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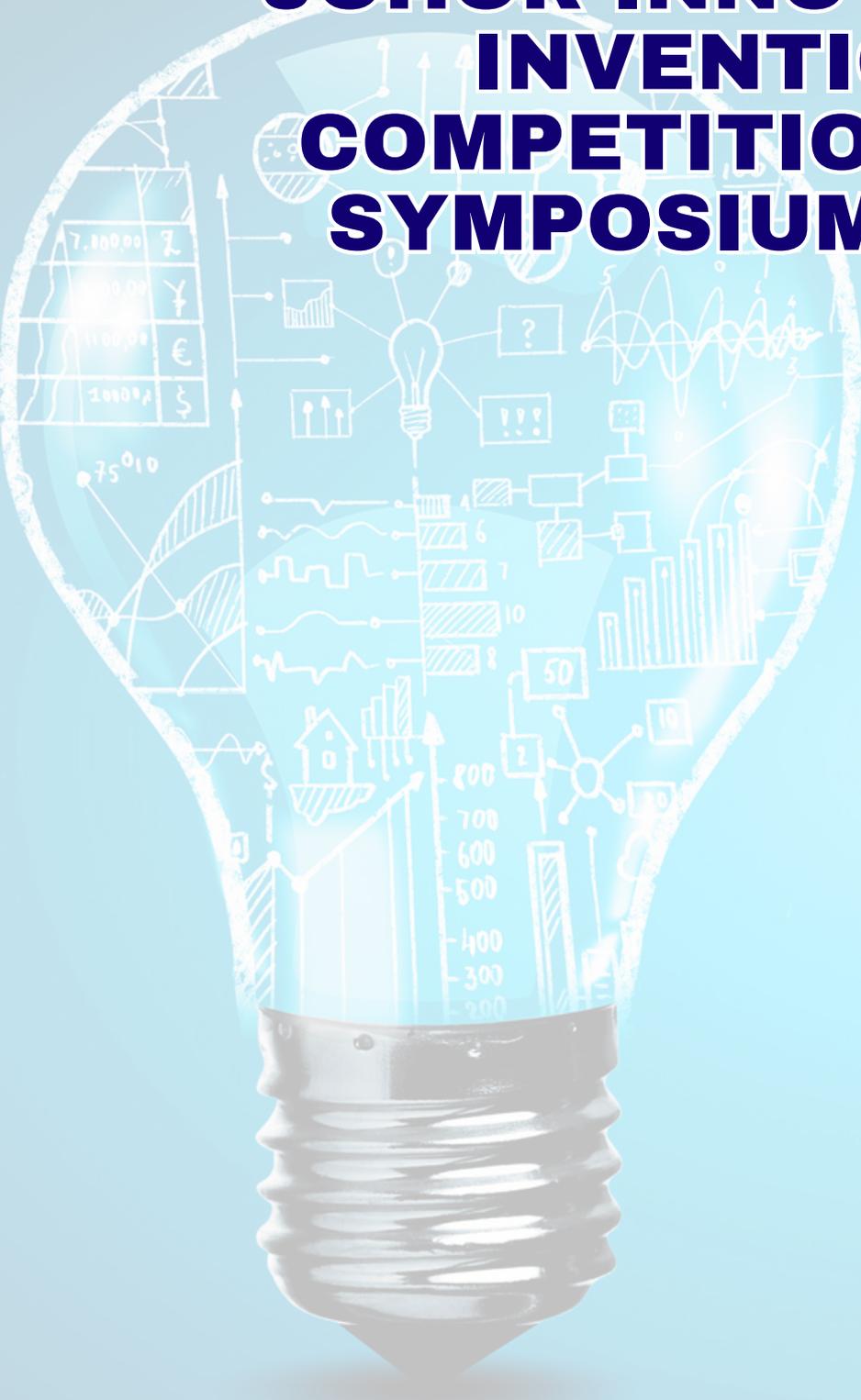
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**JOHOR  
INNOVATION  
INVENTION  
COMPETITION  
AND  
SYMPOSIUM  
2023**



"Innovation Inspires a Society  
to be Critical and Creative"

# **JOHOR INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2023**



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**Editors-in-Chief**

**AHMAD KHUDZAIRI KHALID  
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الجامعة التكنولوجية  
UNIVERSITI  
TEKNOLOGI  
MARA

**Cawangan Johor  
Kampus Pasir Gudang**

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## **Preface**

**In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.**

**This e-book compiles the extended abstracts that submitted to Johor Innovation Invention Competition and Symposium 2023 (JIICaS2023), where JIICaS2023 is a virtual platform for all creative minds to share and present their invention and innovation. The extended abstracts are divided into two categories, which are Category A (Higher Educational Student/ Any Recognized Institutional Students in Malaysia) and Category B (Primary/ Secondary School Students / Special Education School Students in Johor). Each abstract gives a brief background on the innovation or project.**

**We hope that this e-book will help the readers to get to know the innovation done by the students from both categories and get some ideas to develop future innovation products.**



## TYPE OF TRANSPORTATION USED BY NON-RESIDENT UiTM PASIR GUDANG STUDENTS TO CLASS

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### ABSTRACT

Universities and transit agencies in the Universiti Teknologi MARA (UiTM) Pasir Gudang have been developing novel approaches to providing and financing mobility services on and near university campus. Many transportations provide significantly more service and transport significantly more passengers than their non university counterparts. In this study, the type of transportation used by the non-resident students is determined. The goal is to collect all data from different types of transportation and demographics that exist on university campus, as well as to investigate the relationship between different types of mode of transportation and reason, time taken, budget, distance. These aspects of university transport systems were investigated using demographic data and a questionnaire. The questionnaire was distributed to all UiTM Pasir Gudang students, with 82 responding with sufficient valid data and information to be included in the study. Key findings indicate that student characteristics such as age, gender, and income have a significant impact on their mode choice decision. Travel time from home to the university has been found to have a significant negative impact on the choice of walking as a mode of transportation to university. It has also been discovered that students who ride motorcycles to university are willing to switch to public transportation if an efficient and dependable public transportation system is available.

**Keywords:** Mobility, Data, Transportation.

### 1.0 INTRODUCTION

This study specifically highlights the independent variable, the Mode of Transportation among UiTM Pasir Gudang Non-Resident students, as it plays a crucial role in enhancing the convenience and efficiency of student life. Understanding the factors that contribute to the choice of transportation modes is essential in order to improve the transportation environment and address the unique needs of students.

Rather than solely relying on universities and schools to provide transportation services, it is important for parents and students themselves to stay updated and explore the effectiveness of different modes of transportation. By staying in touch with students and considering their preferences for transportation while studying, students can improve their overall experience and achieve greater motivation. Additionally, universities can support students by identifying their transportation needs and offering appropriate services and facilities.

This study aims to explore why students consider their mode of transportation. The choice of transportation can impact various aspects of student life, such as academic performance, mental well-being, and social engagement. By prioritizing factors such as convenience, safety, cost-effectiveness, and environmental impact, students can make informed decisions that contribute to their overall well-being.

It is evident that in order to fully devote their focus to demanding academic pursuits, students need to maintain their physical, mental, and psychological well-being. This study emphasizes the significance of considering the mode of transportation as a key factor in achieving an optimal university experience and facilitating student success.

## 2.0 OBJECTIVES

1. To determine the mode of transportation used among UiTM Pasir Gudang Non-Resident students.
2. To identify the factors affecting the selection of transportation modes.
3. To identify the time taken by the student to reach UiTM Pasir Gudang.
4. To identify the student travel distance to UiTM Pasir Gudang.
5. To evaluate the students' weekly spending on transport.

## 3.0 METHODOLOGY

**Population:** All Non-Resident students of UiTM Pasir Gudang.

**Sample:** 82 Non-Resident students of UiTM Pasir Gudang.

**Sampling technique:** We use Convenience Sampling because every student at UiTM does not have framing sampling and has a non-probability technique. Non-probability sampling techniques are used when the generalization of the population is not important, and at the same time the sampling frame from which the sample will be selected is not available or difficult to obtain. Convenience sampling, as the name suggests, is a procedure where the selection of respondents is at the convenience of the researcher. Often, respondents are chosen because they are in the right place at the right time where the researcher conducts the survey.

**Data Collection Method:** The questionnaire was administered using the Google Forms platform and was distributed through the online messaging platform WhatsApp.

## 4.0 RESULTS

Table 1 : Frequency Table of Faculty

Faculty	Number of Students
Business and Management (FPP)	49
Chemical Engineering (FKK)	14
Electrical Engineering (FKE)	9
Civil Engineering (FKA)	6
Mechanical Engineering (FKM)	4
<b>Total</b>	<b>82</b>

We can observe that the Faculty of Business and Management (FPP) has the highest number of students that answer the survey, comprising approximately 60% (49 students) of the 82 total student population. The Faculty of Chemical Engineering (FKK) follows with around 17% (14 students). The Faculty of Electrical Engineering (FKE) accounts for approximately 11% (9 students), while the Faculty of Civil Engineering (FKA) has around 7% (6 students). Lastly, the Faculty of Mechanical Engineering (FKM) has the smallest percentage, with approximately 5% (4 students).

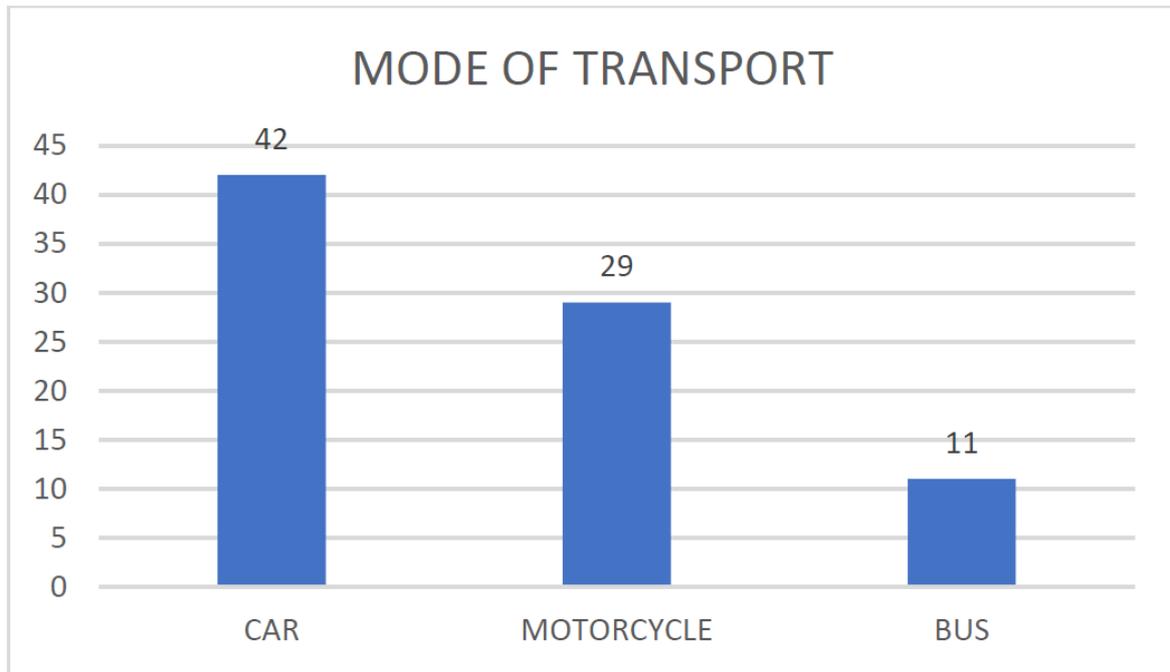


Figure 2 : Number of students who prefer to eat at MSSM and other restaurants

From the bar chart above, we can observe the majority of students, approximately 51.22% (42 student), use cars as their mode of transportation. Around 35.37% (29 students) use motorcycles as their preferred mode of transport. Approximately 13.41% (11 students) rely on buses for their transportation needs. These percentages provide insights into the distribution of transportation modes among students at UiTM Pasir Gudang. It indicates that cars are the most popular mode of transport among the students surveyed, followed by motorcycles and buses. This information can be helpful for transportation planning, infrastructure development, and understanding the commuting patterns of the students at the campus.

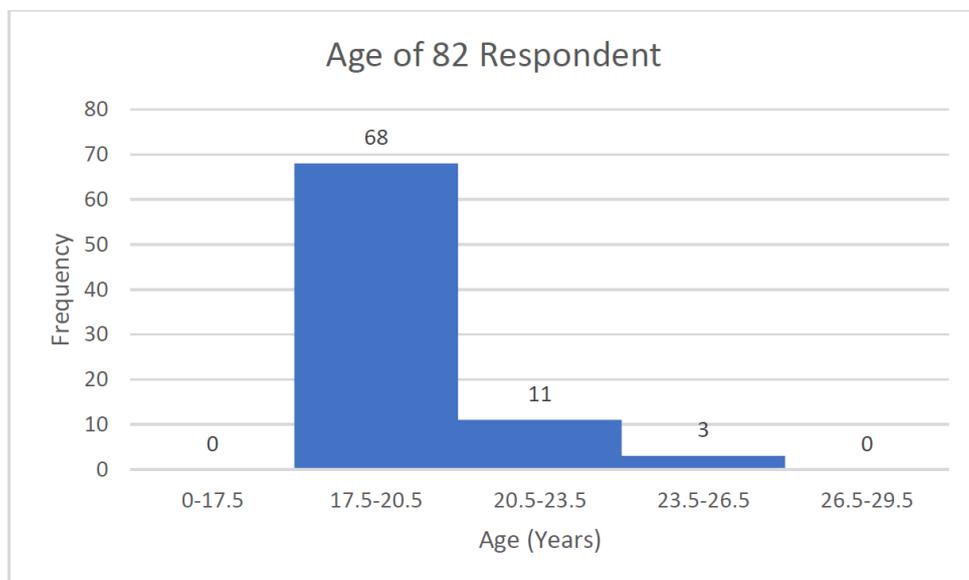


Figure 3 : Histogram of age of respondents

Based on the histogram chart above, we can observe the majority of students, approximately 82.93% of the total student population, fall within the age range of 18-20. This indicates a significant concentration of younger students at UiTM Pasir Gudang. A smaller percentage, approximately 13.41% of the students, are in the age range of 21-23. This suggests a smaller number of students who are slightly older than the majority. Only a few students, approximately 3.66%, are in the age range of 24-26. This indicates a relatively small number of students in the higher age bracket. Interestingly, there are no students reported in the age range of 27-29. This may be due to a specific demographic characteristic of the student population at UiTM Pasir Gudang or limitations in the data provided.

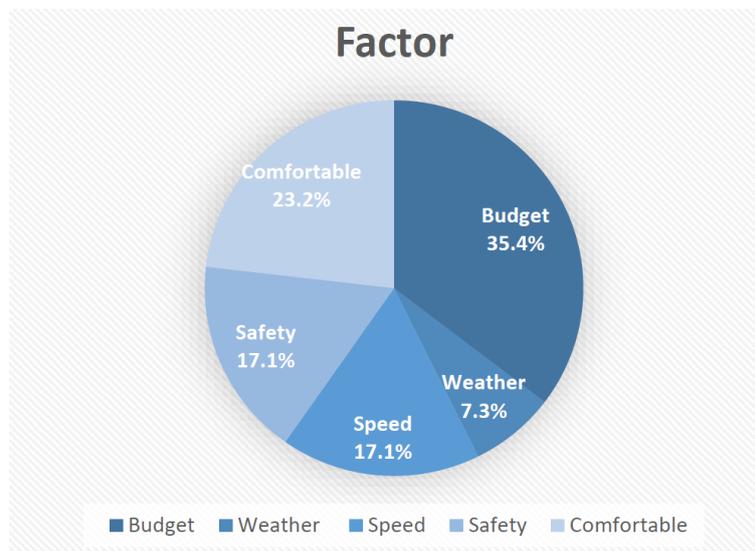


Figure 4 : Factor that effect the mode of transportation

Based on the pie chart above, the factor that effect the mode of transportation, which is divide to 5 factor based on student preference. There are total of 84 students who participated to survey the factors. Total 29 who use transportation base on budget, when 19 other like to feel comfortable when using transportation. Both speed and safety factor had 14 students each, while least factor that that only had 6 student voting is weather. Based on the chart above, we can see many students had the budget factor when using transportation.

Time Taken (minute)	Number of student (f)	Cumulative frequency	Class boundaries	Midpoint (x)	fx
1-10	45	45	0.5-10.5	5.5	247.5
11-20	24	69	10.5-20.5	15.5	327
21-30	11	80	20.5-30.5	25.5	280.5
31-40	2	82	30.5-40.5	35.5	71

Figure 5 : Frequency table of time taken by students.

We can see that the majority of students which is 45 who take times around 1 to 10 minutes to arrive at UiTM Pasir Gudang. This shown a significant amount of students who lives near the campus UiTM Pasir Gudang. But 24 students takes around 10-20 minutes to arrive while 11 student taking time 20-30 minutes. This shown a smaller number of students who are slightly far from UiTM Pasir Gudang than the majority. And only a few students, as only 2 students from the survey live far away which they take 30-40 minutes to arrive at UiTM Pasir

Gudang. This could be due to a how they find their rent house or their parent already live far but not far enough to rent a house.

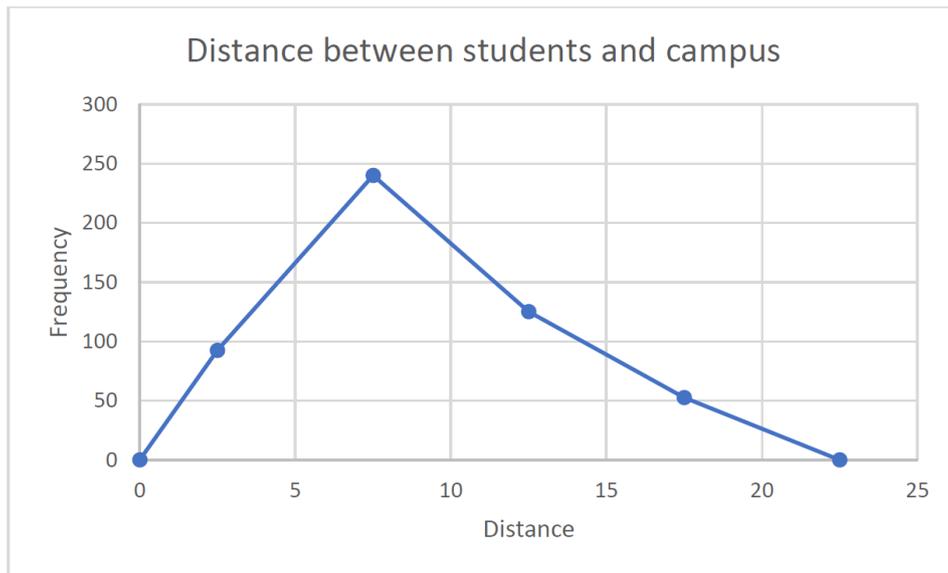


Figure 6 : Distance to campus

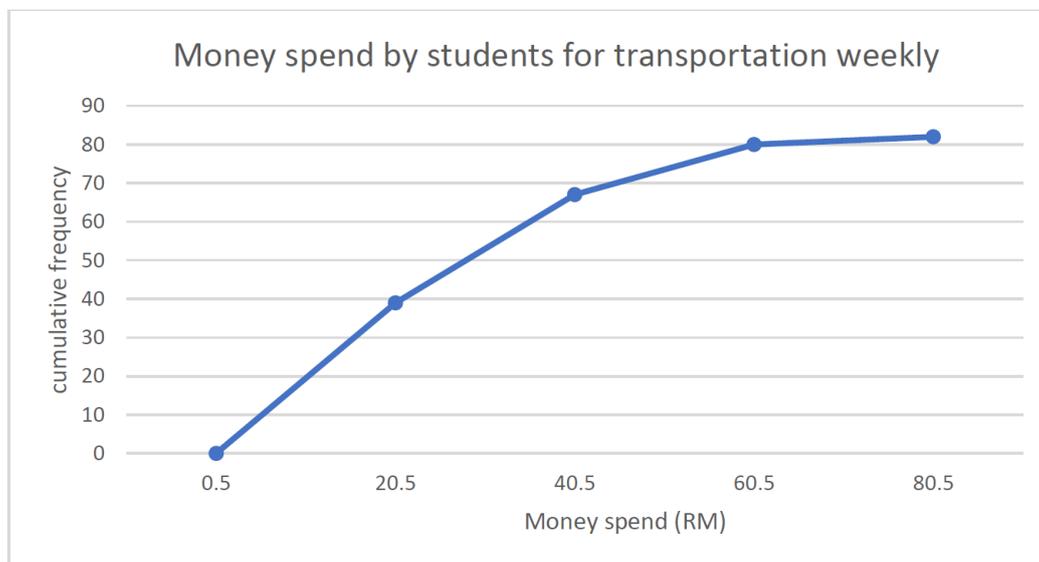


Figure 7 : Less than Ogive for money spend by students for transportation weekly.

The data set's lowest value is Rm 0.50. On the horizontal axis, this is where the ogive begins. The data's highest value is Rm 80.50 since here is where the horizontal axis's ogive terminates.

## 5.0 CONCLUSION

In conclusion, we can see that most UiTM Pasir Gudang Non-Resident students choose car as their main mode of transport and the main reason is budget. Most students take less than 10 minutes to arrive at the campus. Many of the students live in a radius of 5 Km from the campus. We also get that the students spend around RM20.00 on transportation weekly. The survey on modes of transport among UiTM Pasir Gudang Non-Resident students yields significant implications and offers valuable recommendations for universities and relevant stakeholders.

**Implications and Significance:** The survey findings provide insights into the demand for specific transportation infrastructure, such as parking facilities for cars, designated areas for motorcycles, or improved accessibility for bus passengers. This information can guide campus planning efforts and ensure the provision of adequate facilities to accommodate students' transportation needs. Understanding the prevalent modes of transport enables universities to identify safety concerns and take appropriate measures. Enhancing road safety measures, enforcing helmet usage, and improving infrastructure for vulnerable road users can contribute to creating a safer transportation environment for students.