

**Title:** Study on Traffic Flow of Jamaica North South Toll Road to Explore the Operating Strategy of Traffic Attraction and Toll Revenue Maximization

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## ABSTRACT

The North South Highway Project is a unique one. Thus, careful analysis and consideration must be done to determine ways to improve the operations and maintenance of the North South Highway. Doing so will, by extension, bring more benefits to the Jamaican economy.

In the meantime, as an investment, the pursuit of the maximization of returns and profitability analyses is the most important part for the developer. Toll revenue, as the major income of the project, comes from the traffic flow. However, the composition and development trend of traffic flow is very complex.

Because of the foregoing, this study has three (3) main purposes.

Firstly, to fully understand the structure of the highway's traffic. As one of the top managements of JNSHCL, the project started since 2020. Even though the North South Highway has seen a steady increase in traffic flow over the years, there is a disparity in traffic flow at different sections. This means that the increase for some sections is significantly less when compared to other sections.

Secondly, this research will look at the various methods/tools used by JNSHCL to increase traffic on the highway. Such methods include using the toll fare cost as leverage (for example lowering the toll fare for some sections), increasing marketing efforts, business networking, and organizing E-PASS promotions.

From this research, two aspects will be determined:

1. If these methods/tools work efficiently and if so, how efficiently.
2. Whether there are other measures and opportunities which need to be created/exploited to attract more customers.

Finally, this research aims to discuss the relationship between one of the methods/tools which is toll fare prices, and revenue maximization. The traffic does not increase at the same pace as the toll revenue; the revenue increase takes place more rapidly. In the past year, the increase in toll fare price did not lead to a traffic decrease in any section, which means two parts:

1. There is still potential for traffic growth at most sections of the Highway
2. The toll fare price is not yet at the economic and psychological limits of the highway users.

The research method of this paper uses the literature data method, questionnaire survey method, mathematical-statistical method, and logical analysis method, taking the opinions of toll-users to maximize satisfaction degree and project revenue, but which is deemed acceptable by users. Analysis of the traffic flow after the most recent increase in the toll fare will help to explain the effect that toll fare increase has on traffic.

As a result of seeing the effectiveness of using the toll fare cost as leverage, for the toll fare increase which took place in July 2022, the same tool could be used in assigning the toll fare increase. The same thought process was taken into consideration for this toll rate increase. Some JNSHCL believes this strategy will continue to attract more and more customers in this important section.

**Keywords:** JNSHCL, North South Highway, Traffic attraction

