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Analysis of the Impact of the Work Environment Affected by Parking Facilities and Traffic Logs in the University of Brawijaya

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Abstract:- This study aims to analyze the impact of the work environment of Brawijaya University which is influenced by parking facility variables and congestion variables as mediating variables, where an appropriate settlement model is needed so that it can produce solutions in the form of policies that may be applied to the campus area of Brawijaya University. The data used in this study is primary data collected through a questionnaire and distributed to all respondents who were selected as samples. The population in this study were all UB employees and the research sample was lecturers and students of five faculties (engineering, agriculture, medicine, administrative science, and economics) with the consideration of the largest number of lecturers and students. Sampling was carried out using a purposive sampling technique and the analytical method used was Structural Equation Modeling (SEM). The results showed that the most dominant variable was Parking Facilities, where the strongest indicator in measuring Parking Facilities was the affordability of parking locations to work areas. In addition, in the SEM model, it is proven that there is a significant and positive influence between the variables of Parking Facilities on Congestion, Parking Facilities on the Impact of the Work Environment, Congestion on the Impact of the Work Environment, and Parking Facilities on the Impact of the Work Environment mediated by the variable Congestion. The originality of this study is by using the variable Congestion as a mediating variable between Parking Facilities and the Impact of the Work Environment at Brawijaya University.
Keywords: Congestion, Campus, SEM, Parking Facilities, Work Environment Impact.

1.   Introduction

The environment is something that cannot be separated from human life. This is because where a person lives, a different environment will be created, and vice versa. In this day and age, it is common to find environmental damage by humans with reasons of using it to produce more materials, efficient use of time, and use of sophisticated technology, where this action will indirectly damage the environment and threaten the survival of humans themselves. One of them is the result of the rapid development of transportation.

The development of transportation today can have an impact on the environment and human life. The existence of transportation as a supporter of human movement will have positive implications for the increasing growth and development of a city. However, the development of transportation so far has not only provided positive but also negative implications, such as congestion, chaos, and traffic accidents.

Traffic congestion that is commonly found in every urban area, especially in business locations, schools, or campuses, is one of the disturbances to modern life in large-scale cities, including Malang City. For most of us, getting stuck in traffic is a waste of time(Small et al., 2014). Some conditions that can trigger and exacerbate

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traffic congestion are population growth, increased number of vehicles, low road capacity, poor urban planning and supervision, and economic growth.(Kesuma et al., 2019). In the city of Malang, according to data from the Central Bureau of Statistics for the City of Malang, population growth increases 0.27 percent every year from the 2010-2022 period and there is an increase in the number of vehicles.

The impact of congestion that occurs according to (Ponrahon et al., 2019) is that the resulting traffic circulation can have indirect effects on the environment such as noise pollution which can cause noise during lectures/work environment when traffic jams occur during rush hour, loss of natural environment and greenery, visual environmental degradation by improper or illegal parking, air pollution from motorized vehicles moving or in idle mode due to traffic jams, energy consumption, regulation of land use and health effects. These conditions can damage the concept of Green Open Space which has been regulated in the 1945 Constitution of the Republic of Indonesia, in particular Article 28 H Paragraph (1) concerning a person's right to a good and healthy environment (Aris & Ashar,

Congestion occurs, one of which is the result of minimal parking space, therefore it is important to manage and compile parking space requirements. In minimizing traffic jams that occur due to a lack of parking space, Universitas Brawijaya has issued a circular letter to all new students not to bring vehicles and to park vehicles on campus for one semester. However, this is often violated, because there are still many new students who bring private vehicles and park them in the campus area, some of them also park them around Universitas Brawijaya (UB), causing severe traffic jams at certain hours. The lack of supervision by security guards/parking guards in each faculty and the absence of a warning given to students who violate it makes students indifferent to these regulations. Therefore, the rectorate or policymakers can evaluate the policy and provide stricter sanctions if the policy is violated. One of them is the recommendation to resubmit the policy of having a sticker for UB residents to support the new student policy not to bring vehicles to campus, to minimize traffic jams that occur in the Universitas Brawijaya area.

Increasing vehicle queues or congestion within campuses raises urgent concerns for staff as well as students, distorting their time schedules to reach classes and office buildings on time (Kutty, et al., 2021). Therefore the problem of congestion on campus must be addressed immediately because it interferes with the comfort of teaching and learning and other activities both indoors and outdoors. There is smoke from motorized vehicles which causes air pollution that interferes with activities outside the campus, the sound of vehicles continuing to turn on and the sound of horns disrupts teaching and learning activities and the loss of concentration of workers in the campus environment, and many more. From these problems.

In the context of the University of Brawijaya in Malang City, issues of mobility take center stage. With the rapid growth in the number of students and vehicles, traffic congestion has become a significant hindrance in the campus routine. Air pollution from constantly active vehicles, disruptive noise affecting the teaching and learning process, and worsening environmental impacts have sparked demands for change. However, innovative breakthroughs and awareness of sustainable transportation are on the rise. Solutions like ride-sharing, efficient parking concepts, and proactive student involvement in promoting sustainable mobility offer fresh hope in addressing these challenges, creating a more environmentally friendly and efficient campus

2.   Literature Review
A.   Parking Facilities
Parking is a stationary state of a vehicle that is not temporarily stopped with the driver not leaving the vehicle. Parking is a necessity for vehicle owners who wants their vehicles parked in a place where the place is easy to reach. Types of parking facilities are classified according to the placement and divided into two parking arrangements namely (Nourinejad et al., 2018):

1.   On-street parking
Roadside parking takes place along the road with or without widening the road for parking barriers and visitors this type of parking is very detrimental if not managed properly and also locations with high intensity of land use are less profitable

2.   Off-street parking

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This parking method occupies a certain parking lot both in an open yard and in a special building and is planned based on applicable standards and does not use the road body. The parking position can be done like on-street parking, only the parking angle setting is affected by the area and shape of the parking lot. Off-street parking is expected to provide a better level of security from vandalism and theft.

According to the type of parked vehicle, several types of parking aim to facilitate service, namely:

a.　　　Parking for non-engined two-wheeled vehicles (bikes).

b.　　　Parking for motorized two-wheeled vehicles (motorcycles).

c.　　　Parking for four-wheeled vehicles, or more, and engines (cars).

According to the purpose of parking, there are also several types, as follows:

a.　　　Passenger parking is parked to raise or lower passengers.

b.　　　Goods parking is parking for loading or unloading goods.

Both are separated so that each activity does not wait for each other. The type of ownership and operation of parking can be classified into:

a.　　　 Parking is owned and operated by the Regional Government.

b.　　　Parking belongs to the Regional Government and those who operate are private.

c.　　　Privately owned and operated parking.

B.　　　Congestion

If the traffic flow approaches capacity, congestion starts to occur. Congestion increases when the current is so large that vehicles are very close to each other. Total congestion when the vehicle has to stop or move slowly (Tamin, 2000). Traffic congestion is a condition in the road network that occurs along with an increase in usage, characterized by slower speeds, longer travel times, and increased queues of vehicles. The most common example is the physical use of the road by vehicles. When the traffic demand is large enough that the interaction between vehicles slows down the speed of the traffic flow, this results in some congestion. When demand approaches road capacity (or intersections along the way), extreme traffic congestion occurs.

There are several important impacts or trends in urban transportation services (Rahardjo & Adisamita, 2011; Sholihah et al., 2019), namely:

a.　　　Relatively better accessibility.

b.　　　 The smoothness of road traffic is still lacking.

c.　　　The disproportionate number of motorized vehicles with the length of the road available, and

d.　　　The low discipline of road users.

These four trends have caused urban traffic congestion to become increasingly serious, which is an urgent demand to be addressed immediately. Efforts to overcome the problem of traffic congestion must be carried out quickly and precisely in its implementation. Traffic jams for motorized vehicles have negative impacts in various aspects, namely disrupting the smooth flow of traffic, making travel times longer, fuel consumption increasing, and causing air pollution. Traffic congestion will disrupt the smooth flow of urban traffic, the impact will be longer travel times, as a result arriving at the destination late. In addition, creating an uncomfortable atmosphere is tiring, and reduces work concentration. This will reduce one's productive time.

The large number of people choosing to use private vehicles rather than public transportation can also cause traffic jams because the number of vehicles increases. One of the reasons for not choosing public transportation is because the condition of some urban public vehicles is still unsatisfactory, and they feel less comfortable and safe. The large number of motorists who choose to use private vehicles results in an increase in the budget that must be spent by someone to purchase fuel.

C.　　　Work environment

The work environment can be interpreted as the overall work facilities and infrastructure around employees who are doing work which can affect the implementation of work. The work environment includes the workplace, facilities, work aids, cleanliness, lighting, and calm, including the working relationship between the people in that place. The work environment can also be interpreted as everything that is around workers who can influence them in carrying out various assigned tasks (Sholihah et al., 2021).

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Prawirosentono (2002) explains that there are many benefits of creating a work environment, including:

1.   Minimizing the possibility of work accidents that result in losses.

2.   Optimizing the use of the equipment and raw materials more productively and efficiently

3.   Creating conditions that support the comfort and excitement of work, thereby increasing the level of work efficiency. Due to its increased productivity and increased efficiency, it can ensure the continuity of production processes and business ventures.

4.   Directing the participation of all parties to create a healthy and good work climate as a foundation that supports the smooth operation of a business.

The work environment can be beneficial in creating work passion so that work productivity increases (Siahaan & Sholihah, 2020). Therefore, a conducive work environment can indirectly improve employee performance and productivity.

3.   Methods

This study uses the variable Parking Facilities (X) as an independent variable which is a variable that influences the dependent variable. The dependent variable is the variable that is influenced by other variables, in this study, namely the Work Environment variable (Y2) and the Congestion variable (Y1) as mediating variables, namely the variables that affect the dependent variable and are influenced by the independent variables. The data used in this study is primary data collected through a questionnaire and distributed to all respondents who were selected as samples. The population in this study is all UB employees consisting of lecturers and students. The total population in this study was 7,280 people consisting of 2,341 lecturers and 4,939 students. The sample in this study was UB residents consisting of lecturers and students from five faculties (engineering, agriculture, medicine, administrative science, and economics) with the consideration of the largest number of lecturers and students. This sampling was carried out based on the researcher's considerations because not all samples had criteria that matched the phenomenon under study. Therefore, the researcher chose a purposive sampling technique which determined certain considerations or criteria which had to be fulfilled by the samples used in this study, namely: This sampling was carried out based on the researcher's considerations because not all samples had criteria that matched the phenomenon under study. Therefore, the researcher chose a purposive sampling technique which determined certain considerations or criteria which had to be fulfilled by the samples used in this study, namely: This sampling was carried out based on the researcher's considerations because not all samples had criteria that matched the phenomenon under study. Therefore, the researcher chose a purposive sampling technique which determined certain considerations or criteria which had to be fulfilled by the samples used in this study, namely:

1. Respondents have at least 1 year in UB

2. Willing to be a research respondent

3. Respondents filled out all the questions completely

The analytical method used is Structural Equation Modeling (SEM) (Solimun, et al., 2017), assuming linearity for each relationship. The following research hypothesis models are presented in this study:
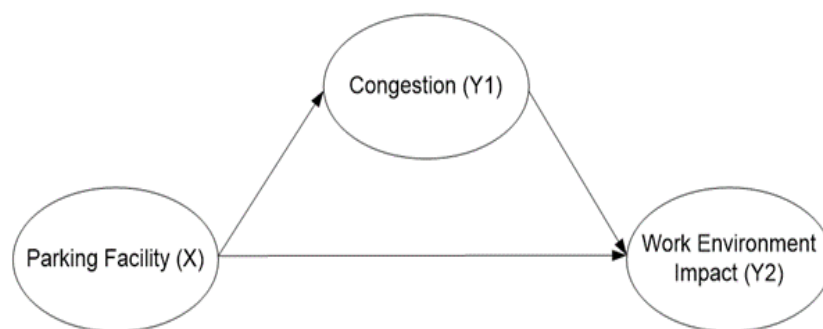

Figure 1. Research Hypothesis Model

Based on the research hypothesis model in Figure 1, the research hypothesis can be formulated as follows:

H1: Parking Facilities significant effect on Congestion

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H2: Parking Facilities significant effect on the Work Environment Impact

H3: Congestion significant effect on the Work Environment Impact

H4: Parking Facilities significant effect on the Impact of the Work Environment through the variable Congestion

4. Results and Discussion

a. Percentage of Live Forest Plants

The conceptual framework model used in this study is shown in Figure 1. Within this conceptual framework, there are three direct relationships and one mediating relationship. In this sub-chapter, testing or checking the goodness of fit has been carried out. The goodness of the model can be used to determine how much the variation in the value of the dependent variable can be explained by the independent variables included in the model. SEM analysis in this study was carried out with the help of WarpPLS software. The results of the SEM analysis test are presented in Table 1.

Table 1. Results of the Goodness of Fit Model

No	Test Name	Test Criteria	Test results	Decision
1	Average path coefficient	Significant if P < 0.05	APC = 0.422 P = < 0.001	Significant
2	Average R-squared	Significant if P < 0.05	ARS = 0.349 P = <0.001	Significant
3	Average adjusted R-squared	Significant if P < 0.05	AARS = 0.347 P = <0.001	Significant
4	Average Block VIF	Accepted if AVIF ≤ 5 ideal if AVIF ≤ 3.3	AVIF = 1.242	Ideal
5	Average full collinearity VIF	Accepted if AFVIF ≤ 5 ideal if AFVIF ≤ 3.3	AFVIF = 1,490	Ideal
6	Tenenhaus GoF	Small if GoF ≥ 0.1 medium if GoF ≥ 0.25 large if GoF ≥ 0.36	GoF = 0.520	large
7	Sympson's paradox of ratios	Accepted if SPR ≥ 0.7 ideal if SPR = 1	SPR = 1,000	Acceptable
8	R-squared contribution ratio	Accepted if RSCR ≥ 0.9 ideal if RSCR = 1	RSCR = 1,000	Acceptable
9	Statistical suppression ratio	Accepted if SSR ≥ 0.7	SSR = 1,000	Acceptable
10	Nonlinear bivariate causality direction ratio	Accepted if NLBCDR ≥ 0.7	NLBDR = 1,000	Acceptable

Based on Table 1, the p-value for the Average path coefficient (APC), Average R-squared (ARS), and Average adjusted R-squared (AARS) is less than 0.05. This shows that the research model has been considered good. In addition, the Average block VIF (AVIF) value of the research model reaches 1,350 which is included in the ideal criteria. Meanwhile, the Average full collinearity VIF (AFVIF) score reaches 1,242 which is included in the ideal criteria. As for valueTenenhaus GoFis known to be 0.520 which is included in the large category.

Sympson's paradox ratio (SPR) and R-squared contribution ratio (RSCR) in Table 1 also show acceptable values, namely 1,000. Furthermore, the Statistical suppression ratio (SSR) value shows a value of 1,000 explaining that the model is acceptable and the Nonlinear bivariate causality direction ratio (NLBCDR)shows more than 0.7 value indicating that the model is acceptable. Of the 10 Goodness of Fit tests, all criteria have been fulfilled, so it can be said that the model and research data can be analyzed further. That is, based on the description of the ten different tests described earlier, it can be concluded that the model is a fit. Next, perform the calculation of R2 which is presented in Table 2.

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Table 2. Value of the R-Squared Model

Variable	R2
Congestion (Y1)	0.192
Work Environment Impact (Y2)	0.507

Apart from using the ten criteria, the goodness of the model can also be seen through the value of R2. In Table 2 it is known that R2 for Congestion (Y1) is equal to 1.92% (0.192). This means that in the research model, it is known that the Parking Facility variable (X) can explain the variation in valuesCongestion (Y1) of1.92%. Furthermore, it can also be seen that R2 for Work Environment Impact (Y2) by 50.7% (0.507). That is variables work Environment Impact (Y2) able to explain the value of the variance by the independent variables, namely Parking Facilities (X) and Congestion (Y1).

Based on the previously available R2 value, the Q2 value can be calculated. The Q2 value is a measure of how well the observations made give results to the research model. With Q2 > 0, it can be concluded that the model has predictive relevance. The greater the value of Q2, the better the model. The followings are the calculation formula and Q2 calculation results for this research model.

$$Q2 = 1 - ((1 - R2Y1)(1 - R2Y2))$$
$$= 1 - ((1 - 0.192)(1 - 0.507))$$
$$= 0.602$$

Based on these calculation results, this research model can explain the empirical phenomena (systems) studied by 60.2%. Thus, this research model has relatively good predictive relevance

b.   High Growth of Forest Plants

Based on these calculation results, this research model can explain the empirical phenomena (systems) studied by 60.2%. Thus, this research model has relatively good predictive relevance.

Table 3. Outer Research Variable Model

Variable	Indicator	Loading Factor	P-values	Conclusion
Parking Facility (X)	Parking Location (X1.1)	0.877	<0.001	Significant
	Ease of Access to Parking (Availability of Parking Areas) (X1.2)	0.851	<0.001	Significant
	Affordability (X1.3)	0.904	<0.001	Significant
Congestion (Y1)	Number of vehicles(Y1.1)	0.642	<0.001	Significant
	Speed(Y1.2)	0.963	<0.001	Significant
	Accessibility (Y1.3)	0.654	<0.001	Significant
	Road Network(Y1.4)	0910	<0.001	Significant
Work Environment Impact (Y2)	Physical Work Environment (Y2.1)	0.924	<0.001	Significant
	Non-Physical Work Environment (Y2.2)	0.956	<0.001	Significant
	Work Motivation (Y2.3)	0.952	<0.001	Significant
	Work Stress Level (Y2.4)	0.971	<0.001	Significant
	Physical Condition (Y2.5)	0962	<0.001	Significant

Table 3 shows that the three indicators of the Parking Facility variable (X) namelyParking Location (X1.1), Ease of Access to Parking (Availability of Parking Areas) (X1.2), and Affordability (X1.3)significant as a measure of Parking Facilities (X). From the magnitude of the highest factor loading coefficient obtained that Affordability (X1.3) is the strongest measurement of Parking Facility (X1). That is, Parking Facility (X1), mainly seen from Affordability (X1.3) of parking space.

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Next, indicators Number of Vehicles (Y1.1), Speed (Y1.2), Accessibility (Y1.3), and Road Network (Y1.4) are stated as significant in measuring variable Congestion (Y1). The highest loading factor value is obtained on the indicatorSpeed (Y1.2). This means that the heightindicatorSpeed (Y1.2) is the main indicator showing variable Congestion (Y1).

The five indicators of the Work Environment Impact variable (Y2) namely the impact of the Physical Work Environment (Y2.1), Non-Physical Work Environment (Y2.2), Work Motivation (Y2.3), Work Stress Levels (Y2.4), and Physical Conditions (Y2.5) were declared significant as a measure variable Work Environment Impact (Y3). Indicator The level of Work Stress (Y2.4) is the strongest measure of the variable Work Environment Impact (Y2) because it has the highest factor loading coefficient. This means that the assessment variable Work Environment Impact (Y2) is seen from the height of Work Stress Level (Y2.4) UB residents.

c.   Growth InnerModel

The second stage in the WarpPLS research is to measure the inner model or also called the structural model. The structural model represents the relationship between variables. The structural model coefficients state the magnitude of the relationship between one variable and another. There is a significant influence between one variable and another if the p-value <0.05. There are two influences in WarpPLS, namely direct and indirect effects. Table 4 and Figure 2 present the test results for direct and indirect effects.

Table 4. Assessment of Direct and Indirect Effects

| hypothesis				Coeff.	P-value	Conclusion
Independent	→		dependent			
		Direct Influence				
Parking Facility (X)	→H1		Congestion(Y1)	0.438	<0.001	Significant
Parking Facility (X)	→H2		Congestion(Y1)	0.519	<0.001	Significant
Congestion (Y1)	→H3		Work Environment Impact (Y2)	0.310	<0.001	Significant
		Indirect Influence				
Parking Facility (X)	→H4	Congestion (Y1)	→H4 Work Environment Impact (Y2)	0.136	<0.001	Significant
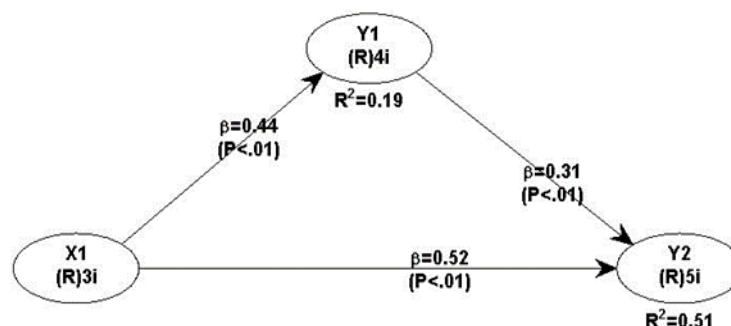
Figure 2. SEM models

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The results of testing the direct and indirect influence hypotheses based on Table 4 and Figure 2 are as follows:

H1 Accepted. There is a positive and significant influence of Parking Facilities (X) on congestion (Y1). That is, the better the Parking Facility (X), the more conditioned it isCongestion(Y1), with a coefficient of 0.438 and a p-value of <0.001.

H2 Accepted. There is a positive and significant influence of Parking Facilities (X) on Work Environment Impacts (Y2). That is, the better the Parking Facility (X) the more impact it has on the Work Environment (Y2), with a coefficient value of 0.519 and a p-value of <0.001.

H3 Accepted. There is a positive and significant influenceCongestion(Y1) on Work Environment Impacts (Y2). That is the more conditioned Congestion (Y1) the more impact on the Work Environment (Y2) with a coefficient value of 0.310 and a p-value of <0.001.

H4 Accepted. There is a positive and significant influence of Parking Facilities (X) on Work Environment Impacts (Y2) mediated by variables Congestion (Y1). That is, the higher the Parking Facility (X) and Congestion (Y1), the more impact on the Work Environment (Y2), with a coefficient value of 0.136 and a p-value of <0.001. It can be said that the Congestion variable (Y1) has a significant effect as a mediating variable on the relationship between Parking Facilities (X) and Work Environment Impacts (Y2). Thus it can be concluded that the Work Environment Impact (Y2) is not only directly influenced by Parking Facilities (X), but is also mediated by variables Congestion(Y1).

5.   Discussion

The number of new students at Universitas Brawijaya has increased significantly from 2017 to 2019 with the number of cars entering from the gates of Universitas Brawijaya amounting to 9,795 units and the number of cars leaving 8,490 units, the number of motorcycles entering Universitas Brawijaya is 35,363 units and 28,179 units came out. Meanwhile, the capacity of car parking in UB is 624 Parking Space Units (SRP), while the capacity of motorbikes is 5,312 SRP. The need for car parking space is 693 SRP, and the need for motorcycle parking space is 5,902 SRP. This is reinforced by the results of the questionnaire where 61.4% of the respondents stated that the respondents always encountered the condition of Brawijaya University which was full of vehicles. This of course causes congestion and delays in traffic flow which causes inconvenience to road users in the Brawijaya University area and adds to the chaos in the campus area. In line with the growth in the number of motorized vehicles, motorized vehicle exhaust gas as a source of air pollution in the campus environment has also increased where its contribution can reach 60-70%. According to Haruna et al. (2019), although motor vehicle exhaust consists of compounds that are not harmful such as nitrogen, carbon dioxide, and water vapor, they also contain other compounds with a large amount of exhaust gas which can be harmful to health and the environment. In line with the growth in the number of motorized vehicles, motorized vehicle exhaust gas as a source of air pollution in the campus environment has also increased where its contribution can reach 60-70%. According to Haruna et al. (2019), although motor vehicle exhaust consists of compounds that are not harmful such as nitrogen, carbon dioxide, and water vapor, they also contain other compounds with a large amount of exhaust gas which can be harmful to health and the environment. In line with the growth in the number of motorized vehicles, motorized vehicle exhaust gas as a source of air pollution in the campus environment has also increased where its contribution can reach 60-70%. According to Haruna et al. (2019), although motor vehicle exhaust consists of compounds that are not harmful such as nitrogen, carbon dioxide, and water vapor, they also contain other compounds with a large amount of exhaust gas which can be harmful to health and the environment.

The increase in the growth rate of motorized vehicles from year to year in Universitas Brawijaya which is increasing needs to be reduced in the hope that it will have implications for reducing vehicle exhaust emissions. The reduction procedures and processes certainly require several gradual and firm mechanisms. Some efforts that can be made to reduce the level of air pollution are:

1. Increasing Green Open Spaces as environmental engineering with pollutant absorbing plants and adding green belts around the UB environment which is dense with accumulation of vehicle exhaust gases

2. Improving traffic management toward environmentally sustainable transportation

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3. Restricting private vehicles from entering the streets around campus. This can be done in some way by limiting the number of vehicles or concentration of parking areas at several points and enforcing motorized vehicle-free regulations in the area of Brawijaya University.

4. Increasing the use of bicycles through special programs (eg green bikes at UB campus, bike to school, and bike to work) followed by the provision of bicycle lanes, and bicycle sections in Universitas Brawijaya.

Based on the results of the SEM analysis, it was found that there is a significant and positive influence between Parking Facilities on Congestion. That is, the better the parking facilities, the more conditioned the level of congestion at Universitas Brawijaya. Shafiei et al. (2023) entitled "Impact of Self-Parking Autonomous Vehicles on Urban Traffic Congestion". The research shows that distance-based pricing schemes can effectively limit the use of PAVs and reduce traffic congestion, especially in urban centers and suburban suburbs. Furthermore, the results obtained show that there is a significant influence between Parking Facilities on Work Environment Impacts. That is, the better the parking facilities, the better the impact on the work environment. This is in line with research by Nugraha et al., (2019) entitled "Pengaruh Kualitas Pelayanan dan Fasilitas Lahan Parkir terhadap Kepuasan Civitas Kampus". The results showed that the quality of service and parking facilities had a significant effect on the satisfaction of the campus community. And based on the results of SEM analysis, the result shows that there is a significant influence between Congestion and the Impact of the Work Environment. That is, the more conditioned the level of congestion in the Brawijaya University area, the better the impact on the work environment. This supports the research of Somuyiwa et al. (2015) entitled "Analysis of the Cost of Traffic Congestion on Worker's Productivity in a Mega City of a Developing Economy". This study concludes that there is an inverse relationship between traffic congestion and worker productivity, which means that an increase in the level of traffic congestion will lead to lower productivity. Therefore.

6.   Conclusion

The increase in the growth rate of motorized vehicles from year to year in Universitas Brawijaya which is increasing needs to be reduced in the hope that it will have implications for reducing vehicle exhaust emissions. The reduction procedures and processes certainly require several gradual and firm mechanisms. The most dominant variable is Parking Facilities, where the strongest indicator in measuring Parking Facilities is the affordability of parking locations to work areas. Thus, the indicator of the affordability of parking locations can be taken into consideration for Universitas Brawijaya to be able to provide comfortable and strategic parking lots for campus residents. In addition, in the SEM model, it is proven that there is a significant and positive influence between the Parking Facilities variable on Congestion,

Research suggestions for Brawijaya University to make new policies to reduce the number of vehicles and improve the road network so that it can condition the congestion that occurs. Efforts to overcome the problem of congestion must be carried out quickly and precisely in its implementation. Congestion can have a negative impact in various aspects, namely disrupting the smooth flow of traffic, longer travel times, increasing fuel consumption, and causing air pollution. Congestion also results in longer travel times, as a result of arriving at the destination late. In addition, creating an uncomfortable atmosphere is tiring, and reduces work concentration. This will reduce one's productive time. Suggestions for future research are that this research uses 5 faculties with the highest number of lecturers and students from 16 faculties in Brawijaya University. Therefore, future research can add other faculties so that the results of the multigroup analysis produced are more numerous and varied.

The continuous increase in the number of motorized vehicles year by year at Universitas Brawijaya raises serious concerns regarding its environmental impact and congestion within the campus. Reducing this growth poses a significant challenge that requires strong mechanisms and policies. One of the factors with a significant influence is the availability of parking facilities, with the affordability of parking locations being the most crucial indicator in its measurement. Therefore, it is essential for Universitas Brawijaya to consider providing affordable and strategic parking facilities for the campus community. Structural Equation Modeling (SEM) studies also demonstrate a significant and positive relationship between parking facilities and congestion, underscoring the importance of effective parking management in reducing congestion. Proper policy measures and further research

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involving more faculties can serve as the initial steps in addressing this issue and creating a more sustainable and comfortable campus environment for the entire campus community.

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