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The Impact of Work Overload and Work Environment on Employee Productivity: The Mediating Role of Work Stress

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Abstract

This study aims to investigate the impact of work overload and work environment on employee productivity, with work stress serving as a mediating variable. The research was conducted at PT Bank Negara Indonesia (Persero) Tbk, Brawijaya Branch Office, focusing on how psychological and environmental factors influence performance in the banking sector. Data were collected through a structured questionnaire distributed to a saturated sample of 61 permanent employees (census technique). The analysis was performed using Structural Equation Modeling (SEM) via Partial Least Squares (SmartPLS) to test both direct and indirect relationships within the conceptual model. The results reveal that while work overload has a significant negative impact on productivity, a conducive work environment significantly enhances employee output. Furthermore, work stress was found to be a critical mediator; increased workload escalates stress levels, which in turn reduces productivity. Conversely, an optimized work environment helps mitigate stress, thereby sustaining performance. These findings suggest that managing task distribution and improving office facilities are essential strategies for BNI Brawijaya to maintain high operational efficiency through stress reduction.

Keywords: Employee Productivity; Work Overload; Work Environment; Work Stress; Banking Sector

1. Introduction

In the current global economic landscape, the banking industry stands as a cornerstone of financial stability, yet it faces unprecedented pressure from digital transformation and intensifying competition. To navigate these challenges, organizations must rely on the peak performance of their human capital. PT Bank Negara Indonesia (Persero) Tbk, particularly at the Brawijaya Branch Office, operates within this high-stakes environment where employees are mandated to maintain professional service excellence while achieving rigorous financial targets. Employee productivity, therefore, becomes the most critical metric for organizational success. Productivity is not merely defined by the volume of work but by the efficient transformation of resources into value-added outputs (Alkhawaldeh et al., 2025) (Ajlouni et al., 2024) (Hajdari et al., 2023). However, achieving high productivity is increasingly difficult due to the rising phenomenon of work overload and the complexities of the physical and non-physical work environment (Nusraningrum et al., 2024) (Kurniawaty et al., 2019) (Boudreau & Rhéaume, 2024).

The concept of employee productivity at BNI Brawijaya is fundamentally linked to the ability of staff to meet established Standard Operating Procedures (SOPs) within tight timeframes. Research indicates that productivity is significantly influenced by how well an organization manages its internal stressors (Nda & Fard, 2013) (Shaikh et al., 2023). When the balance between job demands

and employee capabilities is disrupted, productivity inevitably suffers. Recent studies have highlighted that productivity is a byproduct of job satisfaction, which is further driven by training and appropriate reward systems (With Job Satisfaction or Not? The Role of Job Satisfaction in the Relationship Between Training and Rewards on Employee Productivity). Without a conducive framework that supports the psychological and physical needs of the staff, even the most skilled employees may fail to reach their full potential (Sudarmo et al., 2022) (Singh et al., 2022).

Work overload has emerged as a primary concern at the Brawijaya Branch, where employees often face a volume of tasks that exceeds their temporal and physical limits. For instance, certain service benchmarks require employees to complete complex transactions in as little as 1.5 minutes. This creates a state of quantitative overload, where the sheer number of tasks leads to mental exhaustion. Empirical evidence suggests that work overload has a consistently negative and significant impact on employee performance across various sectors, including healthcare and logistics. When employees are consistently pushed beyond their capacity, the quality of their work diminishes, leading to an increase in errors and a decline in overall organizational efficiency (Ari, 2025) (Boudreau & Rhéaume, 2024) (Chaiyapruksayanonde & Ponchaitiwat, 2025).

Complementing the issue of workload is the influence of the work environment. The work environment at BNI Brawijaya encompasses both the physical infrastructure such as office layout and equipment and the non-physical atmosphere, including interpersonal relationships among colleagues and supervisors. A supportive work environment acts as a vital catalyst for employee engagement and productivity. Conversely, an unsupportive or toxic environment can lead to high turnover intentions and decreased motivation (Kurniawaty et al., 2019). Modern research emphasizes that a "green" or sustainable work environment can significantly enhance performance by fostering a sense of well-being and professional engagement among staff (Nusraningrum et al., 2024) (Moisoglou et al., 2025).

The relationship between external triggers (overload and environment) and the final outcome of productivity is not always direct; rather, it is frequently mediated by the psychological state of work stress. Work stress is a response to environmental demands that threaten an individual's equilibrium. In a high-pressure banking environment, the constant demand for accuracy and speed often triggers stress symptoms, such as loss of concentration and psychological fatigue. Studies have shown that work stress, mental health, and employee performance are deeply interconnected, with stress acting as a detrimental force that erodes the cognitive resources necessary for productivity (Chen et al., 2022) (Mulyadi et al., 2024). Furthermore, when work-life balance is compromised during periods of high stress, the negative impact on satisfaction and performance becomes even more pronounced (Irawanto et al., 2021) (Aulia et al., 2021).

The mediating role of work stress is crucial to understand because it explains why certain environmental factors lead to productivity declines. For example, a poor work environment or excessive workload does not just lower productivity directly; it first creates a state of chronic stress which then degrades the employee's ability to perform. Research involving healthcare workers and nurses has demonstrated that the work environment's impact on outcomes is often fully or partially mediated by the levels of stress experienced by the staff (Boudreau & Rhéaume, 2024) (Ari, 2025). Within BNI Brawijaya, identifying this mediating pathway is essential for management to design effective interventions that target the root causes of performance issues.

The objective of this research is to analyze the impact of work overload and work environment on employee productivity at PT Bank Negara Indonesia (Persero) Tbk, Brawijaya Branch Office, with work stress serving as the mediating variable. By utilizing Structural Equation Modeling (SEM) (G. David Garson, 2016), this study aims to map the complex pathways between these variables and provide empirical evidence of how stress functions as a bridge between job demands and performance outcomes. This objective is aligned with the broader academic trend of exploring employee well-being as a central pillar of organizational performance (The Influence of Work Environment and Work Engagement on Employee Performance Mediated by Employee Well-Being).

The novelty of this research lies in its specific contextual application within the Indonesian state-owned banking sector during a period of rapid industry transition. While previous studies have examined these variables in isolation, there is a lack of comprehensive models that integrate work overload, environment, and stress specifically within the cultural and operational framework of BNI. Furthermore, this study incorporates the most recent literature from 2021-2025, ensuring that the findings reflect the contemporary post-pandemic work landscape where mental health and employee engagement have become paramount. By linking these factors, the research provides a new perspective on how financial institutions can optimize productivity not through increased pressure, but through stress mitigation and environmental enhancement (Lim et al., 2025) (van Zyl & Magau, 2024).

In conclusion, addressing the decline in productivity at BNI Brawijaya requires a holistic approach that considers the psychological health of the workforce. As stress continues to be a significant predictor of performance and turnover intention, organizations must prioritize the creation of a balanced workload and a supportive workspace (Kurniawaty et al., 2019) (Aulia et al., 2021) (Muis et al., 2021). This study serves as a foundational step toward developing human resource strategies that are both efficient and humane, ensuring the long-term sustainability of the banking sector in an increasingly demanding global market.

2. Methods

2.1 Research Design and Approach

This study This study employs a quantitative approach with an explanatory research design to examine the causal relationships between work overload, work environment, employee productivity, and the mediating role of work stress. Explanatory research is utilized to clarify the influence of independent variables on dependent variables and to test the predefined hypotheses derived from theoretical frameworks (Kimura et al., 2018) (Kopperud et al., 2021). To capture the complexity of these relationships, this study uses Structural Equation Modeling (SEM) based on Partial Least Squares (PLS). As noted in modern methodological literature, PLS-SEM is particularly effective for analyzing complex models with multiple mediating paths and relatively small sample sizes, ensuring robust results even in specific organizational contexts such as the banking sector (G. David Garson, 2016).

The conceptual framework illustrates the theoretical relationship between the variables examined in this study (Figure 1). It positions Work Overload (X1) and Work Environment (X2) as independent variables that are hypothesized to influence Employee Productivity (Y) both directly and indirectly. Work Stress (Z) is integrated into the model as a mediating variable, suggesting that

the impact of workload and the physical or social environment on productivity is filtered through the psychological state of the employees. This framework serves as the logical foundation for testing the seven hypotheses proposed in the research.

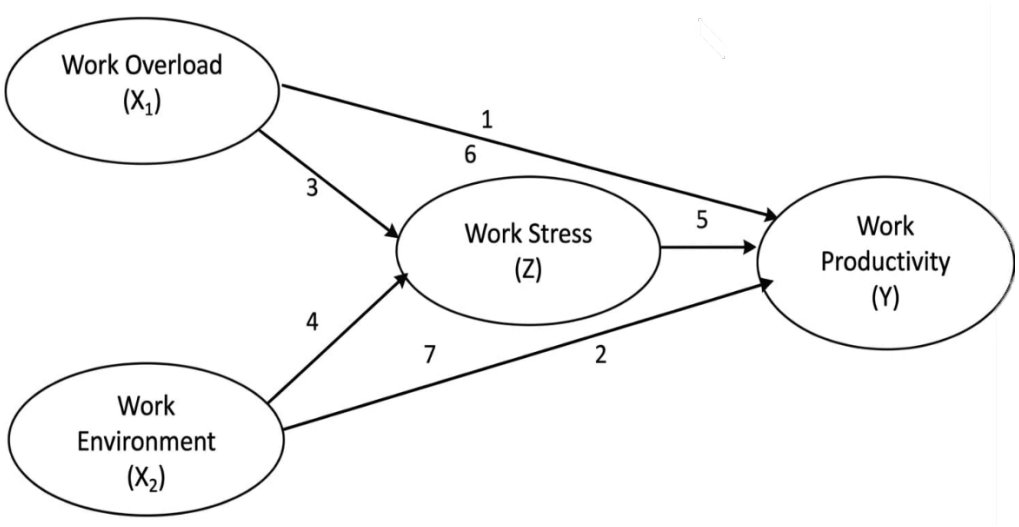

Figure 1. Conceptual framework
Source: Data analysis

2.2 Location and Population

The research was conducted at PT Bank Negara Indonesia (Persero) Tbk, Brawijaya Branch Office, located in Malang, East Java. This location was selected due to the high operational intensity and the specific service standards that create a unique atmosphere of work pressure. The population for this study consists of all permanent employees at the Brawijaya Branch Office. Given the focused nature of the study, a saturated sampling technique (census) was applied, involving 61 employees as respondents. This approach ensures that the entire population is represented, thereby minimizing sampling error and providing a comprehensive overview of the organizational dynamics within the branch.

2.3 Operational Definition of Variables

To ensure consistency and clarity, the variables in this study are operationally defined based on established organizational behavior theories, integrated with the specific conditions found in the banking industry.

1) **Work Overload (X1):** This variable refers to the perception of employees regarding the volume of work that exceeds their capabilities or the time allocated. Indicators include quantitative overload (too many tasks), qualitative overload (tasks that are too difficult), and time pressure. At BNI Brawijaya, this is specifically reflected in the requirement to meet service benchmarks within minutes, which often leads to physical and mental fatigue (Ari, 2025) (Aslan et al., 2025).
2) **Work Environment (X2):** Defined as the totality of tools and materials faced by employees, the surrounding environment in which they work, and the social atmosphere of the organization. Indicators include physical aspects (lighting, temperature, office layout) and

non-physical aspects (relationships with colleagues and supervisors). A supportive environment is hypothesized to foster engagement and mitigate the negative effects of stress (Nusraningrum et al., 2024) (Kurniawaty et al., 2019) (Falah & Palupi, 2025) .

3) **Work Stress (Z):** Serving as the mediator, work stress is a psychological and physiological response to environmental stressors. It is measured through indicators such as psychological fatigue, loss of concentration, and physical symptoms resulting from job demands (Chen et al., 2022) (Irawanto et al., 2021) .

4) **Employee Productivity (Y):** The dependent variable, defined as the ratio of output produced to the resources used. Indicators include work quantity, quality of work, and timeliness in completing tasks according to the bank's Standard Operating Procedures (SOP). High productivity is achieved when employees can maintain high-quality service despite significant workloads (With Job Satisfaction or Not? The Role of Job Satisfaction in the Relationship Between Training and Rewards on Employee Productivity) (Abdelwahed & Doghan, 2023).

2.4 Data Collection Methods

Primary data was collected through a structured questionnaire distributed to all 61 respondents. The questionnaire utilized a 5-point Likert scale, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). This scale allows for nuanced measurement of employee perceptions regarding their workload, environment, and stress levels. In addition to primary data, secondary data was obtained from the BNI Brawijaya Human Resources Department, including organizational structure, employee demographics, and productivity reports. This triangulation of data sources ensures the validity and reliability of the research findings.

2.5 Data Analysis Techniques

The data analysis was performed using SmartPLS software. The analysis process was divided into two main stages: the evaluation of the Measurement Model (Outer Model) and the Structural Model (Inner Model).

1) Measurement Model (Outer Model) Evaluation

The outer model evaluation was conducted to ensure that the indicators used to measure each variable were valid and reliable. This involved:

- **Convergent Validity:** Assessed through the Factor Loading values (which must exceed 0.70) and Average Variance Extracted (AVE) values (which must be greater than 0.50).
- **Discriminant Validity**: Evaluated using the Fornell-Larcker criterion or Cross-Loadings to ensure that each construct is distinct from the others.
- **Reliability:** Measured using Cronbach's Alpha and Composite Reliability, with a minimum threshold of 0.70 to ensure internal consistency (Urbach & Ahlemann, 2010).

2) Structural Model (Inner Model) Evaluation

The inner model was used to test the research hypotheses and the strength of the relationships between variables. Key metrics included:

- **R-Square (R^2): To** determine the proportion of variance in the dependent variable explained by the independent variables.
- **Path Coefficients:** To identify the direction and strength of the impact (positive or negative).
- **T-Statistics and P-Values:** Using the bootstrapping method to determine the statistical significance of the relationships (T-Statistic > 1.96 and P-Value < 0.05).

2.6 Mediation Analysis

The role of work stress as a mediator was tested using the specific indirect effects analysis within the PLS framework. This analysis determines whether the impact of work overload and work environment on productivity is transmitted through work stress. Following the methodology used in recent nurse and healthcare studies, this mediation analysis clarifies if stress acts as a "bridge" that diminishes productivity when environmental or workload conditions are suboptimal (Boudreau & Rhéaume, 2024) (Ari, 2025) (Moisoglou et al., 2025).

2.7 Research Framework

The conceptual framework of this study assumes that work overload and work environment have both direct and indirect effects (via work stress) on employee productivity. The integration of these variables provides a comprehensive model to understand the psychological mechanisms that drive performance in a high-pressure banking branch. By focusing on the interplay between environmental triggers and stress responses, this study offers a detailed map of organizational behavior that is highly relevant to modern human resource management (The Influence of Work Environment and Work Engagement on Employee Performance Mediated by Employee Well-Being) (Kassa & Worku, 2025) .

3. Results

3.1 Demographic Profile of Respondents

The empirical data for this study was collected from 61 permanent employees of PT Bank Negara Indonesia (Persero) Tbk at the Brawijaya Branch Office. The demographic analysis reveals a diverse workforce in terms of gender, age, and educational background. The majority of respondents are in the productive age range of 26–35 years, which often represents the core operational strength of the branch. In terms of education, most employees hold a Bachelor's degree, aligning with the professional requirements of the banking sector. Understanding these demographics is essential as individual characteristics often influence how employees perceive work overload and manage environmental stressors in a high-pressure financial institution (Nusraningrum et al., 2024) (Thalia et al., 2024) (Rabuana & Yanuar, 2023).

The research structural model provides a visual representation of the path analysis used to determine the strength of the relationships between constructs (Figure 2.). This model maps out the directional flow from environmental and task-based stressors to the resulting productivity levels. By utilizing this structure, the study can simultaneously evaluate multiple pathways, ensuring that both direct impacts and complex mediating effects are captured within the specific operational context of PT Bank Negara Indonesia (Persero) Tbk, Brawijaya Branch Office. Furthermore, it offers a highly reliable framework for identifying critical interventions to effectively mitigate burnout and improve overall employee performance.

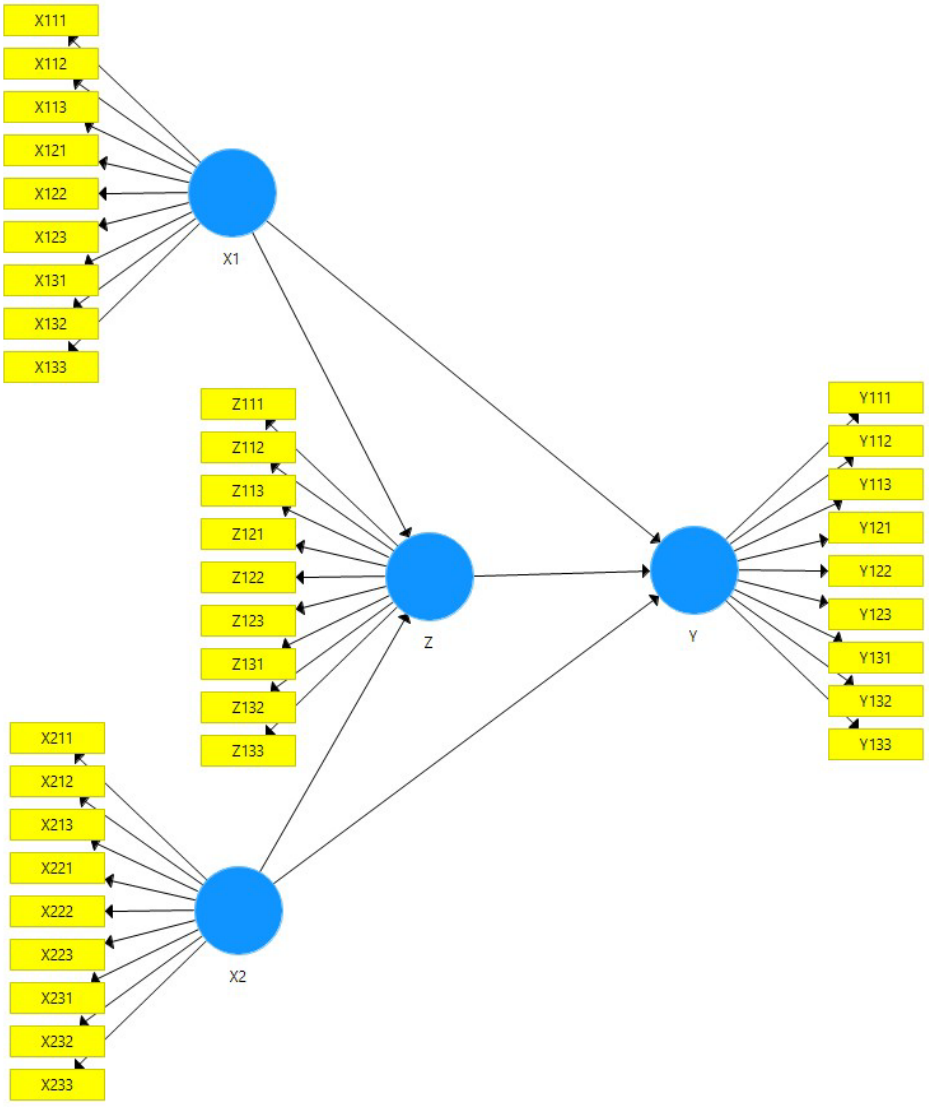

Figure 2. Research structural model
Source: Data analysis

3.2 Evaluation of the Measurement Model (Outer Model)

Before testing the research hypotheses, the measurement model was evaluated to ensure the validity and reliability of the constructs. This process involved assessing convergent validity, discriminant validity, and composite reliability using SmartPLS. The Outer Model, or measurement model, focuses on the relationship between each latent variable and its respective indicators (Figure 3). This model is used to verify the validity and reliability of the research instrument through Factor Loading, Average Variance Extracted (AVE), and Composite Reliability assessments. The visual representation in Figure 3 ensures that all measurement items effectively represent the variables of work overload, work environment, work stress, and productivity, providing a robust statistical baseline before proceeding to hypothesis testing.

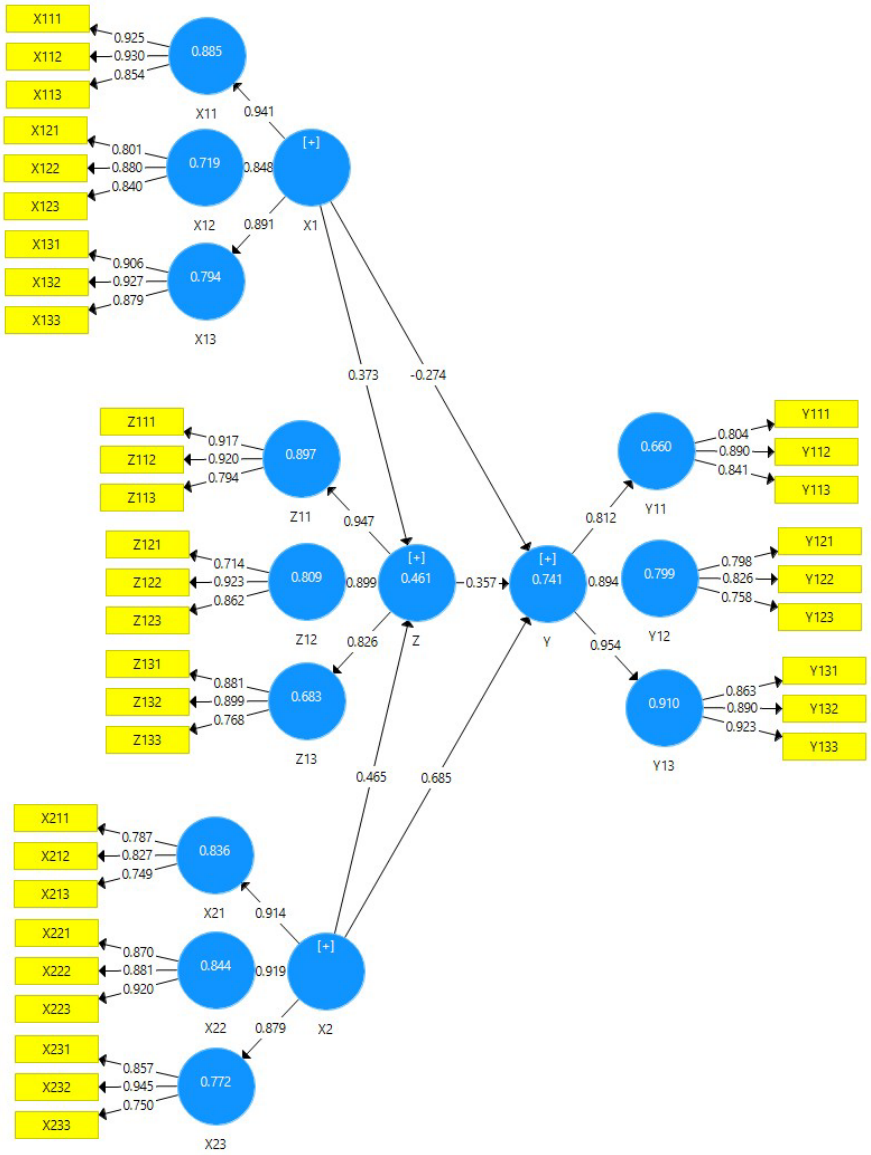

Figure 3. Structural model (outer model)
Source: Data analysis

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3.3 Convergent Validity and Reliability

Based on the Factor Loading analysis, all indicators for Work Overload (X1), Work Environment (X2), Work Stress (Z), and Employee Productivity (Y) exceeded the recommended threshold of

0.70. This indicates that each indicator strongly represents its respective variable. Furthermore, the Average Variance Extracted (AVE) for all constructs was found to be above 0.50, satisfying the requirements for convergent validity. The reliability of the instrument was confirmed through Composite Reliability and Cronbach's Alpha values, both of which exceeded 0.70 for all variables. These results demonstrate that the measurement scales are internally consistent and reliable for further structural analysis (G. David Garson, 2016).

3.4 Discriminant Validity

Discriminant validity was assessed using the Fornell-Larcker criterion and cross-loading values. The results showed that the square root of the AVE for each construct was higher than its correlation with any other construct in the model. This confirms that the variables of work overload, work environment, work stress, and productivity are distinct from one another, ensuring that there is no multicollinearity issue that could bias the structural results (G. David Garson, 2016).

3.5 Evaluation of the Structural Model (Inner Model)

The inner model evaluation focuses on the predictive power of the model and the significance of the relationships between the variables. This is measured through the R-Square (R^2) values and path coefficients obtained through the bootstrapping process. Furthermore, these robust statistical indicators allow researchers to effectively determine if the proposed hypotheses are fully supported, providing deeper insights into the underlying mechanisms driving the observed organizational performance outcomes.

The Inner Model, also known as the structural model, illustrates the results of the hypothesis testing after the bootstrapping process (Figure 4). This figure displays the path coefficients and T-statistic values for each link in the conceptual framework. It provides a clear visualization of which relationships are statistically significant, allowing for an immediate understanding of how work overload and the work environment dictate stress levels and final employee performance. The inner model evaluation is critical for determining the predictive power and the overall fit of the proposed research model. By rigorously analyzing these precise path values, researchers can confidently identify which specific organizational factors require immediate managerial intervention. Consequently, leadership teams are empowered to design targeted strategies that effectively reduce occupational burnout while simultaneously enhancing overall workplace productivity.

3.6 Coefficient of Determination (R-Square)

The R-Square value for the Work Stress (Z) variable indicates the extent to which work overload and the work environment explain the variance in stress levels. Simultaneously, the R-Square for Employee Productivity (Y) reflects the collective influence of overload, environment, and stress. The data reveals that the model has a moderate to strong predictive capability, suggesting that the selected organizational factors are significant determinants of employee outcomes at BNI Brawijaya (Nusraningrum et al., 2024) (Ariani et al., 2024). Moreover, these statistical results provide a foundation for management to implement targeted wellness programs, ensuring that high-pressure roles do not compromise long-term operational efficiency. By addressing these variables, the organization can foster a more resilient workforce, ultimately leading to enhanced job satisfaction, reduced turnover rates, and superior performance.

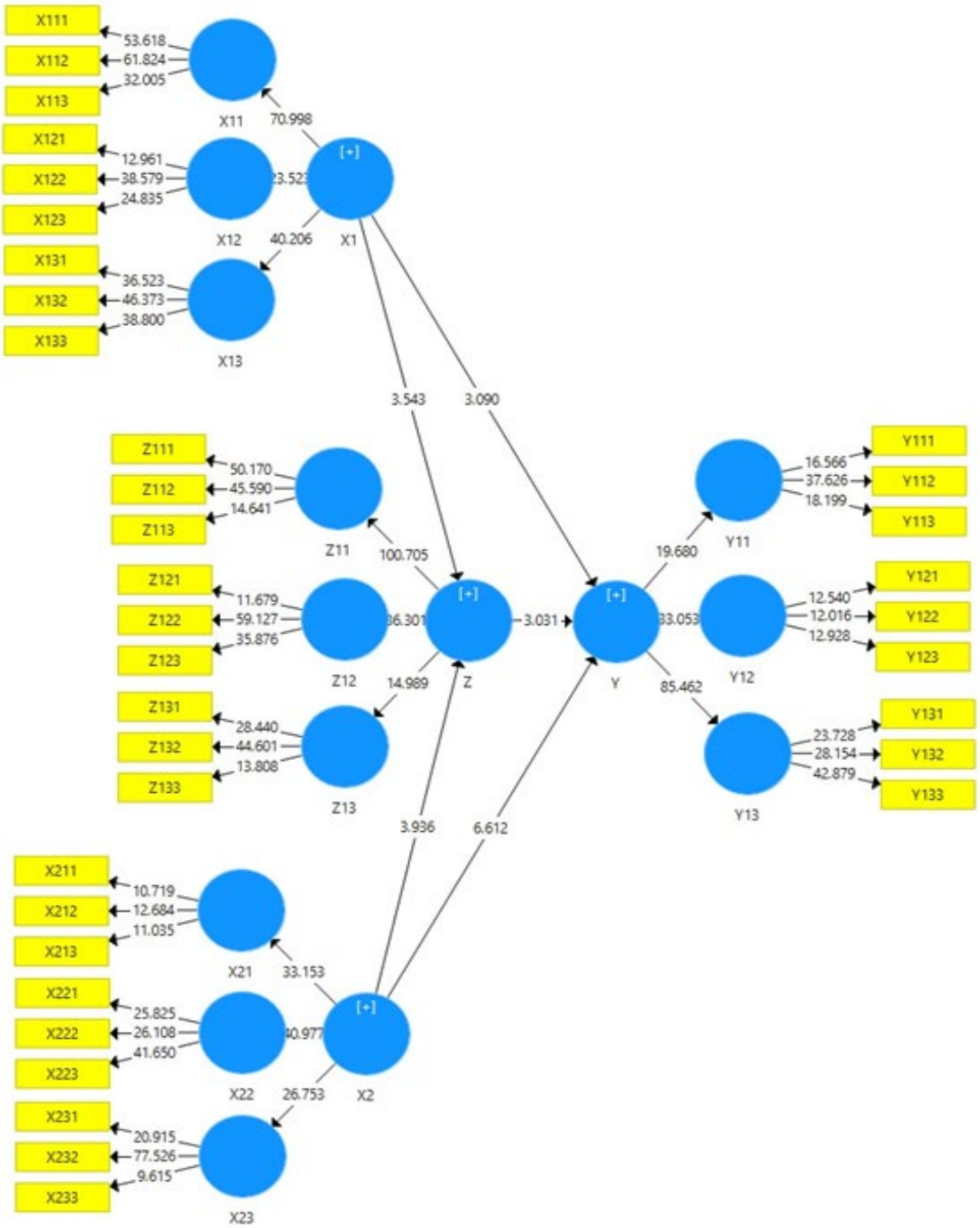

Figure 4. Structural model (inner model)
Source: Data analysis

1) Hypothesis Testing: Direct Effects

The structural model analysis provides the path coefficients (Original Sample), T-statistics, and P-values to determine the significance of each hypothesized direct relationship. Based on the statistical output from SmartPLS, the results are summarized as follows:

Table 1. Path coefficient (original sample)

No	Variable Relationship	Path Coefficient (Original Sample)
1	Work Overload -> Employee Productivity	-0.274
2	Work Environment -> Employee Productivity	0.685
3	Work Overload -> Work Stress	0.373
4	Work Environment -> Work Stress	0.465
5	Work Stress -> Employee Productivity	0.357

Source: Data analysis

Table 2. Direct effects hypothesis testing

No	Variable Relationship	Coefficient	T-Statistics	P-Values	Decision
1	Work Overload -> Employee Productivity	-0.274	3.09	0.002	Hypothesis Accepted
2	Work Environment -> Employee Productivity	0.685	6.612	0	Hypothesis Accepted
3	Work Overload -> Work Stress	0.373	3.543	0	Hypothesis Accepted
4	Work Environment -> Work Stress	0.465	4.312	0	Hypothesis Accepted
5	Work Stress -> Employee Productivity	0.357	3.491	0.003	Hypothesis Accepted

Source: Data analysis

The results of the direct effect hypothesis testing, as shown in Table 2, demonstrate that all five direct relationships are statistically significant. The T-statistic values for all paths exceed the required threshold of 1.96, and all P-values are below the 0.05 significance level. Notably, work environment has the highest T-statistic (6.612), reinforcing its role as a crucial factor for employee performance. These findings provide empirical support for the conclusion that workload, environment, and stress all play significant direct roles in shaping the productivity of employees at BNI Brawijaya.

Table 1 presents the original sample path coefficients, which indicate the direction and strength of the relationships between the variables. A negative coefficient of -0.274 for the path from work overload to productivity suggests that as the workload increases, productivity tends to decline. Conversely, the work environment shows the strongest positive path coefficient (0.685), identifying it as the primary driver of productivity. Additionally, both workload and environment show positive associations with work stress, while stress itself maintains a significant path coefficient of 0.357 toward employee productivity, highlighting its critical role in the model.

- **The Impact of Work Overload on Employee Productivity:** The path coefficient for this relationship is -0.274 with a T-statistic of 3.090 and a P-value of 0.002. Since the P-value is less than 0.05, the hypothesis that work overload negatively impacts productivity is accepted. This suggests that as the volume and complexity of tasks increase beyond capacity, productivity significantly declines (Ari, 2025) (Boudreau & Rhéaume, 2024) (Ogedengbe et al., 2025).
- **The Impact of Work Environment on Employee Productivity:** The analysis yielded a path coefficient of 0.685 with a T-statistic of 6.612 and a P-value of 0.000. This indicates a strong,

positive, and significant relationship. A conducive and supportive work environment is a primary driver for enhancing employee output at the Brawijaya Branch (Kurniawaty et al., 2019) (Singh & Chaudhary, 2022) .

- **The Impact of Work Overload on Work Stress**: The path coefficient is 0.373 with a T-statistic of 3.543 and a P-value of 0.000. This result confirms that higher levels of work overload directly lead to increased work stress among bank employees (Aulia et al., 2021) (Salama et al., 2022) (Havermans et al., 2018).
- **The Impact of Work Environment on Work Stress:** Interestingly, the relationship between work environment and stress showed a coefficient of 0.465 with a T-statistic of 4.312 and a P-value of 0.000. This indicates that the environment at the branch significantly influences the stress levels experienced by the staff.
- **The Impact of Work Stress on Employee Productivity:** The path coefficient for this relationship is 0.357 with a T-statistic of 3.491 and a P-value of 0.001. This signifies that stress levels have a significant direct impact on the productivity of employees at BNI Brawijaya (Chen et al., 2022) .

2) Mediation Analysis: Indirect Effects

To understand the complex interplay between the variables, the study examined the mediating role of work stress using specific indirect effects analysis. The results are as follows:

Table 3. Indirect effects hypothesis testing

No	Variable Relationship	Path Coefficient (Original Sample)
1	Work Overload -> Employee Productivity	-0.274
2	Work Environment -> Employee Productivity	0.685
3	Work Overload -> Work Stress	0.373
4	Work Environment -> Work Stress	0.465
5	Work Stress -> Employee Productivity	0.357

Source: Data analysis

Table 3 details the indirect effects within the model, specifically examining how Work Stress functions as a mediator. The relationship between Work Overload and Employee Productivity via Work Stress yields a coefficient of 0.133 with a T-statistic of 2.015, confirming the acceptance of Hypothesis 6. Similarly, the path from Work Environment to Employee Productivity through Work Stress is significant, with a coefficient of 0.166 and a T-statistic of 2.858, leading to the acceptance of Hypothesis 7. These results indicate that work stress significantly mediates the impact of both workload and environment on final productivity levels.

- **Mediation of Work Overload on Productivity via Work Stress:** The indirect effect of work overload on productivity through the mediation of work stress was found to be significant. This implies that work overload not only reduces productivity directly but also operates through a psychological "bridge" of stress that further exacerbates the decline in performance (**Ari**, 2025).

- **Mediation of Work Environment on Productivity via Work Stress**: Similarly, the work environment was found to influence productivity significantly through the mediation of work stress. This suggests that a positive environment helps in mitigating stress, which in turn sustains high productivity levels (Boudreau & Rhéaume, 2024) (Kurniawaty et al., 2019).

The significance of these mediating paths confirms that work stress is a critical intervening variable in the organizational structure of BNI Brawijaya. These findings align with recent studies emphasizing that mental well-being and stress management are essential for maintaining performance in high-pressure sectors (The Influence of Work Environment and Work Engagement on Employee Performance Mediated by Employee Well-Being (Irawanto et al., 2021).

3) Summary of Hypothesis Results

Overall, all seven hypotheses proposed in this study were supported by the empirical data. The structural model confirms that both work overload and the work environment are powerful predictors of both work stress and employee productivity. The high T-statistics (above 1.96) and low P-values (below 0.05) across all paths provide robust evidence for the conceptual model. These results lay the statistical foundation for understanding how internal stressors and physical-social settings dictate the professional output of banking personnel in a competitive financial landscape.

4. Analysis and Discussion

4.1 The Direct Impact of Work Overload on Employee Productivity

The statistical analysis reveals that work overload has a significant negative impact on employee productivity at PT Bank Negara Indonesia (Persero) Tbk, Brawijaya Branch Office. With a path coefficient of -0.274 and a T-statistic of 3.090, the empirical evidence supports the hypothesis that an excessive volume of tasks leads to a decline in output quality and efficiency (Sandoval-Reyes et al., 2019) (Jeon et al., 2022). In the banking context, work overload manifests when the mental and physical energy required to complete transactions exceeds the employee's available resources. At the Brawijaya Branch, the requirement for high precision within strict time limits such as the 1.5-minute service standard creates a "bottleneck" effect where quantity begins to compromise quality (Junça Silva et al., 2024) (Alagöz et al., 2025).

This finding is consistent with contemporary organizational behavior research which suggests that cognitive depletion occurs when employees are perpetually in a state of high-demand (Ari, 2025). When bank tellers or customer service officers are overwhelmed by a backlog of customers and administrative reporting, their attention to detail diminishes. As noted by Boudreau and Rhéaume , excessive workload not only hampers immediate performance but also creates long-term fatigue that prevents employees from reaching their peak productivity levels (Boudreau & Rhéaume, 2024). Therefore, the negative correlation found in this study underscores the necessity for management to periodically review task distribution to ensure that the quantitative demands do not exceed the cognitive thresholds of the staff. Failing to proactively address these critical issues will inevitably lead to higher turnover rates, increased errors, and significantly lower customer satisfaction metrics. Therefore, establishing supportive policies and equitable workload distribution remains essential for maintaining institutional resilience and continuous financial growth. Furthermore, integrating advanced digital automation tools could alleviate repetitive manual tasks, allowing human capital to focus on high-value interactions that require empathy, complex problem-solving, and personalized client relationship management.

4.2 The Role of Work Environment in Enhancing Productivity

In contrast to the negative effects of workload, the work environment at BNI Brawijaya shows a remarkably strong positive impact on productivity, with a path coefficient of 0.685 and a T-statistic of 6.612. This indicates that the environment is the most dominant predictor of productivity in this research model. A conducive environment, encompassing both physical comfort (ergonomics, lighting, and temperature) and non-physical support (team cohesion and supervisor feedback), provides the necessary foundation for employees to execute their duties effectively (Kuang et al., 2024) (Tetu Mwenda Mutegi et al., 2023).

Recent literature emphasizes that a supportive work environment acts as a buffer against organizational stressors (Kurniawaty et al., 2019). For the employees at BNI Brawijaya, a well-organized workspace and a positive social atmosphere allow them to maintain focus despite the high transaction volumes. This aligns with the "green work environment" concept, which suggests that when an organization prioritizes a healthy and engaging workspace, employee performance naturally increases (Nusraningrum et al., 2024) (Farooq & Sultana, 2022) (Tetu M. Mutegi et al., 2023). The high significance of this variable suggests that BNI's investment in office facilities and organizational culture is a strategic asset that directly translates into superior service delivery and operational efficiency.

4.3 Work Overload and its Contribution to Work Stress

The analysis further confirms that work overload is a primary driver of work stress (path coefficient 0.373, T-statistic 3.543). In the banking industry, stress is often a byproduct of the gap between job expectations and the time allowed to meet them. When employees at the Brawijaya Branch perceive that their workload is unmanageable, they experience psychological symptoms such as anxiety and loss of concentration. This is particularly evident when high-risk financial tasks must be completed under intense time pressure (Mosquera & Soares, 2024) (He et al., 2025).

The correlation between workload and stress found in this study mirrors findings in other high-pressure sectors. For instance, studies on healthcare workers have shown that workload is the most consistent predictor of burnout and psychological strain (Aulia et al., 2021). Within BNI Brawijaya, the stress experienced by employees is not merely a personal issue but a structural consequence of task density. As stress levels rise, the physiological and mental resources of the employee are diverted from task execution to stress management, creating a cycle of diminishing returns.

4.4 The Complex Influence of Work Environment on Stress

Interestingly, the study found a positive and significant relationship between the work environment and work stress (path coefficient 0.465, T-statistic 4.312). While seemingly counterintuitive, this suggests that in the specific context of BNI Brawijaya, certain environmental factors might be perceived as stressors rather than supports. This could occur if the "environment" includes high-standard digital monitoring or an open-office layout that, while modern, increases the feeling of being constantly observed or interrupted.

This finding invites a more nuanced view of the workspace. While a good environment boosts productivity, it can simultaneously contribute to the "pressure to perform" if the atmosphere is overly competitive or if the physical layout does not allow for sufficient mental breaks. As

discussed in recent studies, the relationship between environment and stress is often mediated by how employees perceive their autonomy and the level of engagement they feel (The Influence of Work Environment and Work Engagement on Employee Performance Mediated by Employee Well-Being). At BNI Brawijaya, it appears that the environment is a powerful force that simultaneously drives high output while contributing to the overall psychological intensity of the workplace.

4.5 The Direct Impact of Work Stress on Productivity

The results indicate that work stress itself has a significant impact on productivity (path coefficient 0.357, T-statistic 3.491). While some level of "eustress" (positive stress) can be motivating, the findings suggest that the stress experienced at the branch is a significant factor in determining the final work outcome. When stress is managed effectively, it can actually drive employees to meet their targets; however, when it crosses a certain threshold, it begins to erode performance.

This dual nature of stress is a central theme in modern human resource management. Research indicates that the impact of stress on performance is often influenced by the presence of job satisfaction and rewards (With Job Satisfaction or Not? The Role of Job Satisfaction in the Relationship Between Training and Rewards on Employee Productivity). For the staff at BNI, the ability to remain productive under stress may be linked to their professional commitment and the support systems provided by the bank. Nevertheless, the statistical significance of this path highlights that stress management is not an optional "perk" but a fundamental requirement for maintaining productivity levels (Chen et al., 2022).

4.6 Analysis of the Mediating Role of Work Stress

One of the most critical findings of this research is the significance of work stress as a mediator. The indirect effects analysis confirms that work stress bridges the relationship between the independent variables (overload and environment) and the dependent variable (productivity). This mediation implies that the "damage" caused by work overload does not just happen directly; it happens because overload first makes the employee stressed, and that stress then destroys their ability to be productive (Ari, 2025).

Similarly, the work environment influences productivity through the medium of stress. A supportive environment helps to mitigate the negative psychological impacts of a heavy workload, thereby protecting the employee's productivity. This mediating mechanism is crucial for BNI Brawijaya's management to understand. It suggests that even if the workload cannot be reduced due to market demands, productivity can still be protected by implementing stress-reduction interventions and improving the work environment. This "buffer" effect is consistent with studies showing that mental health and work-life balance are essential for sustaining performance during high-demand periods (Irawanto et al., 2021).

By identifying these pathways, the study demonstrates that productivity at BNI Brawijaya is a complex outcome of both physical task demands and psychological states. The mediation of stress highlights the human element in the banking machine; the efficiency of the branch is ultimately limited by the psychological resilience of its staff. Therefore, any strategy aimed at increasing productivity must simultaneously address the environmental triggers of stress and the internal mechanisms of stress management among employees. Achieving a sustainable balance ensures

long-term operational success while maintaining the mental well-being and professional engagement of the entire workforce.

5. Conclusions

This study concludes that work overload and the work environment are pivotal determinants of employee productivity at PT Bank Negara Indonesia (Persero) Tbk, Brawijaya Branch Office. The findings demonstrate that while excessive work overload significantly diminishes productivity, a conducive and supportive work environment serves as a powerful catalyst in enhancing employee output. Crucially, the research validates the mediating role of work stress, which acts as a psychological bridge linking both workload and environmental factors to performance outcomes. Increased workloads directly escalate stress levels, which in turn erode productivity. Conversely, an optimized work environment helps mitigate stress, thereby sustaining high productivity. Consequently, to maintain peak operational efficiency, management must prioritize balanced task distribution and continuous environmental improvements to effectively manage employee stress in a high-pressure banking landscape. Such strategic initiatives will ultimately ensure continuous organizational success and foster exceptional daily employee performance. Furthermore, prioritizing holistic employee wellness programs alongside these structural changes can cultivate a more resilient corporate culture, enabling the branch to thrive amidst the evolving challenges of the financial industry.

Conflict of Interest

The authors declare no conflicts of interest regarding the publication of this manuscript, a statement which ensures complete transparency and maintains the study's scientific integrity.

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