

Analysis of the effect of nutritional status, workload and work period on worker productivity



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ABSTRACT

Introduction: Worker productivity measures quantity and quality in specific units to produce outputs efficiently. Low labor productivity is one of Indonesia's biggest issues. In these times of constant change, rising economic conditions, and increased dominance of the market economy system, there is an increase in fierce competition between businesses operating in similar industries. The rise and fall in labor productivity are influenced by various variables, including those at work, the environment, and personal issues. This research aims to identify the variables that influence employee productivity.

Method: This research's methodology employs cross-sectional observational research with quantitative approaches. The participants in this study were employees of PT. Z in Samarinda, with a sample size of 45 participants.

Result: The study's findings point to several variables impacting employee productivity. PT. Z. According to the analysis, productivity is determined by workload, working time, and nutritional status. It is evident from the significance value's findings, which have a value of 0.05.

Conclusion: Workloads that are above the employee's capabilities, working hours, and irregular nutritional state can impact the degree of productivity. Implementing fit-to-work policies, a healthy diet, regulating the workload, and obtaining enough rest are some examples of the modifications that must be made to increase workers' productivity.

Keywords: Occupational health, nutritional status, years of work, workload, work productivity.

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INTRODUCTION

Excellent health in workers can determine high work productivity, but the ability to think or do physical work can decrease when workers' health is disturbed. One example of health problems that workers can experience is work fatigue.¹ Industrial workers are the workers who are most vulnerable to health problems. Previous research stated that 43.3% of workers in the informal sector experienced health problems, one of which was fatigue, which could result in decreased productivity.²

Increasing quantity and quality together can be used to interpret productivity. The capacity of an individual or group of individuals to produce products in the form of goods or services, both in terms of quantity, quality and varying degrees, is called work productivity. The person's health is one of the key elements that can affect productivity at work.³ An indicator of how well workers are utilized in a production process to produce the desired output is labor productivity. One of the supporting elements is the age level of the

workforce. Workers with a productive age level of 15-50 years can adapt quickly to new tasks and are easy to understand and use technology. However, it is different with non-productive age workers, whose physical abilities are certainly decreasing, and it is difficult to adapt to technology, so their work productivity will decrease.⁴

Increasing staff productivity is one of the ways the business works to become more competitive. But raising productivity at work is not always simple. To boost job productivity, senior management of an organization or company typically faces numerous challenges. This calls for a unique strategy, especially from the company's staff.⁵

One of the many variables affecting a worker's productivity level is their nutritional status.¹ According to the Manpower Act, there are 6 working days every week. Working hours are 7 hours per day for 40 hours per week; on days with five working hours, working hours are 8 hours per day for 40 hours per week. A person can typically work well for 6 to 10 hours each day.⁶ The ability

to work for extended amounts of time is only one aspect of extending working hours; working for extended periods also increases the risk of exhaustion, health issues, illness, accidents, and discontent. Excessive workloads can have a negative impact on work quality and performance. Adverse effects can include decreased reaction time, increased decision-making errors, decreased concentration ability, and increased potential for work accidents. A physiologically excessive workload will have an impact on health and work productivity.¹

Therefore, this study was conducted to determine whether nutritional status, workload and years of service can affect workers' productivity levels. If these factors affect workers' productivity level, this can provide an appropriate evaluation in regulating the work system to improve productivity in workers. So that the performance of workers can increase and this can increase the company's targets and all work activities in the workplace can be carried out properly.

METHODS

Materials

With an observational research design and cross-sectional methodology, this study employs quantitative research methods. One of the state-owned businesses in the city of Samarinda, PT.Z, served as the site of this study.

Data collection procedures

There were 45 workers in this study's entire population, including all workers. There are 45 responders because the sample used in this study is the whole population. Primary data are gathered through interview techniques, questionnaires, and direct observation.

Data analysis

The logistic regression test was employed in this study to ascertain the relationship between the dependent variable (work productivity) and the independent variables (Nutrition Status, workload, and tenure). When the hypothesis is evaluated using a p-value of less than 0.05, it is assumed that the independent variable affects the dependent variable.

RESULTS

Distribution of nutritional status, workload, work period and worker productivity

The following are the findings of the research investigation of how worker productivity is impacted by nutritional state, workload, and work duration. According to [Table 1](#), 58% of respondents have a moderate burden, whereas 42% have a light workload. The distribution of years of service shows that 67% of respondents have a work period of more than 10 years, while 33% have a work period of less than or equal to 10 years ([Table 2](#)).

The results on the distribution of nutritional status showed that 40% of respondents had overweight nutritional status, 38% had normal nutritional status, and 22% of respondents had underweight nutritional status ([Table 3](#)). Based on [Table 4](#), the productivity distribution shows that 58% of respondents have a less productive status, while 42% have a productive work status.

Table 1. Distribution of respondents based on workload

	Information	n	%
Workload	Light	19	42
	Moderate	26	58
	N	45	100

Table 2. Distribution of respondents based on work Period

	Information	n	%
Work Period	≤ 10 Years	15	33
	>10 Years	30	67
	N	45	100

Table 3. Distribution of nutritional status

	Information	n	%
Nutritional status	Thin	10	22
	Normal	17	38
	Overweight	18	40
	N	45	100

Table 4. Distribution of work productivity

	Information	n	%
Work Productivity	Less Productive	19	42
	Productive	26	58
	N	45	100

Table 5. Analysis of factors affecting work productivity

Variable	B	Wald	Df	Sig	Exp(B) CI 95%
Workload	1.705	9.836	1	0.002	5.500
Work Period	2.023	8.005	1	0.005	7.562
Nutritional Status	2.996	8.756	1	0.003	13.327

Results of the analysis of the effect of nutritional status, workload work period on work productivity

[Table 5](#) shows the analysis findings for the study, which used a partial logistic regression test to determine how respondents' nutritional state, workload, and years of service impacted their work productivity. The workload analysis results have a significant value, or P value, from the alpha value () (0.05), which is 0.002 based on the results of the logistic regression test in [Table 5](#), indicating that these factors significantly affect worker productivity. It is also known to have a significant value or P-value during the work period since the alpha value () (0.05), which is 0.005, is significant. These findings also demonstrate how the tenure issue considerably affects employee productivity. Then the results of the Exp (B) value on the period of service have a factor of 7.562, which means that the work period has an effect of 7.5 times on the level of productivity of workers.

DISCUSSION

Work productivity is the capacity of an individual or a group to produce products in the form of goods or services, both in terms of quantity and quality, and to do regularly. Numerous variables, including the workplace, environment, personality, and health, can affect how productive an individual is at work. This study found that the workload has an effect of 5.5 times on workers' productivity levels. This result is in line with research conducted on employees of PT. Bank Syariah Mandiri Harapan Raya Pekanbaru Branch states that workload (X) positively and significantly affects employee work productivity.⁷ Based on the research results from Musdalifah (2017), Workload and productivity at work are significantly correlated or related. The productivity of work decreases as the workload increases. This results from a shortage of hotel attendants at KTM Resort Batam.⁸

The tenure element considerably

impacts the degree of worker productivity, according to the study's findings. The productivity of employees is 7.5 times more affected by the work period. According to research by Aprilyanti S (2017) and Pamungkas et al. (2017), the duration of the workday is one of the elements that affects a person's productivity at work. Someone who was employed has stopped.^{9,10} A worker's skills and ability to perform the work will improve the longer they work there. Continuous work experience might help a person become more technically mature. A person's technical equipment implementation proficiency depends on their tenure. The amount of time/age of work, level of knowledge and abilities, and mastery of the task and equipment are among the variables that determine whether an employee is experienced and, at the same time, an indicator of work experience.

The results of this study found that nutritional status has a significant influence on worker productivity. Nutritional status affects the level of productivity of workers 13 times. The low level of productivity can be caused by health conditions such as general illnesses, occupational diseases, the nutritional state of the workforce, the environment, to aspects of work psychology.¹ According to Utami (2015), age, amount of formal education, job experience, remuneration, and workload to the outpouring of labor are a few characteristics that can affect labor productivity.¹¹ Nutritional status is related to work productivity, so nutritional status factors need attention because they are related to health and body resistance and can ultimately affect work productivity. The results of this nutritional status are also in accordance with the research of Utami (2012), which argues that there is a relationship between nutritional status and the productivity of female workers in the Spinning 1 unit of the Winding section of PT. Apac Inti Corpora Bawen.¹² This is reinforced by the research of Novianti et al. (2017) on the Relationship Between Age, Nutritional Status, Work Motivation, and Work Experience with the Work Productivity of Assembly Section Operators at PT. X, namely, a strong relationship leads to

a positive relationship ($p = 0.000$) ($r = 0.647$) between nutritional status variables and work productivity, where nutritional status is directly proportional to work productivity.¹³⁻¹⁶

CONCLUSION

Workload, work time, and nutritional state all greatly impact how productive employees are. To prevent working hours from exceeding the allotted time and to adjust the workload to the workforce's capabilities, it is necessary to monitor, supervise, and improve the work system for employees. This will prevent workers from complaining about feeling bored at work. After four hours of work, employees must take a 30-minute break to allow their bodies to recover. This will help them organize their time and maximize their day off. Rest to reduce fatigue due to work, and adjust the appropriate sleep time (7-8 hours/day) to refresh or be healthy when they return to work.

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CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests.

ETHICAL CLEARANCE

The study received ethical approval from Universitas Nahdlatul Ulama Surabaya with number 045/EC/KEPK/UNUSA/2022.

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AUTHOR CONTRIBUTIONS

All authors work equally in doing this research and writing this research article.

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