Alyana Barrera
Professor Wang
CS 1181 - Project 4
20 July 2021

Proposal: Best Number of Lanes

Based off of the data of your provided text field, I found that there are a multitude of options for your business when it comes to having the most optimal number of express lanes, regular lanes, and closed lanes. First, I will explain the most optimal number of express lanes in time efficiency for your customers but not for cost and then I will share your options with closed checkout lanes along with the most optimal express lanes.

The most optimal number of express checkout lanes when all 12 lanes are open is 3. This will have the least amount of average wait time for customers at “12.730” minutes (Barrera). Although this would be quite costly, throughout all the inputs of number of lanes and express lanes this average wait time number was the lowest by far for customers. However, you have some other options depending on how many lanes you would like open.

When it comes to having 11, 10, or 9 lanes open, the lowest wait time for customers comes where there are 3 express lanes. The average wait time for 11 lanes with 3 express lanes is “36.14” minutes (Barrera). The average wait time for 10 lanes with 3 express lanes is “67.60” minutes (Barrera). The average wait time for 9 lanes with 3 express lanes is “110.24” minutes (Barrera). As you can see, the results come with a dramatic change in wait time. Based off of these numbers, I would recommend not going under 10 lanes. This may result in not only overworked employees but also very upset customers because of how long they would have to wait to get their items. This may in turn cost your business loyal customers because of how long they have to wait but the option is still there in terms of closing some lanes.

As mentioned earlier, the most optimal in terms of least amount of wait time is to have 12 lanes open with 3 express lanes. I would highly recommend the optimal choice to keep customers happy and in turn it will hopefully result in loyal customers. I would recommend going no lower than 2 lanes closed. This is because it will be at the cost of wait time for customers. To further look at some options if needed, you can review my “project4” java code in the folder I have sent this paper with.

Works Cited

Barrera, Alyana (20 July 2021) project4 [Source Code].