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Flexible Working Arrangement (FWA) Model: Reducing Congestion Levels and Work Stress and Increasing Work Productivity

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Abstract

Research aims: This research aims to analyze the impact of the flexible working arrangement (FWA) system in reducing traffic jams, reducing work stress, and increasing work productivity.

Design/Methodology/Approach: This research uses a sample collection technique with purposive sampling by distributing questionnaires to 100 government and company employees and interviewing 5 informants from government employees. Data analysis uses SEM (structural equation model) with the AMOS analysis tool.

Research findings: Flexible working arrangements (FWA) have an important role in reducing traffic jams, which can increase a person's work stress. Reducing traffic congestion has a positive impact on workers and decreases work stress. Despite flexible working arrangements (FWA), work congestion and stress do not influence work productivity.

Theoretical Contribution/Originality: This research contributes to the science of human resource management and urban management related to HR work activities.

Practitioners/Policy Implications: The results of this research become a source and basis for guidance in structuring work patterns to be more efficient and effective, i.e., working flexibly can reduce the level of traffic congestion.

Research Limitations/Implications: The limitation to this research includes the very limited number of respondents and informants who cannot be met directly so the question-and-answer process is less in-depth. Moreover, the indicators for each variable are still lacking, while the references are still weak.

Keywords: Work Flexibly; Traffic Density; Work Stress; Work Productivity

Introduction

Traffic jams greatly influence the work activities and lifestyles of all elements of society, making them a major problem throughout the world. It is very important to create and change government policies and encourage changes to break down these bottlenecks. Moreover, this problem cannot be simply ignored because it creates work stress for workers (Vencataya et al., 2018). Stress causes several serious problems such as mental and physical health which have a negative effect of decreased productivity, while flexible work practices provide benefits for balancing work responsibilities and personal life (Shagvaliyeva & Yazdanifard, 2014). More than half of employees (54%) said stress in their work life was caused by severe traffic jams. Congestion also affects the

welfare of workers, and time that could be used for productivity is hampered (van der Loop et al., 2019; Permatasari, 2020). Increasing encouragement for flexible working can reduce traffic congestion at peak times and improve people's quality of life (Acharyaviriya et al., 2021). Therefore, the best solution is to implement a more flexible work system to avoid facing traffic jams on the way to work, providing much better peace of mind and making the employees more productive.

Work stress at the workplaces arises due to experiences in traffic jams (Weerasinghe et al., 2020b). In addition, traffic congestion and worker productivity imply that increasing levels of traffic congestion will lead to lower productivity. Therefore, some efforts are needed to reduce traffic congestion on highways and increase the free flow of traffic expected to significantly increase worker productivity (Somuyiwa et al., 2015a). In one of the most congested cities in the world, Bengaluru in India, the level of traffic jams is a serious problem and affects students' mental health (T. Singh & Reddy, 2021). In Indonesia, the most congested city is DKI Jakarta, ranked 173rd in the world and ranked 1st in Indonesia based on INRIX 2023 Traffic Scorecard report data. Therefore, flexible working arrangements (FWA), such WFH during the Covid-19 pandemic, can be implemented to reduce congestion on the roads due to the number of vehicle users. The level of congestion in the city of Jakarta can be seen in Figure 1.

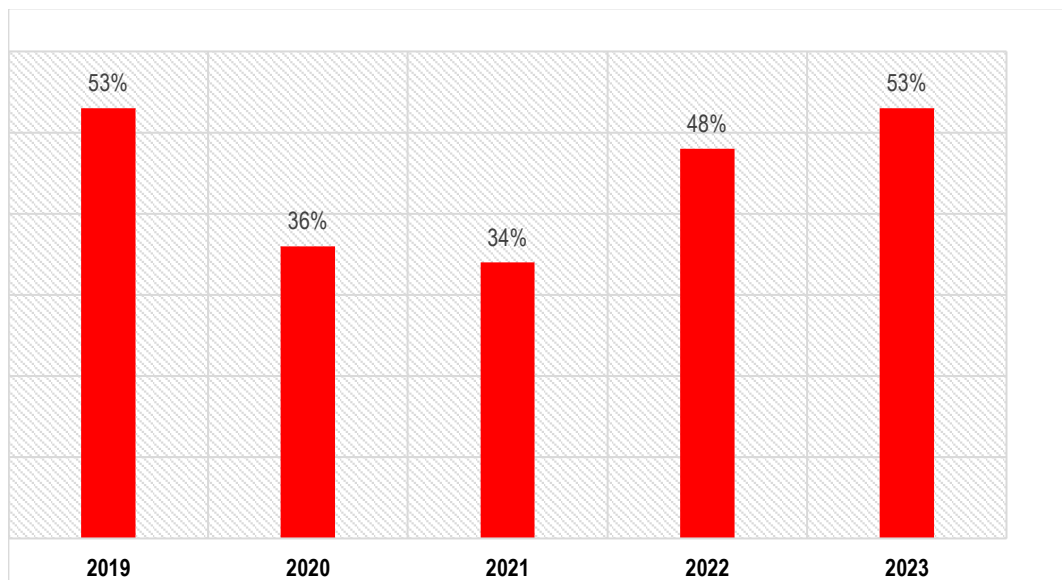


Figure 1 Percentage of Congestion levels in the city of DKI Jakarta
Source: DKI Jakarta Provincial Transportation Agency

Figure 1 shows a significant decrease in congestion from 2019 to 2021, although it increased again from 2022 to 2023. One of the reasons for the decreased traffic congestion in 2020-2021 was the Covid-19 pandemic. The Work from Home (WFH) system implemented by the central government during the Covid-19 pandemic was effective in reducing the number of vehicle users on the road, forcing the workers and students predominantly to do their activities at home. Even though the implementation was

initially difficult, people started to get used to it, and some people even felt that working from home was quite effective as long as it was supported by a good technological system.

Flexible working hours from home and other flexible work arrangements modestly improve mental health (Shiri et al., 2022). The implementation of flexible working arrangements (FWA) has been positively increased with high enthusiasm followed by high productivity levels through work systems that suit needs. Other benefits can be seen in several aspects related to efficiency, gender, culture, technology, and transportation (Fadhila & Wicaksana, 2020). Some evidence shows that working for a certain duration and a set work schedule suits their needs because they can manage their time between work and free time. This can reduce fatigue and overwork in general and increase workload to be more productive, enthusiastic, and motivated at work (Damayanti et al., 2021). However, it is necessary to note and pay attention that implementing FWA requires technological readiness from the agency and employee psychology to adapt to the new system.

Previous studies stated that policies regulating working time from home have increased employee productivity (Witriaryani et al., 2022; Aziz & Iqbal, 2022) and working from home can help reduce traffic jams during peak hours and reduce energy consumption (Du et al., 2021; Loo & Huang, 2022). However, the direct impact of FWA did not increase employee performance. This is supported by some research stating that the effect of work-from-home (WFH) on work stress was found to be significant, but on employee performance was found to be insignificant (Hamdani et al., 2022). Based on the explanation above, FWA can provide support in reducing traffic density, reducing work stress, and increasing the productivity of employees who work in areas that are dense with human activity. Furthermore, this research aims to analyze and see the impact of implementing flexible working hours for employees on the level of traffic jams on the road, work stress, and work productivity.

Literature Review and Hypotheses Development

The human relations movement theory by Elton Mayo (1920) is a form of social relations, employee welfare, and open communication between management and staff. This theory suggests that workers are not solely motivated by money but are also motivated by ensuring that social and psychological needs can be met. One of the current needs is to be able to work flexibly. Flexible work is to meet workforce needs for various customer or production needs. From the workers' perspective, flexibility means having the option to choose when, for how long, and in which company the worker wants to work. Both can be achieved with work flexibility (temporary work, contract work) and with time and space flexibility (Dettmers et al., 2013). FWA is a work system that prioritizes work flexibility regarding when to start work, where, and the length of time of work referring to the policies of the workplace. The work system, by changing work patterns, which is carried out regularly, affects the time and the place of work in FWA (Anisahwati et al., 2020).

The relationship between FWA and congestion level, work stress, and work productivity

Currently, traffic congestion is a major problem in big cities that affects daily life. Due to the imbalance between supply and demand causing traffic jams, one of the policies implemented in Tehran to reduce traffic jams is flexible working hours (Baradaran et al., 2023). Therefore, more companies and workplaces in developed countries are providing flexible working hours or flextime for their employees, which is expected to reduce traffic jams. Congestion is a situation or condition where road users are hampered or even stopped due to the large number of vehicles exceeding the road capacity. Traffic jams can cause many losses in terms of material, time, and energy. From a health aspect, traffic jams can affect the psychological condition of traffic users, such as stress due to a work deadline. From an economic aspect, the workers show decreased productivity (Br & Maha, 2022).

Working remotely can reduce traffic congestion, of course, through more flexible work arrangements (Wöhner, 2022). Careful implementation of alternative work schedule policies such as flextime can provide multilevel benefits, including reducing pollution, increasing productivity, and maximizing personal well-being from stress (Rahman et al., 2022). There are still differences of opinion about the benefits of flexible working arrangements for employee well-being. Lack of empirical analysis regarding whether flexible working makes employees experience stress. Previous research results suggest that flexible working arrangements allow the combination of the roles of work and family to reduce chronic stress levels (Chandola et al., 2019).

Implementing FWA is a step to increase employee productivity because employees feel appreciated by the company and proud of the agency. The implementation of FWA is considered an added value obtained from the workplace, apart from providing a sense of security and no problems when carrying out work at home; even work and family time can be managed well (Stefanie et al., 2020). By implementing this FWA, it is hoped that the mental health conditions of employees will improve so that productivity can be increased. Organizations that implement FWA policies have attracted prospective employee candidates and employees who are already working, especially the millennial generation, who are happy with the system (Vera et al., 2022).

H₁: FWA has an impact on reducing congestion.

H₂: FWA has an impact on reducing work stress.

H₃: FWA has an impact on increasing work productivity.

The relationship between the level of congestion with work stress and work productivity

Stress in the workplace can be due to the workplace as well as a combination of internal and external factors. One of which is traffic jams, which cannot be ignored. Traffic jams

become a significant predictor of work stress for employees who often get stuck within (Weerasinghe et al., 2020a). Longer commute times have been shown to increase job stress, and this can also impact mental health (Hennessy & Wiesenthal, 1997). Moreover, transportation modes influence stress levels; where active passengers, such as those on motorbikes or private vehicles, tend to be more stressed, compared to passive passengers, such as those using buses, which do not show a significant impact on stress levels (Amelia et al., 2023).

Traffic congestion causes a decrease in worker effectiveness, effort levels, and overall productivity (Harriet et al., 2013). There is an inverse relationship between traffic jams and worker productivity, where the time lost due to traffic jams significantly reduces workers' work effectiveness (Kamruzzaman & Rumpa, 2019; Somuyiwa et al., 2015b). Therefore, it can be concluded that traffic jams can cause low work performance and morale, hamper job satisfaction, affect employee commitment, and ultimately have an impact on organizational productivity.

H₄: Traffic jams have an impact on work stress.

H₅: Traffic jams have an impact on reducing work productivity.

The relationship between work stress and work productivity

Work stress can interfere with a person's ability to concentrate, focus, and make the right decisions, thereby causing a decrease in productivity and efficiency. Thus, there is an inverse relationship between overall stress and productivity, where higher levels of stress are associated with lower productivity (Bui et al., 2021). Stress has a destructive or negative nature, while eustress has a positive nature. Sometimes, stress is needed to produce high performance, meaning that the higher the drive for achievement or pressure, the higher the productivity and efficiency. However, when destructive activities hurt health, this causes them to no longer be able to work normally (Naibaho & Naibaho, 2022), workers who experience work stress experience fatigue more easily (Yogisutanti et al., 2019). Generally speaking, work stress is a condition where a person at work receives pressure, which reduces work productivity.

H₆: The relationship between work stress has an impact in reducing work productivity.

The empirical study linked above produces the following conceptual framework model:

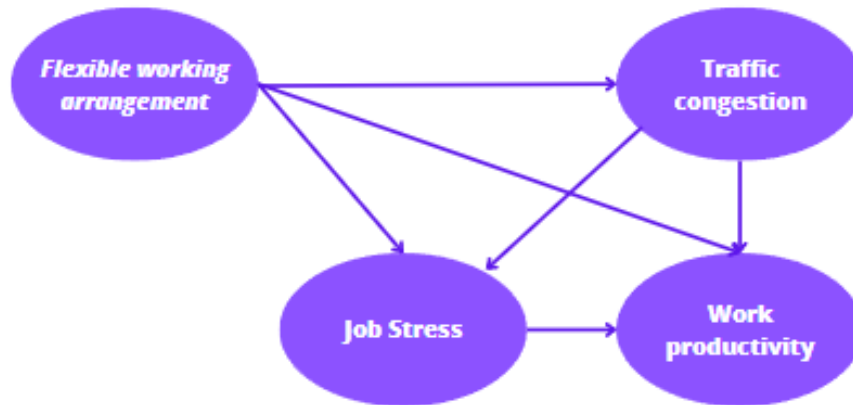


Figure 2 Conceptual framework, development

The flexible work arrangement (FWA) model promotes some benefits, with a focus on its potential to reduce levels of congestion and work stress and increase work productivity (Bontrager et al., 2021; G. H. Singh & Joshi, 2022). Moreover, flexible work is able to reduce congestion levels, especially in urban areas. Thus, with fewer employees commuting to office spaces, demand for transportation infrastructure is reduced, leading to decreased traffic, lower emissions, and increased overall mobility. The impact of traffic jams before leaving for work can cause stress among workers, which ultimately affects their productivity. Overall, the evidence shows that work congestion and stress can have a major impact on productivity, highlighting the need for effective strategies to mitigate this impact. Concrete steps are relevant to flexible working systems.

Research Methods

This research uses a mixed methods approach. This combined research is an option aimed at obtaining more comprehensive, valid, reliable, and objective research results. The mixed methods model used in this research is a sequential model using an explanatory approach, namely quantitative data and analysis in the first stage, followed by qualitative collection and analysis. The research scheme carried out is shown in Figure 3.



Figure 3 Research method scheme.

Figure 3 shows that the research method scheme is applied; so, the implementation of this research is adapted to the problem that has been formulated:

The data source in this research uses primary data obtained and referred to directly from the main source. The sampling technique for this research uses nonprobability sampling, where the researcher determines several criteria for population members to be selected as samples. The sampling method in this research uses a purposive sampling method by determining certain criteria as follows:

1. Participants who work in the Jakarta, Bogor, Depok, Tangerang, and Bekasi (Jabodetabek) areas and have the status of Private Employees in companies or Employees in State institutions. This criterion was chosen because both groups have a work from home (WFH) policy during the Covid-19 pandemic.
2. Employees who have worked for 5 years (before and after the Covid-19 pandemic).
3. The employee's working hours imposed by the institution or company are 08.00 to 16.00 Western Indonesia Time.

The total sample size in this study is determined using Lemeshow's formula, resulting in 96.04, which is rounded to 100 samples. This formula is used because the exact number of the population in this study is unknown (Lwanga & Lemeshow, 1991). The measurement indicators in this research are:

Table 1 Measurement Indicators

Source	Variables	Measurement Indicator
(Carlson et al., 2010) and (Ray & Pana-Cryan, 2021)	<i>Flexible Working Arrangement</i>	1. Remote working 2. Flextime 3. Division of labor
(Bian et al., 2016)	Congestion Level	1. Vehicle volume 2. Park the vehicle on the street 3. Road infrastructure
(Ayu et al., 2022) and (Tsen et al., 2023)	Job Stress	1. Family financial condition 2. Problems with the nuclear family 3. Work pressure
(Maliah & Kurniawan, 2020) and (Suhariadi et al., 2023)	Work productivity	1. Ability 2. Work enthusiasm. 3. Efficiency

Several effective data collection techniques were employed to collect accurate and useful data. First, data was gathered by distributing closed-ended questionnaires specifically designed for workers or employees. These questionnaires use a Likert scale ranging from 1 to 5 to capture respondents' opinions, where they were asked to rate statements directly related to the research objectives. The questions in the questionnaire were carefully crafted to capture the perceptions and experiences of respondents regarding the topics under study. This approach is considered highly effective in obtaining relevant and quality data. To strengthen the results from the questionnaires, additional information was collected through interviews conducted with five workers in the Greater Jakarta area (Jabodetabek). These interviews were conducted either directly or indirectly via telecommunications. In these interviews, informants were approached in a manner that considered their comfort and willingness to participate. They were asked a series of semi-structured questions designed to explore the issues raised in the questionnaires

more deeply. It is hoped that these interviews could provide the additional depth and perspective needed for this research.

After the data is collected, the next step is data analysis. Quantitative data analysis was carried out by first testing the validity and reliability of the instruments used. Then, the data was analyzed using SEM (Structural Equation Model) with the help of the AMOS analysis tool. This process ensures the data can be interpreted accurately and provides significant results. Apart from quantitative analysis, qualitative data analysis was carried out through three main stages. First, the data is summarized, and important points are selected through a data reduction process. Next, the data is presented as a brief description, diagram, or relationship between categories. Finally, conclusions or verification are drawn based on the data that has been analyzed, ensuring that the conclusions drawn truly reflect the results of the research.

Results and Discussion

In completing this research, several tests were carried out: validity and reliability tests, model tests, and hypothesis tests using SEM. The validity and reliability testing examined the questionnaire items; they are valid when the loading factor magnitude is >0.5 and reliable when the CR value is > 0.7 (Esposito Vinzi et al., 2010; Hair et al., 2011). The test results are shown in the following table:

Table 2 Validity and reliability test results

Variable	Indicator	λ	Validity	AVE	CR	Reliability
X	X.1	0.808	valid	0.64	0.85	reliable
	X.2	0.861	valid			
	X.3	0.718	valid			
Y1	Y1.1	0.811	valid	0.72	0.87	reliable
	Y1.2	0.843	valid			
	Y1.3	0.886	valid			
Y2	Y2.1	0.712	valid	0.65	0.85	reliable
	Y2.2	0.906	valid			
	Y2.3	0.792	valid			
Z	Z.1	0.861	valid	0.65	0.85	reliable
	Z.2	0.764	valid			
	Z.3	0.794	valid			

The results of the validity testing with CFA show that the overall indicator values of the loading factor have exceeded 0.5. A threshold of 0.5 for the loading factor refers to the literature stating that a value above 0.5 indicates good construct validity, as the indicator significantly reflects the measured construct (Esposito Vinzi et al., 2010). Therefore, it can be concluded that the data in this study is valid, and the subsequent testing phase can proceed.

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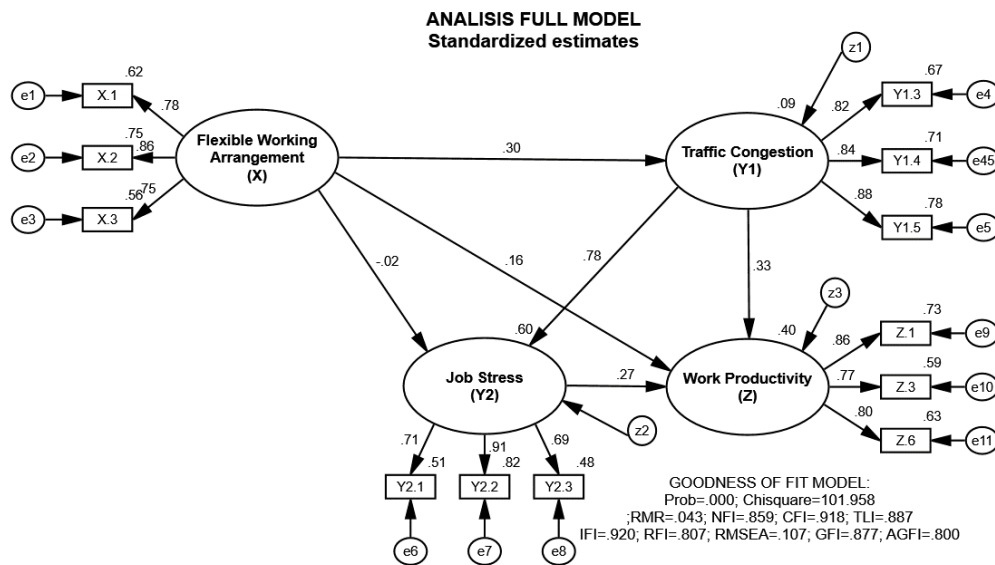


Figure 3 Estimated structural model results.

Based on the results of testing the structural model using the SEM approach, several goodness-of-fit model criteria have been seen, namely chi-square, probability, RMR, NFI, CFI, TLI, IFI, GFI, and RMSEA with the following details:

Table 3 Evaluation of goodness of fit indices overall model criteria

Goodness of fit index	Cut-off Value	Computation Results	Description
Chi-square	Expected to be small	101.958	Marginal Fit
Probability	≥ 0.05	0.000	Marginal Fit
RMR	≤ 0,05	0.043	Fit
NFI	≥ 0.90	0.859	Marginal Fit
CFI	≥ 0.90	0.918	Fit
TLI	≥ 0.90	0.887	Marginal Fit
IFI	≥ 0.90	0.920	Fit
RMSEA	≤ 0,08	0.107	Marginal Fit
GFI	≥ 0.90	0.877	Marginal Fit

Table 3 shows that the probability and chi-square values are close to fit. Hence, the data in the model has the same covariance matrix as the population covariance, so it can be ensured that the model is suitable for use in testing the research hypothesis. Furthermore, a significance test is carried out with a critical level of 0.05; if the value (P) < 0.05 and c.r > 1.96, then it can be said that H0 is rejected, and Ha is accepted. Likewise, when the value (P) > 0.05 and c.r < 1.96, it can be stated that H0 is accepted and Ha is rejected (Hair et al., 2011). The significant test results in this research are as follows:

Table 4 Significance Test

			Estimate	S.E.	C.R.	P	Label
Y1	<---	X	.353	.141	2.514	.012	par_12
Y2	<---	X	-.022	.125	-.177	.859	par_7
Y2	<---	Y1	.879	.160	5.496	***	par_14
Z	<---	X	.136	.090	1.514	.130	par_8
Z	<---	Y2	.171	.117	1.467	.142	par_9
Z	<---	Y1	.240	.134	1.791	.073	par_13

Table 4 shows that the Flexible Work Arrangement (FWA) variable on the level of congestion has a p-value of 0.012 with a C.R. amounting to 2,514. This shows that FWA has a significant impact in reducing traffic congestion. Implementing FWA, like a work-from-home (WFH) policy during the COVID-19 pandemic, which is implemented optimally, can drastically reduce congestion levels. Working more flexibly minimizes heavy traffic activities as people work from home or arrange travel hours to avoid peak congestion. Furthermore, the p-value between the FWA variable and work stress is 0.859 with the C.R. value, of -0.177. This shows that FWA does not have a significant effect on work stress. Working more flexibly is not yet the main factor causing a person's stress because family factors can also be a cause of work stress.

The same results, based on testing between the level of congestion variable and work stress, have a p-value of < 0.001, with a C.R. amounting to 5,496. This shows that the level of congestion has a significant impact on work stress. Congestion on the road affects the activities of residents, especially workers whose working hours are pre-arranged, while a person's income is calculated based on working hours. When someone is late because of traffic jams, this affects stress and ultimately creates emotions on the road. Apart from that, the number of vehicle density results in increased pollution, thus affecting health. The p-value between the FWA variable and work productivity is 0.130 with the C.R. value amounting to 1.514. This shows that FWA does not significantly affect a person's work productivity. Some companies or institutions still do not agree with a more flexible work system, considering that direct coordination and communication are more effective.

The results of hypothesis testing between the work stress variable and work productivity have a p-value of 0.142 with a C.R. value amounting to 1,467. This shows that work stress does not significantly influence work productivity. Stress can build or reduce morale, depending on how the individual manages the stress. Finally, the test between the level of congestion variable and work productivity has a p-value of 0.073 with a C.R. value amounting to 1,791. This shows that the congestion level has a less significant impact on work productivity. Currently, the congestion level has not been able to reduce someone's work enthusiasm to remain productive.

Interviews were carried out with informants to support and see the test results in more depth. Interviews were conducted via telecommunications with 5 (five) civil servants and banking employees who work in the Jabodetabek area every day. The questions/constructs used in the interviews related to previously established variables for the informants.

Table 4 Summary of Informant Interview Results

Question construct	Response
The relationship between FWA and traffic jams	<p>A more flexible work system like WFH during the Covid-19 pandemic can reduce traffic jams on the roads by up to 80%, and make any trip smoother, unlike before the Covid-19 pandemic.</p> <p>However, traffic jams are much higher now than before COVID-19. The cause is not clear, and the size of the jams is now much worse than before. Perhaps the work targets are increasing due to a decrease in turnover during COVID-19.</p>
The Relationship between Work Stress and Traffic Jams	<p>One of the causes of stress at work is being stuck in traffic jams before work, making workers a little burdened and work uncomfortably. Congestion is very stressful, for example, during the roll call every Monday, which must be followed and attended. Workers must leave the house much earlier, at around 05.00, to avoid traffic jams.</p>
The relationship between FWA and work productivity	<p>FWA to increase work productivity cannot yet be said to be effective. Distributing work to several staff is difficult if it has to be done remotely. Explaining what work targets want to be conveyed is different from distributing work directly. So, if implementing WFH becomes a thing in the future, what is important for organizations to do is first prepare a technology system that supports the works.</p> <p>Apart from that, the leadership's ability to operate technology is very necessary. Thus, when receiving and sending tasks to staff remotely, they can explain to the subordinates. What is important is how the work target can be achieved. Moreover, the assessment measure is the main goal, and overtime costs are available.</p> <p>Flexible Working Hours cannot be implemented optimally in Indonesia because the technology is not yet ready or adequate.</p> <p>The implementation of a flexible work system in government office environments has not been repeated after COVID-19. However, I think working with this system is more effective and productive because creative ideas and innovations can usually be explored more easily.</p>
Relationship between FWA, Congestion, Work Stress, and Productivity	<p>Flexible working can be more effective in completing work, while reduced traffic jams can decrease work pressure.</p> <p>The government has taken steps to reduce congestion by introducing public transportation and the Odd-Even plate system. However, this still fails to reduce traffic jams because the density of people with activities is high. Even if the road is widened, it still cannot accommodate the number of vehicles.</p> <p>Apart from traffic jams, what sometimes makes a person stressed are family problems, such as children's sickness or other things making their mind less focused on work. On the other hand, working at home for too long will lead to some work being difficult to achieve due to children or other distractions. However, with the working from home method, many things can be done, such as working while looking after sick children/family, thus making employees feel better and not burdened by pressure from family and leaders at work, meaning there is a balance that can be achieved without sacrificing either one or the other. Thus, WFH needs to be balanced with WFO.</p>

Source: results of informant interviews, 2023

Referring to the results of data processing and testing as well as additional information from interviews with informants, the discussion can be described as follows:

The relationship between FWA and congestion level, work stress, and work productivity

The results of this research show that FWA reduced the level of traffic congestion. As in big cities throughout the world, congestion is experiencing a significant increase. This congestion causes many things, such as local air pollution, work delays, and distribution delays. The COVID-19 pandemic caused many economic, political, and social problems, as well as a disruption to the operational transportation system. This drastically reduced the number of trips, but traffic conditions became relatively smooth. When the lockdown was eased again, traffic volumes approached normal levels, and congestion started to increase again. Therefore, a flexible working policy is certainly a good solution to reduce traffic jams and, at the same time, reduce air pollution in the Jabodetabek area, which has the highest level of pollution in Indonesia.

The results of research related to FWA in reducing traffic activity are supported by previous research, which states that WFH, one part of FWA, is a viable solution for reducing traffic congestion (Elldér, 2020). Moreover, there is potential to reduce traffic in developed cities in the future, and using ICT technology can reduce the need for people to move around (Hopkins & McKay, 2019). Interviews with informants resulted in the same thing: during the implementation of remote work, around 80% of traffic congestion was reduced. However, the advantage of this and previous research is the mixed method approach used and indicators of flexibility. This research uses flexible work methods in terms of time, job sharing, and remote work, while previous research merely focuses on working remotely.

Meanwhile, the test results in this research show that FWA had no impact on work stress and work productivity. Working flexibly certainly provides comfort, but this is temporary because working flexibly makes someone complacent about managing time in a disciplined manner. Especially in remote work or work from home, there is a debate between personal matters, such as family conditions at home and the work itself. Moreover, the main factors influencing work stress and productivity are organizational climate and satisfaction at work (Dávila Morán, 2023; Hoboubi et al., 2017).

Furthermore, this research is also supported by previous research stating that there are disadvantages of working flexibly, namely limited internet access, which is sometimes slow, household problems impacting work and coordination problems between colleagues, which are difficult to distribute (Ruth et al., 2021). The results of this research are also supported by previous research that shows that FWA has no significant effect on work stress (Maharani et al., 2020; Nur Ilma et al., 2022). Therefore, it can be said that work flexibility does not always provide positive things such as job success, but it has disadvantages. According to the interview results, the informant stated that working from home does not have an impact on employee productivity because the process of distributing work from leaders to subordinates is difficult to convey well. Moreover, they stated that distributing work directly makes it easier for subordinates to accept and

understand. Moreover, the implementation of the technology system is not adequate; meaning that work flexibility does not become a trigger for increased work productivity.

The relationship between the congestion level with work stress and work productivity

The level of traffic congestion can make workers stressed and frustrated; it can also reduce work productivity (Fonceca & Catherine, 2022). The results of this research show that the level of traffic jams influences work stress; every active worker is preceded by a quite tiring journey, one of which is traffic jams. Work stress can hurt employee health, physically and mentally. According to some sources, workplace stress can cause anxiety, burnout, depression, substance use disorders, and other mental health problems. Therefore, traffic jams may contribute to increased work stress.

The results of this research are in line with previous research stating that traffic jams have been proven to have a significant impact on work stress, causing reduced concentration and effectiveness due to frustration and loss of time due to traffic jams (Dananjaya Weerasinghe & Karunarathna, 2021; Somuyiwa et al., 2015b). The interview results show that traffic jams have been a burden on the mind, making it uncomfortable when working and reducing the ability to concentrate. Every day at work, workers will pass through this dense traffic, especially on Mondays when demands for attending ceremonial activities cannot be met because they are already stuck in traffic jams. Therefore, the government needs to make policies and decisions in certain areas with high levels of congestion by reducing private transportation on weekdays and then implementing maximum use of public transportation. Moreover, according to the average wage income, there should be good facilities and affordable costs.

Based on the test results, this research shows that the congestion level does not affect employee work productivity. Moreover, the interview results hint a little that today's workers prioritize achieving work targets according to the payment given, not making traffic jams an obstacle to productivity, and the costs given are in line with problems at work. Several sources state that a high economic level is a congestion level, indicating an area is active (Fattah et al., 2022; Sweet, 2014).

The relationship between work stress and work productivity

The results of this study show that work stress does not affect work productivity. Work stress is not always a trigger for workers to be unproductive; sometimes, they are under pressure because they can manage it well with support and motivation. This research is different from previous research, which shows that work stress is related to work productivity (de Oliveira et al., 2023; Halkos & Bousinakis, 2010; Sucharitha, 2020). The difference in research results could be because this research uses an indicator approach to office environmental conditions, and a family approach is more dominant since sometimes family problems trigger stress at work. In contrast, previous research focused more on the environment and conditions of the workplace. Moreover, it has been proven that family pressure is not the main factor influencing work. The results of the previous interview slightly mentioned that working at home while looking after children is quite

stressful but does not reduce performance in completing work, meaning workers can complete work while looking after and playing with their family. This was proven during COVID-19 when almost all work was done at home, but it was not a problem to complete the work, and even family problems did not have an impact on work productivity. Therefore, work stress merely determines whether each person is productive.

Flexible working arrangements (FWA) have a significant impact on overcoming some of the challenges of modern work. First, FWA has proven effective in reducing congestion levels. With flexibility in time and place of work, employees can avoid busy work times, which overall helps reduce traffic volumes and congestion on the roads. Apart from that, FWA also contributes to reducing work stress through reducing congestion. Employees with the freedom to set their work schedules can better balance work and personal life. They can avoid traffic jams, adapt work to personal needs, and have more control over their daily routines, reducing stress levels. Even though FWA has succeeded in reducing traffic jams and thereby reducing work stress, this does not directly increase work productivity. This shows that other factors, such as motivation and work commitment, play a role in determining employee productivity apart from stress levels and flexible working hours.

Conclusion

Flexible working arrangements (FWA) have an important role in reducing traffic jams, and traffic jams have the impact of increasing a person's work stress. Work activity is high, so when the density on the roads increases and causes traffic jams, reducing this activity by working flexibly, whether flexible time, remote working, or job sharing, will certainly affect traffic jams. Meanwhile, reducing traffic congestion has a positive impact on workers and can decrease work stress. Despite flexible working arrangements (FWA), congestion and work stress do not influence productivity.

This research has many limitations, and future researchers must explore it more deeply. First, we acknowledge the limitations in the research methodology, specifically related to the limited number of respondents and the inability to meet informants in person, which resulted in less in-depth interviews. This could introduce potential bias in the data collected and make it difficult to obtain more comprehensive feedback on the key issues in this research. Second, we recognize that the indicators used in this study may be insufficient, and the references supporting this research are also limited, particularly concerning flexible working and its association with productivity through the lens of traffic congestion. Since few studies have explored this connection, we hope future researchers will consider these aspects for further research on the same issue.

The results of this research are a source and basis for guidance in structuring more efficient and effective work patterns. Since the COVID-19 pandemic, flexible working arrangements have gained prominence as a means to reduce traffic congestion across Indonesia, decreasing pollution levels. Traffic congestion is often perceived as a negative

indicator in evaluating a country's development, primarily due to the dominance of private vehicles over public transportation.

As the world transitions to post-pandemic norms, it is essential to consider how these findings might evolve. The potential for sustained changes in work arrangements, such as the continued adoption of flexible working, could have significant implications for future workforce dynamics. A forward-looking perspective is necessary to explore how these shifts may influence long-term congestion patterns, environmental impact, and the broader socio-economic landscape in Indonesia and beyond. Apart from that, traffic jams have an impact on physical and mental health, one of which is causing work stress. Thus, with a flexible work arrangement policy that is well managed, the support of facilities will provide benefits for agencies/institutions, especially for Indonesia, which is notorious for its congestion.

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