BENCHMARKING FRAMEWORK FOR PERFORMANCE IMPROVEMENT OF THE ROAD MAINTENANCE SERVICES IN THE NEW ZEALAND ROADING SECTOR

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ABSTRACT

Purpose

This research aims to establish for the New Zealand highway operations and maintenance sector the best practice benchmark techniques, benchmarking opportunities in the road sector, relevant international comparators for benchmarking, and barriers and risks to benchmarking.

Knowledge gap and research questions

In 2013, the New Zealand Transport Agency (NZTA) began to commission network outcomes contract for the maintenance of the NZ highways. The contract was meant for nationwide use across 23 networks. However, there is no available and New Zealand specific framework for comparing, contrasting, and analyzing the performance of contractors carrying out operations and maintenance (OM) services within each network (NZTA, 2014). The NZTA would like research to be carried out to develop a robust framework for benchmarking the operations and maintenance of the OM services within the nation’s roading networks. The developed framework will be utilized by the agency to measure performance across both the state highway and local roading sector. This research aims to bridge the knowledge gap by seeking answers to the following research questions:

1) What suitable benchmarking methodologies for OM services are currently in use in other roading agencies and similar industries in New Zealand and overseas?

2) What high level drivers are evident in the best practice performers in these other jurisdictions and/or sectors?
3) How could such successful methodologies be adapted to the specifics of the roading sector in New Zealand?

**Research objectives**

As a key outcome of the above enquiries, the research will aim to develop a framework for measuring the performance, quality and cost of OM services within the NZ road sector. The framework will be used for the following purposes:

a) Translating performance, quality and cost of the OM operations into a level of service and value-for-money model for use in evaluating and comparing OM service performance across the NZ sector.

b) Comparing OM cost and performance between networks within New Zealand and against comparable overseas organisations.

c) Providing a schema for the design and development of a working benchmarking model.

**Research method**

The research will be carried out in four stages over two to three years as follows:

i. Literature and best-practice review of suitable benchmarking methodologies for OM services currently in use in other roading agencies and similar industries in New Zealand and overseas.

ii. Focus group meeting with experts in the roading and allied sectors to validate the identified high level drivers that underpin best practice performance in allied sectors.

iii. Online structured surveys amongst consultants, contractors and policy makers in the roading sector aimed at providing a quantitative assessment and priority ranking of the identified parameters for the development of a benchmarking framework for the OM services. The model will be developed using the SPSS-based multivariate analysis, the exact variant of which will be determined by the nature of the established parameters.

iv. Industry validation workshop on the feasibility/practicality of the roll-out of the developed model in the roading sector.

Strategic justification for the study

This research contributes to the ethos of systematic problem-solving and industry connectedness which are key underpinnings of SEAT Profile (Massey University Strategic Plan, 2011). Being focused on the research needs of the roading industry, the research offers a platform for contributing to the Vision and Strategic Goals of the College of Sciences and Massey University. This is moreso that the NZ Government spends $2.5 - $3 billion annually in maintaining, operating and renewing the 23 roading networks in New Zealand (National Infrastructure Unit, 2011). In addition, the central government’s investment in the roading infrastructure is about 1.4% of the GDP (NZ Treasury, 2012; NZTA, 2009). These investments are strategic levers for ramping up sustainable economic growth and development (Cunningham, 2010; Page, 2010). This research aims to establish a framework for optimizing the outcome of this multibillion dollar investment in the roading system. The research focus therefore contributes to capacity development of the BE Cluster and the CoS “Industrial Innovation” platform through construction research.

Anticipated findings of the study

The research will aim to develop a framework for monitoring, measuring and reporting performance on schedule, scope, quality and cost of maintenance services within the NZ road sector. The framework will be used for the following purposes:

1. Translating performance on schedule, scope, quality and cost of the road pavement maintenance operations into a level of service and value-for-money model for use in evaluating and comparing road pavement maintenance and rehabilitation service performance across the NZ roading sector.
2. Comparing maintenance cost and performance between networks within New Zealand and against comparable overseas organisations.
3. Providing a schema for the design and development of a working benchmarking model for timely performance improvement.

REFERENCES


