In this paper we study the transportation problem of passengers traveling in a bus between two fixed points with four varying constraints under the assumption that the approximate number of passengers traveling between two fixed points is given. We fuzzify this problem and show that when the level of satisfaction ‘h’ fluctuates between 0.5 and 1, the annual costs ‘T’ is acceptable in some range of tolerance. When h is 1, then we show the acceptable costs to be in the best fit and when h ranges in the interval (0, 0.5), the costs exceeds the range of tolerance. Hence in our model we verify the results and conclude that $h \in (0.5,1)$ gives the acceptable range.