

**THE RELATIONSHIP BETWEEN SAFETY CLIMATE AND SAFETY  
PERFORMANCE**

**By**

**MOHD YUSOF BIN HUSSAIN**

**Thesis Submitted to  
Othman Yeop Abdullah Graduate School of Business,  
Universiti Utara Malaysia,  
in Fulfillment of the Requirement for the Degree of Master Science of  
Occupational Safety and Health Management**



**Othman Yeop Abdullah**  
**Graduate School of Business**

**Universiti Utara Malaysia**

**PERAKUAN KERJA KERTAS PROJEK**  
*(Certification of Project Paper)*

Saya, yang bertandatangan, memperakukan bahawa  
*(I, the undersigned, certify that)*

**MOHD YUSOF BIN HUSSAIN (809085)**

Calon untuk Ijazah Sarjana

*(Candidate for the degree of)* **MASTER OF SCIENCE (OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT)**

telah mengemukakan kertas projek yang bertajuk:

*(has presented his/her project paper with the following title:)*

**THE RELATIONSHIP BETWEEN SAFETY CLIMATE AND SAFETY PERFORMANCE.**

Seperti yang tercatat di muka surat tajuk dan kulit kertas projek.  
*(as it appears on the title page and front cover of the project paper)*

Bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan.

*(that the project paper acceptable in the form and content that a satisfactory knowledge of the field is covered by the project paper).*

Nama Penyelia : **EN LUKMAN BIN WAN MAT DAUD**  
*(Name of Supervisor)*

Tandatangan : \_\_\_\_\_  
*(Signature)*

Tarikh : **25 JULY 2013**  
*(Date)*

## **PERMISSION TO USE**

In presenting this thesis in partial requirement for the Master of Science Occupational safety and Health Management in Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying this thesis in any manner, in a whole or in part, for scholarly purpose may be granted by my supervisor or, in his absence, by the Dean Collage of Business. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall not be given to me and Universiti Utara Malaysia for any scholarly use which may be made of any material from this thesis.

Requests for permission to copy or to make other use of material in this thesis, in whole or in part should be address to:

Dean of Othman Yeop Abdullah Graduate School of Business  
Universiti Utara Malaysia  
06010 UUM Sintok  
Kedah Darul Aman

## **ABSTRAK**

Kajian ini dinilai berdasarkan persepsi keselamatan pekerja di sebuah syarikat pembuatan kertas dengan penekanan kepada hubungan antara iklim keselamatan dan prestasi keselamatan di kalangan pekerja-pekerja di sebuah kilang kertas di Pahang. Kajian ini akan melihat hubungan antara iklim keselamatan dan prestasi keselamatan untuk memahami persepsi keselamatan yang telah diamalkan di Pascorp Paper Industries Berhad. Keselamatan adalah isu yang terbaik, bagaimanapun majikan dan pekerja tidak merasakan ia sebagai satu proses yang penting dalam keselamatan matlamat jangka. Konsep keselamatan pekerja akan meningkatkan kefahaman majikan keperluan keselamatan Kertas Pascorp dan mematuhi keperluan undang-undang. Kajian mendapati bahawa faktor-faktor yang mempengaruhi kejayaan sistem keselamatan adalah iklim keselamatan dan prestasi keselamatan dalam mengurangkan insiden pekerjaan. Menggunakan SPSS 19 diukur hasil daripada kajian dan ujian hipotesis iklim keselamatan dilihat dan komitmen keselamatan ke arkib prestasi keselamatan dalam organisasi. Kajian ini mendapati bahawa terdapat tiada hubungan yang signifikan untuk gender, umur dan tempoh kerja, bagaimanapun terdapat hubungan yang signifikan antara posisi kerja, tahap pelajaran dan dan prestasi keselamatan.

Katakunci: Persepsi Keselamatan, Iklim Keselamatan, Prestasi Keselamatan

## **ABSTRACT**

*This study evaluated on employee safety perception at a paper manufacturing company with emphasize on relationship between safety climate and safety performance among employees in a paper manufacturing company in Pahang. This study examined the relationship between safety climate and safety performance in order to understand safety perception that has been practiced in Pascorp Paper Industries Berhad. Safety is utmost issue, however employer and employees does not feel it as an important process of long goal safety. Understanding the concept of workers safety will enhance employer understanding the safety requirement of Pascorp Paper and adhere legal requirements. The study found that factors influencing the success of the safety system are safety climate and safety performance in reducing occupational incidents. Using SPSS 19 to measure the result of studies and test of hypothesis perceived safety climate to achieve the safety performance in organization. The study noticed that there is no significant relationship between gender age and year of service status. While significant relationship between workers position, education level and safety performance.*

*Keywords: Safety Perception, Safety Climate, Safety Performance*

## ACKNOWLEDGEMENT

I would like to express my sincere appreciation to my supervisor, En. En Lukman Bin Wan Mat Daud for his encouragement, guidance, critics, friendship and help during the development of this project report. I am especially grateful for his assistance in providing me with ample reference materials at the early stage of this study.

I would also like to express my gratitude and thanks to my wife, Ms. Suhana Binti Halim, for her constant encouragement and advice. This project paper would not have been possible without her love and support.

A special thanks to my daughters my daughter Nur Syuhada, Nur Syafura and Nur Syakina, who was always with me at the computer and when I was studying. Your soft purring and desire to be close was a welcome distraction when I needed a break and a comfort to know how unconditionally important you thought I was!

A special dedication to my late father, Haji Hussain bin Mahdi who had provided me with the fundamentals to excel academically and in my profession.

Lastly, my sincere appreciation also extends to all my colleagues and others who have provided assistance at various occasions. Their views and tips are useful indeed. Unfortunately, it is not possible to list all of them in this limited space.

Thanks to all for helping me either directly or indirectly in the completion of this project paper.

## TABLE OF CONTENTS

<u>List of Content</u>	Pages
Certification of Project Paper	ii
Permission to Use	iii
Abstrak	iv
Abstract	v
Acknowledgment	vi
Table of Content	vii
List of Tables	ix
List of Figures	x
List of abbreviation	xi

NO.	CONTENTS	PAGES
CHAPTER 1: INTRODUCTION		
1.0	Introduction	1
1.1	Information about Pascorp Paper Industries Berhad	4
1.2	Safety and Health practices in Pascorp Paper	7
	1.2.1 Establishment of Safety, Health and environment Policy	7
	1.2.2 Role of Safety Committee and Safety Officer to success In the safety and health program in PPIB	10
	1.2.3 Safety and Health Program and planning activities	12
1.3	Background of study and problem statement	12
1.4	Research Question	14
1.5	Objective of Study	15
1.6	Significant of Study	16
1.7	Scope of Study	16
1.7	Limitation	16
1.8	Conclusion	17
CHAPTER 2: LITERATURE REVIEW		
2.1	Introduction	18
2.2	Safety Climate and Safety Performance	18
	2.2.1 Safety Climate or Safety Culture	18
	2.2.2 Benefit in accessing safety climate in organization	22
2.3	Safety Performance	23
2.4	Relating Safety Climate and Safety performance and demographic Factors	26
2.12	Conclusion	29

## CHAPTER 3: METHODOLOGY

3.1	Introduction	31
3.2	Framework and Hypothesis of study	32
	3.2.1 Relationship between Safety Climate and Safety Performance	32
	3.2.2 The influences of Safety Climate and Safety Performance	32
	3.2.3. Gender, age, position, year of service and education level	33
3.3	Research Design	35
3.4	Population and Samples	36
3.5	Data Collection method or procedure	37
3.6	Instrument	37
3.7	Type of Data Analyses	38
3.8	Conclusion	39

## CHAPTER 4: RESULT AND DATA ANALYSIS

4.1	Introduction	40
4.2	Demographic Analysis	40
4.3	Reliability Analysis	43
4.4	Mean and standard Deviation Analysis for Safety Climate and Safety Performance	44
4.5	Hypothesis Testing	45
	4.5.1 Relationship between Safety Climate and Safety Performance	45
	4.5.2 The influences of Safety Climate and Safety Performance	46
	4.5.3 Gender, age, position, year of service and education level	47
4.6	Conclusion	54

## CHAPTER 5: DISCUSSION, SUMMARY, CONCLUSION AND RECOMMENDATION

5.1	Introduction	55
5.2	Summary of the Main Findings	55
5.3	Discussion of Hypothesis Result	56
5.4	Recommendation	61
5.5	Implication	63
5.6	Limitation of study	64

References	66
------------	----

Appendix A : Questionnaire	71
Appendix B : Safety Training Plan for Year 2012	77



## LIST OF TABLES

TABLES	TITLES	PAGES
Table 1.1	PPIB Workplace Accident Statistics 2002-2011	13
Table 4.1	Frequency of Demographic variables	42
Table 4.2	Reliability test for dependent and independent variables	43
Table 4.3	Mean and Standard Deviation for Safety Climate and Safety Performance	44
Table 4.4	Correlation Matrix Among Variables	44
Table 4.5	Correlation coefficient and determination	46
Table 4.7	Gender: Mean Safety Performance	47
Table 4.8	Age: Mean Safety Performance	48
Table 4.9	Employment Status: Mean Safety Performance	49
Table 4.10	Year of Service: Mean Safety Performance	51
Table 4.11	Education: Mean Safety Performance	52

## **LIST OF FIGURES**

Figure 1.1	Number of Industrial Accidents Reported 2006-2010	3
Figure 1.2	PPIB Safety and Health Policy	10
Figure 1.3	Safety and Health Committee Organization Chart	11
Figure 3.1	Theoretical Framework	31

## **LIST OF ABBREVIATIONS**

<b>Abbreviation</b>	<b>Description</b>
PPIB	Pascorp Paper Industries Berhad
PM1	Paper Machine 1
PM2	Paper Machine 2
PM3	Paper Machine 3
WWTP	Waste Water Treatment Plant

# CHAPTER 1

## INTRODUCTION

### 1.0. Introduction

This study will explain the detail overview of the study on relationship between safety climate and safety performance in the Pascorp Paper Industries Berhad. In this chapter will include an explanation about the research background, area research, safety practices in Pascorp Paper, problem statement, objective and research question for this study.

Occupational Safety and Health Act (OSHA, 1994) set an objective to promote safe and health workplace for every person at work, which adapted their physiological and psychological needs. Organization started giving attention to organizational and management impact on safety performance particularly the function of safety climate (Nahrgang, Morgesan & Hofmann, 2007)

This study on safety perception is paramount, Wong due to measure the level of safety practices in the organization. Studies show that positive safety climate in the organization will result in reducing the accident rate in the company (Huang, 2006, Wong, 2009, Susan et al., 2008, Tsung, 2007). Thus management commitment and involvement of employee's participation as well as total quality management have been highlighted as key elements of success in the safety system (Ahamadon Bakri et al., 2006, Huang, 2006, Chia Yang et al., 2009).

The contents of  
the thesis is for  
internal user  
only

## References

- Abd Aziz, FS (2008), Safety Culture and commitment to safety in the Malaysia railway System, *Unpublished doctorate thesis, University of Nottingham, UK*
- Barling, J., Loughin, C., & Kelloway, E. K. (2002). Development and test of a model linking safety-specific transformational leadership and occupational safety. *Journal of Applied Psychology*, 87, 488–496.
- CANSO Safety Standing Comitee CANSO (2008) Safety Culture Defination & Enhancement Model Process , The Civil Air Navigation Services Organization. Retrieved from [www.canso.org](http://www.canso.org)
- Cheng-Chia Yang, Yi-Shun Wang, Sue-Ting Chang, Suh-Er Guo, Mei Fen Huang (2009) A study on the leadership Behavior, Safety Culture and Safety Performance of the Healthcare Industry. *World Academy of Science Engineering and Technology* 53, 2009.
- Clarke, S (1998). Perceptions of organizational safety: implications for the development of safety culture. *Journal of organizational Behavior*, 20, pp185-198.
- Clarke, S. (2006). The relationship between safety climate and safety performance: a meta-analytic review. *Journal of Occupational Health Psychology*, 11(4), 315-327.
- Collinson, DL (1999). Surviving the rigs: Safety and surveillance on North Sea oil installations. *Organization studies*; Vol 20(4), pp579-600
- Cooper, M.D., Philips, R.A., (2004). Explonatory analysis of safety climate and behavioral relationships, *Journal of Safety Research* 35,497-512.
- Cullen, WD (2001). The Ladbroke Grove rail inquiry Part 2 Report. HSE Books
- David M. DeJoya, Bryan S.Schaffer, Mark G. Wilsona, Robert J.Vandenberg, marcus M.Butts (2004). Creating safer workpalces: asesing the determinants and role of safety climate. *Journal of Safety Research* 35(2004) 81-90.
- Dickety, N., Collins, A & Williamson, J (2002). Analysis of accidents in the foundry industry. HSL Draft report.
- Evelyn A.T, Florence Y.Y & Derrick S.Y.O (2005) Fostering safe work behavior in workers at construction sites. *Architectural management Vo.12 No 4*, 410-422.

- Fadzli Shah Abd Aziz at. Al. (2002). “*Kesedaran Pekerja-pekerja Ladang Getah dalam Aspek Keselamatan dan Kesihatan Pekerjaan: Satu Tinjauan.*” Universiti Utara Malaysia.
- Flin, R., Mearns, K., O’Connor, P., & Bryden, R. (2000). Measuring safety climate; identifying the common features. *Safety Science*, 34, 177–192.
- Gil Luria, Dana Yagil (2010). Safety perception referents of permanent and temporary employees: Safety climate boundaries in the industrial workplace. *Accident Analysis and Prevention* 42, 1423–1430.
- Glendon, AI. & McKenna, EF., (1995). Human safety and risk management. London: Chapman and Hall
- Glendon, I. (2008). Safety culture: Snapshot of a developing concept. *The Journal of Occupational Health and Safety –Australia and New Zealand*, 24, 179–189.
- Gludmund F (2000). The Nature of Safety Culture: A review of theory and research, *Safety Science*, 34, 215-257.
- Geotsch, D.L (2008) Occupational safety and Health for technologist, Engineer and Managers, *Pearson International Edition, 6<sup>th</sup> edition*, Prentice Hall.
- 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.
- Hassan, A., Nor Azimah, C.A. & Chandrakantan, S. 2005. ”*Reducing workplace injury through effective management practices: some empirical evidence from Malaysian companies*”, Presented at the 18<sup>th</sup> Asian Conference on Occupational and Environmental Health on 11 – 13 May 2005 at Wellington, New Zealand.
- HSE (2000). *Successful Health and Safety Management*. Retrieved from [www.hse.gov.uk/pubns/books/hsg65.htm](http://www.hse.gov.uk/pubns/books/hsg65.htm)
- Health and Safety Executive (HSE). 2005. “A review of safety culture and safety climate literature for the development of the safety culture inspection toolkit”, Retrieved from <http://www.hse.gov.uk/RESEARCH/rrpdf/rr367.pdf>.
- Hsu, S.H., Lee, C.C., Wu, M.C., & Takano, K. (2007). “Exploring cross-cultural differences in safety climate of oil refinery plants in Japan and Taiwan”, in *Proceedings of the International Conference on Business and Information*. Tokyo, Japan, 11-13 July 2007. Retrieved: from <http://ibacnet.org/bai2007/proceedings/Papers/2007bai7280.doc>.
- Huang, Y.-H., 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.

- Lewin, K., Lippitt, R., White, R.K., (1939). Patterns of aggressive behaviour in experimental groups created social climates, *Journal of Social Psychology* 10, 271-299.
- Mearns, K. J., & Flin, R. (1999). Assessing the state of organizational safety–culture or climate? *Current Psychology*, 18, 5–17.
- Hale, A.R., Heming, B.H.J., Cathley, J., & Kirwan, B. (1997). *Modelling safety management systems*” *Safety Science*, vol.26, no. 1/2. Pp.121- 140.
- Huang, Y. -H., 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 & Prevention*, 38(3), 425-433.
- Mahmood R, Mohd Isa M.F, Mustafa M, Abd Aziz F.S and Salleh A. (2010) . Safety behaviour : The role of safety commitment. College of Business, UUM. Retrieved from [http://www.internationalconference.com.my/proceeding/icber2010\\_proceeding/PAPER\\_214\\_SafetyBehaviour.pdf](http://www.internationalconference.com.my/proceeding/icber2010_proceeding/PAPER_214_SafetyBehaviour.pdf).
- Nahrgang, J.D., Morgeson, F.P. & Hofmann, D.A. (2007). ”*Predicting safety performance : a meta-analysis of safety and organizational constructs*”, Poster session presented at the 22nd Annual Conference of the Society for Industrial and Organizational Psychology, New York. Retrieved from [http://www.msu.edu/~morgeson/nahrgang\\_morgeson\\_hofmann\\_2007.pdf](http://www.msu.edu/~morgeson/nahrgang_morgeson_hofmann_2007.pdf)
- Neal, A., & Griffin, M. A. (2004). Safety climate and safety at work. In M. R. Frone & J. Barling (Eds.), *The psychology of workplace safety*. Washington, DC: American Psychological Association.
- 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.
- Nor Azimah, C.A, Jeffery T.S, Krassi B.R, Satinder S.d & Yang M.G (2009) *Managing Safety: The role of safety perception approach to improve safety in organization*, IBEJ Vol.2 issue No.1, 1-18.
- Norudin Mansor, Noorul Huda Zakaria, Zalinawati Abdullah (2011). *Understanding Common Dimensions of Workplace Accident in Malaysia*. Business and Management Review Vol. 1(6), 22 – 33.
- Occupational Safety and Health Act (2003). MDC Publisher Printers, Kuala Lumpur.



- Oi-ling Siu, David R. Phillips, Tat-wing Leung (2004) Safety Climate and Safety Performance among construction worker in Hong Kong: *The role of psychological strains as mediators*. *Accident Analysis and Prevention* 36 (2004), 359-366.
- Pidgeon, N., (1998), Safety Culture: key theoretical issues. *Work and stress*. 12, 202-216.
- Pidgeon, N., O'Leary, M., (2000) Man Made disasters: why technology and organization (sometimes) fail. *Safety Science* 34, 15-30.
- Rundmo, T., 2000. Safety Climate attitudes and risk perception in Norsk Hydro, *Safety Science* 34, 47-59.
- Sekaran, Umar (2003), *Research methods for business; A skill building approach*. (4<sup>th</sup> ed) USA; John Wiley & Sons, Inc.
- Smallman, C & John, G. (2001). British directors perspectives on the impact of health and safety on corporate performance. *Safety Science* 38, 227-229.
- Thompson, R.C Hilton, T.F., Witt, L.A, (1998). Where the safety rubber meet the shop floor; a confirmatory model of management influence on workforce safety. *Journal of Safety Research* 29(1), 15-24.
- Tsung-chih Wua, Chi-wei Liu, Mu-Chen Lua (2007) Safety Climate in university and collage laboratories: Impact of organizational and individual factors.. *Journal of Safety Research* 38, 91-102.
- Uma Sekaran & Bougie, R., (2010). *Research Method for Business: A Skill Building Approach*.
- Yule, S., Flin, R. & Murdy, A. 2007. "The role of management and safety climate in preventing risk-taking at work", *International Journal of Risk Assessment and Management*, vol. 7, no. 2, pp. 137 – 151.
- Varonen, U., & Mattila, M. (2000). The safety climate and its relationship to safety practices, safety of the work environment and occupational accidents in eight wood- processing companies. *Accident Analysis and Prevention*, 32(6), 761- 769.
- Zimolong, B., Elke, G. (2006). *Occupational health and safety management*. In: Salvendy, G. (Ed.), *Handbook of Human Factors & Ergonomics*. Wiley, New York, 1–66.
- Zohar, D. (1980). Safety climate in industrial organisations: 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(4), 587–596.
- Zohar, D. (2003). Safety climate: Conceptual and measurement issues. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of Occupational Health Psychology*. Washington, DC: American Psychological Association.