**Supplementary Material**

**Defining and measuring safety climate: A review of the construction industry literature**

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| **Table S1.** Description of the safety climate indicator categories created by the authors | | |
| **No.** | **Indicator** | **Description and example indicators** |
| 1 | Safety policies, resources and training | How safety is managed on the job - e.g., proper equipment, error management, safety training, safety rules |
| 2 | General management commitment to safety | Generally, whether or not management is committed to safety - e.g., management safety priority, management safety commitment, management caring |
| 3 | Supervisor commitment to safety | Supervisor's commitment to safety - e.g., supervisor support for safety, foremen safety management, supervisor safety expectations |
| 4 | General organizational commitment to safety | Generally, an organization's commitment to safety - e.g., safety's impact on cost and schedule, organizational commitment, organizational priority placed on safety |
| 5 | Safety communication | How safety is talked about on the job - e.g., safety communication, quality and quantity of safety communication |
| 6 | Co-workers commitment to safety | Co-workers commitment to safety - e.g., workmate's influence, workers' safety commitment, workers' safety priority |
| 7 | Worker involvement in safety | How involved workers were in safety - e.g., employee involvement, workers' involvement |
| 8 | Risk appraisal and risk taking | Taking stock of safety risk at work and risk taking - e.g., personal risk appreciation, appraisal of work hazards, likelihood of injury |
| 9 | Worker competence and controla | Worker competence and control – e.g., perceived control, awareness of safety program |
| 10 | Safe work conductb | Worker safety practices – e.g., attention to safety, worker safety response |
| 11 | Top management safety response | Top management safety response – e.g., senior management’s commitment to safety |
| 12 | Safety attitudesc | Worker attitudes towards safety – e.g., safety attitudes |
| 13 | Trust | Trust in jobsite safety practices – e.g., workers’ trust in the efficacy of safety systems |
| 14 | Sub-contractor involvement | Involvement of sub-contractors in safety practices – e.g., sub-contractor involvement |
| 15 | Safety incentives and disincentives | Incentives and disincentives for safety – e.g., safety incentives, safety disincentives |
| 16 | Workplace safety practicesd | Workplace safety practices |
| aSome indicators reflected personal safety knowledge.  bSome indicators reflected personal safety behaviors.  cSome indicators asked questions such as, “People are just unlucky to suffer an accident.”  dThis indicator could not be grouped with others due to its questions’ wide coverage of categories such as management commitment to safety, safety training, perception of risk, etc. (see Arcury et al. 2012). | | |

| **Table S2.** Description of each article included in the review of safety climate literature | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Reference** | **Country** | **N** | **Latino workers**b | **No. of indicators** | **No. of questions** | **Indicators**a | **Factor analyse** b | **Comparisons across groups**b | **Examine the relationship between safety climate and other variables**b | **Using safety climate survey data to measure intervention effectiveness**b |
| Abbe et al. 2011 | USA | 68 |  | 1 | 5 | 2 |  | Y | Y |  |
| Arcury et al. 2012 | USA | 119 | Y | 2 | 10 | 4, 16 |  | Y | Y |  |
| Biggs and Banks 2012 | Australia | 689 |  | 1 | 3 | 2 |  | Y |  |  |
| Burt et al. 2008 | New Zealand | 184 |  | 1 | 21 | 6 |  |  | Y |  |
| Chen and Jin 2013 | USA | 650 |  | 5 | 67 | 4, 9 |  | Y |  |  |
| Chen et al. 2013 | USA | 579 |  | 4 | 28 | 4, 9 |  | Y | Y |  |
| Choudhry et al. 2009 | Hong Kong | 1120 |  | 2 | 22 | 1, 2, 7 | Y |  |  |  |
| Cigularov et al. 2013b | USA | 4182 | Y | 4 | 19 | 1, 2, 3, 4 | Y | Y |  |  |
| Cigularov et al. 2013a | USA | 5628 |  | 4 | 19 | 1, 2, 3, 4 | Y | Y |  |  |
| Cigularov et al. 2010 | USA | 235 |  | 2 | 21 | 1, 5 |  |  | Y |  |
| Colley et al. 2013 | Australia | 309 |  | 3 | 39 | 3, 4, 6 |  |  | Y |  |
| Dedobbeleer & Bedland 1991 | USA | 272 |  | 9 | 27 | 1, 2, 3, 8, 9 | Y |  |  |  |
| Edelson et al. 2009 | USA | 251 |  | 2 | 8 | 1, 2 |  |  | Y |  |
| Fang & Wu 2013 | Singapore | 486 |  | 6 | ND | 1, 2, 3, 5, 7 |  | Y |  |  |
| Fang et al. 2006 | Hong Kong | 4719 |  | 10 | 78 | 1, 2, 3, 6, 7, 8 | Y |  | Y |  |
| Feng et al. 2014 | Singapore | 23 |  | 10 | ND | 1, 2, 3, 4, 5, 6, 7, 8 |  |  | Y |  |
| Fung et al. 2005 | Hong Kong | 423 |  | 8 | 31 | 1, 2, 3, 5, 6, 8, 9 |  | Y |  |  |
| Gilkey et al. 2013 | USA | 341 | Y | 9 | 27 | 1, 2, 4, 5, 6, 8, 10 |  | Y |  |  |
| Notes. ND = Not described in the paper well enough  aThe indicator categories are based on the authors’ categorization schema in the online supplementary material Table 1. Note that some of the papers had multiple indicators that fell within the same indicator category created by the authors of this paper.  bY = Researchers addressed this issue in their paper | | | | | | | | | | |
| Gilkey et al. 2012 | USA | 225 |  | 2 | 11 | 2, 6 |  | Y |  |  |
| Gillen et al. 2002 | USA | 255 |  | 2 | 10 | 2, 7 |  | Y | Y |  |
| Gittleman et al. 2010 | USA | 5628 |  | 2 | 8 | 1, 3, 11 |  | Y | Y |  |
| Glendon & Litherland 2001 | Australia | 198 |  | 6 | 32 | 1, 4, 5 | Y | Y | Y |  |
| Han et al. 2014 | Canada | 56 |  | 5 | ND | 1, 2, 4, 8 |  |  | Y |  |
| Healey & Sudgen 2012 | UK | 10,000 |  | 8 | ND | 1, 4, 6, 10, 13 |  | Y | Y | Y |
| Hoffmeister et al. 2014 | USA | 1548 |  | 2 | 6 | 3, 5 | Y |  | Y |  |
| Hon et al. 2013 | Hong Kong | 662 |  | 3 | 22 | 1, 2, 7 | Y |  |  |  |
| Hon et al. 2014 | Hong Kong | 396 |  | 3 | 22 | 1, 2 |  |  | Y |  |
| Jorgensen et al. 2007 | USA | 198 | Y | 2 | 7 | 2 |  | Y |  |  |
| Kapp 2012 | USA | 153 |  | 1 | 10 | 3 |  |  | Y |  |
| Kines et al. 2010 | Denmark | 84 |  | 6 | 27 | 1, 3, 7, 10 |  | Y |  | Y |
| Kines et al. 2011 | European Nordic countries | 1075 |  | 7 | 50 | 2, 5, 6, 9, 13 | Y |  | Y |  |
| Liao et al. 2013 | China | 80 |  | 7 | 24 | 3, 4, 6, 8, 9 |  | Y |  |  |
| Liao et al. 2014 | China | 248 |  | 5 | ND | 1, 2, 6 |  |  | Y |  |
| Lingard et al. 2012 | Australia | 390 |  | 4 | ND | 3, 6, 11 | Y | Y | Y |  |
| Lingard et al. 2010 | Australia | 114 |  | 2 | 29 | 2, 3 | Y | Y | Y |  |
| Lingard et al. 2009 | Australia | 101 |  | 3 | 44 | 3, 6 | Y | Y |  |  |
| Notes. ND = Not described in the paper well enough  aThe indicator categories are based on the authors’ categorization schema in the online supplementary material Table 1. Note that some of the papers had multiple indicators that fell within the same indicator category created by the authors of this paper.  bY = Researchers addressed this issue in their paper | | | | | | | | | | |
| Lopez del Puerto et al. 2013 | USA | 218 | Y | 9 | 30 | 1, 2, 4, 5, 6, 8, 10 |  |  |  |  |
| Martin and Lewis 2013 | Trinidad and Tobego | 30 |  | ND | ND | 2, 4, 5 |  |  | Y |  |
| Melia et al. 2008 | England, Spain, and Hong Kong | 473 |  | 4 | 33 | 1, 3, 6, 10 |  |  | Y |  |
| Mohamed 2002 | Australia | 68 |  | 1 | 10 | 4 |  |  | Y |  |
| Molenaar et al. 2009 | USA | 196 |  | 3 | 54 | 1, 3, 4, 11, 14, 15 |  |  | Y |  |
| Molenaar et al. 2002 | USA | 212 |  | 3 | 54 | 1, 3, 4, 11, 14, 15 |  | Y |  |  |
| Niskanen 1994 | Finland | 2542 |  | 6 | 10 | 4, 5, 7, 10 | Y | Y |  |  |
| Pousette et al. 2008 | Sweden | 174 |  | 4 | 33 | 1, 2, 5, 7 | Y |  | Y |  |
| Probst et al. 2008 | USA | 1390 |  | 1 | 8 | 5 |  | Y | Y |  |
| Shen et al. 2014 | Hong Kong | 292 |  | 2 | 22 | 1, 2, 7 | Y |  | Y |  |
| Shojii and Egawa 2006 | Japan | 496 |  | 8 | 27 | 9 | Y | Y | Y |  |
| Siu et al. 2004 | Hong Kong | 374 |  | 2 | 52 | 5, 12 |  |  | Y |  |
| Sokas et al. 2009 | USA | 175 |  | 1 | ND | 2 |  | Y | Y | Y |
| Sparer et al. 2013 | USA | 401 |  | 2 | 9 | 2, 7 |  | Y | Y |  |
| Suninjijo and Zou 2012 | Australia | 270 |  | 1 | 20 | 1, 3, 11 |  |  | Y |  |
| Teo and Feng 2011 | Singapore | 40 |  | 10 | 70 | 1, 2, 3, 4, 5, 6, 7, 8, 9 |  | Y |  |  |
| Tholen et al. 2013 | Sweden | 289 |  | 4 | 28 | 2, 5, 7 |  |  | Y |  |
| Notes. ND = Not described in the paper well enough  aThe indicator categories are based on the authors’ categorization schema in the online supplementary material Table 1. Note that some of the papers had multiple indicators that fell within the same indicator category created by the authors of this paper.  bY = Researchers addressed this issue in their paper | | | | | | | | | | |
| Zhou et al. 2008 | China | 3410 |  | 5 | 17 | 1, 2, 3, 7, 12 |  |  | Y |  |
| Zhou et al. 2011 | China | 513 |  | 5 | 24 | 1, 2, 6, 12 | Y |  |  |  |
| Zou and Sunindijo 2013 | Australia | 273 |  | 1 | ND | ND |  |  | Y |  |
| Notes. ND = Not described in the paper well enough  aThe indicator categories are based on the authors’ categorization schema in the online supplementary material Table 1. Note that some of the papers had multiple indicators that fell within the same indicator category created by the authors of this paper.  bY = Researchers addressed this issue in their paper | | | | | | | | | | |