

**THE INFLUENCE OF TEAM MEMBER RESOURCES AND STRUCTURE
ON INITIAL EMERGENCY RESPONSE PERFORMANCE OF FIRE
FIGHTERS IN MALAYSIA**

CHANDRAKANTAN SUBRAMANIAM

**UNIVERSITI UTARA MALAYSIA
2009**

THE INFLUENCE OF TEAM MEMBER RESOURCES AND STRUCTURE
ON INITIAL EMERGENCY RESPONSE PERFORMANCE OF FIRE
FIGHTERS IN MALAYSIA

A Thesis submitted to the College of Business in full fulfillment of the
requirements for the degree of Doctor of Philosophy, Universiti Utara
Malaysia

By

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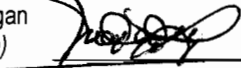


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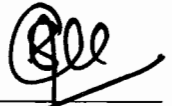
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Tajuk Tesis
(Title of the Thesis) : THE INFLUENCE OF TEAM MEMBER RESOURCES AND STRUCTURE ON
INITIAL EMERGENCY RESPONSE PERFORMANCE OF FIRE FIGHTERS
IN MALAYSIA

Program Pengajian
(Programme of Study) : Doktor Falsafah (Ph.D)

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ABSTRACT

This study examines the determinants of initial emergency response performance among emergency response teams. Specifically, the present study examines the direct relationship between team member resources and team structure variables and initial emergency response performance among 126 firefighting teams employed by the Fire and Rescue Department of Malaysia (FRDM). This study also explored the role of cohesiveness as a moderator on the relationship between team structure variables and initial emergency response performance. Self-reported measures of team member resources, team structure, and cohesiveness were obtained from team members, while the initial emergency response performance was derived from the official record on emergency occurrence logged by each fire station.

A number of different analyses were performed to analyze the data collected. Firstly, factor analysis revealed that personality variables loaded into two dimensions, labeled as emotional stability and extraversion, while leadership, roles, norms, and cohesiveness loaded into single dimensions respectively, and were labeled as leadership, roles, norms, and cohesiveness. Multiple regression and hierarchical multiple regressions were used to test the study hypotheses. In detecting interaction effects, significant beta coefficients and post hoc probing by split sample analysis ascertained the acceptance of interaction effects were used. The results provided general support for the hypotheses of the study, although there were some differences on the direction of relationships. Specifically, extraversion, age diversity, and leadership were significantly and positively related to initial

emergency response performance, while weight, cardiovascular endurance, tenure diversity, and norms were significantly and negatively related to initial emergency response performance. Additionally, the results of hierarchical multiple regressions indicated that cohesiveness interacted with age diversity and tenure diversity in predicting the initial emergency response performance. The relationship between team member resources and team structure variables and initial emergency response performance suggests that it would be beneficial to the Fire and Rescue Department of Malaysia (FRDM) to manage team dynamics as a measure to improve initial emergency response performance. Contributions, limitations, and implications are discussed.

ABSTRAK

Kajian ini memberi tumpuan pada faktor yang mempengaruhi prestasi respons awal kecemasan di kalangan pasukan respons kecemasan. Secara spesifik ia mengkaji hubungan faktor sumber ahli kumpulan dan faktor struktur kumpulan terhadap prestasi respons awal kecemasan di kalangan 126 pasukan kecemasan yang digajikan oleh Jabatan Bomba dan Penyelamat Malaysia (JBPM). Kajian ini turut meninjau peranan pembolehubah penyederhana, iaitu, perpaduan terhadap hubungan antara faktor struktur kumpulan dan prestasi respons awal kecemasan. Faktor sumber ahli kumpulan, faktor struktur kumpulan, dan perpaduan diukur melalui pengadaran sendiri oleh setiap ahli pasukan manakala prestasi respons awal kecemasan di perolehi daripada buku rekod rasmi catatan kecemasan bagi setiap balai bomba.

Kajian ini mengaplikasikan beberapa teknik analisis data ke atas data yang terkumpul. Pertama sekali, analisis faktor mendapati pengadaran untuk personaliti menghasilkan dua dimensi yang dinamakan kestabilan emosi dan ekstroversi manakala, analisis faktor bagi faktor kepimpinan, peranan, norma, dan perpaduan menghasilkan satu dimensi bagi setiap faktor yang dinamakan sebagai kepimpinan, peranan, norma, dan perpaduan. Analisis regresi berganda dan regresi berganda berperingkat digunakan untuk menguji hipotesis-hipotesis kajian. Bagi ujian interaksi, pekali beta yang signifikan bagi setiap interaksi diperiksa dengan analisis membahagi sampel yang melibatkan graf garisan serta *split regression* digunakan. Secara umum, dapatan kajian memberi sokongan terhadap hipotesis-hipotesis

kajian, walaupun terdapat perbezaan terhadap arah perhubungan. Secara khusus, dimensi-dimensi ekstraversi, diversiti umur, dan kepimpinan mempunyai hubungan positif dan signifikan dengan prestasi respons awal kecemasan manakala dimensi-dimensi berat, ketahanan kardiovaskular, diversiti pengalaman kerja, dan norma mempunyai hubungan negatif dan signifikan dengan prestasi respons awal kecemasan. Selain itu, hasil analisis regresi berganda berperingkat, mendapati, perpaduan berinteraksi dengan dimensi diversiti umur dan diversiti pengalaman kerja untuk mempengaruhi prestasi respons awal kecemasan. Penemuan hubungan faktor sumber ahli kumpulan dan faktor struktur kumpulan terhadap prestasi respons awal kecemasan turut membawa manfaat kepada Jabatan Bomba dan Penyelamat Malaysia (JBPM) dalam usaha untuk mengurus dinamik kerja kumpulan sebagai pengukur untuk meningkatkan prestasi respons awal kecemasan. Sumbangan, limitasi, dan implikasi kajian turut dibincangkan.

ACKNOWLEDGEMENTS

It is well known that a PhD cannot be written without the intellectual and motivating help of other people. First, I would like to express my gratitude to Universiti Utara Malaysia for the scholarship it has given me that allows me to pursue my studies. Secondly, I wish to thank my supervisors who have closely guided me in the process of conducting my research and writing this thesis. This research has benefited greatly from the comments and expertise of my supervisors, Associate Professor Dr. Hassan Ali and Dr. Faridahwati Mohd Shamsudin, who have provided vital constructive criticisms and path breaking advice throughout this process. Our meetings were not always pleasurable for me because they quite often resulted in much more work than I had anticipated. However, without their advice and criticism this PhD would never have been written.

Many other people deserve my thanks of which only a few can be mentioned here. First of all, I want to thank Professor Dr. Mahfooz A. Ansari, my last supervisor at the Universiti Sains Malaysia. He had great influence on my spirit to complete my PhD. Secondly, I am grateful to Associate Professor T. Ramayah who has showed the path in data analysis. Thirdly, I would like to thank Dato' Hamzah bin Abu Bakar, the Director General of Fire and Rescue Department (FRDM) for his support in collecting the data.

Last but not least, I would heartedly convey my gratitude to my family. To my wife Vigneswary and son Pranav, thank you for your constant support and encouragement throughout this period when I devoted more time to my computer than to both of you. My love and appreciation is extended to my

father, mother, brother, and sister for their whole-hearted moral support. I am extremely grateful to them for their love and endless support to whom I dedicate this thesis.

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CHAPTER ONE

BACKGROUND OF THE RESEARCH

1.1 INTRODUCTION

Emergencies are incidents that occur suddenly, unexpectedly, and life threatening. Incidents come in various forms and sizes such as, in the form of floods, hurricanes, earthquakes, fires, hazardous material, terrorism, and nuclear accidents (Ford & Schmidt, 2000). The last decades saw increasing numbers of incidents occurring around the globe and lately the emergency incidents have increased in number, severity, scope, and complexity. Some of the memorable events include the 1974 chemical plant explosion at Flixborough in the United Kingdom. Soon after that incident in 1976, a toxic chemical release took place in Seveso, Italy. Following closely to this event was the 1979 nuclear power plant accident at Three Mile Island in Pennsylvania, United States of America. In the same year a railway accident involving various dangerous products took place in the suburbs of Toronto in Canada. The 1984 toxic cloud release at Bhopal, India and the 1986 radiation exposure at Chernobyl, near Ukraine at the time part of the Soviet Union, marked some of the worst incidents

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