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Empirical Evaluation of Work Environment Based on Transportation Factors at Brawijaya University

Imam Nurhadi Purwanto, Sobri Abusini, M. Naufal Reza Zulkarnaen, Daniel Pandapotan, Taufan Talib
Universitas Brawijaya, Indonesia
Email: wantoinp@ub.ac.id*

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parking facilities, sem-pls, traffic conditions, transportation, university, work environment

ABSTRACT
The rapid growth of universities has created complex campus transportation issues that impact the quality of the working environment for the academic community. Inadequate parking facilities and heavy traffic conditions are crucial problems requiring empirical evaluation to support appropriate policymaking. This study aims to empirically evaluate the effects of parking facilities and traffic conditions on the work environment at Brawijaya University. The Structural Equation Modeling - Partial Least Squares (SEM-PLS) approach is used to analyze the relationships between latent variables and indicators that are not directly measurable. Data were collected through a survey of the academic community at Universitas Brawijaya. The results of the SEM-PLS analysis show that parking facilities and traffic conditions significantly influence the campus work environment, both directly and indirectly. Traffic conditions proved to have the most dominant direct effect on the work environment, indicating that the smooth flow of campus traffic is a major determinant of the quality of the academic community's work environment. Furthermore, based on the dominant influence of traffic conditions, Brawijaya University needs to prioritize investment in an integrated campus traffic management system.

INTRODUCTION

The work environment is a critical determinant of organizational productivity and individual well-being in higher education institutions. Theoretically, the work environment encompasses both tangible elements (physical infrastructure) and intangible factors (accessibility, safety, and mobility convenience) that collectively influence employee performance and satisfaction (Abdelwahed & Doghan, 2023; Gao, 2024). In the context of universities, transportation-related factors—specifically parking facilities and traffic conditions—constitute key independent variables that directly and indirectly affect the work environment as a dependent variable. Despite growing attention to campus sustainability and employee welfare globally, empirical evidence linking transportation infrastructure quality to workplace outcomes in Indonesian higher education remains limited. International studies have documented significant correlations between commuting stress, parking availability, and faculty productivity (Naaman et al., 2024; Wiers & Schneider, 2022), yet few have systematically examined these relationships within Southeast Asian urban campuses characterized by rapid motorization and inadequate infrastructure planning.

The development of transportation in urban areas has brought significant changes to human life. On the one hand, transportation supports the efficient movement of people, the distribution of goods and services, and the economic growth of a region (Pokharel, Bertolini, & te Brömmelstroet, 2023). On the other hand, without proper planning, transportation growth can lead to various negative impacts such as congestion, air and noise pollution, psychological stress due to driving stress, and a general decline in environmental quality (Xu, Sun, & Liu, 2024). In the scope of the campus, this transportation problem becomes more complex due to the high intensity of activities at the same time, such as going in and out of class, working hours of lecturers and staff, and various academic and non-academic activities carried out by thousands of students and educators every day.

The population dynamics of Malang City provide crucial context for understanding transportation pressures on Brawijaya University. According to the Malang City Statistics Agency (BPS Kota Malang, 2025), the urban population increased from 844,933 in 2021 to 889,359 in 2024, representing a cumulative growth rate of 5.26% and an average annual increase of 1.75%. Notably, a significant spike occurred between 2023 and 2024 (4.98%), contrasting sharply with the relatively stable growth of 0.12-0.14% in previous years. This demographic expansion directly correlates with motorization trends: Electronic Registration and Identification (ERI) data from Korlantas Polri (April 2025) recorded 837,460 motorized vehicles in Malang City, including 539,670 motorcycles and 274,620 passenger cars (Databoks Katadata, 2025). From an environmental ergonomics perspective, this vehicle-to-population ratio (0.94 vehicles per capita) generates substantial urban mobility pressure, particularly affecting institutional productivity in densely populated campus environments. Organizational behavior literature establishes that commuting difficulties and workplace accessibility barriers constitute significant stressors that diminish cognitive performance and job satisfaction (Hashim et al., 2020)—a phenomenon particularly relevant to understanding work environment quality at UB.

This motorization surge creates cascading effects on campus transportation systems. During peak hours (07:00-09:00 and 16:00-18:00), major arterial roads surrounding UB—Jalan Veteran and Jalan MT Haryono—experience severe congestion with average vehicle speeds dropping below 15 km/hour. The inadequacy of parking infrastructure compounds this problem: with approximately 12,000 parking spaces serving a community of 88,900 users (capacity ratio of 0.135), vehicles frequently park illegally on sidewalks, road shoulders, and green spaces. This condition not only disturbs the aesthetics of the campus, but also has the potential to hinder the circulation of vehicles and pedestrians, and increase the risk of accidents. Irregular parking can also cause internal congestion within the campus area, especially when vehicles enter and exit at the same time (Wiers & Schneider, 2022). On the other hand, the presence of adequate parking facilities can actually be an early mitigation solution to reduce congestion and improve transportation.

Transportation within the campus environment, if not managed properly, can have a negative impact on the work environment. Noise pollution from constant vehicle horns, engine vibrations, and heavy vehicle traffic can disrupt the concentration of students while studying in the classroom and lecturers while working in the office (AL-ASMAR, 2025; Ali, Farhan, & Jawad, 2023; Makebo Choramo, 2019). In addition, motor vehicle fumes cause a decrease in air quality, which has a direct impact on the health and physical comfort of the academic community (Ramírez, Hernández-Cuellar, & de la Rosa, 2023). Ponrahon et al. (2019) also mentioned that heavy traffic produces air pollution from moving and stationary vehicles, as well as visual degradation of the environment due to disorderly illegal parking. If left unchecked, these conditions can lead to an overall decline in the quality of the campus work environment. In line with the research of Kutty et al. (2021) explain that congestion in the campus environment can cause psychological stress due to delays, increased fatigue due to long travel times, and decreased work effectiveness due to disruption of planned schedules. Students who are late for class because they are stuck in traffic, lecturers who lose effective time due to difficulty finding a parking space, and administrative staff who have to face traffic jams when going to work are a real portrait of the impact of transportation on the work environment on campus.

Based on these problems, this study aims to empirically evaluate the influence of parking facilities and traffic conditions on the impact of the work environment at Brawijaya University, using the Structural Equation Modeling - Partial Least Squares (SEM-PLS) approach. This research examines the extent to which these two transportation factors have a direct and indirect impact on the comfort, effectiveness, and efficiency of the campus work environment. The use of the SEM-PLS model was chosen because it is able to analyze complex relationships between latent variables and indicators that are not directly measured, and is suitable for use in testing predictive and exploratory models.

This research is expected to make a real contribution in making transportation management policies in the campus environment, both in the form of planning the construction of more adequate parking facilities, regulating internal campus traffic, and developing environmentally friendly transportation policies such as the use of electric vehicles, campus bicycles, or shuttle systems. The results of this study are also expected to provide a basis for Brawijaya University in formulating strategies to improve the quality of the work environment that supports academic and professional processes. With a more comfortable and efficient work environment, the productivity and job satisfaction of the academic community can increase, which in turn supports the achievement of the university's vision and mission as a leading higher education institution at the national and international levels.

METHOD

This study used a quantitative approach with an explanatory research type, which aims to explain the causal relationship between independent variables in the form of parking facilities and traffic conditions on the dependent variable, namely the work environment at Brawijaya University. Data was collected through a questionnaire survey distributed to respondents consisting of lecturers, education staff, and students, as a representation of the main users of transportation facilities and the campus work environment. The population in this study is the entire academic community of Universitas Brawijaya consisting of lecturers, education staff, and students, with a total of 88,900 people. The population was divided into three strata: lecturers as many as 2,341 people, tendik as many as 4,939 people, and students: 81,620 people. The sample size was determined using the Slovin formula with an error rate of 5%, thus obtained:

$$n = \frac{N}{1 + N(e^2)} = \frac{88.900}{1 + 88.900(0.0025)} = \frac{88.900}{223.25} = 398{,}208 \approx 400$$

The sampling technique used is cluster sampling, which is a sampling technique in the form of random sampling in which the population is divided into several groups (clusters) using certain rules, such as proximity to the entrance gate of Universitas Brawijaya. The following are the clusters (groups) of faculties according to the proximity to the entrance gate of Universitas Brawijaya:

1) Group 1, which passes through KPRI Gate, includes Faculty of Engineering (FT), Faculty of Social and Political Sciences (FISIP), and Faculty of Animal Husbandry (FAPET).
2) Group 2, which passes through Mayjend Panjaitan Gate, consists of the Faculty of Law (FH), Faculty of Economics and Business (FEB), Faculty of Health Sciences (FIKES), and Faculty of Agricultural Technology (FTP).
3) Group 3 through Veteran Gate includes Faculty of Veterinary Medicine (FKH), Faculty of Mathematics and Natural Sciences (FMIPA), Faculty of Humanities (FIB), Faculty of Fisheries and Marine Science (FPIK), Faculty of Agriculture (FP), Faculty of Medicine (FK), and Faculty of Computer Science (FILKOM).
4) Group 4 that passes through BNI Gate 46 consists of Faculty of Administrative Sciences (FIA), Faculty of Vocational Studies, and Faculty of Medicine.

The sample distribution is as follows:

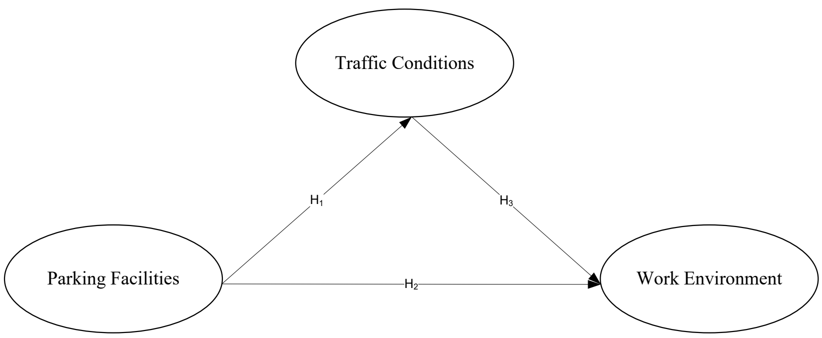
Table-1 Distribution of Research Samples

Category	Population	Proportion (%)	Sample (N)	Sample (group)
Lecturer	2.341	2.63%	11	3
Students	81.620	91.81%	367	6
Staff	4.939	5.56%	22	91
Total	88.900	100%	400	100

Source: Author (2025)

So, a sample of 100 people was selected for each group with a total sample of 400 people. Testing the relationship between variables is done with Structural Equation Modeling - Partial Least Squares (SEM-PLS) using SmartPLS software. SEM-PLS was chosen because it is able to handle models with complex indicators. The measurement model (outer model) is evaluated through convergent validity, discriminant validity, and construct reliability tests, while the structural model (inner model) is analyzed through the path coefficient value, R^2 value, as well as the significance value (p-value) and t-statistics based on bootstrapping.

The model and hypothesis formed are as follows:



Source: Author (2025)

Figure-1 Research Model

The hypothesis formed is:

1) Parking facilities have a significant effect on traffic conditions.
2) Parking facilities have a significant effect on the work environment.

3) Traffic conditions have a significant effect on the work environment.
4) Parking facilities have a significant effect on the work environment through traffic conditions.

RESULT AND DISCUSSION

Results of the Validity and Reliability Check of the Questionnaire

The questionnaire used in this study has gone through validity and reliability tests to ensure that the instruments used are feasible and reliable. The validity test is carried out by looking at the loading factor value of each indicator against its construct. An indicator is declared valid if it has a loading factor value ≥ 0.70, although in exploratory research, a value ≥ 0.60 is still acceptable (Hair et al., 2014). In addition, for reliability testing, two main indicators are used, namely Cronbach's alpha and composite reliability (CR). A construct is said to be reliable if the Cronbach's alpha and CR values are ≥ 0.70 each (Hair, Hult, Ringle, & Sarstedt, 2014; Solimun, Fernandes, & Nurjannah, 2017). Based on the results of the analysis, all indicators in this study meet these criteria, so it can be concluded that the instruments used have met the requirements of adequate validity and reliability.

SEM-PLS Measurement Model

The first part of the SEM-PLS analysis presented the measurement model of the Parking Facility variable (X1). This variable is measured by three indicators, namely Parking Location (X1.1), Ease of Parking Access (X1.2), and Affordability (X1.3). Table 2 presents the measurement model of the Parking Facility variable (X1).

Table-2 Measurement Model of Parking Facility Variables (X1)

Indicator	Loading Factor	P-value	Conclusion
Parking Location (X1.1)	0.745	0.000	Significant
Ease of Parking Access (X1.2)	0.922	0.000	Significant
Affordability (X1.3)	0.903	0.000	Significant
AVE	0.740		
Composite Reliability	0.894		
Cronbach Alpha	0.820		

Source: Author (2025)

The three indicators, namely Parking Location (X1.1), Ease of Parking Access (X1.2), and Affordability (X1.3) are significant as measures of Parking Facilities (X1). From the highest loading factor coefficient, it is found that Ease of Parking Access (X1.2) is the strongest measure of Parking Facilities (X1). This means that Parking Facilities (X1), mainly seen from Ease of Parking Access (X1.2). The AVE value of 0.740 indicates that more than 74% of the variance of its indicators can be explained by this construct, exceeding the minimum threshold of 0.50 which indicates convergent validity has been met. Furthermore, the Cronbach's Alpha value of 0.820 and Composite Reliability of 0.894, both of which exceed the minimum requirement of 0.70, indicate that this instrument is reliable and can be used consistently to measure respondents' perceptions of parking facilities. Thus, it can be concluded that Ease of Parking Access (X1.2) is the most important indicator in assessing parking facilities, which needs to be the main concern in its management and planning.

The next section presents the measurement model of the Traffic Condition variable (Y1). This variable is measured by four indicators, namely Number of Vehicles (Y1.1), Speed (Y1.2), Accessibility (Y1.3), and Road Network (Y1.4). Table 3 below presents the variable measurement model Traffic Conditions (Y1).

Table-3 Measurement Model of Traffic Condition Variable (Y1)

Indicator	**Loading Factor**	**P-value**	**Conclusion**
Number of Vehicles (Y1.1)	0.883	0.000	Significant
Speed (Y1.2)	0.862	0.000	Significant
Accessibility (Y1.3)	0.899	0.000	Significant
Road Network (Y1.4)	0.898	0.000	Significant
AVE		0.785	
Composite Reliability		0.936	
Cronbach Alpha		0.909	

Source: Author (2025)

Based on Table 3, the indicators of Number of Vehicles (Y1.1), Speed (Y1.2), Accessibility (Y1.3), and Road Network (Y1.4) are significant in measuring the Traffic Condition variable (Y1). All of these values exceed the minimum threshold of 0.7, which indicates that these indicators have a strong contribution in representing the construct of the Traffic Condition variable. In addition, all P-values are 0.000, which means <0.05, so all indicators are statistically significant in forming constructs. The Average Variance Extracted (AVE) value of 0.785 also shows that more than 78.5% of the variance of the indicators can be explained by the construct, which indicates excellent convergent validity. Composite Reliability of 0.936 and Cronbach's Alpha of 0.909 indicate that the Traffic Conditions (Y1) construct has a very high level of internal reliability, so the indicators used are consistent in measuring the construct. Overall, the measurement model of the Traffic Conditions (Y1) variable is declared valid and reliable. In addition, the highest loading factor value is obtained in the Accessibility indicator (Y1.3). This means that the high Accessibility indicator (Y1.3) is the main indicator that shows the Traffic Condition variable (Y1).

The last section presents the third measurement model, namely the Work Environment (Y2). This variable is measured by five indicators, namely the Impact of Physical Work Environment (Y2.1), Non-Physical Work Environment (Y2.2), Work Motivation (Y2.3), Work Stress Level (Y2.4), and Physical Conditions (Y2.5). The Work Environment measurement model (Y2) is presented in the following table.

Table-4 Measurement Model of Work Environment Variables (Y2)

Indicator	**Loading Factor**	**P-value**	**Conclusion**
Physical Work Environment Impact (Y2.1)	0.828	0.000	Significant
Non Physical Work Environment (Y2.2)	0.879	0.000	Significant
Work Motivation (Y2.3)	0.816	0.000	Significant
Job Stress Level (Y2.4)	0.882	0.000	Significant
Physical Condition (Y2.5)	0.875	0.000	Significant
AVE		0.734	
Composite Reliability		0.932	
Cronbach Alpha		0.909	

Source: Author (2025)

The five indicators of the Work Environment variable (Y2), namely the Impact of the Physical Work Environment (Y2.1), Non-Physical Work Environment (Y2.2), Work Motivation (Y2.3), Work Stress Level (Y2.4), and Physical Conditions (Y2.5) are declared significant as measures of the Work Environment Impact variable (Y3). This is indicated that the results of all indicators have a loading factor value above 0.7 and a p-value of 0.000, which indicates that each indicator significantly contributes to the construct of the Work Environment variable.The indicator of Work Stress Level (Y2.4) is the strongest measure of the Work Environment Impact variable (Y3), because it has the highest loading factor coefficient. This means that the assessment of the Work Environment Impact variable (Y3) is seen from the high level of Work Stress (Y3.4) of UB residents. In addition, the Average Variance Extracted (AVE) value of 0.734 indicates that more than 50% of the indicator variance can be explained by the construct, which indicates convergent validity has been met. The Composite Reliability value of 0.932 and the Cronbach's Alpha value of 0.909 also indicate excellent construct reliability, as both exceed the minimum threshold value of 0.7. Thus, it can be concluded that the Work Environment variable construct (Y2) has excellent validity and reliability and all indicators are significant in representing the construct.

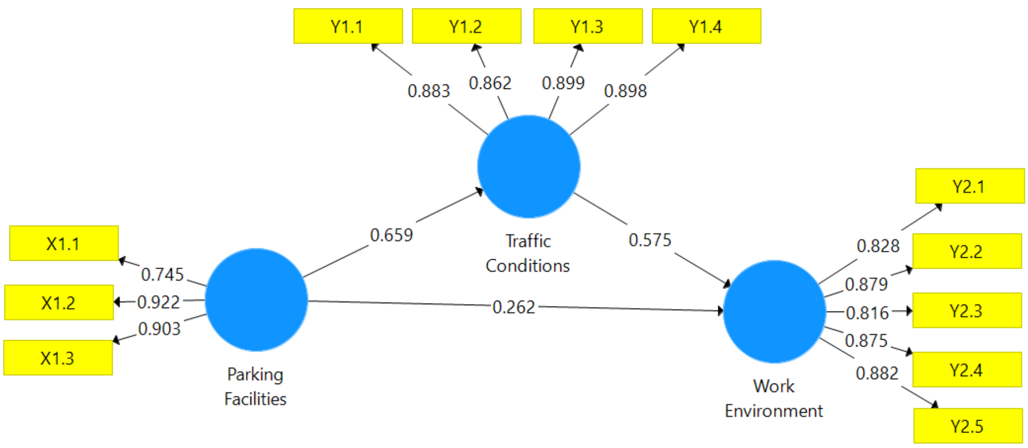
SEM-PLS Structural Model

The second part of the SEM-PLS analysis is the interpretation of the structural model. The structural model presents the relationship between research variables The coefficient of the structural model states the magnitude of the relationship between one variable and another. There is a significant influence between one variable on another, if the p-value <0.05. The results of structural modeling are presented in Table 5 and Figure 2.

Table-5 SEM Structural Model

No	Relationship	Coefficient	P-value	Conclusion
1	Parking Facility (X1) ➔ Traffic Condition (Y1)	0.659	0.000	Significant
2	Parking Facility (X1) ➔ Work Environment (Y2)	0.262	0.000	Significant
3	Traffic Conditions (Y1) ➔ Work Environment (Y2)	0.575	0.000	Significant
4	Parking Facility (X1) ➔ Traffic Condition (Y1) ➔ Work Environment (Y2)	0.379	0.000	Significant

Source: Author (2025)



Source: Author (2025)

Figure-2 SEM Structural Model

The SEM-PLS structural model is formed:

$$Y_1 = 0{,}659\, X_1 + \zeta_1$$

$$Y_2 = 0{,}262\, X_1 + 0{,}575\, Y_1 + \zeta_2$$

The results of testing the structural model of direct influence and indirect influence are shown in Table 5 and Figure 2 with the following explanation:

First, the direct effect of Parking Facilities (X1) on Traffic Conditions (Y1), obtained a structural coefficient of 0.659, and a p-value of 0.000. Because the p-value is < 0.05, and the coefficient is positive, it indicates that there is a significant and positive influence between Parking Facilities (X1) on Driving Behavior (Y1). The positive coefficient value indicates that the better the parking facilities available, the better the traffic conditions at Brawijaya University. Since the p-value is less than 0.05, this relationship is statistically significant, which means that there is strong evidence that Parking Facilities affect Traffic Conditions.

The second relationship, the direct effect between Parking Facilities (X1) and Working Environment (Y2) is also shown with a coefficient of 0.262 and a p-value of 0.000. Although the coefficient value is smaller than the first relationship, the direction of the relationship remains positive and significant. This means that improving the quality of parking facilities has a positive influence on the working environment, although the effect is not as great as on traffic conditions. The better the parking facilities, the better the working environment at Brawijaya University.

Third, the relationship between the Traffic Condition variable (Y1) and the Working Environment (Y2), obtained a structural coefficient of 0.575, and a p-value of 0.000. Since the p-value is < 0.05 and the structural coefficient is positive, it means that there is a significant and positive influence of the Traffic Condition variable (Y1) on the Working Environment (Y2). This shows that good traffic conditions are significantly correlated with a good working environment. This relationship is quite strong and significant, indicating that smooth traffic can increase comfort or productivity in the work environment in the Brawijaya University area.

Furthermore, the relationship between Parking Facilities (X1) which affects the Working Environment (Y2) through the Traffic Conditions variable (Y1), has a total coefficient of 0.379 with a p-value of 0.000. In other words, the Traffic Condition variable (Y1) is a mediating variable between Parking Facility (X1) and Work Environment (Y2). This shows that there is a significant indirect effect (mediation) from Parking Facilities on the Work Environment through the mediating variable, namely Traffic Conditions. The positive coefficient means that the better the Parking Facility (X1), the better the Working Environment (Y2) through the Traffic Condition variable (Y1).

Discussion

The results of the SEM-PLS analysis in this study provide strong empirical evidence of significant direct and indirect effects on the variables of parking facilities and traffic conditions on the impact of the work environment at Brawijaya University. Empirical results show that parking facilities have a direct effect on the work environment with a path coefficient of 0.262, while traffic conditions have a greater direct effect with a coefficient of 0.575. While the most significant variable is the result of a strong mediation effect, where parking facilities affect the work environment through traffic conditions with a coefficient of 0.659. The resulting indirect effect of 0.379 (0.659 × 0.575) is even greater than the direct effect of parking facilities on the work environment. This result suggests that inadequate parking facilities not only have a direct impact on user convenience, but also create traffic disruptions that ultimately worsen the overall working environment conditions. With a total effect of 0.641 (0.262 + 0.379), parking facilities actually have an almost equal influence as traffic conditions in determining the quality of the campus work environment.

This research is in line with Alhajaj's research (2023) which shows how the design of parking facilities affects the physical conditions of the campus work environment and the safety and movement flow of staff and students. Alhajaj's research evaluated pedestrian facilities in a large campus parking lot (King Abdulaziz University, Saudi Arabia), which found that pedestrian orientation, correct access, crossing zones, as well as traffic calming strategies and single entrance/exit design significantly improved walkability and pedestrian safety. Naaman et al. 2024) also concurred with the results of this study, which showed that parking availability is an important factor affecting traffic conditions and the work travel environment. Naaman et al. analyzed the choice of transportation modes (active, public transportation, private car) before and during the COVID-19 pandemic, including parking availability variables and vehicle policies entering the campus area. In addition, Joel et al. (2024) is relevant to understanding how the distribution of parking facilities affects vehicle density, internal traffic, and ultimately working/study conditions. The study presents a model of optimal parking space allocation in a campus environment, addressing conflicts between users and reserved or non-reserved parking spaces.

Based on the empirical findings, which show a coefficient of 0.659 for parking facilities on traffic conditions, parking infrastructure planning at Brawijaya University should be viewed as an integral part of the campus traffic management system. This high coefficient confirms that unorganized parking contributes significantly to congestion and traffic flow disruption in the campus area. Therefore, parking infrastructure development strategies need to adopt a holistic approach that not only focuses on adding capacity, but also on optimizing the distribution and accessibility of parking facilities. Hashim et al. (2020) supported the assumption that traffic conditions on campus are influenced by parking facilities and user behavior, where the study linked the behavior of student drivers, staff, and campus residents to congestion and accidents within the campus environment.

The implementation of strategic parking zoning based on activity patterns can reduce unnecessary vehicle movements within the campus. With the highest loading factor on indicator X1.2 (0.922), the aspect of accessibility and ease of parking access is a top priority in planning. The development of on-street parking facilities with an internal shuttle system can reduce the volume of vehicles in the core area of the campus, while the implementation of an online parking reservation system can optimize the utilization of available capacity. In line with Abood & Adil (2025) who pointed out that legal parking and double parking on the roadside greatly reduce road capacity and average vehicle speed, thereby increasing the risk of congestion. This underscores the importance of effective parking management as part of urban congestion mitigation efforts.

The finding that traffic conditions have the most dominant direct influence on the work environment (coefficient 0.575) provides empirical justification for prioritizing investments in campus traffic management systems. The high loading factor consistency across all traffic condition indicators suggests that different aspects of traffic contribute equally to the perceived quality of campus traffic.

Traffic management strategies need to integrate intelligent traffic system technology that can respond to variations in the daily movement patterns of the academic community. The implementation of adaptive traffic lights at key intersections, coupled with real-time monitoring systems, can optimize vehicle flow based on actual volumes. The establishment of a one-way system on certain corridors, especially during peak academic hours, can increase road capacity while reducing movement conflicts. In addition, the establishment of vehicle-free zones in strategic areas such as around the library and administration center can create a more conducive environment for academic activities.

The strong mediating effect (coefficient 0.379) between parking facilities and work environment through traffic conditions provides an empirical basis for developing sustainable transportation initiatives as a comprehensive solution. These findings suggest that interventions in one aspect of transportation will create a cascading effect that affects other aspects, making an integrated approach in the development of sustainable transportation systems highly relevant. Similarly, the research of Cerioli et al. (2025), which focuses on the graph of the pedestrian network and robustness, is relevant in looking at how parking facilities impact internal traffic patterns and the comfort of the work environment. The study analyzed pedestrian movement on campus using Wi-Fi data; evaluating crowding, pedestrian distribution, and path network connectedness.

A bike-sharing program can be implemented as an internal transportation alternative that reduces pressure on motorcycle and car parking facilities while reducing traffic volume. With a consistently high work environment loading factor (0.816-0.882), improving environmental quality through reduced air and noise pollution from the implementation of electric vehicles will have a measurable impact on the job satisfaction of the academic community. The development of charging stations for electric vehicles in strategic parking locations can provide incentives for the campus community to switch to green mobility.

An electric shuttle service that connects peripheral parking areas with centers of academic activity can overcome the laziness of the academic community to park far from the place of teaching and learning activities. This system not only reduces traffic congestion in the campus area but also optimizes the utilization of available parking facilities. Integration with mobile applications for tracking and scheduling can improve user experience and encourage wider adoption.

The sustainability aspect of implementation requires long-term institutional commitment, given the complexity of the relationships between the variables found. Coordination with external stakeholders such as local governments and public transportation operators is crucial to create an integrated transportation system. Periodic impact evaluation using a consistent SEM-PLS methodology can ensure that policy interventions provide measurable and sustainable results in improving the quality of the campus work environment.

CONCLUSION

The SEM-PLS analysis revealed that both parking facilities and traffic conditions significantly affect the campus work environment at Brawijaya University, with traffic conditions having the most dominant direct influence, highlighting the importance of smooth campus traffic flow for academic community well-being. This study innovatively combines these two transportation factors in a single SEM-PLS model, a novel approach in Indonesia's campus transportation research, and uncovers the indirect effect of parking facilities on the work environment mediated by traffic conditions. Based on these findings, the university should prioritize investment in an integrated traffic management system. Future research could expand by examining additional transportation-related factors, such as pedestrian accessibility and public transit options, to provide a more comprehensive understanding of campus mobility and its effects on academic staff productivity and satisfaction.

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