

# Development of a Health Risk Management Cultural Maturity Index for the Construction Industry

- Dr Jennifer Lunt, Health and Safety Laboratory
- Jane Hopkinson, Health and Safety Laboratory
- Clare Forshaw, Health and Safety Executive
- Ian Strudley, Health and Safety Executive
- David Fox, Health and Safety Laboratory

# Aims



- To **develop** a user centred OH cultural maturity matrix for the UK construction sector that indicates solutions for improving cultural maturity.
- To **survey** actual OH culture maturity in the UK construction industry.



10th IOHA International  
Scientific Conference

IOHA London 2015, 27-30 April  
2015, Hilton London Metropole



# Method

**1. Evidence synthesis:** literature review, interviews; subject expert consultation (iterative)

- Definitions;
- Matrix Structure
- Populated Index
- Occ Health leading & lagging indicators

**2. Piloting & Refinement**

- **Sample** (Cross Rail, n=20, Duty Holders, H&S Managers)
- **Scope:** Electronic (SNAP), (End User: Duty Holder; H&S Manager self-assessment)
- Usability, Acceptability
- 'Psychometrics'

**3. Survey**

- **Sample** (n=252, Duty Holders, H&S Managers)
- 'Psychometrics'
- Maturity Assessment

**4. Solutions (draft)**

 Completed

 Drafted

# Results (a) Content



# Definitions

- **OH culture:**
  - An organisations shared core values, beliefs, behaviours, traditions and history with respect to OH.
- **OH maturity:**
  - A reflection of the extent of proactivity (*and level of knowledge*) that an organisation and employees have in managing their health and well being at work (c.f. Safety Culture Maturity) .
- **Occupational health** (for current purposes):
  - Encompasses both the organisational and individual level and refers to physical, psychological and social functioning in the workplace.
- **OH Risks/Issues:**
  - All risks to which workforce is exposed all risks to which workforce isexposed (e.g. noise, HAVS, respiratory, dermal, MSDs, Common Health Problems (Stress, Anxiety, Depression), Health Promotion.  
*(\*Agreed with subject matter experts)*



# Criteria

- Be strongly aligned with OH (as opposed to safety).
- Capture key conceptual/perceptual distinctions between safety and OH maturity e.g.
  - Latency
  - Perceptibility of risk/harm
  - Causal attribution
  - Responsibility (ambiguity)
  - Cost/benefits (underestimation)
- Capture established contributors to healthy workplaces e.g.
  - Senior management commitment
  - Learning Organisation
  - Communication
  - Worker involvement

# Structure: Overview

- 5 (levels - sensitivity) x 6 (dimensions) (18 variables)

| Dimensions<br>(building blocks)   | Levels of Maturity                                    |                  |                  |                  |                  |
|-----------------------------------|---|------------------|------------------|------------------|------------------|
|                                   | Proactivity, Knowledge (range, causes); Inclusiveness |                  |                  |                  |                  |
| Key motivator<br>y influence<br>s | <i>Statement</i>                                      | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> |
|                                   | <i>Statement</i>                                      | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> |
|                                   | <i>Statement</i>                                      | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> |
|                                   | <i>Statement</i>                                      | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> |
|                                   | <i>Statement</i>                                      | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> | <i>Statement</i> |

# Structure: Maturity levels

| Level of Maturity  | Description   |
|--------------------|---|
| <b>Unknowing</b>   | “We just don’t know about it ”  |
| <b>Reactive</b>    | “We’ll do it when we think we have an issue” (for business)               |
| <b>Compliant</b>   | “We do it because we know we have to” (legal)                             |
| <b>Proactive</b>   | “We do it because we know we ought to” (moral)                            |
| <b>Enlightened</b> | “We do it because we know it’s worth our while” (legal, moral & business) |



# Building Blocks/elements

| Dimensions (Building Blocks)   | Variables (Elements)  |
|--|---|
| <p><b>Business Beliefs</b><br/>Belief that 'health is good for work' and 'work is good for health'.</p>                        | <ul style="list-style-type: none"> <li>○ Good health ↔ good business</li> <li>○ OH risk management</li> <li>○ OH is a core business value</li> </ul>  |
| <p><b>Fairness</b><br/>Uniformity of support provided for health and wellbeing.</p>  | <ul style="list-style-type: none"> <li>○ Accessibility to OH support</li> <li>○ Mutual trust</li> <li>○ Fair treatment of all</li> </ul>  |
| <p><b>Mindful</b><br/>Being vigilant and responsive to the full range of current and future OH issues</p>                      | <ul style="list-style-type: none"> <li>○ Foresight</li> <li>○ Awareness of the range of OH issues</li> <li>○ Responsiveness</li> <li>○ Vigilance</li> </ul>   |
| <p><b>Collective responsibility</b><br/>Distribution of responsibility and control of OH between management and workforce.</p> | <ul style="list-style-type: none"> <li>○ Worker involvement</li> <li>○ Shared responsibility (within organisation)</li> <li>○ Involvement of all stakeholders throughout project lifecycle</li> </ul> |
| <p><b>Leadership</b><br/>Competency and consistency in managing, leading and supervising OH.</p>                               | <ul style="list-style-type: none"> <li>○ Role modelling</li> <li>○ Consistent decision making</li> <li>○ Having and delivering on a vision for OH</li> </ul>  |
| <p><b>Learning</b><br/>Learning opportunities</p>  | <ul style="list-style-type: none"> <li>○ Learning opportunities for workers</li> <li>○ Organisational learning</li> </ul>   |

# Illustration

| Building Block<br>(description)  | Elements                           | Statements: Which of the following applies to your company?   |
|--|------------------------------------|---|
| <p><b>Business Beliefs</b></p> <p>(Belief that 'health is good for work' and 'work is good for health'.)</p> | <p>Good health ↔ good business</p> | <p>A. Employers/leadership do not recognise that good health↔good business. They do not recognise that looking after all aspects of workers health makes good financial, legal and moral sense.</p> <p>B. Employers/leadership only recognises the importance of looking after workers health if it impacts upon the business.</p> <p>C. Employers/leadership act on legal obligations for traditional OH issues. Financial and moral benefits aren't recognised.</p> <p>D. Employers/leadership recognise that they ought to look after all aspects of workers health because it's the right thing to do.</p> <p>E. Employers/leadership recognise that good health↔good business. They recognise that continuously investing in all aspects of workers health (including wellbeing) makes good legal, financial, and moral sense.</p> |
|  | <p>OH risk management</p>          | <p>A. No one manages OH risks.</p> <p>B. OH risks are only managed when they become critical to business interests.</p> <p>C. Only traditional OH risks are proactively managed.</p> <p>D. All stakeholders are involved in proactively managing traditional OH risks.</p> <p>E. All stakeholders are involved in proactively managing all types of OH risks.</p>   |
|  | <p>OH is a core business value</p> | <p>A. Employers/leadership do not consider OH issues when making business decisions.</p> <p>B. Employers/leadership only consider OH issues in business decisions when they become critical to business interests.</p> <p>C. Employers/leadership only consider legal obligations for managing traditional OH issues when making business decisions. Financial and moral benefits aren't recognised.</p> <p>D. Employers/leadership recognise that they ought to consider all aspects of workers health when making business decisions because it is the right thing to</p>   |

# Results (b) Testing/Survey

# Sample

**Table Summary of Demographic Factors (N=252 businesses)**

|  |  |
|--|--|
| <b>Organisation size (by number of employees)</b>          | Less than 5 (5.6%), 5 to 99 (37.7%), 100 to 249 (13.5%), 500 or more (27.0%) Total N = 252,  |
| <b>Worker status</b>                                       | Directly employed (42.1%), Sub-contracted (3.6%), Both (54.4%)<br>Total N = 252,   |
| <b>Position in supply chain</b>                            | Principal contractor (61.6%), Tier 1 (27.2%), Tier 2 (7.2%), Tier 3 (1.6%), Tier 4 (2.4%)<br>Total N = 250,  |
| <b>Do you have access to OH provision?</b>                 | Yes (72.2%), No (27.8%) Total N = 252,   |
| <b>Type of OH provision</b>                                | External provider (76.9%), In-house (23.1%) Total N = 182  |
| <b>Is OH specifically considered in your organisation?</b> | There is a separate OH policy (13.5%), OH is part of the H&S policy (57.4%), There is a formalised approach to OH management (18.3%), OH is not specifically considered (10.8%) Total N = 251, |
| <b>Location</b>  | South East (35.8%), South West (9.8%), Midlands (17.1%), North East (7.3%), North West (8.5%), Wales (3.3%), Scotland (13.0%), Ireland (5.3%) Total N = 246, Missing N = 6                     |

# Reliability & Validity

|                              | N   | M   | SD    | $\alpha$ | 1    | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14    |      |
|------------------------------|---|-----|-------|----------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|------|
| <b>HeRRMIn Dimensions</b>    |   |     |       |          |      |        |        |        |        |        |        |        |        |        |        |        |        |       |      |
| 1                            | Business Beliefs  | 250 | 10.58 | 3.1      | 0.85 | 1.00   |        |        |        |        |        |        |        |        |        |        |        |       |      |
| 2                            | Fairness  | 246 | 10.08 | 2.9      | 0.79 | 0.77*  | 1.00   |        |        |        |        |        |        |        |        |        |        |       |      |
| 3                            | Mindful   | 248 | 13.21 | 3.7      | 0.91 | 0.86** | 0.82*  | 1.00   |        |        |        |        |        |        |        |        |        |       |      |
| 4                            | Collective Responsibility                               | 247 | 9.69  | 2.8      | 0.82 | 0.75** | 0.78** | 0.80** | 1.00   |        |        |        |        |        |        |        |        |       |      |
| 5                            | Leadership  | 246 | 9.55  | 3.2      | 0.91 | 0.83** | 0.79** | 0.88** | 0.8**  | 1.00   |        |        |        |        |        |        |        |       |      |
| 6                            | Learning  | 245 | 6.68  | 1.9      | 0.84 | 0.73** | 0.69** | 0.79** | 0.75** | 0.78** | 1.00   |        |        |        |        |        |        |       |      |
| 7                            | <b>Total Score</b>                                      | 229 | 59.51 | 15.9     | 0.97 | 0.91** | 0.89** | 0.95** | 0.90** | 0.94** | 0.85** | 1.00   |        |        |        |        |        |       |      |
| <b>Leading OH Indicators</b> |   |     |       |          |      |        |        |        |        |        |        |        |        |        |        |        |        |       |      |
| 8                            | Exposure Monitoring: Duration since last undertaken?    | 251 | 4.00  | 1.37     | -    | 0.41*  | 0.35** | 0.45** | 0.35** | 0.37** | 0.38** | 0.41** | 1.00   |        |        |        |        |       |      |
| 9                            | Exposure Monitoring: When last used in decision making? | 252 | 3.83  | 1.46     | -    | 0.45** | 0.39** | 0.44** | 0.38** | 0.41** | 0.42** | 0.45** | 0.86** | 1.00   |        |        |        |       |      |
| 10                           | Control methods: When last reviewed?                    | 249 | 4.13  | 1.13     | -    | 0.44** | 0.41** | 0.45** | 0.36** | 0.41** | 0.36** | 0.45** | 0.50** | 0.51** | 1.00   |        |        |       |      |
| 11                           | Control methods: When last improved?                    | 251 | 4.04  | 1.15     | -    | 0.30** | 0.26** | 0.45** | 0.29** | 0.26** | 0.31** | 0.27** | 0.65** | 0.61** | 0.52** | 1.00   |        |       |      |
| 12                           | Working Conditions: When last improved?                 | 251 | 3.18  | 1.52     | -    | 0.50** | 0.47** | 0.28** | 0.38** | 0.48** | 0.44** | 0.50** | 0.56** | 0.58** | 0.49** | 0.62** | 1.00   |       |      |
| 13                           | Frequency of consideration at senior level?             | 252 | 3.61  | 1.15     | -    | 0.63** | 0.56** | 0.64** | 0.58** | 0.65** | 0.62** | 0.67** | 0.35** | 0.34** | 0.51** | 0.43** | 0.43** | 1.00  |      |
| 14                           | <b>Combined leading indicators</b>                      | 246 | 22.80 | 6.01     | 0.87 | 0.57** | 0.52** | 0.58** | 0.48** | 0.55** | 0.54** | 0.59** | 0.85** | 0.74** | 0.84** | 0.81** | 0.77** | 0.67* | 1.00 |



# Construct Validity



ANOVA's to determine whether differences in total maturity score varied with sample characteristics revealed:

- Significant differences in 2 of the 5 ANOVAs performed:
  - **Access to an OH provider** - maturity scores were significantly higher for those with access to an OH provider.
  - **How occupational health is considered in the organisation** – maturity scores were significantly higher for those with separate OH policy

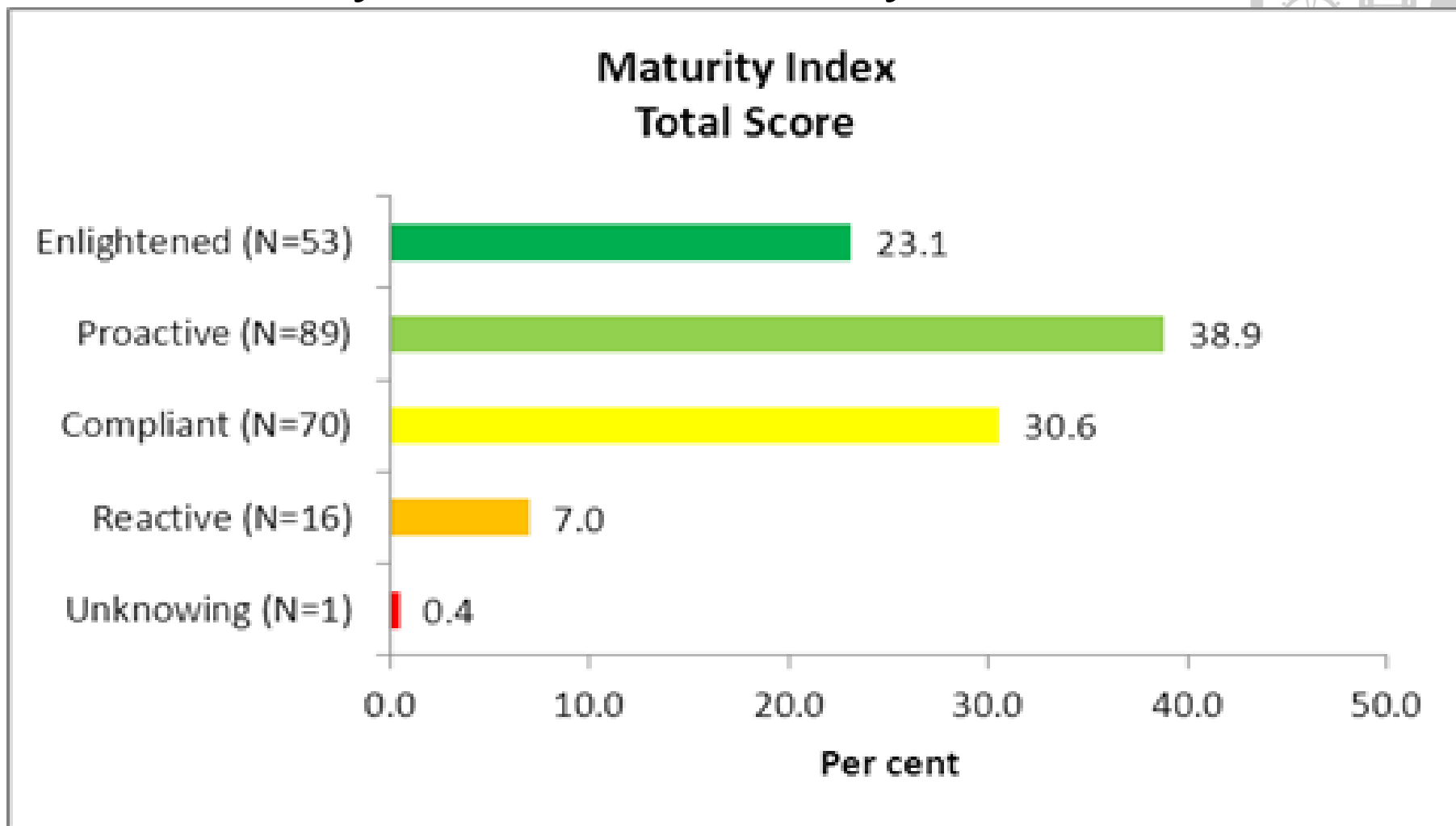


10th IOHA International  
Scientific Conference

IOHA London 2015, 27-30 April  
2015, Hilton London Metropole



# Survey Results: Maturity Level



# Caveats

- Potential selection bias potentially already aware and engaged with managing OH issues
- Potential response bias due to self-report survey.
- Therefore results cannot be interpreted as the sector population is performing well already with no room for improvement.
- Sample size Demonstrating that good levels of OH culture maturity are possible and achievable within the construction sector.
- However, there is room for improvement!





# Summary

- This research provides key messages for advancing effectiveness of OH risk management by:
  - Providing empirical evidence that OH cultural maturity is a separate construct from safety cultural maturity, driven by different motivational influences
  - Unpacking and quantifying the nature of those motivational influences
  - Identifying a coherent set of OH management leading indicators
  - Providing means of measuring Occupational Health Maturity with some degree of reliability and validity
  - Provides a basis for a targeted approach to improving occupational health performance.



# Publications

- RR1045. Developing the Health Risk Management Maturity Index as a Performance Indicator within the Construction Industry. HSE report
- Hopkinson, J & Lunt, J (2014) 'In the Same Breadth'. *Safety and Health Practitioner*, March 2014
- Lunt, J., Hopkinson, J, Forshaw, C & Strudley, I (2015) Development of the Health Risk Management Maturity Index (HeRMMIn) – a measure for assessing Occupational Health Cultural Maturity (under submission to JOEM)

# Next Steps



- Solutions (development)
- Convert the matrix into an HSE engagement tool:  
Independent Support/Assessment by HSE
- Adapt the index for use by other industry sectors.
- Further testing



10th IOHA International  
Scientific Conference

IOHA London 2015, 27-30 April  
2015, Hilton London Metropole





Thank you for listening!

Jennifer.lunt@hsl.gsi.gov.uk



10th IOHA International  
Scientific Conference

IOHA London 2015, 27-30 April  
2015, Hilton London Metropole





# 10th IOHA International Scientific Conference

LONDON 2015



April 25th-30th 2015  
London Metropole Hotel



**IOHA & BOHS 2015**  
London: Building on Occupational Hygiene Together

15-27-30 April  
London Metropole [www.iohalondon2015.org](http://www.iohalondon2015.org)