Comparing Organizational Functioning to Injury Rates and Cost per Unit Produced: A Case Study

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Objectives

• Introduce nine factors that predict organizational functioning
• Compare these nine factors to injury rate performance
• Compare these nine factors to cost per unit produced
• Completing the model - How do you improve organizational functioning?
Organizational Functioning

Organizational Factors
1. Procedural justice
2. Leader-member exchange
3. Management credibility
4. Perceived organizational support
5. Work group relations
6. Teamwork

Team Factors
7. Organizational value for EHS performance improvement
8. Upward communication
9. Approaching others

Performance-specific Factors

ORGANIZATIONAL QUALITIES
- Organizational commitment
- Openness to change
- Job satisfaction
- Mutual trust and respect between supervisor and worker
- Organizational citizenship behavior
- Excellent communication and cooperation

OUTCOMES
- Lower injury rates
- Higher levels of safe behavior
- Reduced WC costs
- Less turnover
- Less Absenteeism
- Increased commitment to the organization
High Organizational Functioning Attributes

- Organizational commitment
- Openness to change
- Ethical decision making
- Job satisfaction
- Mutual trust and respect between supervisor and worker
- Organizational citizenship behavior
- Excellent communication and cooperation
- Typically high-performance
Dysfunctional Cultures

- Unspoken and frequent undiscussable arrangements / agreements determine the way things get done
- Values do not guide decision making
- Ethics expectations become blurred
- Behind-the-scenes conflicts stand in the way of getting work done effectively and efficiently
- People wonder why leaders “can’t see what we see” and feel that “things are harder than they should be”
Organizational Factors

- **Procedural Justice**: Fair decision-making by supervisor
- **Perceived Organizational Support**: Organization is concerned about needs and interests of employee
- **Leader-Member Exchange**: Positive reciprocation between supervisor and employee
- **Management Credibility**: Managers are trustworthy, honest, forthright
Team Factors

Trust, respect and cooperation among co-workers

Planning, communication, and performance within the work group
Safety Specific Factors

- **Org. Value for Safety**: Attention and resources devoted to safety by the organization
- **Approaching Others About Safety**: Individuals’ willingness to speak up to co-workers about safety
- **Upward Communication About Safety**: Encouragement by supervisor to bring up safety issues
Data Collection

- Survey targeting 100% of the employee population
- 2 instruments
  - Manager
  - Non-manager
- Scoring 1-5
- Statistical analysis comparing results to norms data base
Norms Database

- 125,000+ Surveys
- 508 Companies
  - ~ 25% Chemicals
  - ~ 12.5% Food Processing & Manufacturing
  - ~ 10% each (Metals, Mining, Paper, Petroleum, Utilities, & Consumer Products)
  - ~ 2.5% Other
Case Study 1

Organizational Factors versus Safety Results
About the Organization

- 16 locations
- Mix of continuous and batch operations
- Report to same Vice President
- Implemented the same EHS systems
- Mix of union/non-union (was not a factor in the survey scores)
Site 1
Overall Percentile by Scale

TICR = .8

Percentile Score

Overall
Lower Quartile (25th Percentile)
Median (50th Percentile)
Upper Quartile (75th Percentile)

Organizational Factor
PJ  Procedural Justice
LMX  Leader-Member Exchange
MC  Management Credibility
POS  Perceived Organizational Support

Team Factor
TW  Teamwork
WGR  Work Group Relations

Safety-Specific Factor
OVS  Organization's Value for Safety
UC  Upward Communication about Safety
AO  Approaching Others about Safety

Other Scales
SE  Social Efficacy

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Site 2
Overall Percentile by Scale

Organizational Factor
PJ  Procedural Justice
LMX  Leader-Member Exchange
MC  Management Credibility
POS  Perceived Organizational Support

Team Factor
TW  Teamwork
WGR  Work Group Relations

Safety-Specific Factor
OVS  Organization's Value for Safety
UC  Upward Communication about Safety
AO  Approaching Others about Safety

Other Scales
SE  Social Efficacy

Percentile Score

83  83  84  81  88  88  92  94  88

Lower Quartile (25th Percentile)
Median (50th Percentile)
Upper Quartile (75th Percentile)
Site 3
Overall Percentile by Scale

TICR – 4.2

Percentile Score

Organizational Factor
PJ Procedural Justice
LMX Leader-Member Exchange
MC Management Credibility
POS Perceived Organizational Support

Team Factor
TW Teamwork
WGR Work Group Relations

Safety-Specific Factor
OVS Organization’s Value for Safety
UC Upward Communication about Safety
AO Approaching Others about Safety

Other Scales
SE Social Efficacy

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Site 4
Overall Percentile by Scale

TICR – 7.8
Case Study 2

Organizational Factors versus Safety Results for 94 Sites
Organizational Cultural Diagnostic Scores Predict Injury Rates

94 sites - The difference between the two groups is statistically significant: \( X^2 (2, N = 94) = 8.872, p < .05 \).
Organizational Cultural Diagnostic Scores Predict Injury Performance for Sites with Rates less than 3.0

42 sites - difference between the three groups is statistically significant: $\chi^2 (2, N = 42) = 9.233$, $p < .05$. 
Why the Diagnostic is not always predictive of injury rates

- **Exposure varies due to:**
  - Culture
  - Type of Work
  - Work Pace
  - Robustness of Safety Enabling Systems
    - What programs
    - How the programs are implemented
Case Study 3
Organizational Functioning Versus Productivity and Cost
About the Organization

• 13 Extrusion plants.
• Raw material and energy cost consistent
• Data available to analyze included:
  • manufacturing costs,
  • production quantities,
  • quality costs,
  • payroll,
  • workers’ compensation costs,
  • incident rates, and
  • employee counts and hours worked
Average OCDI scores versus Unit Produced per Employee

Average OCDI Percentile Score

Units Manufactured Per Employee 2005 YTD

1,215

1,522

<35

>70

\[ t(7) = .41, \ p > .05 \]
LMX versus Unit Produced per Employee

$\text{t}(11) = .49, \ p<.05$
Teamwork versus Unit Produced per employee

$t(11) = .58, p<.05$
Workgroup Relations versus Unit Produced per Employee

$ t(11) = .50, p < .05 $
Average OCDI Scores versus Costs per 1000 units

Average OCDI Percentile Score

- $108.36 for <35
- $94.50 for >70

t(7) = -.39, p>.05

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LMX Exchange versus Cost per 1000 Units Produced

\[ t(11) = -0.575, \ p < 0.05 \]
How do you improve Organizational Functioning?
Path to a Zero-Injury Culture

**SAFETY LEADERSHIP**
**BEST PRACTICES**

- Vision
- Credibility
- Collaboration
- Feedback & Recognition
- Accountability
- Communication
- Action Oriented

**Organizational Factors**
1. Procedural justice
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**Team Factors**
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**Safety Factors**
7. Organizational value for EHS performance improvement
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Factor Results – Before and After Working on Leadership at All Levels

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Before and After Results
Control Chart of Recordable Rate

Leadership Intervention Begins
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