



A CONCEPTUAL MODEL OF THE EFFECTS OF WORKLOAD AND NON-PHYSICAL WORK ENVIRONMENT ON WORK FATIGUE AND ITS IMPACT ON EMPLOYEE PERFORMANCE

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ABSTRACT

This paper proposes a conceptual model to determine the effect of workload and non-physical work environment on the performance of employees of the Directorate General of Training, and Productivity Development of the Ministry of Manpower of the Republic of Indonesia (Ditjen Binalattas). Work fatigue is defined as a mediating variable. The study uses a quantitative approach using saturated sample techniques to 85 employees. Data would collect using a questionnaire. Data analysis was performed by path analysis using the Structural Equation Modeling SEM. The literature review, conceptual model, hypotheses development, and research methodology are discussed. Practicing this paper instantly would provide information about the relationship of workload, non-physical work environment, work fatigue, and employee performance at the Directorate General of Training and Productivity of the Ministry of Manpower of the Republic of Indonesia.

KeyWords

Workload, Non-physical Work Environment, Work Fatigue, Employee Performance, Conceptual Model

INTRODUCTION

In accordance with the Presidential Regulation of the Republic of Indonesia Number 2 of 2015 concerning Medium-Term Development Plans, one of the strategic objectives to be achieved is job training and productivity. To achieve these strategic goals, the national development agenda and targets are related to the Directorate General of Training, and Productivity Development of the Ministry of Manpower of the Republic of Indonesia (Ditjen Binalattas) are to increase people's productivity and competitiveness in international markets through increasing the competitiveness of the workforce. With reference to the development agenda and targets set by the Ditjen Binalattas, the Performance Agreement (PK) has been established.

The following are the achievements of Ditjen Binalattas in 2018 based on several activity indicators.

Table 1: Performance Achievements Ditjen Binalattas of 2018

No	Target of Program	Performance Indicator of Program	Target 2018 (%)	Actual 2018 (%)	Performance Achievements 2018 (%)	Strategic Plan's Target 2019 (%)	Strategic Plan's Target Achievement up to 2018 (%)
1	Increasing Labor Quality and Productivity to Produce Competitive Workforce	Percentage of the Increased Number of Accredited Training Institution	26.00	31.99	123.04	32.00	99.97
2		Percentage of the Increased Number of Licensed LSP	81.00	41.86	51.68	94.00	44.53
3		Percentage of the Increased Number of Competence Certified Workforce	74.00	30.35	41.02	79.00	38.42
4		Percentage of The Increased Number of Workfoce Productivity (National, Sectoral, Regional)	7.33	12.50	170.51	9.26	134.97

Source: 2018 Report

In general, from the 4 Program's Performance Indicators (IKP), 2 IKP could reach and exceed the target, 2 IKP have not reached the target. The target was not achieved due to an increase in the budget from 2017 to 2018 amounting to Rp 584,954,082,000, resulting in an increase of workload by 35%.

The success of Ditjen Binalattas in realizing its programs can be achieved by improving the performance of employees. Along with the dynamics of politics and government causes increased workload to be resolved by employees. This condition is one of the factors causing the implementation of the overtime system or the addition of working hours outside regular working hours. Overtime, when viewed from the positive side, it can be interpreted as an organization's profit in obtaining many projects even though it is done beyond the organization's capabilities. Unfortunately, overtime is often connoted in a negative perspective as a barometer that the productivity of an organization is not going well, because the overtime system makes the organization spend extra costs associated with employee welfare.

The following is employee performance based on work achievements that have been successfully carried out or completed for some time.

Table 2: Some Employee Performance Achievement

Employment	Target (Date)	Realization (Date)	Remarks*
Setditjen's Monthly Report	10	5	During January-March: punctual
Ditjen's Monthly Report	15	12	During January-March: punctual
Input of the Ministry of Finance's SMART Application Report	10	8	During January-March: punctual
Input of the Bappenas e-Monev Application Report	10	9	During January-March: punctual

* After March, the reporting process has been late due to the many activities that are running

Based on the table of January-March period above, employees are successful or able to complete the job in accordance with the target. However, as more workloads must be handled, employees are unable to complete the work that is given because there is an imbalance in the number of employee personnel with existing workloads.

The influence of workload is quite dominant on the performance of human resources but also has a negative effect on the safety and health of the workforce. Workload problems are indicated in excessive workloads due to the large number of work targets from the Ministry that must be resolved quickly. This will certainly have an impact on employee fatigue, which, in the end, cannot produce the quality of work as expected.

Another problem in the non-physical work environment is that it is not supportive. Based on observations, there are several conditions that make employees less comfortable at work. These conditions include an emotional/temperamental leader, a leader who does not want to receive input from staff, a perfectionist leader, a leader who delegates almost all the work to the staff, many coworkers who are old, staff acting shy to their superiors, when junior staff ask to be taught to staff seniors but do not want to explain in detail, and there are staff and leaders who are too dominating so that it is not good for the work climate.

LITERATURE REVIEW

1. Workload

According to Tarwaka (2014: 104), workload is something that arises from the interaction between task demands, work environment where it is used as a workplace, skills, behaviors and perceptions of workers. Workload can also be operationally defined on various factors such as the demands of the task or the effort made to do the work. Based on the Decree of the Ministry of Manpower of the Republic of Indonesia Number 128 Year 2016 on Guidelines for Workload Analysis at the Ministry of Manpower, what is meant by workload is the amount of work that must be borne by a position or organizational unit and is the product of work volume and time norms. According to Tarwaka (2014: 105), the relationship between workload and work capacity is influenced by a variety of very complex factors, both internal and external factors.

The following are external workloads: Tasks (physical and mental), Work organization (duration of work, rest periods, shift work, night work, wage systems, work systems, work music, organizational structure models, delegation of tasks, responsibilities and authorities), and work environment (physical work environment, chemical work environment, biological work environment, psychological work environment). Internal factors include: somatic factors (sex, age, body size, health conditions and nutritional status) and psychological factors (motivation, perception, belief, desire, satisfaction, etc.).

2. Work fatigue

The word tired (fatigue) shows a different state of physical and mental bodies, but all of them resulting in declining employment and reduced power endurance to work (Suma'mur PK, 2014: 407). Work fatigue according to Wignjosoebroto (2003) in Wibowo and Rahardja (2015: 3), fatigue can be interpreted as a condition of decreased efficiency, work performance, and reduced strength or physical endurance of the body to continue the activities that must be carried out.

Physiologically the human body can be likened to a machine that in carrying out its work requires fuel as an energy source. When carrying out physical tasks the body is affected by several systems, namely the circulatory system, the digestive system, the muscular system, and the nervous system as well as the respiratory system.

Fatigue can be a result of accumulation of lactic acid in the muscles as this substance is also in the bloodstream. Lactic acid accumulation can cause a decrease in muscle work and possibly peripheral and central nerve factors also influence the process of fatigue. When muscles contract, glycogen turns into lactic acid and this acid is a product that can inhibit the continuity of muscle work so that fatigue occurs (Setyawati KM, 2011: 25). A recovery stage occurs in a process that converts some lactic acid back to gly-

cogen to allow the muscles to function normally again.

Fatigue can be divided into two, namely:

1. Muscular Fatigue
2. General Fatigue

There are two causes of fatigue:

1. Physiological fatigue, caused by physical factors at work such as temperature and noise.
2. Psychological Fatigue, caused by psychological factors.

Indicators of Work Fatigue:

Symptoms of work fatigue according to Ciptadi et al (2015: 129) in general are:

- 1) Physical Symptoms; Feeling tired and drained by time, decreased immunity, aches such as headaches, back pain, muscle aches, flu, etc., changes in appetite or sleep.
- 2) Emotional Symptoms; Feeling like a failure and always doubtful of his ability, feeling helpless and lacking enthusiasm, loss of motivation, increasingly cynical and negative thinking, decreasing job satisfaction
- 3) Behavioral Symptoms: Running away from responsibility, delaying longer time to get things done, using drugs and alcohol, frustration.

3. Work Environment

Work environment is anything that is around workers that can influence themselves in carrying out the tasks they carry. The following understanding of the work environment stated by experts: according to Siagian (2014: 56), the work environment is an environment where employees do their daily work. According to Sedarmayanti (2013: 23), the work environment is a place where there is a group in which there are several supporting facilities to achieve company goals in accordance with the company's vision and mission.

Siagian (2014: 57) states that in general there are two types of work environment, namely:

- 1) Physical Work Environment

All physical forms that exist around the workplace and can affect employees.

- 2) Non-Physical Work Environment

A pleasant work environment in the sense of creating a harmonious working relationship between employees and superiors, because in essence humans do not only make money, but also work is a form of activity that aims to get satisfaction .

According Sedarmayanti (2001: 31), non-physical work environment is all the conditions that occur relating to work relationships, both relationships with superiors and relationships between colleagues or relations with subordinates. Several types of non-physical work environment according to Wursanto (2009) mentioned the employee's feeling of security, employee loyalty, and employee satisfaction Non-physical work environment indicators by DeStefano et al (2006) are as follows: Work Procedure, Work Standards, Supervisory Accountability, Task Clarity, Reward System, and Relationships Among Employees

Thus, the non-physical work environment is a reflection of the work atmosphere that occurs in an organization. A comfortable and conducive work atmosphere will be able to make a person concentrate more in carrying out his duties. The more conducive the work atmosphere of a person, the greater the opportunity to look for new things that can further alleviate.

4. Employee Performance

Sedarmayanti (2011: 260) defines that: "Performance is a system used to assess and find out whether an employee has carried out his work in an overall, or is a combination of work results (what one must achieve) and competence (how one achieves it)." According to Mathis and Jackson in Priansa (2014: 269), performance is basically what is done or not done by employees in carrying out their work.

The purpose of performance evaluation is to fix and improve organizational performance through improving organizational HR performance. The objectives of employee performance appraisal, according to Rivai (2011: 552), basically include: improving work ethic, increasing work motivation, find out the level of employee performance so far, encourage accountability from employees, giving appropriate rewards, differentiating employees from one another, developing human resources, developing tools to help and encourage employees to take initiative, identify and remove obstacles so that performance is good, getting feedback from employees, termination of employment, strengthen relations between employees, and as a distributor of complaints relating to work problems.

According to Robbins (2006: 260) in Mangkunegara (2011: 75), dimensions and performance indicators are as follows: quality, quantity, responsibility, collaboration, and initiatives. The next section is formulating a conceptual model.

CONCEPTUAL MODEL

Based on the above problem formulation, the objectives of the study are:

1. To test and analyze the effect of workload on employee work fatigue of Ditjen Binalattas, Ministry of Manpower.
2. To test and analyze the influence of the non-physical work environment on employee work fatigue of the Ditjen Binalattas, Ministry of Manpower.
3. To test and analyze the effect of workload on the performance of employees of Ditjen Binalattas, Ministry of Manpower.
4. To test and analyze the effect of the non-physical work environment on the performance of employees of Ditjen Binalattas, Ministry of Manpower.
5. To test and analyze the effect of work fatigue on the performance of employees of Ditjen Binalattas, Ministry of Manpower.
6. To test and analyze the effect of workload on the performance of employees of Ditjen Binalattas, Ministry of Manpower, through work fatigue.

Based on the theoretical study in the previous chapter, the research model or theoretical framework developed is contained in Figure 1, which explains the theoretical framework that illustrates the effect of workload, work fatigue and non-physical work environment on the performance of employees of Ditjen Binalattas of the Indonesian Ministry of Manpower.

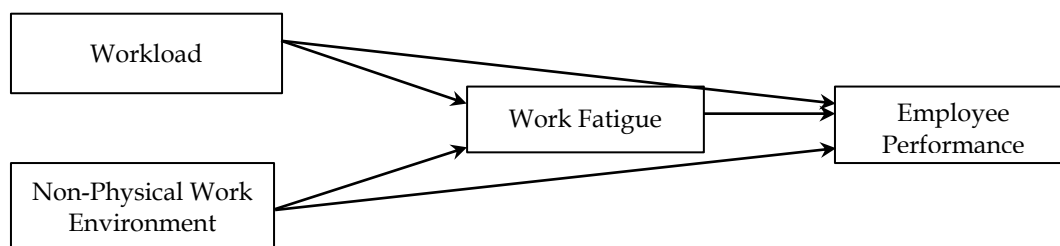


Figure 1: The Conceptual Model

HYPOTHESIS DEVELOPMENT

Based on the literature review and the conceptual model that has been prepared, the hypotheses can be formulated as follows:

1. The Relationship between Workload and Work Fatigue

Hasibuan (2006) in Delima (2018) states that fatigue is one indicator of the amount of workload that must be borne by an employee. Likewise, the research of Ardiyanti et al. (2017) proves that there is a significant relationship between mental workload with work fatigue. The workload given to workers needs to be adjusted to the psychological and physical abilities of the workers concerned. Based on those results, the following research hypothesis is proposed:

H₁: The workload has significant effect on fatigue.

2. The Relationship between Non-physical Work Environment and Work Fatigue

The results of Dewi's research (2018) prove that there is a relationship between work environment and work fatigue. Work fatigue is caused by an imbalance between work capacity factors and task demands. One of the factors in work capacity is work motivation. The task demands consist of job characteristics, work environment and work organization. Likewise, research by Kumalasari et al (2016) proves the influence of work environment on work fatigue.

H₂: Non-physical work environment has significant effect on fatigue.

3. The Relationship between Workload and Employee Performance

Mahfudz (2017) who examined the effect of workload on employee performance proves that workload has a negative effect on employee performance. There are several factors about workload that affect employee performance including: the length of work time, rest time, delegation of duties and authority. Hastutiningsih (2018) in his research stated that the performance of production division employees at PT. MSV Pictures is included in the excellent category. However, if the workload is felt to be too high, it will have an impact on the output produced. The results of the study prove that workload negatively affects employee performance, indicating the conditions under which an increase in workload will be followed by a decrease in employee performance.

H₃: Workload has significant effect on employee performance.

4. The Relationship between Non-physical Work Environment and Employee Performance

Virgiyanti and Sunuharyo (2018) in their research proved that the non-physical work environment had a significant effect on employee performance. The better the non-physical work environment will improve employee performance. Widianingrum and Dja-stuti (2016) in their research proves that non-physical work environment is the most influential factor on employee performance.

H₄: Non-physical work environment has significant effect on Employee Performance.

5. The Relationship between Fatigue and Employee Performance

Wibowo and Rahardja (2015) in their research proved that work fatigue has a negative and significant effect on employee performance. The higher the level of work fatigue, it will result in decreased performance of the employees concerned. Jamaluddin (2015) in his research noted that work fatigue has a negative and significant relationship with the performance of librarians. Hera, Rasyidin, and Hasmin (2016) in their research stated that there was a significant influence between burnout and the performance of female nurses in the inpatient room at Lagaligo Regional Hospital I, Eastern Luwu District. Female nurses who did not experience burnout were more likely to perform better than female nurses who experienced burnout.

H₅: Work fatigue has a negative and significant effect on employee performance.

6. The Effect of Workload on Employee Performance through Fatigue

Past research proves that the workload has a negative effect on employee performance (Mahfudz, 2017). A research proves that there is a significant relationship between mental workload with work fatigue (Ardiyanti et al., 2017). Another research proves the influence of fatigue on employee work productivity (Sidiq, 2019). The result of Samrin's results (2018) shows that workload has a negative effect on work productivity, which means that the higher the workload, the lower the productivity. Lower productivity means that lower employee performance. Based on those results, the following research hypothesis is proposed:

H₆: Workload significant has an effect on the employee performance through fatigue.

7. The Effect of Non-physical Work Environment on Employee Performance through Fatigue

Past research proved that the non-physical work environment had a significant effect on employee performance (Virgiyanti & Sunuharyo, 2018). Kumalasari et al (2016) proves the influence of work environment on work fatigue. Wibowo and Rahardja (2015) in their research proved that work fatigue has a negative and significant effect on employee performance. Based on those results, the following research hypothesis is proposed:

H₇: Non-physical work environment has a significant effect on the performance of employees through fatigue.

METHODOLOGY

This research is a quantitative research. The population in this study was employees of the Directorate General of Training, and Productivity Development of the Ministry of Manpower of the Republic of Indonesia (Ditjen Binalattas) in 2019. The selected sampling technique is saturated sampling (census). This is done because the total population is relatively small, so the number of samples in this study was 85 respondents. Data collected in the form of primary data obtained from questionnaires, as well as secondary data obtained from those available at the Ministry of Manpower and books relating to this study. The questionnaire was designed to obtain the data needed from respondents, namely employees of the Indonesian Ministry of Manpower using a Likert scale, which is a scale that gives a score of 1 to 5. Validity and reliability tests are carried out to ensure that the instruments used provide the right data. Data analysis technique used in this research is path analysis using Structural Equation Modeling (SEM) with SmartPLS 4.0 program.

CONCLUSION

This paper consists of a conceptual model to determine the effect of workload and non-physical working environment to employee performance of the Directorate General of Training, and Productivity Development of the Ministry of Manpower of the Republic of Indonesia (Ditjen Binalattas) with work fatigue as a mediating variable. In addition, background, literature review, Conceptual model, hypotheses development and research methodology are established. Practicing this paper instantly will find out the relationships among variables in the conceptual model.

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