



DEA-19



CONFERENCE PROCEEDINGS

**FEAST INTERNATIONAL CONFERENCE ON DESIGN,
ENGINEERING, BASIC & APPLIED SCIENCES AND INFORMATION
TECHNOLOGY: CHALLENGES IN GLOBALIZED DIGITAL ERA**

January 12-13, 2019

Mercure London Hyde Park Hotel, UK

DEA - 2019

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Review board

- Prof. Dr. Clive: University of Exeter
- Dr. Misha Isupov: University of Exeter
- Dr. Nick Le Brun: University of East Anglia
- Dr. Andrew Hemmings: University of East Anglia
- Dr. Tom Clarke: University of East Anglia
- Dr. Richard Strange: University of Liverpool
- Mr. Mohd Azhar Bin Abdul Rahman: Urban Development Authority of Malaysia (UDA)
- Dr. Myles Cheesman: University of East Anglia
- Dr. David Leys: University of Manchester
- Prof. David Garner: University of Nottingham
- Prof. Chris Schofield: University of Oxford
- Prof. Hagan Bayley: University of Oxford
- Dr. Michael Hough: University of Liverpool
- Mr. Bright Lumor MENSAH: Jilin University, School of International and Public Affairs (SIPA), China
- Dr. Nicholas Harmer: University of Exeter
- Prof. Andrew Thomson: University of East Anglia
- Prof. David Richardson: University of East Anglia
- Dr. Nick Watmough: University of East Anglia
- Dr. Fraser Macmillan: University of East Anglia
- Dr. Gunter Grossmann: University of Liverpool
- Prof. Dr. Surendra Kansara: Symbiosis Institute of Operations Management, India
- Prof. Nigel Scrutton: University of Manchester
- Prof. Andrew Munro: University of Manchester
- Dr. Jon McMaster: University of Nottingham
- Prof. Ben Davis: University of Oxford
- Prof. Vilmos Fulop: University of Warwick
- Dr. Svetlana Antonyuk: University of Liverpool
- Prof. Doc Sharifah Hayaati Syed Ismail: University of Malaya, Kuala Lumpur Malaysia

Conference Program Overview

09:00 am 09:10 am
Welcome Reception & Registration
09:10 am 09:20 am
Introduction of Participants
09:20 am 09:30 am
Welcome Notes - Conference Coordinator
09:30 - 10:00 am
Grand Networking Session & Tea Break

Presentation Detail

DAY 01 Saturday (January 12, 2019)
Presentation Session (10:00 am 01:00 pm)
Session Chair: Dr. Charlotte H.

Track: Social Sciences & Business Management

Dr. Elad Harison	Is Organizational Service Culture Homogeneous or Heterogeneous? Evidence from the Utilities Sector	SSBM-JAN-105
Beskida Dorda	Leadership's Relationship in the Banking Sector According to Leader-Member Exchanges (LMX) Theory and Employees' Experience	SSBM-JAN-144

Track: Engineering Technology & Applied Sciences

Prof. Khaled Moh. Alhamad	A Zero-One Integer Programming for Preventive Maintenance Scheduling for electricity Plants with Production	DEA-JAN-101
Taghreed A. Musa	Improving Some Mechanical Properties of Concrete by Using Hyper-Plasticizer (HP-580) and Steel Fibers	DEA-JAN-102
Mr. Yousef Alqurashi	Laser-Induced Surface Modification of Contact Lenses for Measuring Intraocular Pressure for Glaucoma Patients	DEA-JAN-103

Attendees Details

Dr. Ofer Barkai	Department of Industrial Engineering and Management, Shamoon College of Engineering, Ashdod, Israel
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2nd Day (January 13, 2019)

All respective guests are free to conduct their own sightseeing and tour. The second day of the event is reserved for this memorable purpose.

Is Organizational Service Culture Homogeneous or Heterogeneous? Evidence from the Utilities Sector

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ABSTRACT

The research studies to what extent different phases of the service process that do not involve similar training, know-how, managerial practices and resources (such as customer care, service management and administration, and technical maintenance) may be inter-linked. We assess whether different departments that are involved in the service supply chain across the organization may differ in their service standard or follow similar patterns in their service provision. The service standard of each organizational unit be orchestrated, or may vary, due to the service culture and values of the organization. Major differences between the organizational departments and the separation between them may affect not only the final service level provided to customers, but also the heterogeneity in service provision standards within the organization. The paper analyzes the provision of service fault maintenance in a large utilities company in Israel. The process begins when customers call to the companys customer care center to inform it about termination of services in their area. The company evaluates the characteristics of the fault and a maintenance team is sent to renew the provision of services. The reaction times of all the departments involved in this process throughout the organization where statistically analyzed to determine whether organizational units are correlated (thereby indicating a similar service culture at the organizational level) or differ (thereupon indicating the emergence of different service subcultures within the organization). Findings suggest that despite the inherent differences in practices and tasks between the organizational units, they are correlated in their service provision, hence indicating effects of the organizations level of service culture on different parts within it.

KEYWORDS

Service; Service Standard; Service Culture; Utilities.

Leadership'S Relationship in the Banking Sector According to Leader-Member Exchanges (LMX) Theory and Employees' Experience

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Leadership is one of the main elements that affects job satisfaction in every organization. The level of job satisfaction perceived by employees depends in many cases on the human relationships among people that occupy different job positions. The paper investigates on how banking sector employees evaluate the level of leader-member exchange at their organization. It explores how this relationship is considered according to them.

The level of leader-member exchange is measured through LMX theory and it is related to the experience of employees in banking sector. Information is gathered through questionnaires, which are distributed to main banks operating in the capital of Albania, Tirana; BKT (Banka Kombetare Tregtare), NBG (National Bank of Greece) and Societe Generale Albania. The paper's results show that banks have moderate leadership style according LMX theory. It reveals also that results of LMX theory are affected by the the period of time employees have dedicated to the company. Employees who have different tenure resulted in different considerations about the relationship leader-follower.

Index Terms: Banking Sector, Job Satisfaction, Leader-Member Exchanges (LMX), Organization Performance.

A Zero-One Integer Programming for Preventive Maintenance Scheduling for electricity Plants with Production

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ABSTRACT

This paper describes a method developed to schedule the preventive maintenance tasks of the generation units in separate and linked electricity plants provided that all the necessary maintenance and production constraints are satisfied. The proposed methodology is used to generate preventing maintenance schedule for electricity. Zero-one Integer Programming (0-1-IP) was applied to solve this problem. The objective function of the model is to maximize availability number of operational units per plant. The performance as well as the effectiveness of the 0-1-IP in solving preventive maintenance scheduling were applied and tested on a real system of 21 units for electricity, over a time horizon of 52 weeks. Sensitivity analysis was applied in term of extend the maintenance duration time for all units, increasing the demand by 30%, and impose some conditions, where the model prove it robustness. The results obtained are optimal or very close to optimality.

KEYWORDS

Preventive Maintenance, Scheduling, Optimization, Zero-One Integer Programming.

Improving Some Mechanical Properties of Concrete by Using Hyper-Plasticizer (HP-580) and Steel Fibers

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ABSTRACT

this research aims to study the effects of high performance superplasticizer or hyper superplasticizer on mechanical properties of concrete include compressive , tensile and flexural strength. Superplasticizers in general are a water reducer admixtures that give concrete high workability and higher strength , but the use of superplasticizers must done with care ,because higher dosages ratio lead to segregation and lower ratios not have significant effects ,so for these reasons this research include the use of different dosages of HP and studying the ratios effect on mechanical properties and taking the optimum ratio of HP that use with steel fibers mixes .study show 1liter for each 100 kg cement leads to give optimum mechanical properties of concrete . Steel fibers increase slightly compressive strength but flexural strength is highly increased by adding fibers , mixes with both HP super plasticizer and steel fibers give best results . compressive strength increased from 34.6MPa for reference mixes to 49.90 MPa for mixes with 2% steel fibers and HP with 1 liter for each 100 kg cement . flexural strength increase also from 2.3 to 13.28 MPa by using both steel fiber and HP-superplasticizer.

KEYWORDS

Steel fiber, Superplasticizer, Compressive strength, Tensile strength, Flexural strength.

Laser-Induced Surface Modification of Contact Lenses for Measuring Intraocular Pressure for Glaucoma Patients

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ABSTRACT

The project highlights the final findings on the laser-induced modification of surface properties of contact lenses. Selective areas of the surface of commercial silicon-hydrogel contact lenses were patterned in array formats using different powers of the CO₂ laser. 1D arrays of different groove densities, channels, and 2D intersecting architecture were fabricated. Contact angle measurements were carried out to measure the surface hydrophilicity, and extent of hydration was linked with the surface profile properties and the space gap between the fabricated patterns, which were controlled by the beam exposure time, beam power, and scan speed. Laser treatment of contact lenses resulted in improved hydration proportional to the density of laser ablated segments on the surface. The hydration time of water droplets on different lens surfaces was also recorded all 2D patterned lenses showed faster hydration as water quickly diffused into the bulk of the lens due to the extended interfacial area between the contact lens and the water droplet as a consequence of larger areal modification in 2D as compared with 1D patterns. The best wettability properties were obtained with 0.3 mm space gap, 9 W power, and 200 mm s⁻¹ scan speed. Optical microscopy was used to image the 3D surface profiles of the modified lenses and the depth of the patterns and was correlated with the experimental observations. The maximum depth of 40 μm was observed with 0.3 mm space gap, 9 W, and 200 mm s⁻¹ scan speed. Optical transmittance of broadband white light was measured to assess the surface treatment effects on the contact lenses. A large exposure and dense patterning of contact lens resulted in decreased (down to a minimum of 45%) in the light transmittance, which dictates the practical usability of such patterning. Surface treatment of contact lenses can be utilized to deposit stable conducting connection for on-lens-LEDs, displays, and communication antennas as well as for stabilizing biosensing materials and drug dispensing applications.

KEYWORDS

Laser-induced modification, Contact Lenses, Silicon-hydrogel, Wettability.

