Fatigue-related crashes involving express buses in Malaysia: Will the proposed policy of banning the early-hour operation reduce fatigue-related crashes and benefit overall road safety?

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A B S T R A C T

Fatigue-related crashes have long been the topic of discussion and study worldwide. The relationship between fatigue-related crashes and time of day is well documented. In Malaysia, the possibility of banning express buses from operating during the early-hours of the morning has emerged as an important consideration for passenger safety. This paper highlights the findings of an impact assessment study. The study was conducted to determine all possible impacts prior to the government making any decision on the proposed banning. This study is an example of a simple and inexpensive approach that may influence future policy-making process. The impact assessment comprised two major steps. The first step involved profiling existing operation scenarios, gathering information on crashes involving public express buses and stakeholders’ views. The second step involved a qualitative impact assessment analysis using all information gathered during the profiling stage to describe the possible impacts. Based on the assessment, the move to ban early-hour operations could possibly result in further negative impacts on the overall road safety agenda. These negative impacts may occur if the fundamental issues, such as driving and working hours, and the need for rest and sleep facilities for drivers, are not addressed. In addition, a safer and more accessible public transportation system as an alternative for those who choose to travel at night would be required. The proposed banning of early-hour operations is also not a feasible solution for sustainability of express bus operations in Malaysia, especially for those operating long journeys. The paper concludes by highlighting the need to design a more holistic approach for preventing fatigue-related crashes involving express buses in Malaysia.

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1. Introduction

In Malaysia, a number of tragic crashes occur during the early-hours of the morning and these often result in serious casualties (Fadhli et al., 2009a). These crashes have been at least partially attributed to fatigue and sleepiness. Sleepiness is a basic physiological state brought about by the restriction or interruption of sleep. It is also influenced by natural changes in the body’s level of alertness during each 24 h sleep–wake cycle due to the influence of the endogenous body clock (Czeisler et al., 1980; Zulley et al., 1981). The body clock programs individuals to be very sleepy twice a day: firstly, during the habitual sleep period which occurs during the middle of the night (01:00–06:00 h) with a maximum circadian effect occurring at about 06:00 h (Akerstedt and Folkard, 1995; Lavie, 1986; Zulley, 1990). The second period occurs 12 h later, between 14:00 h and 16:00 h in the afternoon. Many studies have shown that the risk of a person being involved in an accident is 10 times higher at night when compared to the daytime (Horne and Reyner, 1995a,b; Langlois et al., 1985). In reaction to the tragic crashes, it has been proposed that express buses should be banned from operating during the early-hours (i.e. 00:00–06:00 h).

Many studies worldwide have identified fatigue and sleepiness as one of the major causes of road accidents (Akerstedt and Kecklund, 2001; Chen and Wu, 2010; Connor et al., 2002; Dobbie, 2002; Horne and Reyner, 1995a,b; Lyznicki et al., 1998; Perez-Chada et al., 2005; Philip et al., 2001; Pierce, 1999). Indeed, it is estimated that between 15% and 20% of commercial vehicle fatalities can be attributed to fatigue and sleepiness (Horne and Reyner, 1995b; MacLean et al., 2003). However, these studies did not