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Title of Thesis: Study of Traffic Stream Characteristics on Highways in Egypt using Digital Video Camera.
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ABSTRACT

Although there are many studies that describe the relationships between the traffic stream parameters (i.e., Speed, Density and Traffic Volume), Only very limited studies have been reported from Egypt in this respect and the present study develops an optimal speed–density relation, speed-flow and flow density relations that are suitable for rural roads in Egypt. Therefore, the main objective of this research is to develop relationships between the main traffic stream characteristics (i.e., traffic volume, traffic speed, and traffic density) that best describe the traffic stream on multi-lane divided highways in Egypt. These relationships are used in planning, designing, and operation of transportation facilities.

Traffic data such as flow rate, speed, density, and vehicles classification were collected using Digital video camera (Traficam X-Stream Camera) on a sample of road sections along rural roads in Egypt. These sections were chosen on the rural road connecting Cairo with Fayoum (i.e, Cairo-Fayoum rural road). This data was processed and analyzed to obtain the required relationships for the main characteristics of traffic steam on the rural roads, then identified the best models that represent the data well, and obtained the values of the passenger car units (PCU) of all categories of vehicles on the highways, which, were compared with passenger car units used in the Egyptian code of rural and urban roads.