

Applied OHS With Empirical Ergonomics and Hazard Methods to Minimize Fatigue at KPPS Cerme Gresik

Muhammad Teguh Yulianto¹, Yunia Dwie Nucahyanie²

^{1,2}Fakultas Teknik Prodi Teknik Industri , Universitas PGRI Adibuana Surabaya

email: yuniadwie@unipasby.ac.id

Abstract-To support fair, honest, and Luber Jurdil elections, public awareness about the importance of healthy politics needs to be increased. Voters who have registered for the permanent election (DPT) must cast five ballots in the 2019 simultaneous elections. Voter participation in the 2019 elections, which reached 81.97%, and legislative participation (Pileg) in 2019, which reached 81.69%, showed a fairly good election organization in 2019. However, this is at odds with the health and safety of KPPS officers. According to the KPU RI, the number of election organizers who died in the 2019 elections was 11,239, with 527 victims dying, based on the results of the Ministry of Health's investigation in 28 provinces. Based on the investigation and analysis of the Indonesian Ministry of Health, the fatigue factor triggered the disease suffered by polling station officers. It is necessary to conduct ergonomic research on KPPS officers in the 2024 elections, which is useful for developing an election polling station model that is comfortable, safe, healthy, effective, and efficient so as to reduce factors that cause fatigue while working. The components studied include workload components, rest time, or the physical work environment at election polling stations. The data collection methods used in this research are observation, interview, direct data, and literature study. The analysis used in this study produces a list of events and classifies the incidence of fatigue of KPPS officers, the most problematic workplace. fatigue classification, Identifying Ergonomic Risk Factor (ERF), Data processing, Analysis

and discussion as well as conclusions and suggestions.

Keywords: *Ergonomics, KPPS, Fatigue.*

I. INTRODUCTION

The people are responsible for the primacy of Indonesia, which is a state of law and democracy. Indonesia is a democratic country with general elections held every five years (Alra, 2023). The voter participation rate in the 2019 Presidential Election was 81.97%, and the voter participation rate in the 2019 Legislative Election was 81.69%, according to data released by the General Election Commission (KPU).

However, this is contrary to the health and safety of KPPS officers. According to KPU RI data, in the evaluation of the 2019 simultaneous elections, there were 11,239 election officers who died and 527 victims died. There are 13 diseases that cause death. Heart disease is the most common, followed by myocardial infarction, hepatic coma, stroke, and hypertension.

KPPS officers perform ordinary tasks that do not pose health risks. Workers who work for long durations of time, with unhealthy postures, and without the right work environment are particularly vulnerable. (Pramono et al., 2022).

It is necessary to conduct ergonomic research on KPPS officers in the 2024 elections which is useful for developing an election polling station model that is comfortable, safe, healthy, effective, and efficient so as to reduce factors that cause fatigue while working. The components studied include workload components, rest

time, or the physical work environment at election polling stations.

Problem Statment:

1. How to overcome fatigue at KPPS 07 Cerme Gresik by using the Empirical Ergonomics and Hazard Ergonomics methods?
2. How to improve and reduce the risk of fatigue that occurs at KPPS 07 Cerme Gresik by comparing the KPU regulations in 2019 with the 2024 regulations whether it has reduced the level of risk that occurs?
3. How to solve these problems efficiently and practically independently and can be useful for the public in every election in order to reduce the level of fatigue for KPPS members?

Purpose

1. Reduce the fatigue risk level of KPPS 07 Cerme Kidul officers.
2. Aim to improve the level of risk that occurs by using Empirical Ergonomics and Hazard Ergonomics methods.
3. Creating a cheerful polling station synergized for its KPPS members by applying the methods given.

II. LITERATURE REVIEW

2.1 Occupational Health and Safety

According to OHSAS 18001:2007, Occupational Health and Safety (OHS) is all matters and factors that can affect the occupational safety and health of the workforce and other people (contractors, suppliers, visitors and guests) in the workplace. An occupational health program, according to Mangkunegara (2000), means a condition free from physical, mental, emotional, or pain disorders caused by the work

environment. In a workplace environment where people work more than the specified time, there are health risks.

2.2 Ergonomic

"Ergonomics" comes from the Greek words "ergon", meaning "work", and "nomos", meaning "rule or law." That is, ergonomics is the rules or norms that exist in work systems. In the United States, "Human Engineering" or "Human Factors Engineering" is used, and in Indonesia, "ergonomics" and in other countries, such as Scandinavia, "bioengineering" are used (Tanjung et al., 2023).

2.3 Hazard

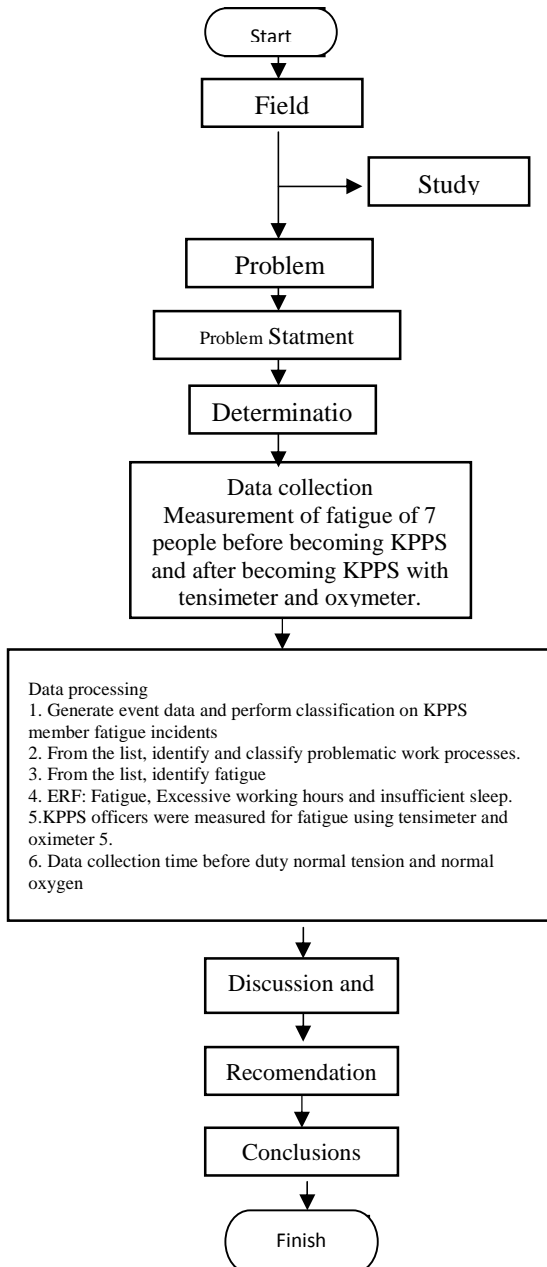
Hazard analysis is a systematic, thorough, and structured method of hazard identification. Standard hazard analysis techniques are used when preparing the safety determination of new systems or changes for the presence of potential hazards or operating problems. Risks are identified to indicate various problems that interfere with the process and risks that exist in a piece of equipment. This can pose a risk or harm to individuals or facilities in the system (Qibti et al., 2022)

2.4 KPPS

Based on Law Number 8 of 2022, KPPS is domiciled at polling stations and was formed to organize voting and counting of votes in elections and elections at polling stations. KPPS members consist of 7 (seven) people who come from members of the community around the TPS who are eligible to become members and 6 (six) members. (KPU, 2022.)

III. Research Methods

3.1 Flow Chart



3.2 Research Sources

Basically, research subjects are respondents or people who respond to a treatment given to them. The term respondent is then called an informant or person who provides information about the data the researcher wants related to the research being carried out. Then there were 7 people who became research subjects: 1 KPPS Chairman, and 6 KPPS members.

3.3 Data Processing

The data collection methods used in this study are:

1. Observation, which is a method for obtaining data, by direct observation of the actual situation of KPPS officers at TPS 07 located in the Cerme Region, Gresik Regency.
2. Interview is a data collection technique that involves direct questions to KPPS officers while they are working on tasks that can help explain the problem being studied.
3. Primary Data, Is data taken directly from the results of the tensimeter and oximeter.
4. Literature study is a research stage in which people search, collect, read, and study information from various sources related to the research topic. Literature studies are conducted to obtain research findings that are relevant to the research topic. Thus, this literature study produces a theory about the problem to be discussed.

3.4 Data Analysis

In the data processing process there are stages in this research, namely:

1. List and categorize the incidence of fatigue of KPPS officers,
2. The most problematic workplaces are identified and classified from the list of events.
3. From the list of events, the identification and classification of KPPS members' fatigue is carried out
4. Determine ergonomic risk factors (ERFs) on the most challenging workload through research on fatigue, excessive working hours, and sleep deprivation.
5. Analysis and Discussion: The results from the previous subsections are analyzed and discussed to determine whether the

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research findings meet the objectives.

6. After knowing the results of the analysis at the data processing stage, the data becomes the basis for improving the current conditions as KPPS officers. This research will improve the current scheme by creating a larger layout drawing and identifying the associated ergonomic risk factors (ERFs) at the work site.
7. The conclusion of this research can be made based on the results of data processing, analysis, and discussion.

3.5 Research Time

This research was conducted in the TPS 07 area located in the Cerme Region, Gresik Regency. The research was conducted on January 25 - February 15, 2024.

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