The Government has committed itself to major structural reforms, which include inter-alia economic liberalization, commercialization and privatization of public enterprises. This has a broad scope of injecting efficiency in the economy. With improved efficiency, cost of cane transport is bound to be competitive and ultimately the price of the end product sugar shall be competitive. (KSA, 2000) Mumias Sugar Company has already been privatized: all the other sugar companies are gradually being privatized as the government reduces its shareholdings in these companies. With adoption of economic liberalization, farm inputs, cane transport cost, cane and the market forces of demand and supply now freely determines sugar prices. Controls on cane transport cost have been abolished. Cane transport costs account for approximately 30% of the total cost of cane production. With the fore-mentioned liberalization and privatization of sugar sub-sector it is important that the cost of production is minimized. It is against this background that the study looked at the application of Queuing theory in reducing transportation costs in sugar factories. The study started by looking at the existing queuing model and finding the ideal number of units required to transport cane in the two selected sugar factories. The cane transportation aspects were looked at i.e. Amount of cane received, amount of cane milled per hour, waiting times at service points, distance traveled by the transporters, cane spillages, transport costs for the transporters. The study sample involved the transporters contracted to Mumias sugar company and cane transporters of West Kenya sugar company. The research data was collected through interviews, questionnaires and observations. The study finding were as follows: -

- Waiting time between 10 minutes to 40 minutes caused the cane transporter yield high costs
- The higher the milling rates, the lower the waiting time
- Most transporters were found operating over capacity
- Most small scale transporters had the lowest costs could hardly compete the transporters with a high number of fleets due to lack of basic facilities like winches