RESEARCH UPDATE

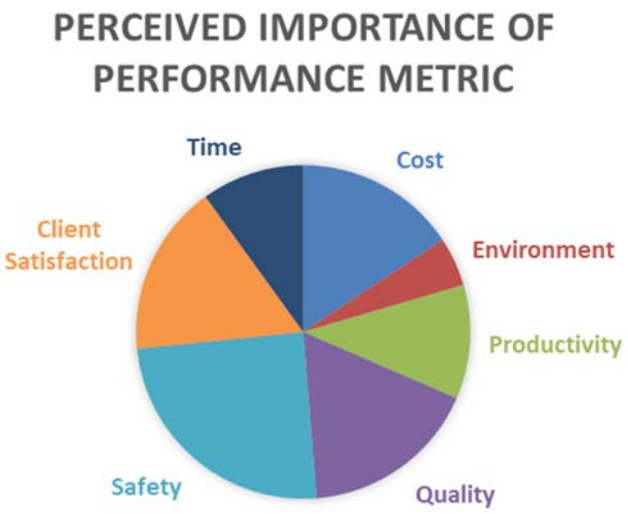
Hello OGCA Members!

In November 2017 the OGCA sent out, on my behalf, an online survey where construction decision makers were asked to rank seven project performance indicators from most important to least important in evaluating project success. These indicators were Cost, Time, Quality, Safety, Satisfaction and Environment. This survey was sent out to approximately 185 OGCA members and received an 18% response rate.

This survey was completed as part of my Masters thesis at the University of Waterloo through the School of Public Health. Unfortunately, in March 2018, complications arose and the OGCA survey was no longer included in my thesis document. As a result, I will provide you here with preliminary findings from the survey, as well as a small summary of what my completed thesis entailed.

KEY PERFORMANCE INDICATOR RANKING

As shown in graph, the survey respondents ranked the project success variables from most important to least important: safety, quality, client satisfaction, cost, productivity, time, to environment. Based on additional comments provide by the survey respondents it is clear that ranking project performance can be very difficult as project success is very multifaceted and some of the key performance indicators are intrinsically connected to each other.



While this survey was not used in the final thesis, it was encouraging to see how many members of the OGCA value safety!

FINAL THESIS

The objective of my thesis was to determine whether the relationship between safety leading and lagging indicators have predictable relationships, as they are on an industry level, when measured on a company level using company administrative data. Put simpler, my research tested whether effects of injury prevention, or leading indicators, can be seen to influence injury outcomes, or lagging indicators, when these indicators were collected using

company safety documentation. My thesis used four years of safety documentation from Melloul Blamey Construction, a general contractor in Waterloo, as its study sample.

While the concept seems simple, it actually proved to be very difficult. First, the safety documentation used was completed to meet legislative standards, not research standards. Only indicators that met research standards could be included in my thesis. Second, safety documentation changes as legislation changes. As a result, it can be hard to track details related safety documentation over time when the documentation keeps changing. In the end, four indicators were used: site inspections, toolbox talks, first aid injuries, and injuries requiring medical intervention.

The results showed that the use of site inspections and toolbox talks, at the least maintained the low level of injuries that Melloul Blamey Construction experiences and in some cases reduced injuries. While this may not seem like much, it is not possible to see large differences within one company with a good safety record. It does show that the safety interventions used by Melloul Blamey Construction are working.

Although the results were promising, there were some important findings for other contractors that should be noted. First, many of the indicators collected couldn't be used because there were not collected equally across projects. If decision makers want to make decisions based on their safety indicators, more effort needs to go towards training their workers to allow for more consistent reporting. Second, there was no available measure related to the safety environment or safety climate. Collecting a safety climate measure is a good place to start as an indicator to inform decision makers.

Finally, this study shows the difficulty placed on companies with regards to safety reporting. Companies will spend hundreds and thousands of man hours completing safety reporting to meet their COR and legislative requirements, yet, there is little information available on how to use these reports beyond legislative purposes. Hopefully in time, legislators can alter safety reporting requirements to make the reports more useful for companies.

If you would like anymore information, feel free to contact me at kaversteeg@uwaterloo.ca. My entire thesis document can be viewed on UWSpace:

> *Katelyn Versteeg (2018). Utilizing Construction Safety Leading and Lagging Indicators to Measure Project Safety Performance: a case study. UWSpace.*http://hdl.handle.net/10012/13467

Thank you,

Katelyn Versteeg