

**A FORMAL MODEL FOR ANALYZING MANAGER'S
PERFORMANCE DURING STRESS**



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Abstrak

Pengurus yang terdedah kepada tekanan mempunyai risiko mengambil keputusan yang tidak mencukupi, yang akan memberi kesan kepada tahap prestasi mereka. Menjejaskan boleh menjadi sama ada positif atau negatif, bergantung kepada persepsi individu pada stres. Ramai yang tidak mencukupi kajian konvensional telah dijalankan untuk menganalisis hubungan rumit tekanan dan prestasi. Oleh itu kajian ini memperkenalkan model formal menyokong prestasi pengurus 'semasa tekanan. Model ini boleh dimuatkan ke dalam agen pintar atau robot yang boleh digunakan untuk menyokong pengurus. Metodologi yang digunakan untuk meneroka proses kognitif manusia semasa tekanan terdiri daripada empat fasa: pengenalanpastian ciri-ciri tempatan dan bukan tempatan, konsep model ini harta, perasmian, dan penilaian. Persamaan yg memuji-muji telah digunakan dalam memformalkan hartanah. Model yang dibangunkan telah disimulasikan dengan memohon kepada senario yang berbeza. Analisis matematik telah digunakan untuk penilaian model. Hasil kajian menunjukkan bahawa model yang formal dapat menunjukkan kesan tahap yang berbeza tekanan pada prestasi pengurus.

Kata kunci: model formal, prestasi pengurus, tekanan, tekanan dan hubungan prestasi



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Abstract

Managers who are exposed to stress have the risk of taking insufficient decisions, which will affect their performance levels. The affect could be either positive or negative, depending on the individual's perception on stress. Many inadequate conventional studies have been conducted for analyzing the complicated relationship of stress and performance. Hence this study introduces a formal model supports managers' performance during stress. This model can be encapsulated within an intelligent agent or robots that can be used to support managers. The methodology was used to explore human cognitive processes during stress consisted of four phases: identification of local and non-local properties, conceptualization of the model of these properties, formalization, and evaluation. Differential equations have been used in formalizing the properties. The developed model has been simulated by applying it to different scenarios. Mathematical analysis has been used for the evaluation of the model. Results showed that the formal model was able to show the effects of different levels of stress on managers' performance.

Keywords: formal model, managers' performance, stressors, stress and performance relationship



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TABLE OF CONTENTS

Permission to Use	ii
Abstrak	iii
Abstract	iv
Acknowledgement	v
Table of Contents	vi
List of Tables	viii
List of Figures	x
List of Abbreviations	xii
CHAPTER ONE : INTRODUCTION	1
1.1 Introduction	1
1.2 Background of the Study	1
1.3 Problem Statement	4
1.4 Research Questions	6
1.5 Research Objectives	6
1.6 Scope of the Study	6
1.7 Significance of the Study	6
1.8 Summary	7
CHAPTER TWO : LITERATURE REVIEW	8
2.1 Introduction	8
2.2 Important Concepts Related to Stress	8
2.2.1 Job Performance	8
2.2.2 Managers Performance	10
2.2.3 Stress and Performance during Stress	12
2.3 Stress and Performance Models	12
2.3.1 Stressors	12
2.3.2 Job Demand Resources Model	18
2.3.3 Model of Work Stress	19
2.3.4 The Cognitive-Transactional Model	20
2.4 Theories related to Stress and Performance	22
2.4.1 Cannon-bard theory of emotion	22
2.4.2 Self-efficacy theory	22

2.4.3 Inverted-U Theory of stress	23
2.5 Computational Modelling	23
2.5.1 Computational Psychology	24
2.5.2 Computational Models related to Psychological Models	25
2.6 Evaluation in Computational Modelling	29
2.6.1 Mathematical Verification	29
2.7 Summary	30
CHAPTER THREE : RESEARCH METHODOLOGY	32
3.1 Identification of Conceptual Model Variables	34
3.2 Developing a Conceptual Model	34
3.3 Formalization of Conceptual Model	35
3.4 Evaluation	35
3.5 Summary	35
CHAPTER FOUR : FORMAL MODEL DESIGN	36
4.1 Identified Properties and their Relations	36
4.2 List of the Properties	39
4.3 Conceptual Model of Manager's Performance during Stress	41
4.4 Formal Model Design	43
4.4.1 Instantaneous Local Properties	43
4.4.2 Temporal Properties	66
4.5 Simulation	72
4.6 Evaluation Technique	75
4.7 Summary	75
CHAPTER FIVE: SIMULATION RESULTS AND VALIDIATION	77
5.1 Simulation Results	77
5.2 Mathematical Verification	94
5.3 Summary	97

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS	98
6.1 Conclusion	98
6.2 Limitation of the study	99
6.3 Future work recommendation	99
6.4 Summary	99
REFRERENCES	100



LIST OF TABLES

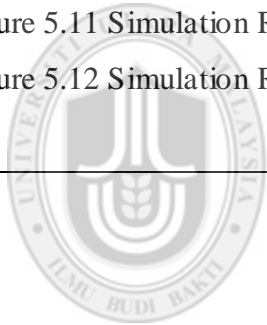
TABLE	PAGE
Table 2.1 Stressors and Findings	16
Table 2.2 Studies of Computational Model	27
Table 3.1 Methodology Activities	33
Table 4.1 Instantaneous proprieties	39
Table 4.2 Temporal proprieties	40
Table 4.3 Parameters Declaration	43
Table 4.4 Contributed Properties to Self Efficacy	44
Table 4.5 Different Conditions of Self Efficacy	45
Table 4.6 Contributed Properties to Job Buffer	45
Table 4.7 Different Conditions of Job Buffer	46
Table 4.8 Contributed Properties to Job Strain	47
Table 4.9 Different Conditions of Job Strain	48
Table 4.10 Contributed Properties to Cynicism	48
Table 4.11 Different Conditions of Cynicism	49
Table 4.12 Contributed Properties to Acceptance	50
Table 4.13 Different Conditions of Acceptance	51
Table 4.14 Contributed Properties to Holdback	51
Table 4.15 Different Conditions of Holdback	52
Table 4.16 Contributed Properties to Holdback	53
Table 4.17 Different Conditions of Emotional Focus	54
Table 4.18 Contributed Properties to Problem Focus	54
Table 4.19 Different Conditions of Problem Focus	55
Table 4.20 Contributed Properties to Satisfaction	56
Table 4.21 Different Conditions of Satisfaction	57
Table 4.22 Contributed Properties to Dissatisfaction	57
Table 4.23 Different Conditions of Dissatisfaction	58
Table 4.24 Contributed Properties to Motivation	59
Table 4.25 Different Condition of Motivation	60
Table 4.26 Contributed Properties to Sort Term Stress	61
Table 4.27 Different Conditions of Short Term Stress	62
Table 4.28 Contributed Properties to Short Term Exhaustion	62

TABLE	PAGE
Table 4.29 Different Conditions of Short Term Exhaustion	63
Table 4.30 Contributed Properties to Short Term Fatigue	64
Table 4.31 Different Conditions of Short Term Fatigue	65
Table 4.32 Contributed Properties to Short Term Performance	65
Table 4.33 Different Conditions of Short Term Performance	66
Table 4.34 Different Conditions of Long Term Exhaustion	67
Table 4.35 Different Conditions of Long Term Stress	68
Table 4.36 Different Conditions of Long Term Fatigue	69
Table 4.37 Different Conditions of Long Term Performance	70
Table 4.38 Contributed Properties to Burnout	70
Table 4.39 Different Conditions of Burnout	71
Table 4.40 Simulation Scenarios	72
Table 5.1 Values of Case 1.1	77
Table 5.2 Given Values of Case 1.2	79
Table 5.3 Values of Case 1.2	80
Table 5.4 Values of Case 2.1	82
Table 5.5 Values of Case 2.2	83
Table 5.6 Values of Case 2.2	84
Table 5.7 Values of Case 3.1	86
Table 5.8 Values of Case 3.2	87
Table 5.9 Values of Case 3.3	89
Table 5.10 Values of Case 4.1	90
Table 5.11 Values of Case 4.2	92
Table 5.12 Values of Case 4.3	93

LIST OF FIGURES

FIGURE	PAGE
Figure 2.1 Five Categories of Stressors	13
Figure 2.2 Job Demand-Resource Model	19
Figure 2.3 Model of Work stress	20
Figure 2.4 Cognitive-Transactional Model of Stress	21
Figure 2.5 Inverted-U Theory of Stress	23
Figure 2.6 Domain Model in Cognitive Vulnerability	26
Figure 2.7 Model of Mood Dynamics	27
Figure 3.1 Research Methodology	32
Figure4.1 Conceptual Model of Manager's Performance during Stress	42
Figure 4.2 Self Efficacy	44
Figure 4.3 Job Buffer	46
Figure 4.4 Job Strain	47
Figure 4.5 Cynicism	49
Figure 4.6 Acceptance	50
Figure 4.7 Holdback	52
Figure 4.8 Emotional Focus	53
Figure 4.9 Problem Focus	55
Figure4.10 Satisfaction	56
Figure4.11 Dissatisfaction	58
Figure4.12 Motivation	59
Figure4.13 Short term Stress	61
Figure4.14 Short Term Exhaustion	63
Figure4.15 Short Term Fatigue	64
Figure4.16 Short Term Performance	66
Figure4.17 Long Term Exhaustion	67
Figure4.18 Long Term Stress	68
Figure4.19 Long Term Fatigue	69

FIGURE	PAGE
Figure 4.20 Long Term Performance	70
Figure 4.21 Burnout	71
Figure 4.22 Sample of Simulation Code	74
Figure 5.1 Simulation Result of Case 1.1	78
Figure 5.2 Simulation Result of Case 1.2	79
Figure 5.3 Simulation Result of Case 1.3	81
Figure 5.4 Simulation Result of Case 2.1	82
Figure 5.5 Simulation Result of Case 2.2	83
Figure 5.6 Simulation Result Case 4.6	85
Figure 5.7 Simulation Result of Case 3.1	86
Figure 5.8 Simulation Result of Case 3.2	88
Figure 5.9 Simulation Result of Case 3.3	89
Figure 5.10 Simulation Result of case 4.1	91
Figure 5.11 Simulation Result of Case 4.2	92
Figure 5.12 Simulation Result of Case 4.3	94



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LIST OF ABBREVIATIONS

EU-OSHA	European Agency for Safety and Health at Work
KPI	Key Performance Indicators
CO's	Correctional Officers
JDR	Job Demand Resources Model
COR	Conservation of Resources Theory
HSE	Health and Safety Executive
BERT	Rational Emotive Behavioural Therapy



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CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter briefly explains the study background, problem statement, objectives, significance and scope of the study.

1.2 Background of the Study

Researchers and practitioners have paid more concern and focus on studying managerial stress and stress management. Implications of stress on individual and organization can no longer be studied or treated solely as the problem of individual manager. Stress has affects on the adjustment of individual with others which in turn can affect production and performance of the whole organization. Potential negative effects of stress are being realized by organizations, stress affects organizations in terms of lower motivation, decreased performance levels as well as physical and mental illness which are beyond cause of stress (Menon & Akhilesh, 1994). Stress emerges in situations when individuals face circumstances that they appraise as demanding or exceeding their resources and endangering their well-being (Lazarus & Folkman, 2011; Rani et al. 2013; Ramezani et al., 2013).

Up to fifty million Europeans complained about stress at work reported by European Agency for Safety and Health at work, stress results in costs of forty billion Euros in both health care and time (EU-OSHA, 2003; 2015). Additionally, 19% and 30% of general working employees are suffering from workplace stress and burnout (Cooper & Mrshall, 1976; Bourbonnais, Malenfant, Vézina, Jauvin, & Brisson, 2005; Dewa, McDaid, & Ettner, 2007). Work stress is the psychological negative stress or strain that appears as a result of both individual as well as organizational stressors in the work (Cooper & Mrshall, 1976; Cullen, Link, Wolfe & Frank, 1985). Burnout in the work is characterized by feelings of exhaustion which is one of the consequences of long term stress; there are plenty of other consequences just to mention cynicism, detachment, ineffectiveness and lack of personal accomplishment (Maslach, Schaufeli, & Leiter, 2001). Both job stress and burnout can affect employees' organizational commitment and leads to lower productivity (Maslach et al., 2001).

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