

Fourth International Symposium on Infrastructure Engineering in Developing Countries

(IEDC 2013)

Procedia Engineering Volume 77

**Karachi, Pakistan
26 – 28 December 2013**

Editors:

M. S. Ali

ISBN: 978-1-63439-357-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by Elsevier B.V.
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact Elsevier B.V.
at the address below.

Elsevier B.V.
Radarweg 29
Amsterdam 1043 NX
The Netherlands

Phone: +31 20 485 3911
Fax: +31 20 485 2457

<http://www.elsevierpublishingsolutions.com/contact.asp>

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Preface	1
---------------	---

SECTION-I: TRANSPORT POLICY & SUSTAINABLE URBAN SYSTEMS FOR DEVELOPING COUNTRIES

Development of a Regional Transport Policy Support System for Rural Planning Agencies in Developing World	2
<i>Mir Aftab Hussain Talpur, Madzlan Napiah, Imtiaz Ahmed Chandio, Taufiq Ahmed Qureshi, Shabir Hussain Khahro</i>	
Best Practice Criteria for Sustainable Maintenance Management of Heritage Buildings in Malaysia	11
<i>Mahmoud Sodangi, Mohd Faris Khamdi, Arazi Idrus, Dabo B. Hammad, Abdullahi Ahmedumar</i>	
Solid Waste Collection Routes Optimization via GIS Techniques in Ipoh City, Malaysia	20
<i>Amirhossein Malakahmad, Putri Md Bakri, Munirah Radin Md Mokhtar, Noordiana Khalil</i>	
Land Suitability Analysis for Installing New Petrol Filling Stations Using GIS	28
<i>Shabir Hussain Khahro, Abd Nassir Matori, Imtiaz Ahmed Chandio, Mir Aftab Hussain Talpur</i>	
Estimation of Traffic Congestion Cost-A Case Study of a Major Arterial in Karachi	37
<i>Mir Shabbar Ali, Muhammad Adnan, Syed Muhammad Noman, Syed Fazal Abbas Baqueri</i>	

SECTION-II: ROAD SAFETY & MUNICIPAL INFRASTRUCTURE MONITORING AND MANAGEMENT-DEVELOPING COUNTRIES CONTEXT

Accident Analysis Using Count Data for Unsignalized Intersections in Malaysia	45
<i>Ashar Ahmed, Ahmad Farhan Mohd Sadullah, Ahmad Shukri Yahya</i>	
Criticality Analysis of Defects in Civil Engineering Structures: Case of Onshore Process Plant.	53
<i>Dabo B. Hammad, Nasir Shafiq, Muhd Fadhil Nuruddin, Mahmood Sodangi, Umar Abdullahi Ahmed</i>	
Approach to Fire-related Disaster Management in High Density Urban-area	61
<i>Muhammad Azeem Abdul Waheed</i>	
Estimation of Vehicle Damage Cost Involved in Road Traffic Accidents in Karachi, Pakistan: A Geospatial Perspective	70
<i>Jamil H. Kazmi, Salman Zubair</i>	

SECTION-III: ADVANCES IN URBAN INFRASTRUCTURE DESIGN & TRANSPORTATION MODELING-DEVELOPING CITIES ASPECT

Time Dynamic Characteristics for Road Crashes in Developing Countries	79
<i>Mir Shabbar Ali, Khawaja Sheeraz</i>	
GIS-basedland Suitability Analysis of Sustainable Hillside Development	87
<i>Imtiaz Ahmed Chandio, A. N. Matori, K. Yusof, M. A. Hussain Talpur, M. Aminu</i>	
Effect of Overloaded Vehicles on the Performance of Highway Bridge Girder: A Case Study	95
<i>Sadaqat Ullah Khan, Tehmina Ayub, Adnan Qadir</i>	
Passenger Car Equivalent Factors in Heterogenous Traffic Environment-are We Using the Right Numbers?	106
<i>Muhammad Adnan</i>	
Significance of Sensor Location in Real-time Traffic State Estimation	114
<i>Afzal Ahmed, David Watling, Dong Ngoduy</i>	

SECTION IV: PAVEMENT, MATERIALS DESIGN AND MAINTENANCE

Behaviour of Reinforced Concrete Beams Strengthened by CFRP Wraps with and without End Anchorages	123
<i>Asad Ur Rehman Khan, Shamsoon Fareed</i>	
Mechanical Properties of High-performance Concrete Reinforced with Basalt Fibers.....	131
<i>Tehmina Ayub, Nasir Shafiq, M. Fadhil Nuruddin</i>	

Sample Preparation Technique for Fiber Reinforced Cemented Soils	140
<i>Amanullah Marri, Salah Uddin, Dariusz Wanatowski</i>	
Application of Different Testing Methods for Evaluating Effects of Hydrated Lime in Bituminous Mixes	148
<i>Amir Kavussi, Javad Bakhtiari</i>	

SECTION-V: CONSTRUCTION MANAGEMENT-ISSUES AND STRATEGIES IN DEVELOPING COUNTRIES

Experimental Investigation of Strength and Stiffness Characteristics of Hot Mix Asphalt (HMA)	155
<i>Kashif Ahmed, Muhammad Irfan, Sarfraz Ahmed, Arsalan Ahmed, Afaq Khattak</i>	
The Use of Advanced Computer Based Management Systems by Large Saudi Companies for Managing Remote Construction Projects	161
<i>Bhzad Sidawi, Abdulsalam A. Al-Sudairi</i>	
PFI Procurement Skills: A Cross-sector Survey of Practitioners	170
<i>Noor Amila Wan Abdullah Zawawi, Abdullahi A. Umar, Abdul Rashid Abdul Aziz, Olivier Crouzier, Mohd Faris Khamidi, Arazi Idrus</i>	
Financing PF2 Projects: Opportunities for Islamic Project Finance	179
<i>Noor Amila Wan Abdullah Zawawi, Mahadi Ahmad, Abdullahi A. Umar, Mohd Faris Khamidi, Arazi Idrus</i>	
Slow Adoption of PPPs in Developing Countries: Survey of Nigerian Construction Professionals	188
<i>Abdulganiyu Otairu, Abdullahi A. Umar, Noor Amila Wan Abdullah Zawawi, Mahmoud Sodangi, Dabo B. Hammad</i>	
Time Extension Factors in Construction Industry of Pakistan	196
<i>S. Shujaa Safdar Gardezi, Irfan Anjum Manarvi, S. Jamal Safdar Gardezi</i>	
Investigating the Awareness of Onsite Mechanization in Malaysian Construction Industry	205
<i>M. Waris, Mohd. Shahir Liew, Mohd. Faris Khamidi, Arazi Idrus</i>	
Factors Influencing Integrated Project Delivery in Publicly Owned Construction Projects: An Information Modelling Perspective	213
<i>Nida Azhar, Youngcheol Kang, Irtishad U. Ahmad</i>	
Foreign Market Entry Considerations of Emerging Economy Firms: An Example of Pakistani Contractors	222
<i>Ahsen Maqsoom, Chotchai Charoenngam, Rehan Masood, Muhammad Awais</i>	
Is BIM Adoption Advantageous for Construction Industry of Pakistan?	229
<i>R. Masood, M. K. N. Kharal, A. R. Nasir</i>	
Author Index	