

An audit-based occupational health and safety recognition program: Is COR associated with lower firm-level injury rates in Saskatchewan?

Background

The Certificate of Recognition (COR) is a voluntary audit-based employer certification program intended to motivate employers to take a proactive role in occupational health and safety (OHS). In Saskatchewan, five non-profit safety associations funded by the Saskatchewan Workers' Compensation Board (WCB) offer COR programs. The Heavy Construction Safety Association of Saskatchewan (HCSAS), Saskatchewan Construction Safety Association (SCSA), and Motor Safety Association (MSA) participated in this study.

Voluntary audit-based certification as a way of recognizing or encouraging effective OHS practices is a common approach of regulators and safety associations in Canada and internationally. The Partnership for Work, Health and Safety (PWHS) has conducted several studies on COR in BC and Alberta. The findings suggest that COR certification is associated with lower firm-level injury rates in BC and Alberta. [In BC](#), certified firms had a 12% reduction in their short and long-term disability and fatality claim rates between 2003 and 2016, compared to non-certified firms, and an 11% reduction in their serious injury rate. [In Alberta](#), certified firms had, on average, a 14% reduction in the lost-time injury rate and 3% reduction in the disabling injury rate between 2001 and 2015. The

The findings in this brief are based on research presented in:

Macpherson R, Fan J, Peck H, McLeod C. (2021). [Is COR associated with lower firm-level injury rates in Saskatchewan? Final Report to the Saskatchewan Workers' Compensation Board](#). Vancouver, BC: Partnership for Work, Health and Safety, University of British Columbia.

purpose of this study was to build on that work and address the following research question: do COR firms in Saskatchewan have lower firm-level injury rates than comparable non-COR firms?

Approach

We used an observational research design. Certification is voluntary and firms self-select into the program. Participating firms, by the very nature of choosing to become certified, are different than non-participating firms. Self-selection into voluntary programs is a challenge in assessing whether a program has a “causal” effect (i.e., that any changes in the injury rate are due to participation in the program and not due to other factors). Because COR firms are different on average from non-COR firms, in that they are larger, have been in operation longer, and tend to come from higher risk industries, we used a matched difference-in-differences evaluation methodology that can identify change attributed to an intervention (COR certification).



This approach utilizes a control group of non-certified firms that have been matched to the intervention group of certified firms based on industry subcode, base premium rate, firm size, and year of assessment, and identifies two differences in injury rates:

1. The difference between certified and similar non-certified firms, pre-intervention; and
2. The difference between certified and similar non-certified firms, post-intervention.

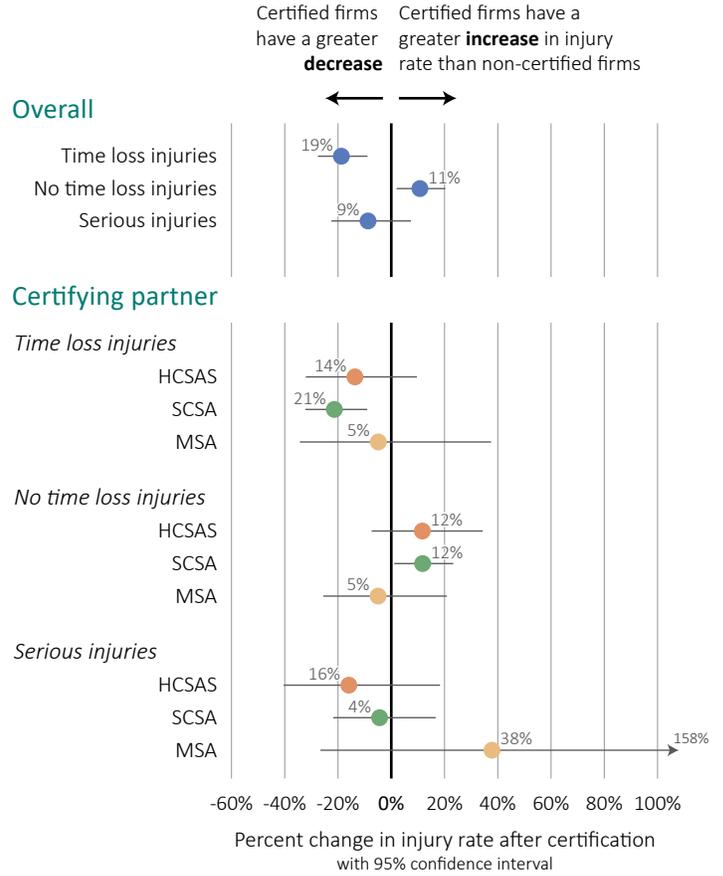
This allows us to identify the change in the injury rate attributable to participation in the COR program. We state the impact as a percent change in injury rate, for certified firms compared to non-certified firms. We evaluated the impact of COR overall, by certifying partner, certifying partner by time period, firm size, and standard COR and small employer COR (SECOR).

What we found

Overall impact

Certified firms had, on average, a 19% decrease in their time loss injury rate between 2007 and 2019 compared to non-certified firms, and a 11% increase in the no time loss injury rate. We found no difference in the serious injury rate (Figure 1).

Figure 1 | Effect of COR certification on change in injury rate, by type of injury rate, overall and by certifying partner, 2007-2019



A negative percent change in injury rate indicates that certified firms have a decrease in injury rate compared to non-certified firms. A positive percent change indicates that certified firms have an increase in injury rate compared to non-certified firms. Where confidence intervals cross zero, the change in the injury rate is more likely due to chance.

What are time loss injuries?

Time loss injuries are accepted claims where workers had to take time off work after the day of injury. Time taken off for medical appointments does not result in a claim being considered a time loss claim.

What are no time loss injuries?

No time loss claims are accepted claims where no time was taken off after the day of injury, or where the only time taken off was for medical appointments. This measure also includes claims where no external medical costs were accrued.

What are serious injuries?

Serious injury claims are accepted claims with any of the following characteristics: fatality, more than 50 days of compensation paid, referral to the Ministry of Labour Relations and Workplace Safety, primary psychological/mental health, or permanent functional impairment greater than or equal to 10%.

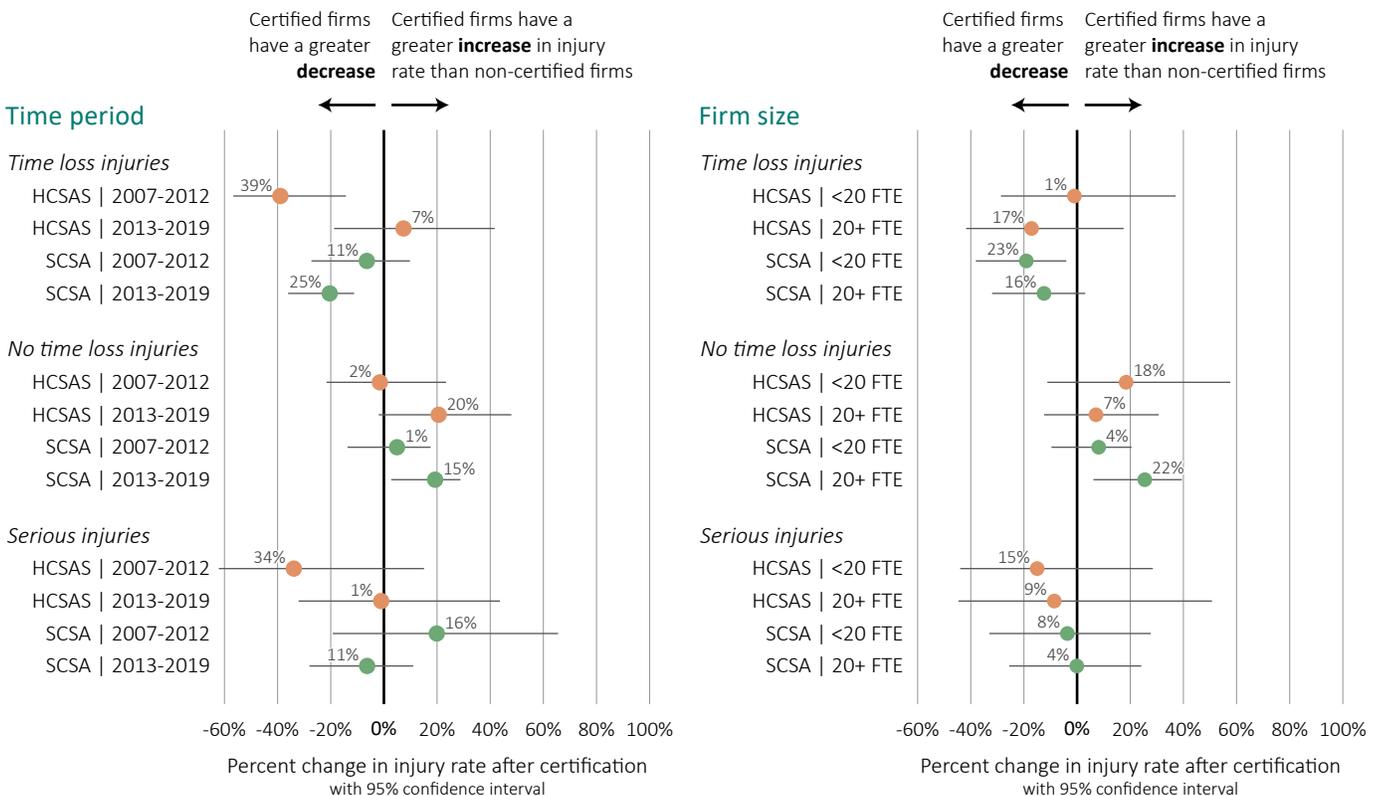
Certifying partner

We examined the effect of COR separately for each certifying partner (Figure 1). Statistically significant effects were only found for changes in the time loss and no time loss injury rates for SCSA COR-certified firms. Firms certified by HCSAS had, on average, a 14% reduction in their time loss injury rate, 12% increase in their no time loss injury rate, and 16% reduction in their serious injury rate, compared to non-certified firms. Firms certified by SCSA had, on average, a 21% reduction in their time loss injury rate, 12% increase in their no time loss injury rate, and 4% reduction in their serious injury rate. Firms certified by MSA had, on average, a 5% reduction in their time loss and no time loss injury rates and 38% increase in their serious injury rate.

Certifying partner and time period

The time period of COR certification had an impact on the effect of certification on injury rates (Figure 2). The effect of HCSAS COR participation changed from being associated with a 39% decrease in the time loss injury rate between 2007 and 2012, to being no different to the change in non-COR firms between 2013 and 2019. In contrast, the effect of SCSA COR participation changed from being associated with no difference to non-COR firms between 2007 and 2012, to a 25% decrease in the time loss injury rate between 2013 and 2019. In terms of other injury outcomes, the only precisely estimated effect was the 15% increase in the time loss injuries.

Figure 2 | Effect of COR certification on change in injury rate, by certifying partner, time period, and firm size



A negative percent change in injury rate indicates that certified firms have a decrease in injury rate compared to non-certified firms. A positive percent change indicates that certified firms have an increase in injury rate compared to non-certified firms. Where confidence intervals cross zero, the change in the injury rate is more likely due to chance.

Certifying partner and firm size

When comparing small firms (<20 full time equivalents (FTEs)) and large firms (20+ FTEs), the results suggest that for time loss injuries, COR participation was associated with a greater reduction for large HCSAS firms and small SCSA firms, relative to the change in non-COR firms (Figure 2).

Certifying partner and COR type

The effect of standard COR program participation was similar to the overall effect in that it showed evidence of a decreased time loss injury rate and increased no time loss injury rate among SCSA COR firms. In contrast, SECOR program participation was not effective for either certifying partner (not shown).

Certifying partner and firm size, excluding SECOR

Following the exclusion of SECOR program participants, analysis by firm size and certifying partner showed similar results to those in Figure 1. Small firms participating in the SCSA standard COR program experienced a larger reduction in their time loss injury rate than large firms (27% compared to 16%), compared to the change among non-COR firms (not shown).

What this means

COR certification is associated with lower firm-level injury rates but the strength of this association is dependent on context, such as firm, industry, certifying partner, and audit tool. The overall reduction in the time loss injury rate and increase in the no time loss injury rate was driven by firms certified by SCSA, particularly those certified in 2013-2019 that were small (less than 20 FTEs), during their first year of certification, and certified under the standard COR program, not SECOR.

Using the most comparable effect estimates across separate PWHS studies, COR participation in the construction sector was associated with a time loss injury rate decrease of 9% in BC and Alberta construction firms and 19% in Saskatchewan, and no time loss injury rate increase of 4% and 11% in BC and Saskatchewan, respectively (albeit with imprecise estimation in BC). Differences between the provinces may be explained by the greater potential for improvement in Saskatchewan due to higher overall injury rates; and the lack of a rebate incentive in Saskatchewan, which could mean that firms are more likely to join the program for health and safety or operational reasons.

The evaluation approach adjusts for pre- and post-certification differences between COR certified and non-COR certified firms and matches by the year of COR certification to make COR firms similar to non-COR firms. However, we cannot rule out that there may be other important factors not controlled for in the analysis that may be associated with differences in injury rates between COR certified and non-certified firms. Nevertheless, in the absence of the ability to evaluate the COR program prospectively, these analyses represent the most rigorous assessment of the impact of COR on injury rates to date.

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Disclaimer

All inferences, opinions, and conclusions drawn within this publication are those of the authors, and do not reflect the opinions or policies of the data stewards.

About us

The Partnership for Work, Health and Safety (PWHS) is an innovative research unit that combines rigorous work and health research with effective knowledge translation.

PWHS brings together policy-makers, researchers and data resources from national and international organizations to address current and emerging issues of work-related health in Canada. Our research is aimed at improving understanding of the causes and consequences of injuries and illness, identifying high-risk industries and occupations, and investigating the effectiveness of interventions that improve worker health, prevent occupational illness and injury, and reduce work-related disability.

Our collaboration, based on best practices of knowledge transfer, enables researchers and decision-makers to work together to identify relevant questions, understand data, and produce useful information to effectively inform policy and practice.

More information

Please contact Chris McLeod, Partnership for Work, Health and Safety Co-Director, at chris.mcleod@ubc.ca with questions about the methods, results, or interpretation of this evaluation, or to request a copy of the full report. General enquiries should be directed to Suhail Marino, Partnership for Work, Health and Safety Director of Privacy and Operations, at suhail.marino@ubc.ca.