

Suffering from Whiplash? The Effects of Pencil Whipping on Data Variability in the Safety Industry



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This study will attempt to identify certain signs of pencil-whipped data and investigate the **effects of pencil whipping on data variability and analysis.**

Background

- **Pencil Whipping**
 - When an employee doesn't carry out necessary work required to complete a safety checklist. (Ludwig, 2014)
 - Causes a lack in variability
- **Big data** is increasingly being used to predict trends, and future events.
 - Includes: volume, velocity, variety, variability, and complexity (Statistical Analysis System, 2019)

Implications

Our analysis will:

- Demonstrate necessity of reducing pencil whipping
- Create a predictive solution to safety issues
- Reduce injuries/fatalities
- More accurately represent observed safety behaviors

Methods

- Data from American Fortune 500 company
- Inspect data for signs of pencil whipping/variability

Is Your Data Pencil Whipped?

- ✓ Low numbers of at-risk behavior identified?
- ✓ High number of observations with no effect on injuries?
- ✓ Checked "safe" all the way down the checklist?
- ✓ Multiple observations being turned in at the same time?

Visualization of Pencil Whipping

