

DEVELOPMENT OF A DECISION SUPPORT TOOL TO
DETERMINE THE STATE OF TRAIN WAGONS IN SRILANKA
RAILWAYS

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DECLARATION

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Signature of the supervisor:

Date:

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ABSTRACT

Different countries use different models to condemn railway wagons once they reach the end of their service life. However, in Sri Lanka, such transparent method is not being used. The method currently practiced mainly depends on the experience of the assessors. The Sri Lanka Railway (SLR) has 53 types wagons in its rolling stock and wrong decisions to condemn wagons can lead to considerable loss to the SLR and country's economy in general. Therefore, this study focused on developing a decision supporting mechanism to condemn the train wagons in SLR by assessing their status using a well-defined and transparent mechanism. The objectives were to study the existing procedures for valuation and condemning process of BCGS in SLR, to develop a decision support mechanism to condemn BCGS and analyse the scrap value in a transparent manner, and to evaluate the mechanism. Data were collected using documents, and surveys, interviews and focus group discussions with relevant 18 employees in the SLR. Then, the decision support mechanism was developed based on Microsoft excel. Finally, it was evaluated by letting 3 evaluators to assess the status of two wagons of different conditions using the existing and the proposed mechanisms. The proposed decision support mechanism showed consistency compared to the current method. Extension of the developed method to encompass other types of units in the rolling stock is proposed as future work.

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LIST OF ABBREVIATIONS

SLR	Sri Lanka Railways
CGR	Ceylon Government Railways
BCGS	Bogie Covered Goods Steel
DV	Diminishing value
SL	Straight Lines
MS	Microsoft
SMW	Supervisory Manager Workshops
CME	Chief Mechanical Engineer
FGD	Focus Group Discussion
RSI	Rolling Stock Inspection
KV	Kelani Vally
MCDM	Multi Criteria Decision Making
WSM	Weighted Sum model
WAM	Weighted Average Method

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