

Thesis title:

A quantitative approach to Hospital Resilience based on System Dynamics in Sri Lankan context

Abstract :

Disasters caused by natural hazards have become a major issue in Sri Lanka recently as they have caused a mass of fatalities and injuries, and also critical economic losses. In this case, hospitals have to play an important role in recovering the damage caused by disasters, providing immediate care during the recovery time. At the same time hospitals have to withstand the disaster impacts by themselves. The damages on the infrastructures and medical equipment, impacts on the medical staff and the supplies can break down the functionality of the hospital in a disaster. In this case, the disaster resilience of the hospitals, the ability to withstand, absorb and respond to the immediate impacts of the disasters, is considered as an important aspect. The preparedness level of the hospitals also becomes a significant factor in hospital resilience.

Enhancement of hospital resilience has become a popular topic in the present. Sendai Framework for Disaster Risk Reduction 2015-2030 is considering the improvement of hospital resilience as one of the priorities. In the operation of enhancing the hospital resilience, resilience level should be quantified as it can be used as a measure of the effectiveness of enhancing hospital resilience. In this study, a quantitative assessment to evaluate the hospital resilience level in Sri Lankan context is to be proposed by developing a system dynamics model to evaluate the functionality of the hospitals. The developed model is to be verified using a case study in the Sri Lankan context.