

Systems Thinking Approach to 2013 Genting Highlands Bus Crash on Technical Document Requirements and Standardised Operating Procedure for Transportation Safety

*Muhammad Shaqif bin Syed Jamaludin\* & Ibrahim Adham Taib*

Department of Biomedical Science, Kulliyah of Allied Health Sciences, International Islamic University Malaysia

ABSTRACT

*Objectives/Research Problem:* Vehicles, drivers, and environmental factors are often emphasised in investigation of road traffic accident. Nevertheless, the 2013 Genting Highlands Bus Crash (Genting Crash) reveals that the flaws in documented technical requirements and standardised operating procedure of road safety were also critical contributing factors to a road tragedy. This study describes the use of Systems Theoretic Accident Model and Process (STAMP) to analyse the inquiry report on Genting Crash as it focuses on system error thus neglecting hindsight bias and blame culture.

*Materials and Method:* The inquiry report of the Genting Crash was analysed through the system thinking of STAMP by viewing the diverse and specialised components including integrated organisational communication, system design, and the safety constraints as an integrated whole component. These causal factors are then presented in the theoretical framework of road safety control structure to see how the causal factors were interconnected among themselves that lead to the event of Genting Crash. The present study, explores for the first time, the application of STAMP towards road traffic accident in Malaysia.

*Results and Discussion:* The systemic analysis of STAMP on the Genting Crash indicated that there were inconsistencies between standards adopted by government agencies as certain organisations at the control structure have differing self-regulated guidelines and thus leading to inadequate enforcement on road safety in Malaysia.

*Conclusion:* This study demonstrates the versatility of STAMP in analysing road traffic accident in Malaysia. In addition, the method highlights the weaknesses that exist in the current standards or procedures, particularly with regards to inconsistencies between what different govt agencies adopt. The findings of this study should make an important contribution to minimise losses and find new ways of preventing road traffic accident for long term improvement.

KEYWORDS: Accident Investigation, Systems Theory, Systems Theoretic Accident Model; Process, STAMP

\*CORRESPONDENCE: shaqifjamaludin@gmail.com