiene factor that affects working conditions. Although emotional exhaustion is usually considered a negative factor, in certain contexts, it can serve as a motivator to improve performance as an effort to meet job demands. Companies need to consider a more holistic approach in supporting employees experiencing high stress. While pressure can drive performance in the short term, in the long run, it can negatively impact employee well-being. Therefore, companies should provide adequate support for stress management and employee emotional well-being, including mental health programs and counseling.

The positive and significant relationship between emotional exhaustion and job satisfaction which refers to the increment in emotional exhaustion which associated with an increase in job satisfaction. This result is supported by Alarcon, G. M. (2011), who stated that emotional exhaustion can significantly reduce job satisfaction. Although emotional exhaustion is usually considered a negative condition that lowers job satisfaction, in some contexts, employees facing high levels of exhaustion may feel more satisfied with their achievements due to the challenges they face. Employees who can overcome emotional exhaustion may feel more competent and satisfied with their ability to remain productive. Employees experiencing emotional exhaustion may feel satisfied because they have successfully completed difficult tasks under pressure. This success can increase a sense of personal and professional achievement, which in turn increases job satisfaction. Furthermore, indicator EE3 in this study reflects this relationship, with the question "I feel tired waking up in the morning when I have to work" as one of the indicators with the highest factor loading. The indicator shows that employees who feel tired in the morning due to emotional exhaustion tend to have lower job satisfaction levels. This finding can be explained using Herzberg's (1959) two-factor theory. According to Herzberg, hygiene factors, such as adequate working conditions, prevent dissatisfaction but do not always increase satisfaction. Emotional exhaustion can be seen as a poor working condition. However, if employees feel they can overcome it, this can increase feelings of accomplishment and satisfaction.

The mediation of job satisfaction showcased the relationship between smartphone use at night and work performance. This finding indicates that smartphone use at night indirectly affects work performance through job satisfaction. Specifically, smartphone use at night has a

negative impact on job satisfaction, which in turn negatively impacts work performance. This means that increased smartphone use at night reduces job satisfaction, which then decreases work performance. Supporting this result, Lin et al. (2021) explained in their research that with easy access to information and communication, employees also feel more engaged and responsible for the projects or tasks they are working on. Smartphone use at night can disrupt sleep quality, increase stress, and cause fatigue, all of which contribute to decreased job satisfaction. Poor sleep quality can lead to fatigue and decreased concentration, affecting productivity and work effectiveness. Low job satisfaction due to sleep disturbances and increased stress can cause employees to feel less satisfied with their jobs. When employees feel dissatisfied, they tend to be less motivated, less enthusiastic, and have a lower level of dedication to their tasks. According to Herzberg's (1959) theory, hygiene factors such as good working conditions (including adequate sleep and rest time) prevent job dissatisfaction. When these hygiene factors are disrupted, such as by smartphone use at night, job dissatisfaction increases, negatively impacting work performance. The findings of this study indicate the need to consider policies that limit the use of smartphones for work outside of working hours. These policies could include education about the importance of quality sleep, wellness programs that support sleep health, and time limits for work-related communication outside of working hours.

On the other hands, job satisfaction mediates the relationship between emotional exhaustion and work performance. This finding suggests that emotional exhaustion can indirectly influence work performance through job satisfaction. In other words, emotional exhaustion impacts job satisfaction, which in turn affects work performance. Specifically, emotional exhaustion leads to a decrease in job satisfaction, which then results in a decrease in work performance. Supporting this result, Alharbi et al. (2020) explained that employees who feel supported and valued by their superiors and colleagues may remain satisfied even if they experience emotional exhaustion. Employees experiencing emotional exhaustion tend to feel less satisfied with their jobs. Emotional exhaustion can reduce motivation and a sense of engagement in work, negatively impacting job satisfaction. Low job satisfaction negatively impacts work performance. Employees who are dissatisfied with their jobs tend to be less motivated, less dedicated, and tend to procrastinate, resulting in decreased performance. This aligns with research showing that job satisfaction plays a crucial role in improving work performance (Rasool, 2019). Herzberg (1959) provides a framework for understanding how motivational and hygiene factors influence work performance through job satisfaction. Emotional exhaustion can be considered a hygiene factor that affects working conditions, while job satisfaction functions as a motivational factor that directly impacts work performance.

CONCLUSION

This study investigates how work engagement, nighttime smartphone use, and emotional exhaustion affect work performance and job satisfaction among employees at PT Brantas Abipraya. It finds that high work engagement is positively affected with increased productivity, commitment, and effective work abilities, while smartphone use at night negatively impacts sleep quality, leading to reduced job performance and satisfaction. Emotional exhaustion decreases productivity and engagement, though job satisfaction can mitigate these effects.

The study suggests for managerial implication that is to improve work engagement through career development, training, and recognition programs can boost employee performance. It also emphasizes the need for policies limiting smartphone use outside work hours to improve sleep and overall job satisfaction. Additionally, enhancing emotional support through mental health services and promoting work-life balance are recommended strategies to address emotional exhaustion and improve workplace well-being.

For future research, the study recommends exploring other variables, such as leadership style and organizational culture, and conducting longitudinal studies to better understand the long-term dynamics of work engagement, smartphone use, and emotional exhaustion. Comparing results across industries and assessing the effectiveness of interventions are also highlighted as key areas for further investigation.

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