Adaptive optimisation of road safety strategic management

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Background

- Focus of road network management from construction through to strategic management.

- Road death and injuries have been becoming a global health issue. (World Health Organization, 2018)

- Road safety strategic management is promoted but lack of data-based intelligent methods to achieve.

(World Health Organization, 2021)
Problem and Needs

- Number of traffic crash and KSI (killed and seriously injured) crashes are not acceptable.
- Strategic tools are not widely used.

A procedure with less interference from experts based on data is needed

Multi-disciplined knowledge is required to conduct data analysis and resource allocation for strategy formulation.
Innovation and Challenges

- Innovation
  1) Data mining leading to rules that represent hidden information.
  2) Advance visualisation for the results.

- Challenges
  1) Need for data of significant quantity and very good quality.
  2) Lack of such data in developing countries.
Outputs

- Software programming developed for research purposes on a prototype
- Need to produce a fully working model for the practising engineers.
- Knowledge can be extracted from database
- Objectives for strategic optimisation ways include reduction of accidents, budget optimisation, countermeasure selection.
Impact

- Perspectives for strategy development
  1) Quantity of the results
  2) Quality of the results
  3) Knowledge for strategic development

- Severity analysis, regional safety analysis, road class analysis are all applicable.

- The model can be adapted to cater for different levels of governance or administration (local or central).

- It enables unconstrained budget allocation of safety countermeasure.
THANK YOU

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