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Job Satisfaction as a Mediating Variable Between Work Environment and Employee Productivity



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KEYWORDS	ABSTRACT
<p>Keywords: Work environment; Job satisfaction; Employee productivity; Human resource management.</p> <p>Conflict of Interest Statement: The author(s) declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.</p> <p>Copyright © 2024 AHRMR. All rights reserved.</p>	<p>Purpose: This study aims to examine the role of job satisfaction as a mediating variable between the work environment and employee productivity at PT Air Minum Jayapura Robongholo Nanwani.</p> <p>Research Design and Methodology: The research employs a quantitative approach with a sample of 150 employees, utilizing cluster sampling. Data collection was conducted through questionnaires, and the data were analyzed using Structural Equation Modeling (SEM) with AMOS software.</p> <p>Findings and Discussion: The findings indicate that the work environment significantly influences job satisfaction and employee productivity. Moreover, job satisfaction fully mediates the relationship between the work environment and productivity, suggesting that improvements in the work environment led to higher job satisfaction, enhancing productivity. The study's results support theories such as Maslow's hierarchy of needs and Herzberg's two-factor theory.</p> <p>Implications: These findings have practical implications for organizational management, highlighting the importance of creating a conducive work environment to boost job satisfaction and productivity. Future research should consider longitudinal studies and diverse methods to explore these dynamics in different organizational contexts further. This study contributes to human resource management theory by providing empirical evidence of the mediating role of job satisfaction in the relationship between work environment and productivity.</p>

Introduction

In a global context, work productivity is a crucial factor determining an organization's success and competitiveness in the modern era. Amidst the constantly evolving market dynamics and increasing competition, organizations must optimize human resource performance to achieve strategic goals and maintain a competitive edge. Work productivity impacts the achievement of organizational targets and contributes to operational efficiency and sustainable innovation. One crucial element influencing work productivity is the work environment, encompassing the physical, social, and psychological aspects where employees operate. A conducive work environment plays a vital role in employee well-being, which, in the long run, positively affects individual productivity and performance. Conversely, a poor work environment can lower employee morale and motivation, increasing stress and dissatisfaction. This can result in high absenteeism, decreased work quality, and even high turnover

rates, negatively impacting organizational productivity. Therefore, understanding and managing work environment factors are essential for managers and organizational leaders aiming to create an environment that supports optimal employee performance. This study emphasizes the importance of creating and maintaining a positive work environment to enhance work productivity in modern organizations.

Recent literature shows that job satisfaction significantly mediates the relationship between work environment and employee productivity. Idris et al., (2020) found that job satisfaction mediates the relationship between the work environment and employee performance. This finding is supported by studies from (Setyaningrum & Ekhsan, 2021; Suifan, 2019), which also identify a similar mediating role. (Enzelina et al., 2024; Oztruck & Okcu, 2020) further confirm that job satisfaction mediates the work environment's and stress's impact on productivity. Additionally, (Ashraf, 2019; Athirah Saidi et al. (2019) emphasizes the importance of a positive work atmosphere in enhancing job satisfaction and employee performance. Thakur et al., (2020) highlights various work environment dimensions that can influence job satisfaction. These studies underscore the significant mediating role of job satisfaction in the relationship between work environment and employee productivity. However, despite valuable insights, current studies have limitations. Many need to holistically integrate these factors, leaving gaps in understanding how these elements interact in a broader context. For instance, some studies focus only on specific aspects of the work environment or job satisfaction without considering the complex interactions between factors that can affect overall productivity.

Existing literature reveals significant gaps regarding the mediating role of job satisfaction between work environment and productivity, particularly in the Indonesian context. Most existing studies focus on countries with different cultural and economic contexts, making their findings only partially applicable to Indonesia. This lack of empirical evidence highlights the need for more in-depth and specific research to understand how job satisfaction mediates the relationship between work environment and productivity locally. This research aims to fill these gaps by providing new empirical evidence focusing on Indonesia. By exploring how job satisfaction mediates the relationship between work environment and productivity, this study hopes to offer more profound and more relevant insights. These findings are expected to help organizations in Indonesia design more effective strategies for creating a conducive work environment, ultimately enhancing job satisfaction and productivity. To provide comprehensive context, this research will also reference critical findings from previous studies that support or challenge the hypothesis of this study.

The primary objective of this study is to understand and test the role of job satisfaction as a mediating variable between the work environment and work productivity. This research aims to uncover how work environment factors can influence employee productivity through their level of job satisfaction. This study is expected to provide robust empirical evidence on these complex dynamics by employing an objective data collection and analysis approach. The research question to be addressed is: How does the work environment affect employee productivity through job satisfaction? This study explores the relationships between these variables to determine how job satisfaction is a mediator. Consequently, this research offers a more comprehensive understanding of the factors influencing work productivity in different environments. The novelty of this study lies in its holistic and contextual approach. Unlike previous research that may focus solely on one aspect of the work environment or job satisfaction, this study strives to integrate all these elements into a comprehensive analytical framework. Additionally, this research provides a unique contribution by focusing on the Indonesian context, which still needs to be represented in international literature. This study aims to offer new insights relevant to academics, practitioners, and policymakers in designing more effective and productive work environments by addressing these gaps.

Literature Review

The work environment is one of the critical aspects of organizational behavior, and it includes various physical, social, and psychological elements that affect employee performance. Physically, the work environment includes aspects such as office design, ergonomics, and occupational safety. Social aspects include relationships between employees, leadership, and organizational culture. Meanwhile, the psychological aspect includes stress levels, mental well-being, and feelings of

psychological safety. A conducive work environment improves individual performance and overall organizational productivity. Job satisfaction is the level of comfort and satisfaction that employees feel towards their work, which is influenced by intrinsic and extrinsic factors. Intrinsic factors include the nature of the job itself, such as skill variety, autonomy, and meaning of work. Extrinsic factors include pay, benefits, job security, and work-life balance. Job satisfaction strongly influences employee motivation and commitment to the organization. High levels of job satisfaction are usually associated with increased productivity, loyalty, and low turnover rates. Work productivity refers to the output produced by employees in a certain period, which can be measured through various indicators such as work efficiency, output quality, and timeliness. Various individual factors, such as skills and motivation, and organizational factors, such as management systems and work culture, influence productivity. Understanding the relationship between work environment, job satisfaction, and productivity is essential for designing effective strategies to improve organizational performance. Thus, this study seeks to explore the mediating role of job satisfaction in the relationship between work environment and employee productivity, with the hope of providing new insights that are beneficial to the development of human resource management theory and practice.

Work Environment

The work environment in the company is critical for management to pay attention to because although not directly involved in the production process, the work environment significantly influences employees who run the production. The work environment includes everything around workers that affects performance, including lighting arrangements, noise control, workplace cleanliness, and security. Setiawan et al., (2023) state that the work environment is around workers and affects the performance of their duties. Waris (2015) defines the work environment as all tools, materials, and the surrounding environment that workers face, including work methods and arrangements individually and in groups. Adams et al., (2024) added that the work environment includes everything around employees, affecting their sense of security, comfort, and satisfaction in completing work. A comfortable work environment will positively impact individuals, while poor environmental conditions will have a negative impact. The types of work environment are divided into physical and non-physical work environments (Sedarmayanti, 2017). The physical work environment includes the physical conditions around the workplace, such as work centers, chairs, and tables, as well as general conditions, such as temperature, humidity, air circulation, lighting, noise, and color. The non-physical work environment includes working relationships with superiors and co-workers, as well as social factors and information systems within the company. According to Afandi, (2018) the benefits of the work environment are that it creates work passion that increases productivity and work performance. A good work environment allows work to be completed according to standards and within the specified time. According to Sedarmayanti, (2017) indicators of the work environment include noise, air temperature, space for movement, lighting, and relationships between employees. Noise disturbs calmness and communication, air temperature needs to be well regulated for work comfort, adequate space for movement prevents security and safety disturbances, sufficient lighting increases work efficiency, and harmonious employee relationships support organizational stability. Historically, the concept of the work environment has evolved. Physical aspects such as air conditioning and lighting, while Setiawan et al., (2023) expanded the definition to be everything that affects workers. Waris, (2015) emphasizes the importance of tools, materials, and a sense of safety and comfort for workers, asserting that a comfortable environment positively impacts individuals.

Work Productivity

Work productivity is the ability of employees to produce goods or services compared to the inputs used, so an employee is said to be productive if he can produce goods or services as expected in a short or appropriate time. Work productivity measures the quantity and quality of work by considering the cost of resources. Sinungan (2018) defines work productivity as the ability of individuals or groups to produce something negotiated together quickly. Hasibuan (2013) states that work productivity is the ratio between output and input and how resources are utilized to produce goods or services.

Work productivity is the ability to produce goods or services from employees' various resources and abilities. Work productivity is the ability of individuals or groups to produce outputs that are increasing both qualitatively and quantitatively over time. Factors that affect work productivity include work motivation, education, work discipline, skills, ability to cooperate, income level, and achievement opportunities. Work productivity includes continuous improvement, challenging job tasks, and pleasant physical conditions in the workplace (Siagian & Cahyono (2014). According to Desanti & Sutrisno (2017), indicators of work productivity include ability, improvement of results achieved, self-development, quality, and efficiency. Historically, the concept of work productivity has evolved. Mathis & Jackson, (2001) emphasized the importance of considering resource costs in measuring productivity. The importance of capability and the way resources are utilized (Sinungan, 2018; Hasibuan, 2013). (Kustini & Sari, 2020; Mahawati et al., 2021) emphasize the ability to produce output that increases over time.

Job Satisfaction

Job satisfaction is a pleasant or unpleasant emotional state employees feel related to the rewards received, work situations, and cooperation between leaders and employees. Suhardi et al. (2015) state that job satisfaction is a pleasant and subjective psychological condition, depending on the individual and the work environment. Hamali & SS (2023) define job satisfaction as an employee's attitude towards work related to the work situation, cooperation between employees, and rewards. Nurhayati et al., (2016) added that job satisfaction reflects how work can provide benefits to the organization, which means that what employees get at work has fulfilled things that are considered essential. Sutrisno (2019) states that job satisfaction is related to the work situation, cooperation between employees, rewards received, and physical and psychological factors. Deniswara et al., (2020) define job satisfaction as an employee's pleasant or unpleasant opinion about his job, reflected in the employee's behavior towards work and experiences in the work environment. According to Afandi, (2018) job satisfaction factors include meeting needs, differences between expectations and reality, value achievement, justice, and organizational culture. Indicators of job satisfaction include the job itself, salary, promotion, supervisors, and co-workers. According to Afandi (2018), a job with satisfying elements, fair pay, promotion opportunities, good supervision, and solid cooperation of colleagues are the leading indicators of job satisfaction. Historically, the concept of job satisfaction has evolved. Suhardi et al., (2015) emphasized subjective psychological conditions and work environment, while (Hamali, 2016; Desanti & Sutrisno, 2017) highlighted the importance of work situations, cooperation among employees, and rewards. Nurhayati, (2016) emphasizes the benefits of work to the organization, and Handoko, (2012) adds that employees' opinions about their jobs are seen from their behavior towards work and the work environment.

Research Design and Methodology

This research method uses a quantitative approach based on the philosophy of positivism to examine specific populations or samples to test hypotheses between predetermined variables. The research was conducted at PT Air Minum Jayapura Robongholo Nanwani Papua. The study population was all 158 PT Air Minum Jayapura Robongholo Nanwani employees, including the field, production, and distribution sections. The research sample was taken using the Cluster Sampling method, with 95% of the population, so the sample used was 150 employees. The data used is quantitative data that can be measured or calculated directly in the form of information expressed in numbers. Data sources consist of primary data collected directly by researchers and secondary data obtained from previous research reports or literature. Data collection was carried out using a questionnaire as the main instrument. Research variables include independent variables (Work Environment), dependent variables (Work Productivity), and mediating variables (Job Satisfaction). The operational definition of variables is determined based on indicators measured using an interval scale. The measurement scale used is the Bipolar Adjective scale to assess the weight of the response. Data analysis was conducted using the Structural Equation Modelling (SEM) method using the AMOS program, which combines aspects of multiple regression and factor analysis to estimate dependency relationships simultaneously. Instrument testing included validity and reliability tests to ensure the accuracy and

consistency of the measurement tools. Structural model testing was conducted concerning the assumptions of sample coverage, normality, and outliers. Evaluation of the goodness of fit criteria uses various fit indices to measure the degree of fit of the model to the data. The Sobel Test was conducted to determine the significance of mediating variables in the tested model.

Findings and Discussion

Findings

Table 1 presents the results of the validity and reliability tests conducted for work environment, productivity, and job satisfaction. The validity test was performed by comparing the calculated R values with the R table value of 0.1603, and the reliability test was measured using Cronbach's Alpha. Each item within these variables was scrutinized to ensure they met the criteria for inclusion in the study. The findings indicate that all items are valid, with their R calculated values exceeding the R table value and reliable, with Cronbach's Alpha values above the acceptable threshold of 0.7. This robust validation process underscores the reliability of the measurement instruments used in this research, ensuring that the data collected is consistent and accurate. Table 1 shows the detailed results of these tests.

Table 1. Validity and Reliability Test Results

Variable	Item	R Calculated	R Table	Description	Cronbach's Alpha
Work Environment (X)	Noise	0.811	0.1603	Valid	0.776
	Employee relations	0.811	0.1603	Valid	
	Air temperature	0.816	0.1603	Valid	
	Space to move	0.830	0.1603	Valid	
	Lighting	0.265	0.1603	Valid	
Work Productivity (Y)	Ability	0.769	0.1603	Valid	0.762
	Self-development	0.851	0.1603	Valid	
	Efficiency	0.845	0.1603	Valid	
	Quality	0.746	0.1603	Valid	
	Increasing results	0.277	0.1603	Valid	
Job Satisfaction (Z)	Salary	0.832	0.1603	Valid	0.765
	Promotion	0.798	0.1603	Valid	
	Coworkers	0.803	0.1603	Valid	
	Supervisor	0.771	0.1603	Valid	
	Job itself	0.314	0.1603	Valid	

Source: Processed data 2024 using SPSS version 22

The validity and reliability tests shown in the table above indicate that all items measured for work environment, work productivity, and job satisfaction are valid and reliable. Item validity is measured by comparing the R Calculated value with the R Table value, where all items have an R Calculated value more significant than the R Table value of 0.1603, indicating that each item is valid for use in this study. Additionally, Cronbach's Alpha values for the variables of work environment, work productivity, and job satisfaction are 0.776, 0.762, and 0.765, respectively, all above the threshold of 0.7. This indicates that these three variables have good internal consistency and reliability. These findings suggest that the instruments used in this study are robust and can provide accurate results in measuring the factors affecting work environment, work productivity, and job satisfaction. As an academic and writer, it is essential to ensure that the measurement tools used in research have high validity and reliability, as this will strengthen the validity and credibility of the research findings.

Table 2 presents the normality test results for various variables and the Mahalanobis distance for specific observations. The normality test is crucial to ensure that the data follows a normal distribution, a fundamental assumption in many statistical analyses. Skewness and kurtosis values, along with their critical ratios (C.R.), are used to assess the normality of the distribution. Skewness measures symmetry, while kurtosis indicates the peakedness of the data distribution. A critical ratio (C.R.) outside the range of ± 1.96 suggests deviations from normality. Additionally, the Mahalanobis distance is used to detect multivariate outliers. Observations with Mahalanobis distance values higher than the critical value indicate potential outliers in the data, which can influence the analysis. This

table aids researchers in understanding data distribution and identifying outliers that need to be considered in further statistical analysis to ensure valid and reliable research results.

Table 2. Normality Test Results and Mahalanobis Distance

Variable	Skew	C.R. Skew	Kurtosis	C.R. Kurtosis	Mahalanobis Distance	Critical Mahalanobis Distance (15:0.001)
Improving Results	-0.321	-1.604	-0.481	-1.203		
Quality	0.391	1.954	0.11	0.276		
Efficiency	0.162	0.808	-0.244	-0.61		
Self-Development	0.281	1.406	-0.488	-1.219		
Ability	-0.107	-0.535	0.211	0.529		
Job	-0.065	-0.327	-0.806	-2.014		
Supervisor	0.042	0.209	-0.175	-0.437		
Colleague	-0.191	-0.955	0.011	0.026		
Promotion	-0.341	-1.703	-0.635	-1.588		
Salary	-0.036	-0.178	-0.183	-0.458		
Lighting	-0.194	-0.971	-0.624	-1.56		
Space	-0.138	-0.69	0.065	0.163		
Air Temperature	-0.111	-0.553	-0.197	-0.493		
Employee Relations	-0.084	-0.422	0.023	0.058		
Noise	-0.199	-0.993	-0.277	-0.692		
Multivariate Observation		26.002		7.051	39.863	37.697

Source: Processed data 2024 using SPSS version 22

The normality test results and Mahalanobis distance for various variables are detailed in Table 2. The skewness and kurtosis values and their critical ratios (C.R.) indicate how the data distributions deviate from a normal distribution. For instance, the variable "Improving Results" shows a skewness of -0.321 and a C.R. skew of -1.604, while the kurtosis is -0.481 with a C.R. kurtosis of -1.203, suggesting some deviation from normality but within acceptable ranges. The variable "Quality" has a skewness of 0.391 and a C.R. skew of 1.954, with a kurtosis of 0.11 and a C.R. kurtosis of 0.276, indicating a relatively normal distribution. Other variables, such as "Efficiency," "Self-Development," "Ability," and "Job," also display skewness and kurtosis values that mostly fall within the acceptable range, though some, like "Job," with a kurtosis C.R. of -2.014, indicate more significant deviations from normality. Additionally, the Mahalanobis distance is used to identify multivariate outliers, with a critical value for 15 degrees of freedom at 0.001 significance level being 37.697. Observations with a Mahalanobis distance exceeding this critical value, such as 39.863, suggest the presence of outliers in the data. The multivariate C.R. values of 26.002 and 7.051 indicate significant deviation, highlighting the importance of considering these outliers in further statistical analyses to ensure the validity and reliability of the research results.

Figure 1 presents the Structural Equation Modeling (SEM) analysis used to test hypotheses and develop a robust model. The SEM technique, implemented with the aid of the AMOS 26 software, allows for comprehensive analysis and evaluation of the relationships between the variables. The diagram illustrates the interconnections among work environment, job satisfaction, productivity, and their respective indicators.

The Structural Equation Modeling (SEM) analysis in the figure evaluates the relationships between the latent variables: work environment, job satisfaction, and productivity. The indicators for each latent variable are shown along with their factor loadings, representing the strength of the relationship between the latent variables and their observed measures. The model fit indices in the diagram indicate a good fit between the model and the observed data. Specifically, the Chi-square value is 107.008 with a probability value of 0.072, suggesting that the model is acceptable. The CMIN/DF value of 1.230 is below the threshold of 3, indicating a good fit. The RMSEA value of 0.039 is well within the acceptable range of less than 0.08, further supporting the model's adequacy. Additionally, the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) values are 0.981 and 0.977, respectively, exceeding the recommended threshold of 0.95, demonstrating excellent fit. The Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI) values of 0.918 and 0.887, respectively, indicate a satisfactory fit, reinforcing the robustness of the model. Overall, these fit

indices confirm that the proposed model is a well-fitting representation of the data, validating the hypothesized relationships among the variables under study.

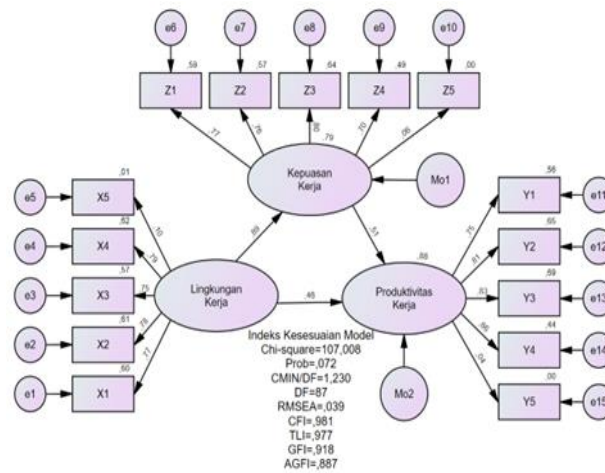


Figure 1. Structural Equation Modelling (SEM) Equation

Table 3 presents the combined mediation analysis results and the coefficients of influence for various variables. This analysis used Structural Equation Modeling (SEM) with AMOS 26 software. It includes the Sobel test statistic and associated probabilities, as well as the coefficient estimates, standard errors, critical ratios, and p-values for the impact of the work environment on job satisfaction and productivity. These results provide a comprehensive understanding of the relationships between the studied variables and the robustness of the hypothesized model.

Table 3. Mediation Analysis and Variable Influence Coefficients

Variable	Estimate	S.E.	C.R.	P	Sobel Test Statistic	One-tailed Probability	Two-tailed Probability
Work Environment	0.977	0.114	8.605	0.0			
Job Satisfaction	0.424	0.153	2.771	0.006			
Work Environment	0.426	0.165	2.584	0.01	2.472077	0.00671653	0.01343306

Source: Processed data 2024 using SPSS version 22

Table 3 provides a comprehensive overview of the mediation analysis and the influence coefficients for the variables: work environment, job satisfaction, and productivity. The analysis, conducted using Structural Equation Modeling (SEM) with AMOS 26, examines the impact of the work environment on job satisfaction and productivity. The coefficient estimate for the relationship between the work environment and job satisfaction is 0.977, with a standard error (S.E.) of 0.114, a critical ratio (C.R.) of 8.605, and a p-value of 0.000. This indicates a significant and robust positive relationship between the work environment and job satisfaction, suggesting that improvements in the work environment are likely to lead to higher job satisfaction among employees. The coefficient estimate for the relationship between job satisfaction and work productivity is 0.424, with an S.E. of 0.153, a C.R. of 2.771, and a p-value of 0.006. This signifies a significant positive relationship, indicating increased job satisfaction contributes to higher productivity. Additionally, the direct relationship between the work environment and work productivity has a coefficient estimate of 0.426, with an S.E. of 0.165, a C.R. of 2.584, and a p-value of 0.010. This direct path is also significant, illustrating that a better work environment enhances productivity.

The mediation analysis includes the Sobel test statistic to evaluate the significance of the indirect effect of the work environment on work productivity through job satisfaction. The Sobel test statistic is 2.472077, with a one-tailed probability of 0.00671653 and a two-tailed probability of 0.01343306. These values indicate that the indirect effect is significant, confirming that job satisfaction mediates the relationship between the work environment and productivity. Table 3 demonstrates that the work environment positively influences both job satisfaction and work productivity and job satisfaction

serve as a significant mediator in this relationship. These findings underscore the importance of fostering a positive work environment to enhance employee satisfaction and productivity.

Discussion

Work Environment on Work Productivity

In the dynamic and challenging world of work, the work environment plays a crucial role in determining employee productivity. Our research at PT Air Minum Jayapura Robongholo Nanwani demonstrates that an improved work environment significantly enhances employee productivity. This finding goes beyond physical space, highlighting the importance of conditions that make employees feel comfortable and motivated to work. The theories underlying this hypothesis are well-established. Abraham Maslow's hierarchy of needs places physiological and safety as the foundation of human motivation. In this context, sufficient space to move, good air circulation, and minimal noise are fundamental elements that must be met to create a conducive work environment. Herzberg's two-factor theory supports this by identifying hygiene factors, such as good working conditions, that prevent employee dissatisfaction, while motivators, such as recognition and responsibility, drive productivity. Previous literature supports these findings. (Iskandar et al., 2023; Maggasingang, 2020) emphasize the importance of a good work environment in enhancing productivity. Studies by (Cahyaningsih, 2023; Setiawan, 2022; Fau, 2021) show that a comfortable and conducive work environment positively influences employee performance. (Nugraha, 2024; Taryat, 2022) adds that the work environment has a strong positive and partial effect on employee productivity. Rorong, (2016) specifically highlights the impact of the physical work environment on employee performance. However, these results can differ from previous findings or existing theories because of the difference in context and location of the research. PT Air Minum Jayapura Robongholo Nanwani has unique characteristics and challenges that may not be found elsewhere. Cultural factors, geographical conditions, and organizational dynamics all play a role in how the work environment affects productivity. For example, good air circulation is crucial in a tropical climate like Jayapura. Poor air quality makes employees uncomfortable and reduces their concentration and work enthusiasm. Similarly, noise levels, which may be more disruptive in specific work environments, must be managed to ensure a calm and peaceful atmosphere for employees. These findings suggest that PT Air Minum Jayapura Robongholo Nanwani management should consider improving the work environment as part of their productivity enhancement strategy.

Work Environment on Job Satisfaction

The work environment plays a crucial role in determining employee job satisfaction. Our research at PT Air Minum Jayapura Robongholo Nanwani reveals that a better work environment significantly enhances job satisfaction. This finding underscores that the quality of the work environment is not just a supporting element but a foundational aspect of a company's success. Employees with adequate space to move can interact and discuss more freely, fostering good relationships with colleagues. These harmonious relationships facilitate task completion and increase job satisfaction. Trust and motivation that emerge from good workplace relationships further enhance job satisfaction. The theories underpinning this hypothesis are well-established in management and organizational psychology literature. Maslow's hierarchy of needs places physiological and safety needs at the base of human motivation. In this context, adequate space, good air circulation, and minimal noise are fundamental requirements for creating a conducive work environment. Herzberg's two-factor theory is also relevant, where hygiene factors such as good working conditions prevent dissatisfaction, while motivators like recognition and responsibility drive job satisfaction and productivity. Previous literature supports these findings. (Hasan, 2021; Suifan, 2019) found that the work environment has a direct positive effect on job satisfaction, with Suifan highlighting the mediating role of work motivation. (Kurnianto et al., 2017; Yusnita, 2023) also found a positive and significant effect of the work environment on job satisfaction, with Kurnianto emphasizing the role of job satisfaction in mediating the relationship between the work environment and performance. (Prayoga & Sasana, 2022; Thakur et al., 2020) identified the work environment as a critical factor influencing job satisfaction. Thakur specifically highlighted the importance of a positive and healthy

work environment. (Erro-Garcés & Ferreira, 2019; Taheri et al., 2020) further support these findings, noting the importance of workplace environmental conditions in explaining job satisfaction. PT Air Minum Jayapura Robongholo Nanwani has unique characteristics and challenges that may not be found elsewhere. Cultural factors, geographical conditions, and organizational dynamics influence how the work environment affects job satisfaction. For example, good air circulation is crucial in a tropical climate like Jayapura. Poor air quality makes employees uncomfortable and reduces their concentration and enthusiasm for work. Similarly, noise levels, which may be more disruptive in some work environments than others, must be managed to ensure employees' calm and peaceful atmosphere.

The implications of this research are extensive. First, the PT Air Minum Jayapura Robongholo Nanwani management should consider improving the work environment as part of their strategy to enhance job satisfaction. This could include improving office layouts to provide more space, upgrading ventilation systems to ensure good air circulation, and controlling noise to create a quiet working environment. Second, employee relationships should be strengthened through team development programs and activities promoting cooperation. Building solid and harmonious relationships will motivate employees to work together to achieve the company's goals. Continuing studies could explore how other factors, such as technology and workspace design, affect job satisfaction. Additionally, longitudinal research could be conducted to observe the long-term impact of changes in the work environment on employee satisfaction and performance. Further studies could expand the scope by including new variables such as work-life balance and job satisfaction. This would provide a more holistic understanding of how various aspects of the work environment contribute to satisfaction and productivity.

Job Satisfaction on Work Productivity

Job satisfaction plays a crucial role in determining work productivity. Our research at PT Air Minum Jayapura Robongholo Nanwani reveals that job satisfaction significantly enhances productivity. This finding underscores that higher levels of job satisfaction led to increased employee productivity. Providing appropriate compensation for their work and offering clear promotion opportunities motivates employees to work more diligently. Employees who feel valued and see opportunities for advancement tend to be more motivated and industrious. Furthermore, allowing employees to showcase and develop their skills contributes to higher productivity, as skilled and developed employees complete tasks more efficiently. The theories underlying this hypothesis support these findings. Herzberg's motivation-hygiene theory highlights the importance of motivators such as recognition, responsibility, and promotion opportunities in increasing job satisfaction and, subsequently, work productivity. Vroom's expectancy theory is also relevant, where employees' expectations that their efforts will lead to good performance, which will be rewarded appropriately, play a critical role in motivating them to work harder. Therefore, companies that meet employees' expectations and needs create a conducive environment for high productivity.

Previous literature consistently supports the positive relationship between job satisfaction and productivity. (VrindaN, (2015; Tentama, 2019) found a significant positive correlation between higher job satisfaction and increased productivity. (Cima, 2023; Veenhoven, 2003) emphasized the importance of job satisfaction in creating a positive work environment and its impact on employee performance. (Navale, 2008; Pushpakumari, 2008) also found a positive correlation between job satisfaction and job performance, with Navale highlighting the role of rewards in determining job satisfaction. (Singh, 2013; Böckerman, 2012) underscored the need for a satisfied workforce to maintain productivity and achieve work-life balance, with Böckerman providing evidence of the positive effect of job satisfaction on establishment-level productivity. Context and location of research contribute to the differences in findings compared to previous studies. PT Air Minum Jayapura Robongholo Nanwani exhibits unique characteristics and challenges. Cultural factors, geographical conditions, and organizational dynamics influence how job satisfaction affects productivity. In Jayapura, job security, a supportive work climate, and good inter-employee relationships are crucial in a physically or emotionally challenging work environment.

The implications of this research are extensive. Management at PT Air Minum Jayapura Robongholo Nanwani should consider strategies to enhance job satisfaction and increase productivity. These strategies may include fair compensation policies, straightforward career development programs, and creating a supportive work environment. The company can ensure that employees remain motivated and productive by meeting employee expectations and providing growth opportunities. Continuing studies on this topic could explore how other factors, such as technology and innovation in job design, affect job satisfaction and productivity. Longitudinal research could observe the long-term impact of increased job satisfaction on productivity. Additionally, incorporating new variables such as work-life balance and job satisfaction would provide a more holistic understanding of how various aspects of the work environment contribute to satisfaction and productivity.

Work Environment on Work Productivity through Job Satisfaction

A positive work environment has long been recognized as crucial in determining employee productivity and job satisfaction. Our research at PT Air Minum Jayapura Robongholo Nanwani demonstrates that job satisfaction fully mediates the effect of the work environment on work productivity. This means that a good work environment not only directly enhances productivity but also does so indirectly by increasing job satisfaction. Employees who feel satisfied with their work environment become more motivated and productive. The theories underlying this hypothesis are both profound and comprehensive. Maslow's hierarchy of needs emphasizes the importance of fulfilling basic needs such as safety and comfort in the workplace to achieve higher levels of satisfaction and motivation. Herzberg's two-factor theory asserts that hygiene factors like good working conditions prevent dissatisfaction, while motivators such as recognition and personal growth enhance job satisfaction and productivity. Vroom's expectancy theory highlights that employees' expectations of fair rewards for their efforts are vital to motivating them to work harder. Previous literature consistently supports these findings. Studies by (Lukitasari & Alliffia, 2022; Rosul et al., 2022; Taryat et al., 2022; Faujiah et al., 2022) show a strong correlation between a positive work environment and increased productivity and job satisfaction. (M. Thakur et al., 2020; Pahlevi & Digidowiseiso, 2024) emphasize the role of work motivation, influenced by the work environment, in enhancing employee performance. Tasman et al., 2021; Gosal, 2014) indicate that comfort, facilities, rewards, and safety are crucial elements in creating a positive work environment.

The unique context and characteristics of PT Air Minum Jayapura Robongholo Nanwani contribute to these findings. Cultural factors, geographical conditions, and organizational dynamics play significant roles in how the work environment affects satisfaction and productivity. In Jayapura, good air circulation, harmonious employee relationships, and a sense of security are critical. Job satisfaction increases when employees feel comfortable and secure, leading to higher productivity. The implications of this research are extensive. Management at PT Air Minum Jayapura Robongholo Nanwani should adopt strategies focused on enhancing the work environment to ensure employee satisfaction and productivity. This includes improving workplace facilities, implementing fair compensation policies, and providing comprehensive personal development programs. Additionally, fostering good relationships among employees is crucial to creating a collaborative and harmonious work atmosphere. By doing so, the company will boost productivity and build a positive and sustainable work culture.

Relevant ongoing studies could explore how other elements, such as technology and workspace design innovation, impact job satisfaction and productivity. Longitudinal research could examine the long-term effects of improved job satisfaction on productivity. Furthermore, incorporating new variables like work-life balance and mental health would provide a more holistic understanding of how various aspects of the work environment contribute to satisfaction and productivity. Recognizing that change is the only constant, maintaining high job satisfaction is a continuous journey. Management must be ready to adapt and improve working conditions to align with employees' needs and market dynamics. This approach ensures that PT Air Minum Jayapura Robongholo Nanwani continually enhances productivity and fosters a positive and sustainable work culture. This long-term investment will benefit the company and its employees significantly.

Conclusion

This study reveals that job satisfaction fully mediates the relationship between work environment and work productivity at PT Air Minum Jayapura Robongholo Nanwani. A good work environment significantly increases employee productivity directly and through increased job satisfaction. Employees who are satisfied with their work environment tend to be more motivated and productive. This finding confirms the importance of the work environment as a significant factor affecting employee performance and highlights that job satisfaction is critical to achieving higher productivity.

This research significantly contributes to the science and practice of human resource management. In the academic world, the findings add to the empirical evidence supporting motivation and job satisfaction theories, such as Maslow's hierarchy of needs theory, Herzberg's two-factor theory, and Vroom's expectancy theory. Practically, the results of this study provide guidance for company management in designing performance improvement strategies through improving the work environment and policies that support job satisfaction. The findings also emphasize the importance of paying attention to aspects such as fair compensation, self-development opportunities, and harmonious employee relations to create a conducive work environment.

This study also has some limitations that need to be considered. First, this study was conducted in the specific context of PT Air Minum Jayapura Robongholo Nanwani, so the results may not be generalizable to other organizations with different characteristics. Secondly, this study used a cross-sectional approach, meaning data was collected at a single time. This limits the ability to capture the dynamics of changes in the relationship between work environment, job satisfaction, and work productivity over time. Thirdly, this study relied on questionnaire data, which may have been affected by respondent bias. For future research, it is recommended to expand the scope of the study by involving different types of organizations and industries to increase the generalisability of the findings. Longitudinal research is also needed to observe changes in the relationship between these variables over time. In addition, more diverse research methods, such as in-depth interviews and direct observation, can be utilized to understand better the factors influencing job satisfaction and productivity. Further research could also explore moderating variables such as organizational culture and work climate in strengthening or weakening the relationship between work environment, job satisfaction, and productivity.

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