

Bergen Community College Public Transportation Survey Data Report



PHI THETA KAPPA
HONOR SOCIETY

Alpha Epsilon Phi Chapter

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Who we are

We are an Honors Society At Bergen community college That focuses on student volunteerism and community service, among other things one of our main goals is to work on 2 projects every year. One of them is called the college project. A project in which students and the college administration work together in order to solve an issue affecting the institution.

Introduction

Our 2019-2020 College Project consisted of gathering, analyzing, and assessing data regarding the availability of public transportation in our county and its effect on students' academic success. The purpose of the project was to investigate a leading factor of the high student attrition rate. Lowering attrition has been the administration's top priority, as even 1% of a decrease in student enrollment translates to a deduction of \$750,000 in the college's annual budget. This loss in revenue directly jeopardizes the funding of programs designed to support academic success.

Our project focused on two areas of analysis. The first area involved conducting extensive research of the infrastructure of public transportation in our county, which included studying existing bus routes and travel time. The second area consisted of creating a student survey to assess public transportation service issues and its impact on attendance and academic performance.

The results of our research reveal that some of our top feeder municipalities lack direct bus routes to campus. Additionally, many bus routes do not run in the early morning or late night, which limits the whentimes students are able to attend classes. Our survey shows that 40% of our student population utilizes public transportation, and 39% were unable to attend courses due to limited and unreliable bus routes.

Students modes of transportation

The first thing we wanted to know is how are students getting to school. In order to do this we asked different questions. And got some graphs out of them.

Figure 1. Primary Mode of Transportation

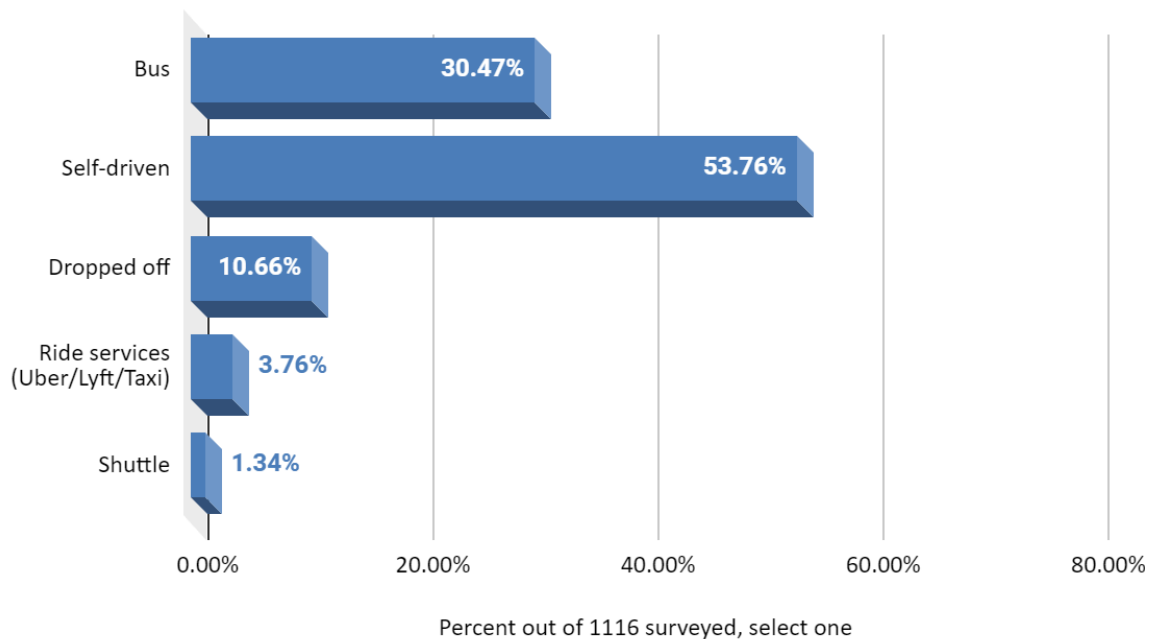


Figure 1 is based on the question “Which is your PRIMARY mode of transportation to get to or from campus? “ where participants were allowed to check their answers. All the 1116 survey participants answered this question.

Figure 2. Secondary Modes of Transportation (Primary Bus Commuters)

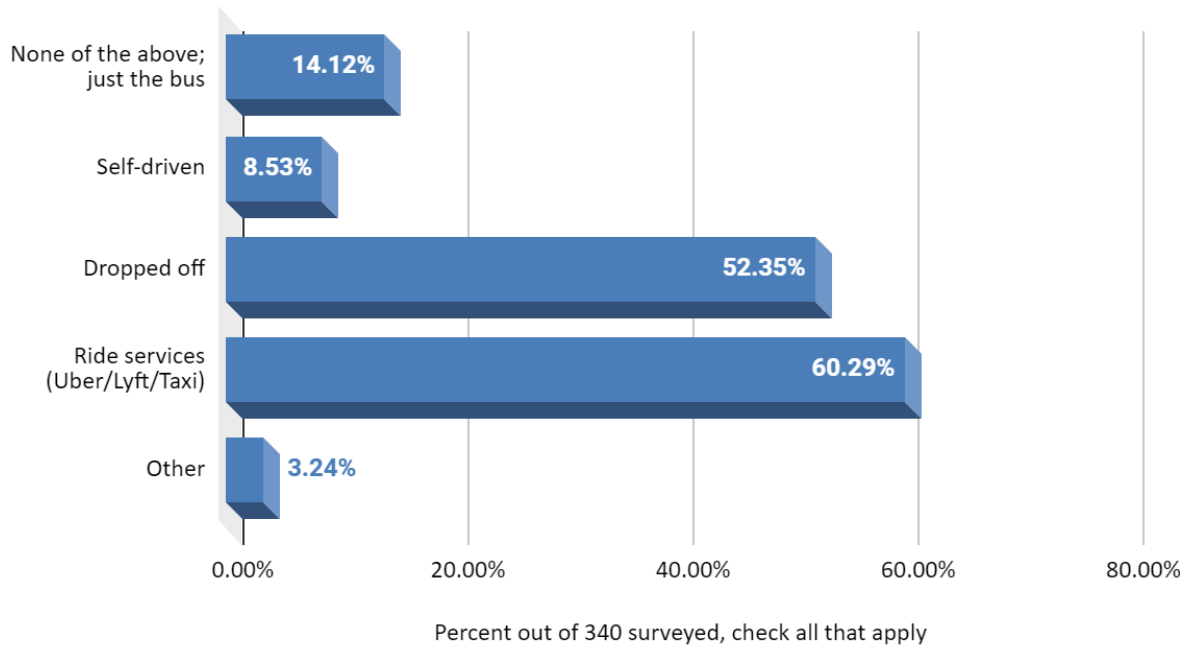


Figure 2 was based on the question “What other modes of transportation do you EVER use to get to or from campus? (Check all that apply.)”. Participants were able to check all that applied to them, which is why there percentages don’t add up to a 100. This question was asked to students who marked bus as their primary mode of transportation.

Figure 3. Secondary Modes of Transportation (Non-Bus Commuters)

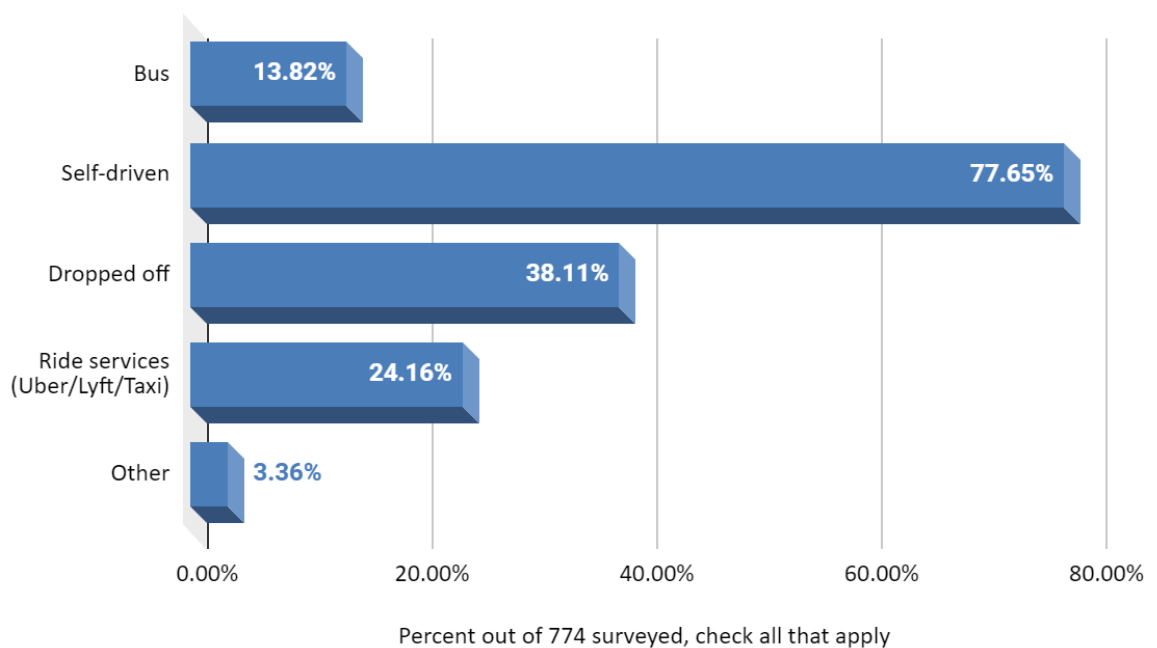


Figure 3 was asked to students who did not answer the bus as their primary mode of transportation. This one was a check all that apply which is why the percentages don't add up to 100. The amount of students that did not select bus as their primary mode of transportation is a total of 777 but 3 people skipped this question.

Figure 4. All Modes of Transportation

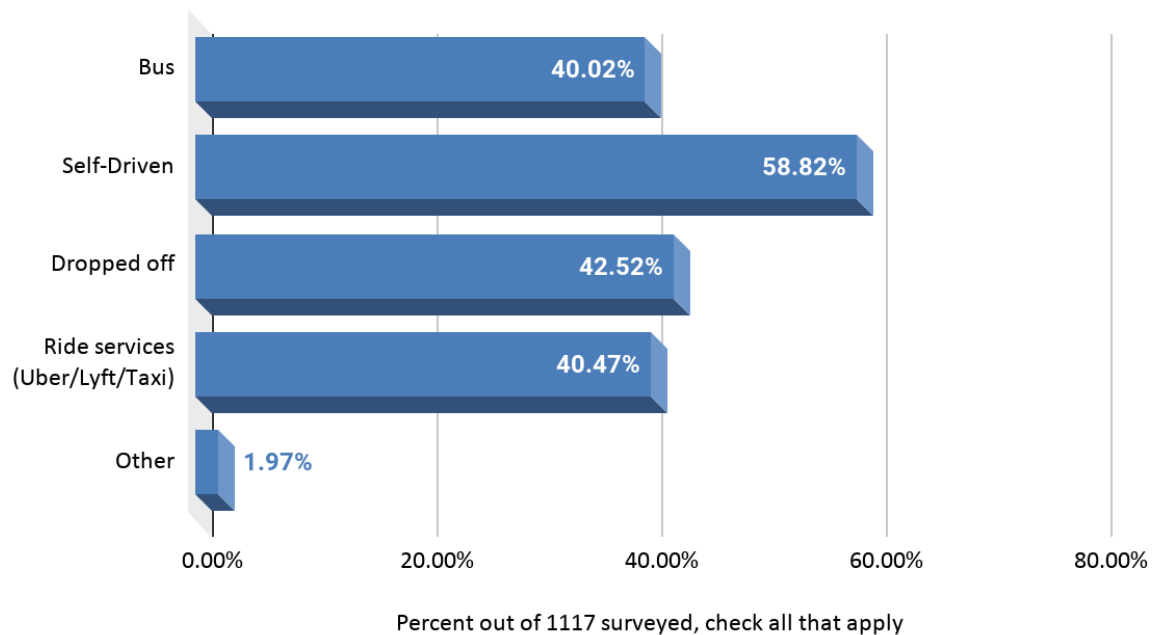
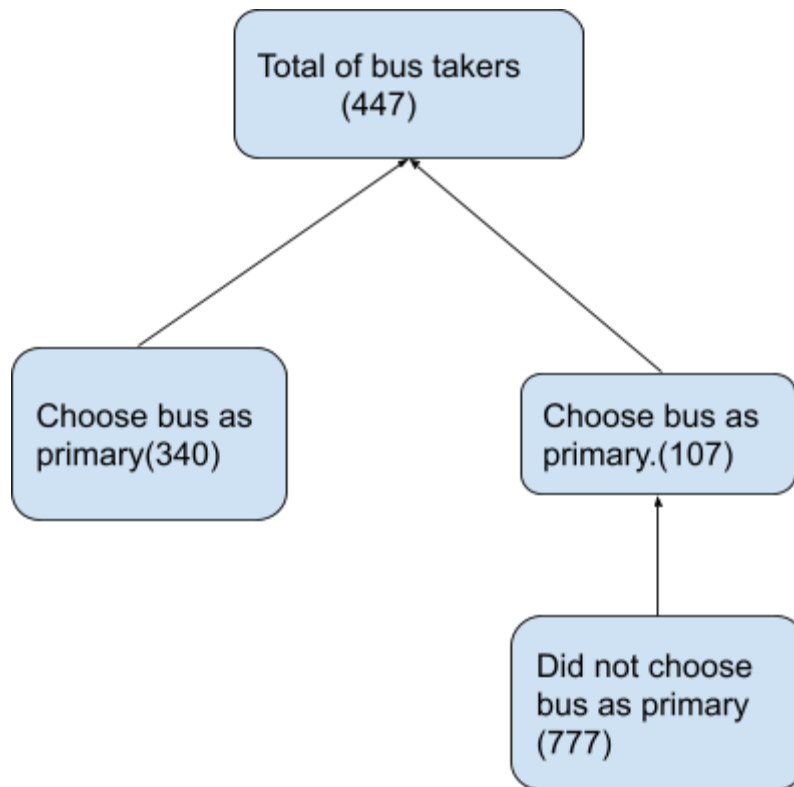
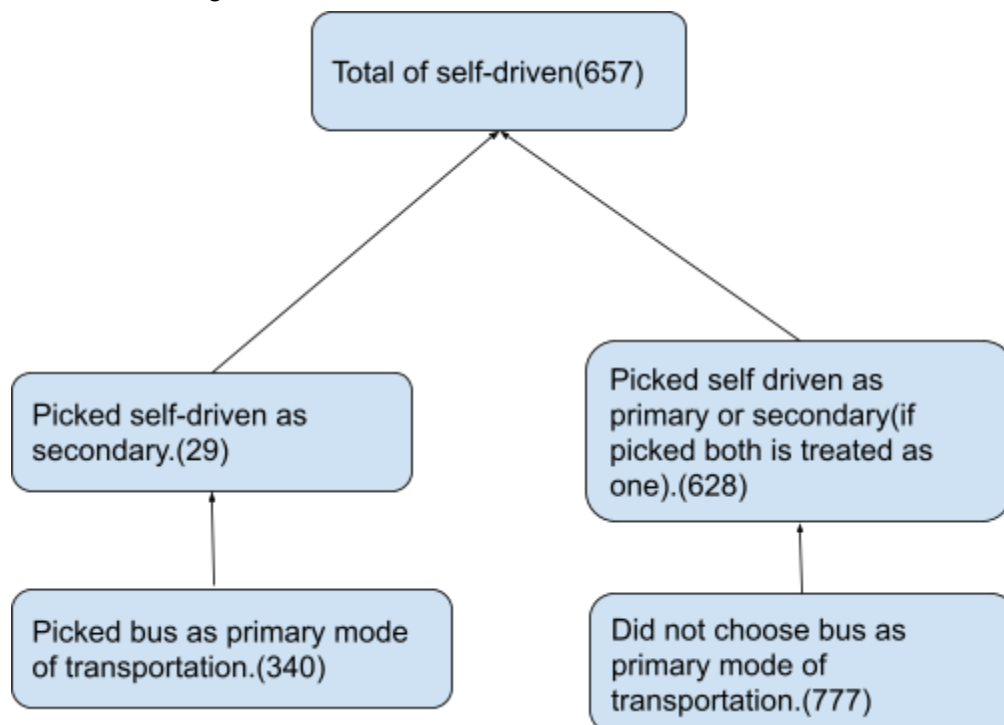


Figure 4 is a combination of the previous three graphs, in a 'check all that apply' format. To get the bus value we added everyone that picked the bus as primary with everyone that picked the bus as secondary. To get self driven we took everyone that picked self-driven as primary or secondary and treated it as if they just chose one so if someone picked self-driving as both primary and secondary it only counts as one. Then we added that value to everyone that picked the bus as primary and self-driven as secondary.



This is how we got the bus value.



How all of the other values were obtained.

Travel times

Figure 5. Average Time to Campus (Primary Bus Commuters)

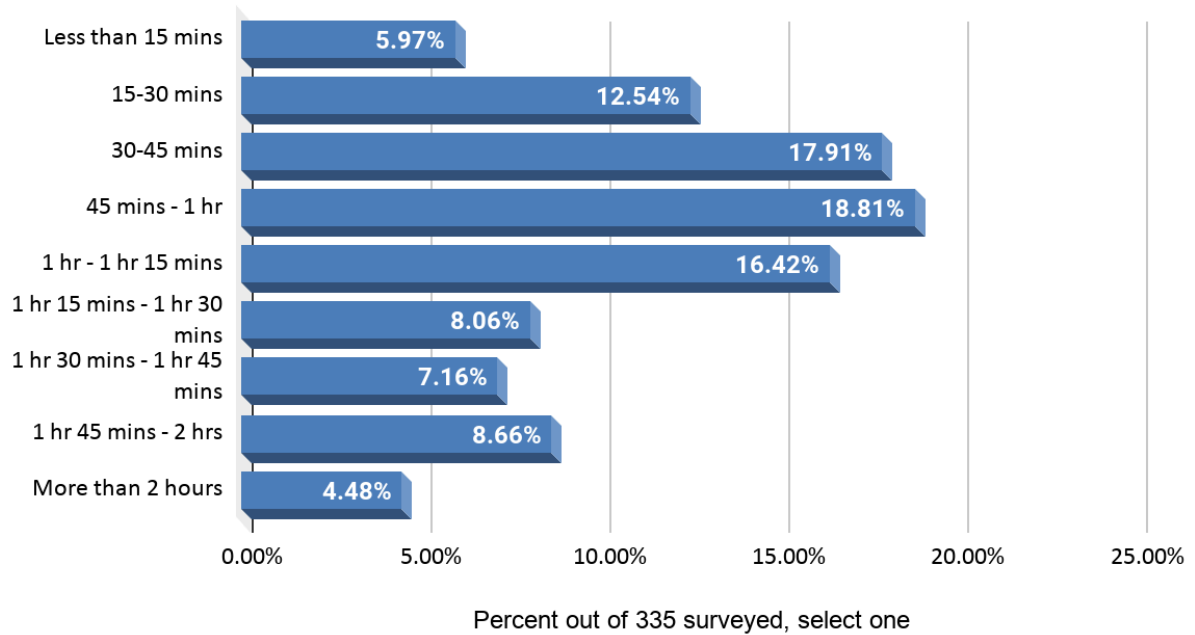


Figure 5 was obtained from the question “Typically, when you take the bus, how long does it take you to get to Bergen Community College?” participants were able to choose one and this question was only asked to participants that choose the bus as their primary mode of transportation.

Figure 6. Average Time to Campus (Secondary Bus Commuters)

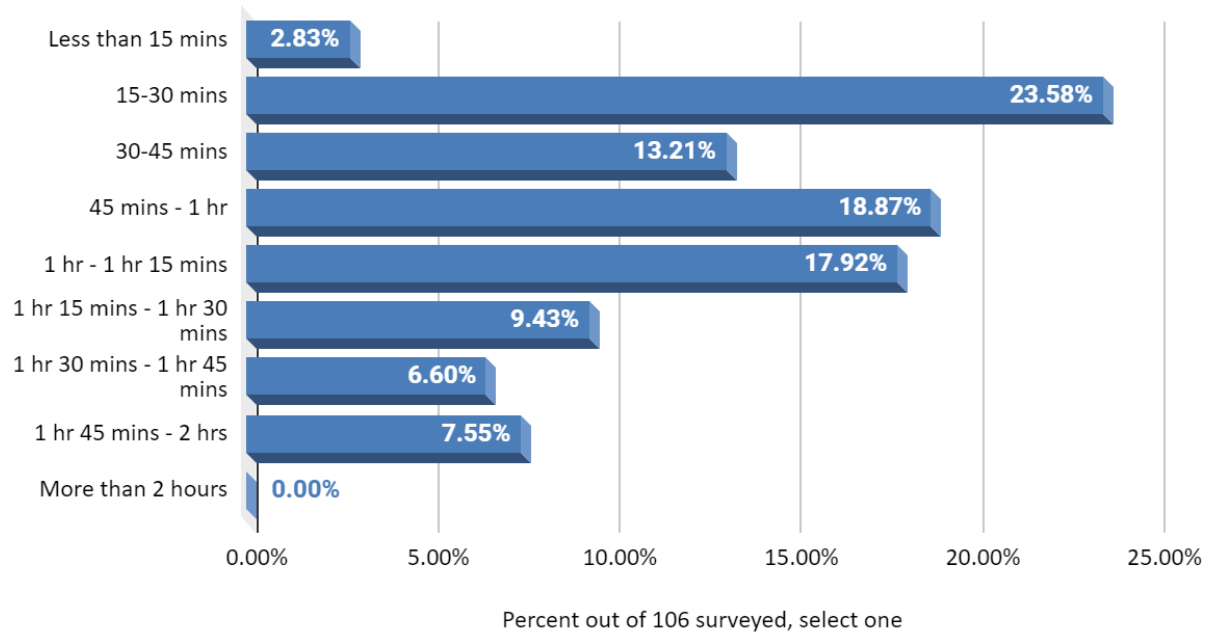


Figure 6 comes from the question “Typically, when you take the bus, how long does it take you to get to Bergen Community College?” This question was asked to participants that did not choose the bus as a primary mode of transportation but that chose it as a secondary. Participants were only able to choose one answer..

Figure 7. Travel Time to Campus (All Bus Commuters)

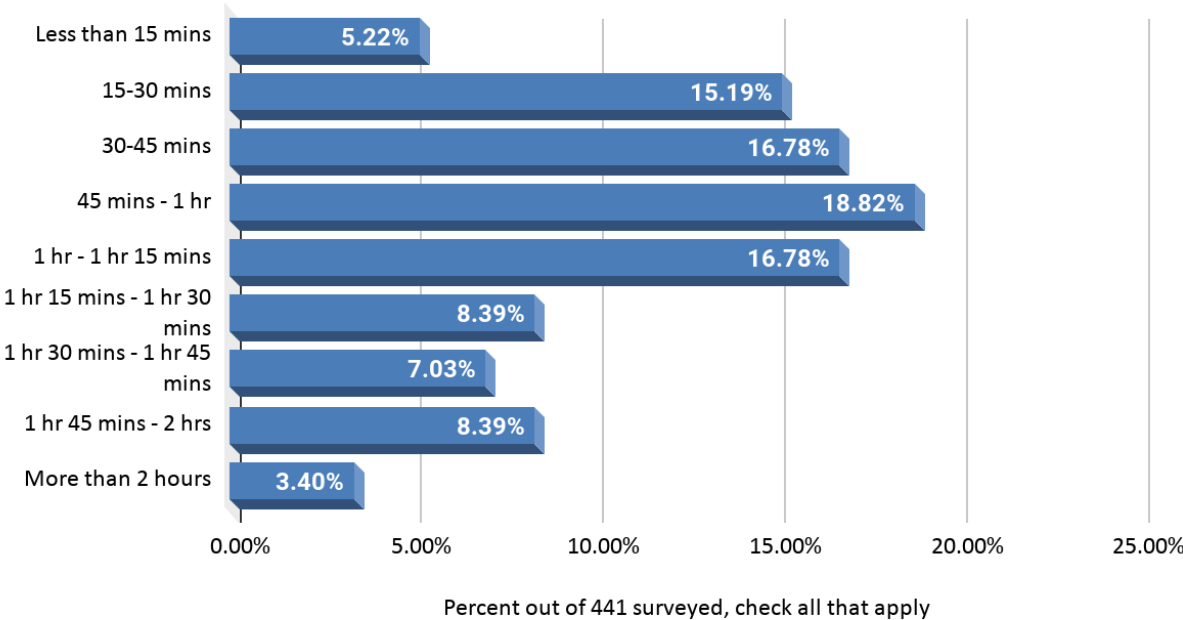


Figure 7 is a combination of figures 5 and 6 and we got it by adding graph's 7 answers and figure 6 answers with figure 7 answers and adding the totals.

Connections

Figure 8. Primary Bus Commuter Students Who Take Connections

Percent out of 335 surveyed, select one

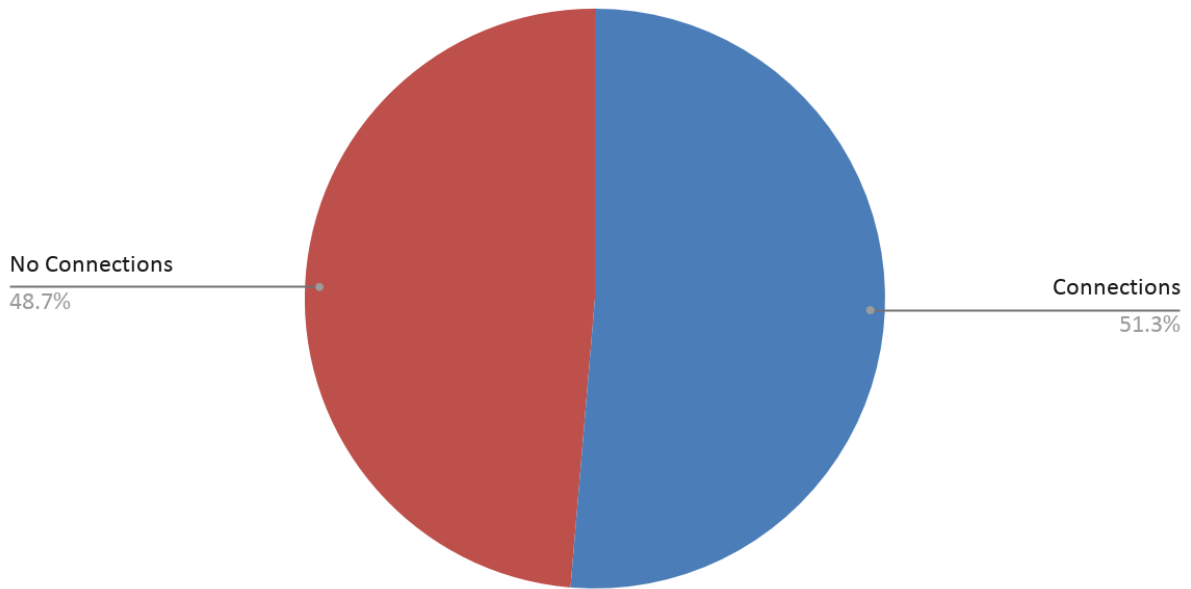


Figure 9. Secondary Bus Commuter Students Who Take Connections

Percent out of 106 Surveyed, select one

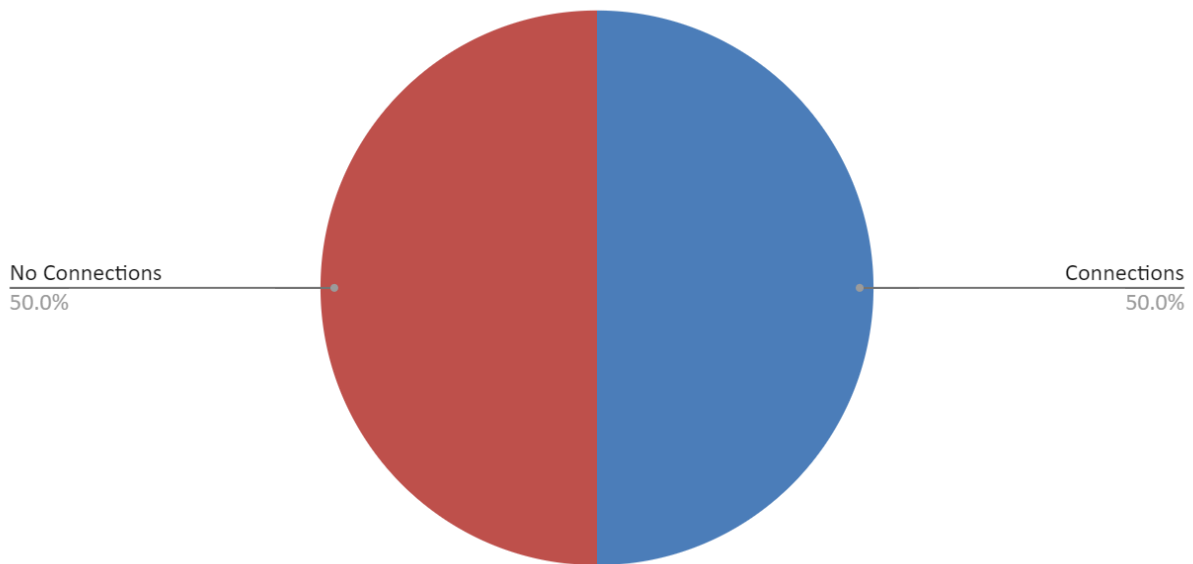


Figure 8 and 9 comes from the question “Do you take any connections (more than one bus) to and from Campus?” And was asked to people who use public transportation as a primary mode and as a secondary mode. Figure 8 comes from primary mode and figure 9 comes from secondary mode.

Figure 10. All Bus Commuter Students Who Take Connections

Percent out of 441, select one

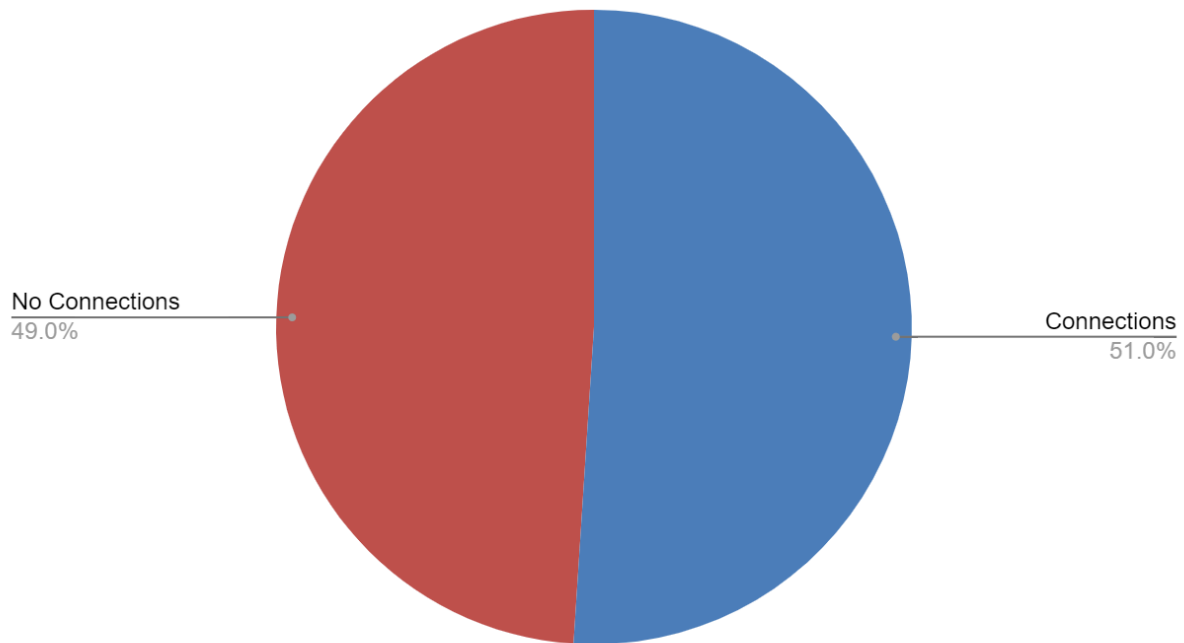
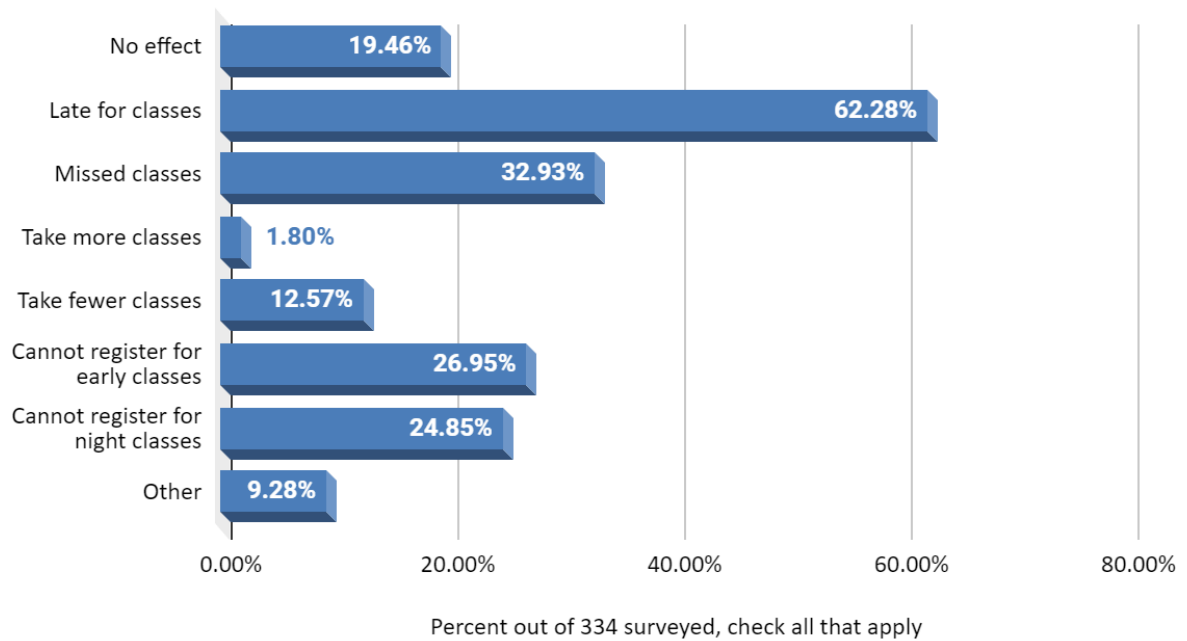


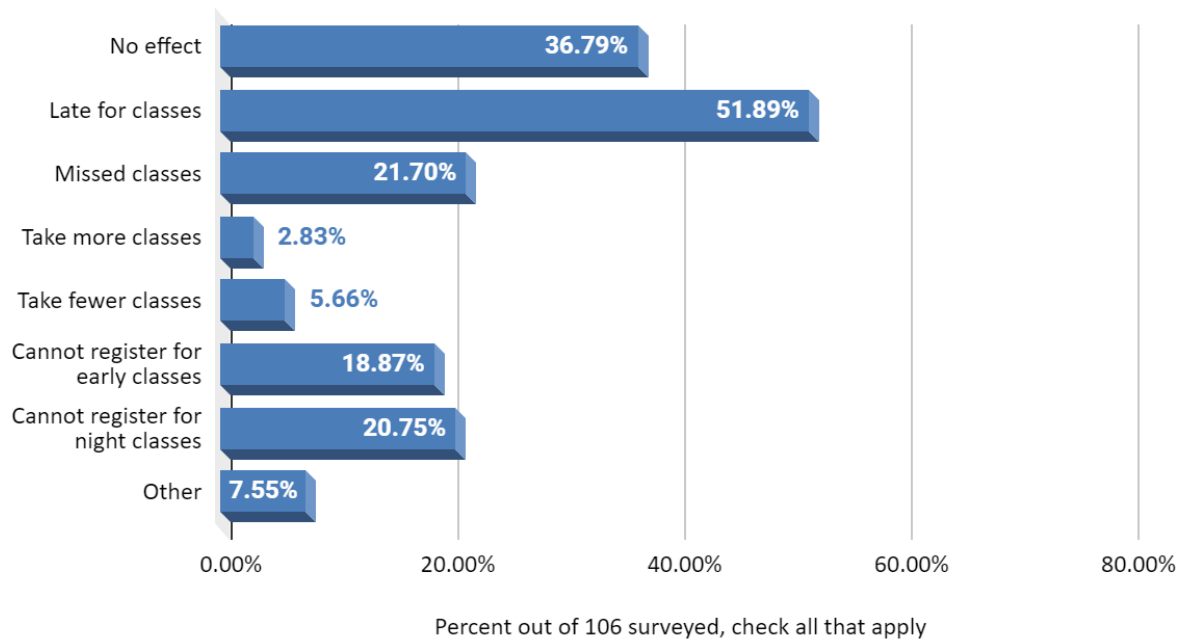
Figure 10 is a combination of figures 8 and 9 so it includes the total amount of students who take connections.

Figure 11. Effects of Public Transportation (Primary Bus Commuters)



This graph comes from the question “How does public transportation affect your Bergen experience? (Check all that apply)” The question was a check all that applied and was only asked to students who selected public transportation as their primary mode.

Figure 12. Effects of Public Transportation (Secondary Bus Commuters)



This graph comes from the question “How does public transportation affect your Bergen experience? (Check all that apply)” The question was a check all that applied and was only asked to students who selected public transportation as one of their secondary modes.

Figure 13. Effects of Public Transportation (All Bus Commuters)

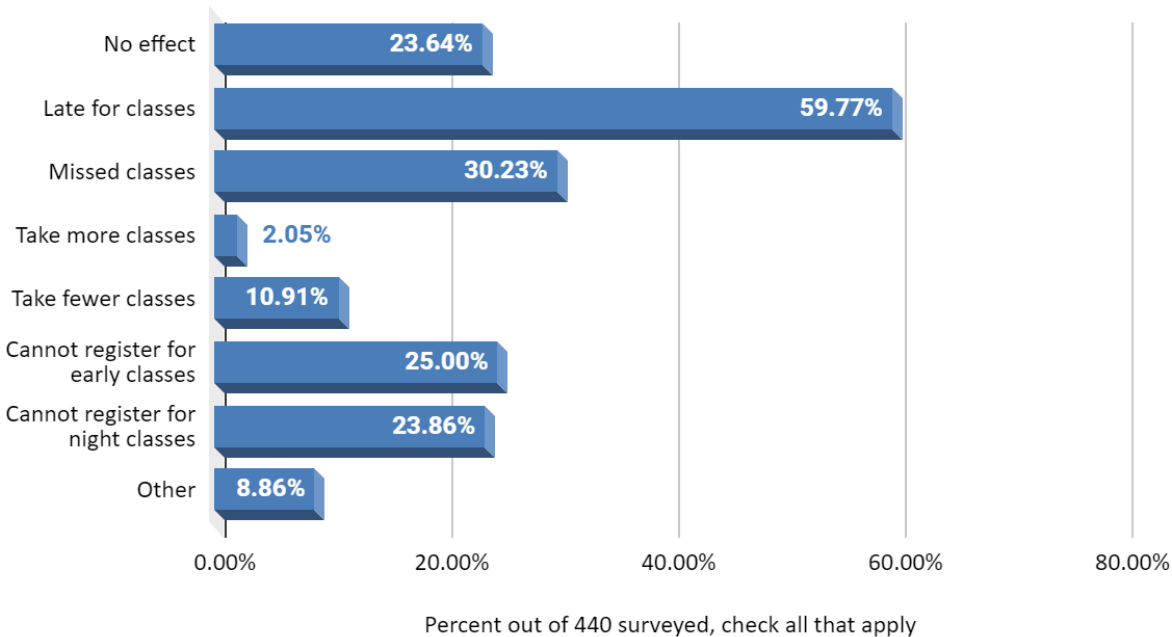
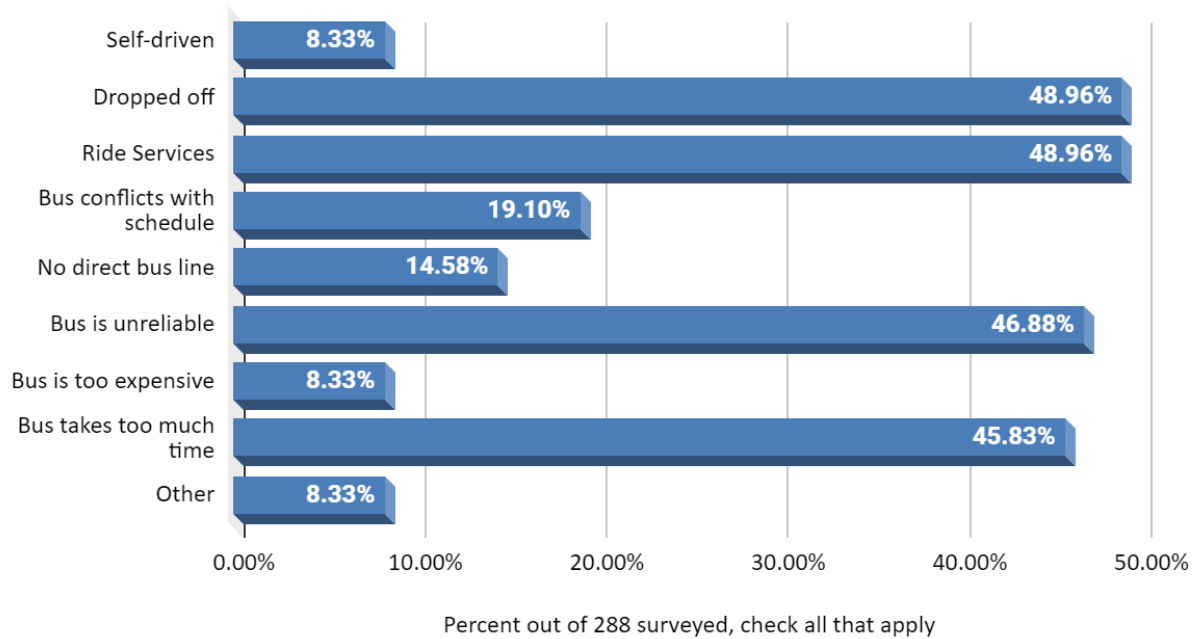


Figure 13 is a combination of 11 and 12.

Figure 14. Why Doesn't a Student Take the Bus? (All Bus Commuters)



This graph comes from the question. “When you don't take the bus, why don't you take the bus to or from campus? (Please mark all that apply)”. It was only asked to students who chose public transportation as their primary mode.

Figure 15. Why Doesn't a Student Take the Bus? (Non-Bus Commuters)

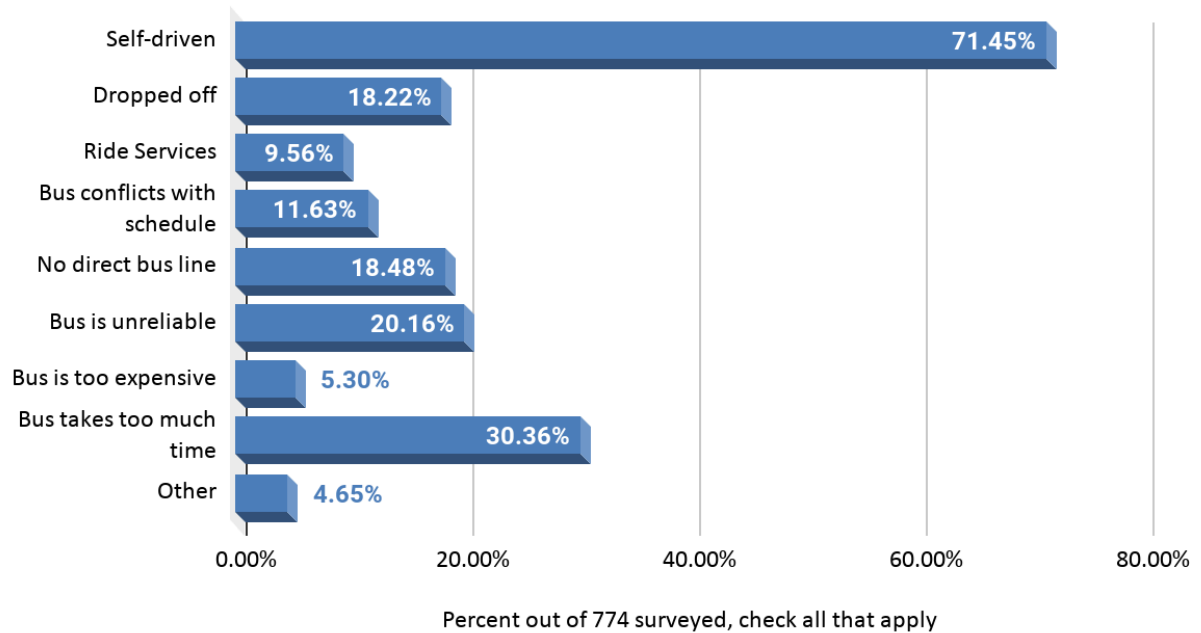
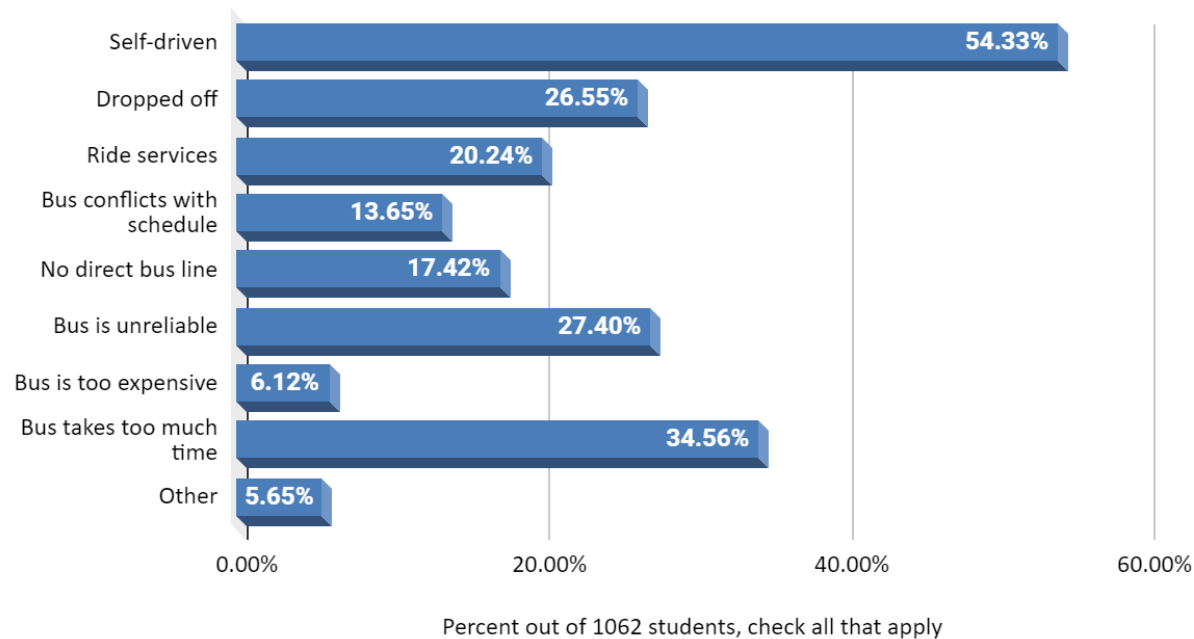


Figure 15 comes from the question “For which reasons don't you take the bus to campus? (Please mark all that apply).” this is a check all that apply questions and it was ask to students that did not check the bus as their primary mode of transportation.

Figure 16. Why Doesn't a Student Take the Bus?



***Figure 16 is a combination of 14 and 15.**

Figure 17. Would You Utilize a Shuttle System?

Percent out of 1088 surveyed, select one

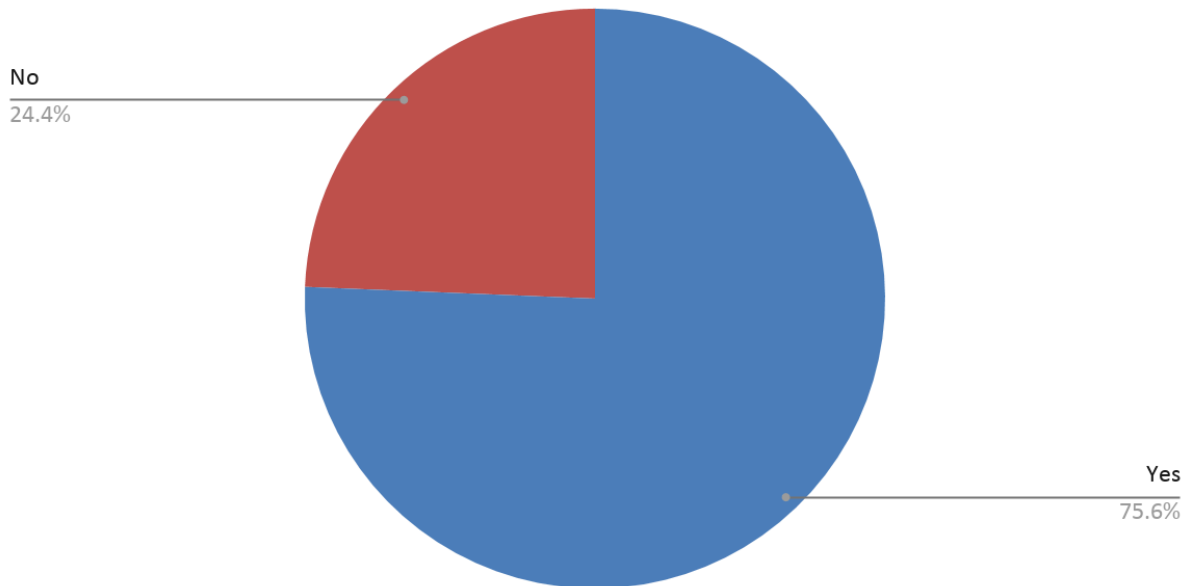


figure 17 This graph came from the question “If there were a more direct shuttle from your town to Bergen (like a college bus) offered by the county, would you take it?” and it was asked to all students.

Maps

[illegible]

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Figure 19. Student Enrollment per town

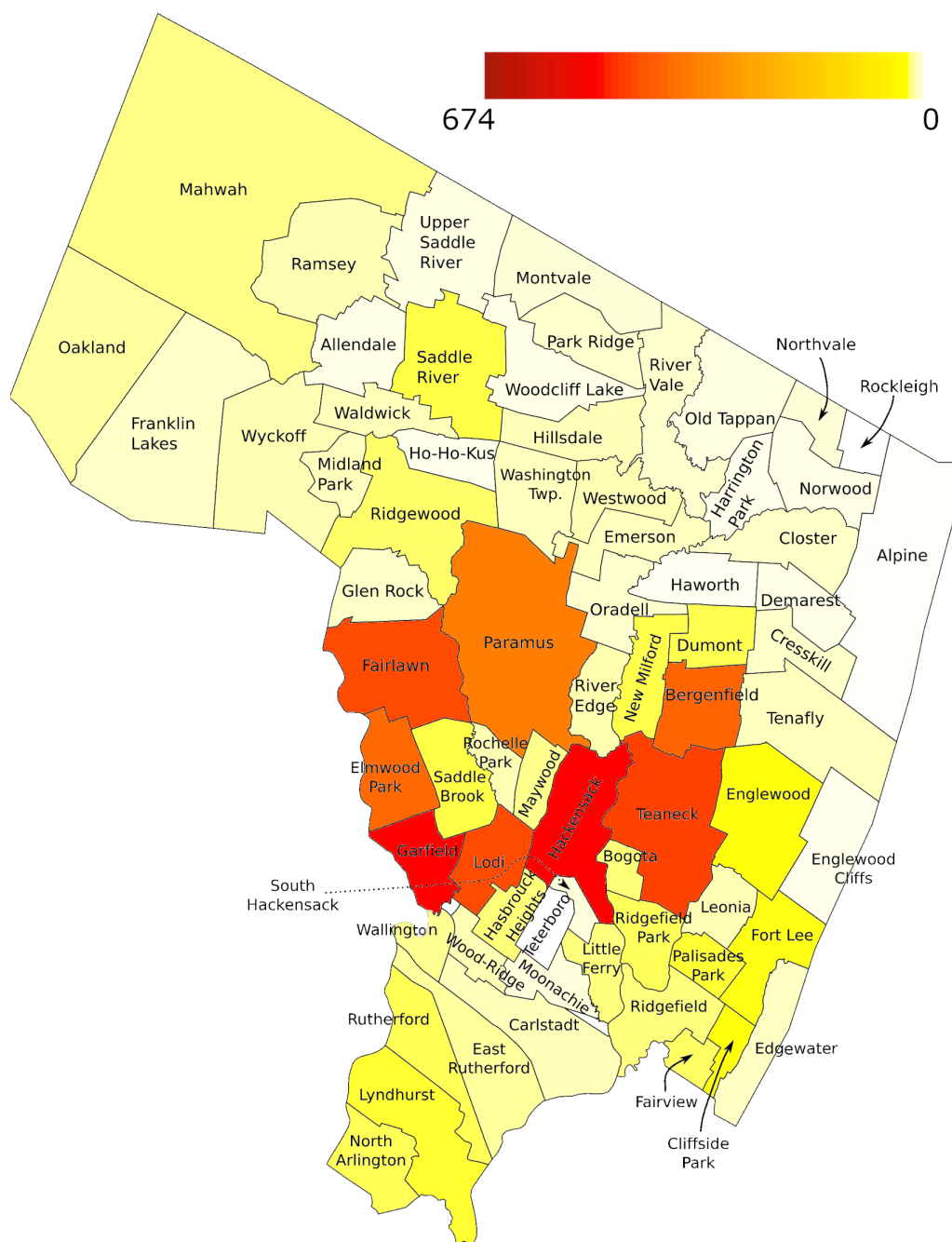


Figure 19 is a heatmap of the student population at Bergen. The more red the town is the more students leave there.

Discussion

Before discussing how public transportation is affecting students the most important thing to know is how many students it is affecting. And as you can see in figure 1. 30% of students use the bus as their primary mode of transportation, if we use the figure 4 which shows all the students being affected by public transportation we can see that 40% of the student population relies on public transportation in an either primary or a secondary way. By getting the p-value of 95% confidence we can conclude that the amount of students that rely on public transportation is between 4,954 - 5,729 students. With the survey data we found different ways that students are being affected by public transportation. The main ones being time, attendance, registration and money.

If we looked at figure 7 one of the main things that stand out is the amount of students that spend more than 45 minutes to get to school. Which add up to 62.81% of the students who take the bus spending that much time. A clarification to do is that this is just one trip, so it will be double that if we added up the way back.

Another problem we looked at is the attendance of students and their registration decisions. If you look at figure 13 you can see that that 59.77 percent of students are late for classes, and 30.23% miss classes due to public transportation. This is a lot of students failing to fulfil their academics due to public transportation. Additionally there is a 25% of students that cannot register for early morning classes and the 23.86% of students that cannot register for late night classes.

A main factor we looked at when doing in our surveys why aren't students taking the bus and if you see figure 16 shows us that the main factors for students not taking the bus are. Being self driven makes sense because it is the most efficient means of transportation. But if we look at the next two biggest we get that people are not taking the bus because it is unreliable and because it takes too much time. Unreliability is a great problem with public transportation that sadly there is not an effective way to quantify other than asking people.

Time is one of the main reasons people are not able to access public transportation and if we look more in depth we can see that the problem goes deeper than the buses being unreliable. If we looked at figure 18 we can see that the public transportation system has some structural issues like the fact that there are so many towns where students are forced to take more than one bus who will increase the time of arriving to school because now you need to wait for two busses rather than one. There is also towns with no access to public transportation at all forcing everybody in the area to get to school by other means. This problem goes further when we see figure 19. Elmwood Park, Garfield, These three towns contain a vast amount of the Bergen population however they have no direct bus line to get to Bergen. Making a huge amount of the Bergen population waste time.

