In the Presenece of

H.E.Dr. Mohammed Bin Mubarak Juma

Minister of Education, Kingdom of Bahrain

INTERNATIONAL CONFERENCE ON OPEN INNOVATION and DIGITAL TRANSFORMATION

3th-4th March 2024

The Diplomat Radisson Blu Hotel, Residence & Spa,

Diplomatic Area, Road 1701, Manama, Bahrain

Website: https://oidt2023.agu.edu.bh/

Open Innovation and Digital Transformation Conference

The theme of this conference revolves around bringing Open Innovation and Digital transformation in Technological and Educational research areas synchronically on a single platform. This conference will attract research fellows from diverse fields to share their research findings, current experience and latest ideas with the objective to integrate interdisciplinary research to deliver the best knowledge and bridge the existing gap between Industry and academia .

Speakers

Dr. Frederic Caillaud

Expert in technology transfer, Innovation management, and R&D strategy.
France

Prof. Milen Baltov

Rector of the Burgas Free University and a representing Bulgaria in the Programme Committee for the European Innovation Council and Innovation Ecosystems, under the EU Horizon Europe Programme.

Dr. Jassim Haji

President, International Group of Artificial Intelligence
Executive Advisor, HH Shk Nasser AI R&D Centre

Call for Participation:

We welcome submissions for the upcoming Open Innovation and Digital Transformation Conference. This event will bring together academia, industry leaders, experts, and innovators to discuss the latest trends and best practices in open innovation and digital transformation.

Type of Participation:

Abstract Submissions will be reviewed by a panel of experts and selected based on relevance, originality, and quality for **Oral or Poster presentations.** Selected presenters will have the opportunity to present their research and share their insights with a diverse audience of academia and industry professionals.

Publication Opportunity:

Short papers submission to the conference are welcome. The **Conference Proceedings** will be published in **IEEE Xplore** (Scopus Indexed). An extended selection of papers will be published as **Full-Length papers** in a Special Issue of the "Arab Gulf Journal of Scientific Research" (Scopus Indexed) after meeting the publication criteria.

Important Dates:

Type of Participation	Abstract Submission	Full Paper Submission	Notification of Acceptance	Camera Ready Papers
Poster Presentation	31st of December 2023	-	31st January 2024	-
Oral Presentation	31st of December 2023	-	31st January 2024	-
Short Paper	-	31st January 2024	15th February 2024	30th May 2024

If you have any questions, please do not hesitate to contact us at
OIDT2023_CGS@agu.edu.bh

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General Conference Themes

We welcome submissions on a wide range of topics related to open innovation and digital transformation, including but not limited to:

Open Innovation Policies and Innovation Ecosystem

Public Sector and Social Innovation

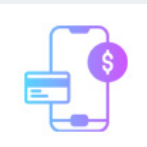
Open Innovation and Sustainable Development

Emerging Technologies and Artificial Intelligence in Digital transformation

Privacy and Data Protection in the Digital World

Digitalization and Organization Performance

Innovation in Education



Open Innovation in Digital Finance and Banking

Open Innovation and Digital Transformation in Health

Partner with Us

As a sponsor, you will have the opportunity to showcase your brand and products to a diverse audience of decision-makers and users. You will also have the chance to network with other industry leaders and gain valuable insights on the latest developments in the field.

There are several sponsorship packages available, each tailored to meet the specific needs of your organization. Our team is available to work with you to create a customized package that will provide maximum exposure for your brand.
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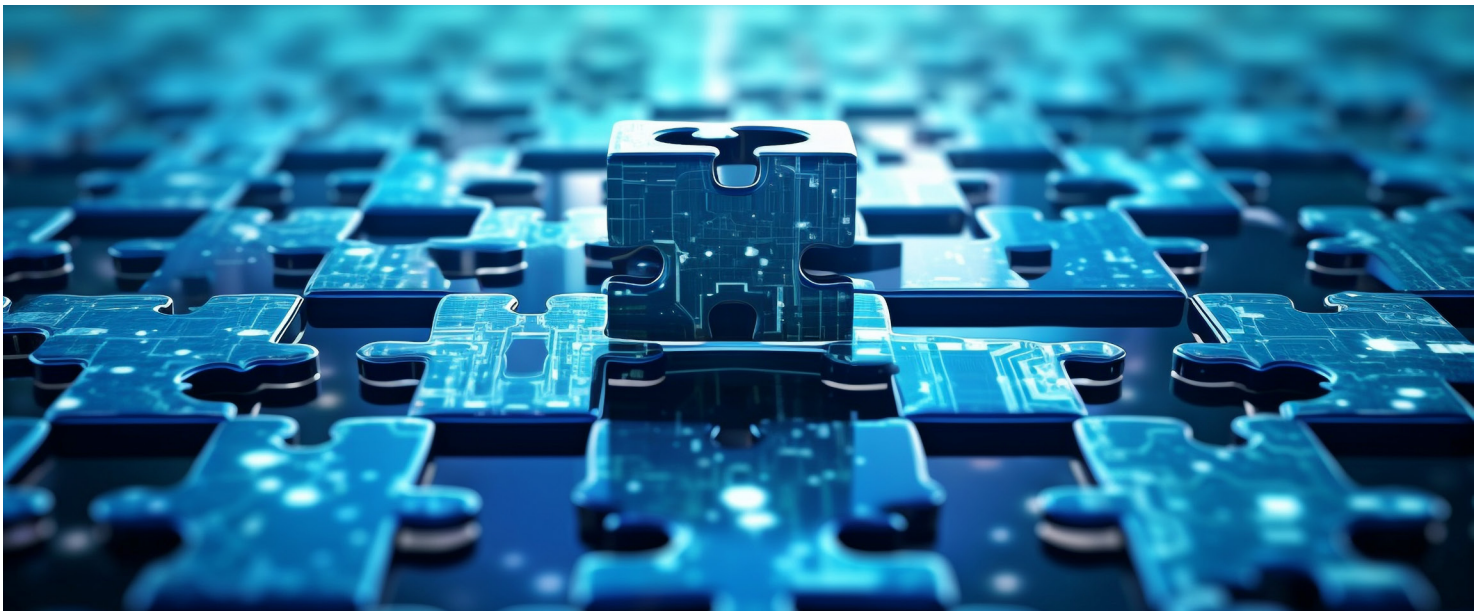

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- Dr. Ahmed AlAbbassi, Arabian Gulf University
- Prof. Alaaeldin Ayoub, Arabian Gulf University
- Dr. Ali Khalifa, University of Bahrain
- Dr. Anton Manfreda, University of Ljubljana, School of Economics and Business
- Dr. Arpita Mehrotra, Royal University for Women
- Dr. Asif Mahmood, Arabian Gulf University
- Prof. Fairouz Mosleh, Arabian Gulf University
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- Dr. Muhammad Ali, UCSI University

- Dr. Noureddine Ben khalaf, Arabian Gulf University
- Prof. Odeh Al-Jayyousi, Arabian Gulf University
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- Ms. Zainab Busaif

Conference Agenda

Day 1: Opening Ceremony

9:30 am to 10:00 am

Arabian Gulf University Introductory session

Keynote Lectures

10:00 am to 10:30 am

Dr. Frederic Caillaud, France

"Open Innovation in Organization Growth, New Trends and Impacts"

10:30 am to 11:00 am

Prof. Milen Baltov, Rector and Full Professor, Burgas Free University, Bulgaria

"Challenges Towards the Sustainable Blue Economy"

11:00 am to 11:30 am

Coffee Break and Poster Viewing

Hall 1 11:30 am to 3:00 pm	Hall 2 11:30 am to 3:00 pm
Tech 1: Emerging Technologies and Artificial Intelligence **Chair: Prof. Anton Manfreda / Prof. Adel Bouhoula**	**Edu 1: Innovation in Education** **Chair: Prof. Shoeb Gamal / Dr. Alagab Alagab**
11:30- 11:45 Employee Churn Predictive ML Models, Incorporating Standardization, SMOTE, and Feature Selection, the Case of IBM. Kubra Edhrabooh (Bahrain Polytechnic) Paper ID: 83	**11:30- 11:40** Leveraging International Experts' Perspectives to Reframe Citizenship in Social Studies Curriculum During the Globalization Era: Shifting to a Global Citizenship Education Huda Alazmi (Kuwait University) Paper ID: 78
11:45- 11:55 Exploring the Determinants of Artificial Intelligence (AI) and Machine Learning (ML) adoption in Accounting Information Systems. Nur Baiti Shafee (Multimedia University) Paper ID: 46	**11:40- 11:50** Implementing Gaming and Video Recording in STEM Classroom. Amr Amin (Sharjah University) Paper ID: 17
11:55- 12:10 The Widespread of Artificial Intelligence and the Changing Role of Trust. Anton Manfreda (School of Business and Economics, University of Ljubljana) Paper ID: 67	**11:50- 12:00** Quality Criteria for Online Courses Development. Maimoona Al Abri (Sultan Qaboos University) Paper ID: 44
12:10- 12:25 Enhancing Cybersecurity Knowledge Management through AI-Enabled Technologies Maryam Alrashidi (University of Bahrain) Paper ID: 87	**12:00- 12:10** The Potential of Open Micro-credentials to Up-Skill and Re-Skill Professions in the Labour Market in Oman. Aisha Al-Harthi (Sultan Qaboos University) Paper ID: 45

12:25- 12:40 Predictive Analytics in Bahrain's Real Estate Market: A Time Series Approach Using Seasonal Autoregressive Integrated Moving Average (SARIMA) Ebrahim AlBurshaid (University of Bahrain) Paper ID: 100	**12:10- 12:20** Technical Incubators and Valleys in Gifted Education at Saudi Universities: Feasibility of Employment and Perceptions of Digital Support. Shoeb Gamal Saleh (King Faisal University) Paper ID: 53
12:40- 12:55 Design and Evaluate Collaborative Filtering as a Recommender System for Investors. Fatima Binzaiman (University of Bahrain) Paper ID: 118	**12:20- 12:30** Legal Controls for the Teacher When Using Social Media in the State of Kuwait: An Educational Legal Study. Ayeshah Alazmi (Kuwait University) Paper ID: 47
	12:30- 12:40 Innovations in Medical Education During the COVID-19 Era and Beyond: Medical Students› Perspectives on the Transformation of Real Public Health Visits Into Virtual Format. Salman Alzayani (Arabian Gulf University) Paper ID: 19
	12:40- 12:50 Innovation Capabilities and Effect on Innovation Performance at Higher Education Institutions : A case study of Kuwait University. Dalal Al Naseri (Kuwait University) Paper ID: 149
	12:50- 1:05 Enhancing Science Education through Virtual Laboratories: A Path to Interactive and Immersive Learning Experiences. Sawsan Dagher (Abu Dhabi Polytechnic) Paper ID: 16

	1:05- 1:20 Reinventing Library Knowledge Services through Librchain: An Open Innovation Approach. Yang Yue (Institute of Science Studies and S&T Management Dalian University of Technology) Paper ID: 6
1:00 pm to 1:20 pm Coffee Break	
Tech 1: Emerging Technologies and Artificial Intelligence (continued) **Chair: Dr. Wafeeq Ajoor (NHRA) / Prof. Fairouz Aldhumur**	**Tech 2: Public Sector and Social Innovation Cases** **Chair: Dr. Yousef Mohammed / Prof. Odeh AlJayoussi**
1:20- 1:30 Applying Artificial Intelligence Techniques: A Comparison Between Microsoft Azure and Google Colaboratory. Shaima Almeer (NSSA BAHRAIN) Paper ID: 48	**1:20- 1:40** Open Innovation: An Accelerator of Artificial Intelligence and Digital Transformation in Bahrain›s Space Sector. Aysha Alharam (NSSA BAHRAIN)
1:30- 1:45 Enhancing Product Development Through Sentiment Analysis of Customer Feedback. Maryam Al-Barrak (University of Bahrain) Paper ID: 95	**1:40- 2:00** Benayat Mr. Khalid Bedaiwi (Municipality), Bahrain
1:45- 2:00 Customer Churn Predication in the Telecommunication Industry Using Multiple Machine Learning Algorithms Habes AlTairey (University of Bahrain) Paper ID: 113	**2:00- 2:20** Reducing Waiting Times for Outpatient Appointments. Abdulla Alsowaidi (Government Hospitals), Bahrain

2:00- 2:15 Enhanced Chronic Kidney Disease Prediction Using Hybrid Technology Wahiba Ismaiel (Taif University) Paper ID: 121	**2:20- 2:40** Municipality Creative Award . Amal AlKooheji (Municipality), Bahrain
2:15- 2:25 Convolutional Neural Network-enabled Semantic Communication Approach for Image Classification Tasks N.Guler (University of Technology Bahrain)	**2:40- 2:55** Open Innovation in the Public Sector: Synthesis. Meshari Al-Safran (Arabian Gulf University) Paper ID: 136
2:25- 2:40 Analysis Performance of Machine Learning Classifiers for Breast Cancer Detection Based on Features Selection and Cross-Validation. Wahiba Ismaiel (Taif University) Paper ID: 52	
3:00 pm to 4:00 pm . Lunch Break	
Workshop 1: Hands-on Practice on Path Modeling Using SmartPLS (4:00 – 5:30 pm)	**Workshop 2:** Strategic Foresight and Innovation **(4:00 – 5:00 pm)**

Day 2: Opening Ceremony

8:30 am to 9:00 am

Dr. Jassim Ali

"The Role of AI in Sustainable Development"

9:00 am to 9:15 am

Coffee Break and Poster Viewing

Hall 1 9:15 am to 3:00 pm	Hall 2 9:15 am to 3:00 pm
Tech 3: Innovation in Digital Finance and Banking **Chair: Dr. Asma Ayarii / Dr. Asif Mahmoud**	**Tech 5: Open Innovation and Sustainable Development** **Chair: Prof. MilEn Baltov / Prof. Waleed Zubari**
9:15- 9:30 Grid Search Algorithm Used for Optimizing Neural Networks in Stock Market Prediction Ali Al Ali (University of Bahrain) Paper ID: 116	**9:15- 9:30** Environmental, Social, and Governance Score: A Predictive Analysis of GCC Countries Using Machine Learning. Muna Al Romaihi (University of Bahrain) Paper ID: 103
9:30- 9:45 The Power of Machine Learning in Bankruptcy Prediction: Application on Taiwanese Organizations Ahmed Khudur (University of Bahrain) Paper ID: 131	**9:45- 10:00** The Enabling Role of IT Solutions in SMEs Frugal Innovation: Post Coronavirus Crisis in Bahrain- Case Study Maryam Zainal (Arabian Gulf University) Paper ID:124
9:45- 10:00 The Neural Network for Accurate Prediction of Stock Price: Systematic Literature Review Fatima Binzaiman (University of Bahrain) Paper ID: 139	**9:45- 9:55** Water Resources Management in the age of Artificial Intelligence for Sustainable Development Drisya J (Arabian Gulf Unversity) Paper ID: 101

10:00- 10:15 Impact of Digital Transformation on Organization Resilience. Mohammed Al Fataih (Saudi Aramco) Paper ID: 143	**9:55- 10:05** The Effect of Sustainable Procurement in the Public Sector and Green Innovation on Managing Electronic Waste: Case of the State of Kuwait. Fai Ali (Arabian Gulf Unversity) Paper ID: 119
10:15- 10:30 Unveiling Credit Card Fraud: Harnessing Neural Networks for Accurate Detection Muneera Albuainain (University of Bahrain) Paper ID: 80	**10:05- 10:20** Technology Readiness Level Assessment of Smart Cities: Case Study of London Saly Abdou (King Fahd University of Petroleum and Minerals),Paper ID: 111
10:30- 10:45 Machine Learning Based Fraud Detection: Fradulent Transactions of Credit Card. Mohamed Abbas (University of Bahrain) Paper ID: 90	**10:20- 10:35** "Innovation Policy towards Achieving a Comprehensive National Framework for Sustainable Development Goals (NSDF)" An Analytical Case Study on the Sustainable Development Ecosystem in the Kingdom of Bahrain Mohammed Al-Mannaei (Mannai Enterprises), Bahrain Paper ID: 158
10:45- 10:55 Secure Data Transfer Between Networks. Abdulmajeed AlAbdulhadi (Saudi Aramco) Paper ID: 77	**10:35- 10:45** An Examination of Dust Buildup and Mitigation Techniques for Solar Photovoltaic Installations Hussein A. Kazam (Sohar University) Paper ID: 161
10:55- 11:10 Enhancing Stock Price Prediction: A Comparative Study of Deep Learning Models . Naser Alshakhoori (University of Bahrain) Paper ID: 86	**10:45- 11:00** Need of Innovative Artificial Intelligence to Encounter the Impact of Future Climate Change on The Renewable Energy Potential in The Kingdom of Bahrain Marlene Tomaszkiewicz (UN-ESCWA) Paper ID: 160

11:10- 11:25 Securing the Digital Frontier: A Comprehensive Analysis of Threats and Countermeasures in Digital Forensics . Hothefa Jassim (Modern College of Business & Science) Paper ID: 138	**11:00- 11:10** Estimating the Rooftop Potential Solar Power using Remote Sensing and GIS for Tala Island at the Kingdom of Bahrain Roaya Bubshait (NSSA BAHRAIN) Paper ID: 159
	11:10- 11:25 Comparative Feasibility of Solar Photovoltaic and Concentrated Solar Power: Case Study in Saudi Arabia Ali Ahmad Amiri (King Fahd University of Petroleum and Minerals) Paper ID: 129
11:30 am-11:45 am Coffee Break	
Tech 4: Digitalization and Organization Performance **Chair: Dr. Frederic Calliaud / Prof. Odeh AlJayyousi**	**Tech 5: Open Innovation and Sustainable Development (Continued)** **Chair: Dr. Sura Alayed / Dr. Noureddine Ben Khalaf**
11:45- 12:00 Team Formation Theories in Scenarios of Human-AI Collaboration. Maryam Abu Alfateh (University of Bahrain) Paper ID: 75	**11:45- 12:00** Influence of Employee innovative Work Behavior on Green Innovation via Mediating Role of Digital Innovation Sura Alayed, Arab Open University, KSA Paper ID: 157
12:00- 12:15 Predictive Modelling of Employees Turnover in a Private Sector Company in Bahrain Using Logistic Regression Abdulla Alghasra (University of Bahrain) Paper ID: 93	**12:00- 12:15** Innovation Projects Sustainable Development: Organization Performance Optimization and Investment Risk Analysis Models Alexey Zalozhnev (Institute of Control Sciences of RAS) Paper ID: 92

12:15- 12:30 Predict Employee Attrition Using Multiple Machine Learning Techniques Yahya Ghanem (University of Bahrain) Paper ID: 104	**12:15- 12:30** Roof Optimization for PV Installation in Buildings Mojeed Olawale (King Fahd University of Petroleum and Minerals) Paper ID: 156
12:30- 12:45 The Potential for Predicting Employee Promotions Using Blended Ensemble Machine Learning Models. Najal Aljawder (University of Bahrain) Paper ID: 109	**12:30- 12:45** Application of PV Systems in the Building Sector: An Investigation into Socio-Economic Factors in KSA Shaima Abdullatif Businnah (King Fahd University of Petroleum and Minerals) Paper ID: 141
12:45- 12:55 The Role of Digital Communication in Digital Media Production in the Remote Era: Leveraging Innovative Learning Techniques Sahar Hamzah (Arabian Gulf University) Paper ID: 73	**12:45- 1:00** Increasing Sustainability through Digital Transformation: A Case Study of the UCN-LSA Rafael Martinez Pelaez (Universidad Catolica del Norte) Paper ID: 134
12:55- 1:10 The Implication of Organizational Creativity and Open Innovation on Bahraini SME's Performance Noora Mohamed Salman Salem (University of Bahrain) Paper ID: 151	**1:00- 1:15** A Study of Risk Management Process and Its Impact on Project Success - in the Oil and Gas Sector Joseph Mani (Modern College of Business and Science) Paper ID: 152
1:10- 1:25 A Systematic Review of Digitalization and Organizational Ambidexterity Practices in GCC Countries Abdulaziz Almayouf (University of Bahrain) Paper ID: 133	**1:15- 1:30** Feasibility of PV Systems in Off-Grid Schools Joseph Mani (Modern College of Business and Science) Paper ID: 154
1:25- 1:40 Efficient Hybrid Ensemble Learning Algorithms for Employee Absenteeism Prediction. Mohammed Ahmed (University of Bahrain) Paper ID: 112	**1:30- 1:45** Research on Visualization Analysis and Digital Development of Chinese Opera Costumes Zifei Li (Universiti Teknologi MARA) Paper ID: 142

1:40- 1:50 Blockchain Technology in Supply Chain Management: An Exploratory Study in Failure Factors Issam Najati (HECF Business School) Paper ID: 24	
1:50- 2:05 Exploring the Intersection of Innovation and Digital Transformation: Navigating the Path to Success Ali Ahmed Ali (Gulf University) Paper ID: 25	
2:05- 2:20 Resource-based approach to the analysis of maintenance strategies for process analyzers. Teofilo De Sagun (Batangas State University) Paper ID: 150	
2:30 pm - 3:30 pm Lunch Break	
Workshop 3: Social Media and Innovation **3:30- 4:30 pm**	**Workshop 4:** The Power of AI: Clarity of Leaders **3:30- 4:30 pm**

Poster Presentations

Unmasking Hidden Biases Transparency and Fair Decision-Making through Human Resources Analytics. **Fatema Al Bin Ali (University of Bahrain)**

Paper ID: 81

Analysis of Employee Capabilities Using Sentiment Analysis and Machine Learning Methods **Fawzah Alharbi (University of Bahrain) Paper ID: 108**

Advancing Petroleum Economics: Machine Learning Approaches to Predicting Oil Prices. **Yaqoob Abdulla (Unviersity of Bahrain) Paper ID: 102**

Intelligent Technology for Smarter Healthcare: A Literature Review on Technology Transfer **Maryam Zainal (Arabian Gulf Unviersity) Paper ID: 122**

Digital and Innovation in Enterprises End User Devices. **Amnah Almuali (Saudi Aramco) Paper ID: 32**

Integration and Implementation of Technological Tools in Conservation Teaching. **Ayesha Shah (University of Bahrain) Paper ID: 70**

Exploring the Determinants of Smart Sustainable Cities Affecting Social Innovation. **Raweya Almannaei (Ministry of Municipalities Affairs) Paper ID: 97**

Elementary English Language Teachers in Kuwait: Their Awareness of E-Learning to What Extent They Actually Use It **Athari Alzidan (Arabian Gulf University) Paper ID: 28**

The Impact of Blended Learning on Students in Kuwait's Basic Education Colleges' Development of Digital Learning Media Production Competencies. **Asmaa Jumah (Arabian Gulf University) Paper ID: 26**

Artificial Intelligence and Metaverse Towards a Sustainable Future in Interior Design. **Asmaa Khder (Jazan University)** **Paper ID: 153**

Beyond Public Sector Innovation: Nuturing Open Innovation through Public Participation **Mohammad Albous (Arabian Gulf University)** **Paper ID: 127**

Exploring the Factors Influencing Open Government Data Performance through Technological Innovation **Shaikhah Aljwaisri (Arabian Gulf University)** **Paper ID: 132**

University Creative Simulation Center **Dr. Hani Elsayed (Najran University)** **Paper ID: 105**

The State of Play of Fintech Sector in Morocco : An in-depth SWOT Analysis of its Ecosystem **Said Achchab (Mohammed V University)** **Paper ID: 137**

Understanding Factors Influencing the Use of Health IoT Applications of Wearable Devices : Extending the Technology Acceptance Model (TAM) **Maryam Zainal (Arabian Gulf University)** **Paper ID: 123**

The Influence of Information and Communciation Technology Knowledge on the Soft Skills of Students. **Bambang Budi Wiyona (Universitas Negeri Malang)** **Paper ID: 96**

Exploring the Relationship between Age Categories and Injury Distribution in Workplace Accidents. **Sara A Al-Barrak (University of Bahrain)** **Paper ID: 117**

Designing a Collaborative E-Learning Environment and Its Impact on Female Seventh Intermediate Grade Students in Kuwait›s Computer Competency Development. ***Yasmin AlMutawah (Arabian Gulf University)*** **Paper ID: 18**

How Automation Can Enhance Teacher Innovation and Student Learning in Public Elementary Education. ***Noora Albinkhalil (Arabian Gulf University)*** **Paper ID: 140**

Conference Workshops

Day 1:

3rd of March 2024

Hall 1. Workshop 1 : Hands-on Practice on Path Modeling Using SmartPLS 4

3:30-5:00 pm

Dr. Asif Mahmood is an Associate Professor of Operations Management at the College of Graduate Studies, Arabian Gulf University, Bahrain. He holds a Ph.D. & MS in Operations Management from the Polytechnic University of Turin, Italy. He has published numerous research papers in various reputable journals, and has been cited by many scholars in his field. Dr. Mahmood›s research focuses on a wide range of topics, including data analytics, machine learning, operations management, and project management.

Description:

This workshop will familiarize the participants with the PLS-SEM approach using SmartPLS 4. It will also enable them to analyze and interpret the results of causal models thoroughly.

Contents:

· Fundamentals of PLS-SEM

· PLS path model estimation

· Evaluation and interpretation of measurement and structural model results

· Model validity (convergent & discriminant)

Target Audience:

· MS & PhD students

· Faculty and Researchers

Learning Objectives:

Upon completion of this workshop, participants will be able to:

· Understand the basic concepts of PLS-SEM

· Estimate PLS path models using SmartPLS 4

· Evaluate and interpret the results of measurement and structural model estimation

· Assess the validity and goodness of fit of PLS path models

· Conduct mediation and moderation analyses using SmartPLS 4

Additional Information:

SmartPLS is a milestone in latent variable modeling. It combines state-of-the-art methods (e.g., PLS-POS, IPMA, complex bootstrapping routines) with an easy-to-use and intuitive graphical user interface. Participants are expected to have basic knowledge of statistics and data analysis.

Hall 2. Wokshop 2 :Strategic Foresight and Innovation

3:30-4:30 pm

Odeh Al-Jayyousi is a professor of innovation policy and head of Innovation and Technology Management Department. His research areas include innovation systems, innovation policy, sustainability and higher education. He was vice president of scientific research at the Royal Scientific Society, Jordan, former regional director for IUCN, Switzerland, and former director of MSc program in transformation management, Buckingham University. Chair of Sustainable Engineering at ISESCO.

Aim:

This workshop aims to present tools for foresight and innovation using causal layered analysis and scenario planning

Outline:

1.Context and significance of strategic foresight and innovation in a changing world;

2.Framework for strategic foresight

3.Causal layered analysis

4.Scenario planning

Who should attend:

·Managers

·Professionals

·Policy makers

·Students

Day 2:

4th of March 2024

Hall 1. Workshop 1 : The Power of AI: Clarity for Leaders

3:30-5:00 pm

Moderator: Dr. Dakshinamurthy Kolluru (Soothsayer Analytics)

Dr. Murthy is an accomplished visionary, pioneer, and transformational leader with an infectious enthusiasm for science that enables him to work on pioneering concepts in bleeding edge technologies. Dr. Kolluru graduated from India's National Institute of Technology then completed his Masters and Ph.D. from Carnegie Mellon University in the USA. In addition to his role as Chief Scientist of Soothsayer Analytics, Dr. Murthy is the Founder & President of the International School of Engineering (INSOFE) – a Carnegie Mellon certified, globally acclaimed institute focused on Data Science education. INSOFE was named a top 3 analytics program that pays off by CIO.com (included with the likes of Columbia & Stanford).

Background:

Many AI initiatives fail not due to programming issues but rather due to factors such as inadequate participation, unclear definition, and suboptimal utilization by business champions. To ensure the successful adoption of AI solutions, senior management must grasp the distinct roles of each person, clearly define objectives, and establish a framework for effective collaboration between business and technical stakeholders. In this workshop, we will leverage real-world success stories and pitfalls to equip you with a deep understanding of these critical aspects.

Goal:

Demystify AI and digital technologies in our engaging session tailored for decision-makers/ leaders. Recognize the crucial role of leadership in the digital and data science journey, empowering you to drive successful technology adoption. Enhance your critical thinking abilities and make strategic decisions during your digital transformation. Benefit from our extensive experience and research, equipping leaders across global organizations with the knowledge and confidence for effective decision-making.

Outline:

Gain insights into the adoption and integration of new digital technologies. Explore practical applications of AI and IoT across industries through engaging success stories and case studies. Learn key strategies for driving successful digital transformation initiatives as business leaders. Leave the workshop equipped with the knowledge and confidence to make informed decisions for the digital future of your organization.

Hall 2. Wokshop 2 :Media and Innovation

3:30-4:30 pm

Moderator: Dr. Sahar Hamza (Arabian Gulf University)

Dr. Sahar R. Hamzah is an Assistant Professor of Innovation and Technology Management at the College of Graduate Studies at the Arabian Gulf University in the Kingdom of Bahrain. Dr. Hamzah was previously an Assistant Professor at the Jack J. Valenti School of Communication at the University of Houston in Houston, Texas, USA. Dr. Hamzah received her PhD in Media and Communication in 2017 from Queen Margaret University in Edinburgh, Scotland, UK. Her feature-length Documentary, Digital Kenya, was published in The Journal of African Media Studies and screened at the International Association for Media and Communication Research (IAMCR) in Nairobi, Kenya, in July 2021. Her areas of research are digital media innovation, pedagogies for digital education, adaptation studies, and communication.

Course Description:

This workshop explores media innovation, highlighting the newest advancements that are redefining storytelling and audience engagement in the digital age. The workshop analyzes current trends in media innovation, and how digital shifts and AI are reshaping content creation and consumption. Participants will equip themselves with the insights needed to navigate and lead in the rapidly evolving media landscape, understanding the trends in technological innovations and their impact on the future of media.

Learning Objectives:

1.Understand the main concepts of Digital Media Innovations

2.Explore the most current Media Innovations

3.Analyze the Impact of Media Innovations

4.Identify Trends in Consumer Media Consumption

Target Audience:

1.Innovation, media, and communication students and scholars

2.Faculty members and researchers

3.Digital media professionals and entrepreneurs

4.Policymakers

Conference Abstracts

Tech 1: Emerging Technologies and Artificial Intelligence

Title: Employee Churn Predictive ML Models, Incorporating Standardization, SMOTE, and Feature Selection, the Case of IBM

Author: Kubra M Edhrabooh (Bahrain Polytechnic) ; Adel I Al-Alawi(University of Bahrain)

Abstract: The purpose of this paper goes beyond simple prediction of IBM employee churn using various single, ensemble, and hybrid machine learning (ML) models considering the main related features. Moreover, this paper aims to estimate the future churn risk of current employees and highlight related features. For the methodology, the data underwent preprocessing, descriptive analytics, data transformation, data balancing using the Synthetic Minority Oversampling Technique (SMOTE), and feature selection using Fisher Score, Chi-squared, Spearman, and Pearson Correlation methods. Several ML models are built and trained using a 70/30 split and k-fold cross-validation. The models' accuracy is evaluated using metrics such as accuracy, precision, recall, F1 scores, and ROC curve. The main findings are: (1) the hybrid model (Random Forest (RF) +CatBoost) achieved the highest accuracy (93.71%), precision (94%), recall (94%), F1 (94%) scores, and ROC curve ((94%) using k-folds cross-validation and Pearson's feature selection method, (2) the top six features attributable to IBM employee churn prediction are Job Involvement, Over Time, Education, Job Satisfaction, Marital Status, and Age, and (3) the majority of employees who are still working in IBM have mid to low future churn risk. However, 10% of employees have a high risk, mainly due to unsatisfactory Job Involvement. This study contributes to improving the accuracy of ML models by incorporating simultaneous techniques to address issues such as data scale variations through standardization, imbalanced data using SMOTE, and inclusion of feature importance through feature selection.

Title: Exploring the Determinants of Artificial Intelligence (AI) and Machine Learning (ML) Adoption in Accounting Information Systems

Authors: Nur Baiti Shafee (Multimedia University) ; Shadia Suhaimi (Multimedia University); Zuraina Sal Salbila Mohamed (Multimedia University); Haniza Hashim (Multimedia University); Siti Nurul Huda Mohd (Multimedia University)

Abstract: The rapid development of artificial intelligence (AI) and machine learning (ML) technologies has revolutionized numerous industries, including accounting. AI and ML have the potential to enhance efficiency, accuracy, and decision-making capabilities within accounting information systems (AIS). Despite their promising advantages, the adoption of AI and ML in AIS varies among organizations. Understanding the underlying factors that influence their adoption is crucial for facilitating successful implementation and reaping the benefits of these advanced technologies. Traditional accounting systems often rely on manual data entry, repetitive tasks, and rule-based processes, which can be time-consuming and prone to human errors The survey questionnaire was collected from 243 respondents to validate and quantify the identified factors. Statistical analyses were applied to analyze the survey data. The findings indicate that several key factors influence the adoption of AI and ML in AIS. These factors include data privacy and security, efficiency, and familiarity with technologies. Understanding the factors that influence the adoption of AI and ML in AIS is essential for organizations seeking to enhance their accounting processes and stay competitive in the digital age. By addressing these factors effectively, organizations can harness the full potential of AI and ML technologies, leading to improved efficiency, accuracy, and decision-making in their accounting practices.

Title: The Widespread of Artificial Intelligence and the Changing Role of Trust

Authors: Anton Manfreda (University of Ljubljana, School of Economics and Business) ; Tea Mijač (University of Split, Faculty of Economics, Business and Tourism)

Abstract: The pervasive influence of Artificial Intelligence (AI) has influenced several aspects of everyday life. Its widespread in the last years has caused additional transformations in human behavior and has become a focal point of extensive scholarly and professional examination. Researchers and domain experts have continuously been examining the benefits and challenges of AI considering various perspectives. Despite the longstanding conceptual existence of AI, its recent adoption rate well-captures this new transformation in everyday life. The widespread of AI usage, the speed of new consumer-oriented AI services and tools in the last two years, together with its incorporation into various domains is remarkable. Projections indicate that AI will have a significant impact on the global economy by enhancing efficiency, therefore a lot of emphasis is placed on empowering individuals with the new knowledge. Yet, as is the case with every single technology, there are also several concerns regarding future development. Several scholars agree upon the importance of trust related to technology adoption, yet it also depends on the domain, human interaction, and perception of AI systems. To delve deeper into the dynamics of trust and concerns associated with AI, firstly a bibliometric analysis of a total of 5,535 papers published between 1992 and 2023 was done to examine the characteristics of scientific publications within the selected field. Secondly, empirical research was conducted in two different periods on more than 300 individuals belonging to Generation Z focusing on the influence of various technologies on individuals. Through the empirical investigation, the aim was to examine the complex interplay of trust within the context of AI technology adoption. By doing so, we contribute insights that can guide future research endeavors in this domain.

Title: Enhancing Cybersecurity Knowledge Management through AI-Enabled Technologies

Authors: Maryam A Alrashidi (University of Bahrain) ; Adel I Al-Alawi (University of Bahrain)

Abstract: This study explores the potential of knowledge management (KM) models in the field of artificial intelligence (AI)-powered cybersecurity, specifically in relation to machine learning, deep learning, and natural language processing approaches. This study systematically reviews literature since 2019 on algorithms in KM. Inclusion criteria reflect direct significance to algorithm-KM intersections, whereas exclusion criteria filter out pre2019- studies and irrelevant papers. Using PubMed, IEEE Xplore, ScienceDirect, and Google Scholar, the search employed Boolean operators to refine queries with keywords such as «cybersecurity,» «machine learning,» «artificial intelligence,» «knowledge management,» and «algorithm.»

The paper evaluates various models, including convolutional neural networks (CNN), quasi-recurrent neural networks (QRNN), Principal Component Analysis (PCA), and Random Forest (RF), through an extensive analysis of literature in diverse areas. The study finds that CNN and QRNN perform better in tasks related to pattern recognition, PCA is useful in detecting anomalies, and RF is adaptable across a wide range of applications. The research provides valuable insights for companies seeking effective knowledge management methods, emphasizing the importance of flexibility and interpretability. Although individual models have limitations, this study highlights the mutually beneficial relationship between AI and KM, and how their collaboration can improve the overall cybersecurity situation.

Title: Predictive Analytics in Bahrain's Real Estate Market: A Time Series Approach Using Seasonal Autoregressive Integrated Moving Average (SARIMA)

Authors: Ebrahim AlBurshaid (University of Bahrain) ; Adel I Al-Alawi (University of Bahrain)

Abstract: This research closely examines Bahrain's dynamic real estate market, which is marked by significant investments and vulnerability to market swings. The main objective of this study is to build a Seasonal Autoregressive Integrated Moving Average (SARIMA) model that would enable precise prediction of transaction counts in Bahrain's real estate market. The tailored SARIMA model summarizes the Bahraini market's distinct characteristics and seasonal fluctuations. The study's conclusions are remarkable; the SARIMA model highlights significant seasonal variations while accurately capturing seasonality and trends. These insights lay the groundwork for intelligent investing choices and risk-reduction strategies. The research concludes by establishing the SARIMA model as a crucial predictive analytics tool in Bahrain's real estate landscape, improving investment methods and strategic planning, and expanding our grasp of the Gulf real estate industry dynamics. This study harnessed live and open data from the Survey and Land Registration Bureau (SLRB) as the foundational dataset. The SLRB dataset forms the basis for the investigation into forecasting real estate transactions in the unique context of the Bahrain real estate market.

Title: Design and Evaluate Collaborative Filtering as a Recommender System for Investors

Authors: Fatima Binzaiman (University of Bahrain) ; Adel Al-Alawi (University of Bahrain)

Abstract: Investment decisions play a pivotal role in investors› sustainable success. Therefore, choosing the appropriate company to invest with is a difficult mission for investors, especially for startup companies, as there will be limited investment information to rely on. In the current research, a recommendation system is designed and evaluated to recommend the appropriate company for investors to join. The dataset of Crunchbase monthly Exports is imported from Kaggle; it contains information on investors and companies for the funded

year 2014. The KNN algorithm is implemented and evaluated according to RMSE, indicating reasonable acceptance. The result is supported by previous studies, which showed the effectiveness of collaborative filtering as a recommender system in financial analysis and investment decisions.

Title: Applying Artificial Intelligence Techniques: A Comparison Between Microsoft Azure and Google Colaboratory

Authors: Shaima Shawqi Almeer (NSSA) ; Aysha Alhajeri (NSSA)

Abstract: Artificial intelligence is influencing the future of humankind through almost every industry. It is even now the key driver of developing technologies similar to big data, robotics as well as the Internet of Things. In this report, we aim to assess the disparity between Microsoft Azure and Google Colaboratory platforms in detecting oil spills in the interior of the Arabian Gulf region, by leveraging machine learning techniques. Qualitative and quantitative evaluations have shown a %0.23 difference in the accuracy between both algorithms, whereas the overall oil spill occurrence has a precision of around %90.

Title: Enhancing Product Development Through Sentiment Analysis of Customer Feedback

Authors: Maryam A AL-Barrak (University of Bahrain) ; Adel I Al-Alawi (University of Bahrain)

Abstract: Purpose- The study investigates E-commerce platform review sentiment, tracking sentiment, and E-commerce platform improvements. Sentiment analysis provides relevant information and recommendations to improve marketing strategy. Understanding customers› sentiments helps organizations create marketing, products, and customer service that meets their needs. Customer satisfaction and sales efficiency may increase. This occurs. Design/Methodology/Approach- This study analyzes e-commerce platform customer comments extensively. User reviews, product information, ratings, and sentiment labels were analyzed. Data preparation restored the ‹Review› and ‹Summary› items. Customer satisfaction

was measured using a pie chart and rating distribution. Word clouds revealed mood and common phrases.

Findings- Mixed reviews, although the positives outweighed the cons. High scores and favorable feelings for commonly used terms suggest E-commerce platform customer happiness. Most reviewers were pleased with the products, according to this study. Unlike positive feedback, negative feedback recommends improvements.

Originality/Value- This study helps the E-commerce platform identify client attitudes, settle concerns, and improve user satisfaction. Knowledge gaps and sentiment analysis research recommendations expand the literature.

Title: Customer Churn Prediction in the Telecommunication Industry Using Multiple Machine Learning Algorithms

Authors: Habes Ali Altairey (University of Bahrain) ; Adel I Al-Alawi (University of Bahrain)

Abstract: In the telecommunications industry, customer churn can result in significant financial losses due to customer churn. Four popular machine learning algorithms (MLAs) are used in this study to predict churn in the telecom industry: Logistic Regression, Random Forest, Gradient Boosting, and Histogram Gradient Boosting. We used a dataset consisting of 7043 samples and 21 features to train and evaluate the models.

The dataset includes demographic information about the customers, including gender and partner information, as well as information related to the customer›s account, including contract type, payment method, monthly charges, and customer service information. This study aims to determine which machine learning algorithm in the telecom sector is most useful for forecasting customer attrition.

As a first step, data preparation was conducted, after which the dataset was split into testing and training sets, and four MLAs were used to train and evaluate the prediction models.

The results show how data balancing affects the results; all four algorithms effectively predict customer churn, with Histogram Gradient Boosting achieving the highest accuracy of %85.56.

Random Forest, Gradient Boosting, and Logistic Regression achieved 85.41%, 84.73%, and 81.45% accuracy.

According to the study, machine learning algorithms effectively predict telecom customer churn. Our results indicate that Histogram Gradient Boosting is the most effective algorithm for this task. Factors such as contract type, tenure, and monthly charges are the most effective predictors of customer churn.

Title: Enhanced Chronic Kidney Disease Prediction Using Hybrid Technology

Authors: Praveen S (KSR Institution) ; Subash S (KSR Institution); Vahith Ahamed M (KSR Institution)

Abstract: Chronic kidney disease (CKD) poses a significant worldwide health threat due to its elevated rates of illness and mortality. Additionally, it serves as the root cause of various other health conditions. The lack of distinct adverse symptoms in the initial phases of CKD can result in undiagnosed cases. Patients can obtain the right medication to hasten the disease›s course if it is discovered early on. Medical personnel can benefit greatly from machine learning models› ability to execute recognition quickly and accurately. In this assessment, I suggest diagnosing chronic kidney disease using logistic regression. Proposed computations such as NAVE BAYES, Choice TREE, KSTAR, LOGISTIC, and SVM are examined in order to obtain the highest level of precision. AI storage with little functionality. Individuals could overlook a few calculations for several reasons, so in therapeutic settings, absent characteristics are usually found. By examining the errors made by existing models, I developed an integrated model using Perceptron that combines estimated relapse and irregular woodlands. Consequently, the research hypothesizes that this concept would prove beneficial for disease identification, particularly when dealing with more complex clinical data.

Title: Convolutional Neural Network-enabled Sematic Communication Approach for Image Classification Tasks.

Nivine Guler (University of Technology Bahrain) ; Zied Ben Hazem (University of Technology Bahrain), Ali Gunes (Istanbul Aydin University)

Abstract: In the context of AI-IoT, the traditional approach of using centralized cloud computing results in significant network transmission volumes and communication delays, which can have a negative impact on the performance of intelligent tasks. To address these challenges, this study introduces an innovative semantic communication system model for intelligent tasks, utilizing deep learning techniques. The research focuses on image classification tasks that are limited by bandwidth and delay in AI-IoT scenarios. The proposed model presents a tailored semantic communication network architecture for image classification tasks, where image feature maps are extracted on IoT devices. These semantic relations are then compressed based on the extracted feature maps to reduce the power consumption burden on IoT devices and alleviate communication transmission pressures. Simulation was conducted, and a comparison of various network performance metrics was studied. In comparison with traditional communication methods, the proposed semantic communication system achieves a 90% improvement in accuracy in image classification at low signal-to-noise ratios. At a compression ratio of 80%, the loss in classification accuracy is minimal when the signal-to-noise ratio exceeds 0, all within 2%. Additionally, for a signal-to-noise ratio of 20, the semantic compression transmission scheme shows a 30% enhancement in classification accuracy compared to the random compression transmission scheme. Furthermore, in terms of execution time, the proposed semantic communication system outperforms the traditional approach by approximately 80%.

Title: Analysis Performance of Machine Learning Classifiers for Breast Cancer Detection Based on Features Selection and Cross-Validation

Author: Wahiba Abakker Ismaiel (Taif University)

Abstract: Breast cancer (BC) is one of the most common diseases among women that leads to the death of many women in the world. We find that artificial intelligence has an important role in helping the medical sector by providing many techniques for diagnosing and classifying breast tumors. Several researchers have contributed to suggesting solutions for classification and diagnosing benign cancer from malignant by using machine learning (ML) techniques. This paper aims to analyze performance to determine an algorithm with the most accurate rate and effective prediction. Seven machine learning (ML) classifiers contain Random Forest (RF), XGBoost, Naive Bayes (NB), K-Nearest Neighbor (KNN), Decision Tree (DT), Logistic Regression (LR), and Support Vector Machine (SVM)) based on six metrics such as accuracy, F1-score, precision, recall, Matthews Correlation Coefficient (MCC), and error rate. The research uses the Wisconsin Diagnostic Breast Cancer (WDBC) dataset from the Kaggle website as training data to measure and compare the prediction results of proposed machine learning techniques. This paper addressed a solution outcome in three stages. The first stage exploits WEKA data mining tools to preprocess data and presents the statistics information of the WDBC dataset. The dataset is split into 75% for training modes and the remainder for the prediction validation and evaluation of the ML algorithms. In the second stage, research features selection techniques that are Chi-square and ANOVA. The last stage is based on three cross-validations, K-fold, stratified K-fold, and shuffle-split. The overall metric results and performance of the proposed classifiers demonstrated that the classifier Xgboost achieved the highest accuracy with a feature selection at 98.25% accuracy and 97.89% with the cross-validation techniques. Therefore, the Xgboost classifier is more reliable for predicting and classifying breast cancer than the other proposed classifiers.

Edu 1: Innovation in Education

Title: Implementing Gaming and Video Recording in STEM Classroom

Authors: Amr Amin (Sharjah University)

Abstract: The ever-evolving landscape of education requires constant adaptation to engage & empower learners. Technological advancements have introduced innovative tools and platforms that enhance the learning experience. This abstract explores the potential of Kahoot, Flipgrid, and PollEverywhere, in fostering educational innovation. Kahoot transforms lectures into interactive experiences, engaging students in a competitive and enjoyable manner while improving knowledge retention. Flipgrid facilitates inclusive discussions, enabling students to express their ideas and perspectives through video responses. PollEverywhere transforms classrooms into interactive spaces by allowing real-time polling and audience response, empowering students to voice their opinions and actively participate. By harnessing the potential of Kahoot, Flipgrid, and PollEverywhere, educators can foster innovation in education. These tools encourage active learning, critical thinking, collaboration, and engagement, transforming traditional classrooms into dynamic and inclusive environments. Integrating technology enhances the learning experience, catering to diverse learning styles and empowering students to take an active role in their education. However, innovation in education goes beyond tool implementation. Educators must consider pedagogical strategies, instructional design, and the alignment of educational goals with technological tools. Successful integration requires thoughtful planning, professional development, and ongoing assessment to ensure their effectiveness and meaningful impact on student learning outcomes. In conclusion, the integration of Kahoot, Flipgrid, and PollEverywhere has immense potential for fostering innovation in education. These tools enhance student engagement, critical thinking, collaboration, and active participation. By embracing these technologies, educators can create a transformative learning environment that prepares

students for success in an ever-evolving world.

Title: Quality Criteria for Online Course Development

Authors: Maimoona Al Abri (Sultan Qaboos University) ; Abdelrahman Elhaj (Sultan Qaboos University)

Abstract: The rapid growth of online education has highlighted the importance of designing high-quality online courses that effectively engage learners and facilitate their success. Quality online courses offer a flexible and convenient way to learn, allowing individuals to access educational content from anywhere at their own pace. This paper aims to present a comprehensive approach to designing high-quality online courses by incorporating key principles that contribute to a meaningful and effective learning experience. The research approach employed in this paper is theoretical, exploring existing literature about best practices for designing quality online courses. The design process of quality online courses incorporates the principles of instructional design and Universal Design for Learning, ensuring inclusivity and accessibility for all learners. Instructional design involves a systematic approach to course development, including analyzing learner needs, setting clear objectives, selecting appropriate instructional strategies, and evaluating learner outcomes. Universal design for learning takes into account the diverse needs and preferences of learners, providing multiple means of representation, engagement, and expression. Additionally, the current paper provides practical tips and guidelines for educators transitioning their courses to the online format. It offers insights into effective instructional strategies, technology tools, and best practices for engaging online learners. The importance of clear communication, establishing a sense of community, and providing timely feedback is emphasized to foster a supportive and motivating online learning environment. As a result, this paper provides a comprehensive framework and practical guidance for educators seeking to create engaging and effective online learning experiences.

Title: The Potential of Open Micro-Credentials to Up-Skill and Re-Skill Professionals in the Labour Market in Oman

Authors: Aisha S. Al-Harthi (Sultan Qaboos University) ; Ali Al-Mosawi (Sultan Qaboos University); Wajeha Al-Ani (Sultan Qaboos University); Zuhoor Al-Khanjari (Sultan Qaboos University; Maimoona Al Abri (Sultan Qaboos University); Ishaq Al-Naabi (University of Technology and Applied Sciences)

Abstract: Background: Open micro-credentials are becoming more acceptable in accrediting and certifying educational experiences, especially with the new digital innovation in education that makes it possible to gain educational certificates for busy professionals, at their own time and place.

Purpose: This study explores the potential of open micro-credentials to up-skill and re-skill workers in the labor market by identifying the requirements for a national open micro-credential system.

Study Design: For this phenomenological qualitative research study, data were collected through focus-group interviews with key stakeholders representing government and private higher education institutions, industry/ labor market organizations, and regulating government entities. Data were then transcribed and analyzed using deductive thematic analysis using pre-specified codes identified from the literature. These included requirements related to higher educational institutions, the labor market, academic accreditation, as well as legal requirements.

Results/Findings: Results showed a need for higher education institutions to transform their educational offering and practices to be more learner-centered and linked to practical labor-market skills to reduce the gap between graduates› skills and attributes and labor market requirements. The labor market is already ahead with competency frameworks and professional development pathways making them technologically ready for open micro-credentials. There is a need to acknowledge micro-credentials within the Omani

Qualification Framework to accredit and acknowledge their offerings from higher education institutions. Further regulatory guidelines and processes are needed.
Originality/Value: The contribution of this study to open innovation and digital transformation is providing higher education institutions with new open tools for certification of learning.

Title: Technical Incubators and Valleys in Gifted Education at Saudi Universities: Feasibility of Employment and Perceptions of Digital Support

Authors: Shoeb Gamal Saleh (King Faisal University) ; Mohammed Al-Qahtani (King Faisal University)

Abstract: The utilization of incubators and technical valleys in gifted education is a significant matter that necessitates ongoing attention and advancement. The primary objective of this study is to assess the extent to which incubators and technical valleys are employed in educating gifted students within Saudi universities. This assessment is based on three key dimensions: information and logistical services, care services provided to gifted individuals, and support services. To enhance the role of incubators and technical valleys in gifted education, this research also presents insights into digital and network support as a valuable contribution.

Title: Legal Controls for the Teacher When Using Social Media in the State of Kuwait: An Educational Legal Study

Authors: Ayeshah A Alazmi (Kuwait University)

Abstract:

هدف الدراسة: تهدف الدراسة الحالية إلى التعرف على الضوابط القانونية للمعلم عند استعماله لوسائل التواصل الاجتماعي في دولة الكويت. ويشتمل هذا الأمر التعرف على الضوابط القانونية لحرية المعلم في التعبير عن آرائه خارج أسوار المدرسة، وتحديدًا من خلال وسائل التواصل الاجتماعي، وهي من القضايا الجدلية الهامة في مجال القوانين والتشريعات التربوية، وخصوصًا مع التطور الهائل في النشر، واستخدام برامج التواصل الاجتماعي، وتأثير هذه البرامج على المعلم والطالب بشكل كبير، مثل استخدام برامج تويتر والانستغرام والفيسبوك.

المنهجية: ولتحقيق هدف الدراسة؛ تم استخدام المنهج الوصفي التحليلي من خلال تحليل المحتوى للعديد من الوثائق والدراسات والقوانين ذات الشأن بموضوع الدراسة. النتائج: لقد توصلت الدراسة للعديد من النتائج منها: (1) أن الضوابط القانونية للمعلم يجب أن تراعي الموازنة بين حق المعلمين في التعبير عن آرائهم بشكل مطلق، وبين الحدود التي تفرضها أخلاقيات مهنة التعليم، حتى وإن كان هذا الأمر خارج حدود المدرسة؛ و(2) أن الضوابط القانونية يجب أن تتضمن مراعاة لطبيعة عمل المعلم باعتباره قدوة للطلبة؛ و() أن طبيعة المحتوى الذي يعرضه المعلم في وسائل التواصل الاجتماعي هي التي تحدد ما هو مسموح وما هو مخالف للقانون؛ و(4) أن الضوابط القانونية للمعلم يجب أن تراعي المسؤولية المدنية والمسؤولية الجنائية عند استعمال وسائل التواصل الاجتماعي.

Title: Innovations in Medical Education During the COVID-19 Era and Beyond: Medical Students› Perspectives on the Transformation of Real Public Health Visits into Virtual Format

Authors: Salman Alzayani (Arabian Gulf University) ; Adel Al-Sayyad (Arabian Gulf University); Khaldoon Al-Roomi (Arabian Gulf University); Amer Almarabheh (Arabian Gulf University)

Abstract: Background: At the College of Medicine and Medical Sciences (CMMS), the Arabian Gulf University (AGU), the Kingdom of Bahrain, the Public Health Program comprises two core components, namely, lectures and field visits (consumer products safety, communicable diseases control, and food safety). Digital transformation has innovated the medical educational activities during the COVID-19 pandemic where the real public health field visits were transformed into a virtual format. This study aims to examine the potential effect of converting the real public health field visit programs into a virtual format during the COVID-19 pandemic.

Methods: All medical students who have submitted online feedback evaluation forms upon completing the Public Health Program in the academic years 2019–2020 (180 students before the COVID-19 pandemic) and 2020–2021 (167 students during the COVID-19 pandemic) were included in the study, a total sample size of 347 responses. Independent samples t-test was employed to compare students› feedback on the Public Health Program before and during the COVID-19 pandemic while the Pearson chi-square test was used for categorical data. A p-value of <0.05 was considered statistically significant.

Results: The mean score of students› satisfaction from the virtual program during the COVID-19 pandemic toward the consumer products safety and food safety field visits was significantly higher than that for students before the COVID-19 pandemic (the real field visits). However, there was no observed statistically significant difference for the Communicable Diseases Control visit. In addition, no significant differences were detected between the mean responses of male and female students toward all field visits, whether the feedback was provided before or during the COVID-19 pandemic.

Conclusion: Transformation of real public health field visits into virtual format is acceptable and applicable during the COVID-19 era and maybe beyond.

Title: Innovation Capabilities and Effect on Innovation Performance at Higher Education Institutions: A Case Study of Kuwait University

Authors: Dalal A Al Naseri (Kuwait University)

Abstract: There are many difficulties facing modern higher education institutions (HEI) globally to raise and enhance their level of performance and outcomes. As HEIs are the source of advanced science and knowledge, modern governments rely on HEIs to expand the phenomenon of knowledge and learning and to collaborate with other institutions to help people develop the skills and abilities needed to take advantage of the global technologies required to boost the innovation and national productivity and ensure economic sustainability based of the knowledge economy. Therefore; the aim of the research is to explore the moderating role of the organizational culture (OC) in the relationship between innovation capabilities (IC)s and innovation performance (IP) at Kuwait University (KU) as a HEI. A mixed methods approach (qualitative and quantitative) is adopted for collecting and gathering data through a systematic literature review, case study, and a questionnaire survey to resolve the three hypotheses set. Responses from 15 leadership and management levels at KU are the basis for the semi-structured interview study, and thematic analysis of the results suggests that KU has the ability to innovate. The 361 responses from staff (academic and administrative) at KU were collected by the questionnaire form the basis for the survey study to explore the relationship between the ICs (Process IC, Product/Service IC, Organization IC, Marketing IC) and IP at KU as well as the moderating role of OC(Hierarchy culture, Marketing culture, Team culture, Entrepreneurship culture. The survey results support the case study findings regarding the availability of a positive relationship between ICs and IP at KU, likewise the moderating role of two types of OC (Hierarchy and Marketing culture) while the other two (Team and Entrepreneurship

culture) have no role at all. Furthermore, the novelty of this study arises from extending an indicator for the IP at HEIs. The thesis offers a set of theoretical and practical contributions and recommendations for future studies for researchers interested in ICs topics and related types to improve HEIs' IP.

Title: Enhancing Science Education through Virtual Laboratories: A Path to Interactive and Immersive Learning Experiences

Authors: Sawsan Dagher (Abu Dhabi Polytechnic) ; Chaima Fekiri (Abu Dhabi Polytechnic); Boshra Akhozheya (Texas A & M University); Amna Alali (Abu Dhabi Polytechnic); Luis Kakazu (Abu Dhabi Polytechnic); Taif Alebri (Abu Dhabi Polytechnic); Najoud Almashamta (Abu Dhabi Polytechnic); Reem Alhebsi (Abu Dhabi Polytechnic); Rashed Aldhanhani (Abu Dhabi Polytechnic)

Abstract: This study investigates the potential of virtual reality (VR) technology in enhancing science education by providing students with interactive and immersive learning experiences. The research includes a survey of students› opinions and interests regarding the integration of VR technology in their curriculum, as well as the implementation of VR simulations to simulate real-world laboratory experiments. The survey results indicate a strong interest among students in incorporating VR technology into their education, with a majority recognizing its potential for improving their understanding of complex concepts. The simulation results demonstrate the successful implementation of VR software, such as Unity and Fusion 360, in designing and conducting virtual experiments. Overall, the findings highlight the importance of investing in VR labs and integrating VR activities within existing courses to provide students with engaging and practical learning opportunities.

Title: Reinventing Library Knowledge Services through Librchain: An Open Innovation Approach

Authors: Yang Yue (Institute of Science Studies and S&T Management, Dalian University of Technology)

Abstract: Background: The traditional approach to library knowledge services has faced several challenges, including limited access to resources, inefficient management of resources, and difficulties in ensuring user privacy and security. To address these challenges, an open innovation approach that leverages blockchain technology has emerged as a potential solution. Library knowledge services can be revolutionized. Through a collaborative platform for library resources that allows efficient and effective knowledge sharing, a new paradigm for knowledge access and management can be established. Purpose/Aim: Through an open innovation approach using blockchain technology, this study aims to explore the potential of revolutionizing library knowledge services by providing practical solutions for improving the management and accessibility of library resources. Results/Findings: The study shows that blockchain technology has the potential to completely transform library knowledge services. It provides a secure and reliable data solution, improves network collaboration, solves the problem of resource isolation, and ensures copyright protection. The use of smart contracts simplifies library management, promotes self-circulation, enhances the user experience of library knowledge services, and facilitates the industrial development of library knowledge services. This study highlights the potential of blockchain as an open innovation approach to enhance library knowledge services. Originality/Value: The originality and value of this study lie in its exploration and practical application of blockchain technology in the context of library knowledge services. By proposing a Librchain-based innovation system, it contributes significantly to the field of Open Innovation and Digital Transformation by presenting a feasible solution to the challenges faced by libraries in the digital age.

Tech 2: Public Sector and Social Innovation Cases

Title: Open Innovation in the Public Sector: Synthesis

Authors: Meshari A Al-Safran (Arabian Gulf University) ; Eisa Alsafran (Algonquin College); Odeh Al-Jayyousi (Arabian Gulf University); Prof. Fairouz Mosleh (Arabian Gulf University)

Abstract: The evolution of the public sector has been shaped by various waves of administrative reforms, which have been influenced by technology, innovation, private-sector involvement, and Open Innovation (OI). This commentary delves into the intricate relationship between innovation in the public sector and waves of administrative reforms, exploring technological changes, organizational restructuring, and the advent of Open Innovation (OI). Open Innovation, characterized by new knowledge flows fostering internal innovation and external market expansion, emerges as a catalyst for transformative change. The Gulf Cooperation Council Countries (GCC) exemplify a forward-thinking approach, framing their public sector vision around innovation and competitiveness. This research contributes to the existing body of knowledge by examining the factors and outcomes of innovation in the public sector across diverse regions.

Tech 3: Innovation in Digital Finance and Banking

Title: Grid Search Algorithm Used for Optimizing Neural Networks in Stock Market Prediction

Authors: Ali M Al Ali (University of Bahrain) ; Adel I Al-Alawi (University of Bahrain)

Abstract: Predicting stock market trends and directions still attracts researchers, traders, and investors to investigate potential ways to secure their investments. In recent years, the complexity of the nature of the stock market has increased, creating a barrier between participants and their potential profits. In this study, we investigate the use of three different Machine Learning (ML) models: Logistic Regression (LR), Random Forest (RF), and Artificial Neural Network (ANN). Furthermore, Grid Search Optimization (GSO) will be used to tune the hyperparameters of the best model, among others, to maximize the accuracy prediction. The dataset contains historical stock prices spanning ten years from 2010 to 2020 and is pre-processed carefully to ensure data integrity. The results are assessed using Precision, Recall, F1-score, and Accuracy. Based on the results, using the GSO algorithm improved the accuracy of the ANN model by 10% compared with the default version.

Title: The Power of Machine Learning in Bankruptcy Prediction: Application on Taiwanese Organizations

Authors: Ahmed Abdulaziz Khudhur (University of Bahrain); Adel I Al-Alawi (University of Bahrain)

Abstract: One of the most critical topics for the financial industry is building prediction models for organizations' bankruptcy. The revolution of Artificial Intelligence (AI) has stimulated researchers to explore bankruptcy prediction extensively. The comparison between Artificial Neural Networks (ANN) and Random Forests (RF) is to examine which

method applied with given variables is superior in the study. The study is based on reviewing 15 papers related to Bankruptcy and (ML). Data collected pertains to the sample of 6,819 Taiwanese organizations for the years 1999 to 2009. The dataset contains 79 financial ratios that were used for the data preprocessing technique. As a result, the models' performance was almost close. Thus, the study enlightens the academia, investors, business owners, managers, and relevant stakeholders that there is no absolute best method. Recent studies have assured the significance and reliability of the mentioned prediction models in the context of Bankruptcy. However, the distinguishment of the study revolves around the selected blend of different variables consequently, how it may contribute to raising the robustness of the model based

Title: The Neural Network for Accurate Prediction of Stock Price: Systematic Literature Review

Authors: Fatima Binzaiman (University of Bahrain) ; Adel Al-Alawi (University of Bahrain)

Abstract: The prediction of stock prices is crucial for investors to explore the future value related to the company they are willing to invest in. Also, to decide whether to progress with this investment or not. It highly depends on the revenue-generating period to overcome their previous losses. This kind of decision requires it to be fast and accurate simultaneously. Current research aims to find studies on the precise prediction of stock prices with the possession of Neural Network (NN) by determining the suitable type of (NN), hyperparameters, and hybrid models. The methodology applied in the research is a systematic literature review (SLR). An overview of thirteen studies has been systematically reviewed. The selection process of these studies depends on the search protocol (inclusion and exclusion criteria). The finding illustrated that ANN, CNN, and LSTMRNN provide better stock price predictions. Besides, the selection of hyperparameters and hybrid models affects the accuracy of the forecast.

Title: Impact of Digital Transformation on Organizational Resilience

Authors: Mohammed H Al Fataih (Aramco)*

Abstract: The current study investigates how digital transformation influences organizational resilience through the mediating role of organizational agility and ambidextrous innovation in the Kingdom of Saudi Arabia. The quantitative research technique was used, and data was collected through purposive sampling and convenience sampling techniques from 500 employees (i.e., CEOs, Project managers, and Supervisors) working in 47 public and private manufacturing organizations operating in Saudi Arabia. A cross-sectional technique was adopted, and SurveyMonkey was used to develop the survey. Results revealed that digital transformation positively and significantly influences organizational resilience. Furthermore, both organizational agility and ambidextrous innovation positively and significantly mediated the relationship between digital transformation and organizational resilience. The current study suggests that digital transformation is an innovative process that helps firms manage uncertainty and change and overcome obstacles. Enterprises in the manufacturing industry should pursue digital transformation strategies that maximize business information management by integrating digital technology deeply into sales, production, and management, enabling network cooperation and intelligent manufacturing.

Lastly, this study proposed that higher relational resilience helps organizations create strong cohesiveness with workers, customers, and investors during crises, enabling them to recover.

Title: Unveiling Credit Card Fraud: Harnessing Neural Networks for Accurate Detection

Authors: Muneera Albuainain (University of Bahrain) ; Adel I Al-Alawi (University of Bahrain)

Abstract: In the context of our modern technology-driven societies, the utilization of credit cards has experienced a substantial rise compared to earlier periods. The rise in electronic commerce (e-commerce) can be traced to the extensive implementation of Digital Transformation (DT) in response to the global COVID-19 pandemic, which compelled

many businesses to shift their activities to online platforms. This study emphasizes the significance of harnessing Artificial Neural Networks (ANN) inside contemporary online systems to increase fraud detection accuracy. This study evaluates ML-supervised and Artificial Neural Networks (ANN) models, particularly Recurrent Neural Networks (RNN). The approach involved a ten-step methodology, from keyword searching to comprehensive analysis, followed by data exploration, subjected to rigorous testing to reach results and a conclusion. Two RNN models were built with different numbers of neurons and functions in Python, and the models were tested on two datasets retrieved from Kaggle (Kaggle.com/dataset). Compared to previous studies, the findings and the RNN models provide higher accuracy and fewer errors. The Long Short-Term Memory (LSTM) model obtained the highest accuracy at 0.9994. This research specifies an insightful understanding of the advantages of adopting ML models in fraud detection systems. The findings of this study will provide banks and financial institutes leaders with an understanding of the gains ML can add to their business. Furthermore, executives and professionals can use this research to develop DT strategies that improve their financial transactions.

Title: Machine learning based fraud detection: Fraudulent transactions of credit card

Authors: Mohamed Abbas (University of Bahrain) ; Dawla Almulla (University of Bahrain); Adel I Al-Alawi (University of Bahrain)

Abstract: Background: There is an increasing threat to the economy from the increase in financial fraud, particularly credit card fraud, which has serious consequences for both individuals and financial institutions. Credit card fraud presents a significant risk for businesses and may appear in a variety of forms, including counterfeit, behavioral, and cardholder-not-present fraud.

Purpose/Aim: This research study aims to assess the use of machine learning algorithms for counterfeit credit card fraud detection.

Study Design/Methodology/Approach: This study used a set of data that was downloaded from Kaggle and contains 1,852,394 credit card transactions that occurred between January 2019 and December 2020 with 800 retailers by 1000 credit card users. The preparation of data, the class imbalance correction, and the development of a classification method based on logistic regression, random forest, and XGboost are all included in the study. The SMOTE technique was used to balance the severely uneven target class because it generates synthetic samples that not only duplicate the minority class but also bring fresh data, preventing overfitting and contributing less bias than other techniques

Results/Findings: The results suggest that although both random forest and logistic regression algorithms prove successful in identifying fraudulent credit card transactions, XGBoost performs superior to both.

Originality/Value: This work looks at and assesses several Machine learning techniques, including logistic regression, random forest, and XGBoost, to identify credit card fraud. By using the SMOTE technique for class imbalance, it innovatively addresses a common challenge in fraud detection research. These comparative analyses and methodological advancements significantly contribute to the field by identifying the most effective techniques for fraud detection and laying the groundwork for future real-time detection and operational system integration.

Title: Secure Data Transfer Between Networks

Authors: Abdulmajeed A AlAbdulhadi (Saudi Aramco) ; Saleem AlHarthi (Saudi Aramco)

Abstract: The presentation will illustrate how the Modbus protocol is used to securely exchange numerical values between two networks. The Modbus protocol will be used as a safe and secure carrier for numerical values between applications on both sides of the networks. The concept assures that numerical values are exchanged both ways between a secured network (ex. plant network) and another network (ex. corporate network) through multi-serial links (such as RS232). The concept, which has been granted a US patent, assures

that the secured network is secured from all the risks the upper layers of the OSI model, layers 3 to 7 may introduce.

The International Standards Organization (ISO) Open Systems Interconnection (OSI) model is an interconnectivity model to standardize the communication between independent systems, which consists of 7 layers. Security concerns increase as the surface attack increases with more features and capabilities introduced by layers as you go up from layer 1, the physical layer, to layer 7, the application layer. Starting with layer 1, the physical layer, all possible vulnerabilities can be mitigated with physical security measures. Moving to the second layer, the data link layer, which is a node-to-node data transfer layer that is sufficient to fulfill most Industrial Control Systems (ICS) serial communications with field instruments. As you go up in the OSI model layers, the surface attack increases with more attack vectors and increased potential for threat actors to take control and perform impactful consequences remotely. This is not solely limited to TCP/IP, this is also applicable to other protocols such as IP/SPX and AppleTalk which function on layer 3 and above of the OSI model. The use of the 7 layers of the OSI model is required to interconnect with the world and run business operations, and there is no other way than dealing with it and mitigating the risk with cyber security solutions, systems, procedures, as well as human behaviors, ...etc.

Although this is the case for most of the business use cases, there are other business use cases, their need can be fulfilled using a few layers of the OSI model. For example, the ICS systems communicate with filed equipment using protocols such as Modbus serial and HART wired, which uses only the lower two layers of the OSI model. ICS applications directly interact with data at layer 2 without the need for network, transport, session, and presentation layers. Hence, it is eliminating all vulnerabilities and risks these layers entail in its communication with field equipment. The concept is suitable for business cases where all that you need to exchange between the two networks is limited to numerical values, which is most likely the case for ICS systems.

Title: Enhancing Stock Price Prediction: A Comparative Study of Deep Learning Models

Authors: Naser Alshakhoori (University of Bahrain) ; Adel Al-Alawi (University of Bahrain)

Abstract: Predicting stock prices is still a crucial and difficult task that has attracted high attention from academics and professionals. The purpose of this study is to examine the efficacy of different deep-learning models in forecasting stock prices. The study emphasizes hyperparameters tuning and customizing/hybridizing the models to improve the prediction accuracy and overcome the limitation of deep learning models, namely overfitting and computational resources. The study was conducted on an individual stock (Apple Inc) and a stock Index (S&P 500 Index) to examine the model performance on capturing the patterns and unique characteristics of these two types of securities. The paper compares an advanced Multi-layer Sequential Long Short-Term Memory (MLS LSTM) model against various conventional deep learning models. The results indicate that the proposed model, with the hyperparameters tunning, outperforms the traditional deep learning models. The conclusions drawn from this study offer direction for further research and real-world implementations in the finance sector, highlighting the great potential of deep learning models› hybridization and hyperparameter tuning in capturing the intricate characteristics of stock markets and consequently their capacity to enhance risk management and the investment process.

Title: Securing the Digital Frontier: A Comprehensive Analysis of Threats and Countermeasures in Digital Forensics

Authors: Hothefa Shaker Jassim (Modern College of Business & Science) ; Zeyad Traiq (Ninevah University)

Abstract: In the dynamic world of technology, cyberspace and digital forensics are pivotal. Digital forensics, a specialized branch of forensic science, focuses on extracting and analyzing evidence from digital devices. Its security measures are

essential for safeguarding evidence integrity and reliability. This paper explores key security aspects in digital forensics, addressing associated challenges and proposing strategies to mitigate issues. Furthermore, it presents a comprehensive taxonomy of digital forensics, elucidating the distinct categories of attacks and threats and security mechanisms.

Tech 4: Digitalization and Organization Performance

Title: Team Formation Theories in Scenarios of Human-AI Collaboration

Authors: Maryam Ali Abu Alfateh (University of Bahrain) ; Mazen Ali (University of Bahrain); Mourad Messaadia (University of Bahrain)

Abstract: Effective human-AI teaming presents great potential for improving team efficiency and decision-making and sets considerable challenges. Due to the unresolved research queries about human-AI collaboration and the potential consequences of its implementation, this study was conducted to showcase the theories that are used in team formation to better comprehend the basis on which human-AI teams are formed in scenarios of human-AI collaboration and to explore areas demanding further investigations concerning the different types of teams involving humans and AI. The study follows the three suggested phases of planning, conducting, and reporting the review, that serve as the basis for conducting a systematic literature review. Two research questions were formed, following the PICOC components, to achieve the goals of the study. By selecting and analyzing 20 scientific papers that were published during 2018 and 2023 in ScienceDirect, ACM, and IEEE Xplore/Access, the study showcases 30 theories that support the dynamics of team formation, 11 theories that apply to human-AI team formation, and 17 aspects under 9 themes to consider for future research concerning human-AI teams. The study adds to the understanding of team formation in the context of human-AI collaboration.

Title: Predictive Modelling of Employee Turnover in a Private Sector Company in Bahrain Using Logistic Regression

Authors: Abdulla Alghasra (University of Bahrain) ; Adel Al-Alawi (University of Bahrain)

Abstract: Organizations nowadays are facing a significant challenge in dealing with employee turnover, predicting such turnover is vital and a crucial issue. This research presents a predictive model designed to forecast employees› intentions to leave their jobs. The proposed model relies on Logistic Regression (LR) and utilizes a dataset gathered from a selected company in the Kingdom of Bahrain, including essential features such as gender, task volume, years of experience, basic salary, daily labor hours, and monthly incentive which are considered pivotal factors contributing to turnover. The results produced by the LR-based model were outstanding regarding F-score, reliability, accuracy, as well as false-positive rate (FPR). It effectively predicts the typical chance number of workers who plan to leave their jobs. Consequently, the model might be considered a valuable tool for decision-makers in the selected company, by which the predictive model will allow them to make decisions relying on relevant available data about an employee who is likely to stay or leave his or her current job.

Title: Predict Employee Attrition Using Multiple Machine Learning Techniques

Authors: Yahya Ghanem (University of Bahrain) ; Adel I Al-Alawi (University of Bahrain)

Abstract: This article uses multiple machine learning methods to answer the important question: which model best predicts employee attrition using a dataset with multiple features? We used a dataset with 1200 samples and 28 features in this study. These include personal, job-related, and organizational traits. Oversampling corrected the imbalance caused by 15% attrition in the dataset, which had no missing data. Visual analysis revealed higher attrition rates for male and single employees and a strong inverse relationship between job satisfaction and attrition, especially in Sales compared to Data Science and Finance.

We used Random Forest, XGBoost, Decision Tree, BernoulliNB, KNeighbors, Support Vector Machine, and Logistic Regression to understand attrition prediction model efficacy. Each model was assessed using accuracy, precision, recall, and F1-score metrics. Ensemble methods, especially Random Forest and XGBoost, outperformed other models. It showed how robust and suitable they are for datasets with similar features. GridSearchCV optimized the Random Forest model for better results. The study emphasizes the need for a multi-model approach to account for data attributes and model strengths. The research shows which algorithms work best, but it also acknowledges limitations like the dataset›s initial imbalance and the models' poo tential lack of generalizability. One of the most important findings of this analysis is that GridSearchCV may improve prediction algorithm accuracy. Future research could use GridSearchCV with more models and datasets to improve reliability and predictability in more situations.

Title: The Potential for Predicting Employee Promotions Using Blended Ensemble Machine Learning Models

Authors: Adel I Al-Alawi (University of Bahrain) ; Najal Ahmed Aljawder (University of Bahrain)

Abstract: Companies can find the best candidates and make career development decisions using machine learning (ML) models to predict employee promotions. This study aims to develop a prediction classifier for employee promotion utilizing blended ensemble machine learning algorithms. It aims to create a model that accurately predicts employee promotions while mitigating the effect of imbalanced data. Furthermore, it intends to identify critical factors affecting employee promotion. In this study, predictive methods were applied. The data were created by an international corporation, obtained from Kaggle.com, and balanced using oversampling techniques. The predictions from various base models were aggregated, combined, and stored in a meta-data set based on a blended ensemble approach. This meta-data was used to train several blended ensemble models. The study's findings r

evealed that the blended ensemble Gradient boosting model (BEns_GradBoost) evaluation was the best, with a 94% accuracy rate, a 97% precision rate, and an AUC of 80%. In addition, it was found that the most significant factors contributing to employees' promotion were average training scores, length of service, and region. The study proposed to include variables related to the economy, industry, or competition for future studies. It also proposed that further feature engineering can increase the predictive classifier recall rate. This study can help organizations identify the most qualified candidates for promotion. It can help managers to reduce promotion bias by eliminating human judgment. The study fills some research gaps by incorporating an advanced, high-accuracy algorithm, such as blended ensemble machine learning models. It also provided a better understanding of how imbalanced data may be prepared for prediction. Researchers and academics will benefit from using the blended ensemble ML models for developing high-performance prediction.

Title: The Role of Digital Communication in Digital Media Production in the Remote Era: Utilizing Innovative Learning Techniques

Authors: Sahar R Hamzah (Arabian Gulf University)

Abstract: Background: In a time of exceptional digital innovation and acceleration, further expedited by the onset of the COVID-19 pandemic in 2020, the landscape of distance learning has undergone significant transformation. The rise in the adoption of digital technologies in education necessitated innovation around course delivery and curriculum. However, with media production's hardware-intensive requirements, software demands, and highly collaborative nature, distance learning highlighted the challenges and limitations of teaching digital media production in the remote era.

Purpose/Aims: The aims of this research include identifying the necessary changes and innovations to the curriculum that were required to facilitate students' abilities to complete their work in media production when working remotely, to identify which adaptations made during the pandemic should be continued in the post-pandemic era, demonstrating how

the pandemic changed the teaching of media production for the future, and to identify how digital communication tools can be embraced as a means of creating new media. This paper shares practical solutions and lessons learned regarding the implementation of innovative workflow recommendations and strategic foresight for how to adapt hands-on digital media courses to remote settings.

Methodology: This case-study analysis examines a fall 2020 media production course and a comparative study with media production courses taught in various modes of instruction pre- and post-pandemic. This course simulated the work environments of professional media production houses. Students collaborated and exercised interpersonal communication strategies in a structure that replicated professional roles, workflows, and procedures with project developments for real-life clients. Students had to maximize the technology available at their fingertips, utilizing the same digital communication technology used to communicate their courses as their main means of creating new digital media. The course delivery method was a combination of synchronous and asynchronous remote learning, utilizing and analyzing a variety of teaching techniques and skills, including problem-based learning online.

Results: Through the case-study analysis and comparisons of this course, the paper discusses the transformative effects of teaching media production online on various areas such as challenges, best practices, lessons learned, effectiveness of student learning outcomes and assessments, curriculum, and students' preparedness for work in the professional world. Key findings are that the curriculum should be adjusted to incorporate stronger emphases on cloud-based storage, compression, large file transfer, and online collaborative workflow that continue to be beneficial in the post-pandemic era, that there is benefit in the formal teaching of the use of non-industry standard technology and software in addition to industry standard technology for media creation, and that innovative advanced digital communication tools can be used for effective and professional digital media creation.

Value: The value of this research lies in how the pedagogies of teaching media

production can be transformed for the post-pandemic era. It demonstrates that tools such as Microsoft Teams, Zoom, and others used for video conferencing can be used to create the media itself through the recording of interviews, audio, and other digital media. The paper contributes to the field of open innovation and digital transformation by demonstrating the expansive possibilities for digital media creation through the utilization of digital communication tools in innovative ways to transcend their position as communication platforms and become forceful creators of media production.

Title: The Implication of Organizational Creativity and Open Innovation on Bahraini SMEs' Performance

Authors: Asma Mhadheb Ayari (University of Bahrain) ; Aysha Alromaihi (University of Bahrain); Manar Albaharinah (University of Bahrain)

Abstract: A statistical study using the partial least squares (PLS) technique using SMART PLS 4 examined the associations between organizational creativity (OC), open innovation (OI), and Bahraini SMEs› performance. The structural model evaluation examines how OC and OI affect Bahraini SMEs. Hypothesis testing shows that OC positively affects organizational performance (OP), while OI does not. Regression gives nuanced insights into OP variables. Individual creativity (IC) and knowledge creation (KC) have significant impacts, while inbound open innovation (IOI) has mixed results. Internal organizational environment (IOE) aspects lack a direct effect on OP. The research reveals that, while OI may indirectly affect SME performance in Bahrain, OC is a stronger driver. The study suggests exploring moderating and mediating variables to understand the complex linkages between open innovation, creativity, knowledge generation, and organizational effectiveness. Understanding this complexity allows researchers and practitioners to build sophisticated strategies for leveraging OC, OI, and knowledge production to improve SME performance in Bahrain›s dynamic business climate.

Title: A Systematic Review of Digitalization and Organizational Ambidexterity Practices in GCC Countries

Authors: Asma Mhadheb Ayari (University of Bahrain); Abdulaziz Almayouf (University of Bahrain); Saeed Alahmari (University of Bahrain)

Abstract: In the era of instantaneous technological advances, the Gulf Cooperation Council (GCC) countries have detected a significant surge in digitalization efforts across various industries. As organizations in the GCC region strive to embrace digital transformation, organizational ambidexterity becomes crucial. This proposed paper aims to conduct a systematic review that synthesizes existing literature on the intersection of digitalization and organizational ambidexterity in the context of the GCC countries. The synthesis will be based on a rigorous analysis of peer-reviewed articles, case studies, and reports to ensure a comprehensive and well-rounded understanding of the subject. The research findings aim to provide a theoretical framework that integrates digitalization and organizational ambidexterity concepts within the unique context of GCC countries. Then, the results will offer actionable insights for organizations to navigate the challenges and opportunities associated with digitalization and organizational ambidexterity. Finally, the findings suggest potential policy interventions that can support and facilitate the integration of digital technologies and ambidextrous practices in the GCC business environment.

Title: Efficient Hybrid Ensemble Learning Algorithms for Employee Absenteeism Prediction

Authors: Mohammed M Ahmed (University of Bahrain) ; Adel I Al-Alawi (University of Bahrain)

Abstract: Employee absenteeism forms a significant economic load on businesses, as its complex nature makes it difficult to predict and manage. This study investigates the potential of Hybrid Ensemble Learning Algorithms to reveal sophisticated patterns in absenteeism factors and enhance prediction accuracy. The performance of individual

evolutionary algorithms to predict the risk level of absence was compared with various Hybrid Ensembles constructed based on the individual algorithms as a base learner. The findings reveal that the hybrid ensembles outperform individual algorithms, with the KNN-based hybrid ensemble achieving the highest accuracy, exceeding the leading individual algorithm (XGBoost). This demonstrates the effectiveness of hybrid ensembles in capturing sophisticated interactions between absenteeism factors, offering valuable insights for HR management. By adopting these advanced algorithms, organizations can develop more precise prediction models and implement targeted interventions to reduce absenteeism, leading to improved productivity and cost savings. To the best of our knowledge, our study is the first to compare the performance of the hybrid approaches (averaging, voting, and stacking) to each other and with other individual algorithms to investigate absenteeism prediction and the first to classify the risk level of absenteeism into four categories based on the quartile rule.

Title: Blockchain Technology in Supply Chain Management: An Exploratory Study of Failure Factors

Authors: Issam Najati (HECF BUSINESS SCHOOL)

Abstract: Background: Blockchain technology has been widely promoted as a way to revolutionize supply chain management by offering benefits such as transparency, traceability, and secure transactions. However, despite high expectations, many initiatives to deploy blockchain in the supply chain have failed to achieve their objectives. This exploratory study aims to examine the reasons for these failures using strategic alignment theory as an analytical framework.

Purpose/Aim: This exploratory study aims to highlight the reasons for the failure to deploy blockchain technology in the supply chain using strategic alignment theory as an analytical framework. The article seeks to understand why many blockchain projects have not achieved their objectives despite high expectations.

Study design/methodology/approach: The study will use a qualitative approach based on semi-structured interviews with key players involved in supply chain blockchain deployment projects. Participants are selected from a range of organizations representing different business sectors and levels of experience. The data is then analyzed using a content analysis method to identify recurring themes and patterns.
Results/findings: This exploratory study aims to identify the main factors contributing to the failure of blockchain deployment in the supply chain. Expected results could include issues related to the alignment between the organization›s strategy and blockchain technology, gaps in the understanding of the benefits and limitations of blockchain, challenges related to governance and stakeholder coordination, as well as technical and security issues.
Originality/value: The results of this study provide valuable information to companies and decision-makers involved in projects to deploy blockchain in the supply chain. They could help identify best practices, avoid common pitfalls, and improve the strategic alignment of blockchain initiatives.

Title: Exploring the Intersection of Innovation and Digital Transformation: Navigating the Path to Success

Authors: Ali Ali (Gulf University) ; Mohammed Alzoraiki (Gulf University) ; Marwan Milhem (Gulf University)

Abstract: In today's swiftly changing business environment, organizations must simultaneously foster innovation and embrace digital transformation. Innovation and digital transformation have emerged as essential success drivers, allowing businesses to remain competitive, adapt to shifting consumer demands, and capture new opportunities in the digital age. The purpose of this paper is to investigate the intersection of innovation and digital transformation, highlighting the synergies and complexities involved in navigating this path to success. It analyzes the key elements and strategies organizations can employ to successfully integrate innovation and digital transformation initiatives, as well as the poten-

tial obstacles and dangers that may arise. By comprehending the interplay between innovation and digital transformation, organizations can develop an all-encompassing strategy that exploits the power of technology and innovation to drive sustainable development and long-term success.

Title: Resource-based approach to the analysis of maintenance strategies for process analyzers

Authors: Teofilo De Sagun (Batangas State University) ; Selverino Magon (De La Salle University) ; James Darrel Lara (Batangas State University)

Abstract: Process analytical instruments are key equipment used to monitor process units such as distillation columns for oil & gas processes and chemical reactors for various petrochemical productions. Aside from measuring components, these instruments are critical to ensure efficient and safe operation of chemical plants and various industrial processes. The technology involved in the design, development, installation, and upkeep of these equipment requires thorough evaluation for the design engineer to properly come up with a functional system to address process measurement requirements. Adequate maintenance practices ensure that these instruments are operating properly and provide sufficient information for process operators to formulate critical decisions in sustaining or maximizing plant productions. The resource-based view provides a valuable framework in assessing and formulating proper maintenance strategies to ensure process analyzers are fully operational and reliable

Tech 5: Open Innovation and Sustainable Development

Title: Environmental, Social, and Governance Score: A Predictive Analysis of GCC Countries Using Machine Learning

Authors: Muna Al Romaihi (University of Bahrain) ; Adel I Al-Alawi (University of Bahrain)

Abstract: Purpose: The objective of this study is to evaluate the efficacy of several regression models in forecasting ESG scores, specifically concentrating on the economies within the GCC. The research aims to determine the models that provide the most precise predictions, taking into account the distinctive environment, social, and governance factors of the GCC region. Design: An initial bibliometric analysis was conducted to evaluate the current body of research on ESG scoring objectively. Then, a comparison analysis was performed utilizing various ML models, such as Linear Regression, Decision Tree, Random Forest, Gradient Boosting, and SVR. The study examined the possibility of overfitting and endeavored to address this problem by employing Lasso and Ridge Regression. Findings: The results revealed that the Lasso and Ridge Regression models showed superior performance compared to more complex models. This suggests that these models are more effective in dealing with issues like multicollinearity and overfitting in the setting of the GCC. These findings emphasize the significance of choosing the appropriate model and the possibility of simpler models being able to offer adequate prediction capacity in specific situations. Originality: This work enhances the current body of literature by specifically examining the GCC region, which has not been previously investigated in ESG prediction. The research offers significant insights for investors and policymakers in the GCC, providing guidance on how to include sustainability in investment plans and economic planning. The findings demonstrate the significance of selecting an appropriate model for predicting ESG scores and offer benchmarks for further research.

Title: The Enabling Role of IT Solutions in SMEs Frugal Innovation: Post Coronavirus Crisis in Bahrain - Case Study

Authors: Maryam Mohamed Zainal (Arabian Gulf University)

Abstract: SMEs were pushed to implement innovative procedures and transform from traditional operations into a Digital Transformation process of converting into more technologized and enhance the market needs to obtain new employment opportunities post the COVID-19 crisis, the expectations of development put the stockholders and investments under stress to adopt the new techniques of innovation to fill the market gaps and needs, keeping the low cost as the first target with quality of values in products and services at the same or better level, taking into consideration the customers' satisfaction as the main factor that affects the technology adoption, policies changing and the low-cost innovation due to the economic crisis. To take into consideration this issue, we built a conceptual framework model based on multi-model founds in different studies concerning different factors that affected the adoption, focusing on the digital transformation and had an impact on the Frugal Innovation in 50 of new established SMEs undergoing the new program a dopted by SME's Society in Bahrain. The hypothesis of the adopted model will provide the relationship of some of the most founded factors affecting the Frugal Innovation Implementation, which had a link with Digital Transformation and a positive impact on Customer satisfaction, keeping in mind that COVID-19 anxiety is considered a moderator that affected the adoption of Digital Transformation directly. To test the hypothesis, data would be collected with both Quantitative and Qualitative methods in a longitudinal study before applying the Digital transformation and after the technology adoption, and expected that the data analysis will support the testing of the hypothesis.

Title: Water Resources Management in the Age of Artificial Intelligence for Sustainable Development

Authors: Drisya J (Arabian Gulf University) ; Waleed Khalil Zubari (Arabian Gulf University)

Abstract: Water scarcity is a problem that is increasing on every continent, and the availability of fresh drinking water is a pressing issue worldwide. The depletion of water resources due to population growth is a challenge faced by almost all economies. The problem is made worse by the unwise use of resources and traditional inefficient practices. Therefore, effective management of water resources is of utmost importance. Since it requires a multi-disciplinary approach, integrated water resources management (WRM) can provide a broad framework for governments to align water use patterns with the needs and demands of different users, including the environment. Digital transformation, including the adoption of artificial intelligence (AI) in managing the complex nature of water resources, is emerging and acts as a catalyst of change in the digital era. This approach addresses water challenges on multiple fronts: socially, economically, and environmentally. The use of AI, machine learning, deep learning, the Internet of Things, and wireless communications in the water management sector will help researchers and policy stakeholders make improved decisions, automate production processes, optimize resource utilization, and minimize human intervention.

To conduct efficient WRM studies, assessment of diverse parameters like water quality, and quantity, occurrence of events, and managing its occurrence is crucial. For efficient WRM, the first step is monitoring, which involves scrutinizing hydrological data gathered from historical climatology archives. The second step is prediction, which involves clustering the records and using computational models to simulate hydrological events. The final step is controlling, which involves prioritizing appropriate strategies for preventing risks. Thus, this review article focuses on the current state and potential of AI-integrated modeling applications in these three subdomains, classifying them into two specific domain areas: water supply-side measures and demand-side measures. The aim is to achieve holistic

development in the water sector. The article serves as a comprehensive survey of the potentiality of AI techniques that could revolutionize the water sector. It includes the investigation of major AI technologies in water management and their diverse applications in demand forecasting, leak detection and infrastructure maintenance, flood and drought predictions, water quality monitoring and pollution control, and finally AI-powered decision support systems. The study concludes by discussing the benefits, challenges, and future scope of AI applications in water management. The implementation of these techniques promotes resource allocation and helps in achieving sustainable development of water resources. Thus, this work brings key insights and outlines prospective directions to accelerate the adoption of AI-based solutions and unlock its transformative potential for securing global water resources.

Title: The Effect of Sustainable Procurement in the Public Sector and Green Innovation on Managing Electronic Waste: Case of the State of Kuwait

Authors: Fai Ali (Arabian Gulf University)

Abstract: Kuwait is one of the highest electronic waste (e-waste) producers considering its size. This is due to the increasing consumption of electronic devices and digitalization. The purpose of this study is to provide insight into how green innovation and sustainable procurement practices (SPP) affect e-waste management in the public sector. In addition, it identifies barriers, and challenges and proposes strategies for improvement. This research employs a mixed-method approach, combining quantitative data analysis with qualitative insights. The dual approach facilitates a comprehensive understanding of the current e-waste management practices and the potential of SPP in fostering green innovation as well as drawing related recommendations. Also, multiple research instruments were used such as a comprehensive literature review, data collection through surveys and interviews, case studies of public sector organizations, and comparative analysis with international best practices. Furthermore, the findings of this study will contribute to the existing knowledge on

sustainable procurement, green innovation, and electronic waste management in the context of Kuwait. Additionally, outcomes will assist policymakers, public sector organizations, and environmental agencies in developing evidence-based strategies to reduce electronic waste and promote sustainable practices.

Title: Technology Readiness Level Assessment of Smart Cities: Case Study of London

Authors: Saly Abdou (King Fahd University of Petroleum and Minerals); M Asif (King Fahd University of Petroleum and Minerals)

Abstract: The world faces complex challenges due to population growth, urbanization, and technological advances that impact the environment and citizens' well-being. Many global governments seek to transition into prosperous smart cities to address these issues. The Smart City concept aims to employ innovative approaches to urban complexity, addressing energy optimization, resource management, environmental conservation, safety enhancement, improved quality of life, and efficient urban operations. Rooted in the Internet of Things (IoT) philosophy, the Smart City concept seeks creative solutions to urbanization challenges. However, current smart city assessment tools (SCA) have shortcomings, such as imbalanced indicators, challenges in comparing cities, and an inability to assess global contributions. Urban sustainability and smart city frameworks are categorized into ten sectors and three impact categories to guide decision-making. London, a focal point of this study, ranks second among IoT cities globally, actively pursuing its smart city vision. Acknowledged in various smart city rankings, London leads in entrepreneurial ventures and has initiated the Smarter London Together project. The approach included a literature review to define smart city concepts and indicators, followed by an explanation of the Technology Readiness Level (TRL). London was then analyzed as a case study using smart city indicators. Results showed an overall TRL score of 7, signifying advanced functionality, yet certain components require further development for the desired maturity. The study innovatively integrates sus-

tainability and smart city frameworks, introducing Technology Readiness Level (TRL) for comprehensive performance measurement. This pioneering approach distinguishes the study, providing crucial insights for future research in the intersection of sustainability, technology, and smart city initiatives.

Title: The"Innovation Policy Towards Achieving a Comprehensive National Framework for Sustainable Development Goals (NSDF)" An Analytical Case Study on the Sustainable Development Ecosystem in the Kingdom of Bahrain

Authors: Mohammed A AL-Mannaei (Mannai Enterprises)

Abstract: This paper aims to explore the sustainable development ecosystem in the Kingdom of Bahrain and the importance of adopting an open innovation approach in line with the United Nations Sustainable Development Goals (17 goals), specifically with the goal (Goal 9) related to industry, innovation and infrastructure that seeks to invest in innovations in their various forms, Especially those that are open to broad horizons, through expanding community participation and benefiting from the public and private sectors and the third sector, which is the non-profit sector and non-governmental organizations. This paper also highlighted the importance of sustainable development to enhance the sustainability of economic and environmental resources for future generations, which requires rethinking comprehensively while adopting sustainable lifestyles and patterns of production and consumption. this requires local, regional, and global cooperation and joint efforts, to achieve this goal, which indicates the importance of the interconnection of development issues and the comprehensive role of innovation with technology in achieving sustainable development goals (Goal 9), which requires moving toward an integrated approach that covers several sectors and helps achieve sustainable development goals within the economic vision of the Kingdom Bahrain 2030 and in line with basic local needs by proposing a comprehensive National Sustainable Development Framework (NSDF) for sustainable development in Bahrain.

Title: An examination of dust buildup and mitigation techniques for solar photovoltaic installations

Authors: Waheeb E Alnaser (Arabian Gulf University); Hussein A. Kazem (Sohar University); Lawrence Kazmerski (University of Colorado); Naser Alnaser (University of Bahrain)

Abstract: The utilization of solar energy for large-scale photovoltaic (PV) power generation has gained widespread adoption in many countries. The effective deployment of PV power plants relies heavily on geographical factors such as irradiation levels, latitude, longitude, tilt angle, and orientation. However, PV panels are influenced by various environmental factors, significantly affecting power output, conversion efficiency, and energy costs. Dust, in particular, stands out as a crucial parameter that impacts the performance, yield, and profitability of PV panels. It is worth noting that the characteristics of dust, including its type, size, shape, and meteorological conditions, are site-specific. Numerous researchers have delved into the issue of dust accumulation on PV panels and have explored various methods for cleaning and mitigating its effects. This paper offers a comprehensive overview of recent research regarding the impact of dust on PV systems and the effectiveness of cleaning methods. Notably, it has been observed that in certain locations, daily PV power losses and monthly efficiency reductions due to dust can exceed 1% and 80%, respectively, which is quite substantial.

The primary objective of this paper is to provide an assessment of the dust-related challenges and cleaning methods in the context of PV systems, shedding light on their current status and prospects. This critical review is intended to serve as a valuable resource for researchers engaged in this field. The study identifies six key dust pollutants that have a significant impact on PV systems and highlights the complexity of selecting an appropriate dust cleaning method, which depends on a range of technical and economic considerations. In conclusion, this paper presents a thorough examination of the dust-related challenges and cleaning methods, serving as a valuable reference for engineers, designers, and researchers involved in the realm of PV systems.

Title: Need of Innovative Artificial Intelligence to Encounter the Impact of Future Climate Change on the Renewable Energy Potential in the Kingdom of Bahrain

Authors: Waheeb E Alnaser (Arabian Gulf University); Marlene Tomaszkiewicz (United Nations Economic and Social Commission for Western Asia); Naser Alnaser (University of Bahrain)

Abstract: Increasing pressures upon the energy sector and rising global emissions have heightened the call to diversify energy sources and expand the use of renewable energy (RE). Bahrain, a small island in the Arabian Gulf, is well suited to seek solar, wind, and wave energy sources due to sunshine abundance and proximity to the sea. These can help Bahrain to achieve 20% of the total energy from renewable sources by 2035. Studies have found the long-term solar potential on a horizontal surface to be 408 W/m^{2,} mean daily wind power density is 66.2 W/m^2 and tidal power in Bahrain reaches a maximum in September (0.339 W/m^2) and March (0.340 W/m$^{2)}$. Lastly, water current power was estimated to be nearly 552 W/m^2. The current RE potential may change due to projected climate change caused by global warming. Downward solar radiation is expected to decline 1.2% by 2070, compared to 2020, part of a phenomenon known as global dimming which stems from increased atmospheric aerosols and other factors. Wind speed is also projected to generally decrease in Bahrain (1.7%), similar to global projections which may also affect wave energy potential. However, none of these changes are significant and should not deter from expanded implementation of RE in Bahrain. The paper is devoted to highlighting these issues and shed light on the necessary steps to be resilient to climate change through a thoughtful sustainable built environment.

Title: Estimating the Rooftop Potential Solar Power using Remote Sensing and GIS for Tala Island at the Kingdom of Bahrain

Authors: Waheeb E Alnaser (Arabian Gulf University) ; Naser Alnaser (University of Bahrain); Roaya Bubshait (National Space Science Agency); Aysha Alhajeri (National Space Science Agency)

Abstract: Currently, satellite imagery is becoming a more useful tool to estimate the solar potential on lands and roofs of houses. It has become an increasingly useful tool for renewable energy (RE) planning and implementation. This method allows for large-scale analysis and assessment of solar potential, which can help identify suitable locations for solar panel installation and optimize the use of solar energy. Satellite-based solar potential assessment relies on various factors and technologies to accurately estimate the solar potential of a specific region or roof. The scope of this study is to size the availability of the rooftop in Bahrain and sizing the Surface Solar Irradiance (SSI) by using Remote Sensing and GIS from satellites, and accordingly, the size of the installed PV. The size of Rooftop SSI is compared with the measured solar radiation data and solar yield from PV installed on 4 houses (two years of data). Amwaj Island in Bahrain is selected; a location that is expected to generate generous clean solar electricity that will contribute to fulfilling Bahrain RE target to have 20% by 2035. This is part of Artificial Intelligence (AI) and Machine learning (ML); an innovative way to determine the best sites where solar energy cells can be installed. Also, the case study will show the sites with the least solar energy which is affected by natural factors such as the shadow of neighboring buildings, the inclination of roofs, the presence of trees, and the availability of space on the roof for PV installation.

Title: Comparative Feasibility of Solar Photovoltaic and Concentrated Solar Power: Case Study of Saudi Arabia

Authors: Ali Ahmad Amiri (King Fahd University of Petroleum and Minerals); M. Asif (King Fahd University of Petroleum and Minerals)

Abstract: This study delves into solar energy as a viable alternative to fossil fuels. Solar photovoltaic (PV) and concentrated solar power (CSP) technologies stand out as leading approaches in converting solar energy into electricity. This study aims to evaluate and compare the techno-economic feasibility of PV and CSP technologies considering Saudi Arabia as a case study. The analysis of the Levelized Cost of Energy (LCOE), undertaken with the help of System Advisor Model (SAM), indicates that in Saudi Arabia, CSP technology demonstrates an LCOE ranging from 6.6 to 10.6 ¢/kWh, notably below the global average. Additionally, PV technology showcases an LCOE range of 3.77 to 4.5 ¢/kWh, emphasizing its cost-effectiveness. The study identifies specific regions within Saudi Arabia, particularly in the northern and north-western parts, as being very suitable for the implementation of both CSP and PV power plants. Additionally, central parts of the KSA exhibit a moderate level of solar potential. However, regions along the southwestern coastal area, such as Jazan and Al Baha, may not be as economically viable for solar energy projects due to reduced solar resource availability when compared to other parts of the country.

Title: Innovation Projects Sustainable Development: Organization Performance Optimization and Investment Risk Analysis Models

Authors: Alexey Zalozhnev (Institute of Control Sciences of RAS)

Abstract: The article is dedicated to Innovation Projects Sustainable Development, and more specifically, Organization Performance Optimization and Investment Risk Analysis Models. The first part of the article discusses the Project Performance Optimization Model. This model allows, based on a retrospective analysis of data on completed projects, already at the pre-investment stage of the Innovation Project life cycle, to estimate th e average time for completing works on the development of the Innovation Project and determine the optimal project team's quantitative composition for the project support stage. In the second part of the article the Risk Analysis Models for investing in Innovation Projects is discussed. The presented models are based on the theory of financial risks and the assessment of the probability of ruin. When constructing the models, indicators of the initial volume of the investment reserve, the assessment of the possible capitalization of profits received from investments in the newly created Innovation Project, an assessment of possible losses, and other characteristics are used. Two probabilistic estimates of Investment Risk in Innovation Projects—optimistic and realistic—are obtained. Research gaps are shown.

Title: Influence of Employee Innovative Work Behavior on Green Innovation via mediating role of Digital Innovation

Authors: Sura Alayed (Arab Open University)

Abstract: This study examines the relationship between Innovative Work Behavior, Digital innovation, and green innovation within organizational contexts. A conceptual framework is proposed based on existing literature to investigate how innovative work behavior influences Digital innovation and, subsequently, green innovation. Employing a quantitative approach, the research utilizes structural equation modeling to analyze data collected from employees in private sector organizations in Saudi Arabia.

Results reveal a significant positive influence of innovative work behavior on Digital innovation, with Digital innovation mediating the relationship between IWB and green innovation. These findings underscore the importance of fostering a supportive organizational culture and leveraging digital technologies to drive innovation and sustainability initiatives. The study discusses implications for organizational practice and suggests future research directions.

Title: Roof Optimization for PV Installation in Buildings

Authors: M. Asif (King Fahd University of Petroleum and Minerals), Mojeed Olawale (King Fahad University of Petroleum and Minerals), Rayyan Sharieff (King Fahd University of Petroleum and Minerals)

Abstract: Energy consumption across the world is on the rise due to the growing population, with a rapid increase in annual Increments of 5- 8% in the Kingdom of Saudi Arabia. As part of the Kingdom's goal of reducing its dependency on oil and natural gas for electricity generation, the country is quickly moving towards two major sources of energy abundantly available: wind and solar. The building rooftops have been identified to be the most viable location fully exposed to the sunlight with little to no effect of shadow, however, residential buildings in the Kingdom have their rooftops usually occupied with various types of obstructions ranging from the AHU, Satellite dish, clothing line, water tank, etc as identified in some of the previous studies. An area of study to optimize the usage of the rooftop for PV application has not been touched. A typical apartment facility located in the Al Khobar locality of the eastern province was studied with 3 other alternative solutions from Case A (Base case) to utilize the rooftop, which are Case B (re-arrangement of the obstacles), case C (re-arrangement of the obstacles with lower parapet), and case D (Fly roof). In the case of A, results show that about 32.6% of the roof area with 16.5% shading effects, while cases B and C have the same roof space availability increased to 63.4% with 12% and 7.6% shading effects respectively. Finally, it is understood that Case D is the best in terms of area availability and power generation due to the absence of shading from the obstacles.

Title: Application of PV Systems in the Building Sector: An Investigation into Socio-Economic Factors in KSA

Authors: Shaima Businnah (King Fahd University of Petroleum and Minerals), Roua Osman (King Fahd University of Petroleum and Minerals), M. Asif (King Fahd University of Petroleum and Minerals)

Abstract: Worldwide, solar PV is playing a crucial role in improving the energy and environmental sustainability of buildings. The Kingdom of Saudi Arabia (KSA) is currently transitioning toward renewable energy sources to reduce energy consumption and generate energy from renewable sources. One of the most significant renewable energy technologies is solar photovoltaics (PV), as part of Saudi Vision 2030. This study aims to evaluate the socio-economic awareness of PV technology in the residential sector of Saudi Arabia, as well as to analyze the attitudes and behaviors of individuals toward the use of electricity and its effectiveness in adopting PV technology as an alternative energy source. It targets a diverse sample of individuals from the local society, including men and women. The study analyses empirical data through a questionnaire-based survey and interviews. Results suggest that most respondents are unfamiliar with solar PV, with a value of 30.5%, and 47.6% do not have experience with the technology, seeing it work in another place. Results show that 49% of the respondents believe that males should be primarily responsible for decision-making regarding the optimization of electricity consumption. Overall, due to a lack of social acceptance, the local community of Saudi Arabia is not yet ready to implement PV technology in their homes. Although, economically, an overall percentage of 90.7% are interested in using PV technology in the future, 34.4% of them are unwilling to re-arrange their roofs to install the PV panels for the additional cost. The interview results align with the survey, representing the lack of awareness in the local society about using less energy, adopting PV technology, and government policies. The interviewees suggested using campaigns, high tariffs, and incentives to encourage using less energy and adopting PV in the future.

Title: Increasing Sustainability through Digital Transformation: A Case Study of the UCN-LSA

Authors: Alexa Muñoz Leiva (Universidad Católica del Norte), Sebastián Delgado Guerra (Universidad Católica del Norte), Ronald Campillay Pizarro (Universidad Católica del Norte), Janetti Rudolffi Castillo (Universidad Católica del Norte), Luis Rojas-Araya (Universidad Católica del Norte), Víctor Flores (Universidad Católica del Norte), Carlos Pon (Universidad Católica del Norte), Rafael Martinez Pelaez (Universidad Católica del Norte)

Abstract: This study explores achieving sustainability through digital transformation within an analytical services laboratory in the digital transformation era. Through the proposed framework, the research evidences substantial benefits in terms of time efficiency, operational cost reduction, and environmental sustainability. Adopting digital tools results in notable time savings, translating into an annual efficiency gain. Financially, the study anticipates significant operational cost savings associated with sample receipt and entry. The laboratory's commitment to environmental sustainability is fundamental to the research. The study marks a strategic step towards a paperless operation by eliminating self-copying sheets through digital processes. This research demonstrates the benefits of sustainability through the digital transformation of workflows and mitigates the environmental impact of intensive paper consumption, which encompasses water use, CO2 emissions, and tree felling.

Title: A Study of Risk Management Process and Its Impact on Project Success - in the Oil and Gas Sector

Authors: Joseph Mani (Modern College of Business and Science)

Abstract: The oil and gas industry is the Sultanate of Oman's greatest economic contributor. It has been recognized as an influential sector that concentrates the country's emphasis on creating comprehensive, reliable, and sustainable performance to produce long-term economic benefits. The complex competitive environment in the oil and gas sector has led companies to recognize the substantial number of risks fac-

ing their activities. Oil and gas companies' most valuable asset is their workforce, whose environment, health, and well-being contribute to the company's productivity. It is crucial to consider the impact of risk when evaluating and treating it. The oil and gas industry is one of the fields in which addressing risks remains a major concern to ensure that human life and environmental damage can be limited. Therefore, this study aims to glance at the risk management process and its role in oil and gas companies in Oman. It also proposes a risk management process that can be used in oil and gas as well as in other industries. It shows how risks are efficiently and effectively managed and mitigated in several steps.

Title: Feasibility of PV Systems in Off-Grid Schools

Authors: Rayyan Sharieff (King Fahd University of Petroleum and Minerals), Mojeed Olawale (King Fahd University of Petroleum and Minerals), M Asif (King Fahd University of Petroleum and Minerals)

Abstract: The lack of reliable electricity is one of the primary challenges for isolated communities, which heavily depend on fossil fuels such as diesel contributing to an increased carbon footprint. Conventional grid extension is the preferred mode for remote area electrification, however, the expansion of the grid to geographically remote and sparsely occupied rural areas can either be economically unviable or practically infeasible due to topographical and economic constraints. The present study highlights the solar PV integration feasibility for schools situated on the outskirts of Jizan City in Saudi Arabia that lack access to electricity by the national grid network. Saudi Arabia has a high solar power potential which can power up solar energy systems in remote areas. An energy analysis of a school building reflected its need for an efficient solar PV system where an optimized setup was obtained after 320 simulations using Homer Pro. The estimated cost of the grid extension and solar PV integration for each school was analyzed to learn that only 8% of the grid expansion cost was sufficient for all the schools. The opportunity cost of the school's fuel resulted in more than 700% of the revenue income on export. The utilization of Renewables such as PV in these

schools could generate enough electricity to power the school during the day with a surplus to be sold back to the grid.

Title: Research on Visualization Analysis and Digital Development of Chinese Opera Costumes

Authors: : ZIFEI LI (Universiti Teknologi MARA) ; ASLIZA ARIS (Universiti Teknologi MARA); ZAINUDIN NOR (Universiti Teknologi MARA (UiTM))

Abstract: Opera is a traditional Chinese performance form that occupies an indelible place in China's intangible cultural heritage. Combining traditional Chinese cultural elements and exquisite costumes, opera attracts audiences most understandably and popularly. With the development of technology, the audience of opera performances is aging and the art of opera is being replaced by new media. This study adopts a quantitative researchmethod, using CiteSpace software and CNKI visual analysis to examine the relevant literature.We examined 1,756 articles on «opera costumes» in the CNKI database from 2000 to 2023. Our visual analysis included annual publication trends, keyword co-occurrences, disciplinary hierarchies, and classifications. At the end of the analysis, we distilled and organized the results in a digital format to present information on Chinese opera costume research in a visual way, to improve the accessibility and development of the information. Through the visual analysis of the research on Chinese traditional opera costumes, we summarise and describe the current situation of the development of Chinese opera, combine the research and preservation of traditional opera costumes with digitization, protect the integrity of opera costumes through digital presentation, and make it more intuitive for the public to appreciate and understand Chinese opera and its costumes. The digital analysis not only reveals the shortcomings of Chinese opera costume research but also proposes practical improvement solutions. By visualizing a large amount of literature on Chinese traditional opera costumes and combining it with digital preservation, this study provides guidance for future development. It introduces new perspectives for the preservation of Chinese opera costumes

and advances the cause of traditional culture preservation while promoting diversity and systematic development.

Poster Presentations

Title: Unmasking Hidden Biases Transparency and Fair Decision-Making through Human Resources Analytics

Author: Fatema Ahmed Al Bin Ali (University of Bahrain) ; Adel Al-Alawi (University of Bahrain)

Abstract: This systematic literature review aims to synthesize current knowledge on techniques for addressing biases and enabling human resource (HR) analytics transparency. A comprehensive search of relevant literature was conducted on Google Scholar. Papers were screened and qualitatively analyzed to identify key themes. Common bias detection approaches include demographic parity testing, calibration, and natural language processing. Fairness in HR processes can be enhanced through anonymization, skill-focused modeling, and addressing biases across the employee life-cycle. Integrated frameworks show promise if evaluated in real-world contexts. However, challenges exist regarding explainability and obtaining meaningful consent to achieve transparency. The strategic application of reviewed techniques could help organizations responsibly leverage HR analytics to maximize benefits while ensuring dignified treatment. Context-specific solutions also need evaluation through case studies and stakeholder input. This review consolidates knowledge on addressing algorithmic bias and lack of transparency concerns in HR analytics. It identifies research gaps in implementations and underrepresented perspectives to advance the responsible and ethical use of data-driven talent management.

Title: Analysis of Employee Capabilities Using Sentiment Analysis and Machine Learning Methods

Author: Fawzah Alharbi (University of Bahrain); Prof. Adel Al-Alawi (University of Bahrain)

Abstract: Employee capability is a critical factor that affects the organization›s performance. However, many organizations find it challenging to analyze due to its complexity. This paper aims to analyze employee capability using sentiment analysis and machine learning algorithms. To extract and classify those hidden capabilities from employee social media data, sentiment analysis examines employee comments on the social media platform 'X' by identifying words and emotions that are frequently used. Five Machine learning (ML) algorithms are employed: the Multinomial Naive Bayes Classifier, Random Forrest Classifier, Extra-Trees Classifier, Gradient Boosting Classifier, and Support Vector Classifier. The Machine Learning algorithms' performance in accurately classifying the sentiment is evaluated based on precision, recall, F1 score, and accuracy. The results reveal that the Random Forest Classifier and Extra-Trees Classifier exhibit superior performance in accurately classifying sentiments within the text data, achieving high precision, recall, F1 score, and accuracy scores of 90% and 92%, respectively. In contrast, the Gradient Boosting Classifier demonstrates relatively lower performance. This study contributes to the existing literature by applying artificial intelligence tools to analyze employee capabilities, which provide insights and make informed decisions about employees, and enhance the hiring process. The study presents opportunities for further research using machine learning and natural language processing techniques to analyze employee capabilities and therefore enhance hiring procedures. The study also highlights the need for capabilities frameworks to address specific issues that require further investigation. Furthermore, it is essential to develop comprehensive ethical frameworks and guidelines that address informed consent, data privacy, fairness, and bias mitigation.

Title: Advancing Petroleum Economics: Machine Learning Approaches to Predicting Oil Prices

Author: Yaqoob Yusuf Abdulla (University of Bahrain); Yaqoob Abdulla (University of Bahrain); Adel I Al-Alawi (University of Bahrain)

Abstract: Forecasting oil prices is essential to improve the decision-making process for many users. The study aims to assess the oil price forecast using advanced machine learning techniques and compare the accuracy results with traditional statistical models. The study compares the accuracy of the estimates of the advanced gene expression programming and extended short-term memory models with the forecasting results of the traditional auto-regressive integrated moving average model. Moreover, the study illustrates the prediction process's main challenges, such as the impact of market complexity and the non-linear and non-stationary factors in predicting oil prices. The study uses a dataset containing daily prices of Brent oil from 1988 to 2023, which uses a methodological framework. It compares the prediction results of the advanced machine learning techniques with the results of the traditional statistical approaches. The study was conducted in multiple steps. The first step was data collection and data preprocessing, followed by the implementation of a machine-learning model. Finally, the prediction results of the three models used in the study were compared. The findings of the study show that the performance of the gene expression programming is better than the auto-regressive integrated moving average model in dealing with the complexity of the market and generated higher prediction accuracy, indicated by the higher R-squared values, lower mean squared errors, and higher accuracy. The main contribution of the study is to provide a novel machine-learning model for the energy sector. The model is more capable of predicting oil prices effectively and reliably than traditional models. Additionally, investors, analysts, and regulators might use these advanced machine learning models to make decisions.

Title: Intelligent Technology for Smarter Healthcare: A Literature Review on Technology Transfer

Author: Maryam Mohamed Zainal (Arabian Gulf University)

Abstract: As part of the advanced need for more technology in the healthcare sector due to the integration of intelligent technologies into healthcare systems the Healthcare study field has shown great promise in enhancing patient care, improving efficiency, and transforming traditional medical practices while applying digitalization. This literature review explores the current state of technology transfer in healthcare and the role of mobile applications used by practitioners and the public in facilitating intelligent healthcare solutions and fostering the development stages of human health. The review encompasses a broad range of studies, spanning from the transfer of the traditionally used technologies in healthcare to the implementation of mobile applications for healthcare purposes, focusing on the conversion of medical digitalization after the Coronavirus pandemic. The objective is to provide a comprehensive understanding of the advancements of these mobile applications, challenges, and future directions in leveraging intelligent technology for smarter healthcare. The research findings may advise healthcare practitioners to move ahead toward smarter healthcare and more advanced technology and innovation.

Title: Digital and Innovation in Enterprises End User Devices

Author: Amnah Almuaili (Saudi Aramco)

Abstract: Enterprises introduce digital platforms for their businesses to accelerate operations, enable large-scale automating processes, promote user experience, and become up-to-date compared to the fourth industrial revolution digital pillars. From the end-user's perspective, work automation, virtual communication, and intelligent collaboration are important aspects of business performance and productivity. Therefore, emerging and computing business end-user devices (EUD) innovations are key enablers in transferring digital transformation vision and capabilities between enterprises' digital platforms and end-user

individual experience. This paper provides insights into digital and compute business end-user devices innovation which illustrate how EUD digital innovation become a crucial factor in enterprises selection and manufacture strategic hardware productions. Furthermore, shows how the growth of business needs of emerging technologies in EUD increases dramatically in most enterprises' internal work such as field operations, and external such as their customer use. This study is supported by consultant reports, enterprises' positions, emerging end-user device manufacturers interviews, and professional surveys. The originality of this research is to understand enterprises' and manufacturer's position in end-user digital innovation. In addition, the research highlights the future view of enterprises' digital workplace.

Title: Integration and Implementation of Technological Tools in Conservation Teaching

Author: Ayesha Agha Shah (University of Bahrain)

Abstract: Universities have evolved into significant participants in economic growth based on research and technology in an evolving environment of global innovation and economic development. The concept of an entrepreneurial university has grown in favor, whereby universities have added a third mission to their traditional duties of education and research: promoting economic development by bringing scientific discoveries from the lab to the market.

It is essential to digitally document historic buildings if cultural heritage is to be preserved and advanced and bring innovative teaching methods to the studio to effectively integrate digital tools. But to teach pupils this crucial ability, it is necessary to employ cutting-edge educational approaches that combine academic understanding, practical competence, and the incorporation of cutting-edge technical resources.

To facilitate effective teaching integration and technological implementation in the context of digital information, the University of Bahrain embarked on a collaborative

endeavor with BACA. Within this framework, students were provided comprehensive instruction on the process of digitally uploading field survey data onto a database owned by BACA. This instructional approach streamlined data management and encouraged seamless collaboration among diverse student groups, enabled by technology-driven solutions. Furthermore, students were entrusted with the creative task of conceiving design proposals that harmonized with BACA's visionary Manama theme, strategically crafted to promote cultural heritage within the region. This holistic pedagogical strategy embraced a diverse array of effective teaching tools, including immersive site visits, structured critical discussions, the adept utilization of technological platforms, comprehensive knowledge enrichment, and close collaboration with accomplished subject matter experts.

The study shows that the students who participated in the project developed skills related to digital heritage documentation, such as digital recording techniques, data management, and information modeling. The students also gained a profound understanding of Manama's architectural legacy and the historical and contextual factors that influenced its urban development. They were also tasked to develop design proposals that aligned with BACA's Manama theme, which aimed to promote cultural heritage in the region.

The study contributes to the literature on digital heritage documentation and education by presenting an innovative educational methodology that combines theory, practice, and technology. This holistic pedagogical strategy embraces a diverse array of effective teaching tools, including immersive site visits, structured critical discussions, the adept utilization of technological platforms, comprehensive knowledge enrichment, and close collaboration with accomplished subject matter experts.

Title: Exploring the Determinants of Smart Sustainable Cities Affecting Social Innovation

Author: Raweya Almannaei (Ministry of Municipalities Affairs)

Abstract: In recent years, social innovation has attracted the attention of policymakers because it is perceived as a critical answer to mounting social, demographic, and environmental issues (Anheier et al., 2019). Researchers have emphasized the importance of social innovation, which is viewed as a mechanism for generating new ideas that address societal problems of the people, the issue, which may be an opportunity or a problem, the method, and the purpose, which is to enhance or raise well-being, are the four key factors described by Dawson and Daniel (2010) as constituting social innovation, Osburg and Schmidpeter (2013) argue that despite the great influence of social innovation in addressing social problems, it should not be viewed as a solution, because it is not yet developed through systematic research, as is the case with technological innovation, but rather through individual ideas that can be applied on a larger scale, and this process of application is not simple due to the importance of participation and well-being of different actors from different backgrounds with respect to smart sustainable cities and social innovation, it has been highlighted in the literature that smart cities foster social innovation, according to Husar and Ondrejicka (2019). This research paper aims to explore the determinants of smart sustainable cities affecting social innovation. The research adopts quantitative methodologies for the collection of data through survey questionnaires. The responses of 60 experts in the field of smart sustainable cities in the Kingdom of Bahrain, collected from questionnaires formed the basis for quantitative analysis. The survey, findings approved the effect of smart sustainable cities' determinants on social innovation. The research proposes a framework for smart sustainable cities with social innovation as an outcome. The research offers theoretical and policy suggestions for policymakers and decision-makers to draw upon their quest to achieve social innovation in Bahrain.

This review presents a brief from a systematic analysis that explores the key themes,

sub-themes, models, factors, and research methods of OI and innovation outcomes in the public sector. The study analyzed 122 articles from Google Scholar, Scopus, and ScienceDirect published between 1990 and 2022. Existing research in the Middle East and GCC is limited, and this paper aims to highlight the enablers for fostering public sector innovation through OI. The findings of this review contribute to framing PSI and OI in the digital era.

Title: Elementary English Language Teachers in Kuwait: Awareness of E-Learning and the extent to which it is used

Author: Athari S. Alzidan (Arabian Gulf University)

Abstract: The study aimed to identify the extent of e-learning awareness and the reality of its usage among elementary English language teachers in Kuwait. The current study followed the descriptive analytical approach. The sample consisted of 131 teachers in the elementary stage. The researcher designed and developed a questionnaire to collect the data needed. Validity and reliability were ascertained. Results of the study indicate that awareness of English language teachers in the elementary stage in the State of Kuwait about E-learning was moderate. The absence of statistically significant differences about the extent of English language teachers in the elementary stage in the State of Kuwait E-learning in the light of the variables (gender, educational qualifications, and years of experience) besides statistically significant differences about the reality of the use of English language in the elementary stage. In the light of the gender variable in all fields and the total score in favor of males, except for the area of the skills. In addition, there were no differences in the reality of the use of e-learning by English language teachers in the State of Kuwait in variables of educational qualifications and years of experience.

Title: Prediction of Hospital No-Show Appointments Using Artificial Intelligence Algorithm in a Pediatric Psychiatric Clinic

Author: Ahmed MS AL Ansari (Arabian Gulf University) ; Haitham Jahrami (Arabian Gulf University)

Abstract: Scheduled but unattended medical appointments (no-shows) have an impact on patients' health and resource allocation. The magnitude of the problem varies in different hospitals or clinics. The reason for no-shows varies from problems with scheduling, time conflict traffic, and environmental factors. History of no-shows is the most predictive factor for it.

Objective: Use of Artificial Intelligence in predicting no-shows for individual appointments based on the data in the electronic files. This is done as part of the CQI project – an internal audit that uses machine learning techniques to predict and reduce the no-show system.

Child and Adolescent Psychiatric Unit (CAPU), Psychiatric Hospital.

Sample size: All new children referred to CAPU in the period 1st March 2022 to June 2023, n = 323 the overall no-show rate.

Procedures: The author sought to identify critical factors through logistic regression, artificial networks, and algorithms to predict missed appointments.

The project consists of 3 phases;

Phase one is to establish a baseline by studying the characteristics of the sample show (no-show). A focus group, including a multi-disciplinary team working in CAPU, voted on a list of selected items that could affect no-shows. Participants were asked to give a rating of 1-10 points on 19 items.

Phase two machine learning algorithm deployed and evaluated. The high-risk characteristics for no-shows were reached.

Phase three is the application of an intervention program for 6 months and measure the outcome.

The intervention program is under study. It consists of a simple phone call 24 hours before

the appointment and/or booking an extra appointment (25% of appointments) with every clinic that has 25% high-risk appointments.

Title: The Impact of Blended Learning on Students in Kuwait's Basic Education Colleges' Development of Digital Learning Media Production Competencies

Author: Asmaa M Jumah (Arabian Gulf University)

Abstract: The purpose of this study was to evaluate how blended learning affected students'ability to use digital media in productive and creative ways as well as how it affected the development of skills and production competencies. and increasing confidence in the learning techniques needed for the learning of Educational Technology increasing the development of scientific knowledge levels, and emphasizing confidence in learning in software and technologies and its relationship to students of the College of Basic Education. The developmental research approach was used, which included the descriptive approach, the systems development approach, and the experimental approach with a quasi-experimental design with one group with pre- and post-measurements. The study sample was composed of 36 students studying educational technology in the College of Basic Education affiliated with the Public Authority for Applied Education and Training in the State of Kuwait. The research tools were based on three instruments; pre-and post-test, a product evaluation scale, and a satisfaction with learning scale, where the validity and reliability of these instruments were verified through expert judgment and statistical treatment. The researcher applied the proposed instructional program by designing the electronic learning environment using Moodle LMS. The achievement test was applied before and after the treatment, while the production evaluation scale was used to assess a final project assignment developed by the students, and the satisfaction with the learning scale was administered by the end of the treatment program. The research results revealed the effectiveness of the blended learning approach for teaching educational technology. The results also showed a positive relationship with a statistical significance at the level of 0.01

between the pre-and post-testing achievement results.

Title: Artificial intelligence and Metaverse towards a Sustainable Future in Interior Design.

Author: Asmaa A Khder (Jazan University)

Abstract: The use of technology is a prerequisite that all societies strive to achieve, because of its impact on the sustainability of societies, and designers have devoted their efforts to enter this world and live in it with all the imaginary things they carry and explore through a world called Metaverse. Today, this term is at the forefront of scientific and research interests. We note that major companies compete in entering and booking their positions in them and their influence on the user to create comfortable spaces that belong to the user and achieve the highest psychological comfort when using them. This means we must pay attention to this area to keep up with this renaissance quickly. This research, in turn, has reached the connection of the latest technologies reached by generative artificial intelligence and technology metaverse as one of the most important journals that affect individuals, their psychological conditions, and ways of living through the design of Interior Architecture (Interior Design).

Title: Beyond Public Sector Innovation: Nurturing Open Innovation through Public Participation

Author: Mohammad R. Albous (Arabian Gulf University)

Abstract: This paper explores the transformative potential of open innovation and public participation in revolutionizing the public sector, primarily via a theoretical framework and literature review. It argues that traditional top-down approaches, hampered by inertia and risk aversion, fail to address complex challenges faced by modern societies. Instead, the paper advocates for collaborative models that harness the collective wisdom of citizens, experts, and diverse stakeholders.

Title: Exploring the Factors Influencing Open Government Data Performance through Technological Innovation

Author: Shaikhah M Aljwaisri (Arabian Gulf University)

Abstract: The ubiquity of open government data presents a compelling prospect, holding the potential to foster innovation and create new economic and social opportunities. This research seeks to explore the factors that influence the performance of open government data, with a specific focus on the role of technological innovation. This study will adopt the qualitative methodology in analyzing data that will be gathered from two sources. Primary data will be collected through open-ended interviews. Secondary data will be sourced from the annual reports of the Information and eGovernment Authority. The study will particularly target IT directors and employees within the Information and eGovernment Authority in the Kingdom of Bahrain, recognizing them as key participants possessing valuable insights into the complex interplay between technology and open government data initiatives. The chosen method of analysis for the gathered data is a thematic approach, allowing for an exploration of patterns, trends, and relationships. This analytical framework aligns with the research questions, providing a structured and in-depth examination of the factors influencing open government data performance. By adopting a thematic method, the study aims to refine key insights that not only answer the research questions but also contribute to the broader understanding of the complex dynamics between technological innovation and open government data. Anticipated findings from this research consider significant implications for management within the Information and eGovernment Authority. The insights garnered from this study will serve as a valuable roadmap for decision-makers, informing strategic initiatives and facilitating a more seamless integration of technological innovation into open government data practices. By exploring the factors influencing open government data performance, this study contributes to the body of knowledge of

technology, governance, and innovation.

Title: University Creative Simulation Center

Author: Dr. Hani Hamed Elsayed (Najran University)

Abstract: The idea of the UCSC is an initiative that provides the full opportunity for students to free self-learning and training in many skills that complement the mission of the college to which the student belongs by building an integrated personality capable of storming the future at the level of excellence required. The idea of the center represents a kind of supportive education for student activities that simulate working-life attitudes and educational experiences that lead to real learning of the educational environment with new interactive dimensions to university life. It is also an integrated academic activity to simulate many cultural and scientific activities, conferences, seminars, and works. For charity in various fields and to give students the skills to be shareholders

4 -The expected benefits from the proposed initiative

Today, simulation methods have evolved a development that distances it from mere imitation and has become “the art of simulation does not stop at the limit of simulation of reality, but goes beyond it to far limits and levels where the knowledge and experience that result from the introduction of this method in the educational process far exceeds that which results from familiar traditional methods, as well.” However, it is usually more entrenched in the minds of its librarians than that generated by traditional methods. Therefore, the initiative proposal represents a new start for one of the most important interactive educational paths and it is expected that it will have a significant impact on developing students ’abilities and their demand for university education effectively, as it aims Increasing international, regional and local awareness of students and introducing them to regional organizations in various knowledge fields and their tasks and their connection with current issues and developing knowledge of issues of international and regional concern, training and teamwork methods on critical thinking, research, communication, practical offers, team work, negotiation,

planning and knowledge transfer in addition to developing leadership skills Also, the endeavor of each participant in these models himself to obtain knowledge and go through the experience represents a strategy of self-learning strategies that combines the scientific and applied side as the simulation models that are considered. The center has tools for strategic planning as it can be used to test the susceptibility of specific educational policies and strategies, and to suggest alternatives to cope with dynamic environments, planning scenarios in the field of education to develop the educational system in its entirety, or to develop specific areas and the simulation process contributes to ensuring a comprehensive educational development, this In addition to providing many job opportunities from coaches and facilitators to work.

Title: The State of Play of the Fintech Sector in Morocco: An in-depth SWOT analysis of its ecosystem

Author: Said Achchab (Mohammed V University) ; Younes Lahrichi (ISCAE); Zoubida Samlal (ISCAE); Lamiaa Laouami (Hassan I University)

Abstract: Over the past decade, Financial Technologies (Fintech) have grown in popularity thanks to underpinning technologies such as artificial intelligence, blockchain, mobile applications, and big data. These latter have improved accessibility to financial services, reduced costs, bespoke offerings and thus creating a window to new disruptive business models.

In Morocco, the financial sector regulators have shown an uneven commitment to promoting different digital financial services amid several reforms such as the « National Strategy for Financial Inclusion « launched in 2018 and the promulgation of the new banking law of 2015 geared towards the liberalization of the banking sector in general and Fintech services in particular. Thus, it is fair to state that the emergence of financial technology in Morocco has led to the digital divide in the financial sector. Understandably, it seems interesting to understand the current state of the art of the Moroccan Fintech sector and to gauge the main challenges and opportunities in foreplay. The purpose of this study is to

provide a comprehensive overview of the Moroccan Fintech ecosystem with a focus on gauging the main regulatory and infrastructure inclusion challenges.

This paper begins by surveying the field of financial inclusion research over the past 5years, highlighting the evolution of how financial inclusion has been implemented in Morocco. The data collected will be submitted to SWOT analysis to pinpoint areas of development and main challenges of Financial Inclusion in Morocco.

The analysis reveals key findings on the state of play of the Moroccan Fintech Ecosystem. This latter is lagging due to the quality of its infrastructure, lack of capital, limited digital adoption, and weaker regulations. Furthermore, Remittances, banking penetration, security of transactions, and compliance appear to be the most likely areas to benefit from fintech.

This research aspires to map the emerging Fintech Ecosystem in Morocco, identify major gaps, and provide a productive line to guide future industry and academic-driven research. This will contribute to the ongoing debate led by the Central Bank of Morocco (BAM) on financial inclusion as a lever to the development of Fintech companies. This study attempts to proffer ideas to encourage collaborative research and deepen our understanding of the instrumental role of a Regulatory Sandbox of the Moroccan Fintech sector.

This study offers a comprehensive overview of recent government initiatives and the Moroccan Fintech landscape and highlights the need for further research in this field. This study also proposes a promising future research agenda to guide future advancements in the area of the Moroccan Fintech Ecosystem.

Title: Understanding Factors Influencing the Use of Health IoT Applications of Wearable Devices: Extending the Technology Acceptance Model (TAM)

Author: Maryam Mohamed Zainal (Arabian Gulf University)

Abstract: Healthcare facilities were pushed to implement Telehealth and online medical operations during the COVID-19 pandemic and took the public and medical workers under stress to adopt this type of new technology to keep the quality of services at the same

or better level, taking into consideration the patient's satisfaction as the main factor that affects the technology adoption and policies changing. This issue was based on arguments in multiple research conferences, and even between the decision-making people inside the organizations. To take into consideration this issue, we built a conceptual framework model based on multi-model founds concerning different factors that affected the adoption and had an impact on the Patient's satisfaction. The hypothesis of the newly built models will provide the relationship of some of the most founded factors, that had a link with the intention to adopt the Telehealth technology and a positive impact on the patient's satisfaction, keeping in mind that the COVID-19 anxiety considered as a moderator that affected the adoption of technology directly. To test the hypothesis, data is collected with both Quantitative and Qualitative methods, and expected that the data analysis will support the hypothesis adopted.

Title: The Influence of Information and Communication Technology Knowledge on the Soft Skills of Students

Author: Bambang Budi Wiyono (Universitas Negeri Malang) ; Ali Imron (Universitas Negeri Malang); Desi Eri Kusumaningrum (Universitas Negeri Malang); Khalip Musa (Sultan Idris Education University)

Abstract: In line with developments in information and communication technology (ICT), the demands for competencies that students must master also change. Students are not only required to have hard skills but also soft skills. This research aims to examine the influence of ICT mastery on students› skills. The research was carried out at the State University of Malang Indonesia, with a total sample of 156 students, through random sampling techniques. The research design uses descriptive correlational design. Data collection techniques use questionnaires and documentation. Data is analyzed using descriptive statistics, Product Moment Pearson correlation, and regression. The research results show that there is a significant influence of ICT mastery on students' soft

skills, both comprehensively and partially. Some components that show strong influence are personal effectiveness, flexibility, futuristic thinking, decision-making, problem-solving, creativity, teamwork, communication, and conflict management.

Title: Exploring the Relationship between Age Categories and Injury Distribution in Workplace Accidents

Authors: Sara Al-Barrak (University of Bahrain), Adel Al-Alawi (University of Bahrain)

Abstract: Occupational accidents can have a significant impact on both employees and work productivity and, in severe cases, can even lead to physical and mental issues or result in death. The worker's age is a crucial factor affecting the treatment and prevention of occupational accidents. Different age groups face varying levels of job risks and weaknesses. As workers age, physical and cognitive changes may alter how they react to occupational hazards and their risk of injury. This research aims to analyze workplace accident injury distribution among different age groups. The aim is to enhance safety and employee well-being by identifying age-specific risks and recommending prevention techniques. In this paper, we analyzed injury data from the Saudi Open Data Portal dataset by performing descriptive analysis, one-way ANOVA test, scatter plot, and then conducting thematic analysis on the reviews. The most injury groups are 20-29 years and 30-34 years. This is due to several factors, such as lack of experience, physical demands of the job, inadequate training, and potential complacency due to perceived invincibility or overconfidence.

Title: Designing a Collaborative E-Learning Environment and Its Impact on Female Seventh Intermediate Grade Students in Kuwait's Computer Competency Development

Author: Yasmin Almutawah (Arabian Gulf University)

Abstract: The current study's objectives are to create a cooperative e-learning environment and to look into how Kuwaiti female seventh graders are growing their computer skills. A

quasi-experimental design was adopted as the experimental method for one group. 25 female seventh-grade students in Kuwait, whose ages ranged from 11 to 13, participated in the study experiment, which was done during the first semester of the academic year (2019/2020). The second tool was a product evaluation card for the skillful performance of computer subject competencies in Excel. The third tool was a measure of the degree. The research tools included an achievement test to measure the cognitive competencies of students in the computer course, specifically the second unit which is digital processing. The researcher used the following programs: Moodle, Dreamweaver, Adobe Captivate, and Adobe Photoshop CS6, and applied the test tool before and after, as well as applying the product card and satisfaction measure tool. The validity and reliability of those tools were verified by expert examiners and statistical treatment, and the researcher then applied an e-learning environment with those programs. The study's findings showed that the pre- and post-test scores' means differed statistically significantly in favor of the post-application. The researcher presented a number of recommendations and study proposals in light of the findings.

Title: How Automation Can Enhance Teacher Innovation and Student Learning in Public Elementary Education

Authors: Noora Albinkhalil (Arabian Gulf University)

Abstract: Public elementary school teachers often find themselves bogged down by administrative tasks, leaving them with less time and energy to focus on teaching. This can lead to frustration and a lack of motivation, negatively impacting student learning. To enhance the quality of education for students, it is crucial to find ways to empower teachers to innovate and participate in essential school activities while still fulfilling their teaching duties. This research paper examines how automation can help public elementary school teachers achieve this goal. By automating administrative tasks, teachers can feel less burdened and free up valuable time to focus on teaching and other important

activities. This, in turn, benefits both teachers and students by improving the quality of education. To explore this topic, we conducted a comprehensive literature review and gathered perspectives from Bahraini Public Elementary teachers and administrators through surveys and interviews. This research is essential because it emphasizes the critical role that teachers play in shaping our society›s future and the need to support and empower them.


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