

Hazard Closing Actions in Predicting Safety Incidents



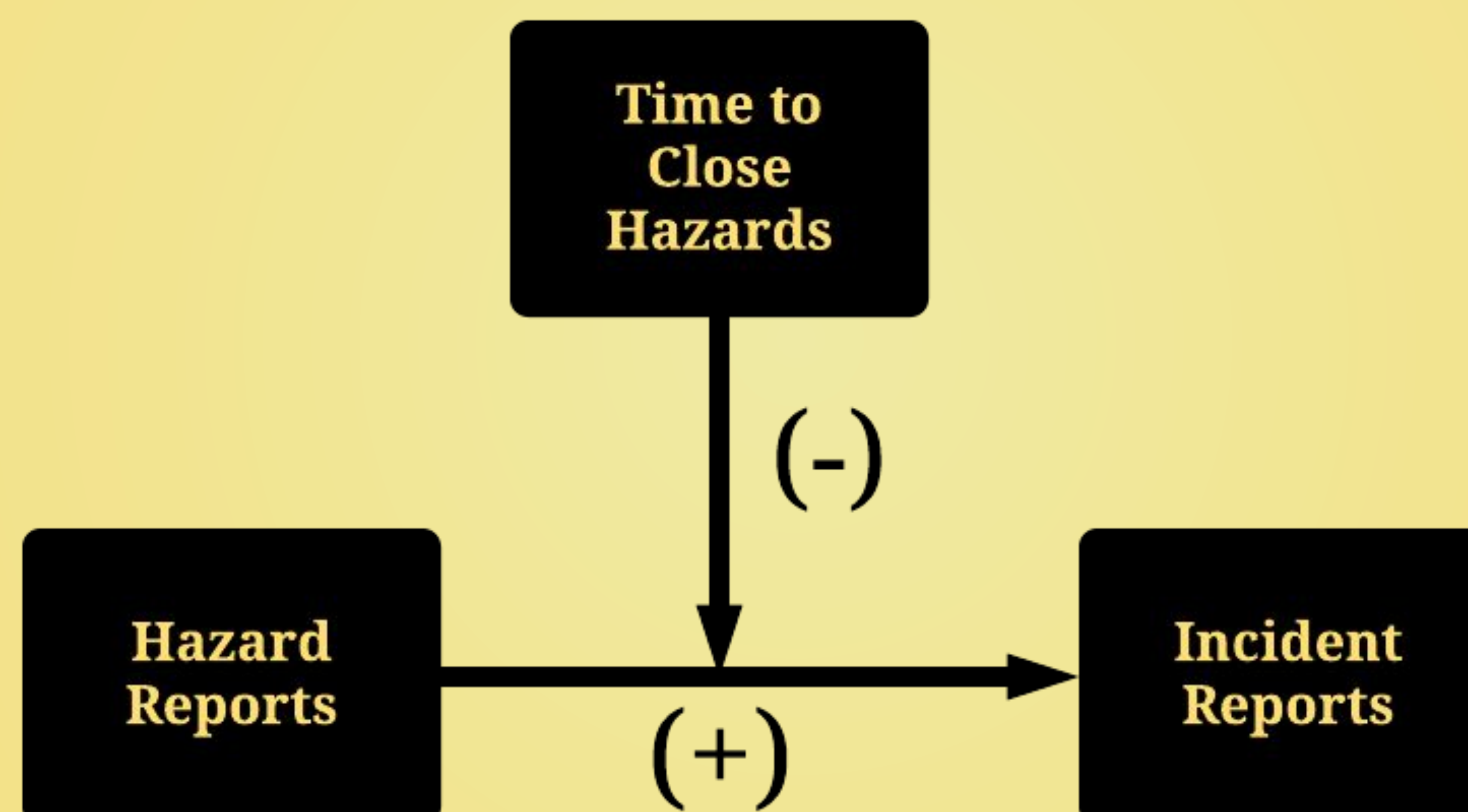
Isabella Lopez, Haley Henderson, Jacob Ledford, Shawn Bergman, Timothy Ludwig, and Yaclin Acikgoz

This proposal examines the relationship between hazard reporting and incident occurrence, moderated by the time it takes to mitigate a hazard and administratively “close out” the hazard report.

Background

- Companies are beginning to use predictive analytics in improving the safety and health of workers (Silver et al., 2013)
- Frequency of hazards and observations are typically used as predictors (McSween & Moran, 2017)
- The length of time to close an identified hazard has not been examined thoroughly in the research

Proposed Model



Implications

- Companies could put more influence on addressing hazards in a timely manner
- With increased focus on hazard closing actions, organizations may be able to better prevent harm to their employees
- Bridges gaps in safety literature, promoting more research involving closing of hazards through time

Hypotheses

1. Number of hazards reported will be positively related to number of incidents
2. Length of time to close a hazard will moderate this relationship such that the relationship will be weaker for shorter time intervals between hazard identification and closing

Methods

- Data collected from a construction and engineering company (2018-2021) at the project level
- Time series analysis, utilizing cross-lagged correlations, will be used to examine the time to close's impact

References

- McSween, T., & Moran, D. J. (2017). Assessing and preventing serious incidents with behavioral science: Enhancing heinrich's triangle for the 21st Century. *Journal of Organizational Behavior Management*, 37(3-4), 283–300. <https://doi.org/10.1080/01608061.2017.1340923>
- Silver, N., Beane, B., & Trebek, A. (2013). Making the case for predictive analytics in workplace safety [White paper]. Predictive Solutions