

EXAMINING THE INFLUENCE OF SAFETY LEADERSHIP TOWARDS SAFETY
BEHAVIOUR IN SME MANUFACTURING

By :

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ABSTRACT

The purpose of this study was to determine the relationship between employer's safety leadership with safety behaviour among Small Medium Enterprises manufacturing sector in Negeri Sembilan. Three independent variables representing safety leadership attributes namely safety motivation, safety concern and safety policy have been selected for this study. Safety behaviour which is the dependent variable has been measured by two dimensions namely safety compliance and safety participation. The employees from SME manufacturing companies in Negeri Sembilan have been selected as a target population. A total of 400 questionnaires were distributed randomly to the Negeri Sembilan SME manufacturing workers and only 210 sets were returned and usable. Correlation and Multiple Regression test were used to analyse the data. Research findings revealed that safety concern and safety policy were significant with safety compliance, with safety Policy ($\beta=0.366$, $t=3.300$, $p=0.001$) was found to have the greatest influence; while safety motivation was not significant with safety compliance. On the other hands, safety motivation and safety concern were significant with safety participation with safety concern ($\beta=0.376$, $t=2.701$, $p=0.007$) was found to have the greatest influence; while safety policy has no influence towards safety participation. Safety concern is an important component of leadership in determining safety behaviour as it has been consistently explaining the variance in both dimensions of safety behaviour.

Keywords: Safety Leadership, Safety Motivation, Safety Concern, Safety Policy, Safety Compliance, Safety Participation, Safety Behaviour

ABSTRAK

Tujuan kajian ini ialah menentukan hubungan antara kepimpinan dan kelakuan kerja selamat di kalangan pekerja-pekerja perusahaan kecil sederhana (PKS) sektor pembuatan. Tiga pembolehubah mewakili kepimpinan keselamatan iaitu motivasi keselamatan, keperihatinan keselamatan dan polisi keselamatan telah dipilih untuk kajian ini. Kelakuan kerja selamat pula diukur melalui pematuhan keselamatan dan penyertaan keselamatan. Pekerja PKS sektor pembuatan di Negeri Sembilan telah dipilih sebagai populasi sasaran. Sebanyak 400 set borang soal selidik telah diedarkan secara rawak kepada pekerja-pekerja PKS sektor pembuatan di Negeri Sembilan dan hanya 210 set borang telah dikembalikan dan boleh digunakan bagi kajian ini. Ujian korelasi (Pearson Correlation Coefficient) dan ujian regresi berganda (Multiple Regression) telah digunakan untuk penganalisaan data. Hasil kajian menunjukkan keperihatinan keselamatan dan polisi keselamatan adalah signifikan terhadap pematuhan keselamatan, dengan polisi keselamatan didapati mempunyai pengaruh yang paling tinggi ($\beta=0.366$, $t=3.300$, $p=0.001$) manakala motivasi keselamatan tidak signifikan dengan pematuhan keselamatan. Dalam pada itu, motivasi keselamatan dan keperihatinan keselamatan adalah signifikan terhadap penyertaan keselamatan, dengan keperihatinan keselamatan didapati mempunyai pengaruh yang paling tinggi ($\beta=0.376$, $t=2.701$, $p=0.007$) manakala polisi keselamatan tidak signifikan dengan penyertaan keselamatan. Keperihatinan keselamatan adalah satu komponen kepimpinan yang penting dalam menentukan kelakuan kerja selamat setelah faktor ini telah menerangkan secara konsisten dalam kedua-dua varians kelakuan kerja selamat.

Kata Kunci: Kepimpinan Keselamatan, Motivasi Keselamatan, Keperihatinan Keselamatan, Polisi Keselamatan, Pematuhan Keselamatan, Penglibatan Keselamatan, Kelakuan Kerja Selamat

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CONTENTS

| TITLE | Pages |
|--------------------------------|--------------|
| DISCLAIMER | i |
| PERMISSION TO USE | ii |
| ABSTRAK | iii |
| ABSTRACT | iv |
| ACKNOWLEDGEMENTS | v |
| CONTENTS | vi |
| LIST OF TABLE | x |
| LIST OF FIGURES AND | xi |
| LIST OF DIAGRAMS | xii |
| LIST OF ABBREVIATIONS | xiii |
| CHAPTER 1 INTRODUCTION | |
| 1.1 Background of the study | 1 |
| 1.2 Problem Statement | 5 |
| 1.3 Research Questions | 7 |
| 1.4 Research Objectives | 8 |
| 1.5 Scope of the study | 9 |
| 1.6 Significance of Study | 12 |
| 1.5 Organisation of the Thesis | 13 |

CHAPTER 2 LITERATURE REVIEW

| | | |
|-------|--|----|
| 2.0 | Introduction | 14 |
| 2.1 | Occupational Safety and Health Development in Malaysia | 15 |
| 2.1.1 | Occupational Safety and Health Legislation in Malaysia | 16 |
| 2.1.2 | Industrial Accident Statistics in Malaysia | 17 |
| 2.1.3 | Occupational Safety and Health Newly Emerging Issue in Malaysia | 19 |
| 2.2 | Occupational Safety and Health in SMEs | 20 |
| 2.3 | Occupational Safety and Health in Manufacturing Sector | 25 |
| 2.4 | The Measure of Safety Performance | 28 |
| 2.5 | Empirical Studies on Safety Behaviour | 30 |
| 2.6 | Leadership | 31 |
| 2.7 | Leadership and Behaviour | 32 |
| 2.8 | Safety Leadership and Safety Behaviour | 33 |
| 2.9 | Safety Leadership Dimensions and Safety Behaviour | 36 |
| 2.10 | Summary | 43 |

CHAPTER 3 METHODOLOGY

| | | |
|-----|--------------------------------------|----|
| 3.0 | Introduction | 44 |
| 3.1 | Research Framework | 44 |
| 3.2 | Conceptual Definition | 45 |
| 3.3 | Hypotheses Development | 47 |
| 3.4 | Research Approach and Design | 48 |
| 3.5 | Data Collecting Technique | 48 |
| | 3.5.1 Research Instrument | 49 |
| | 3.5.2 Pilot Study | 51 |
| | 3.5.3 Population and Sampling Design | 53 |
| | 3.5.4 Data Collecting Procedure | 54 |
| 3.6 | Technique of Data Analysis | 54 |
| 3.7 | Summary | 57 |

CHAPTER 4 FINDINGS

| | | |
|-----|--|----|
| 4.0 | Introduction | 58 |
| 4.1 | Rate of Response | 58 |
| 4.2 | Respondents' Demographic Background | 59 |
| 4.3 | Reliability Analysis | 60 |
| 4.4 | Descriptive Analysis of Variables | 62 |
| 4.5 | Correlation Analysis | 63 |
| 4.6 | Multiple Regression Analysis | 64 |
| | 4.6.1 Independent Variables and Safety Compliance | 64 |
| | 4.6.2 Independent Variables and Safety Participation | 66 |
| 4.7 | Summary | 67 |

CHAPTER 5 DISCUSSIONS AND RECOMMENDATIONS

| | | |
|-------|---|-----|
| 5.1 | Introduction | 68 |
| 5.2 | Discussion | 69 |
| 5.2.1 | The Level of Safety Behaviour among SME Employees | 69 |
| 5.2.2 | The relationship between safety leadership and safety behaviour | 71 |
| 5.3 | Implication | 75 |
| 5.2.1 | Theoretical implication | 75 |
| 5.2.2 | Managerial implication | 76 |
| 5.4 | Suggestion for future research | 79 |
| 5.5 | Conclusion | 80 |
| | REFERENCES | 81 |
| | APPENDIX A | 99 |
| | APPENDIX B | 101 |
| | APPENDIX C | 103 |
| | APPENDIX D | 104 |
| | APPENDIX E | 105 |
| | APPENDIX F | 107 |
| | APPENDIX G | 109 |

LIST OF TABLES

Table 2.1 *SME Definition.*

Table 3.1 *Items of the independent Variables*

Table 3.2 *Items of the dependent Variables*

Table 3.3 *Reliability Coefficients of Questionnaire Items*

Table 3.4 *Cronbach's Alpha Measures*

Table 3.5 *The strength of relationships between the dependent and independent variables*

Table 3.6 *Multiple Regression Analysis Criteria*

Table 4.1 *Rate of Response*

Table 4.2 *Demographic Background of the Respondents*

Table 4.3 *Reliability of Test Result.*

Table 4.4 *Descriptive Statistics*

Table 4.5 *Correlation Analysis*

Table 4.6 *Model Summary A*

Table 4.7 *Beta Coefficients A*

Table 4.8 *Model Summary B*

Table 4.9 *Beta Coefficients B*

LIST OF FIGURES

Figure 2.1 *Industrial Accident Rate*

LIST OF DIAGRAM

Diagram 3.1 *Research Framework*

LIST OF ABBREVIATIONS

| | |
|----------|---|
| DOSH | Department of Occupational Safety and Health |
| FMA | Factories and Machinery Act |
| GDP | Gross Domestic Product |
| KLIA | KL International Airport |
| NIOSH | National Institute of Occupational Safety and Health |
| OSH | Occupational Safety and Health |
| OSHA | Occupational Safety and Health Act |
| OSHMP 15 | Occupational Safety and Health Master Plan 2010- 2015 |
| SMEs | Small Medium Enterprises |
| SME Corp | Small Medium Enterprises Corporation |
| SOCSSO | Social Security Organisation |

CHAPTER I

INTRODUCTION

1.1 Background of Study

Study on human safety behaviour as the main predictor of occupational accident started as early as 1940s where Heinrich (1941) concluded that 88% of the industrial accidents are caused by unsafe behavior whilst. Based on Heinrich Theory, human factor is the important to be investigated because it contributed the most to the occurrence of workplace accidents. Then, Bowander (1987) concluded that workplace accident contributing factors are namely engineering factor, technological factor, system failure factor and also human safety behavioural factor . After that, Gyekye (2010) found that safety behaviour of the workers (unsafe act) is the main fundamentals which cause occupational accident besides working environment (unsafe condition). Besides above mentioned literatures, various efforts have been made by previous researchers to understand and identify problems related to safety behaviour among employees from different sectors such as construction, oil and gas industry, food industry, manufacturing and so forth (DePasquale & Geller, 1999;Langford, Rowlinson, & Sawacha, 2000; Medina, McSween, Rost, & Alvero, 2009; Rundmo, Hestad, & Ulleberg, 1998; Tucker & Turner, 2011) as it is believed that the identification of the main contributors to safety behaviour could lead to the prevention of industrial accidents.

In Malaysia, the number of occupational accidents reported to Social Security Organisation (SOCSO) is 57,639 cases for 2010. The industrial accident recorded 35,603 cases while the remaining cases falls under the category of commuting accident (SOCSO , 2011). While in 2011, the number has increased to 59,897 cases, with 35,088 of industrial

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REFERENCES

- Anderson, T. D., Frod, R., & Hamilton, M. (1998). *Transforming leadership: Equipping yourself and coaching others to build leadership organizations (6th ed.)*. London: St. Lucie Press.
- Anton, T.J. (1989). *Occupational Safety and Health Management (2nd ed.)*. New York: McGraw-Hill.
- Azian Hariri, , Leman, A. M. and Yusof, M. Z. M. (2012) Proposal of development of welding health-hazard index (WHI) for small and medium enterprises (SMEs). *ARPJ Journal of Science and Technology*. 2: 62-67.
- Avolio, B. & Gardner, W. (2005) Authentic leadership development. Getting to the root of positive forms of leadership. *Leadership Quarterly*, 16, 315-338.
- Awolusi, O.D., Onikoyi, A. (2014). Effects of management use of motivation on workers' job commitment : An empirical investigation of tertiary institutions in south-western Nigeria. *Global Journal of Commerce & Management Perspective*, 3(4),8-16.
- Baba Md Deros, Ahmad Rasdan Ismail, Jaharah A. Ghani, & Mohd Yusri Mohd Yusof (2014). Conformity to occupational safety and health regulations in Malaysian small and medium enterprises. *American Journal of Applied Sciences*, 1(3):499-504.
- Baba Md Deros,Ahmad Rashdan Ismail & Mohd Yusri Mohd Yusof, (2012).Conformity to occupational safety and health regulations in small and medium enterprises, *J.Occu. Safety & Health*,9 , 1-6.
- Barling, J., Kelloway, E. K. & Iverson, R. D. (2003) High-quality work, job satisfaction, and occupational injuries. *Journal of Applied Psychology*, 88, 276-83.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.

- Bass, B.M. & Avolio, B.J. (eds.) (1994). *Improving organizational effectiveness through transformational leadership*. Thousand Oaks, CA: Sage.
- Bass, B.M., & Avolio, B. (1990). The implications of transactional and transformational leadership for individual, team and organizational development. *Research in Organizational Change and Development* 4, 231–272.
- Batista-Taran, L. C., Shuck, M. B., Gutierrez, C. C., & Baralt, S. (2009). *The role of leadership style in employee engagement*. In M. S. Plakhotnik, S. M. Nielsen, & D. M. Pane (Eds.), *Proceedings of the Eighth Annual College of Education & GSN Research Conference* (pp. 15-20). Miami: Florida International University.
- Bhanupong Jitwasinkul & Bonaventura H. W. Hadikusumo (2011) Identification of important organisational factors influencing safety work behaviours in construction projects. *Journal of Civil Engineering and Management*, 17(4), 520-528 , DOI: 10.3846/13923730.2011.604538.
- Biggs, H. C., Sheahan, V. L., & Dingsdag, D. P. (2005). A study of construction site safety culture and implications for safe and responsive workplaces. *The Australian Journal of Rehabilitation Counselling*, 11(1), 1-8.
- Blau, P. (1964). *Power and exchange in social life*. NY: John Wiley & Sons.
- Borman, W. C., & Motowildo, S. J. (1993). *Expanding the criterion domain to include elements of contextual performance*. In Schmitt, J., & Borman, W. C. (Eds.), *Personnel selection in organizations* (pp. 71-98). San Francisco: Jossey-Bass.
- Bougie, R., & Sekaran, U. (2013). *Research methods for business: a skill building approach* (6th ed) . New York: John Wiley & Sons, Inc.
- Bowander, B. (1987). The Bhopal accident. *Technological Forecasting and Social Change*, 32 (2), 169–182.
- Brislin, R.W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology* 1.

- Burke, M. J., Sarpy, S. A., Tesluk, P.E., & Smith-Crowe, K. (2002). General safety performance: A test of a grounded theoretical model. *Personnel Psychology*, 55, 429-457. Nominated for the 2002 Scholarly Achievement Award, Human Resources Division, Academy of Management.
- Burns, J. M. (1978). *Leadership*. NY: Harper & Row.
- Burns, N. and Grove, S. 1993. *The practice of nursing research: conduct, critique and utilization* (2nd ed). W.B.Saunders: Philadelphia, Pennsylvania, USA.
- Campbell, J.P., McCloy, R.A., Oppler, S.H., & Sager, C.E. (1993). *A theory of performance* :In: Schmit, J. ,& Borman, W.C. (Associates). *Personnel selection in organizations* (pp35-69). San Francisco : Jossey-Bass.
- Cavazotte, F.S.C. N., Duarte, C.J.P., & Gobbo, A.M.C. (2013). Authentic leader, safe work: the influence of leadership on safety performance. *Brazilian Business Review*, 10(2),95-119.
- Che Hassan, C.R., Basha, O.J., & Wan Hanafi, W.H. (2007). Perception of building construction workers towards safety, health and environment .*Journal of Engineering Science and Technology*,2 (3),271 - 279.
- Chen, C.F. , & Chen,S.C. (2013). *Upward safety communication and safety behavior of cabin crew*. In: Proceedings of the Eastern Asia Society for Transportation Studies, 9, 2013.
- Cheng, B. S., Chou, L. F., Wu, T. Y., Huang, M. P., Farh, J. L. (2004). Paternalistic leadership and subordinate responses: Establishing a leadership model in Chinese organisations. *Asian Journal of Social Psychology*, 7, 89-117.
- Cheng-Chia Yang , Yi-Shun Wang , Sue-Ting Chang, Suh-Er Guo, Mei-Fen Huang (2009). A study on the leadership behavior, safetyculture, and safety performance of the healthcare industry. *World Academy of Science, Engineering and Technology*, 53.
- Cheng, E.W.L., Li, H., Fang, D.P. and Xie, F. (2004). Construction safety management: an exploratory study from department of building and real estate. *Construction Innovation*,4,224–229

- Cheyne , A.,Cox, S.,Oliver, A., & Tomas, J.M. (1998). Modelling safety climate in the prediction of leves of safety activity. *Work And Stress*, 12(3), 255-271.
- Chinda, T. (2011). Investigation of safe behaviors in small, medium, and large food companies in Thailand. In *Proceedings of the International Conference on Engineering, Project, and Production Management (EPPM 2011)*, 20-21 September 2011, Singapore, pp. 205-214.
- Christian, M.S., Wallace, J.C., Bradley, J.C. and Burke, M.J. (2009). Workplace safety: A meta-analysis of the roles of person and situation factors. *Journal of Applied Psychology*, 9(4), 1103-1127.
- Clarke, S., (2013). Safety leadership: a meta-analytic review of transformational and transactional leadership styles as antecedents of safety behaviours. *Journal of Occupational and Organisational Psychology*, 86, 22–49.
- Clarke S. (2006). The relationship between safety climate and safety performance: A meta- analytic review. *Journal of Occupational Health Psychology*, 11(4), 315-327.
- Clarke, S., Ward, K. (2006). The role of leader influence tactics and safety climate in engaging employees' safety participation. *Risk Analysis*, 26 (5), 1175–1185.
- Clissold, G. (2005). Role stress as a predictor of safety climate and safety performance. *British Academy of Management*. Presented at 13-15 September, Oxford, England.
- Cooper, D.R., & Schindler, P.S. (2011). *Business research methods (11th ed.)*.New York : McGraw-Hill/Irwin.
- Cooper, M.D.(1998) . *Improving safety culture: A practical guide*. England:Wiley.
- Cropanzano, R., & Mitchell, M. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, 31(6), 874.

- Dal Corso, L. (2008). Mediation effect of safety climate and safety motivation on the relation between organisational climate and safety performance in the workplace. *TPM*, 15, 2, 77-90.
- Davis, J.A. (1971). *Elementary survey analysis*. Englewood Cliffs, NY: Prentice Hall.
- DeJoy, D.M., Schaffer, B.S., Wilson, M.G., Vandenberg, R.J., & Butts, M.M. (2004). Creating safer workplaces: assessing the determinants and role of safety climate. *Journal of Safety Research* 35 (1), 81–90.
- DePasquale, J. P., & Geller, E. S. (1999). Critical Success Factors for Behavior-Based Safety: A Study of Twenty Industry-wide Applications. *Journal of Safety Research*, 30(4), 237-249.
- Desmukh, L.M. (2006). *Hazard identification and risk control : Industrial Safety Management* . India :McGraw Hill.
- Didla, S., Mearns, K., Flin, R. (2009). Safety citizenship behavior: a proactive approach to risk management. *Journal of Risk Research*, 12(3), 475-483.
- Diugwu, I.A. (2011). Re-Strategising for effective health and safety standards in small and medium-sized enterprises. *Open Journal of Safety Science and Technology*, 1, 115-128. doi:10.4236/ojsst.2011.13013.
- DOSH (2013). *DOSH Annual Report 2012*. Putrajaya: Author
- DOSH (2006). *Guidelines on occupational safety and health act 1994*. Putrajaya : Author.
- Driscoll, D. L. (2011). *Introduction to primary research: Observations, surveys, and interviews*. *Writing Spaces: Readings on Writing*, 2, 153-174.
- Duff, A.R., Robertson, I.T., Phillips, A., & Cooper, M.D. (1993). Improving safety by the modification of behaviour. *Construction Management and Economics* ,12 (1), 67- 78. DOI:10.1080/014461994000000008
- Fan, Q. (2003, September). *Creating a conducive legal & regulatory framework for small and medium enterprise development in Russia*. A policy dialogue workshop presented in St. Petersburg,

Flin, R., Burns, Mearns, K., Yule, S. & Robertson, E. (2006) Measuring hospital safety climate. *Quality and Safety in Health Care*, 15, 109-115.

Flin, R. & Yule, S. (2004) Leadership and safety in healthcare. Lessons from industry. *Quality and Safety in Health Care*, 13 (Suppl II), ii45-ii51.

Ford, M. T., & Tetrick, L. E. (2008). Safety motivation and human resource management in North America. *International Journal of Human Resource Management*, 19, 1472-1485.

Ford, M.T., & Tetrick, L. E. (2011). Relations among occupational hazards, attitudes, and safety performance. *Journal of Occupational Health Psychology*, 16(1), 48-66.

Frooman, J., Mendelson, M.B., Murphy, J.K. (2012). Transformational and passive avoidance leadership as determinants of absenteeism. *Leadership & Organization Development Journal*, 33(5), 447-463.

Geller, E. S. (1996). The truth about safety incentives. *Professional Safety*, 41 (10), 34-39.

Gilbreath, B., & Karimi, L. (2012). Supervisor behavior and employee presenteeism. *International Journal of Leadership Studies*, 7 (1), 114-131.

Gouldner, A. (1960). The norm of reciprocity. *American Sociological Review*, 25(2), 161-178.

Griffin, M.A., & Hu, X. (2013). How leaders differentially motivate safety compliance and safety participation : the role of monitoring, inspiring, and learning. *Safety Science* 60 ,196-202.

Griffin, M. A., & Neal, A. (2000). Perceptions of safety at work: A framework for linking safety climate to safety performance, knowledge, and motivation. *Journal of Occupational Health Psychology*, 5, 347-358.

- Gyekye, S.A. (2006). Workers perception of workpalce safety:An african perspective. *International Journal of Occupational Safety and Ergonomics (JOSE) 2006*, 12(1), 31-42.
- Gyekye, S.A. (2010). Occupational safety management: The role of causal attribution. *International Journal Of Psychology*, 45 (6), 405–416.
- Hagan, P. E., Montgomery, J. F., & O'Reilly, J. T. (2001). *Accident prevention manual for business and industry (12th ed.)*. Itasca, IL: National Safety Council.
- Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate data analysis (7th ed.)*. New Jersey: Prentice Hall
- Hayes, B. E., Peranda, J. T. S., & Trask, J. (1998). Measuring perceptions of workplace safety: development and validation of the workplace safety scale. *Journal of Safety Research*,29, 145–161.
- He, G.Z., Zhang, Y.L. Mol, A.P.J. (2011), Managing major chemical accidents in China: Towards effective risk information. *Journal of Hazardous Materials* ,187, 171-181.
- Health and Safety Executive Statistics (2013). *Health and safety in manufacturing in great britain, 2013 : Work related injuries and ill health*. UK: Author. Retrieved at 15 August 2014 from www.hse.gov.uk/statistics/industry/manufacturing.
- Heinrich, H.W. (1941). *Industrial accident prevention: A scientific approach*. New York: McGraw-Hill.
- Henshaw, J.L. Gaffney, S.H. Madl, A.K. & Paustenback, D.(2007) The employer's responsibility to maintain a safe and healthful work environment: An Historical Review of Societal Expectations And Industrial Practices. *Employee Response Right Journal* , 19, 173-192.
- Herold, D. M. Fedor, D. B., Caldwell, S. D., & Liu, Y. (2008). The effects of transformational leadership and change leadership on employees' commitment to a change: A multi-Level study. *Journal of Applied Psychology*,93, 2, 346-357.
- Hinze , J., & Wilson, G. (1999). Moving forward a zero injury objective. *Journal of Construction Engineering and Management*, 126(5), 399-403.

- Holt, B. (2011). Leadership: Its role in smes. *International Institute of Risk and Safety Management*. Retrieved September 22, 2014 from <http://www.iirsm.org/Resources/IIRSM/Documents/Leadership%20and%20SMEs%20Article.pdf>.
- Holkeri, H. (2001). Globalisation and its effect on occupational health and safety. *Asian-Pacific Newsletter on Occupational Health and Safety* 8, 51.
- Holmes, N. (1999). An exploratory study of meanings of risk control for long term and acute occupational health and safety risk in small business construction firms. *Journal of Safety Research* ,30: 61-71.
- Huang, Y., Ho, M., Smith, G. S., & Chen, P. Y. (2006). Safety climate and self-reported injury: assessing the mediating role of employee safety control. *Accident Analysis and Prevention*, 38, 425–433.
- Inness, M., Turner, N., Barling, J., & Stride, C.B. (2010). Transformational leadership and employee safety performance: A within-person, between-jobs design. *Journal of Occupational Health Psychology* , 15(3), 279–290.
- Ismail Bahari (2006). *Pengurusan keselamatan dan kesihatan pekerjaan (2nd ed.)*. Kuala Lumpur : McGraw-Hill Education.
- Itani, T., Tachi, N., Takeyama, H., Ebara, T., Takanishi, T., Murata, K., Inoue, T., Suzumura, H., Kurungkraiong, S., Khuvasanont, T., & Batino, J.M. (2006). Approaches to occupational health based on participatory methodology in small workplaces. *Industrial Health* 2006, 17-21.
- Jabatan Keselamatan dan Kesihatan Pekerjaan (2008). *132 tahun penguatkuasaan keselamatan dan kesihatan pekerjaan di Malaysia*. Putrajaya : Author
- Jabatan Keselamatan dan Kesihatan Pekerjaan Negeri Sembilan (2014). *Data ringkas tahun 2013*. Seremban : Author.
- Jaselisks, E., Anderson, S. , & Russell, J. (1996). Strategies for achieving excellence in construction safety performance. *Journal of Construction Engineering and Management*, 121(1),61-70.
- Jeynes, J. (2002) . *The impact of European legislation on health & safety in small firms* .United Kingdom : Aston University

- Kalpande, S. D., Gupta, R. C., & Dandekar, M.D. (2010). A SWOT analysis of small and medium scale enterprises implementing total quality management. *International Journal of Business, Management and Social Sciences*, 1 (1), 59-64.
- Kanten, S. (2013). The relationships among working conditions, safety climate, safe behaviors and occupational accidents: An empirical research on the marble workers, *The Macrotheme Review*, 2(4), 173-182.
- Kelloway, E. K., & Barling, J. (2010). Leadership development as an intervention in occupational health psychology. *Work & Stress*, 24 (3), 260 — 279.
- Kelloway, E. K., Mullen, J. , & Francis, I. (2006). Divergent effects of passive and transformational leadership on safety outcomes. *Journal of Occupational Health Psychology* 11, 76-86.
- Kelloway, E. K., & Mullen, J. , (2009). Safety leadership : A longitudinal study of the effects of transformational leadership on safety outcomes. *Journal of Occupational and Organizational Psychology* (2009), 82, 253-272.
- Kerlinger, F.N. & Pedhazur, E.J. (1973). *Multiple regression in behavioral research*. New York: Holt, Rinehart, and Winston.
- Khairiah Soehod (2008). Workers' participation in safety and health at work. *Jurnal Kemanusiaan*, 11,15-23.
- Khdair, W.A. , Faridahwati Mohd Shamsudin and Chandrakantan Subramaniam (2011). A proposed relationship between management practices and safety performance in the oil and gas industry in Iraq. In: World Business and Social Science Research Conference , 27-28 October 2011 , Flamingo Hotel Las Vegas, USA.
- Koehn, E. E., Kothari, R. K., & Pan, C. S. (1995). Safety in developing countries: professional and bureaucratic problems. *Journal of Construction Engineering and Management ASCE*, 121(3), 261-265.
- Kogi, K. (2010). Integrating occupational hygiene and health: the effectiveness in improving small-scale workplaces. *Ital. J. Occup. Environ. Hyg.*, 2010, 1(2), 69 - 75.
- Komaki, J., Heinzmann, A.T., & Lawson, L. (1980). Effect of training and feedback: Component analysis of a behavioral safety program. *Journal of applied psychology*, 65(3), 261-270.

- Krause, T.R. (2005). *Leading with safety*. New Jersey : John Wiley & Sons, Inc.
- Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational And Psychological Measurement* , 30, 607-610.
- Langford, D., Rowlinson, S., & Sawacha, E. (2000). Safety behaviour and safety management: its influence on the attitudes of workers in the UK construction industry. *Engineering Construction & Architectural Management (Blackwell Publishing Limited)*, 7(2), 133.
- Lees, H., & Austin, J. (2009). The case of behaviour-based safety in construction. *Management, Procurement and Law*, 164, (1),1-6.
- Lees, H., & Austin, J. (2010). The case of behavior-based safety in construction. *Management, Procurement and Law*, 164(1), 3-8.
- Leithwod, K. (1994). Leadership for school restructuring. *Educational Administration Quarterly*, 30(4), 498-518.
- Lilis Surienty , Khoo, T.H., & Kee , M.H.(2011). Occupational safety and health (osh) in smes in Malaysia: A preliminary investigation. *Journal Of Global Entrepreneurship* ,1(1), 1-10
- Lilis Surienty (2012). *Management Practices and OSH Implementation in SMEs in Malaysia*. School of Management, Universiti Sains Malaysia.
- Lin, J. and Mills, A. (2001). Measuring the occupational health and safety performance of construction companies in Australia. *Facilities*. 19: 131-138.
- Lind D. A., Marchal W. G., Wathen S. A. (2010). *Statistical techniques in business and economics* (14th ed.). New York, NY: McGraw-Hill Irwin.
- Lingard, H., & Rowlinson, S. (2005). *Occupational health and safety in construction project management* . Abingdon, Oxon : Spon Press.
- Lu, C.S., & Tsai, C.L. (2008). The effects of safety climate in container shipping context. *Accidents Analysis and Prevention*, 40(2), 594-601.

- Lu, C.S., & Yang, C.S. (2010). Safety leadership and safety behaviour in container terminal operations. *Safety Science* 88, 123–134.
- Machida S, Markkanen P (2000). *Occupational safety and health (OHS) in Asia and the Pacific Recent developments and challenges for the new millennium*. Asian Pacific Newsletter on Occupational Health and Safety, 7(1).
- Maimunah Aminuddin (2013). *Malaysian industrial relations & employment law (8th ed.)*. Kuala Lumpur: McGraw-Hill
- Makin, P.J., & Sutherland, V.J. (1994). Reducing accidents using a behavioural approach. *Leadership & Organization Development Journal*, 15, 5-10.
- Manuaba, A. (2001). Impacts of globalization on working conditions and the environment – an Asian perspective. *Asian-Pacific Newsletter* 8, 2–64.
- McDonald, N., Corrigan, S., Daly, C., & Cromie, S. (2000). Safety management systems and safety culture in aircraft maintenance organisations. *Safety Science* 34, 151-176.
- MacNealy, M. S. (1999). *Strategies for empirical research in writing*. New York: Longman.
- Medina, R., McSween, T., Rost, K., & Alvero, A. (2009). Behavioral safety in a refinery: Large-scale change and long-term result. *Professional Safety*, 36-40.
- Mester, C., Visser, D., Roodt, G. & Kellerman, R. (2003). Leadership style and its relation to employee attitudes and behaviour. *SA Journal of Industrial Psychology*, 29 (2), 72-82.
- Mitonga-Monga, J., Coetzee, M., & Cilliers, F.V.N (2011). Perceived leadership style and employee participation in a manufacturing company in the democratic republic of congo. *African Journal of Business Management*, 6(15), 5389-5398.
- Mohamed, S. (2002). Safety climate in construction site environments. *Journal of Construction Engineering and Management*, 128, 375.

Mohammad Najib (1999). *Penyelidikan pendidikan*. Skudai: Universiti Teknologi Malaysia.

Mohammad, S., Bashar, M.A., Khalied, H.H., & Shaher, M. R. (2010). Safety management in Jordanian construction industry. *Jordan Journal of Civil Engineering*, 4(1), 47-54.

Mohd Khairuddin Hashim & Mat Saad Abdullah (2011). *Smes in the Malaysian manufacturing sector : A proposal for redefining smes and a study on the firm characteristic-performance relationships*. Unpublished research , Universiti Teknologi Mara.

Monazzam, M.R., & Soltanzadeh, A. (2009).The relationship between worker's safety attitude and the registered accidents. *Journal of Research in Health Sciences*, 9(1), 17-20.

Monforton, C., & Windson, R. (2010). An impact evaluation of a federal mine safety training regulation on injury rates among us stone, sand, and gravel mine workers: an interrupted time-series analysis, *Am J Public Health*. 2010 July, 100(7),1334–1340.

Mullen, J. (2004). Investigating factors that influence individual safety behavior at work. *Journal of Safety Research*, 35, 275-285.

Mullen, J., Kelloway, E.K., & Teed, M. (2011).*Inconsistent style of leadership as a predictor of safety behaviour*. *Work & Stress*, 25(1), 44-54.

Mullins, L. (1999). *Management and Organizational behaviour*. London: Pitman Publishing.

Nahar, V.K, Ford, M.A., Hallam,J.S., Bass, M.A. ,& Vice, M.A. (2013). Sociodemographic and psychological correlates of sun protection behaviors among outdoor workers: A review. *Journal of Skin Cancer Volume 2013* , 1-10.

National SME Development Council, (2013). *SME Annual Report 2012/2013*. Kuala Lumpur :Author.

National SME Development Council, (2012). *SME Annual Report 2011/2012*. Kuala Lumpur: Author.

- Neal, A., & Griffin, M. A. (2006). A study of the lagged relationships among safety climate, safety motivation, safety behavior, and accidents at the individual and group levels. *Journal of Applied Psychology*, 91, 946–953.
- Neal, A., & Griffin, M. A. (2002). Safety climate and safety behaviour. *Australian Journal of Management*, 27 (Special Issue), 67-75.
- Neal, A., Griffin, M. A., & Hart, P. M. (2000). *The impact of organizational climate on safety climate and individual behavior*. *Safety Science*, 34, 99 – 109.
- Negeri Sembilan tumpuan ‘gergasi’. (2013, April 3). *Harian Metro*. Retrieved November 30, 2013, from http://www2.hmetro.com.my/articles/NegeriSembilantumpuan__8216_gergasi__8217_/Article/
- Nishikido, N., Matsuda, K., Fukuda, E., Motoki, C., Tustaki, M., Kawakami, Y., Yuasa, A., Iijma, M., Tanaka, M., Hirata, M., Hojou, M., Ikeda, T., Meda, K., Miyoshi, Y., Arai, S., & Mitsuhashi, H., (2007). Development and process evaluation of participatory and action-oriented empowerment model facilitated by occupational health nurses for workplace health promotion in small and medium-sized enterprises. *Industrial Health* 2007, 45, 62-73.
- Noorul Huda Zakaria, Norudin Mansor & Zalinawati Abdullah (2012). Workplace accident in malaysia: most common causes and solutions. *Business and Management Review* , 2(5),75 – 88.
- Nor Azimah Chew Abdullah, Chandrakantan Subramaniam, & Zubaidah Hassan (2010). *BBSH410 : Fundamentals of Hazard Management*. Kuala Lumpur : Prentice Hall-OUM
- Northouse, P.G. (2010). *Leadership: Theory and practice (5th ed.)*. Thousand Oaks, CA: Sage.
- Norudin Mansor, Noorul Huda Zakaria, Zalinawati Abdullah (2011). Understanding common dimensions of workplace accident in malaysia. *Business and Management Review* ,1(6) ,22 – 33.
- Nunnally, J. C. (1978), *Psychometric theory (2nd ed.)*.New York: McGraw-Hill
- Occupational Safety & Health Act (2003). Kuala Lumpur: MDC Publisher Printers.

- Occupational Safety & Health Master Plan 2009-2015 (2009). Putrajaya : DOSH.
- O'Dea, A. & Flin , R. (2001). Site managers and safety leadership in the offshore oil and gas industry. *Safety Science* ,37 ,39-57.
- Omar, S. S., Arokiasamy, L., & Ismail, M. (2009). The background and challenges faced by the small and medium enterprises. A human resources development perspectives. *International Journal of Business and Management*, 4(10), 95-102.
- Omer Sadullah & Kanten, S. (2009). An empirical research on relationship quality of work life and work engagement. *Procedia - Social and Behavioral Sciences* 62 ,360 – 366.
- Pandya, V.M. (2012). Comparative analysis of development of SMEs in developed and developing countries : *The 2012 International Conference on Business and Management*
- Pedersen, L.M., & Kines, P. (2011). Why do workers work safely? Development of safety motivation questionnaire scales. *Safety Science Monitor*. 10(15), 1-10.
- Pengusaha IKS Perlu Jawatankuasa KKP (2013, July 11). *Harian Metro* , p. 40
- Phoon, W. (2001). Impact of globalization on small enterprises and the informal sector. *Asian-Pacific Newsletter* 8, 64–65.
- Phoon, Z. (2010). *DOSH On SMI Issues And Solutions - All About Safety*. [ONLINE] Available at: www.aboutsafety.com/article.cfm?id=206. [Last Accessed 22 August 2014].
- PM umum definisi baru PKS. (2013, December 7). *Berita Harian*. Retrieved July 7, 2014, from <http://www2.bharian.com.my/bharian/articles/PMumumdefinisibaruPKS/Article>
- Retneswari Masilamani (2010). Recent development in occupational health services in Malaysia. *Malaysian Journal of Public Health Medicine* 2010, 10(2),1-5.
- Rundmo, T., Hestad, H., & Ulleberg, P. (1998). Organisational factors, safety attitudes and workload among offshore oil personnel. *Safety Science*, 29(2), 75-87.

- Saad, Fatimah & Zairihan (2011). Workplace injuries in Malaysian manufacturing industries. *J. Occu. Safety & Health* ,9 , 1-6
- Saad Mohd Said, Fatimah Said & Zairihan Abdul Halim (2012). The determinants of industrial accidents in the Malaysian manufacturing sector. *African Journal of Business Management*, 6(5), 1999-2006. DOI: 10.5897/AJBM11.2439.
- Saleh, A. S., & Ndubisi, N. O. (2006). *SME development in Malaysia: Domestic and global challenges*. University of Wollongong
- Sarok, A. & Susil, J. (2012). Occupational hazards in the workplace: A case of an electronic company in Sama Jaya , Kuching, sarawak, Malaysia. *Asian Journal of Business Research*, 2(1), 1-12.
- Sawacha, E., Naoum, S. & Fong, D. (1999). Factors affecting performance on construction sites. *International Journal of Project Management* , 17(5),309-315.
- Scholz, J.T., & Gray, W.B. (1990). Osha enforcement and workplace injuries : A behavioural approach to risk assessment. *Journal of Risk and Uncertainty*, 3, 283-305.
- Sekaran, U. (2003). *Research methods for business: a skill building approach*. New York: John Wiley & Sons, Inc.
- Seneviratne, M., & Phoon, W.O. (2006). Exposure assessment in smes : A low-cost approach to bring services to small-scale enterprises. *Industrial Health 2006*, 44, 27-30.
- Seo D.C., Torabi M.R., Blair E.H., Ellis N.T.(2004). A cross validation of safety climate scale using confirmatory factor analytic approach. *Journal of Safety Research*, 35(4), 427-445.
- Sergiovanni , T.J. (1990). Adding value to leadership gets extraordinary result. *Educational Leadership*, 47(8), 23-27.
- Sinha, J. B. P. (2000). *Patterns of work culture: Cases and strategies for culture building*. New Delhi: Sage.

- Sivanathan, N., Turner, N., & Barling, J. (2005). Effects of transformational leadership training on employee safety performance: A quasi-experiment study. *Academy of Management Proceedings*. Retrieved October 19, 2013, from EBSCOhost database.
- Smith-Crowe, K., Burke, M. J., & Landis, R. S. (2003). Organizational climate as a moderator of safety knowledge-safety performance relationships. *Journal of Organizational Behavior*, 24, 861-876.
- Smolarski, J., & Kut, C. (2009). The impact of venture capital financing method on SME performance and internationalization. *International Interpreneurship Management Journal*.
- Social Security Organisation. (2011-2013). *Annual Report 2010*. Retrieved June 2, 2014 from <http://www.perkeso.gov.my/en/report/annual-reports.html>
- Sulastre Mat Zin & Faridah Ismail (2012). Employers' behavioural safety compliance factors towards occupational, safety and health improvement in the construction industry. *Journal of Procedia Engineering* 36, 742-751.
- Tangani nahas di tempat kerja. (2014, August 27). *Harian Metro*, p. 38.
- Taylor, J.R. (2012). *Human Error in Process Plant Operations*. Denmark : ITSA.
- T.C. Wu, C.H Chen, C.C Li. (2008). A correlation among safety leadership, safety climate and safety performance. *Journal of Loss Prevention in the Process Industries*, 21 ,307-318.
- Tucker, S., Chmiel, N., Tunner, S., Hershcovis, M.S., & Stride, C.B. (2008). Perceived Organizational support for safety and employee safety voice: The mediating role of coworker support for safety. *Journal of Occupational Health Psychology* 2008, 13(4), 319-330.
- Tucker, S., & Turner, N. (2011). Young worker safety behaviors: Development and validation of measures. *Accident Analysis and Prevention*, 43(1), 165-175.

- Ummu Kolsome Farouk, Stanley Richardson & Arul Jeganathan Solucis Santhapparaj (2011). Knowledge management to promote occupational safety and health at Malaysian manufacturing workplace : Reposed in occupational safety and health committee. *Journal of Organizational Knowledge Management*, 2011(2011), 1-13.
- Unit Perancang Ekonomi Negeri Sembilan (2009). *Guideline for Preparation of 10th Malaysian Plan for Negeri Sembilan*. Negeri Sembilan : Author
- Vredenburg, A.G. (2002). Organizational safety: Which management practices are most effective in reducing employee injury rates? *Journal of Safety Research*, 33, (2002) 259 – 276.
- Vinodkumar, M.N., & Bashi, M.(2010). Safety management practices and safety behaviour: Assessing the mediating role of safety knowledge and motivation. *Accident Analysis and Prevention*, 42(10),2082-2093.
- Vries, H., & Lechner, L. (2000). Motives for proactive behavior against carcinogenic substances in the workplace: a pilot study among dutch workers. *Journal of Occupational Environmental Medicine*, 42(1), 88-95.
- World Health Organisation (1998). *Safety and safety promotion: Conceptual and operational aspects*: Author.
- Workplace Safety and Health Institute of Singapore (2013). *Workplace safety and health statistics report , jan-jun 2013*.Singapore: Author.
- Wu, J.B., Tsui, A.S., & Kinicki, A.J. (2010). Consequences of differentiated leadership in groups. *Academy Management Journal*, 53(1),90-106.
- Wu, T.-C., Chen, C.-H. and Li, C.-C. (2008). A correlation among safety leadership, safety climate and safety performance. *Journal of Loss Prevention in the Process Industries*,21,307-318.
- Yang, C.C., Wang Y.S., Chang, S.T., Guo, S.E., Huang, M.F. (2009). *A study on the leadership behavior, safety culture and safety performance of the healthcare industry*.In : World Congress on Science, Engineering and Technology May 27-29 2009, Tokyo, Japan.
- Yapp, C. & Fairman, R. (2006). *Factors affecting food safety compliance within small and medium-sized enterprises: implications for regulatory and enforcement strategies*. *Food Control*, 17 (6) ,42–51.

- Yuan, X. , & Wang,K.(2012). Study on safety management of small and medium- sized enterprises based on BBS. *Journal of Procedia Engineering* , 45, 208 – 213.
- Yukl, G. (2006). *Leadership in organizations* (6th ed.). Upper Saddle River, NJ: Pearson-Prentice Hall.
- Yule, S. Flin, R., Davies, J., & McKee, L. (2008). Healthcare CEOs' leadership style and safety. *In Proceedings of the 52nd annual meeting of the Human Factors and Ergonomics Society*, New York, September.
- Zaliha Hj Hussin , Kamaruzaman Jusoff , Ju, S.Y., & Kong, L.K. (2008). Accidents in the food- manufacturing small and medium sized Malaysian industries. *Asian Social Science* , 4 (9), 27-31.
- Zikmund, W. G. (2003). *Business research methods* (7th ed.). MA: McGraw-Hill Irwin, Boston.
- Zohar, D. (1980). Safety climate in industrial organizations: theoretical and applied implications. *Journal of Applied Psychology* ,65, 96–102.
- Zohar, D. (2000). A group-level model of safety climate: Testing the effect of group climate on micro-accidents in manufacturing jobs. *Journal of Applied Psychology*, 85, 587-596.
- Zohar, D. (2002). The effects of leadership dimensions, safety climate, and assigned priorities on minor injuries in work groups. *Journal of Organizational Behavior*, 23, 75-92.
- 80 peratus kemalangan industri babitkan IKS. (2010, December 16). *Berita Harian*. Retrieved June 12, 2014, from http://www2.bharian.com.my/bharian/articles/80peratuskemalanganindustribabitkanIKS/Article/index_html