
ACROSS BORDERS

AN OVERVIEW OF ISSUES IN
MANAGEMENT & BUSINESS / SCIENCE & TECHNOLOGY
/ SOCIAL SCIENCE & HUMANITIES
2009-2011

PROJECT TEAM

Dr. Roaimah Hj. Omar
Dr. David Loh Er Fu
Nor Raihan Abu Bakar
Siti Zuraina Gafar@Abd Ghaffar
Muhamad Hanapi Khamis
Siti Nurshahidah Sah Allam

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**Division of Research, Industrial Linkages & Alumni
Universiti Teknologi MARA
Cawangan Melaka**

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CONTENTS

MANAGEMENT BUSINESS

ENVIRONMENTAL MANAGEMENT AMONGST MANUFACTURING FIRMS IN MALAYSIA
Roaimah Omar and Rachel Samuel

AIR POLLUTANTS IN MALAYSIA: THE CONTRIBUTION OF ECONOMIC GROWTH TOWARDS IT
Halimahton Borhan and Elsadig Musa Ahmed

POLLUTION ACTS AS ONE OF THE DETERMINANTS OF GOVERNMENT POLLUTION ABATEMENT EXPENSES IN MALAYSIA: USING A SIMULTANEITY APPROACH
Halimahton Borhan and Elsadig Musa Ahmed

POLLUTION AS ONE OF THE DETERMINANTS OF INCOME IN MALAYSIA: COMPARISON BETWEEN SINGLE AND SIMULTANEOUS EQUATION ESTIMATORS OF AN EKC
Halimahton Borhan and Elsadig Musa Ahmed

GREEN ENVIRONMENT: ASSESSMENT OF INCOME AND WATER POLLUTION IN MALAYSIA
Halimahton Borhan and Elsadig Musa Ahmed

EMPLOYABILITY AND MOBILITY IN THE "NEW CAREER" WITH SEX AS THE MODERATOR
Rachel Samuel and Roaimah Omar

WORK-LIFE BALANCE AND QUALITY OF LIFE IN THE NEW CAREER
Rachel Samuel and Roaimah Omar

CHALLENGES AND SUCCESSFUL FACTORS OF SME BUMI WOMEN ENTREPRENEURS IN MELAKA
Norba'iti Binti Tukiman and Rafidah Binti Abd. Karim

TESTING THE VALIDITY OF PURCHASING POWER PARITY BETWEEN ASEAN-4 AND SINGAPORE AND ITS CONNECTIONS WITH CEPT SCHEME
Abdul Rahim Ridzuan, Elsadig Musa Ahmed and Lee Chin

TESTING THE EVIDENCE OF PURCHASING POWER PARITY FOR ASEAN-5 COUNTRIES USING PANEL ESTIMATION
Abdul Rahim Ridzuan and Elsadig Musa Ahmed

TESTING FOR LONG-RUN PURCHASING POWER PARITY OF ASEAN4-SINGAPORE THROUGH THE IMPACT OF CEPT SCHEME AND GLOBAL FINANCIAL CRISIS
Abdul Rahim Ridzuan and Maizatul Saadiah Mohamad

DETERMINANTS OF OUTWARD FOREIGN DIRECT INVESTMENT IN DEVELOPING COUNTRIES: A CASE OF MALAYSIA
Rosfadzimi Mat Saad and Abd Halim Mohd Noor

AFFECTS OF DOMESTIC FACTORS ON OUTWARD FOREIGN DIRECT INVESTMENT (OFDI) IN DEVELOPING COUNTRIES – A PRELIMINARY STUDY OF MALAYSIA
Rosfadzimi Mat Saad and Abd Halim Mohd Noor

HOME COUNTRIES' DETERMINANTS OF OUTWARD FOREIGN DIRECT INVESTMENT (OFDI) IN DEVELOPING ECONOMIES: MALAYSIAN CASE
Rosfadzimi Mat Saad, A.P. Dr. Abd Halim Mohd Noor and Prof. Dr. Abu Hassan Shaari Md Noor

CULTURAL UNCERTAINTY ON BRAND TRUST OF FAST FOOD INDUSTRY IN MALAYSIA
Rozita Hj. Naina Mohamed and Associate Prof. Dr. Norzaidi Mohd Daud

RELIGIOUS SENSITIVITY ISSUES ON BRAND RESONANCE: A CONCEPTUAL STUDY OF FAST FOOD INDUSTRY IN MALAYSIA
Rozita Hj. Naina Mohamed and Norzaidi Mohd Daud

THE ANTECEDENTS OF BRAND EXPERIENCE AND ITS EFFECT ON TRUST AND RESONANCE: AN EMPIRICAL STUDY OF FAST FOOD INDUSTRY IN MALAYSIA
Rozita Hj. Naina Mohamed and Associate Prof. Dr. Norzaidi Mohd Daud

ANTECEDENTS AND CONSEQUENCES OF BRAND EXPERIENCE: A CONCEPTUAL STUDY OF FAST FOOD INDUSTRY IN MALAYSIA
Rozita Hj. Naina Mohamed, Associate Prof. Dr. Norzaidi Mohd Daud, Associate Prof. Dr. Faizah Abdul Bekim and Associate Prof. Dr. Basidah Musa

THE BRAND EXPE-RESONANCE MODEL, A NEW INVENTION AND PRACTICAL TOOL OF BRAND EXPERIENCE FOR FAST FOOD INDUSTRY

Rozita Hj. Naina Mohamed, Norzaidi Mohd Daud, Faizah Abdul Rahim and Rosidah Musa

MODELLING CUSTOMERS' BRAND EXPERIENCE: EMPIRICAL EVIDENCE FROM CHAINED FAST FOOD BRAND IN MALAYSIA

Rozita Hj. Naina Mohamed, Associate Prof. Dr. Norzaidi Mohd Daud

THE MEDIATING ROLE OF BRAND EXPERIENCE ON PRODUCT QUALITY, SERVICE QUALITY AND CONSUMER RESONANCE OF FAVOURITE FAST FOOD BRAND

Rozita Hj. Naina Mohamed, Associate Prof. Dr. Norzaidi Mohd Daud and Associate Prof. Dr. Rosidah Musa

SERVICE QUALITY IN HOSPITALITY INDUSTRY: A STUDY OF HOMESTAY IN MELAKA

Nor Shahrina Mphd Rafien, Zunaidah Ab Hassan and Azhana Othman

RELATIONSHIP ON ECONOMIC AND ATTITUDE FACTORS TOWARDS EVASION ON ZAKAT OF INCOME: A STUDY AMONG PUBLIC SERVANTS IN MELAKA

Zunaidah Ab. Hasan, Abd Halim Mohd Noor, Azhana Othman and Nor Shahrina Mohd Rafien

PENCAPAIAN KELUARAN DALAM NEGARA KASAR (KDNK) MALAYSIA DAN NEGARA-NEGARA MAJU : SUATU ANALISA

Suhaida Mohd Amin and Mohd Faizal bin P. Rameli

KAJIAN KEBOLEHCAPAIAN KELUARAN DALAM NEGARA KASAR (KDNK) MALAYSIA DALAM SASARAN WAWASAN 2020

Suhaida Mohd Amin and Mohd Faizal P. Rameli

LEVEL OF EDUCATION AS DETERMINANT OF FEMALE PARTICIPATION RATE IN MALAYSIA

Suhaida Mohd Amin, Mohd Faizal P. Rameli and Dziauddin Sharif

PARTICIPATION RATE BY GENDER IN MALAYSIA'S WORKFORCE

Suhaida Mohd Amin and Mohd Faizal bin P. Rameli

RELATIONSHIP BETWEEN AGE AND SIZE OF FIRM ON CORPORATE ENTREPRENEURIAL BEHAVIOUR AMONG EMPLOYEES

Zarinah Abu Yazid and Ai-Mansor Abu Said

A STUDY OF CORPORATE SOCIAL REPORTING (CSR) ON OCCUPATIONAL SAFETY AND HEALTH IN MALAYSIA

Azilna Rahim, Zaharah Abdullah and Zaieha Mahat

SELF ASSESSMENT IMPACT TO INDIVIDUAL TAXPAYERS: EVIDENCE FROM ACADEMICIANS

Amlrudin Ahmad and Rafizan Abdul Razak

AN EXPLORATORY STUDY ON THE POSSIBILITY OF MISAPPROPRIATION OF ASSETS OCCURRING IN A LOCAL AUTHORITY. A PRELIMINARY STUDY ON THE MISAPPROPRIATION OF ASSETS IN LOCAL AUTHORITY IN MALAYSIA

Majid R, Mohamed N, Abdullah A and Mahmud Z

SPIRITUAL INTELLIGENCE: NARROWING THE GAP BETWEEN THE ETHICAL AND NON-ETHICAL VALUE OF PUBLIC SECTOR EMPLOYEES. A CRITICAL REVIEW OF ETHICS AND MORAL DILEMMAS IN FRAUD RESEARCH, PUBLISHED IN MALAYSIAN ACCOUNTING REVIEW

Majid R, Mohamed N and Mahmud Z

ICT FACILITIES IN LEARNING ACCOUNTING INFORMATION SYSTEM

Vani A/P Tanggamani, Nalin Arumugam and Norlaila Md. Zin

THE ORGANIZATIONAL STRUCTURE FOR ENVIRONMENTAL PROTECTION IN MALAYSIA

Hanim Norza Baba and Kamaruzaman Jusoff

SUPERVISORY QUALITY IN UNIVERSITI TEKNOLOGI MARA: SUPERVISORS' EXPECTATIONS TOWARDS QUALITY SUPERVISION

Maryam Jameelah Hashim, Idris Osman, Joeaiza Juhari and Mohd Halim Mahphoth

RELATIONSHIP BETWEEN PERCEIVED SUPERVISORS SUPPORT (PSS) AND ORGANIZATIONAL COMMITMENT (OC) AMONG ACADEMICIANS IN UITM MALACCA

Nani Shuhada Binti Sehat, Siti Rohana Daud and Mazida binti Ismail

CORPORATE SOCIAL DISCLOSURE: AN ANALYSIS OF THE EMPLOYEE DISCLOSURE AND THEIR RELATION TO THE INDUSTRIAL LAW CASES IN MALAYSIA FROM YEAR 2004 TO 2008

Rafizan Abdul Razak, Zaleha Mahat and Nor Alshah Mohd. Ali

SCIENCE & TECHNOLOGY

THE HOMOLOGICAL FUNCTORS OF 2-GENERATOR 2-GROUPS OF NILPOTENCY CLASS TWO OF TYPE 2

Nor Haniza Sarmin, Nor Muhainiah Mohd. Ali and Mohd. Sham Mohamad

APPLICATIONS OF SOLAR TECHNOLOGY AND POLYSTYRENE MATERIAL FOR SOLAR BOAT COMPETITION MALAYSIA 2011

Zulkarnain Jamak and Rafidah Abd Karim

VISITORS' USE OF INFORMATION KIOSK AT MELAKA TOWN HERITAGE SITES

Mizan Hltam, Mohd Hasrul Yushalri Johari, Mohd Salyidi Mokhtar Mat Roni, Amlruddin Ahmad Ahmad Khairuman Md. Haslim

TECHNOLOGY ACCEPTANCE MODEL EXTENSION IN AN E-LEARNING ENVIRONMENT: EMPIRICAL VALIDATION OF SOCIAL INFLUENCE WITHIN INSTRUCTORS' DOMAIN.

Azmi Aminordin, Mohd Salyidi Mokhtar Mat Roni and Mazlan Salleh

EFFICIENT RECORDS MANAGEMENT VIA SSMSS: THE CONCEPT, DEVELOPMENT AND FUTURE PLANNING

Mahfudzah Othman, Mohd Norafizal A. Aziz and Zainab Othman

PROTOTAIP PENGEDIT BAHASA JAVA BISTARI : PENDEKATAN AWAL PENGAJARAN DAN PEMBELAJARAN

Zamlna Abdullah, Noor Suriana Abu Bakar and Zainab Othman

SOCIAL SCIENCE & HUMANITIES

IDENTIFYING PREFERRED MEDIUM USED IN DELIVERING EFFECTIVE MALAYSIAN ANIMATED PUBLIC SERVICE ANNOUNCEMENTS (PSAs) AMONG STUDENTS

Dzaa Imma Abd Latiff, Mohd Anwar Fahmi Haridas Abdullah and Noor Ashmalia Mohd Asyraf

COMMUNICATION STRATEGIES USED BY MALAYSIA MINISTRY OF HEALTH IN COMBATING RUMOURS ON H1N1 PANDEMIC

Wan Azfarozza Wan Athmar, Wan Nur Atiqah Wan Faizal, Ain Nabilah Mohd Baharudin, Muhammad Affili Ismail, Nur Mazuina Mazlan, Nor Shahira Ruhaizat and Mohd Kamal Hafeiz Ali Kamsani

WOMEN PORTRAYALS IN WARTA PERDANA LOCAL CRIME NEWS

Wan Azfarozza Wan Athmar and Siti Faidul Maisarah Abdullah

POPULAR CULTURE: IT'S OK TO BE GAY!

Noor Mayudia Mohd Mothar, Siti Hajar Abd Aziz and Abdul Rauf Ridzuan

HOW COULD THE MEDIA COUNTER ISLAMOPHOBIA?

Siti Hajar Abd Aziz, Aini Faezah Ramlan, Noor Mayudia Mohd Mothar and Abdul Rauf Ridzuan

METHADONE: DRUG OR MEDICINE?

Noor Mayudia Mohd Mothar, Siti Hajar Abd Aziz and Shahril Anuar Abdul Ghalim

SATU TINJAUAN LITERATUR PERANAN MEDIA MASSA DALAM PEMBANGUNAN MODAL INSAN DIKALANGAN REMAJA

Aini Faezah Ramlan dan Siti Hajar Abd Aziz

NEWSPAPER COVERAGE ON METHADONE MAINTENANCE THERAPY (MMT) IN BERITA HARIAN AND HARIAN METRO

Siti Hajar Abd Aziz, Noor Mayudia Mohd Mothar and Shahril Anuar Abdul Ghalim

THE WORLD THROUGH THE EYES OF THE INTERNATIONAL NEWS AGENCIES:

AN ANALYSIS OF PHOTOGRAPHS PUBLISHED IN THE WORLD SECTION OF THE STAR AND THE NEW STRAITS TIMES

Noor Mayudia Mohd Mothar, Siti Hajar Abd Aziz and Shahril Anuar Abdul Ghalim

YOUTH'S PERCEPTION TOWARDS THE CREDIBILITY OF HARIAN METRO

Nor Raihan Abu Bakar, Norhayati Baba and Sharifah Yullana Syed Ali Hanafiah

**SEGMENTASI SALURAN TELEVISYEN KE ARAH PERPADUAN ANTARA KAUM: KAJIAN KES
PELAJAR FAKULTI KOMUNIKASI DAN PENGAJIAN MEDIA, UITM MELAKA**

Nor Raihan Abu Bakar, Zuraidah Mohd Sulaiman, Dr. Sharil Nizam Sha'ri

**THE EXPLICIT PORTRAYAL OF OBSCENITY IN TELEVISION SERIES TOWARDS THE CURRENT
TREND OF VIEWING PATTERNS: A CONTENT ANALYSIS ON GREY'S ANATOMY**

Mohd Shahnawi Bin Muhammad Pirus

THE MEDIUM : VOICE OF MASSCOMM

Nor Raihan Abu Bakar, Siti Hajar Abd Aziz, Faridah Hanem Ab Rashid, Shafezah Abdul Wahab
Muhamad Hanapi Khamis

ANALYZING THE FIRST MALAYSIAN ANIMATED FILM "HIKAYAT SANG KANCIL

Azahar Harun, Dr Ruslan Abd Rahim and Hassan Abd Muthalib

ANTHROPOMORPHIC MULTI-SPORT MASCOT: A CASE STUDY OF SUKMA XIII MELAKA 2010

Azahar Harun and Mohamed Razeef Abd Razak

"HIKAYAT SANG KANCIL" REVISITED:

A FORMALISTIC PERSPECTIVE OF THE FIRST MADE IN MALAYSIA CARTOON ANIMATION

Azhar Harun and Mohamed Razeef Abd Razak

THE DESIGN & DEVELOPMENT OF A MASCOT CHARACTER FOR SUKMA XIII MELAKA 2010

Azahar Harun, Baharim Samuri, Ariff Ali, Mohamed Razeef Abd Razak and Tengku Shahril
Norzaimi Tengku Hariffadzillah

**KORPUS LISAN : KEPELBAGAIAN NUANSA DAN KREATIVITI DALAM MEMBENTUK
IDENTITI GOLONGAN REMAJA**

Zuraidah Binti Mohd Sulaiman dan Muhamad Fuad Bin Abdul Karim

**AN EXPLORATORY STUDY ON TEENAGERS' VIEW ON SEX EDUCATION SYLLABUS BEFORE
RECEIVING FORMAL SEX EDUCATION LESSON IN SCHOOL**

Asmidar Lokman, Farah Adilla Abd Rahman and Shamsinar Rahman

**PENGUSAHAAN PELAJAR SEKOLAH MENENGAH ALIRAN AGAMA TERHADAP PENGAJIAN
RETORIK ARAB: KAJIAN DI SEKOLAH MENENGAH KEBANGSAAN AGAMA (SMKA) DAN
SEKOLAH MENENGAH AGAMA BANTUAN KERAJAAN (SABK) DI NEGERI MELAKA**

Anuar bin Sopian dan Fakrulnizam bin Jafrî

**CODE-SWITCHING AND CODE-MIXING OF ENGLISH AND BAHASA MALAYSIA IN
CONTENT-BASED CLASSROOMS: FREQUENCY AND ATTITUDES**

Kamisah Ariffin and Misyana Susanti Husin

ENGLISH FOR FUTURE GENERATIONS:

EXAMINING OUR FUTURE TEACHERS' GRAMMAR COMPETENCE

Kamisah Ariffin and Misyana Susanti Husin

RAPPOR BUILDING: A PIVOTAL ART OF ACADEMIC DISCOURSE

Misyana Susanti Husin, Aini Andria Shirin Anuarudin and Lee Geok Imm

A MULTI-FACETED OUTLOOK ON THE GENRE OF CORPORATE ANNUAL REPORTS

Misyana Susanti Husin, Afida Mohd Ali and Shameem Rafik Galea

**THE EFFECTS OF TEACHERS' QUESTIONING BEHAVIOUR ON ESL CLASSROOM
INTERACTION**

Kamisah Ariffin and Misyana Susanti Husin

**THE RHETORICAL ORGANISATION OF MALAY ESL STUDENTS' ARGUMENTATIVE ESSAYS:
AN EXPLORATORY STUDY**

Misyana Susanti Husin and Kamisah Ariffin

**CONTRIBUTING FACTORS TO COMMUNICATION ANXIETY IN ENGLISH AMONG ESL
LEARNERS AND THE EFFECTS ON COMMUNICATION STYLES AND PATTERNS**

Kamisah Ariffin, Misyana Susanti Husin and Maizatulliza Muhammad

TEACHER TALK IN THE CLASSROOM: EMPLOYING GAMBITS IN SMALL TALKS

Kamisah Ariffin and Misyana Susanti Husin

**STUDENTS' VERSUS INSTRUCTORS' PREFERENCES IN TREATMENT OF ERRORS IN ESL
CLASSROOM,**

Kamisah Ariffin and Misyana Susanti Husin

USING WEBSITES FOR LEARNING BASIC GRAMMAR IN THE CLASSROOM

Rafidah Abd Karim and Zulkarnain Jamak

THE EFFECTIVENESS OF WEB-BASED GRAMMAR INSTRUCTION AND STUDENTS' ATTITUDE TOWARDS LEARNING BASIC ENGLISH GRAMMAR

Rafidah Abd Karim

COMPARING THE EFFECTIVENESS OF A COMPUTER-BASED ENGLISH COURSEWARE TO CONVENTIONAL CLASSROOM INSTRUCTION IN TEACHING VOCABULARY SETS

Rafidah Abd Karim and Norbaiti Tukiman

SEMANTIK DALAM PENGGUNAAN BAHASA MAT REMPIIT

Zuraidah Mohd Sulaiman dan Muhamad Fuad Abdul Karim

MELAYU DALAM USAHA MENCAPAI KEMERDEKAAN: KAJIAN TERHADAP TUAN HAJI ABDULLAH FAHIM

Norafifah Ab Hamid, Nor Azlina Abdul Wahab dan Husnul Rita Aris

FAKTOR-FAKTOR PENENTU KEENGGANAN PEMBAYARAN ZAKAT PENDAPATAN DI KALANGAN PENJAWAT AWAM DI MELAKA: SUATU KERANGKA MODEL KONSEPTUAL

Zunaidah Ab. Hasan, Azhana Othman, Nor Shahrina Mohd Rafien dan Husnul Rita Aris

CABARAN GHAZWATAL-FIKR(SERANGANPEMIKIRAN)KEATASDUNIA ISLAM: TINJAUAN DARI ASPEK KEFAHAMAN DI KALANGAN REMAJA MUSLIM

Noraini Ismail dan Minah Dibok

PREFACE

Across Borders is designed for use in knowledge development in various disciplines. It is written to accommodate the interest of academicians and industry. The compilation of research abstracts from different fields provides valuable information to assist the expansion of knowledge and development. It also serves as a reference for Universiti Teknologi MARA (UiTM) Melaka Campus and the Division of Research, Industrial Linkages & Alumni.

The compilation of proceeding abstracts includes 83 research abstracts that are divided into 3 sections according to their respective disciplines; Management and Business, Science and Technology, and Social Science and Humanities.

It is hoped that this book would inspire its readers to undertake further research in the specific fields or disciplines.

ACKNOWLEDGEMENT

The project team of this Across Borders would like to express their deepest appreciation to all the researchers from the various faculties for their participation. Without their on-going contributions the book would not be possible. We are indebted to the Rector of Universiti Teknologi MARA (UiTM) Melaka Campus and the Division of Research, Industrial Linkages & Alumni for mooted the idea of having this book and getting the project started.

We would like to sincerely thank all our friends, colleagues, and acquaintances for their roles, direct and indirect contributions and invaluable support in the compilation of the 83 proceeding abstracts.

POLLUTION ACTS AS ONE OF THE DETERMINANTS OF GOVERNMENT POLLUTION ABATEMENT EXPENSES IN MALAYSIA: USING A SIMULTANEITY APPROACH

Halimahton Borhan
Elsadig Musa Ahmed

ABSTRACT

A major world wide problem is pollution. It causes death, develops health problems and exasperates existing health problems. Pollution is also creditworthy for a broad kind of environmental problems. All these effects imply substantial economic costs. Pollution abatement turns increasingly significant as these costs get widely acknowledge. The aims of this study are to examine the relationship between economic growth and different indicators of air and water pollution in Malaysia and to investigate the determinants of government pollution abatement expenses using a simultaneous equation method. Air pollution indicators were assessed on a number of measures: Carbon Monoxide (CO), Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂), Ozone (O₃), Particulate Matter (PM₁₀) and Suspended Particulate Matter (SPM). Water pollution indicators were assessed on a number of measures: Biochemical oxygen demand (BOD), Cadmium (CD) and Arsenic (AS). The income level per capita, GDP (Gross Domestic Product) per capita were measured from the year 1996 to 2006 quarterly. This study contributes to the available literature by Hung et al (2004) and Shen (2006) by adopting the model and expanding it to include variables such as the number of motor vehicles, foreign direct investment, and government spending, secondary industry share and government pollution abatement expenses. Being different from the study by Hung et al (2004) and Shen (2006), this study estimates population density as an endogenous variable. It formulates a four-equation simultaneous model for empirical research. It is testing for exogeneity using the Hausman test and estimates the simultaneity model using the two-stages least squares method. The EKC hypothesis is supported in the cases of SO₂, O₃, CD and BOD. The simultaneity exists for all the indicators of air and water pollutants except for NO₂ and AS. There are several differences found between single polynomial equation estimators commonly used in EKC literatures and simultaneous equation estimators. Most of the pollutant indicators showing a highly significant effect on government pollution abatement expenses except for NO₂ and BOD.

KEYWORDS

Economic Growth, Environmental Kuznets Curve, Government Pollution Abatement Expenses, Pollutants, Simultaneity