ANALISIS MODEL TUNDAAAN KENDARAAN MELALUI PENDEKATAN KURVA ISOKUAN PENANGANAN PERLINTASAN JALUR KERETA API DENGAN JALAN

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A crossing is intersection between road and railway. A prominent issue of level crossings is the high number of traffic accidents of vehicles and rail, especially at unwatched level crossings and congestion points. As train passes, queue of vehicles causing delays is detrimental to highway users. Data were obtained through survey in study site by using multiple linear regression analysis. The best equation was selected to serve as models of vehicles delayed at level crossing, with equation of weekdays variation is $Y = -264.062 + 34.197X_1 + 0.627X_2$, and holiday variation is $Y = - 151.005 + 29.003X_1 + 0.763X_2$. In which Y is vehicle delay, X_1 is train frequency, and X_2 is the volume of vehicle. The model is then translated into isoquant curve with approach of a comparison between the cost of vehicle delay and crossing handling cost. Then, image of handling area corresponding to the number of vehicles delay and total cost of delay, which is divided into handling area of scenario 1, handling area of scenarios 2 and handling area of scenario 3. Furthermore, the model is applied in four other crossing locations in the Jabotabek to provide an overview of the position of the crossing area scenarios to be handled. Having tested the validity, conclusion is drawn. The equation model of weekdays and holidays can be applied to other crossings in Jabodetabek.

Keywords: crossing, linear regression, validation, pearson, vehicle delay, handling model, the cost of delay and handling costs