



## ANALYSIS OF FACTORS AFFECTING WORK PRODUCTIVITY

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### ABSTRACT

CV. Subur Makmur Istana Embroidery Malang is one of the non-formal businesses or MSMEs in Malang City in the field of convection, with the main product being mukena or embroidered clothes. The aim of this research is to analyze the factors that influence work productivity. The sampling technique used was total sampling with a sample size of 35 workers. Cross sectional research design, statistical analysis using logistic regression tests. The research instruments used in this study were questionnaires, observation sheets, fatigue instruments using Subjective feelings of fatigue from the Japan Industrial Fatigue Research Committee (IFRC). Measurement of the physical work environment using a luxmeter for light measurement, and a sound level meter to measure noise. The research results show that there is a significant influence between age, work fatigue, motivation, length of service, lighting, and wages on work productivity. Meanwhile, the noise variable has no effect on work productivity, because for workers the noise generated by sewing, embroidery and cutting machines is considered not to disturb them while working.

Keywords: fatigue; motivation; productivity; physical work environment; work wages

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## INTRODUCTION

Indonesia's economic growth remains high amid the global economic slowdown, although the difference is not much from last year. Economic growth is determined by developments in the industrial sector. One of the contributors to economic growth in Indonesia is the medium and small-scale industry, as well as the creative industry (MSMEs). The growth of these industries increased quite significantly. Medium and small-scale industries (MSMEs) make a large contribution to the economy in Indonesia. This increase is because it does not require large capital, the technology used is relatively simple, and the raw materials are easy to obtain. A company or organization cannot achieve its goals efficiently and effectively if employee work productivity is low. In implementing productivity targets, human resources play an important role, because company activities cannot be carried out properly without the support of human resources.

Work productivity is a condition where employees of a company can work optimally so that the production results achieved are in accordance with what was planned (Tulzana, Lorita, & Saputra, 2021). Work productivity is important for a production process which is strongly influenced by internal and external factors. These internal factors include individual factors such as length of service, age, education, knowledge and skills. While the internal factors of work are workload, fatigue, work capacity, in addition to internal factors there are also external factors of the work environment ((Nurdiawati & Safira, 2020). The work

environment is a factor that affects comfort for workers. The work environment is the total of materials and tools faced by workers, work methods, work arrangements, then the surrounding environmental conditions where a person works both individually and in a work group. The work environment is divided into 2 types, namely the physical work environment and the non-physical work environment (Sari & Berlianty, 2019).

High work morale is very necessary in every collaborative effort of the workers. One of the important issues faced by leaders is how to increase the productivity of their employees so that it can support the successful achievement of goals. A good leader or manager is able to create a condition so that people individually or in groups can work and achieve work productivity. This can be achieved if the leader or company is able to provide good motivation to all workers so that they can achieve and increase production. Malang is one of the cities in East Java that has many medium and small industries, as well as MSMEs. The presence of these industries provides many benefits in regional economic development. CV. Subur Makmur is one of the medium-scale industries that was originally engaged in embroidery. The production of CV. Subur Makmur is branded "Istana Bordir" which is very well known in the Malang Region and even East Java to other regions.

The independent business, which has been running since 1986, is now growing rapidly. Although she does not mention the exact number, the sales of embroidery products can reach hundreds of pieces every day. Even orders continue to flow from a number of regions in Indonesia. All embroidery products are designed and produced by herself. So it has its own characteristics that may not be found in other areas.<sup>[1]</sup><sub>SEP</sub>In fact, in order to pamper its customers, Istana Bordir dares to issue embroidery products with special embroidery and colors. Colors that are bolder and more striking. In addition, there are mukena and kebaya whose embroidery is made limited so that the price can reach millions of rupiah. Although they have never done excessive promotion, by relying on quality and maximum service, Pakis' embroidery production has been able to penetrate the international market. In addition to the production of embroidered kebaya and mukena, CV Subur Makmur is currently also developing batik and abaya products, as well as scarves/hijab. The developments that occur in CV. Subur Makmur certainly have an impact on labor needs and worker activities, as well as work productivity. At this time the number of workers in CV. Subur Makmur totals 40 people. Workers are divided into several sections, namely tailors, embroidery sections, cutting sections, and pattern making sections. The aim of this research is to analyze the factors that influence work productivity

## **METHOD**

This research is observational with analytical methods with a cross sectional research design, because the purpose of this research is to analyze the relationship between the variables studied, namely the dependent and independent variables. Data collection in this study was carried out directly in the field in one observation or at the same time (period). This research was conducted at CV. Subur Makmur Pakis Malang Regency. The research instruments used in this study were questionnaires, observation sheets, fatigue instruments using Subjective feelings of fatigue from the Japan Industrial Fatigue Research Committee (IFRC). Measurement of the physical work environment using a luxmeter for light measurement, and a sound level meter to measure noise. The sample in this study amounted to 35 people, the sampling technique used was total sampling. Logistic regression test to determine the variables that affect work productivity.

## RESULTS

Based on observations that have been made, the factors related to productivity at CV. Subur Makmur partially can be seen in the following table:

Table 1.  
Partial Test

		Sig.
Threshold	Productiveness	,023
Location	Age	,023
	Fatigue	,024
	Motivational	,000
	Length of service	,000
	Lighting	,025
	Noise	,648
	Work Wage	.000

Based on the table above, it can be seen that the variables that affect productivity are age, fatigue, motivation, tenure, lighting, and work wages. While the one that does not affect is the noise variable. The simultaneous test is conducted to see the effect of independent variables together (simultaneously) on the dependent variable, the test results show that there is a simultaneous influence with a p-value <0.05. This can be seen in table 2 below.

Table 2.  
Simultaneous Test

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	32.958			
Final	17.326	10.632	8	,008

Referring to the data table above, it is known that there is a simultaneous influence between the variables of age, fatigue, motivation, tenure, lighting, and work wages on productivity. The magnitude of the influence of the independent variables on the dependent variable as a whole is 88.9%, while 11.1% is influenced by other variables outside this study.

Tabel 3.  
Pseudo R-Square

Model	Nilai
Cox and Snell	,747
Nagelkerke	,889
McFadden	,574

## DISCUSSION

### Effect of Age, Fatigue, Motivation, Tenure, and Work Wages on Productivity

The results showed that there is an influence between age, motivation, tenure, lighting and work wages on work productivity. Age determines success in doing a job, both physical and non-physical. The age of the tailor workforce at CV. Subur Makmur Istana Bordir Pakis Malang Regency is classified as a productive age. The productive age of the workforce is aged 20 to 65 years, where this age and work experience can adapt quickly to the tasks assigned (Ukkas et al., 2017). Age is also a supporting element for the achievement of the company's expected output, therefore unproductive age will interfere with labor productivity. The older the working age, it will affect productivity, productivity will decrease because physical skills begin to decline (Harlie, 2017; Wulandari, Moelyaningrum, & Hartanti, 2017). Age can affect a person's physical abilities, but with a higher working period, the experience in doing work is

also higher. A person's physical abilities of course cannot be lied to, the older the physical abilities decrease. One of the physical abilities that occurs is the occurrence of fatigue.

Fatigue is a condition of weakening energy to carry out an activity that is common to all people in daily life and is accompanied by a decrease in efficiency and needs at work, causing a decrease in productivity. Fatigue for each person has its own meaning and is subjective (Zaeni, Supriyanto, & Ginanjar, 2019). Fatigue is a protective mechanism for the body to avoid further damage. Workers at CV Subur Makmur Istana Bordir Pakis Malang on average experience subjective fatigue ranging from mild to severe. The most workers here are women, which is around 24 people. One of the things that can be done to reduce work fatigue is to get enough rest, and do exercise or stretching during break times. Based on interviews with several female workers, they mentioned that they do not have enough time to do exercise at home, because when they are at home they also have to do housework such as cooking, cleaning, and others. Work fatigue can also occur because the work performed has static and repetitive movements. Static and repetitive movements when doing work cause fatigue easily, because the parts of the body that are exposed and make movements are always the same so that they get nerve muscle pressure in the same place for a long period of time which then causes occupational diseases, one of which is musculoskeletal disorder (Nurdiawati & Safira, 2020; Rupiwardani et al., 2022).

As many as 30 workers at CV. Subur Makmur Istana Bordir Pakis Malang have a work period of more than 5 years. The period of work in the same field if carried out for a long period of time will increase experience in doing work, meaning that the longer the working period, the more / higher the work experience. This affects work productivity, because the skills that have been formed help workers in completing work quickly and with minimal errors. Therefore, many companies recruit workers with the condition that they have work experience. Fatigue among workers at CV Subur Makmur Istana Bordir Malang can also be caused by the work equipment used, such as manual sewing machines used by workers. When a manual sewing machine is operated, the worker always positions his hands on the top of the sewing machine table and the vibrations will spread to the worker's arms so that the worker could potentially experience the risk of musculoskeletal disorders. Apart from that, the condition of the sewing machines at CV. Subur Makmur Istana Bordir is old, operating since 2000 until now, maintenance is carried out only if it is damaged (Putri, Sari, & Wahyuni, 2022). One way to reduce work fatigue is to use break time to rest and stretch your muscles to reduce fatigue (Balatoni et al., 2023).

Work fatigue is one of the factors that reduce productivity, but there are other factors that also greatly affect the increase/decrease in productivity, namely work motivation and wages. Some studies mention that motivation and wages are positively correlated with work productivity (Mukti & Asmaroni, 2020). Work motivation comes from within a person who can arise either intentionally or due to influences from the surrounding environment. Based on the results of observations, it is known that the motivation of workers at CV. Subur Makmur Istana Bordir Pakis Malang Regency, most of the respondents have high motivation to work and have an effect on work productivity. Increase or foster a good level of work productivity among employees caused by motivation as a positive effort in mobilizing, mobilizing, and directing the power and potential of employees, so that their work productivity can successfully achieve and realize the goals set before (Laisa & Monoarfa, 2018). Workers who have high motivation will have high morale so that they can provide better results for the company. Motivation is the provision of driving force that creates enthusiasm for someone's work so that they want to work together, work effectively, and integrate with all their efforts to achieve satisfaction

(Mustika & Amali, 2020). This has a positive impact on the company and employees will get feedback in the form of promotions, bonuses and others which cause employee motivation to continue to increase along with the results obtained from the employer (Mukti & Asmaroni, 2020; Ratnaningtyas et al., 2021).

One of the motivations for someone to work is to get paid. Work wages are obtained to meet the needs of workers. Wages for workers are a right that must be obtained, because it is an added value in the production process. The wages of workers at CV. Subur Makmur Istana Bordir Pakis Malang Regency vary, depending on the achievement of the results / product targets produced. Wages have a significant effect on a person's work productivity, as well as motivation. The higher the wages and motivation, the higher the productivity. Workers and employers recognize the reciprocal relationship in the workplace and use wages to improve morale so that productivity can increase. Generally, employers tend to use wages as compensation called incentives to stimulate worker productivity. So, the better the wages given to workers, the higher the productivity of these employees (Pawirosumarto & Iriani, 2018). The results of this research are in line with research conducted by Lestari at PT. Jasa Marga (Persero) Tbk Palikanci Branch that there is a positive and significant influence between the variables of compensation, competency, motivation on work productivity at PT. Jasa Marga (Persero) Tbk. Palikanci Branch either partially or simultaneously (Lestari, Dewi, & Kanivia, 2021). So companies need to pay more attention to the amount of compensation given and appreciation for employee competence to increase work productivity. Likewise, high motivation must be evaluated to increase work productivity which will help the company achieve its goals.

### **The Effect of Physical Work Environment on Work Productivity**

The physical work environment is all the physical conditions that exist around the workplace that can affect employees either directly or indirectly. The physical work environment can be divided into two categories, namely: The environment that is directly related to employees. For example, work centers, chairs, tables, work equipment and so on. The intermediate environment or general environment can also be called the work environment that affects human conditions, for example: temperature, humidity, air circulation, lighting, noise, mechanical vibration, unpleasant odors, colors, and others. The physical work environment in the study is the measurement of lighting and noise. The results showed that there was an influence on the lighting variable ( $0.025 < 0.05$ ), while for noise there was no influence ( $0.648 > 0.05$ ) on work productivity. The work environment is one of the factors that can influence the good and bad of employee performance. The work environment is the situation and conditions that exist within the work environment itself, such as how the boss, co-workers are treated, how the workload is given, as well as awards for employees who excel and so on. Apart from that, the physical work environment also influences work comfort such as lighting, noise, temperature, etc. Because a work environment that meets the requirements and meets employee needs can increase employee enthusiasm so that they can work well and in accordance with the expectations of company leaders (Dahlia, 2019).

Lighting is an aspect of the physical environment that is important for the safety of workers at CV. Subur Makmur Istana Bordir Pakis Malang Regency. According to the Regulation of the Minister of Manpower of the Republic of Indonesia No. 5 of 2018 concerning Occupational Safety and Health in the Work Environment, the standard or NAB (Threshold Value) for inspection work on small items with meticulous machinery is 300 lux. Based on observations in the field, it is known that there is an influence of lighting on work productivity. Lighting is one of the factors to get a safe and comfortable work environment, and has a link with work

productivity. Poor lighting will also result in low quality productivity of workers. Better lighting can provide things in the form of higher efficiency, can increase productivity and reduce the difficulty and pressure of vision on work (Sari & Berlianty, 2019).

At an objective level, lighting has the function of significantly affecting activities, working conditions and quality, and also affects health. So, a layout of lights is needed to get good lighting and fulfill the lighting function (Tawaddud, 2020). Apart from lighting, noise also plays a role in work productivity. A noisy work environment can interfere with work concentration. The source of noise in the work area at CV. Subur Makmur Istana Bordir Pakis Malang Regency comes from the sound of the sewing machine used. According to the Regulation of the Minister of Manpower of the Republic of Indonesia No. 5 of 2018 concerning Occupational Safety and Health in the Work Environment, the standard or NAB (threshold value) for the place or work area is 85 dBA. The statistical test results in this study show that there is no effect of noise on work productivity. This is because workers feel that the noise generated by the machine is normal and does not interfere with them in doing their work. In addition, workers have adapted to the noise that has occurred over the past few years.

The noise factor must still be considered because if the noise intensity exceeds the NAB, which is >85 dBA, it can cause hearing loss, comfort problems, sleep disturbances, stress, and other disorders. Therefore, it is necessary to control unqualified noise. Noise control in the workplace consists of technical, administrative and the use of personal protective equipment. Control measures can be done by using ear plugs on the workforce. The risk of hearing loss can be caused by the length of exposure or working hours of 8 hours / day, so it is necessary to determine the use of ear plugs for workers, to avoid the appearance of noise in the ears and rearrange the position of sewing machines and workers to provide distance so that the noise produced by each machine can be lower (Handayani & Hati, 2018).

## **CONCLUSION**

The results showed that there is an influence between age, length of service, fatigue, motivation, and work wages on productivity. As for the physical work environment, lighting has an effect on work productivity, while noise generated by machines has no effect on worker productivity. This is because workers have become accustomed or adapted to the noise and are considered not disturbing when working

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