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Assessing the Validity of the IWH Organizational Performance Metric (IWH-OPM): Workplace Case Studies

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Acknowledgements

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- **Workplace recruiters:** IHSA, WSPS, PSHSA, OHCOW

Workplace Leading Indicators of OHS

- Leading indicators measure workplace characteristics that predict - and are often causally linked with - OHS outcome(s)
  - Safety climate
  - Organizational policies and practices (hazard identification and control)
  - Occupational health and safety management systems
  - Safety practices and observed workplace conditions

(Glendon & Booth, 1995; HSE, 1997; Kjellén 2000; National Occupational Health & Safety Commission 1999)

Organizational Performance Metric (OPM)

In 2008, task force established by the Chief Prevention Officer (WSIB) to define single leading indicator

- Sector-based health and safety associations (HSAs), Occupational Health Clinics for Ontario Workers, Workplace Safety and Insurance Board (WSIB) worked with IWH to develop a leading indicator tool

Organizational Performance Metric (OPM)
1. Formal safety audits at regular intervals are a normal part of our business
2. Everyone at this organization values ongoing safety improvement in this organization
3. This organization considers safety at least as important as production and quality in the way work is done
4. Workers and supervisors have the information they need to work safely
5. Employees are always involved in decisions affecting their health and safety
6. Those in charge of safety have the authority to make the changes they have identified as necessary
7. Those who act safely receive positive recognition
8. Everyone has the tools and/or equipment they need to complete their work safely
Respondents are asked to rate the percent time the practices are going on inside the organization from (1 = 0-20% of the time to 5 = 80-100% of the time). Scores vary from 8 (low) to 40 (high)

OPM -- Leading Indicator of OHS

- Promoting a culture of workplace safety
  - Ontario's Integrated Health and Safety Strategy, MOL (2013, p. 36): OPM "important step in developing an effective leading indicators measurement tool"

- Benchmarking tool to measure OHS performance among employers

- Diagnosing firms in need of support or optimized products and services

OPM Research History

Phase 1: Development and Pilot (2008-2010)

Phase 2: Re-administrating OPM questionnaire (2012-2014)

Phase 3: Cognitive interviews (2013-2014)

Phase 4: Case studies (2013-2014)

Phase 4 Research Questions

Research Question 1: Does the OPM have acceptable construct validity?

Research Question 2: How do the observed characteristics of firms relevant to OHS performance differ in relation to OPM scores

Recruitment and Sampling

Initial Recruitment Strategy

4 matched pairs (n=8)
High (39-40) vs.
Low (<20)

Recruitment

- Lack of low OPM firms
- 27 firms contacted

Firms Recruited

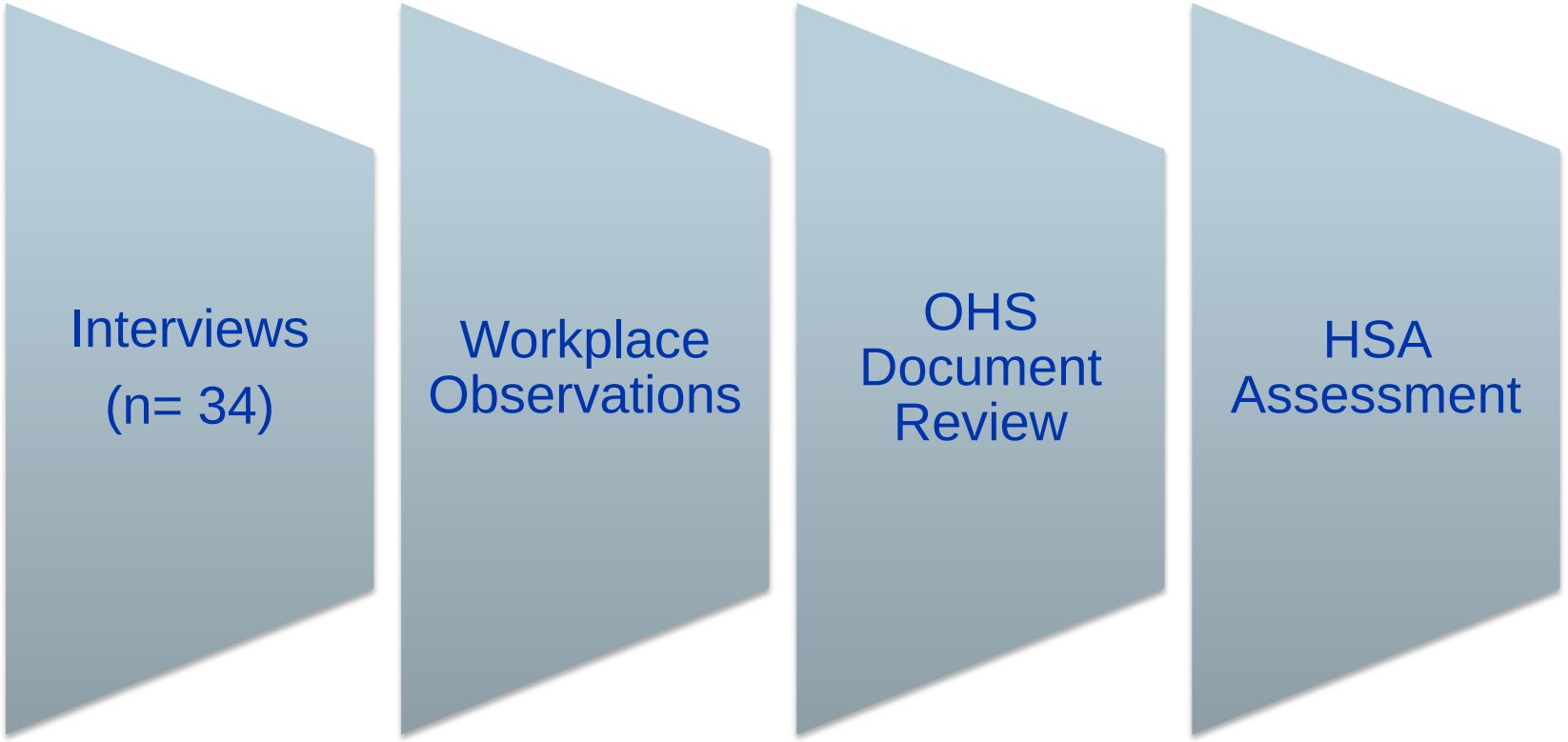
5 firms (High vs. Not high)

OPM Scores:
39 (n=3), 29 (n=2)

Sectors:
community services, transportation, manufacturing, agriculture

Size:
20-50 to 301-500 (location)
20-50 to 10,000> (corporate)

Data Collection



Conceptual framework

- OHS literature on concepts critical to overall health and safety performance
- ***OHS leadership*** *(executive and supervisory)*
- ***OHS culture and climate*** *(HS prioritization, safety reward/recognition, coworker social support, safety culture)*
- ***Worker participation in OHS*** *(worker participation, JHSC, psychological safety)*
- ***OHS policies and processes*** *(safety communication, organizational learning, HS policies & practices)*
- ***OHS risk control*** *(Org. responsiveness, risk control, hazard ID, HS training)*

Interview Participants (n=34)

Respondent Characteristics	
Occupational Roles	• Senior manager (operations, OHS) (n= 4, n = 4) • Manager (day-to-day responsibilities for OHS) (n = 3) • JHSC (Management co-chair, worker co-chair) (n = 4, n = 4) • Supervisor with no OHS responsibilities (n = 6) • Front-line workers with no OHS responsibilities (n = 8)
Age	Early 20s to mid 60s (range)
Tenure	2 years – 30 years (range)
Gender	Female (n = 19) Male (n = 15)

Data Analysis

Research Question 1: Does the OPM have acceptable construct validity?

- "a consistent pattern of relationships with higher OPM scores generally corresponding to higher observer-defined OHS performance." (based on Trochim, 1989)

Research Question 2: How do the observed characteristics of firms relevant to OHS performance differ in relation to OPM scores?

Single and cross case analysis (Eisenhardt, 1989, Miles & Huberman, 1994, Yin, 2003)

RESULTS

Results: Firm OPM Scores and OHS Assessment Tools Scores

GROUPS	High		Not High		
FIRMS	**Firm A**	**Firm B**	**Firm C**	**Firm D**	**Firm E**
Firm OPM score by key contact *(Previous study)*	39	39	29	29	39
Firm OPM score by key contact *(Current study)*	39	37	28	30	29
Firm Average (Mean (SD), Median)	38.3 (2.1) 39	38.1 (1.6) 38	33.4 (5.4) 29	31.5 (9.7) 33.5	31.9 (7.8) 35
Contact most informed about OHS	39*	37*	28*	30*	16**
Manager & Supervisor Average	38.4	37.5	34.5	31.2	29.6
Worker Average	38	39	32	32	37.5
OHS Assessment Tools and Scores* **	Tool A, 98%	Tool B, 92%	Tool B, 87%	Tool C, 49%	Tool C, 24%

*Senior manager responsible for OHS, ** Manager with day-to-day responsibilities for OHS
*** Sector-specific OHS assessment tools

Example: Case-by-concept Data Display Matrix

CONCEPT	Firm A (High)	Firm B (High)	Firm C (Not high)	Firm D (Not high)	Firm E (Not high)
ORGANIZATIONAL LEARNING	•Formal audits •Use of performance indicators •Diverse learning practices: •Focus on worker learning	•Formal audits •Diverse learning practices •Focus on worker learning	•No formal audits •Limited learning practices	•No formal audits •Limited learning practices •Focus on worker learning: lunch & learn	•No formal audits •Learning not encouraged •HS information shared on a need-to-know basis
SAFETY COMMUNICATION	•Diverse communication channels •Hazard reporting system •Best practices shared	•Diverse communication channels •Hazard reporting system •Best practices shared	•Top-down approach to communication limits diversity of channels •Hazard reporting system	•Passive and one-sided communication •Limited channels to disseminate information	•Poor •Top-down approach to communication limits diversity of channels

Example: OHS performance rank by conceptual category

CONCEPT	Firm A (High)	Firm B (High)	Firm C (Not high)	Firm D (Not high)	Firm E (Not high)
ORGANIZATIONAL LEARNING	•Formal audits •Use of performance indicators •Diverse learning practices: •Focus on worker learning **(5)**	•Formal audits •Diverse learning practices •Focus on worker learning **(4)**	•No formal audits •Limited learning practices **(2)**	•No formal audits •Limited learning practices •Focus on worker learning: lunch & learn **(3)**	•No formal audits •Learning not encouraged •HS information shared on a need-to-know basis **(1)**
SAFETY COMMUNICATION	•Diverse communication channels •Hazard reporting system •Best practices shared **(4.5)**	•Diverse communication channels •Hazard reporting system •Best practices shared **(4.5)**	•Top-down approach to communication limits diversity of channels •Hazard reporting system **(3)**	•Passive and one-sided communication •Limited channels to disseminate information **(2)**	•Poor •Top-down approach to communication limits diversity of channels **(1)**

Firm OHS performance rank by conceptual category (Cross-Case Analysis)

Conceptual Category		A	B	C	D	E
OHS Leadership	Exec Leadership	4.5	4.5	1	2.5	2.5
	HS & Suprv Leadership	3	5	3	3	1
OHS Culture & Climate	HS Prioritization	4.5	4.5	2.5	2.5	1
	Safety Reward/Recognition	4.5	4.5	2.5	2.5	1
	Co-worker Social Support	3.5	3.5	3.5	3.5	1
	Safety Culture	4.5	4.5	2.5	2.5	1
OHS Risk Control	Org, Responsiveness	4	4	2	4	1
	Risk Control	4.5	4.5	2.5	2.5	1
	Hazard Identification	4.5	4.5	3	2	1
	HS Training	4.5	4.5	2.5	2.5	1
OHS Policy & Processes	Safety Communication	4.5	4.5	3	2	1
	Organizational Learning	5	4	2	3	1
	HS Policies & Procedures	4	4	4	2	1
Worker Participation	JHSC	3	4.5	4.5	2	1
	Worker Participation	4	5	2.5	2.5	1
	Psychological Safety	2.5	5	2.5	2.5	2.5
Median		**4.5**	**4.5**	**2.5**	**2.5**	**1**

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High OPM Firms	
OHS Leadership	•Supportive executive leadership •Hands-on HS and supervisory leadership
OHS Culture and Climate	•OHS = high priority •Consistent safety recognition •Positive co-worker support •Strong safety culture
Worker Participation in OHS	•Worker participation encouraged •Active and visible JHSC
OHS Policies & Processes	•Frequent safety communication •Formal Audits •Ongoing learning practices •HS P&P documented
OHS Risk Control	•High organizational responsiveness •Use of PPEs highly encouraged •Engineering controls, preventive maintenance •Adoption of best practices •Comprehensive OHS training

In their words – HIGH

"[Executive leadership] eats and breathes safety"

'Safety is our top priority. If you're not safe, don't do it.'

"Well, we want them to investigate everything. And then from there, I'll look at the corrective actions."

Medium OPM Firms	
OHS Leadership	•Executive leadership not visible •Hands-on HS leadership •Supervisory leadership depends on the person
OHS Culture and Climate	•OHS priority varies by department/management •Limited safety recognition •Positive co-worker support •No unified safety culture
Worker Participation in OHS	•Participation limited to reporting concerns, workers rarely involved in decision making •JHSC activity varied
OHS Policies & Processes	•Limited, top-down safety communication •No formal audits •Learning not encouraged •HS P&P documented
OHS Risk Control	•Organizational responsiveness depends on department •Use of PPEs not strictly encouraged •Risk control usually put in place after an accident •OHS Training compliance focused

In their words – MEDIUM

"I honestly do feel that if I walked out the door, … they'd be at a loss. I've got decent files for them, but whether they'll look at them (laugh) …" right?"

"It flows downhill…we don't communicate very well. So, I'm here, and I make sure that everything's going down and getting done that way"

"We have two sets of [PPEs]. So, some people don't wear them... So, if an employee chooses to wear them then that's their decision."

Low OPM Firms	
OHS Leadership	•Executive leadership not visible •No assigned HS leadership •Managers monitor productivity
OHS Culture and Climate	•Production = high priority •No safety recognition •Lack of co-worker support •Reactive safety culture, emphasis on personal responsibility
Worker Participation in OHS	•Worker participation not encouraged •JHSC not visible/lacks training
OHS Policies & Processes	•Top-down safety communication •No formal audits •Limited learning practices •No formal documentation process
OHS Risk Control	•Poor organizational responsiveness •Use of PPEs not encouraged •Lack of risk assessment, poor risk control •Lack of proper training

In their words – LOW

"Definitely production … is priority one; selling … is priority two. And then, it's health and safety"

"[Regarding] quality health and safety ideas, we haven't pursued looking for it….and we haven't sought it out because of time restraints and economics and all that stuff"

"If there's an injury, it's your own fault. You were being stupid or weren't focused…So it's kind of embarrassing, because you know it was your fault"

Results

- High OPM firms showed characteristics consistent with strong OHS performance
  - Focus on building proactive OHS systems

- Medium and low OPM firms had more varied and weaker OHS characteristics
  - More variability in how OHS is being implemented

  - Thus, acceptable construct validity:
    - Pattern of characteristics matched predicted for high versus not high
    - Wide range of characteristics co-vary with the OPM items

Application

- **High OPM**:
  - How can high OHS performance be sustained?

- **Medium and Low OPM**:
  - How can OHS performance be improved?
    - Work with leadership or Board of Directors to strengthen commitment to OHS
    - Identify a department or location where OHS culture is strong, and strategize on how to diffuse practices to the rest of the organization

Limitations

- Limited sample size (5 firms) and sample of persons interviewed within each firm (6-7 people over 2 days)

- Unable to match firms scoring high and low within sector (limited number of low firms to approach)

Looking Forward

- Yanar B, Robson LS, Tonima S, Amick III BC. Assessing the construct validity of the Organizational Performance Metric leading indicator using mixed methods. Safety Science (manuscript in preparation)

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