Evaluating Safety Culture and Climate: Key Measurement Issues

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Key Measurement Issues

What are we measuring? Culture or Climate Substantive vs. Semantic Differences Shared Perceptions vs. Individual Attitudes Appropriate Level of Aggregation Global vs. Multi-dimensional Scale Scientist-Practitioner Differences Priorities, Goals, Intended Use of Resulting Data Home-grown vs. Validated Measures General vs. Specific to Construction Industry Response scales Even (prevent fence-sitting) vs. odd # of options

Single-item vs. Multi-item Scales

Organizational Culture: Historical Origins

- Two events in 1986 brought organizational culture to the forefront
 The Chernobyl nuclear disaster
 The Challenger space shuttle explosion
 Both accident investigations identified "poor culture" as contributing factor
 - Since then, practitioners have tended to refer to "safety culture"
 - Organizational researchers, however, tend to focus on "safety climate"

Organizational Culture

 Assumptions, values, and philosophies that permeate multiple facets of an organization (Schneider & Gunnarson, 1996)



Where Does Climate Fit In?

- Climate reflects the surface features of the safety culture (Flin et al., 2000)
 - Observable attitudes and behaviors of organizational members (Moran & Volwein, 1992)
 - Practices, procedures, and rewarded
 behavior (Schneider & Gunnarson, 1996)
- Climate is what we can measure.
- So, is it just a semantic difference?
 Depends on who you talk to!

Shared vs. Individual Perceptions

- Climate is the <u>shared</u> perceptions regarding what is rewarded, expected, valued, and reinforced in the workplace
- Not everyone will necessarily have the same perceptions.
 - The extent to which those views are shared reflects the strength (or intensity) of the climate.



Appropriate Level of Aggregation



Global vs. Multi-Dimensional Measures of Safety Climate

Zohar (1980)

- Importance of safety training programs
- Management attitudes toward safety
- Effects of safe conduct on promotions
- Effects of safe conduct on social status
- Level of risk in the workplace
- Effects of required work pace on safety
- Status of safety officer
- Status of safety committee

Brown & Holmes (1986)

- Management attitudes
 - Concern for employee wellbeing
- Management action
 - Responsive to employee safety concerns
- Level of physical risk

Neal, Griffin & Hart (2000)

- Management values
- Safety communication
- Safety training
- Safety systems

Benchmarking vs. Actionable Information



"Company X falls at the 66th percentile." Global number good for benchmarking, but doesn't really provide actionable information regarding how to improve.

By considering each of the dimensions separately, we could tell Company X that they were doing well on *safety communication*, but poorly with respect to *safety systems*.

Scientist-Practitioner Differences

 Researchers and practitioners may have different priorities, goals, and/or intended use of the resulting data

To improve safety or address a particular safety concern within a specific organization

VS.

 To contribute generalizable knowledge that will increase our scientific understanding of safety and potentially benefit all organizations.

These differences can potentially affect our measurement of safety climate.

Home-grown/Specific vs. Validated/General Measures

 Need to consider the pros and cons of different types of safety climate measures.

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Tend to be well-validated
Provides generalizable information across industries

General Measure of Safety Climate





• Tend to be idiosyncratic

 Unknown reliability or validity Organization-Specific Measure of Climate Perhaps too general to provide actionable information within a specific organization

If well-validated, can provide more specific actionable information, but few organizations have resources to develop such scales

Other Issues

- Response scales
 - "Employees are able to discuss their concerns about safety issues with management"
 - Strongly Disagree to Strongly Agree
 - Even: 1-4 or 1-6 (prevents fence-sitting)
 - Odd: 1-5 or 1-7 (allows for greater variability and neutral midpoint)

Single-item vs. Multi-item Scales

- Single-items are generally of unknown reliability and validity
 - For example, does the above question capture everything an organization should know about "safety communication"? What about downward communication?

 Lengthy multi-item scales can be extremely time-consuming to administer