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Occupational Health and Safety (OHS) Training for Expedition Couriers to be Able to Deal with Multi-Hazards

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Abstract

Work fatigue is a health and safety problem that can be a risk factor for work accidents. Fatigue in workers can also affect a decrease in productivity, so that Occupational Health and Safety (OHS) training is needed to minimize losses, work accidents and work-related diseases. This study aims to determine the risk factors associated with work fatigue, so that hazard control can be carried out through Occupational Health and Safety (OHS) training. The type of research used is quantitative research which is analytic with a cross sectional approach. The population in this study were ID Express Drop Point Kroya expedition couriers, Cilacap Regency, totaling 40 people. The sample for this study was all package delivery workers or couriers working at ID Express Drop Point Kroya with a total of 35 people, using a total sampling technique. Data were analyzed by univariate and bivariate. The results showed that workload (p=0.024), years of service (p=0.027), length of work (p=0.007), and exercise habits (p=0.021) were associated with work fatigue on expedition courier ID Express Drop Point Kroya, Cilacap Regency.

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INTRODUCTION

Fatigue is a problem that often occurs in every workforce that is closely related to decreased performance and productivity. Work fatigue is defined as a process of decreasing efficiency, work performance, and reduced physical strength or endurance to continue activities (Akbar, Kalsum, & Mahyuni, 2015). Data from the International Labor Organization (ILO) in 2018 estimates that more than 1.8 million work-related deaths occur annually in the Asia and Pacific region, two thirds of work-related deaths in the world occur in Asia. At the global level, more than 2.78 million people die each year from work-related accidents or diseases (International Labour Organization, 2018). The National Safety Council reports that 13% of workplace injuries can be attributed to fatigue.The National Safety Council reports that 13% of workplace injuries can be attributed to fatigue. The level of complaints of severe fatigue among workers around the world ranges from 18.3-27% and the prevalence rate of fatigue in industry is 45% (National Safety Council, 2017).

In Indonesia, based on data from the Director General of Labor Inspection Development (Binwasnaker) in 2017, out of 847 work accident cases that occurred, 36% were caused by work fatigue and the other 64% were caused by other things. The Social Security Administration Agency (BPJS) for Employment noted that the number of work accidents in Indonesia was 234,270 cases in 2021. The number increased by 5.65% from the previous year which amounted to 221,740 cases. The Central Java Health and Transmigration Service stated that in 2019 there were 2,305 cases of work accidents, 673 of which were caused by traffic accidents. Whereas in Cilacap Regency there were 13 work accidents, 3 of which were caused by traffic accidents (Disnakertrans Jawa Tengah, 2022).

The social restrictions that occurred during the COVID-19 pandemic have made e-commerce grow in all countries with growth of 26.7 trillion in 2019, up 4% from the previous year and in 2020 there will be growth from 16% to 19% (UNCTAD, 2021). Based on a survey conducted by We Are Social in April 2021, 88.1% of internet users in Indonesia use e-commerce services (Lidwina, 2021). Presentation of e-commerce in Central Java, 95.53% of entrepreneurs who do e-commerce business and 4.47% do not do e-commerce (Badan Pusat Statistik, 2020c).

In the world it is estimated that 27.2% of the world's population shop online, in 2019 there were 14.1% of online shopping transactions and in 2020 online shopping growth reached 16.1% of worldwide sales (UNCTAD, 2021). Asia Pacific accounts for 75% of world retail sales growth where online sales growth is twice the global average (Tolliver, Graham, & Brown, 2021). In Indonesia around 12 million new e-commerce users have adopted online shopping habits during the COVID-19 pandemic, a survey conducted on 2,987 respondents in June 2020 showed 20% of respondents or 1 in 5 people who shop online, shop online 9 times per month or 2 times a week (SIRCLO, 2020). Based on a survey conducted by the Cilacap Regency Central Statistics Agency in *"Profil Masyarakat Kabupaten Cilacap di Era New Normal"* in 2020 online shopping activities for the Cilacap community during the COVID-19 pandemic were obtained in April 2020, 33% of respondents answered that there had been an increase in online shopping and in May 2020 there was an increase to 34% (Badan Pusat Statistik, 2020a). According to data from the Central Java Statistics Agency, it is known that Cilacap Regency is the largest district in Central Java with an area of 2,253 km2 (Badan Pusat Statistik, 2020b). The vast area of Cilacap Regency and the increase in online shopping orders has resulted in an increase in the need for expedited courier services, so that a high workload can cause work fatigue (Ihsania & Iriani, 2020).

The results of research by Ihsania & Iriani (2020), said that delivery couriers are one of the workers who are at risk of experiencing fatigue, especially during the COVID-19 pandemic where e-commerce orders are getting higher due to the implementation of Large-Scale Social Restrictions (PSBB) as a result of the need for services couriers are also getting higher (Ihsania & Iriani, 2020). Based on the results of interviews with 7 expedition couriers who delivered packages in the Cilacap

Regency area, it was randomly found that 5 out of 7 (71%) couriers experienced heaviness in the head, back pain from sitting on a motorbike for several hours while delivering packages, and stiffness in the shoulders when riding a motorbike and after work.

In carrying out the process of delivering goods, it is possible that unexpected things may happen to the courier due to demands for delivery of goods which require the customer to arrive on time, to maintain and ensure that the goods remain safe until they arrive at the destination and delivery address. and different recipients every day resulting in an increase in the courier's workload during the journey to deliver the goods so that it can result in higher challenges and risks that threaten the safety, health and welfare of courier workers, various types of hazards that couriers encounter, namely safety hazards that have the potential to cause personal injury direct, physical hazards including exposure to various physical agents that are physically hazardous such as the courier work environment with minimal lighting, noise, vibration, and temperature. Apart from that, there are biological hazards including the COVID-19 hazard and chemical hazards including liquids or chemicals, these hazards are based on the courier's work process which must be in direct contact with the package. Psychological hazards experienced by couriers are caused by concerns about the accuracy and speed of delivering packages, problem packages and cash on delivery (COD) features also contribute to stress for couriers.

The ID Express Drop Pint Kroya Expedition has 45 workers, 40 of whom are package delivery couriers who serve deliveries for 13 sub-districts in Cilacap Regency. The results of a preliminary study conducted on expedition couriers at ID Express Drop Point Kroya Cilacap show that couriers work from 07.30 to 17.00 depending on the number of packages they deliver. With the large number of packages that must be delivered, the working time also increases. The courier will deliver the package door-to-door. If you are on an online shopping promo, more packages are sent from normal days to evenings. Courier will work 6 working days a week. According to Law Number 13 of 2003 concerning Manpower, the length of time a person works in a day is 8 hours or 40 hours a week. As for overtime, the time allowed is a maximum of 3 hours/day (Carlos, Yasnani, & Afa, 2016). In line with the increase in online shopping orders and promos offered by various e-commerce platforms, this has resulted in an increased workload on couriers and long working hours. With this type of work that is hard and part of the time on the road, it demands that you have a strong physique, the courier must also be able to deal with all weather conditions and the dangers of heavy traffic. Based on interviews conducted with 5 couriers, it is known that 4 of them do exercise in the afternoon and at night when there is free time. Research conducted by Narpati et al (2019) found that workers with poor exercise frequency were dominated by workers who experienced severe fatigue (Narpati, Ekawati, & Ida, 2019). The questionnaire used to determine the level of work fatigue at ID Express Drop Point Kroya couriers is using the Industrial Fatigue Research Committee (IFRC) questionnaire to measure subjective fatigue levels. Filling out the Fatigue Research Committee (IFRC) questionnaire conducted by 5 couriers showed that 1 courier experienced mild fatigue (20%), 3 couriers experienced moderate fatigue (60%), and 1 courier experienced severe fatigue (20%). Based on the background above, it is necessary to know what risk factors are related to work fatigue, so that appropriate Occupational Health and Safety (OHS) training can be carried out to prevent work accidents and work-related illnesses.

The purpose of this study is to determine the risk factors associated with work fatigue on the courier expedition ID Express Drop Point Kroya, Cilacap Regency. Several things that distinguish this research from previous studies are the location and time of the research that differ from previous studies. In addition, the exercise habit variable has never been studied in previous studies.

METHOD

This research is a quantitative research that is analytic in nature with a cross sectional approach. The variables used in this study consist of independent variables and dependent variables. Independent variables include workload, years of service, length of work, exercise habits and age. The dependent variable in this study is work fatigue.

The research was conducted in November 2022 with a population of 35 package delivery workers or expedition couriers ID Express Drop Point Kroya, Cilacap Regency. The total sampling technique was used in this study, so that the number of samples was 35 people. Retrieval of data using an instrument in the form of a questionnaire. To measure work fatigue, the researchers used the standard KAUPK2 questionnaire *(Kuesioner Alat Ukur Perasaan Kelelahan Kerja)*. To measure the workload using the National Aeronautics and Space Administration Task Load Index (NASA-TLX) standardized questionnaire. Questionnaires were used to collect respondent data including age, exercise habits, length of work and years of service.

Data analysis used univariate and bivariate analysis. Univariate analysis was performed on each research variable in order to obtain an overview of the distribution and frequency of each variable, namely work fatigue, workload, years of service, length of work, exercise habits, and age. Bivariate analysis used the chi-square test, if the conditions for the chi-square test were not met, then the Kolmogorov-Smirnov and Fisher tests were used.

RESULTS AND DISCUSSION

The results of univariate analysis are presented in the table below.

Table 1. Univariate Analysis Results

Variable	Category	Frequency	Percentage (%)
Work Fatigue	Less Tired	-	-
	Tired	11	31,4
	Very Tired	24	68,6
Workload	Very Low	-	-
	Low	-	-
	Currently	4	11,4
	Tall	15	42,9
	Very High	16	45,7
Work Period	New (≤7 months)	20	57,1
	Old (>7 months)	15	42,9
Length of Work	Appropriate Working Hours (≤7 hours)	6	17,1
	Inappropriate Working Hours (>7 hours)	29	82,9
Exercise Habits	Never (0x in a week)	17	48,6
	Sometimes (<3x a week)	15	42,9
	Routine (≥3x a week)	3	8,6
Age	Young (≤27 years)	19	54,3
	Old (>27 years)	16	45,7

Based on the results of univariate analysis, it was found that 11 people (31.4%) were in the category of very tired and 24 people were in the very tired category, 24 people (68.8%). Meanwhile, for the less tired sample there is no (0%). Based on the workload of the respondents, 4 people

(11.4%) had a moderate workload, 15 people (42.9%) had a high workload, and 16 people (45.7%) had a very high workload.

Working period is categorized into new working period and old working period (Kusgiyanto, Suroto, & Ekawati, 2017). The distribution of respondents' characteristics based on years of service was categorized based on the median obtained, which was 7 months, so that it was made into new years of service (≤7 months) and long years of service (>7 months). Respondents with a new working period (≤7 months) are 20 people (57.1%). Meanwhile, for respondents with a long working period (> 7 months), there were 15 people (42.9%).

Based on RI Law No. 13 of 2003 concerning Manpower, in Chapter X concerning Protection, Wages and Welfare, it is explained that a person's working hours per day are 8 or 40 hours per week for 5 working days a week and 7 or 40 working hours per day for 6 working days a week (KEMENPERIN, 2003). Respondents in this study worked for 6 working days, therefore the categorization of the variable length of work was divided into 2, namely appropriate working hours (≤7 hours) and inappropriate working hours (> 7 hours). Respondents with appropriate working hours (≤7 hours) are 6 people (17.1%). Whereas for respondents with inappropriate working hours (> 7 hours), there were 29 people (82.9%).

To improve fitness, it is necessary 3-5 times a week for a total of 150 minutes or 30 minutes every day, ideally exercise is done intermittently, for example Monday - Wednesday - Friday. This is intended to give the body an opportunity to recover from energy sources and eliminate fatigue. Therefore, the categorization of exercise habit variables is divided into three, namely never (0x a week), sometimes (<3x a week), and routinely (≥3x a week) (Prastuti, Nanda, & Martiana, 2017). Respondents with exercise habits in the never category (0x a week) were 17 people (48.6%), sometimes (<3x a week) as many as 14 people (42.9%), and routine (≥3x a week) 3 people (8.6%).

The distribution of respondents' characteristics based on age was categorized based on the median obtained, namely 27 so that it was made into young age (≤27 years) and old age (> 27 years). Respondents with old age (> 27 years) are as many as 16 people (45.7%). Whereas for young respondents (≤ 27 years) there were 19 people (54.3%).

Based on the results of the bivariate analysis showed that there was a relationship between workload (p=0.024), length of work (p=0.027), length of work (p=0.007), and exercise habits (p=0.021) with work fatigue on expedition couriers. The variable that has no relationship with work fatigue on expedition couriers is age (p=0.983).

Table 2. Results Bivariate Analysis

Variable	Work Fatigue						Value p
	Less tired		Tired		Very tired		
	n	%	n	%	n	%	
Workload							
Very Low	-	-	-	-	-	-	
Low	-	-	-	-	-	-	
Currently	-	-	3	75	1	25	0,024
Tall	-	-	8	53,3	7	46,7	
Very High	-	-	0	0	16	100	
Work Period							
New	-	-	3	15	17	85	0,027
Old	-	-	8	53,3	7	46,7	
Length of Work							
Appropriate Working Hours	-	-	5	83,3	1	16,7	0,007

Inappropriate Working Hours	-	-	620,723	79,3	
Exercise Habits					
Never	-	-	- - 17	100	
Sometimes	-	-	853,3 7	46,7	0,021
Routine	-	-	3 100 -	-	
Age					
Young (≤27 years)	-	-	631,613	68,4	0,983
Old (>27 years)	-	-	531,311	68,7	

The results of the study on the workload variable show that the workload variable has a p-value of 0.024, which indicates that there is a relationship between workload and work fatigue for couriers on the ID Express Drop Point Kroya expedition, Cilacap Regency. Based on the results of the analysis, it shows that workers who have a very high workload tend to experience work fatigue compared to workers who have a low workload.

The relationship between workload and work fatigue is closely related to the severity of the workload imposed on workers, according to Tarwaka et al (2004) the heavier the workload, the more energy is required or consumed. So that the workload received by a person must be appropriate or balanced both in terms of physical abilities, cognitive abilities and the limitations of the humans who receive the burden. Physiologically, mental activity is seen as a light type of work, but morally and responsibly, mental activity is considered heavier than physical activity because it involves more brain work than muscle work (Tarwaka, Bakri, & Sudiajeng, 2004). Each individual has a different capacity in responding to workload. The workload received by workers can come from the type of work activities carried out and other additional burdens (Triana, Ekawati, & Wahyuni, 2017).

These results are in line with the research by Nasution et al (2021) which stated that there was a significant relationship between mental workload and work fatigue in PT POS Indonesia Semarang City expedition couriers, in this study a p value was obtained of 0.003. In line with the research by Rahmawati and Tualeka (2019) which states that mental workload has a very strong correlation with work fatigue in workers at the circulator loom unit of PT Kerta Rajasa Raya (Rahmawati & Tualeka, 2019).

In terms of years of service, it is known that the variable of years of service has a p-value of 0.027, which indicates that there is a relationship between years of service and work fatigue on couriers on the ID Express Drop Point Kroya expedition, Cilacap Regency. The results of the analysis show that respondents with a new working period (≤7 months) are 0.154 times more likely to experience burnout than respondents with a long working period (>7 months).

Tenure can affect performance both positively and negatively. The longer the worker works, the more experience he has. Vice versa, the shorter a person's working period, the less experience gained, this is thought to be one of the factors that support worker behavior in protecting themselves from the risk of hazards in the workplace (Sastrohadiwiryo, 2003). A person's body's ability to adapt and respond to a job is different. Workers need time to adapt to work and daily activities. This will have an impact on the level of resistance to fatigue and work experience (Triana et al., 2017).

In line with research by Rinaldi in 2020, it was found that there was a relationship between length of service and work fatigue in the workforce of PT Elnusa Petrofin Banjarmasin. Workers with a working period of ≥3 years experience more fatigue than workers aged <3 years (Rinaldi, 2020). In line with the research of Lestari and Wahyuningsih (2021), the results of the study show that there is a relationship between length of service (PR=5.911; 95% CI=1.576-22.174) and work

fatigue in production workers at the Barecore Wood Factory CV. X (Lestari & Wahyuningsih, 2021).

In the length of work variable, it is known that the length of work variable has a p-value of 0.001, which indicates that there is a relationship between length of work and work fatigue on couriers at the ID Express Drop Point Kroya expedition, Cilacap Regency. The results of the analysis show that respondents with inappropriate working hours (> 7 hours) are 19,167 times more likely to experience work fatigue compared to respondents with appropriate working hours (≤7 hours).

Increasing working hours through long working hours is not closely related to optimal efficiency, effectiveness and productivity, in fact it usually reduces work quality and results. Excessive working hours beyond the limits of ability can accelerate the emergence of fatigue, reduce the accuracy, speed and thoroughness of work. Working long hours tends to cause fatigue, health problems, illness and accidents, and dissatisfaction (Suma'mur, 2014).

In line with the research conducted by Ihsania and Iriani (2020) which stated that there was a significant relationship between length of work and work fatigue with a p value of 0.000 and an OR value of 5.78, which means that workers with inappropriate length of work have a 5.78 times chance of experiencing work burnout. heavy (Ihsania & Iriani, 2020). In line with the research of Datu et al (2019), the results showed that there was a relationship between length of work and work fatigue among online motorcycle taxi drivers, the Manguni Rider Online Sario Community, where the p-value was obtained at 0.023 (Datu, Kawatu, & Mandagi, 2019).

In the exercise habit variable, it is known that the exercise habit variable has a p-value of 0.021, which indicates that there is a relationship between exercise habits and work fatigue as couriers at ID Express Drop Point Expeditions, Kroya, Cilacap Regency. The results of the analysis show that very tired work fatigue is dominated by respondents with a habit of exercising 0 times or never exercising in a week.

Regular and measurable exercise will be beneficial for improving physical fitness, namely the body's ability to function efficiently in carrying out daily tasks and exercising can make a person more resistant to stress and better able to concentrate (Irianto, 1997). By doing physical activities such as exercise with low, medium or high intensity can keep the body fit in carrying out daily activities (Majid, 2020). Exercising regularly and in accordance with the recommended proportions can improve a person's physical fitness so as to prevent fatigue (Narpati et al., 2019).

In line with research conducted by Raihanil (2020) which stated that there was a significant relationship between exercise habits and work fatigue with a p value of 0.043 for PT Defni Sejahtera Mandiri Padang truck drivers. In line with Prastuti et al's research in 2017, it showed that exercise habits have very strong strength with complaints of work fatigue among taxi drivers at Rungkut Surabaya pool (Prastuti et al., 2017).

In the age variable, it is known that the age variable has a p-value of 0.983, which indicates that there is no relationship between age and work fatigue as couriers on the ID Express Drop Point Kroya expedition, Cilacap Regency.

This is not in line with theory, according to Tarwaka (2014) the process of aging or increasing age can reduce muscle strength so that it is easy to experience fatigue (Tarwaka et al., 2004). Aging will be followed by the process of degeneration of organs so that the ability of organs will decrease which can cause the workforce to experience fatigue which is associated with decreased performance and productivity. The decreased ability to work the senses or organs of the body will result in the workforce experiencing fatigue more easily (Suma'mur, 2014).

However, these results are in line with the research of Prastuti et al (2017) which concluded that there is no relationship between age and work fatigue. This conclusion was obtained from the results of data analysis using Chi-Square which obtained a p value of 0.381 (> 0.05). In contrast to research conducted by Ihsani et al in 2020 it was found that there was a relationship between age

and work fatigue at delivery couriers with a P-value = 0.028 and an OR value of 2.87 in the South Tangerang area (Ihsania & Iriani, 2020).

CONCLUSION

Based on the results of the study it can be concluded that workload, length of work, length of work, and exercise habits have a relationship with work fatigue on expedition couriers ID Express Drop Point Kroya, Cilacap Regency. Meanwhile, age has no relationship with work fatigue on expedition couriers ID Express Drop Point Kroya, Cilacap Regency. The advice that can be given is that the expedition is expected to be able to provide occupational Health and Safety (OHS) training to couriers regarding safety riding and work fatigue management so as to minimize work accidents caused by fatigue, with occupational Health and Safety (OHS) training it is hoped that workers will be able to deal with various hazards in the workplace well. In addition, the expedition is expected to be able to implement an occupational Health and Safety (OHS) management system, so that inappropriate working hours and over workload can be avoided. Workers are expected to make the best use of their rest time between package deliveries considering that there is no special break given by expeditions. It is recommended for future researchers to use other methods in measuring work fatigue and it is hoped that they will examine other variables that can cause work fatigue such as work environment factors.

REFERENCES

Akbar, M. B., Kalsum, & Mahyuni, E. L. (2015). Perbedaan Tingkat Kelelahan Kerja Berdasarkan Kebiasaan Sarapan Pada Pekerja Kurir Pengiriman Barang JNE Di Kota Medan Tahun 2015. *Gender & Behaviour, 17(2), 2019, 13007-13015*, *17*(1), 1–19.

Badan Pusat Statistik. (2020a). *Profil Masyarakat Kabupaten Cilacap di Era New Normal*. Retrieved from https://klatenkab.bps.go.id/publication/2020/08/28/aad7a566c86525ffb5b4fa12/profil-masyarakat-kabupaten-klaten-di-era-new-normal-analisis-hasil-survei-sosial-ekonomi-dampak-covid-19-juli-2020.html

Badan Pusat Statistik. (2020b). *Statistik Daerah Kabupaten Cilacap Kabupaten 2020*. *33015.1904*(1101002.3301), 28 + v. Retrieved from https://bonekab.bps.go.id/publication/2016/09/26/d431570789bbe8a5fa7c1833/statistik-daerah-ponre-2016.html

Badan Pusat Statistik. (2020c). *Statistik E-Commerce 2020*.

Carlos, D., Yasnani, Y., & Afa, J. (2016). Faktor - Faktor Yang Berhubungan Dengan Kelelahan Pengemudi Truk Tangki Di Terminal BBM PT. Pertamina (Persero) Kec. Latambaga Kab. Kolaka Tahun 2016. *Jurnal Ilmiah Mahasiswa Kesehatan Masyarakat Unsyiah*, *1*(4), 185972.

Datu, M. M. D., Kawatu, P. A. T., & Mandagi, C. K. F. (2019). Hubungan Antara Lama Kerja Dengan Kelelahan Kerja Pada Pengendara Ojek Online Komunitas Manguni Rider Online Sario. *Kesmas*, *8*(6), 601–607.

Disnakertrans Jawa Tengah. (2022). *Jenis Kecelakaan Kerja 2018-2021*. Retrieved from https://data.jatengprov.go.id/dataset/jenis-kecelakaan-kerja-2018-2021

Ihsania, E., & Iriani, D. U. (2020). Analisis Faktor Risiko Kelelahan Kerja Di Wilayah Tangerang Selatan. *Prosiding Forum Ilmiah Tahunan IAKMI (Ikatan Ahli Kesehatan Masyarakat Indonesia)*, (E-ISSN : 2774-3217 1.), 25–26.

International Labour Organization. (2018). Meningkatkan Keselamatan dan Kesehatan Pekerja Muda. In *Kantor Perburuhan Internasional , CH- 1211 Geneva 22, Switzerland*. Retrieved from http://www.oit.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-jakarta/documents/publication/wcms_627174.pdf

Irianto, D. P. (1997). Olahraga yang Aman dan Efektif untuk Kebugaran. *Cakrawala Pendidikan*, (1), 115–127.

KEMENPERIN. (2003). Undang - Undang RI No 13 tahun 2003. *Ketenagakerjaan*, (1).

Kusgiyanto, W., Suroto, & Ekawati. (2017). Analisis Hubungan Beban Kerja Fisik, Masa Kerja, Usia, Dan Jenis Kelamin Terhadap Tingkat Kelelahan Kerja Pada Pekerja Bagian Pembuatan Kulit Lumpia Di Kelurahan Kranggan Kecamatan Semarang Tengah. *Jurnal Kesehatan Masyarakat (e-Journal)*, *5*(5), 413–423.

Lestari, W. D., & Wahyuningsih, A. S. (2021). Kejadian Kelelahan Kerja pada Pekerja Bagian Produksi di Pabrik Kayu Barecore. *Indonesian Journal of Public Health and Nutrition*, *1*(2), 291–298. Retrieved from http://journal.unnes.ac.id/sju/index.php/IJPHN%0AKejadian

Lidwina, A. (2021). Penggunaan E-Commerce Indonesia Tertinggi di Dunia. *2KataData*, (April), 2021. Retrieved from https://databoks.katadata.co.id/datapublish/2021/06/04/penggunaan-e-commerce-indonesia-tertinggi-di-dunia

Majid, W. (2020). Perilaku aktiviats Olahraga terhadap Peningkatan Kebugaran Jasmani pada Masyarakat. *Seminar Nasional Keolahragaan*, 74–80.

Narpati, J. R., Ekawati, & Ida, W. (2019). Hubungan Beban Kerja Fisik, Frekuensi Olahraga, Lama Tidur, Waktu Istirahat Dan Waktu Kerja Dengan Kelelahan Kerja (Studi Kasus Pada Pekerja Laundry Bagian Produksi Di Cv.X Tembalang, Semarang). *Jurnal Kesehatan Masyarakat (e-Journal)*, *7*(1), 337–344.

National Safety Council. (2017). Fatigue In The Workplace: Causes and Consequences of Employee Fatigue. *Science*, *302*(5642), 51d – 51.

Prastuti, Nanda, T., & Martiana, T. (2017). *Analisis Karakteristik Individu dengan Keluhan Kelelahan Kerja pada Pengemudi Taksi di Rungkut Surabaya*. (November), 64–74. https://doi.org/10.20473/ijph.v12i1.2017.64-74

Rahmawati, N. D., & Tualeka, A. R. (2019). Correlation between Individual Characteristics, Workload, and Noise with Work Fatigue. *The Indonesian Journal of Occupational Safety and Health*, *8*(2), 139. https://doi.org/10.20473/ijosh.v8i2.2019.139-149

Rinaldi, R. R. (2020). *Hubungan Usia, Masa Kerja Dan Status Gizi Dengan Kelelahan Kerja Pada Awak Mobil Tangki (Amt) Di Pt. Elnusa Petrofin Banjarmasin*.

Sastrohadiwiryo, S. (2003). *Manajemen Tenaga Kerja Indonesia* (2nd ed.). Jakarta: PT. Bumi Aksara.

SIRCLO. (2020). *Navigating Indonesia's E-Commerce: Covid-19 Impact & The Rise Of Social Commerce*. 40.

Suma'mur. (2014). *Higene Perusahaan dan Kesehatan Kerja*. Jakarta: Gunung Agung.

Tarwaka, Bakri, S., & Sudiajeng, L. (2004). Ergonomi: Untuk Keselamatan, Kesehatan Kerja dan Produktivitas. In *Analisis Standar Pelayanan Minimal Pada Instalasi Rawat Jalan di RSUD Kota Semarang* (Vol. 1). UNIBA PRESS.

Tolliver, J., Graham, L., & Brown, D. (2021). *2021 Global Logistics Outlook*. Chicago: Cushman and Wakefield.

Triana, E., Ekawati, & Wahyuni, I. (2017). Hubungan Status Gizi, Lama Tidur, Masa Kerja Dan Beban Kerja Dengan Kelelahan Kerja Pada Mekanik Di Pt X Plant Jakarta. *Jurnal Kesehatan Masyarakat (e-Journal)*, *5*(5), 146–155.

UNCTAD. (2021). *Covid-19 And E-Commerce A Global Review*. New York: United Nations Publications.