ANALYSIS OF VARIABLES IN THE SELECTION OF TRANSPORTATION MODES FOR STUDENTS OF SMA NEGERI 1 KUTACANE FOR THE 2023/2024 ACADEMIC YEAR

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Abstract
Transportation is a need in the community including students in reaching school, students can use various modes of transportation such as private or public transportation, education creates a need for transportation to school. Therefore, the author is interested in conducting research aimed at identifying the choice of modes between private and public transportation in students for the 2023/2024 school year. SMA Negeri 1 Kutacane was chosen as a case study in the research. The research methodology used in this is a revealed preference approach with a cross-tabulation analysis method (cross tab). Based on data collection, it was found that personal transportation is the most widely used mode of transportation by students of SMA Negeri 1 Kutacane to go to school. Based on the variables studied, there are several variables that have a significant relationship with the type of transportation mode chosen. Overall, variables that have a significant relationship with the choice of mode of transportation are Allowance (X4), How to Depart (X6), and Cost (X9).
Keywords: *selection of mode of transportation, student.*

Introduction

One of the things that has an important influence in transportation planning is the aspect of mode selection. When going to or before traveling, we will consider whether people will use private vehicles or public transportation to travel. , in choosing a mode of transportation there are several factors or variables that are believed to affect the choice of transportation mode. The factors that influence the choice of transportation mode consist of the characteristics of the traveler, the characteristics of the trip, the characteristics of transportation facilities, and the characteristics of the city or zone (2). (Ilham et al., n.d.) (Tamin, 2000)

The choice of transportation mode used goes through several stages. These stages are the preparation of perceptions of transportation mode services, the stage of forming impressions of transportation mode services, the stage of determining the order of importance of alternative transportation modes, and the stage of choosing transportation modes. Then how can these factors greatly affect someone in choosing a mode of transportation, for example in transportation users there are several variables of ownership of transportation modes and ownership of motor vehicle licenses. Students who already have a motor vehicle license or commonly called a

driver's license and have a private vehicle in the form of a motorcycle or car, will tend to use this mode of transportation in accessing school.   (Ferdiansyah et al., 2009), (Syiah Kuala et al., 2311) , it is believed that private vehicles have advantages in terms of moving that are not limited by routes on public transportation and have a relatively faster travel time. In addition, there is distance which is one of the variables contained in the type of movement that can affect the choice of transportation mode used by students in accessing schools   (Tamin, 2000) .

Based on these reasons, research was conducted on the choice of transportation mode in students of SMA Negeri 1 kutacane in southeast Aceh by linking the variables of transportation mode selection. The scope of this research will take a case study at one of the high schools in Kutacane, namely SMA Negeri 1 Kutacane. Based on the previous background, the problem in the study is that the relationship between the variable selection of transportation modes and the choice of transportation mode used by students of SMA Negeri 1 Kutacane for the 2023/2024 school year has not been identified. Based on the formulation of the problem can be formulated questions.

Research as follows: 1) What type of transportation mode is used by students of SMA Negeri 1 Kutacane for the 2023/2024 school year? 2) What research variables have the most influence on the choice of transportation modes for SMA Negeri 1 Kutacane students for the 20223/2024 school year?

Research Method

The method used in research is cross-tabulation analysis (crosstab). The population selected in this study is students of SMA Negeri 1 Kutacane, Babussalam sub-district, for the 2023/2024 school year, totaling 1,014 students. Using the Slovin formula, the number of research samples was obtained as many as 92 students. The data collection technique used in this study was through questionnaires and literature studies.

Results Of Research and Discussion Of Transportation Mode Choices For High School Students

Of the 145 respondents, the most respondents were those who used private transportation to go to school as many as 122 respondents (84%) The fewest respondents were those who used public transportation in the form of (buses or tricycles) in total there were 23 respondents (16%) to go to school. It can be seen in figure 1.
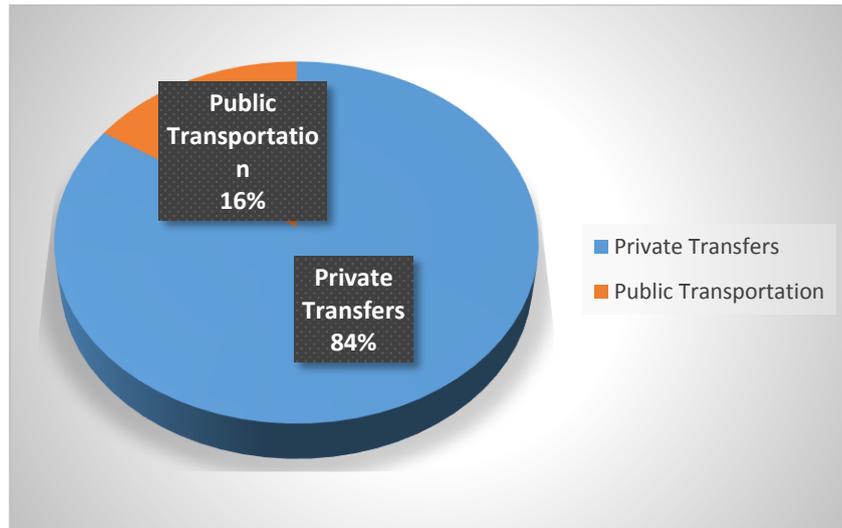
Figure 1. Choice of Transportation Mode for Students of SMA Negeri 1 Kuta Cane

Analysis of Traveler's Characteristics

The variable characteristics of travelers consist of gender, students, private vehicle ownership, pocket money, and age. Here are the results of the analysis of each variable:

Gender

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students per student based on gender and the type of transportation chosen. Overall, respondents were dominated by female students who used private transportation to go to school, a total of 85 respondents had a combination of these answers. The number per student can be seen in figure 2.
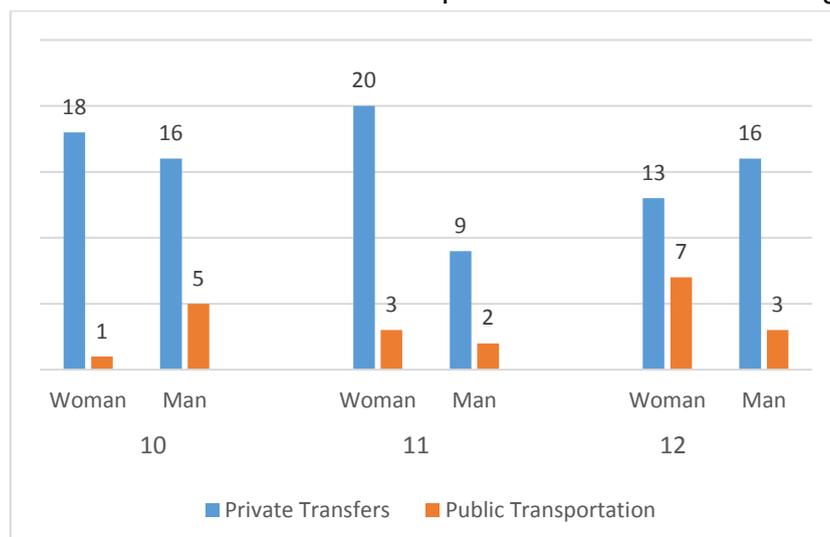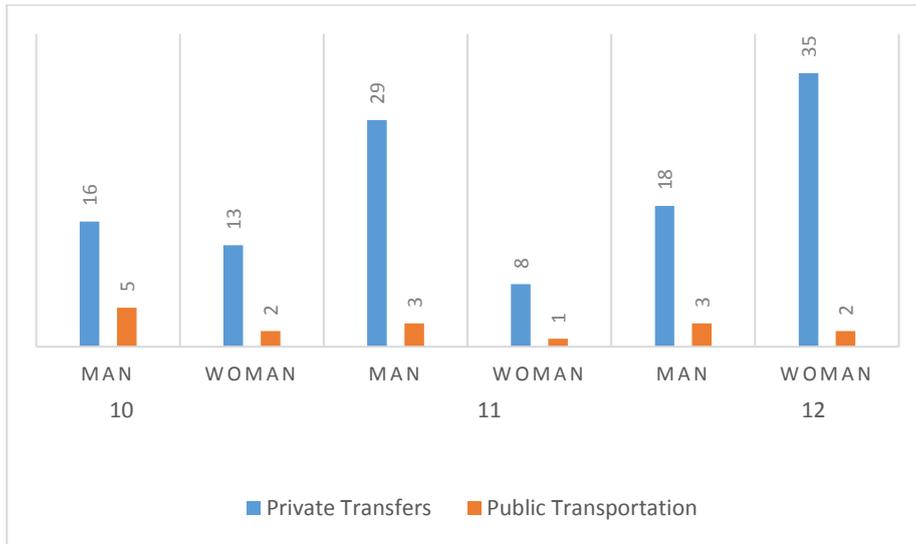

Figure 2. Cross-Tabulation of Gender per Student and Type of Transport

Ownership of Private Vehicles

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students per student based on private vehicle ownership along with the type of transportation that is Selected. Overall, respondents were dominated by students who had private vehicles in the form of cars and motorbikes that used private transportation to go to school, a total of 68 respondents who had a combination of these answers. The number per student can be seen in figure 3.

Figure 3. Cross-Tabulation of Private Vehicle Ownership and Types of Public Transportation

SIM ownership

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students per student based on SIM ownership along with the type of transportation chosen. Overall, respondents were dominated by students who did not have a driver's license and used private transportation to go to school, a total of 108 respondents who had a combination of these answers. The number per student can be seen in figure 4.
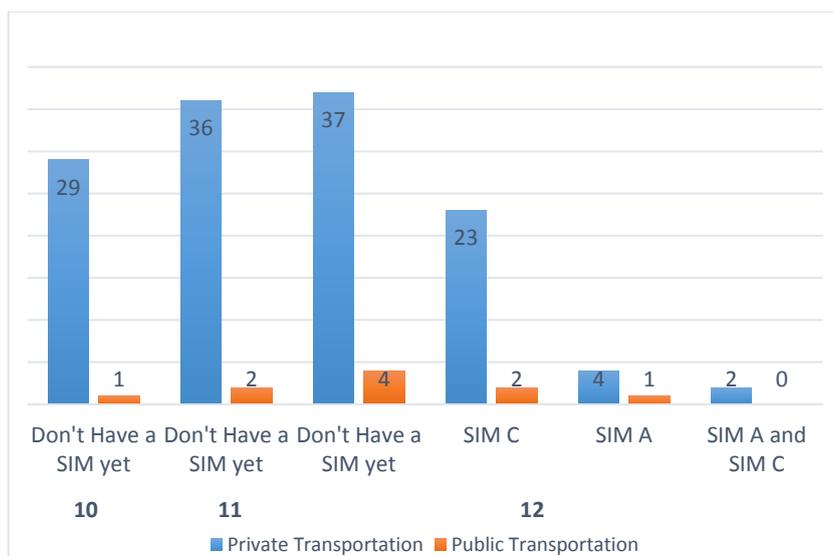
Figure 4. Cross-Tabulation of SIM Ownership and Not Having a SIM

Allowance

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students per student based on pocket money and the type of transportation chosen. Overall, respondents were dominated by students who had an allowance of less than 25 thousand and used personal transportation to go to school, a total of 53 respondents had a combination of these answers. The number per student can be seen in figure 5.
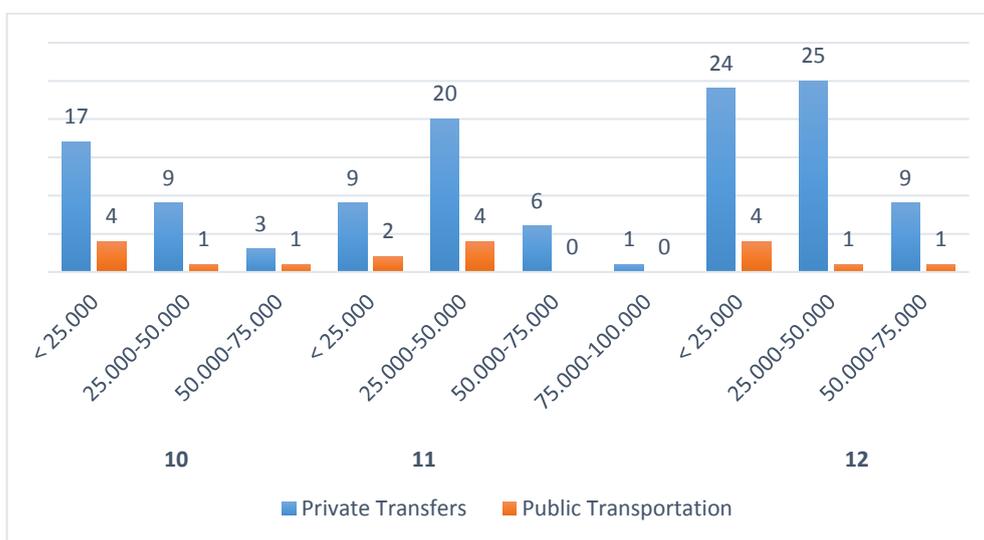

Figure 5. Cross Tabulation of Allowance and Types of Transportation

Age

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students per student based on private vehicle ownership along with the type of transportation chosen. Overall, respondents were dominated by students who were 16 years old and used private transportation to go to school, a total

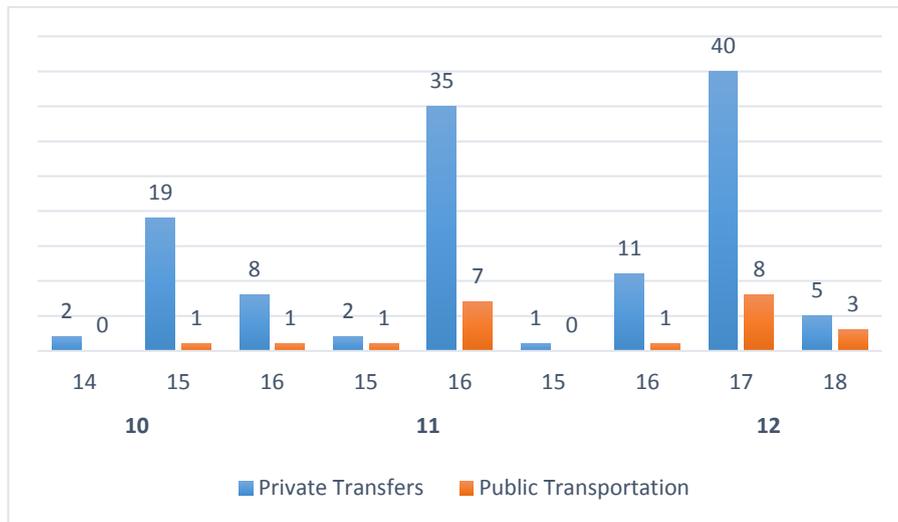of 54 respondents had a combination of these answers. The number per student can be seen in figure 6.

Figure 6. Cross-Tabulation of Age and Type of Transport

Analysis of Travel Characteristics

The variables of travel characteristics consist of how to go to school, distance traveled, and travel time. Here are the results of a complete analysis for each variable of travel characteristics.

How to Go to School

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students based on how to go to school and the type of transportation chosen. Overall, respondents were dominated by students who went to school by delivery and used private transportation to go to school, a total of 78 respondents who had a combination of these answers. The number per student can be seen in figure 7.
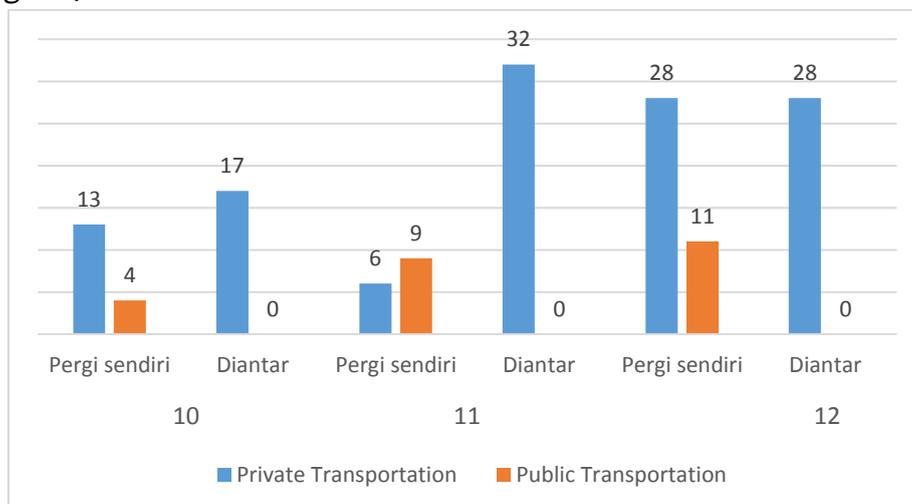

Figure 7. Cross-Tabulation of How to Depart and Types of Transport

Mileage

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students based on the distance traveled and the type of transportation chosen. Overall, respondents were dominated by students who had a distance of under 2 km and used private transportation to go to school, a total of 53 respondents who had a combination of these answers. For the amount can be seen in figure 8.
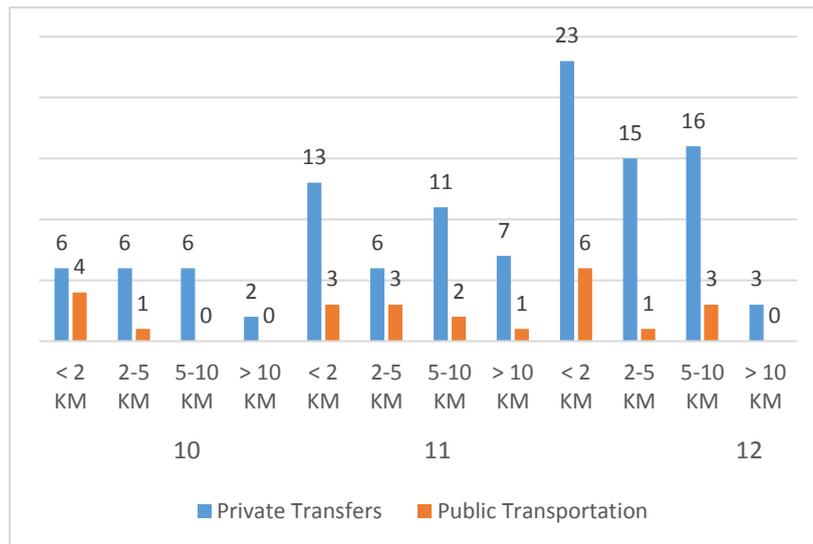

Figure 8. Cross-Tabulation of Mileage and Type of Transport

Traveling time

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students based on travel time and the type of transportation chosen. Overall, respondents were dominated by students who had a travel time of under 15 minutes and used private transportation to go to school, a total of 60 respondents who had a combination of these answers. For the amount can be seen in figure 9.
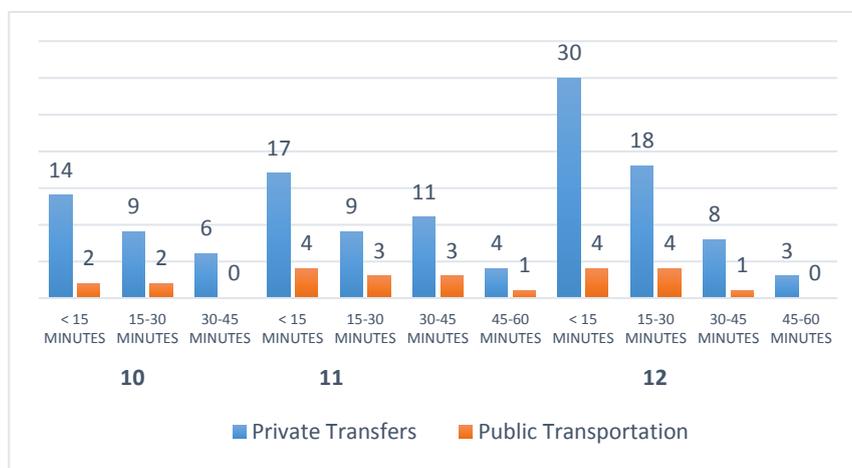

Figure 9. Cross-Tabulation of Travel Time and Type of Transportation

Analysis of Facility Characteristics of Transportation Modes

The variable characteristics of transportation mode facilities consist of transportation costs, affordability of public transportation, concerns about using public transportation and online.

Transportation Costs

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students based on how to go to school and the type of transportation chosen. Overall, respondents were dominated by students who had a cost of less than 10 thousand rupiah and used private transportation to go to school, a total of 96 respondents who had a combination of these answers. For the number of students, see figure 10.
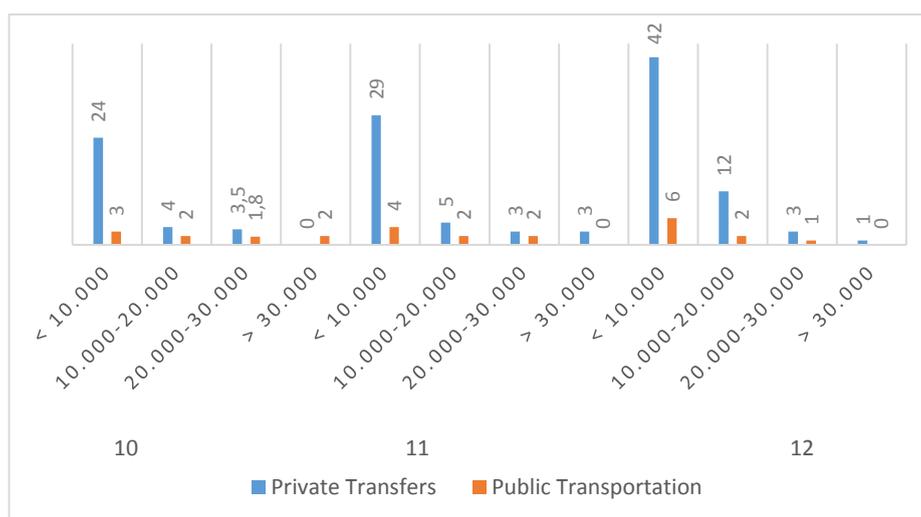

Figure 10. Cross-Tabulation of Transportation Costs per Student and Types of Transportation

Public Transportation Affordability

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students per student based on the affordability of public transportation along with the type of transportation chosen. Overall, respondents were dominated by students who easily reached public transportation but used private transportation to go to school, a total of 71 respondents who had a combination of these answers. The amount per student can be seen in figure 11.
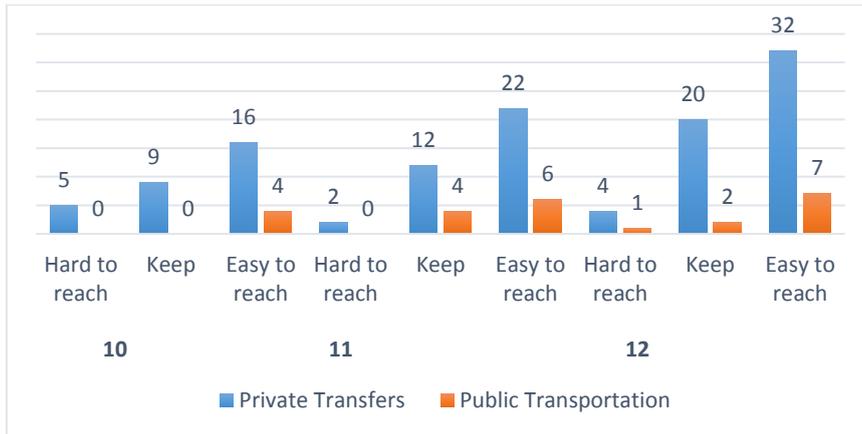
Figure 11. Cross-Tabulation of Student Public Transport Affordability and Transport Types

Concerns about Using Public Transport

Based on the results of the analysis, it can be known the number of respondents of SMA Negeri 1 Kutacane students per student based on how to go to school and the type of transportation chosen. Overall, respondents were dominated by students who did not worry about using public transportation but used private transportation to go to school, a total of 64 respondents who had a combination of these answers. The number per student can be seen in figure 13.
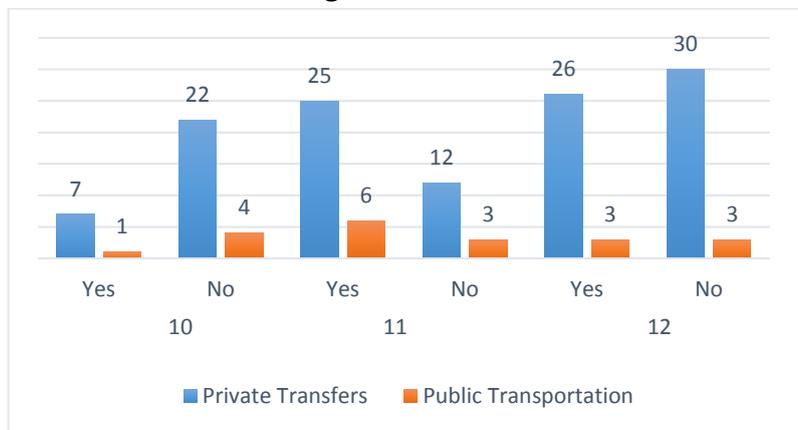

Figure 13. Cross-tabulating Concerns of Using Public Transport per Student and Types of Transportation

Relationships Between Variables

From the results of the study, it can be known the relationship between variables as follows:

1. The variables that have a significant relationship for SMA Negeri 1 Kutacane students 10 students are Private Vehicle Ownership (X2), Age (X5), Cost (X9).
2. The variables that have a significant relationship for SMA Negeri 1 Kutacane students 11 are How to Go (X6) and Cost (X9).
3. The variables that have a significant relationship for students of SMA Negeri 1 Kutacane student 12 are Gender (X1), Pocket Money (X4), and How to Go (X6).
4. Overall, variables that have a significant relationship for students of SMA Negeri 1 Kutacane are Pocket Money (X4), How to Go (X6), and Cost (X9).

Conclusion

It can be concluded from this research, namely:

1. Private transportation is the most widely used type of transportation mode by students of SMA Negeri 1 Kutacane for the 2023/2024 school year with a percentage of 84.2%, while public transportation has a percentage of 15.8%.
2. The variables that have a significant relationship for SMA Negeri 1 Kutacane students 10 students are Private Vehicle Ownership (X2), Age (X5), Cost (X9).
3. The variables that have a significant relationship for SMA Negeri 1 Kutacane students 11 are How to Go (X6) and Cost (X9).
4. The variables that have a significant relationship for students of SMA Negeri 1 Kutacane student 12 are Gender (X1), Pocket Money (X4), and How to Go (X6).
5. Overall, variables that have a significant relationship for students of SMA Negeri 1 Kutacane are Pocket Money (X4), How to Go (X6), and Cost (X9).

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