STRATEGIC CONSTRUCTION MODELING AND DELIVERY
INDUSTRIAL RESEARCH CHAIR

ORGANIZATIONAL COMPETENCIES AND PROJECT PERFORMANCE FOR CONSTRUCTION PROJECTS IN ALBERTA

Dr. Moataz Omar, Postdoctoral Fellow
Dr. Aminah Robinson Fayek, Supervisor

ABOUT THE CHAIR

Established in January 2012 under the leadership of Dr. Aminah Robinson Fayek, the Industrial Research Chair in Strategic Construction Modeling and Delivery operates within the Department of Civil and Environmental Engineering at the University of Alberta.

The Chair brings together construction industry owners, contractors, and labour groups working in Alberta and across Canada to develop comprehensive research-based solutions to key industry problems. Giving particular attention to Canada's oil and gas, utilities, industrial, and commercial construction sectors, the Chair focuses on strategic concerns related to construction management—such as construction industry productivity, project delivery, and performance. Research undertaken includes improvements to labour productivity, structuring projects and teams, assessing owner and contractor competencies, and reducing project execution risk.

The Chair's research program takes advantage of fuzzy logic's ability to capture and quantify the many subjective uncertainties that challenge construction projects. Researchers combine fuzzy logic with other forms of uncertainty modeling, artificial intelligence, and simulation techniques to develop advanced decision-support tools and approaches.

PROJECT PARTNERS

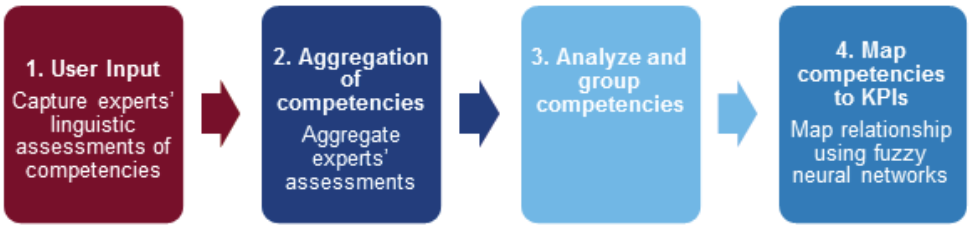
Capital Power
MERIT contractors association
SUNCOR
NSERC CRSNG

BACKGROUND

Organizational competencies significantly influence the performance of construction projects thus the capacity to evaluate and model them is essential. Modeling the relationship between organizational competencies and performance allow us to imitate aspects of the real construction world and provide an understanding of how competencies affect the performance outcomes of projects.

RESEARCH OUTCOMES

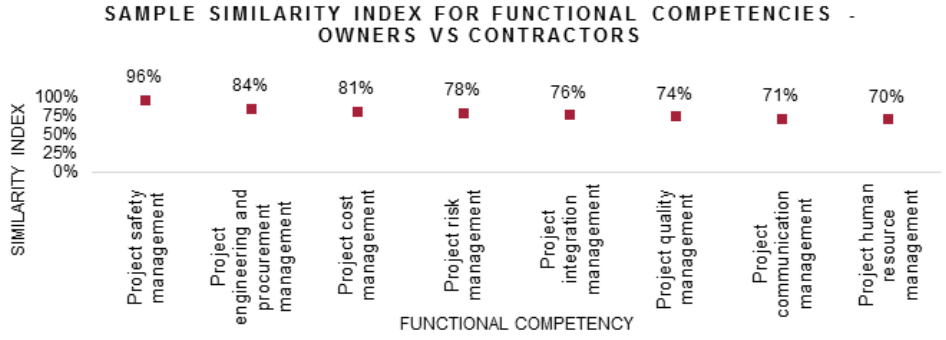
METHODOLOGY



KEY RESULTS

This study has entailed analysis of seven projects across Alberta over the past three years. Some of the key findings include:

A) Similarity between the competencies' criteria for owners and contractors:



Tel: 780.492.1205 | **Fax:** 780.492.0249 | aminah.robinson@ualberta.ca | **www.strategic-construction.ualberta.ca**
7-203 Donadeo Innovation Centre for Engineering | 9211-116 St. NW | University of Alberta, Edmonton, Alberta, Canada | T6G 1H9

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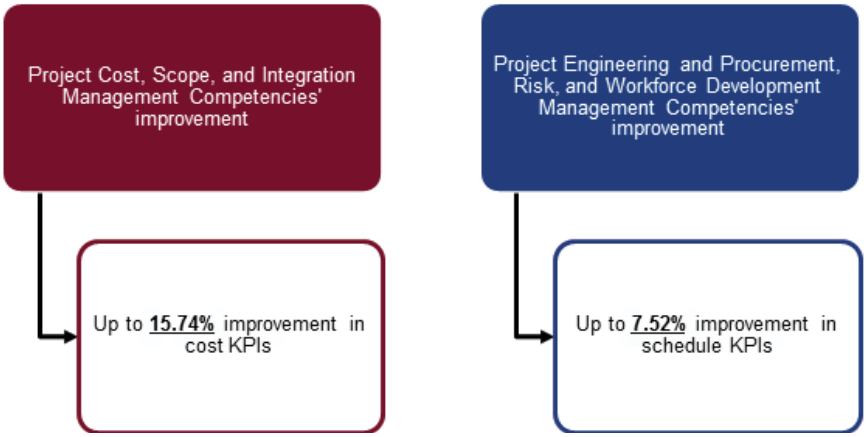
B) Project performance improvement as a result of improving project competencies:



INDUSTRY APPLICATIONS

- List of key competencies leading to better project performance
- A comprehensive data collection and analysis tool (OCPPT©) for use in evaluating organizational competencies and project performance

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