

## THE DIFFERENCES IN EMPLOYEE WORKLOAD DURING WORK FROM OFFICE AND WORK FROM HOME

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### Abstract

This study examines the workloads of employees who work in an office setting versus those who work from home. This study employs a quantitative research methodology. The study utilizes primary data obtained from the source. Out of a total of 360 employees from PT Pertamina Retail, NASA TLX chose 186 individuals to participate in this study. The NASA TLX method takes into account cognitive, physical, temporal, operational, exertion, and annoyance factors. The researchers employed the paired T test to assess and compare the workloads between working from the office (WFO) and working from home (WFH). The study found that PT Pertamina Retail workers had varying workloads both at home and in the office.

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### INTRODUCTION

The corona virus (COVID-19) pandemic was officially declared by the World Health Organization (WHO) on March 11, 2020. This was determined after the outbreak of the disease caused many people to be infected, up to 126,063 infections. According to

Worldometers, 4,616 victims have died and 67,071 have recovered (Sebayar, 2020). The transmission of the COVID-19 virus is scientifically proven, especially by coughing/sneezing (droplets) from person to person. According to Shereen et al. (2020) If a person is in close contact with a patient infected with COVID-19, transmission of COVID-19 is easier. Patients with severe symptoms of COVID-19 will develop pneumonia, acute respiratory syndrome, kidney failure, which can lead to death. To reduce the spread of COVID-19, the Indonesian government has implemented social distancing and work from home (WFH) regulations for employees (Ministry of Health, 2020).

The Covid-19 pandemic was seen as a disaster, but in reality, it provides new opportunities for change. The Covid-19 pandemic is considered to be capable of helping the application of underutilized technologies. We can see that today workers who have to work from home are forced to adapt and take advantage of sophistication in the field of information and communication technology. Whereas in the past, people often relied on personnel with expertise in the field of information technology to do this (Muhyiddin & Nugroho, 2020). The COVID-19 pandemic has changed the way we work, study and socialize. Many industries have implemented work-from-home (WFH) rules for their employees to mitigate the rapid spread of the COVID-19 pandemic.

Flexible Working Arrangement (FWA) in Indonesia is often referred to as Work From Home (WFH). Work from home or WFH is a concept where employees can do their work from home using company approved assets, policies and tools. Working from home offers flexible working hours for employees as well as easy tasks for employers. Working from home is very helpful in providing work-life balance for employees, while also helping companies do their jobs. Flexible Work Arrangement (FWA) is an alternative to the working conditions that have developed since the 1960s in Germany. In this case, FWH was chosen as a breakthrough to address the extent to which road density has increasingly become "street parking" (Fadhila & Wicaksana, 2020). A Flexible Work Arrangement (FWA) is a range of work structures that vary when and/or where work is performed in accordance with applicable regulations. Flexible working forms are divided into 3 groups, namely flexibility in working time arrangement, flexibility in working hours and flexibility in workplace layout.

The government started rolling out the telework policy on March 16, 2020. The definition of teleworking means doing all office activities virtually from each employee's home, for example. office assignments, meetings, as well as discussions and coordination with colleagues and work partners. Pertamina, as a public company, must comply with WFH regulations. At the start of the Covid-19 pandemic, 65% of Pertamina workers performing field operations were working from home or teleworking, which is up to 35% of workers. WFH policy is adjusted to government directives so that the number of employees entering the office gradually increases until it reaches 50% of the workspace capacity (Usman, 2020).

The workload from home or WFH and when working in the office or Work From



Office (WFO) should be different because the working system and working environment are not the same. According to a survey of 4,303 IT employees conducted by Kaspersky on Kustiani (2021), it was found that 54% of employees experience additional workload when working remotely and 69% believe that working remotely creates negative effects on the employee's emotional state. Kaspersky also conducted a management survey. According to the survey, about 82% of companies are concerned that working from home with remote working will lead to reduced productivity. While it was previously assumed by many that there is an extra workload, it turns out that more and more workers here have adapted and are able to handle workloads and tasks between working in the office and working at home. at home. This is shown by the fact that up to 64% of respondents working from home no longer feel tired (Kustiani, 2021). The shift to work has led some workers, especially those with families, to experiment with multiple roles at once, thus increasing task awareness. This can cause conflict and workload (Maziyya, Qoryatul I., & Nisa, 2021).

The definition of workload given in Permendagri No. 12, 2008 is the amount of work that a position or organizational unit must undertake. It is also the product of workload and time norms. Workers can become bored if their abilities exceed the requirements of the job they receive. Therefore, in order to know and predict between operator and worker, it is necessary to measure workload. The ultimate goal of this measurement is to improve working conditions, improve the design of the working environment, and the workflow streamline (Rolos, Sambul and Rumawas, 2018)

Workloads are reported in Gautama, et al. (2020) is a unit of measurement of the effort that a person must give to achieve the result of a particular job. In addition to measuring objective workload, there is also a subjective workload, namely mental workload. According to Dhania in Situmorang & Hidayat (2019), the definition of workload according to professionals is the activities that employees must complete within a predetermined period of time. Mangkunegara in Sihabudhin, et al. (2019) explains that workload is the burden that employees have to perform the work for which they are responsible, and how they can manage tasks to meet the needs of the operating system, in their work. Surname. Physical resources closely correspond to mental needs that affect human performance as well as information processing.

The measurement of mental workload can be classified according to the objective measurement method and the subjective measurement method. Objective measurements are made physiologically by observing multiple limbs by measuring heart rate, blinking, and muscle tension. While the measurement of mental workload is done subjectively based on the perception of the worker. Measurement of subjective mental load is the most widely used measurement technique because it has a high degree of validity and is directly comparable to other measures. The subjective measurement of mental workload has one goal, which is to determine the best scale based on experimental calculations (Gautama et al., 2020).

According to research by Gautama et al. (2020) mental workload is a measure of





workload where the data source to be processed is qualitative data. This measurement is a psychological approach by creating a psychological scale to measure mental load. The measurement method used is to select factors that affect mental workload and make a subjective assessment. Subjective measures can be taken using a number of methods, including: 1) NASA Mission Load Index (NASA-TLX); 2) Subjective Workload Assessment Technique (SWAT); 3) Modified Cooper Harper (MHC).

The researcher concludes that workload is the effort that a person has to put in to complete a task in a given unit of time. The measurement method used in this study is a subjective measurement using the NASA-TLX method. NASA-TLX is considered superior and sensitive in measurements because there are six dimensions to be measured.

Based on this information, this method should be considered to determine the value of employees' workload. The results of these metrics will indicate the differences in employee workload during Work From Office (WFO) and Work From Home (WFH). Work From Office (WFO) is a term commonly used in Indonesia for work activities in offices. The WFO clearly has set office hours and all parties must comply. Standard Working Hours under WFO are 8 hours of work between 8:00 to 17:00. At that time, it was hoped that it would provide the maximum possible capability and productivity, even though in reality there were a number of things that did not work optimally. However, for those 8 hours, they are led to remain productive. By knowing changes in employees' workloads, these results can be used as a consideration for making further decisions, whether to continue, adjust, or change the WFH policy if the workload is too great. With this measure, we can see the factors that most influence the workload. This study can provide recommendations for the Human Resources at PT Pertamina Retail to take further measures for the application of the provisions of the working system such as WFO, WFH, or combining the system.

Although there is a wealth of information available on the effects of the COVID-19 pandemic on different aspects of work and life, there is still a notable lack of understanding regarding the specific impact of the transition to remote work on the mental workload of employees in Indonesia. The current research primarily examines the overall productivity and emotional well-being of remote workers, with little emphasis on the specific variations in workload between traditional office settings and home environments. In addition, there has been extensive research on Flexible Working Arrangements (FWA) in Western contexts, but there is a lack of exploration regarding their implications within Indonesian cultural and organizational frameworks, specifically for state-owned enterprises like PT Pertamina.

In addition, previous studies have primarily focused on objective measures of workload, overlooking the valuable insights that could be gained from employees' subjective experiences. By considering their mental and emotional states, we can gain a more holistic understanding of their experiences. There is a lack of utilization of advanced subjective measurement tools, like the NASA-TLX method, in this particular context. This emphasizes the necessity for a more comprehensive and understanding approach to

workload assessment.

This study seeks to address these gaps by examining the variations in employee workloads between the Work From Office (WFO) and Work From Home (WFH) arrangements at PT Pertamina Retail during the COVID-19 pandemic. The study aims to assess and compare the subjective mental workloads of employees by utilizing the NASA-TLX method. The study aims to analyze these differences and offer practical insights and recommendations for Human Resources at PT Pertamina Retail. This could help shape future policies on implementing and improving flexible working arrangements. This research will provide valuable insights into the impact of remote work on employee workload in an Indonesian context, benefiting both academia and industry practitioners.

### RESEARCH METHODS

The design of this study is a quantitative study. The data source used in this study is primary data, where the data is generated from the primary source. The data collection technique used in this study is the survey method, and data collection is done through questionnaires or questionnaires, namely the distribution of questionnaires and a series of questionnaires. a systematically ordered list of questions, then given for respondents to complete. The aim of this study was to investigate the differences in workloads in WFH and WFO.

The metric used to measure mental workload is the NASA TLX. Aspects measured by NASA's TLX methodology include:

- a. Mental Demands (MD)
- b. Physical Demands (PD)
- c. Temporal Demands (TD)
- d. Own Performance (OP)
- e. Frustration Level (FR)
- f. Effort (EF)

The evaluation stage is given a scale from 1 to 100, after which employees will give a scale based on the amount of work they have experienced on the job. Before interpreting the results, first, point adjustments are made on a scale of 10 to 100. This is because there is a limit to survey scale on Google Forms, not just a scale of 1 to 10. The NASATLX theoretical workload score obtained can be interpreted as follows:

- a. Score  $> 8$  indicates a heavy workload
- b. A score of 5-8 indicates moderate workload
- c. Score  $< 5$  indicates low workload.

The statistical test tool used in testing the research hypothesis is SPSS. Different test analysis in this study used the Paired T Test. This test was intended to compare means of two groups twice. Paired samples are samples from the same subject but experience 2 different treatments or measurements, namely measurements before and after the treatment or policy is carried out, namely when WFH and WFO are applied.

The population of this study included employees of PT Pertamina Retail. The sampling technique used is Simple Sideways Random. According to (Sumargo, 2022), it is defined as One-sided Random because the process of sampling the members of the population is done fairly, meaning that each unit has an equal chance of being selected. The advantage of using Simple Random Sideways is that the sampling method and parameter estimation technique used are simple and easy. The researchers determined the sample size according to Payadnya & Jayantika (2018) using the table RV Krecjie and DW Morgan.

**Table1.** RV Krecjie and DW Morgan

N	Sample	N	Sample	N	Sample
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3,000	341
80	66	420	201	3,500	346
85	70	440	205	4,000	351
90	73	460	210	4,500	354
95	76	480	214	5,000	357
100	80	500	217	6,000	361
110	86	550	226	7,000	364
120	92	600	234	8,000	367
130	97	650	242	9,000	368
140	103	700	248	10,000	370
150	108	750	254	15,000	375
160	113	800	260	20,000	377
170	118	850	265	30,000	379
180	123	900	269	40,000	380
190	127	950	274	50,000	381
200	132	1,000	278	75,000	382
210	136	1,100	285	100,000	384

*Source: Payadnya & Jayantika (2018)*

The theoretical number of samples is based on the table of population size and the ratio of the number of samples to be taken, so that from the number of biological staff of PT Pertamina Retail of 360 people, a total of 186 samples can be obtained.

From the theoretical basis above, it can be concluded that the workload is affected by the work system, namely casual work/Work From Office (WFO) and Work From Home (WFH). The hypothesis aims to compare the mean of two groups by two by two. A paired sample is a sample from the same subject that undergoes 2 different treatments or measures, namely, before and after the implementation of a treatment or policy. Assumptions are used to explain, namely:

Ho = There is no difference in employee workload when working at the office and working from home

HI = Is there a difference in employee workload when working at the office and working from home

## RESULTS AND DISCUSSION

### Respondent Description

Based on the results of the calculation of the gender distribution of the respondents, it is known that the majority of respondents in this study were men, accounting for 65%, the rest were 35 men. This shows that PT Pertamina Retail workers are predominantly male. As for the results of the distribution of respondents by age, it is known that the majority of respondents in this study were 52% in the age group from 21 to 30, then 39% in the age group 31-40. , then to 6% from the age group 41-50, and the rest from the age group over 50, up to 3%. These results indicate that the majority of respondents belong to the productive age group and tend to be young.

Distribution of respondents according to the number of years of work, it is known that the majority of respondents in this study have up to 42% have worked for less than 5 years at PT Pertamina Retail, then up to 37% have worked at PT from 5 to 10 years. Pertamina Retail, up to 20% have worked for 10-15 years at PT Pertamina Retail and the remaining 1% have worked for more than 15 years at PT Pertamina Retail. Although the distribution of respondents was based on location, it is known that the majority of respondents in this study were employees for up to 59 months, then up to 20 months of BUH (Business Unit Head) or commonly referred to as a department head of Gas stations, then no less than 7% supervisors, another 7% are assistant managers, 5% of respondents have management positions, and the rest are service station supervisors 2%.

### Variables Description

**Table 2. WFO's Workload**

Categories	Total	Mean	Explanation
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MD	1224	6.58	Moderate
PD	1287	6.92	Moderate
TD	1263	6.79	Moderate
OP	1396	7.51	Moderate
E.F	954	5.13	Moderate
FR	1217	6.54	Moderate

Source: Research Results, 2023

**Table 3.** WFH's Workload

Categories	Total	Mean	Explanation
MD	948	5.10	Moderate
PD	656	3.53	Low
TD	1152	6.19	Moderate
OP	1244	6.69	Moderate
E.F	905	4.87	Low
FR	882	4.74	Low

Source: Research Results, 2023

**Table 4.** Workload in PT Pertamina Retail

Category	WFO's Workload	WFH's Workload	Mean
Heavy	19	10	15
Currently	148	119	134
Light	19	57	38
Total	186	186	186

Source: Research Results, 2023

Based on the conclusions from the various respondents` responses to the Workload variable, it was found that during the WFO the Mental Demand (MD) aspect; Physical Demands (PD); Temporal Demands (TD); Own Performance (OP); Frustration Level (FR); Effort (EF) is felt by most employees moderately. Meanwhile during WFH the Physical Demand (PD) aspect; Frustration Level (FR); Effort (EF) on workload is felt light, and aspects of Mental Demand (MD); Physical Demands (PD); Temporal Demands (TD); Own Performance (OP) on Workload is moderately felt by most employees.

Overall, the workload of PT Pertamina Retail employees is moderate. In the WFO, 148 people rated the workload as moderate, while in the WFH, 119 people rated the workload as moderate. The heavy workload that employees feel is more in WFO, up to 19 people, while there are only 10 people in WFH. However, in WFH, most employees feel the workload is light with 57 people, while WFH has only 19 people.

## DISCUSSION



The function of the paired t-test is to test for differences by looking at the effect of the treatment, such as the difference in the average before and after being given treatment as in this study, namely testing differences in workload before WFH (WFO) and after WFH was applied. Scaling data for both paired t-test variables should use quantitative data for intervals and scales (Santoso, 2014). The outputs of the paired T-test method to test the difference in employee workloads in WFO and WFH are as follows:

**Table 5.** Workload in PT Pertamina Retail

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	WFO	2.00	186	,453	.033
	WFH	1.75	186	,546	,040

Source: Research Results, 2023

The table above shows that the average value of workload in WFO is 2.00 while workload in WFH is 1.75. You can see a  $WFO > WFH$  workload with a difference of 0.25. This suggests that there is a difference in workloads in WFO and WFH, but the significance of this number should be checked by looking at the following table:

**Table 6.** Workload in PT Pertamina Retail

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	WFO WFH	,253	,654	,048	,158	,347	5,270	185	,000

Source: Research Results, 2023

The above table shows a significance value of 0.000, meaning  $<0.05$ . On this basis, it can be concluded that H1 is acceptable. So there is a difference in workload during WFH and WFO for PT Pertamina Retail workers.

The results of the questionnaire also show that the heavy workload experienced by employees in the WFO is larger, up to 19 people, while there are only 10 people in the WFO. However, in WFH, most employees feel the workload is light with 57 people, while WFH has only 19 people.

The COVID-19 pandemic that hit the whole world has changed people's way of life, of course it entails changes in one of the working systems. The government has also



introduced a teleworking policy for employees to mitigate the rapid spread of the COVID-19 pandemic. This is consistent with what is in Mochklas's book (2019) that the work system is an external factor affecting the workload, so when WFH is deployed, of course, the workload that Employee perception is also different from WFO's working system. Based on the results of the questionnaire, it is also found that many people find it easier to work with WFH's work system because it avoids traffic jams, which employees of course always feel when leaving the workplace. and return home. This is consistent with the questionnaire results that the physical need (PD) or required amount of physical activity in the WFH is 656, which is lower than that in the WFO of 1287.

### CONCLUSIONS AND RECOMMENDATIONS

This research analyzes the workload during WFO and WFH. The workload of 186 employees at PT Pertamina Retail is moderate. The average value of workload in WFO is 2.00 while workload in WFH is 1.75, so workload during WFO is larger than WFH with a difference of 0.25. This suggests that there is a difference in workloads in WFO and WFH. Significance value based on Paired T test is 0.000, which is smaller than the alpha 5%. On this basis, it can be concluded that H1 is acceptable. So, there is a difference in workload during WFH and WFO for PT Pertamina Retail workers. This study also provided the involvement of the Human Resources Department to manage and revise the job description in each observed position and to evaluate the effectiveness of the WFO and WFH working conditions during the COVID-19 pandemic. The study also included mental workload calculations based on gender, age, and position, which were used to map out as part of job descriptions. lots of mental work and kinds of repetition.

PT Pertamina Retail can continue to control the workload assigned to all employees so that the workload is not too heavy as it will impact lower performance. A heavy workload can lead to physical and mental fatigue, which can actually reduce employee productivity. PT Pertamina Retail also needs to study more deeply about the work system that will be implemented in the near future for employees to work efficiently and productively. Hybrid work can be an alternative to the working system after the Covid-19 pandemic, because according to research results, the workload when WFH is smaller than WFO, so it can be said that employees are more productive when WFH.

Further research can be developed by identifying other variables that affect employee performance. In addition, future researchers can use a qualitative approach or complement the research with mix methods that add interviews to data collection so as to obtain more in-depth and detailed information.

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