



Truck Driver Behavior and Travel Time Effectiveness Using Smart GPS

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Abstract

The pattern of coal transportation is very dependent on the behaviour of the driver, which influences the effectiveness of travel time. Good driver behaviour will affect the optimization of travel time, and scenarios need to reduce travel time wastage. This study aims to optimize travel time and sensitivity analysis based on the influence of driver behaviour, truck travel movements and the use of travel time on coal haul roads. The research method uses a field survey with a GPS tracker, a smart GPS server 3.3, google earth and statistics. The results showed that the driver's behaviour greatly influenced the pattern of use of travel time and truck travel speed. Coal transportation in the morning can be more optimal than night so that that travel time wastage can reduced by 40%. The proposed optimization scenarios can save 36.7% - 48.61% of the existing travel time and the transport cycle can be increased to four to five times. So that with the addition of the cycle, it will increase the income of the transport company and the driver's income. With smart GPS, companies can improve the performance of transportation services in company management, get coal supplies on time.

Keywords: Drivers Behaviour, Travel Time Effectiveness, Truck, Coal Roads, Scenarios.

1. Introduction

The Borneo Economic Corridor in MP3EI is a National Energy and Mining Product Production and Processing Center, especially the coal sector. The coal commodity is the primary commodity of South Kalimantan according to the results of the Dynamic Location Quotient > 1 and the need for coal production has increased from the 2011-2016 period of 24 million tons. Coal is the primary fuel for electricity, metallurgy, cement, textile, pulp, fertilizer and briquette factories. Coal transportation distribution is a significant thing in coal availability [1].

There have been many studies to analyze driver behaviours such as street characteristics influence, driver category and car performance on urban driving patterns [2]. Davidovic et al. (2018) estimated the professional driver's fatigue as a modern era problem [3]. Dinges (1995) focused on the sleepy behaviour influence; and accidents that occur, exploration studies about long-distance truck drivers [4, 5]. Zicat et al. (2018) estimated young drivers with cognitive function by analyzing the relationship between attitude, driving, cognition and personality [6]. Moreover, Kirti et al. (2019) got the effects of work-rest patterns, lifestyle and payment incentives drivers on long-haul truck driver sleepiness [7]. Meng et al. (2019) reported on the driving fatigue by surveying the taxi drivers and truck-related to accidents in professional drivers [8].

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