



## Scopus Indexing of IEOM Papers

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[IJIEOM](#)

## Photos of Past Events

- [2019 Bangkok](#)
- [2018 South Africa](#)
- [2018 Washington DC](#)
- [2018 Paris](#)
- [2018 Bandung-1](#)
- [2018 Bandung-2](#)
- [2017 Dhaka](#)
- [2017 Bogota](#)

## Virtual Platform –

**SCHED:** <https://engineeringforumieommtty.sched.com/>

**Submission Link** – <https://www.xcdsystem.com/IEOM/abstract/index.cfm?ID=1GbJu13>

**Registration Link:** <https://www.xcdsystem.com/IEOM/attendee/index.cfm?ID=4J0lyri>

**Host: University of Monterrey**

**Organized by: University of Monterrey and IEOM Society International**

"The IEOM Society International is now jointly organizing with the University of Monterrey an International Conference on Industrial Engineering and Operations Management in conjunction with **the Engineering Forum** of the UDEM School of Engineering and Technologies.

## KEYNOTE SPEAKERS – 6<sup>th</sup> NA IEOM Conference, Monterrey, Mexico, November 3-5, 2021

November 3, 2021



**Dr. José Ignacio Huertas**  
Professor, Escuela de Ingeniería y Ciencias Energy and Climate Change Research Group Tecnológico Monterrey



**Dr. Manuel Montoya**  
General Director Automotive Cluster of Nuevo León, A.C. Monterrey, Mexico



**Dr.-Ing. Patrick Dallasega**  
Industrial Engineering and Automation Free University of Bozen-Bolzano, Italy



**Michele Roccotelli**  
Assistant Professor Department of Electric and Information Engineering Faculty of Engineering Politecnico di Bari, Italy



**Eduardo Caballero Terrazas**  
Omnichannel and Customer Experience Manager Logrand Entertainment Group Monterrey, Mexico

November 4, 2021



**Alberto de Icaza**  
Head of External Affairs ZF Group Mexico



**Eric Ayanequi, CPMM, CRL**  
Director Operations Engineering Cintas Corporation Houston, Texas, USA



**David Pistrui, Ph.D.**  
Professor of Engineering College of Engineering & Science University of Detroit Mercy Detroit, Michigan, USA



**Prof. Jose Arturo Garza-Reyes**  
Professor and Head of the Centre for Supply Chain Improvement University of Derby, UK



**Franco Omar Ramos Langer**  
Channel Technical & Business Enablement Manager Siemens Digital Indus. Software Siemens DI Mesoamérica

November 5, 2021



**Dr. Jose Benito Flores-Juarez**  
Dean of Engineering and Technologies School University of Monterrey Monterrey, Mexico Past President – ASQ



**Dr. Josep Miquel Piqué Huerta**  
President of Technova Barcelona – La Salle Innovation Park Manager of Internationalization and Innovation – La Salle URL Barcelona, Spain



**Marco Antonio Vildoso Flores**  
Secretary for Advance FIT Engineering Studies San Sebastian University Santiago, Chile



**Dra. Natalia Navarrete**  
Chassis Technologies for EVs – Commercial Vehicles Metalsa Monterrey, NL 66600, Mexico



**Frank Nagorschel**  
Director Marketing and Talent Solution Crystal System Group Ltd.

IEOM Society International, a 501(c)(3) non-profit organization, is a premier international platform and forum for academics, researchers, scientists and practitioners to exchange ideas and provide insights into the latest developments and advancements in the fields of Industrial Engineering and Operations Management. IEOM has successfully organized international conferences in Dhaka (2010), Kuala Lumpur (2011), Istanbul (2012), Bali (2014), Dubai (2015), Orlando (2015), Kuala Lumpur (2016), Detroit (2016), Rabat (2017), Bristol, UK (2017), Bogota (2017), Bandung (2018), Paris (2018), Washington DC (2018), Pretoria (2018), Bangkok (2019), Pilsen (2019), Toronto (2019), Riyadh (2019), Dubai (2020), Detroit (2020), Harare (2020), Singapore (2021), Sao Paulo (2021) and Haiti (2021). IEOM Society is organizing the 6<sup>th</sup> North American International Conference on Industrial Engineering and Operations Management (IEOM) in Monterrey, Mexico, November 3–5, 2021. Due to the global pandemic, the event will be virtual and some onsite will be arranged based on the situations.

**PAPER (docx) – Paper / Abstract Template (MS Word Manuscript Required) – ABSTRACT (docx)**

Some the events and activities that are planned include: keynote speakers, global engineering education track, industry solutions track, women in industry and academia track, undergraduate student paper competition sponsored by Siemens, graduate student paper competition sponsored by Eaton, doctoral dissertation competition, masters thesis cCompetition, simulation competition, senior design project competition, undergraduate research competition, high school STEM competition, panel sessions, recognition and awards.

### Call for Papers Flyer

All papers are subject to double peer review. IEOM Template must be followed. **Accepted papers will be indexed in SCOPUS and EBSCO.** Presentation can be delivered with abstract only. Full paper is optional.

1st, 2nd and 3rd places will be selected for each competition. Certificate awards will be provided for the winners.

CLICK LINKS FOR GUIDELINES:

- [2017 Bristol, UK](#)
- [HS/MS STEM Poster Competition 2017](#)
- [2017 Morocco Photos](#)
- [2016 Detroit Photos](#)
- [2016 Malaysia Photos](#)
- [2015 Orlando Photos](#)
- [2015 Dubai Photos](#)
- [2014 Bali Photos](#)
- [2012 Istanbul Photos](#)

### NEWS

Binghamton University Join as a Partner University

### Upcoming Conferences

- [Czech Republic](#)
- [GCC in Riyadh](#)
- [Dubai](#)
- [San Paulo](#)
- [Rome](#)
- [Monterrey](#)
- [Singapore](#)

### Past Conferences

- [Bangkok, March 2019](#)
- [Pretoria, October 2018](#)
- [Washington DC, Sept. 2018](#)
- [Paris, July 2018](#)
- [Bandung, March 2018](#)

### IEOM 2017 Bogota

Marriott Hotel  
October 25–26,  
2017



1. Undergraduate Student Paper Competition Sponsored by SIEMENS
2. Undergraduate Research Competition
3. Senior Capstone Design Project Competition / Final Year Project (FYP) Competition
4. Graduate Student Paper Competition Sponsored by EATON Corporation
5. Master Thesis Competition
6. Doctoral Dissertation Competition
7. High School STEM Competition
8. Human Factors and Ergonomics Competition
9. Simulation Competition
10. Lean Six Sigma Competition
11. Supply Chain and Logistics Competition
12. Poster Competition



#### IEOM 2017 UK

UWE Business  
 School, Bristol  
 July 24–25, 2017

#### IEOM 2017 Morocco

Sofitel Hotel Rabat  
 April 11–13, 2017

#### IEOM 2016 Detroit

Lawrence Tech  
 Campus  
 September 23–25,  
 2016

#### IEOM 2016 Malaysia

JW Marriott KL Hotel  
 March 8–10, 2016

#### IEOM 2016 Detroit

Lawrence Tech  
 University  
 September 23–25,  
 2016

#### IEOM 2015 Orlando

Rosen Plaza Hotel  
 September 10–11,  
 2015

#### IEOM 2015 Dubai

Hyatt Regency Hotel  
 March 3–5, 2015

#### IEOM 2014 Bali

Grand Hyatt Hotel  
 January 7–9, 2014

#### IEOM 2012 Istanbul

Istanbul Technical  
 University  
 July 3–6, 2012

#### IEOM 2011 Kuala Lumpur

Season Four Hotel  
 January 22–24, 2011

#### IEOM 2010 Dhaka

IUT, Bangladesh  
 January 7–9, 2010

#### IEOM Conference Proceedings

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 (U.S. Library of  
 Congress)



Business School of  
 Autonomous University  
 of Nuevo Leon



Tecnológico  
 de Monterrey



CLAUT  
 CLUSTER AUTOMOTRIZ DE NUEVO LEÓN A.C.



RELIEVE (Latin American Network of  
 Energy Efficiency in Vehicles)

- [Bangkok 2019](#)
- [Pretoria 2018](#)
- [Washington DC 2018](#)
- [Paris 2018](#)
- [Bandung 2018](#)
- [Bogota 2017](#)
- [Bristol \(UK\) 2017](#)
- [Morocco 2017](#)
- [Detroit 2016](#)
- [Kuala Lumpur 2016](#)
- [Orlando 2015](#)
- [Dubai 2015](#)
- [Bali 2014](#)
- [Istambul 2012](#)
- [KL 2011](#)
- [Dhaka 2010](#)

**Conference Topics:** [CLICK Here](#)

### Special Tracks

- Global Engineering Education
- Industry 4.0
- Industry Solutions
- Smart Mobility
- Women in Industry and Academia
- Diversity and Inclusion
- Digital Transformation of Business Models

[Launch of Women in Industry and Academia Video](#)

[IEOM Women in Industry and Academia Forum](#)

### Panel Sessions

- Industry 4.0
- Global Engineering Education
- Women in Industry and Academia (WIIA)
- Lean Six Sigma
- Supply Chain Management and Logistics
- Diversity and Inclusion panel sponsored by Ford Motor Company

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### Tourist Attractions

- Fundidora Park / Foundry Park
- Paseo Santa Lucía, Monterrey – Riverwalk with boat tours & local art
- Macroplaza – Iconic plaza almost 100 acres in size
- Cerro de la Silla – Iconic mountain with steep hiking trails
- Parque La Huasteca – Mountain canyon expanse with camping
- Museum of Contemporary Art in Monterrey – Contemporary artwork & sculpture garden
- Parque chipinque
- National park for hiking & star gazing
- Planetarium Alfa – Planetarium & science/technology museum
- Museo de Historia Mexicana, Monterrey – Museum of northern Mexican history
- Metropolitan Center – San Pedro Garza Garcia
- Santiago center (typical town with restaurants)
- Bioparque Estrella (Ecological park in Allende – 1 hour distance)

- Cola de caballo (Beautiful landscape with a waterfall which seems horse tail located in Santiago, Nuevo León– 40 minutes distance)
- García grottoes. (Located in the García city– 1 hour distance)
- Obispado Museum with a central city viewpoint with the biggest Mexican Flag
- Matacanes (Ecological park for rappelling and climbing – 1 hour distance)
- Fashion drive shopping malls and restaurants

### Sponsors and Partners



### Important Dates

Paper and abstract submission deadline: September 30, 2021

Notification of acceptance: October 5, 2021

Registration deadline: October 15, 2021

Conference: November 3–5, 2021

### Honorary Chairs

**Dr. Jose Benito Flores–Juarez**

Dean of Engineering and Technologies School

University of Monterrey, México



**Dr. Bernardo Villarreal Celstino**

Engineering Department

University of Monterrey, México



**Dr. Luis Alberto Villarreal Villareal**  
Director of Business and Accounting School  
Autonomous University of Nuevo Leon, Mexico



**Dr. Ricardo Ambrocio Ramírez-Mendoza**  
Associate Dean of Research  
School of Engineering and Sciences  
Tecnológico de Monterrey



**Dr. Manuel Montoya**  
General Director of the Automotive Cluster of Nuevo León, A.C. (CLAUT)



President of the National Network of Automotive Industry Clusters  
Council Member of the Latin American Chapter of TCI Network



### Conference Chairs

**Dr. Luz María Valdez-de la Rosa**  
Engineering Department  
University of Monterrey, México



**Dr. Edgar M. A. Granda**  
Director of Masters in Engineering Management  
University of Monterrey, Mexico



**Dr. Jenny Díaz**  
Engineering Department  
University of Monterrey, México



**Dr. Ahad Ali**  
Associate Professor and Director of Industrial Engineering  
Lawrence Technological University, Michigan, USA



### **Technical Chairs**

**M.Sc. Karol Villarreal Zambrano**  
Engineering Department, UDEM



**Dr. Fernando González Aleu**  
Engineering Department, UDEM



**Dr. Teresa Verduzco**  
Engineering Department, UDEM



**Dr. Mónica Blanco**

Graduate Center, Business and Accounting School  
Autonomous University of Nuevo León, México



**Dr. Jorge de Jesús Lozoya-Santos**

School of Engineering and Sciences  
Tecnológico de Monterrey





**Dr. David Güemes-Castorena**  
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**Ricardo Apaez**  
Innovation Director  
Automotive Cluster of Nuevo Leon, A.C. (CLAUT)



**Osmar Ernesto Arandia Pérez**  
Director of Graduate Programs  
UDEM Business School. (DINE)



**William Henry Steinwascher Sacio**  
Director of Business Graduate Programs  
UDEM Business School. (DINE)



**Dr. José Alfredo Galván Galván**  
Director of the Division of Engineering and Sciences  
Engineering and Sciences School  
Tecnológico de Monterrey



**Dr. Jose Ignacio Huertas**

Member of Relieve

Professor of the Mechanical Engineering Department at Tecnológico de Monterrey.

Researcher of the Energy and Climate Change Research Group



**Dr. María Araiza**

Autonomous University of Nuevo León







Lean Six Sigma	Fernando González Aleu González	UDEM
Lean Six Sigma	Jesús Gerardo Cruz Alvarez	FACPYA
Logistics	Dr. Daniel Prato	RELIEVE
Logistics	Pamela Jocelyn Palomo Martínez	UDEM
Maintenance Services		
Manufacturing	Demófilo Maldonado Cortés	UDEM

- University of Monterrey, Mexico
- Business School of Autonomous University of Nuevo Leon, Mexico
- Tecnológico de Monterrey, Mexico
- Binghamton University, The State University of New York (SUNY), USA
- Chiang Mai University, Thailand
- Eastern Michigan University, USA
- Florida Polytechnic University
- Lawrence Technological University, Michigan, USA
- Prince Sultan University, Riyadh, Saudi Arabia
- University of Derby, UK
- University of the District of Columbia (UDC), Washington, DC, USA
- University of New Brunswick at Fredericton, Canada
- University of the District of Columbia, Washington, DC, USA
- Université De Lorraine, Nancy cedex – France
- Wayne State University, Detroit, Michigan, USA
- Universitas Sebelas Maret (UNS), Surakarta, Indonesia
- Universiti Tun Hussein Onn Malaysia (UTHM)
- EMI, Mohammed V University, Rabat, Morocco

- Cintas Corporation
- Eaton Corporation
- EFR Certification
- Ford Motor Company
- SIEMENS
- Tooling Tech Group

- The Automotive Cluster of Nuevo León (CLAUT)
- RELIEVE (Latin American Network of Energy Efficiency in Vehicles)
- African Engineering Education Association (AEEA)
- BKSTI: Agency for Cooperation of Higher Education of Industrial Engineering, Indonesia
- CATME, Purdue University
- Indian Institute of Industrial Engineering (IIIE)
- International Federation of Engineering Education Societies (IFEES)
- Pakistan Society of Industrial Engineering (PSIE)
- Society of Cost and Quality Engineers (SCQE)
- Robofest

Attendance Certificates will be provided for conference participants. Continuous Education Unit (CEU) is available. IEOM Society International will provide some awards and recognition

Contact: [info@ieomsociety.org](mailto:info@ieomsociety.org)

- Sao Paulo 2021
- Singapore 2021
- Harare 2020
- Detroit 2020
- Program – Dubai 2020
- Program – Riyadh 2019
- Program – Toronto 2019
- Program – Pilsen 2019
- Program – Bangkok 2019
- Program – Pretoria 2018
- Program – IEOM 2018 Washington DC
- Program – IEOM 2018 Paris
- Program – IEOM 2018 Bandung
- Program – IEOM 2017 Bogota
- Program – IEOM 2017 UK (Bristol)
- Program – IEOM 2017 Rabat, Morocco
- Program – IEOM 2016 Detroit
- Program – IEOM 2016 Kuala Lumpur
- Program – IEOM 2015 Orlando
- Program – IEOM 2015 Dubai
- Program – IEOM 2014 Bali
- Program – IEOM 2012 Istanbul
- Program – IEOM 2011 Malaysia
- Program – IEOM 2010 Dhaka

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Full papers will be indexed in Scopus and EBSCO.

**ID 1      Location of a Temporary Site to Earthquake Waste Separation. Case study: Mexico City**

Adriana Guadalupe Aguilar Montoya, Ángel Leonardo Bañuelos Saucedo, Flor Hernández Padilla

Mechanical and Industrial Engineering Division, School of Engineering, National Autonomous University of Mexico, Mexico City.

**ID 7      Factors Influencing Transport Productivity of a Freight Transport Company**

Felix Eduardo Bueno Pascual

José Luis Martínez Flores

Santiago Omar Caballero Morales, School of Logistics and Supply Chain Management, Universidad Popular Autónoma de Puebla, Avenida 9 Poniente 1712, C.P. 72410, Puebla, Puebla, México

Luis Alberto Barroso Moreno, Universidad de las Américas Puebla. Ex Hacienda Sta. Catarina Mártir S/N. San Andrés Cholula, Puebla. C.P. 72810. México

**ID 9      Business Plan Considerations for a Small Scale Mining Operation**

Mercy Manyuchi, Department of Operations and Quality Management, Faculty of Engineering and the Built Environment, University of Johannesburg, South Africa

N. Sukdeo, Department of Operations and Quality Management, Faculty of Engineering and the Built Environment, University of Johannesburg, South Africa

**ID 10 The Challenges Affecting the Reliability and Maintainability of Rolling Stock Operating in the Thabazimbi Channel**

Avumile Bera, Bheki Makhanya and Hannelie Nel, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa

**ID 11 Reliability analysis of wastewater treatment plants: Lesotho case study**

Mohasi Ntelekoa, Bheki Makhanya, Hannelie Nel, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa

**ID 12 The Importance of Post-mortems in Construction Projects**

Gavin Motswadi and Hannelie Nel, Postgraduate School of Engineering Management, University of Johannesburg,



**ID 13 Quality and Reliability Analysis of Long-hole Stope Slots: A Case Study at South Deep Gold Mine Based on Drilling and Blasting Practices**

M. Tshabalala and JHC. Pretorius, Postgraduate School of Engineering Management, University of Johannesburg, South Africa

**ID 14 Critical Success Factors as Enablers to Achieve Quality Management System Benefits: An Engineering Organisational Case Study**

Siyabonga Zwane, Annlizé Marnewick and Hannelie Nel, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa

**ID 15 Application of the Delphi Technique to Improve the Implementation of Cost of Quality in Industry**

B.B.S Makhanya, H. Nel, J.H.C. Pretorius, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa

**ID 16 Applications of Lean Manufacturing in a manufacturing company in South Africa**

Mpho Karen Masemola, Bheki Makhanya and Hannelie Nel, Department of Engineering Management, University of Johannesburg, Johannesburg, South Africa

**ID 17 Application of Fuzzy Logic for Evaluation of the Level of Social Acceptance of Traffic Noise Pollution Reduction Strategies in Western New York**

Daxing Zhao, Zichuan Liu, Anthony Runk, Johnson Adebayo Fadeyi, Department of Industrial & Systems Engineering, University at Buffalo, Buffalo, NY, USA

**ID 18 The Optimization of an Electric Vehicle (EV) for Improved Range**

Douglas W.E. Ferrier, College of Technology, Indiana State University, Terre Haute, IN 47809, USA

Patrick Appiah-Kubi, Program Director, Cloud Computing & Computer Networking, Cybersecurity Department, School of Cybersecurity & Information Technology, University of Maryland Global Campus

**ID 19 IIoT and Assisted Reality: Re-Shaping Traditional Robotic Cells**

E. N. Finley, S. M. DeWildt, N. A. MacArthur, Z. A. Rougeau, and E. I. Sarda, School of Engineering and Technology, Lake Superior State University, Sault Sainte Marie, MI 49783, USA

**ID 20 The Use of Electric Cars in Short-Notice Evacuations: A Case Study of California's Natural Disasters**

Roxanne Peterson and Mohamed A. Awwad, Industrial and Manufacturing Engineering Department, California Polytechnic State University, San Luis Obispo, San Luis Obispo, CA 93407, USA

**ID 21 Reciprocating sliding motion tribometer design**

Demófilo Maldonado Cortés, Dra. Laura Peña Parás, Mechanical and Electronics Department, University of Monterrey, Monterrey, México

Lizbeth Pérez Alvizo, Yadira Lisette Rangel Acosta, Jesús Ricardo Puente Martínez, Mechanical Engineering Students, Universidad de Monterrey, Monterrey, México

**ID 22 The Accuracy of Dynamic Simulation with the Use of TSB within JACK Siemens PLM software**

Xiaoxu Ji, Justo Hernandez, Emily Schweitzer and Alexa Littman, Department of Biomedical, Industrial and Systems Engineering, Gannon University, Erie, PA 16541, USA

**ID 25 Simulation of Texture Geometries to Optimize Tribological Properties**

Adrián Rodríguez, Luisa Martínez, Luis Miranda, School of Engineering and Technologies, Universidad de Monterrey, San Pedro Garza García, N.L. 66238, México

Laura Peña-Parás, Santiago Cruz and Demófilo Maldonado, Department of Mechanical and Electronic Engineering, Universidad de Monterrey, San Pedro Garza García, N.L. 66238, México

Martha Rodríguez-Villalobos, Department of Physics and Mathematics, Universidad de Monterrey, San Pedro Garza García, N.L. 66238, México

**ID 26      Diffusion of Facilities Management in an Emerging Market: Case of Sri Lanka**

Himal Suranga Jayasena, Department of Building Economics, University of Moratuwa, Moratuwa, Sri Lanka

Gowsiga Mahendrarajah, Department of Building Economics, University of Moratuwa, Moratuwa, Sri Lanka

**ID 27      Mobile Application Design for Managing Preventive Maintenance Information for Neonatal Respirators**

Jhonatan Junnior Anaya Medina, Diego Daniel Martínez Calderón, and José Antonio Taquíá Gutiérrez, School of Engineering and Architecture, University of Lima, Peru

**ID 29      Estimate the Potential in the Harvest of the Sacha Inchi Seed in A 12-Hectare Crop, Using the Decision-Making Model Under Uncertainty**

Luis Fernando Pedraza Ruiz, Department of Engineering, Fundación Universitaria de Popayán, Popayán, Colombia

Ingrid Milena Fernandez, Department of Engineering, Fundación Universitaria de Popayán, Popayán, Colombia

**ID 30      Statistical Analysis Methods changed from Traditional to a Continuous Annealing Heat Treatment in a Copper Wire Drawn Machine**

Francisco Antonio Perales Carballedo, UPAEP University, México

José Luis Martínez-Flores, UPAEP University, México

**ID 31      Risk Factors and Prediction of ST-segment Elevation Myocardial Infarction**

Joshua Emakhu, Leslie Monplaisir, Celestine Aguwa, and Sara Masoud, Department of Industrial and Systems Engineering, Wayne State University, Detroit, MI 48201, USA

Suzan Arslanturk, Department of Computer Science, Wayne State University, Detroit, MI 48201, USA

Egbe-Etu Etu, Department of Marketing and Business Analytics, San Jose State University, San Jose, CA 95192, USA

Joseph Miller, Department of Emergency Medicine and Internal Medicine, Henry Ford Hospital, Detroit, MI 48202, USA

**ID 33      Designing System Assessment of Supply Chain Management Performance in Bridge Project using SCOR**

Naniek Utami Handayani, Industrial Engineering Department, Diponegoro University, Prof. Soedarto, S.H., Semarang, 50275, Indonesia

Anita Mustikasari, Management Department, Yogyakarta State University, Colombo No. 1 Yogyakarta, 55281, Indonesia

Mochammad Agung Wibowo, Civil Engineering Department, Diponegoro University, Prof. Soedarto, S.H., Semarang, 50275, Indonesia

Chemink Sugondo Simanungkalit, Industrial Engineering Department, Diponegoro University, Prof. Soedarto, S.H., Semarang, 50275, Indonesia

**ID 34      AHP Method for Supply Chain Management Performance Measurement in Construction (Study Case: Bridge Project)**

Anita Mustikasari, Management Department, Yogyakarta State University, Colombo No. 1 Yogyakarta, 55281, Indonesia

Naniek Utami Handayani, Industrial Engineering Department, Diponegoro University, Prof. Soedarto, S.H., Semarang, 50275, Indonesia

Mochammad Agung Wibowo Civil Engineering Department, Diponegoro University, Prof. Soedarto, S.H., Semarang, 50275, Indonesia

Chemink Sugondo Simanungkalit, Industrial Engineering Department, Diponegoro University, Prof. Soedarto, S.H., Semarang, 50275, Indonesia

**ID 36 Local Content Requirements in the South African Renewable Energy Independent Power Producer Procurement Programme– With a Focus on Wind**

Andile Mgudlwa, Jan Harm C. Pretorius, Faculty of Engineering and the Built Environment, University of Johannesburg, Johannesburg, South Africa

**ID 37 A Study of the Watershed Management (Maintained and Restored) in Krueng Peusangan, Aceh Province, Indonesia**

Halim Akbar, Riyandi Praza and Muhammad Authar ND, Faculty of Agriculture, Universitas Malikussaleh, East Reuleut, Muara Batu, 24355 North Aceh Regency, Aceh, Indonesia

Jumadil Saputra, Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia

Abdul Talib Bon, Department of Production and Operations, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Johor Malaysia

**ID 38 Analyzing the Effect of Products and Human Resources Towards Customer Loyalty at Bank Aceh Syariah, Bireuen, Indonesia**

Damanhur, Falahuddin, Rani Puspitanigrum, Intan Magfirah, Faculty of Economics and Business, Universitas Malikussaleh, Lhokseumawe, Aceh Utara 24351, Indonesia

Jumadil Saputra, Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia

Abdul Talib Bon, Department of Production and Operations, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Johor Malaysia

**ID 39 Optimising and Digitalising the Technology-Based Electronic Justice in the 4.0 Era: A Judicial Reform**

Elidar Sari and Arif Rahman, Faculty of Law, Universitas Malikussaleh, Muara Satu, Kota Lhokseumawe, Aceh 24355, Indonesia

Jumadil Saputra, Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia

Abdul Talib Bon, Department of Production and Operations, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Johor Malaysia

**ID 40 A Study of Community Empowerment Strategy for Vulnerable Groups in Eradicating Poverty at Aceh Province, Indonesia**

Risna Dewi and Teuku Alfiady, Faculty of Social and Political Science, Universitas Malikussaleh, Muara Satu, Aceh Utara, Aceh 24355, Indonesia

Jumadil Saputra and Zikri Muhammad, Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia

Abdul Talib Bon, Department of Production and Operations, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Johor Malaysia

**ID 41 An Investigation of Biodiversity and Genetic Resources: The Importance of Legal Protection in Indonesia**

Yulia, Faculty of Law, Universitas Malikussaleh, Muara Satu, Kota Lhokseumawe, Aceh 24355, Indonesia

Jumadil Saputra, Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia

Abdul Talib Bon, Department of Production and Operations, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Johor Malaysia

**ID 42 Determining and Evaluating the Pyrolysis of Candlenut Shell as an Alternative Energy Sources**

Sulhatun, Muhammad, Suryati, Meriatna and Lukman Hakim, Department of Chemical Engineering, Faculty of Engineering, Universitas Malikussaleh, Muara Batu, Aceh Utara, Aceh, Indonesia

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Abdul Talib Bon, Department of Production and Operations, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Johor Malaysia

**ID 43 Chitosan–Alginat–Aloe Vera Biomembran for Wound Dressing Applications**

Suryati, Meriatna, Sulhatun and Puspita Sari, Department of Chemical Engineering, Faculty of Engineering, Universitas Malikussaleh, Muara Batu, Aceh Utara, Aceh, Indonesia

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**ID 44 Identifying the Effectiveness of Business Incubator Training among UPN Veteran Jakarta Undergraduate Students: An Application of Randomized Controlled Trial Approach**

Widayani Wahyuningtyas, Department of Nutrition, Faculty of Health Sciences, Universitas Pembangunan Nasional Veteran Jakarta, Depok, Daerah Khusus Ibukota Jakarta 12450, Indonesia

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Abdul Talib Bon, Department of Production and Operations, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Johor Malaysia

**ID 45 Analysis of the Adoption of EVs and Charging Infrastructure in Mexico**

Adrian Ramirez–Nafarrate, Mitchell Ruiz Martinez, and Juan C. Grayeb Pereira, Facultad de Ciencias Económicas y Empresariales, Universidad Panamericana, Zapopan, Jalisco 45010, Mexico

**ID 46 Description of the Electrification and Drinking Water Processes in Non–Interconnected Zones (ZNI) and Construction of Explanatory Structures of these Processes in a Particular Community**

Iván David Sánchez, Maria Fernanda Flórez, Luisa Fernanda Jimenez, Laura Milena Cárdenas, Industrial Engineering Department, University of Antioquia, Medellín, Colombia

**ID 49 Familiness from the approach of Participation, Essence and Identity in Family Businesses of two municipalities in the Northern Zone of the State of Mexico: An Empirical Approach**

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Zugaide Escamilla Salazar, Universidad Autónoma del Estado de México, Centro Universitario Atlacomulco

Carlos Robles Acosta, Universidad Autónoma del Estado de México, Centro Universitario Ecatepec

**ID 55 Building Models Based on Artificial Neural Networks to Predict Customer's Purchase Frequency**

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Carlos Hernández, Departamento de Procesos Industriales, Universidad Católica de Temuco, Temuco, Chile

**ID 56     Applying Machine Learning Algorithms to Predict the Interest in Entrepreneurship among Engineering Students**

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**ID 57     Effects of Technological Factors and Mental Workload in Online Higher Education Professors on Their Academic Performance**

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**ID 58     Responsible consumption as a driver for remanufactured products**

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**ID 59     Mapping of New Venture Creation Publication Themes: A 35-Year Overview**

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**ID 60     Rural Entrepreneur Publication: Insights from Bibliometric Application between 1985 and 2020**

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Karl Hain and Christoph Rapp, Faculty of Mechanical Engineering and Mechatronics, DIT Deggendorf Institute of Technology, 94469 Deggendorf, Bavaria, Germany

**ID 68 Four Decades of the Consumer Culture Publication: A Bibliometric Overview**

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Allie Lin, Stanford Online High School, Redwood City, CA 94063, USA

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Dinalara D Butarbutar and Mustika Mega Wijaya, Department of Law, Faculty of Law Pakuan University, Bogor, Indonesia

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Christian Reich López, María Mayela Terán Cázares, Jesús Fabián López Pérez, Mónica Blanco Jimenez, Universidad Autónoma de Nuevo León, Facultad de Contaduría Pública y Administración Av. Universidad S/N, Col. Ciudad Universitaria, San Nicolas de los Garza, Nuevo León, México.

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Ph.D. José Luis Martínez Flores, Faculty of Industrial, Logistics and Manufacturing, Popular Autonomous University of Puebla State, México

Eng. Carlos Mario Leal Garza, Industrial and System Engineer, University of Monterrey, México.

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Rafael Gonzalez-Parra, Arturo Barba-Pingarrón, Raúl Valdez- Navarro, Alba Covelo-Villar, Miguel A. Hernández-Gallegos, Centro de Ingeniería de Superficies y Acabados (CENISA). Departamento de Ingeniería de, Diseño y Manufactura. División de Ingeniería Mecánica e Industrial. Facultad de Ingeniería., UNAM. 2o Nivel. Edificio "T" (Bernardo Quintana), Circuito Exterior, Ciudad Universitaria, Coyoacan, 04510, Ciudad de México

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**ID 93      Incorporated Fuzzy Robust Principal Component Analysis with Context-Dependent Data Envelopment Analysis for an Advanced Decision Making Process**

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Mario Alberto Del Valle Velez, Vicepresidente, Asociación de Exbecarios de Mexico en Japón, Miguel Hidalgo, Ciudad de México, Mexico

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Bruna Meire Kuhl Gomes, Cassiana Teza, Gabriel Cassino, Rodrigo Luiz Gigante, Henrique Ewbank, Facens University, Sorocaba, SP, Brazil

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Miguel Rocha, Edgar Barbosa and Carlos Gonzalez, Department of Industrial Engineering, Tecnológico de Monterrey, Querétaro, México

Cesar Vega, Tecnológico de Monterrey, Life and Career Center, Tecnológico de Monterrey, Querétaro, México

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Francisco Cunha, FSC Consulting, Portugal

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Yohanes Sugiyanta, Joko Suyono, Narotama University, Surabaya, Indonesia

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K.M.N. De Abrew and Dr. Ruwan Wickramarachchi, Department of Industrial Management, University of Kelaniya, Sri Lanka

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Khathutshelo Mushavhanamadi, M. F. Hlengani, Department of Quality and Operation Management, University of Johannesburg, South Africa

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Khathutshelo Mushavhanamadi, N.Phatlhane, Department of Quality and Operation Management, University of Johannesburg, South Africa

**ID 123 Standard Model Baby Incubator Product Development with Quality Function Deployment (QFD) Method and Simulation Application**

Waluyo Prasetyo, Rina Sri Wulandari, Untung Usada, Agus Rachmad Purnama, Muhammad Mansur Yafi, Achmad Fauzi Alfari, Industrial Engineering Department, Universitas Nahdlatul Ulama Sidoarjo, Sidoarjo, Indonesia

**ID 124 Design Of Feasibility Study Parameters For Selection Of B3 Waste Treatment Location In Bangkalan District**

Rina Sri Wulandari, Waluyo Prasetyo, Luqman Hakim, Taqwanur, Industrial Engineering Department, Universitas Nahdlatul Ulama Sidoarjo, Sidoarjo, Indonesia

Medya Ayunda Fitri, Chemical Engineering Department, Universitas Nahdlatul Ulama Sidoarjo, Sidoarjo, Indonesia

**ID 125      Business process reengineering in public sector organizations: Systematic literature review of critical success factors**

A.A.T.M. Amarasinghe, Ruwan Wickramarachchi, Department of Industrial Management, University of Kelaniya, Kelaniya, Sri Lanka

**ID 126      A Cost–Benefit Approach to Thermo–Processing Equipment Safety Regulation Analysis**

Motshumi Joseph Diphare, Hannelie Nel and Jan–Harm C. Pretorius, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa

**ID 128      Data Driven Supply Chain Optimization a Case Study**

Sandra N. Garza Almazán and Edgar M.A. Granda Gutiérrez, Department of Engineering, Universidad de Monterrey, Monterrey, Nuevo León 66238, México

**ID 129      Determinant Factors for the Sustainability of SMEs in the Northern Mexican Restaurant Sector: A Documentary Perspective**

Evelin Anahí Torres–Torres; Alfonso López–Lira Arjona; César Eduardo Perales Martínez, Ciencias económico y Administrativo, Facultad de Contaduría Pública y Administración, Av. Universidad s/n Cd. Universidad, San Nicolás de los Garza, Nuevo León, México.

**ID 130      An Instrument to Measure Work Stress on Mexican Academic Staff**

César Eduardo Perales Martínez, María Mayela Terán Cázares and Evelin Anahí Torres Torres, Centro de Desarrollo Empresarial y Posgrado de FACPya, Universidad Autónoma de Nuevo León, Monterrey, México

**ID 131      Analysis of Building Construction in a Colombian Case from a Total Quality Management Perspective**

Julián David González Zapata, Bertha Viviana Ruales Guzmán, Lina Patricia Velasquez Mora, Department of Computer and Industrial Engineering, Universidad Nacional de Colombia, Bogotá D.C., Colombia

Laura Milena Hernández Castañeda, Department of Civil and Agricultural Engineering, Universidad Nacional de Colombia, Bogotá D.C., Colombia

**ID 132      A proposal for deep learning model development for pyuria detection**

Sergio Eduardo Anaya Alvarez, Catalina de León Santos, Azael Jesus Cortes Capetillo, Jorge de J Lozoya–Santos, David Güemes–Castorena, Department of science and manufacturing, Tecnológico de Monterrey, School of Engineering and Sciences, Monterrey, N.L. 64849, México

**ID 133      Understanding Makerspaces' Goals and Success**

Laura A. Valadez Rojas and Azael Capetillo, School of Engineering and Sciences, Tecnológico de Monterrey, Av. Eugenio Garza Sada 2501, Monterrey 64849, NL, México

**ID 134      Digital Competencies of University Teachers in Universities in the Times of Covid–19, Cusco–Perú, 2020**

Elena Sonia Paula Espinoza Ríos, Felipe Néstor Gutarra Meza, Miriam Ingrid Espinoza Vilca Escuela Académico Profesional de Sistemas e Informática, Universidad Continental, Av. San Carlos 1980, Urb. San Antonio, Huancayo, Perú

Vilma Canahuire Montufar, Escuela Profesional de Ciencias Administrativas, Universidad Nacional de San Antonio Abad del Cusco, Cusco, Perú

**ID 135      Optimization of the Signal Noise Ratio index using Simultaneous Perturbation Stochastic Approximation Algorithm**

Juan Carlos Castillo García, Jesús Everardo Olguín Tiznado, Faculty of Engineering, Architecture, and Design, Autonomous University of Baja California, Carretera Transpeninsular Ensenada – Tijuana No. 3917 Colonia Playitas, 22860 Ensenada, Baja California México.

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**ID 136      Factors Affecting the Fresh Flower Cold Chain Logistics**

Jirapat Wanitwattanakosol and Yuqin Zhou, College of Arts, Media and Technology, Chiang Mai University, Chiang Mai, 50200, Thailand

**ID 137      A layout design using a production line balancing approach**

Marlene Brás, Department of Economics, Management, Industrial Engineering and Tourism, University of Aveiro, Aveiro, Portugal

Ana Moura, Department of Economics, Management, Industrial Engineering and Tourism, GOVCOPP – Systems for Decision Support Research Group, University of Aveiro, Aveiro, Portugal

**ID 138      Proposals to Strengthen the Implementation of Quality Management in Higher Education**

Catalina Torregrosa Morales, Bertha Viviana Ruales Guzmán, Brayan Camilo Vega Fuentes, Daniel Enrique Saavedra Castañeda, Systems and Industrial Engineering Department, Universidad Nacional de Colombia, Bogotá, Colombia

**ID 139      Application of Agile Methodologies for Design and Development of HealthTech products: Bio Testing Device**

Catalina de León Santos, Sergio Eduardo Anaya Alvarez, Azael Jesus Cortes Capetillo, David Güemes–Castorena, Jorge de–J Lozoya–Santos, Escuela de Ingeniería y Ciencias, Tecnológico de Monterrey, Monterrey, N.L. 64849, México

**ID 140      Science Fiction and Innovation: Prototyping the Future from Uncertainty**

Sinai Galeana, Azael Capetillo and David Güemes–Castorena, School of Engineering and Sciences, Tecnológico de Monterrey, Av. Eugenio Garza Sada 2501 Sur, Tecnológico, 64849 Monterrey, N.L, México

**ID 141      Design of an Electronics Swapping System for Electric Guitars**

Helgi S. Waage–Delgadillo, Rafael González–Parra, Alba Covelo, Miguel A. Hernandez, Raúl Valdéz and Arturo Barba–Pingarrón, Surface Engineering Center (CENISA) – Engineering Faculty, National Autonomous University of Mexico, Circuito Exterior. Ciudad Universitaria. 04510 CDMX

Jesús M. Dorador González, National School of Higher Studies – Engineering Faculty, National Autonomous University of Mexico, Juriquilla, Querétaro

**ID 142      Analysis of the Correlation Between Imposter Syndrome and Grade Level of Online High School Students**

Ester Weinhardt, Stanford Online High School, Redwood City, 94063 CA

**ID 144      Evaluation Of The Feasibility Of Centralization Of Warehouses In The Construction Company VIDUSA**

Ana Paula Ocañas Morales, Brando M. Rodríguez Vallejo, Ricardo C. Lozano Cantú, Business Management Engineering, Industrial and Systems Engineering, Industrial and Systems Engineering, University of Monterrey, México

Refugio Chávez Hernández, Doctorate in Supply Chain Management and Logistics, University of Monterrey, México.

**ID 145      Strategic Value Propositions to Increase Competitiveness in a Tourism Cluster**

Teresa Verduzco–Garza, Industrial Engineering, Engineering School, University of Monterrey UDEM, San Pedro Garza Garcia, NL, México

J. Gerardo Rodríguez Beltrán and José Pablo Nuño de la Parra, Popular Autonomous University of Puebla UPAEP Puebla, Pue, Mexico

**ID 146      Establishing Risks of Food Supply Chains for Small and Medium Food Manufacturing Companies in Malaysia**

Siti Aishah Hadawiah Ahmad and Mohd Nizam Ab Rahman, Department of Mechanical and Manufacturing, The National University of Malaysia, Selangor, Malaysia

Ariff Azly Mohamed, Department of Business and Management, Universiti Teknologi Mara, Selangor, Malaysia

**ID 147      The Impact of the Use of Power on Supplier Integration in Different Cultural Settings: A Conceptual Investigation**

Tesfaye Tolu Feyissa, Assistant Professor, Defense University, Bishoftu, Ethiopia.

Anjali Sharma, Dept. of Industrial & Management Eng, Indian Institute of Technology–Kanpur, U.P. –208016, India

R.R.K. Sharma, Professor, Department of Industrial and Management Engineering, Indian Institute of Technology, Kanpur, 208 016, UP, India.

**ID 148    Total Quality Management, Just In Time And Its Impact On Supply Chain Management In Manufacturing Companies**

Diana Maricela Vasquez Treviño, Mónica Blanco Jiménez, Jesús Fabián López Pérez, Sergio Armando Guerra Moya, Facultad de Contaduría Pública y Administración , Universidad Autónoma de Nuevo León, Cd. Universitaria, N.L. México

**ID 149    Real fuel consumption in the main logistic corridors of Colombia**

José I. Huertasa and Oscar Serrano–Guevaraa, Energy and Climate Change Research Group, School of Engineering and Sciences, Tecnológico de Monterrey, Monterrey, Mexico

Oscar Serrano–Guevaraa, Energy and Climate Change Research Group, School of Engineering and Sciences, Tecnológico de Monterrey, Monterrey, Mexico

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Daniel Pratoc, Innovation department, Latin American Center for Innovation in Logistics – CLI – Logyca, Bogotá, Colombia

Lina Tabaresd, Connected Fleet Department, Michelin, Bogotá, Colombia

**ID 150    Designing a Data Governance Model to Implement GDPR in Sri Lankan Enterprises**

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Dr. Ruwan Wickramarachchi, Senior Lecturer, Department of Industrial Management, Faculty of Science, University of Kelaniya, Sri Lanka

**ID 151    The Factors that Impact the Internationalization of the Artisanal SMES of the Citrus Region of the State of Nuevo León (Theoretical Framework)**

Yamileth Aguilar García and Diana Maricela Vasquez Treviño, Facultad de Contaduría Pública y Administración, Universidad Autónoma de Nuevo León, Ciudad Universitaria, San Nicolás de los Garza, NL.

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Juan Patricio Galindo Mora, Facultad de Contaduría Pública y Administración, Universidad Autónoma de Nuevo León, Ciudad Universitaria, San Nicolás de los Garza, NL

**ID 152    The Effect Of Work Discipline And Motivation On Employee Performance In Commercial Department Pt. Smartfren Telecom Tbk Jakarta**

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Nurul Giswi Karomah, Business Administration Departement Polytechnic LP3I Jakarta, Indonesia

**ID 153 Participatory Ergonomics in a Manufacturing Company in Peru**

María Teresa Noriega Aranibar and Bertha Díaz Garay, Industrial Engineering Program Universidad de Lima, Surco, Lima, Perú

**ID 161    The Influence of Entrepreneurial Orientation on Competitive Advantage and Company Performance**

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Wahyu Astutik, College of Administrative Sciences Panglima Sudirman Surabaya



Dodik Wahyono, College of Administrative Sciences Panglima Sudirman Surabaya

Muhammad Arifin, College of Administrative Sciences Panglima Sudirman Surabaya

Moh. Mukhrojin, College of Administrative Sciences Panglima Sudirman Surabaya

**ID 162     Evaluation of an electric go-kart with lithium-ion and nickel-metal hydride batteries**

Gustavo Alvarez-Coello, ERGON – Automotive Engineering Research and Development Center, Universidad del Azuay, Cuenca, Ecuador

Andrés Idrovo-Pauta

Daniel Cordero-Moreno

Efrén Fernández-Palomeque

**ID 163     Development of E-Learning Learning Media Using Google Classroom In Indonesian Subjects (Biographical Text)**

Misbahul Munir, Universitas Negeri Jakarta

Endry Boeriswati, Universitas Negeri Jakarta

Gusti Yarmi, Universitas Negeri Jakarta

**ID 164     Searching for Key Topics around Artificial Intelligence and Machine Learning as a Process Optimization Driver**

Federico Walas Mateo, Universidad Nacional Arturo Jauretche, Buenos Aires, Argentina

Andres Redchuk, Universidad Nacional de Lomas de Zamora. Facultad de Ingeniería. Buenos Aires, Argentina. ETSII.  
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**ID 165     Performance and Emission Characteristics of Diesel-Biodiesel-Ethanol Blends in a Heavy-Duty Compression Ignition Engine at Simulated High Altitudes**

Julio C. Cuisano and Soín E. Puma, Mechanical Department of Engineering Faculty, Pontificia Universidad Católica del Perú, Lima, Perú

**ID 166     Developing a Performance Measurement Framework for Logistics Service Providers**

Paitoon Varadejsatitwong, Thammasat Business School, Thammasat University, Bangkok, Thailand

Ruth Banomyong, Dean, Thammasat Business School, Thammasat University, Bangkok, Thailand

Puthipong Julagasigorn, Thammasat Business School, Thammasat University, Bangkok, Thailand

**ID 168     Methodology to assess sustainable mobility in LATAM cities**

José I. Huertas, Oscar S. Serrano, Antonio E. Mogro, and Duván A. Alvarado, School of Engineering and Science, Tecnológico de Monterrey, Monterrey, Mexico

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Xanin García and Roberto Castañeda, Instituto Municipal de Planeación Saltillo-IMPLAN, Saltillo, México

**ID 169     Measurement of the adaptability of practical learning units to the non-school modality**

Arlenthe Yari Aguilar Villarreal, Cinthya Rocío Ramos Jiménez, Héctor Fabián Dávila García, Enrique Estanislao Ortiz Fuentes, Universidad Autónoma de Nuevo León, Facultad de Ciencias Químicas, Ave. Universidad S/N Cd. Universitaria, San Nicolás de los Garza Nuevo León

**ID 170     Digital Age Education and its Applications in Higher Education**

Nisaul Barokati Seliro Wangi, Universitas Islam Darul U'lum Lamongan

Winci Firdaus, Badan Pengembangan dan Pembinaan Bahasa

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Yogi Purnama, Universitas Indraprasta PGRI

Edwar Kemal, STKIP PGRI Sumbar

**ID 171     Android–Based Interactive Multimedia Development Integration Of Poetry Text Material With Islamic Values**

Tuti Kusniarti, Universitas Muhammadiyah Malang

Dina Putri Juni Astuti, IAIN Bengkulu

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**ID 172     Investigation of Early Study Stage for Young Researcher**

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**ID 173     The Pyramid of Political Power as Mataraman Community Identity in Kediri Indonesia**

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Darsono Wisadirana, Brawijaya University Malang

Sanggar Kanto, Brawijaya University Malang

Hilmy Mochta, Brawijaya University Malang

Wawan Sobari, Brawijaya University Malang

**ID 174     The Influence Of “Ruang Guru” Platform Learning Model On The Learning Outcomes**

Nisaul Barokati Seliro Wangi, Universitas Islam Darul U’lum Lamongan

Deden, Balikpapan University

Nurlia Latipah, IAIN Bengkulu

Ikke Wulan Dari, IAIN Bengkulu

Akhirudin, IAIN Bengkulu

**ID 175     Development of Learning Media Text Tutorials Video–Based Procedures Screencast O Matic**

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Nisaul Barokati Seliro Wangi, Universitas Islam Darul U’lum Lamongan

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Suantoko, Universitas PGRI Ronggolawe

**ID 176     Development Of Text Negotiation Learning Using Edmodo**

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Idhofiyatul Fathin, Sekolah Tinggi Ilmu Ekonomi Semarang

Muthia Damayanti, Politeknik Negeri Padang

**ID 177     Execution of Information Technology (IT) in Education Marketing**

Yusuf Hamidi, STAI Darussalam Krempyang Nganjuk, Indonesia

Natoil, Sekolah Tinggi Ilmu Ekonomi Semarang

Siti Rochmah, Sekolah Tinggi Ilmu Ekonomi Semarang

Fidyah Yuli Ernawati, Sekolah Tinggi Ilmu Ekonomi Semarang

Siti Aniqoh Shofwani, Sekolah Tinggi Ilmu Ekonomi Semarang

**ID 178     Finding the path to smart mobility: Design of bike routes for university districts**

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Ph.D. José Ignacio Huertas Cardozo, Escuela de Ingeniería y Ciencias, Tecnológico de Monterrey, Monterrey, México

Ph.D. Monica Moreno, Decision Sciences Department, MacEwan University, Edmonton, Canada

Juan Alberto Estrada García, Ingeniería en Gestión Empresarial, Universidad de Monterrey, Monterrey, México

**ID 179     Managing Islamic Elementary Students' Reading Skill through SQ3R Strategy**

Yuli Ani Setyo Dewi, Sekolah Tinggi Ilmu Tarbiyah NU Al Hikmah Mojokerto

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Vita ika sari, universitas pancasakti tegal

**ID 180     Management of Information and Communication Technology (ICT) Learning Packages**

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Syihaabul Huda, Institut Teknologi dan Bisnis Ahmad Dahlan Jakarta

Asrizal Wahdan Wilsa, STKIP NU Indramayu

Kiftian Hady Prasetya, Universitas Balikpapan

Ari Musdolifah, Universitas Balikpapan

**ID 181     Coordinating Gamification in a Blended Learning Entrepreneurship Course: Discussing Student Learning and Achievement Motivation**

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Veni Nurpadillah, IAIN Cirebon, Indonesia

Yunita Suryani, Universitas PGRI Ronggolawe, Indonesia

Ninik Mardiana, University Dr. Soetomo Surabaya, Indonesia

**ID 182 Arranging the Reliable and Valid Assessment's Instrument for Business Model Canvas Comprehension**

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Ratna Nurdiana, Universitas PGRI ADIBUANA Surabaya

Ahmad Hariyadi, IKIP PGRI Bojonegoro

**ID 183 Information Systems in Digital Transformation: Practical case in an automotive industry company and Critical Success Factors**

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**ID 184 New developments on the geometry of the Traveling Salesperson Problem**

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**ID 185 Impact of Material and Labour Cost Overruns on Contractors' Budgeted Cost: The Case of Building Construction Projects in Sri Lanka**

R.D.W.W. Jayathilaka, K.G.A.S. Waidyasekara and D.C. Sirimewan, Department of Building Economics, University of Moratuwa, Sri Lanka

**ID 186 Application of Lean Manufacturing tools to decrease non-conforming products in a zinc refinery**

Alberto Flores-Pérez, Juan Quiroz-Flores and Martín Collao-Díaz, Facultad de Ingeniería y Arquitectura, Universidad de Lima, Lima, Perú

Iván De Fuentes Pérez, Independent mechanical project consultant, Industrial Engineering Program, University of Applied Sciences, Perú

**ID 187 Technology Acceptance Model to Solve Mobile Payment Problem for SMEs**

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**ID 188     Technology Acceptance Model to Solve E-Learning Problem for Teacher in School**

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**ID 189     Human Resources Management System Model Base on Open Source and Cloud Computing for SMEs**

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**ID 192     Measuring the Risk Level of Employees for COVID-19: A Case in Government Sector**

Anthony Sanchez, Jerome Liwanag, Wajid Mariño, Ma. Janice J. Gumasing, School of Industrial Engineering and Engineering Management, Mapua University, Muralla St., Intramuros, Manila, 1002

**ID 193     A Risk Level Assessment of Food Delivery Riders for COVID-19**

Lorenzo T. Caday, Krisanta Ana E. Draculan, Kianna Denise C. Villapando, Ma. Janice J. Gumasing, School of Industrial Engineering and Engineering Management, Mapua University, Muralla St., Intramuros, Manila, 1002

**ID 194     Time duration of a driving cycle and its representativeness**

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Luis F. Quirama and Juan E. Tibaquirá, Mechanical engineering department, Universidad Tecnológica de Pereira, Pereira, Colombia

José I. Huertas, Mechanical engineering department, Tecnológico de Monterrey, Monterrey, México

**ID 195     Increasing Profitability Through the Implementation of an Integrated Balance Score Card –Objectives Key Results Model in a Digital Agency: The Peruvian Case**

Iyari Rojas–Chipana, Nicolas Aguilar–Pelizzoli, Juan Carlos Quiroz–Flores, Martín Collao–Díaz and Alberto Flores–Perez, Facultad de Ingeniería y Arquitectura, Universidad de Lima, Lima, Perú

**ID 196     Order Picking Improvement through Storage Assignment Optimization and Human Error Identification: A Case Study of Automobile Seat Manufacturer**

Niniet Indah Arvitrida, Muhammad Andhika Adiwidya, Department of Industrial and Systems Engineering, Institut Teknologi Sepuluh Nopember, Surabaya 60111, Indonesia

**ID 197     An Overview of the Factors Affecting the E-commerce Readiness of SMEs in Sri Lanka**

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**ID 198     An integrated and comprehensive tool to assess urban mobility strategies**

Jose I. Huertas and Maria E. Huertas, School of Engineering and Science, Tecnológico de Monterrey, Av. Garza Sada 2501, Mexico

**ID 199     Factors of the E-commerce that are Directly Related to the Consumer's Purchase Motivation in Nuevo León, Mexico**

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**ID 200     Determination of Factors for Sustainability in Resilient Supply Chain in the Automotive Component Manufacture Industry**

Carolina Solís Peña, Valentín Lara Jiménez, Juan Manuel Hernández Ramos & Mónica Blanco Jiménez, Industrial Engineering Administration, University of Nuevo Leon, San Nicolás de los Garza, Nuevo León, 66460, México

**ID 203     Quality 4.0: Entity Relationship Model for inspection and repair processes in Aerospace domain**

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Samuel Bassetto, Department of Mathematics and Industrial Engineering, École Polytechnique de Montréal, Montréal, Québec, Canada

**ID 204     The Production Planning Practices and Techniques Impact on Operational Costs in South African Manufacturing industries**

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Bakama Eric Mikobi, Quality and Operations Management Department, University of Johannesburg, South Africa

Dr. Khathutshelo Mushavhanamadi, Quality and Operations Management Department, University of Johannesburg, South Africa

**ID 205     The Impact of Adopting Total Quality management Practices on South African SME's Performance**

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Bakama Eric Mikobi, Quality and operations management Department, University of Johannesburg

Dr. Khathutshelo Mushavhanamadi, Quality and operations management Department, University of Johannesburg

**ID 206     How can BPM and Lean practices accelerate digital transformation? Evidence based on a practical case**

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**ID 207     Smart Warning system for the Rotating parts based on Cloud Computing**

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**ID 208     Bond Graphs for Manufacturing Control: Model's Improvement**

Arthur Sarro Maluf, Production Engineering Department, Federal University of São Carlos, São Carlos, Brazil

Juliana Keiko Sagawa, Production Engineering Department, Federal University of São Carlos, São Carlos, Brazil

Maíra Martins Da Silva, Mechanical Engineering Department, University of São Paulo, São Carlos, Brazil

**ID 209 Digitizing a Daily Continuous Improvement System: A Practical Case in a Portuguese Company**

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Juliana Salvadorinho, Department of Economics, Management, Industrial Engineering and Tourism (DEGEIT), University of Aveiro, Aveiro Portugal

Leonor Teixeira, Institute of Electronics and Informatics Engineering of Aveiro (IEETA), Department of Department of Economics, Management, Industrial Engineering and Tourism (DEGEIT), University of Aveiro, Aveiro Portugal

**ID 210 Optimization of shift scheduling for medical staff: an application in the Outpatient Servuccion**

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**ID 211 Process Improvement for High Precision Components at Medical Devices Company (MDC)**

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**ID 212 IoT enabled indoor air quality monitoring system for sustainable health management in an industry laboratory, a case study**

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Matias Sanchez, Electronics Engineering Department, Universidad Politécnica y Artística del Paraguay, Asunción, PARAGUAY

Walter López, Industrial Safety Management, PETROPAR, Villa Elisa, PARAGUAY

**ID 213 Processed Food Imports that Improve Company Competitiveness in Emerging Countries**

Monica Blanco-Jimenez, Angelica Tejeda-Villanueva, Diana M. Vasquez-Treviño, Maria de Jesus Araiza Vazquez, Facultad de Contaduría Pública y Administración, Universidad Autónoma de Nuevo León, San Nicolas de los Garza, Nuevo León, México

**ID 214 Productivity Improvement in a Sugar Company: A Lean management approach**

Maximiliano Arroyo Ulloa, Faculty of Engineering, Universidad Católica Santo Toribio de Mogrovejo, Chiclayo, Peru

Lucio Llontop Mendoza, Universidad Católica Santo Toribio de Mogrovejo, Chiclayo, Peru, Lima, Peru

Javier Beltran Reyes, Business Intelligence Department, Comercio-Group, Lima, Peru

**ID 215 Making Monterrey an example of sustainable mobility based on electric bicycles**

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**ID 217 Supporting digital transformation using Business Process Management : Proposal of a digital tool**

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**ID 218    A new model for identifying, capturing and transmitting knowledge: A proposal based on practical experience**

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**ID 219    CONCENTRACIONES DE CALCIO Y ALGINATO PARA LA ESFERIFICACIÓN INVERSA**

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**ID 220    PROCESS TO DELAY HYPALON WASTAGE**

Resista Vikaliana, UTHM Indonesia  
RAJA ZURAIDAH RAJA MOHD RASI UTHM, Malaysia  
I Nyoman Pujawan, Sepuluh Nopember Institute of Technology Indonesia  
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**ID 221    WINE PRODUCTION WITH FROZEN GRAPES**

Esra Agca Aktunc, Kadir Has University, Turkey

**ID 222    Electromagnetic and Thermal Performances of Multi U and V Layer Magnet of Permanent Magnet Assistant Synchronous Motor for Electric Vehicles**

Bui Minh Dinh, Hanoi University of Science and Technology

Ho Manh Tien, Faculty of Electrical-Electronic Engineering, University of Transport and Communications (UTC)

**ID 223    RRU 5G 8T8R Heatsink Embedded Vapor Chamber and Heat pipe Assemblies**

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Duc-Thinh Nguyen, Quoc Hung Nguyen and Van Manh Khong, Department of Mechanical Engineering, Viettel High Technology Industries Corporation, Hanoi, Vietnam.

**ID 224    Simulation and Analysis of the Actuation System in a Camless Piston Engine**

Andrés M. Sada-Regalado, David F. Novella-Rodriguez and Juan C. Tudon Martínez, Universidad de Monterrey, School of Engineering and Technologies, 66238 San Pedro Garza García, Nuevo León, México

**ID 225    Comparison of Behavioral Customer Segmentations for Private Labels using Clustering Algorithms**

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Magaly Sandoval, Departamento de Ingeniería Industrial y Sistemas, Universidad de La Frontera, Temuco, Chile

**ID 226    Behavioral Segmentation for Supermarket Customers Using Unsupervised Machine Learning Algorithms**

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Hilda Kundai Chikwanda and Andile LN Zulu, Graduate School of Technology Management (GSTM), Faculty of Engineering, Built Environment and Information Technology, University of Pretoria, Pretoria, South Africa

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B.B.S. Makhanya, H. Nel and J. H.C Pretorius, Faculty of Engineering and Built Environment University of Johannesburg, Johannesburg, Gauteng, South Africa

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Paul Makibelo, Bheki Makhanya and Hannelie Nel, Department of Engineering Management, University of Johannesburg, South



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Sivuyile E. Gayiya, Bheki Makhanya and Hannelie Nel, Faculty of Engineering and Built Environment  
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**ID 250 Ergonomic Design of Taho Cart with Shock Absorber System**

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**ID 254 Information System Plan for Chew & Brew Milk Tea Company (A Case Study)**

Karina Dizon, Dave Pagaduan, David Quindoza, Raphael Tandoc, Grace Lorraine Intal, School of Information Technology, Mapúa University, Makati, NCR, Philippines

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**ID 260 Targeted Key Indicators for Improving National Innovation Performance**

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**ID 261 Information System Plan for West Corner Hotel ( A Case Study)**

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**ID 262 Information Systems Plan for La Teacia Artisan Milk Tea (A Case Study)**

Noel D. Basañez, Jr., Angelica Rose D. Bauzon, Kathleen R. Santos, Tristan Andrei T. Saura, Grace Lorraine Intal, School of Information Technology, Mapua University, Makati City, Philippines

**ID 263 Strategic Information Systems Planning for the Improvement of RS Top Pizza’s Business Process**

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**ID 264 Characterization of the assessment of university education learning in times of COVID–19 based on a systemic approach**

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**ID 268 Two Decades of Closed-loop Supply Chain: A Bibliometric Analysis**

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**ID 271 Statistical Analysis of the Relationship between the Sintering Process and Magnetic Energy on the Improvement of the Magnetic Properties of the Permanent Magnet BaFe12O19**

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Duaa Nawafleh, M.Sc., Alexandr M. Sokolov, Ph.D., and Niamat Ullah Ibne Hossain, Ph.D., Engineering Management Program, Arkansas State University, AR 72467, USA

**ID 306     How Good or Bad is the Prediction of Black-Box COVID-19 Models After One Year Has Lapped?**

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**ID 330 INTERPERSONAL COMMUNICATION BETWEEN MOTHER AND DAUGHTER TO INCULTING FEMINISM VALUES IN "ENOLA HOLMES" FILM**

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Sarah Ali A Alshahrani, Industrial Engineering Department, King Khalid University, Abha, Saudi Arabia

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Alexandr M. Sokolov, Ph.D., Steven Picklesimon, M.Sc., Duaa Nawafleh, M.Sc. and Niamat Ullah Ibne Hossain, Ph.D., Engineering Management Program, Arkansas State University, State University, AR 72467, USA

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**ID 354     The Key Factors to improve Thailand's Logistics System during the COVID-19 period**

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**ID 356     PINNING-UP OF HOUSEHOLD FINANCIAL BEHAVIOR TO SUPPORT FINANCIAL SYSTEM STABILITY IN INDONESIA (2015-2019)**

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**ID 357     Knowing the SMEs Strategy Research around the World Using a Bibliometric Approach**

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**ID 358     Leveraging the Application of Forecasting Methods to Analyze the Scrap Data of a Tire Industry**

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**ID 365     Life cycle assessment in the wine industry – a Bibliometric analysis**

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**ID 366     Decent Work and Gender Equality in Mexico**

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Victor Martin Maldonado–Benitez, ESCA Santo Tomás, Instituto Politécnico Nacional, Mexico City, Mexico

**ID 368     Industrial Symbiosis for Responsible Consumption in the Coffee Sector: Literature Review**

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**ID 369     Implementation of MSMEs Competitiveness Improvement Model to Strengthen Entrepreneurial Aspects in Malang City**

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**ID 370     Smart Living: Mapping of the Past Research for Future Living**

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**ID 373     GENERATION Z's PERCEPTION ON THE CONCEPT OF SEXUAL HARASSMENT THROUGH TIKTOK VIDEOS**

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**ID 374    The Analysis on Factors influencing the Use of Mobile Payment System Among Generation Z in Indonesia**

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**ID 375    Evaluation and Digital Marketing Platform Together to Develop the Organizational Agility of Cooperatives in Indonesia**

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**ID 377    A Hybrid Artificial Neural Network and Logistics Regression Model for Fashion Sales Strategies Prediction**

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**ID 379    Control and Continuous Improvement in the Picking Area**

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**ID 380    A Review of Strategic Management Research in Indonesia**

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**ID 381    A Comparative Life Cycle Assessment Study of Conventional and Best Available Techniques Incorporated Cement Production Processes using midpoint approach**

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Juan Barbosa and Arturo Aranda, Manufacturing Process Simulation Department, DRIVEN / CLAUT Innovation Center, Monterrey, NL 66628, Mexico

**ID 389    On the Assessment of Neutral Theory via Applying MaxEnt to the Analysis of Barro Colorado Island Species Abundance Data**

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**ID 391    Economic Statistical Design of np Control Chart for Monitoring Attribute**

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**ID 392    Supplier Selection Criteria for E-Commerce Based Fashion SME's**

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**ID 393    Factor Analysis on Consumer Behavior Intention to Use Homecare Application for Veterinarian using Structural Equation Model**

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**ID 394    Digital Transformation in Small Medium Enterprises: Mapping of the Knowledge Base**

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**ID 395    Knowing The Facts of SMEs Performance Research in Indonesia Using Bibliometric Approach**

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**ID 396    Deep Learning Based Platform for Vehicle Parts Defect Classification and Anomaly Detection**

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Korea

**ID 397 The Stakeholders' Perceptions on Critical Success Factors for Construction Projects**

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**ID 398 Product Quality, Price, Product Involvement, Atmosphere and WOM Effect on Purchase Intention at Starbucks Coffee Hayam Wuruk Drivethru Jakarta, Indonesia**

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**ID 400 Critical Success factors of adopting Social Media for Internal Communication in Private Sector Organizations in Sri Lanka**

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**ID 402 An integration approach of multi-structure DEA and random vector functional link neural network in benchmarking modelling and forecasting**

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Sin-Jin Lin, Department of Accounting, Chinese Culture University, Taipei, Taiwan

Ming-Fu Hsu, Department of Business Management, National United University, Miaoli, Taiwan

**ID 403 Detection of Mental illness using Machine learning and Deep Learning**

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Dr. Nitin Pise, Faculty, MIT WPU Dr. Vishwanath Karad MIT World Peace University, Pune, India

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**ID 408 Analysing the Potential of Technology in Sri Lanka to Adopt E- voting : A Systematic Literature Review**

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Janaka Wijayanayake, Department of Industrial Management, University of Kelaniya, Sri Lanka

**ID 410 The Cultural Dimension of Entrepreneurial Leaders in Sundanese Society**

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**ID 411 Investigation of the Effectiveness of ERP System on Management Decision-Making in Higher Educational Institutions**

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#### **ID 412 ERP Implementation Challenges in Ghanaian Higher Education Institution**

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#### **ID 413 Collaborative model between Data Analytics and PDCA for service level improvement in environmental consulting SMEs**

Juan Carlos Quiroz-Flores and Martín Collao-Díaz, Faculty of Engineering and Architecture, Industrial Engineering Program, Universidad de Lima, Perú

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Maxwell Schoeman and Marné de Vries, Department of Industrial Engineering, University of Pretoria, South Africa

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#### **ID 416 Supply chain inventory optimization: An alternative approach**

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#### **ID 418 A Framework to Foster Innovation-Driven Enterprises Creation in the University, the Case of Monterrey Region in Mexico**

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**ID 420 Vertical Take-off and Landing Platform for Cartography and Local Governance Consulting**

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**ID 421 The Effect Of Digital Marketing And Brand Trust On The Decision To Use Digital Wallet Funds In Bandung City Community**

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**ID 422 THE INFLUENCE OF ORGANIZATIONAL CULTURE ON EMPLOYEE PERFORMANCE AT PT SIPATEX PUTRI LESTARI**

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**ID 424 Recycling Model Selection based for express package base on AHP: A practical case of Yunnan University**

Kodchanitch Wannagoat, Wang Ruowen, Jirapat Wanitwattanakosol, College of Arts, Media and Technology, Chiang Mai University, Chiang Mai, Thailand

**ID 425 Modeling and Algorithm Design for Driver Assignment Problems Considering Drivers States and Capacity**

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**ID 426 Malangan Mask Preservation Based on Social Media Consumption of Generation Z in Malang**

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**ID 427 The Influence of Communication Psychology on the Character of Jasalindo Sport Swimming Athletes**

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**ID 428 Preparation and characteristics of synthesized hydroxyapatite from bovine bones and by co-precipitation method**  
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Mohamed Grimet and Oussama Bensalem, Chemistry Department, Badji Mokhtar –Annaba University

**ID 429 Academic Performance, Fatigue, and Stress in Online Learning Among College Students: A Multivariate Analysis**  
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**ID 430 Robust Least Squared Model: How to Maintain Brand Loyalty at Starbucks Indonesia**  
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**ID 431 Robust Least Squared: To Build Consumer’s Purchase Intention at Louis Vuitton Indonesia**  
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**ID 432 Human Resource 4.0: A vision of a technological tool to assess and foster employee engagement**  
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**ID 433 Factors Bridging the Satisfaction of Generational Gap in Philippine Healthcare System Telemedicine Use**  
Charish Jen Rala, Jovilyn Abarico, Obeaya Marie Camota, Andrea Cumpa, Dianne Lizbeth Perico, Kenneth Salvante, Pamela Anne Mae Velasco, Romalyn Galingan, Arriane Palisoc, Department of Industrial Engineering, College of Engineering and Architecture, Technological Institute of the Philippines – Quezon City, Cubao, Quezon City, Philippines

**ID 434 Factors Influencing The Diffusion of Telehealth In Home Visit Medical Services**  
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**ID 435    Proposal for the Implementation of Key Performance Indicators for a Warehouse. Case: Tracto Partes Diamante de Puebla S.A. de C.V**

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**ID 436    Development of Vegetable Oil-based Nano-lubricants using MMT Nanoparticles as Lubricant Additives**

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Laura Peña-Parás and Demófilo Maldonado-Cortés, Engineering Department, Universidad de Monterrey, San Pedro Garza García, N. L., México

**ID 437    Characterization of vegetable oil-based lubricants with Halloysite Nanotubes as lubricant additives and their tribological performance**

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**ID 438    Redesigning an Inclusive Digital Contact Tracing Service Systems: User-Focused Phase of Design Thinking Approach**

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**ID 439    Queuing Theory: A Case Study in Analyzing the Vaccination Service in Quezon City**

Christlyn Mae C. Valeriano, Charles Kristian K. Ilo, Maria Kathryn A. Illescas, Jan Aldrin V. Dahilig, Rene D. Estember, School of Industrial and Engineering Management, Mapúa University, Intramuros, Manila, Philippines

**ID 440    Experimental Analysis on Determination of Significant Factors in Growing Mung Bean Sprouts (Length) in a Home-Based Set Up (Non-Soil Germination)**

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**ID 441 Brand Trust, Price, Perceived Value and Brand Image as Mediation toward Purchase Intention of Aircraft Tickets in Traveloka in the era of Pandemic Covid-19**

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**ID 442 Economic Growth, Information Technology, and Bribery Incidence**

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**ID 443 Application of Decision Theory on Strategy of Supermarket in Promoting Health Safety and Developing Sustainability amidst Pandemic**

Angelo Luis S. Doctora, William Davin D. Perez, Franco Neil A. Sanchez, Abigail B. Vasquez, Rene D. Estember, School of Industrial Engineering and Engineering Management, Mapúa University, Manila, Philippines

**ID 444 Markov Chain Analysis of Student Learning Progression in a Quarter Academic System**

Jhon Lawrence G. Quimio, Anthony A. Sanchez, Kianna Denise C. Villapando, Rene D. Estember, School of Industrial Engineering and Engineering Management, Mapúa University, Manila, Philippines

**ID 445 Supply Chain Risk Mitigation with Supply Risk Management approach**

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**ID 446 Effectiveness Of Gamification Strategy To Increasing Shopee's Customer Loyalty In Shopee's Marketing Public Relations**

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**ID 447 Managing Risk with the Concept of SCRM on Procurement and Warehouse Department**

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**ID 448 Risk Mitigation for Strengthening Supply Chain Strategies in the Pandemic Era**

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**ID 449 Preventive Maintenance on Main Components of PT KA Indonesia Transportation Equipment**

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**ID 450 Goal Programming Approach: Application in a Cake Business**

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**ID 451 Preventive Maintenance Modeling on Die Casting Machines with Information Systems**

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**ID 452 The Application of Decision Theory in Picking Delivery Courier Services in the Philippines**

Alliah Jane S. Agunos, Carl Louie N. Cruz, Cedric F. Reprado, Henrie Louis P. Subido, Rene D. Estember, Department of Industrial Engineering and Engineering Management, Mapua University, Intramuros, Manila, Philippines

**ID 453 The Influence of Mobile Experience Design on Brand Satisfaction**

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**ID 454 Optimizing Raw Material Orders Using a Comparison of Deterministic and Probabilistic Methods**

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**ID 455 Using E-Procurement to Minimize Risks in Customer Service**

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**ID 456 A Queuing Theory Approach to Improve Service Quality of Banking Systems: A Case Study of a Bank in Laguna, Philippines**

Madeline Anne Patrice C. Sy, Frankern Luis S. Malabuyoc, Ma. Daniella M. Sobrevilla, and Rene D. Estember, School of Industrial Engineering and Engineering Management, Mapúa University, Intramuros, Manila, Philippines

**ID 457 Districting based on Stochastic Demands**

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**ID 458 An Application of Decision Analysis on the Strategy of Professors with the Absorption of Knowledge Between Face-to-Face and Online Learning**

Julianne Mikhaella Delos Reyes, Louis Miguel Dural, Julia Sofie Mangaoang, Gaea Marithe Victor, and Rene Estember, School of Industrial Engineering and Engineering management, Mapua University, Muralla St. Intramuros, Manila 1002 Philippines

**ID 459 An Adaptation of Industry 4.0: Modifying the Implemented Queuing System in Philippine Statistics Authority Applying Monte Carlo Simulation**

Matthew P. Solivio, Maria Angelica D. Bare, Francee Mae F. Castro, Kirstien Paola E. Robas, Rene D. Estember, School of Industrial Engineering and Engineering Management, Mapúa University, Manila, Philippines

**ID 460 A Guideline to Improve the Business Continuity in the New Normal (Covid-19) through Human Resource Management: Case of Sri Lankan Apparel Industry**

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Kartheepan Thavarasasingam, University of Western London

**ID 461 Building a Two-Decade Traditional Retail Strategy Research Theme Map Using a Bibliometric Approach**

Febby Candra Pratama, Hera Rachmahani, Mardhatillah Shanti, Riesta Devi Kumalasari, Entrepreneurship Department, BINUS Business School Undergraduate Program, Bina Nusantara University, Jakarta 11480, Indonesia

**ID 462 The Applications of Game Theory in Processing the Orders of Company OL-A and Company OL-B**

Deceree Anne A. Haboy, Daniel John B. Sacramento, Ervin Josh P. Santos, Christine Angelie Y. Taw, Rene D. Estember, Department of Industrial Engineering and Engineering Management, Mapúa University, Manila, Philippines

**ID 463 Product Launch Decision Making for Non-preemptive Product Development Process**

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**ID 464 Application of Dynamic Programming to Sweet Delights: A Market Research for Online Baked Products**

James Brylle C. Foz, Martin James D. Olan, Daniel N. Perez, Christian Jay E. Sesnorio, Rene D. Estember, School of Industrial

**ID 465     The Internet of Things start-up business model for smartization of urban transportation serving Base of the Pyramid consumers**

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Mohammad Tondro, Management of Technology and Entrepreneurship Department, Allameh Tabataba'i University, Tehran, Iran

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**ID 466     Investigating the Applicability of 4IR technologies in the Foundry Industry – A South African case**

Yvonie N. Mawane and Robert P. Mutyavavire, Department of Mechanical and industrial Engineering, University of Johannesburg, South Africa

**ID 467     Small-scale Manufacturing of Aluminium & Steel Products Inclusion in the Mainstream Economy**

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**ID 468     Achieving Mass Customization Through Integrating Human Factors in Product Platform Concepts During Product Design**

Oscar Ming Liu, Venkat Allada, Engineering Management and Systems Engineering Department, Missouri University of Science and Technology, Rolla, MO 65401, USA

**ID 469     Development and Characterization of Cold Spray Coatings for Aerospace and Defense Manufacturing**

Albert Alejandro and Javier A. Ortega, Department of Mechanical Engineering, The University of Texas Rio Grande Valley, Edinburg, TX, USA

Anil Srivastava and Jianzhi Li, Manufacturing and Industrial Engineering Department, The University of Texas Rio Grande Valley, Edinburg, TX 78539, USA

**ID 470     Energy Saving in a Tobacco Curing Stove with the Use of Heat Recovery and Solar Energy**

Miguel Condorí, Federico Albesa, Ileana Cruz, Instituto de Investigaciones en Energía no Convencional (INENCO), Universidad Nacional de Salta (UNSa), Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Av. Bolivia 5150, A4408FVY, Salta, Argentina

**ID 471     An Introduction of Aircraft Maintenance Programs Engineering Inputs to Scheduled Maintenance Operations**

Aaron Rubel, M.S.E.M., Head of Aircraft Maintenance Programs Development, Intellectual Property Focal Point, Airbus Americas, Inc., Mobile, Alabama Engineering Center, Mobile, AL 36615, USA

**ID 472     Novel In-Situ Aircraft Oxygen Cylinder Refilling Tool**

Allan D. Lang, BEng., Systems Engineers Oxygen Design Office, Airbus Americas Engineering, Inc., Mobile, Alabama, 36615, USA

Robert Thompson, Head of Flight Test Systems Engineering Support, Airbus North Americas Final Assembly Line, Mobile, Alabama, 36615, USA

**ID 473     Relationship Between Lean Manufacturing and Sustainability – A Bibliometric Analysis**

Luis Javier Márquez Figueroa, Jorge Luis García Alcaraz, Instituto de Ingeniería y Tecnología, Universidad Autónoma de Ciudad Juárez

Jesús Alfonso Gil López, Departamento de Economía y Empresa, Universidad de La Rioja

Efrén Romero Riaño, Director de Bibliometría, Observatorio Colombiano de Ciencia y Tecnología

**ID 474 Determining How Team Communication and Project Outcomes Evolve in A Midwestern Healthcare Company: A Case Study Approach**

Gregory J. Ash, Indiana State University, Terre Haute, IN 47809, USA

Cindy L. Crowder, Professor, Department of HRD & Performance Technologies, Indiana State University, Terre Haute, IN 47809, USA

**ID 475 Noninvasive detection of glucose levels using a commercial pulse oximeter and artificial intelligence**

Luis Guzman, Antonio Martinez–Torteya and Andrés Garzafox, Universidad de Monterre,  
Av. Morones Prieto, Monterrey, N.L. México

**ID 476 Inventory Modeling for Automotive Spare Parts with Probabilistic Demand by Considering an Integrated Cost and Filling Rate**

Wirawan Agung Nugroho, Mohammad Mi'radj Isnaini, Abdul Hakim Halim, Industrial Engineering Department, Institut Teknologi Bandung, Bandung 40132, Indonesia

**ID 477 Development of a Dashboard to Improve Fleet Maintenance for a Food Bank**

La'Tricha Parks, Steven Jiang and Lauren Davis, Department of Industrial and Systems Engineering, North Carolina A&T State University, Greensboro, NC 27411, USA

**ID 478 ECONOMICS OF SMALL-SCALE POWER GENERATION FROM RENEWABLE AND HYBRID SOURCES**

Mohd Faiz Che Wahab, Md Mizanur Rahman, Aminuddin Saat, Hasan Mohd Faizal and Mazlan Abdul Wahid, School of Mechanical Engineering, Faculty of Engineering, Universiti Teknologi Malaysia (UTM), 81310 Johor Bahru, Johor, Malaysia

**ID 479 Digital Twin for Urban Spaces: an Application**

Diego M. Botín–Sanabria, Jorge G. Lozoya–Reyes, Roberto C. Vargas–Maldonado, Karen L. Rodríguez–Hernández, Ricardo A. Ramírez–Mendoza, Mauricio A. Ramírez–Moreno, Jorge de J. Lozoya–Santos, School of Engineering and Science, Mechatronics Engineering Department, Tecnológico de Monterrey, Campus Monterrey Eugenio Garza Sada 2501 Sur, Monterrey, México

**ID 480 Modelling and Mapping University Business Process level 2**

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Lily Leonita, Management Department, BINUS Business School Undergraduate Program, Bina Nusantara University, Jakarta, Indonesia 11480

**ID 481 GMove: Gyroscopic Controlled Robotic Movement**

Raymond Yap, Valley Christian High School, 100 Skyway Drive, San Jose, CA, USA

**ID 482 Classification of Driving Styles in the Metropolitan Area of Bucaramanga with On-board Monitoring (OBD-II) in Real Road Conditions**

Juan Danilo Molina Martínez. Brayan Ferney Acuña Olivar and Jessica Gissella Maradey Lázaro, Mechatronics Engineering Program, Universidad Autónoma de Bucaramanga, Bucaramanga, Santander, Colombia

Jose Ignacio Huertas Cardozo, Mechanical Engineering Department, Tecnológico de Monterrey, Monterrey, Nuevo León, México

**ID 483 Use of Technology for Better Understanding of Cities**

Karen L. Rodríguez–Hernández, Ana L. Gaxiola–Beltrán, Jorge Narezo–Balzaretto, Mauricio A. Ramírez–Moreno, Ricardo A.

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**ID 484     Energy efficiency analysis of the electric traction systems with simple traction drive and in-wheel motor**

Sebastián Fernández Herrera, School of Automotive Mechanics, University of Azuay, Cuenca, Ecuador

Efrén Fernández Palomeque, School of Automotive Mechanics, University of Azuay, Cuenca, Ecuador

**ID 485     Detection of Engineering Interest in Children Through an Intelligent System Using Biometric Signals**

Gustavo Olivas Martínez, Milton Osiel Candela Leal, Juan Carlos Ocampo Alvarado, Luis Fernando Acosta Soto, Diego Mauricio Botín Sanabria, Gladys Guadalupe Díaz Armas, Aimé Judith Aguilar Herrera, Esther Aimeé Delgado Jiménez, Myriam Alanis Espinosa,  
Mauricio Adolfo Ramírez Moreno, Rubén Morales Menéndez, Ricardo Ambrocio Ramírez Mendoza, Jorge de Jesús Lozoya Santos, School of Engineering and Sciences, Tecnológico de Monterrey, Monterrey, Nuevo León, México

Jorge Murrieta González, Aleyka García Briseño, MachineCare Education, Monterrey, Nuevo León, México

**ID 486     The Bullwhip Effect in the Northern States of Mexico: an Econometric and Sustainable Analysis in the Transport and Logistics Sector**

Fabricio Moreno–Baca, Patricia Cano–Olivos, Industrial & Logistics Faculty, Universidad Popular Autónoma del Estado de Puebla, 17 Sur 901, Barrio de Santiago, 72410, Puebla, Mexico

**ID 487     Real-time Biofeedback System for Interactive Learning using Wearables and IoT**

Milton O. Candela–Leal, Juan M. García–Briones, Gustavo Olivas–Martínez, Rafael Abrego–Ramos, Gabriela J. Álvarez–Espinoza, Diego M. Botín–Sanabria, Karen L. Rodríguez–Hernández, José F. Pachego–Quintana, Sofía Sampogna–Montemayor, Ruben Morales–Menendez, Ricardo A. Ramírez–Mendoza, Mauricio A. Ramírez–Moreno, Jorge de J. Lozoya–Santos, School of Engineering and Sciences, Tecnológico de Monterrey, Monterrey, NL 64849, Mexico

Juan C. Tudón–Martínez., School of Engineering and Technologies, Universidad de Monterrey, San Pedro Garza García, NL 66238, Mexico

**ID 488     Digital Twin for a Vehicle: ElectroBus Case Study**

Diego M. Botín–Sanabria, Diego A. Santiesteban–Pozas, Guillermo Sáenz–González, Ricardo A. Ramírez–Mendoza, Mauricio A. Ramírez–Moreno, Jorge de J. Lozoya–Santos, School of Engineering and Science, Mechatronics Engineering Department, Tecnológico de Monterrey, Campus Monterrey, Eugenio Garza Sada 2501 Sur, Monterrey, Mexico

**ID 489     Conscious Mobility for Urban Spaces Application**

Jorge G. Lozoya–Reyes, Roberto C. Vargas–Maldonado, Mauricio A. Ramírez–Moreno, Jorge de J. Lozoya–Santos, Vianney Lara–Prieto, Maria I. Ruiz–Cantisani, Jorge Narezo Balzaretti, Gabriel J. Leal–Cantu, Guadalupe Lara–Sanchez, Vanessa Ontiveros–Yanes, Dalia L. Hurtado–Gonzalez, Jose M. Aguilar–Zamudio, Daniela I. Balderas–Aldape, Alejandro Sanchez–Gomez, Jose A. Galvan–Galvan, School of Engineering and Sciences, Mechatronics Engineering Department, Tecnológico de Monterrey, Campus Monterrey, Eugenio Garza Sada 2501 Sur, Monterrey, Mexico

**ID 490     Development of an On–Board System for Measuring the Implicit Variables of the Driving Cycle for 250cc Carbureted Motorcycles**

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Jose Ignacio Huertas Cardozo, Mechanical Engineering Department, Tecnológico de Monterrey, Monterrey, Nuevo León, México

**ID 491     Assessment of the process of generation and final use of electric energy in Colombia based on energy efficiency indicators**

Juan Zapata–Mina, Melissa Valencia–Duque, Juan José Tabares y Juan Esteban Tibaquirá, Faculty of Mechanical Engineering, Universidad Tecnológica de Pereira, Pereira, Colombia

**ID 492     Facial Recognition System for Access Control through the Application of Convolutional Neural Networks**

Edison Vasquez and Monica Karel Huerta, Grupo de Telecomunicaciones GITEL, Universidad Politecnica Salesiana, Cuenca, Ecuador

Roger Clotet Martinez, Astronomy, Big Data and Computing Science (ABACO), Valencian International University (VIU), Valencia, Spain

José-Ignacio Castillo-Velázquez, ADVNETLAB, Telecommunications Engineering Department, Autonomous University of Mexico City, Mexico City, Mexico

**ID 493     Predicting subgrain size and dislocation density in machining-induced surface microstructure of Nickel using supervised model-based learning**

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**ID 494     Performance Comparison for File Transfers for Four Advanced Networks in GNS3 under IPv6**

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**ID 495     A Survey of Approaches to Describe Driving Patterns**

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**ID 496     Microgrid Supplier Selection Problem Considering Euclidean Distance and Ideal Vector System**

Trinidad Reyes and Jose F. Espiritu, Industrial Manufacturing and System Engineering Department, The University of Texas at El Pas, El Paso, TX 79968, USA

**ID 497     Service Quality Assessment of Local Government Units' COVID Pandemic Response using Factor Analysis**

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**ID 510     Impact of the Country-of-Origin Image on the Purchase Intention of Foreign Products in Mexican Consumers During the COVID-19 Pandemic**

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**ID 511     Communication Experience of The Neighborhood Chief in Covid 19 Handling in Kelurahan Pangkalan Mansyur Medan**

Nadra Ideyani Vita, Nina Siti Salmaniah Siregar and Agnita Yolanda, Communication Science Department, Faculty of Political and Social Sciences, Universitas Medan Area, North Sumatera, Indonesia

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**ID 512 Strategies for Utilizing Instagram as a Digital Marketing Communication Media in Samudera Kuphi Medan Coffeeshop**

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**ID 513 Policies, Roles and Relationships between Village Government and Community in Tourism Management in Situngkir Village, Pangururan District, Toba Samosir Regency, North Sumatra, Indonesia**

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**ID 514 How Media Sees the Brawl Between Residents in Belawan, North Sumatra, Indonesia (Case Study)**

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**ID 515 Efficient Cumulative Sum Chart for Monitoring Fraction Nonconforming**

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**ID 516 A Review of Engineering Education Study in Indonesia**

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**ID 517    Role of Media in Africa Elections: A Comparative Analysis of Nigeria and Ivory Coast**

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**ID 518    Study on the Legality of Indonesian Micro Business Products Based on Economic and Law Regulations**

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Devita Anggraini Lestari, Departement of Public Health, Airlangga University Surabaya

**ID 519    Investigation of Simple Moving Average: Pre-COVID-19 Evidence from the Tokyo Stock Exchange**

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**ID 521    An aggregated time series forecasting model for the healthand wellness sector: case of a Brazilian retail company**

Carlos Ernani Fries and Vitor Rodrigues, Department of Production and Systems Engineering, Federal University of Santa Catarina, Florianópolis, SC, Brazil

**ID 522    Financing Small-Scale Manufacturing in South Africa – The Egg and Chicken Problem**

Sizwe Mkwanazi, Department of Business Management, University of Johannesburg, Cnr Kingsway & University Road, Auckland Park, South Africa

**ID 523    Monitoring Multi-Attribute Characteristics using a Combined Scheme of np and EWMA Charts**

Farah Alyassi, Salah Haridy, Mohammad Shamsuzzaman, Imad Alsayouf, Department of Industrial Engineering and Engineering Management, University of Sharjah, Sharjah 27272, United Arab Emirates

**ID 525    Walnut Oil: Variation in oxidation levels dependent on temperature in the extraction methodology**

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Andres Carvajal Morales, Monterrey Institute of Technology and Higher Education

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Renato Gallifa Quintanilla, Monterrey Institute of Technology and Higher Education

Jorge Hernández Sosa, Monterrey Institute of Technology and Higher Education

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**ID 527    Comparison of the Elaboration of Hard Apple Cider with Fresh and Frozen Wort**

Alejandra Villarreal Reyes, Ivana Karina Reyes Rubio, Mónica Pacheco Fernández, Eduardo Augusto Saldivar Balboa, Javier

Rojas Sánchez, Oscar Eduardo Ruiz Adame and Marcelo Sauza Sada, Instituto Tecnológico y de Estudios Superiores de Monterrey Campus Monterrey Monterrey, Nuevo León, México

**ID 541     Decision Support System Application with Simple Additive Weighting**

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**ID 542     Decision Support System of Food and Beverage Franchise Business**

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**ID 543     The Evaluation of Acceptance Samsung Smart Switch Application as Data Sharing Media Using UTAUT**

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**ID 544     Comparison of SVM Algorithm and Neural Network with Feature Optimization Based on Genetic Algorithm in Determining Immunotherapy Success in Cancer Disease**

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**ID 546     Jidoka enhances unilateral e-marketing and predicts e-stock although uncertainty modus operandi case**

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Tamer S. Gaafar, Dept. of computer and System Engineering, Zagazig University, Egypt

**ID 548     An Understanding of the Food Chain System in Malaysia: A Mini-Review Approach**

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**ID 566     Tax Relaxation During the Covid –19 Pandemic Against Individual Taxpayer Compliance in SPT Reporting at the Pondok Aren Tax Service Office, South Tangerang City**

Ambarwati and Indra Sumarna Sobari and Rudi Kristanto, Institut Ilmu Sosial dan Manajemen STIAMI, Jakarta, Indonesia

Agus Sunarya Sulaeman and Muhammad Heru Akhmadi, Politeknik Keuangan Negara STAN, Jakarta, Indonesia

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Fakhry Ajie Hidayat, Graduated from the Civil Engineering Master Program, Trisakti University, Indonesia

Agus Hadi Santosa Wargadipura, Senior Lecturer in the Civil Engineering Master Program, Trisakti University, Indonesia

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Darmawan Pontan, Ryan Faza Prasetyo, Reky Prayogo, Wishnu Arindra Pranoto, Civil Engineering Department, Universitas Trisakti, Jakarta, 11440, Indonesia

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**ID 610 Leadership of the Principal on Laboratory Elementary School of Unimuda Sorong in Improving the Quality of Education**

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**ID 611 The Effect Of Investment Strategy And Risk Management On Bitcoin Online Trading In Bitcoin Investors, (Study on College Students in Bandung City, Indonesia)**

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Prato Daniel and Reinoso Camila, Latin-American Center For innovation in Logistics, Bogotá, Colombia

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**ID 618 The Influence of Work Ethic on Employee's Performance of Small-Medium Enterprises Restaurant**

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Melanie Cornelia, Cindy Oktavia, Food Technology Study Program, Faculty of Science and Technology, Pelita Harapan University, Lippo Karawaci, Tangerang 15811, INDONESIA

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**ID 634 Characteristics Of Vegetable Canistel Mousse Dessert (*Pouteria campechiana*) Using Polysacaride Stabilizer**

Etty Hesthiati, Inkorena GS Sukartono, Tri Waluyo and Nurul Hanifah, Faculty of Agriculture, Universitas Nasional, Indonesia

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**ID 638 Using a Multimedia for natural Science Learning in Improving Concept skills of Elementary School Teachers**

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Didiharyono Didiharyono, Andi Djemma University, Palopo, Indonesia

**ID 647 Educational Technology in Higher Education on Pandemic Covid–19 Experiences**

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Muhammad Makbul, UIN Alauddin Makassar, Indonesia

**ID 648 Designing the Sustainable Collaboration among the Local Government, Community and Academics: The Sharia–Based Economic Growth**

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**ID 649 A Study of Micro, Small and Medium Enterprises (MSMEs) during Covid-19 Pandemic: An Evidence using Economic Value-Added Method**

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Raffaello Furlan, Department of Architecture and Urban Planning College of Engineering, Qatar University, Doha, Qatar

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José Ignacio Huertas, Energy and Climate Change Research Group, School of Engineering and Science, Tecnológico de Monterrey, Monterrey, 64849, Mexico

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**ID 659 The Impact of COVID-19 Pandemic on Sustainable Development in Southeast Asia**

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**ID 665 A Study of Anticipating Post Pandemic “Tsunami” of Psychiatric Illness: A Public Psychiatry Approach**

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**ID 666 Review: Floating Homes Transportation Opportunities in Indonesia**

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**ID 668 Consumer entrepreneurship on online media: Issues and Potential Approaches for Business Models**

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Candra Supriyatna, Student, Civil Engineering Department, Universitas Trisakti, Jakarta, Indonesia

Agung Sumarno, Researcher, Research Center for Biomaterials – Indonesian Institute of Sciences

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Dede Niman and Eka Octaviyatna Mulyadi, PT Indonesia Power Priok POMU, Indonesia

**ID 671 SEMI-MODERN MARKET COMPETITIVENESS STRATEGY IN THE ERA OF DIGITAL DISRUPTION**

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**ID 673 Analyzing the Relationship of Work Environment and Quality of Work Life on Employee Performance: The Mediating Role of Organizational Commitment**

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**ID 675 The Implementation of Poverty Alleviation Policy during the COVID-19 Pandemic: A Case Study of Pekalongan Regency, Indonesia**

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**ID 676 Identifying the Ethics of Preparing Financial Statements among Islamic Boarding School Students in Central Java, Indonesia**

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**ID 677 Implementation of the Role-Playing in Developing the Speaking Skills for Early Childhood**

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Akande Saheed, Ter Kumater Peter and Mgbeze Emmanuel, Department of Mechanical and Mechatronics Engineering, Afe Babalola University, Ado-Ekiti, Nigeria

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#### **ID 697 Analysis of The Management Services Modeling of Flats in Surabaya and its Impact on The Comfort of Residents**

Dimas Ade Pranata, Muhammad Ikhsan Setiawan, Adi Prawito, Ronny Durrotun Nasihien and Sri Wiwoho Mudjanarko, Department of Civil Engineering, Narotama University, Indonesia

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#### **ID 698 Analysis of The Modeling Delay Factor for The Implementation of Flats in Surabaya and Its Impact on The Housing Needs of Urban Communities**

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**ID 699 Compensation, Supervision, or Work Environment, which has the greatest influence on Work Motivation and Performance?"**

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**ID 700 Performance Assessment Analysis of XYZ Private Universities Using Balanced Scorecard Method**

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**ID 701 BUILDING INFORMATION MODELING (BIM) IMPLEMENTATION MODEL FOR FACILITY MANAGEMENT**

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**ID 703 Optimizing of the Processing of Sulphide Ores Using Neural Network Technologies**

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**ID 704 ANALYSIS OF QUALITY OF SERVICE, PRICE AND PRODUCT QUALITY TO PURCHASE DECISIONS IN PT. JAPFA SIDOARJO**

Muslikhun, STIE MAHARDHIKA

**ID 705 ANALYSIS OF EFFECT OF LEADERSHIP STYLE AND ENVIRONMENT WORK USING THE PERFORMANCE OF EMPLOYEES WORK MOTIVATION as an intervening variable (Case Study at PT. Suparma TBK)**

Nuning Nurna Dewi, Economic Lecture of the University Maarif Latif Hashim

**ID 706 COMMUNITY SERVICES PROGRAM, SMALL MEDIUM ENTERPRISES AND ENTREPRENEURSHIP IN INDONESIA**

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**ID 707 Anomaly Detection on the High Throughput Network of the ATLAS TDAQ System**

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**ID 708 Model for measure supply risk in supply chains: a SARS-CoV-2 crisis case study**

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**ID 709 HUMAN RESOURCES DEVELOPMENT STRATEGY FOR SMALL AND MEDIUM ENTERPRISES (SMEs) IN THE FIELD OF INFORMATION TECHNOLOGY AMID THE COVID-19 PANDEMIC**

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**ID 710 VALUE CHAIN COLLABORATION, MSMEs STRATEGY IN THE COVID PERIOD**

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**ID 711 TAX HOLIDAY INCENTIVE STRATEGY DURING THE COVID-19 PANDEMIC PERIOD TO INCREASE INVESTMENT IN INDONESIA**

Novianita Rulandari, Chairil Anwar Pohan, Alian Natision, Mohammad Sofyan, Putri Ayu Lestari  
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**ID 712 Factors of Successful Adoption of E-Filing during The Covid-19 Pandemic**

Agus Arianto Toly, Alicia Wijaya, Priscilia Geovany Lewa, Sonia Frensiana Tjung, Tax Accounting Program, Universitas Kristen Petra, Surabaya.

**ID 713 Analysis of safety construction modeling of the implementation of flats in Surabaya and its impact on the security and safety of urban workers**

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**ID 715 Higher Order Thinking Skill (HOTS) and Bloom Taxonomy Revised**

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**ID 716 Determinants of Environmental Quality in ASEAN Countries**

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**ID 717 Investment Decision with Analytical Network Process Method**

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**ID 718 Analysis of Trigger Accounting Fraud: Individual and Organizational Culture Aspects**

Putu Firda Febriyanti Suartha and Desak Nyoman Sri Werastuti, Master of Accounting, Ganesha University of Education

**ID 719 Enhancing MSME Performance through Digital Marketing and Innovation with Government Policy as Moderating Effect**

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**ID 720 Partnership-Based Training and Assistance Model for Small and Medium Enterprises**

Riza Bahtiar Sulistyan, Mimin Yatminiwati, Emmy Ermawati and Moh Hudi, Setyobakti, Institut Teknologi dan Bisnis Widya Gama Lumajang, Indonesia

**ID 721 Patient Satisfaction of Dental and Oral Health Service Facility based on Digital Patient Experience Driven Innovation**

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**ID 722 Valuation of Adaro Energy Ltd (ADRO.JK) Stock Price as Blue-Chip Stock in 2021**

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**ID 723 RECOMMENDATIONS FOR TOURISM RECOVERY POLICY POST OUTCOME CORONA VIRUS DISEASE 2019 (COVID-19) IN BALI BASED ON THE SMART BALI BACKPACKER APPLICATION**

Akhmad Fauzi, Eristya Maya Safitri, Kartika Maulida Hindrayani, Ilmatus Sa'diyah, Farkhan, Muhammad Luthfirrohman, Mohammad Naufal Pratama, I Gede Susrama Mas Diyasa, University of Pembangunan Nasional "Veteran" Jawa Timur, Surabaya, Indonesia

**ID 724 Visualizing Tweets Text Analysis of Indonesian Religion Figures on Moderate and Radicalism using Sentiment Analysis and Word Clouds**

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**ID 725 DIGITAL MARKETING WEB DESIGN BASED ON THE SHOPIFY APPLICATION AT "PT. RUMAH DELTASARI INDAH"**

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**ID 726 UTILIZATION OF MAGGOT BLACK SOLDIER FLY (BSF) CULTIVATION FOR FISH FEED**

Deffi Ayu Puspito Sari, Richa Andreina, Prisma Nursetyowati, Diki Surya Irawan, Environmental Engineering Bakrie University, 12940, Indonesia

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**ID 727 Change Management: A Strategy for Developing BUMDES**

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**ID 728 AN ASSESMENT DETERMINATION ON THE SME'S INTERNATIONAL PERFORMANCE AS A COMPETITIVE ADVANTAGE IN INDONESIA**

Seprianti Eka Putri, Universitas Bengkulu, Indonesia

**ID 729 E-Learning Platform to Assess Students' Performance in Industrial Revolution 4.0**

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**ID 730 HOW IMPORTANT IS BUSINESS ETHICS IN CORPORATE STRATEGY**

Chairul Iksan Burhanuddin, Aulia, Alamsjah, Firmansyah, University of Muhammadiyah Makassar

**ID 731 A Design of Enterprise System View on a Restaurant Waiting Time**

Fadi Aljuhani, Hashim AlDabbagh, Jameel Mujlid, Anas Alzahrani, and Sameer Maimani, Industrial Engineering Department King Abdulaziz University, Jeddah, Makkah, KSA

**ID 732 UNIVERSITY ANALYSIS ON DIGITAL CONSTRUCTION PROGRAM: IMPLEMENTATION & IMPACT OF MBKM INTERNSHIP IN CONSTRUCTION & INFRASTRUCTURE INDUSTRY AT NAROTAMA UNIVERSITY**

Julistiyana Tistogondo, Farida Hardaningrum, Muhammad Ikhsan Setiawan, Sri Wiwoho Mudjanarko, Diah Ayu Restuti Wulandari, Ronny Durrotun Nasihien, Hendro Sutowijoyo, Adi Prawito, Department of Civil Engineering, Narotama University, Surabaya, Indonesia

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**ID 733 Technology Service Delivery in Urban Transportation Business Strategy in Indonesia**

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**ID 756 Effect of Investment Opportunity Set, Firm Size, Institutional Ownership And Dividend Policy on The Firm Value In Automotive and Components Companies Listed on The Indonesia Stock (2015–2019 Period)**

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**ID 757 Cooperative And Msme Empowerment Strategies in Economic Recovery During The Covid–19 Pandemic in Bogor Regency Indonesia**

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**ID 758 Optimization Regional Original Income (PAD) of Economic Growth Bogor City 2015–2020 (During Covid–19)**

Retno Martanti Endah Lestari, Ernadhi Sudarmanto, Antania Hanjanilia Ristiyana, Accounting Departement, Economics and Bussiness Faculty, Pakuan University Bogor, West Java, Indonesia

**ID 759 Soft Skills Improvement Of Youth Organization : Entering The Work Environment**

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**ID 760 Implementation of Criminal Sanctions in Law Number 6 of 2018 Concerning Health Quarantine for Large–Scale Social Restriction Breakers in The Jabodetabek Area**

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**ID 762 The Impact of Narcotics Use and Selling in Criminological Studies: Learn from Indonesia**

Esti Royani, Faculty of Law, 17 August 1945 University, Samarinda, Indonesia

**ID 763 Study of Implementation Planning of Electronic Road Pricing System on Jakarta**

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Yasmin Ramadian, Muhammad Isradi, Amar Mufhidin Faculty of Civil Engineering and Planing University of Mercubuana Jakarta, Indonesia

**ID 764 Analysis of Pedestrian Services in Metropolitan Cities: Case of Jakarta Business Area**

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**ID 765 Analysis of Pavement Thickness Planning and Overlaying Method on Trans Sumatera Toll Road, Pekanbaru – Dumai**

Muhammad Isradi, Joewono Prasetijo, Nurani Hartatik, Faculty of Engineering and Technology, University Tun Hussein Onn Malaysia, Malaysia

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**ID 847 The Influence of Technology–based PBL Learning Model, Learning Method, Learning Motivation on Entrepreneurship Attitudes in Economics Education Department students of STKIP PGRI Jombang**

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**ID 848 Language Mastering Reflected In The Speaking Skill Of Mentally Retarded Students at SLBN 1 Jombang East Java, Indonesia**

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**ID 849 Profile of Student's Mathematical Representation based on Teacher's Accepted–Promoted–action**

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**ID 855 The Effect Of Disruptive Era And New Product On Innovative Product Launches**

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Joko Suyono, Narotama University, Surabaya, Indonesia

**ID 856 The Mediating Role of Work Environment in Relationship Between Leadership and Job Promotion on Employee Performance**

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# Work Loyalty and Employee Performance: The Mediating Role of Organizational Commitment

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## Abstract

Work loyalty and organizational commitment have a very important meaning for every company in improving employee performance. State-owned companies engaged in clean water services are very concerned about employee performance to improve services to the community. This research was conducted at a government-owned clean water company in Surabaya, East Java, Indonesia with the aim of analyzing the effect of work loyalty on employee performance, employee loyalty on organizational commitment, organizational commitment on employee performance and employee loyalty to employee performance through organizational commitment. This study uses 63 employees of clean water companies as the population. The sampling technique used was total sampling technique. Data analysis used Structural Equation Modeling (SEM) Partial Least Square (PLS). The results showed that work loyalty has an effect on employee performance, employee loyalty has an effect on organizational commitment, organizational commitment has an effect on employee performance, and organizational commitment is able to mediate the effect of employee loyalty on employee performance.

## Keywords

Work loyalty, Structural Equation Modeling, organizational commitment, Partial Least Square employee performance.

## 1. Introduction

Many experts say that human resources are the most valuable asset for a company and therefore they should be managed efficiently to ensure increased productivity. The existence of human resources in a company plays a very important role. Human resources have great potential to carry out business activities. For this reason, the company must optimize the potential of each employee to get optimal productivity. The success of a company is strongly influenced by the performance of its employees.

Mangkunegara (2016) explained that performance is the result of work (output) either quality or amount achieved by an employee in carrying out tasks based on the responsibilities assigned by the company to the employee or employee. Good performance is maximum performance, meaning that performance is based on the standards set by the company and is able to support the organization in achieving the mission and goals of the organization. Increased employee performance has an impact on the development of the organization so that it can exist and continue in a very fierce competition. Employee performance itself will be influenced by various factors related to HR or related to the organizational environment. Each organization certainly has a guideline and order that must be obeyed by all workers, among others, namely the presence of employees, all employees are required to come according to the working hours that have been set by each organization. Employee performance is work performance in terms of quality and amount that can be achieved by a worker in carrying out his duties based on the responsibilities that the company has handed over to the worker (Widia and Rusdianti, 2018). Employee performance can be seen from the quantity of work achieved by workers, the level of efficiency and effectiveness of workers in carrying out their duties, and on time in completing tasks that have been set by the company (Mangkunegara, 2016). Meanwhile, according to Robbins (2015) employee performance is a function of the

relationship between competence or ability and motivation. Robbins (2015) also explains that the determination of performance goals is to prepare useful goals not only for carrying out a performance evaluation at the end of the period. Robbins (2015) explains that employee performance is a function of the relationship between competence and motivation. Determination of performance goals is useful for setting targets to be targeted and not only for evaluating performance at the end of the period but for managing work processes during that period.

From several empirical studies, it can be seen that employee performance is influenced by several factors, including work loyalty (Tamba et al., 2018; Pradana and Nugraheni, 2015; Saputra et al., 2016) and organizational commitment (Elisabeth et al., 2021; Amri et al., 2021; Ratnasari et al., 2020). Hasibuan (2016) explains that loyalty is reflected by employee actions to maintain and defend the organization inside and outside of work from undermining irresponsible parties. Loyalty is identical to the psychological condition that unites employees with the company. Thus, employee loyalty is not only physical loyalty to their existence in the company, but also includes the attention, thoughts, dedication and ideas that are fully devoted to the company. Currently, employee loyalty is not just doing job descriptions, but also includes employee loyalty in maintaining and protecting the company from disturbances that can harm the company. Rachmawati (2015) defines organizational commitment as an attitude that reflects the "loyalty" of employees and is a continuous process of how an employee expresses their concern for the success and goodness of his company. Employees with high work loyalty will always support company policies, strive to achieve company goals and will stay at the company. Meanwhile, employees who do not have work loyalty will have turnover intention and this turnover intention is more dangerous than the real turnover because employees who have turnover intention are still working at the company but their minds are not focused on work, causing low productivity (Suyono et al, 2020).

Commitment includes work involvement. This is because there is a close relationship between work involvement and organizational commitment. Job involvement is the degree of willingness to unite himself with work, invest his time, ability and energy in work, and consider his work as a major part of his life. Commitment from employees is something important. Because of the impact, among others, on delays, absenteeism, the desire to change jobs, and labor turnover. Organizational commitment is a reflection of employee attitudes or behavior towards the company in the form of loyalty and actions to achieve the vision, mission and goals of the organization. Employees can be said to have a commitment if they have a high commitment to the company, this can be known by looking at the characteristics of trust and also strong support for the goals and values of the company, have a very strong will to work to achieve company goals and always put yourself as part of the company. Organizational commitment is something important because if employees are committed and will be willing to serve the company then they will fight hard to achieve company goals. One effort to increase employee commitment to the company is to increase employee job satisfaction. High job satisfaction will make employees more committed to the company. Satisfied employees will not work with full creativity and always support the policies and decisions taken by the company. Employees with high commitment are expected to be able to provide high performance.

This research was conducted at a government-owned clean water company in Surabaya, East Java, Indonesia. A regional company in charge of providing clean water services to the people of East Java Province, Indonesia. Because the function of this company is so important to provide clean water services to the community, the researchers are interested in conducting research on the factors that can improve employee performance in government-owned clean water companies. These factors include employee loyalty and organizational commitment. With the support of good employee performance, this company will certainly be able to improve clean water services to the community.

## **2. Literature Review and Hypotheses**

### **2.1 Employee Performance**

Employee performance is one of the success factors that influence the achievement of personal goals, which can be sourced from the output of organizational goals (Rivai, 2015). Meanwhile Hasibuan (2016) said that performance is the result of a person in completing the work or task assigned to him according to skill, knowledge, insight, attitude and time. The same thing was conveyed by Widodo (2016), that performance is the level of output or the result of a person's work from a goal that must be achieved or a job that must be completed in a certain period. Mangkunegara (2016), explains that the term "performance" comes from the term work performance or actual performance (achievement or actual work performance of a person), namely the quality and quantity of work carried out by an employee in carrying out his duties or work. Performance is a condition that must be understood and ensured by

certain parties to determine the level of performance of the relevant organization based on the vision adopted by the organization or company, and to know the positive or negative consequences of the policy.

Based on research by Mathis and Jakson (2015), the factors that influence the performance of individual employees are:

1. Ability of workers
2. Motivation.
3. Get support.
4. There is work they do.
5. Its relationship to the organization.

Meanwhile, Gibson (2015) explains several factors that influence performance, namely:

1. Competence, (ability), personality and interest in work.
2. Be clear and accept or explain the role of the worker, which is the level of understanding and acceptance of the tasks assigned to him.
3. The level of motivation of workers, namely the power to encourage, guide and maintain behavior.

Work standards are very necessary in measuring a person's performance so that everyone who works will know whether his work is in accordance with the standards set by the company or not. Traditionally, a person carries out work according to a job description that includes job responsibilities and responsibilities. However, performance standards must emphasize work results rather than tasks, so that a set of work standards describes the results that must exist and occur in the completion of a satisfactory job. The development of performance standards based on job descriptions will provide job opportunities for supervisors and employees. Therefore, the job description can be used as an overview of the overall goals that must be achieved by subordinates in supporting organizational goals. Sofyandi (2013) suggests the function of performance standards, namely: "performance standards are certain goals that must be achieved by employees, must be realistic, measurable, and obtain positions".

Performance standards compiled from job descriptions can be used to link static job definitions with dynamic performance, or they can be created for everyone based on job descriptions. Sofyandi (2013), said that performance standards can provide satisfaction if:

1. The statement identifies several key areas of employee responsibility
2. Including how to do work activities
3. Focus on quantitative mechanisms to measure performance results.

This performance standard is very much needed in the work environment, refers to activities that are the main part of employee responsibilities and aims to improve the quality of products or services, can operate more efficiently and can increase the number of results. In addition, performance standards may also be required for the area of problem solving, which involves the definition of the main problems encountered or anticipated. Usually, the goal is to eliminate predefined problems. It is also necessary in the area of innovation, in this area refers to new ways of working, and may be effective in evaluating new employee ideas and continuous employee growth in tennis and related fields.

Gomes (2016) said that there are several provisions used to measure worker performance, include:

1. Workload, namely the number of jobs obtained in a certain period of time.
2. Quality of work, namely the quality of work based on suitability and readiness.
3. Work knowledge, breadth of knowledge about work and skills.
4. Creativity, namely the originality of the ideas generated and actions to solve problems that arise.
5. Cooperation, namely the willingness to cooperate with other people (senior members of the organization).
6. Reliability, namely awareness and credibility in attendance and completion of tasks.
7. Initiative, namely the spirit of doing new tasks and expanding responsibilities.
8. Personal qualities, involving personality, leadership, friendliness and personal character.

## 2.2 Work Loyalty

Work loyalty is defined by Sudimin (2003) as the willingness of employees to participate in achieving company goals by using all abilities, skills, thoughts and time and keeping company secrets and not doing activities that cause the company to lose. Loyalty is formulated by Sudimin (2003) as loyalty to someone and not being a traitor when needed. Robbins (2015) argues that loyalty is a willingness to protect and save one's feelings and physical. Siswanto (2005) defines loyalty as a determination and willingness to obey, do, and distribute something that is obeyed with full responsibility and awareness. Agustian (2009) defines loyalty as loyalty to the principles that are believed.) Employee loyalty is defined as an emotional attitude that is encouraging and loves his work (Dessler, 2015).

Basically loyalty can be defined as a person's loyalty to something that can be in the form of physical or non-physical loyalty such as attention and thoughts. To be successful in achieving company goals, companies absolutely need employees with high loyalty. Hasibuan (2016) argues that employees show loyalty with the sincerity of employees to defend and protect the company where they work from interference from people who want to bring the company down. Similar opinions were expressed by Poerwadarminta (2002) loyalty is trust, devotion and loyalty that is dedicated to a person or agency, in which there is responsibility and love and behave and provide the best service. The attitude of the company is an attitude, namely how far an employee identifies the company where he works by showing a desire to work and try his best and loyalty to the company is a behavior, which is a person's decision to stay in the company. Robbins (2015) argues that loyalty is related to the level of trust, namely a desire to save and protect someone. If someone has loyalty and trust in something, then that person is willing to sacrifice and be loyal to what he believes in. Thus, loyalty has a positive correlation with the level of trust, the higher the level of employee trust in the company, the level of loyalty of the employee to the company is also higher.

Poerwopoespito (2014), stated that loyalty to work is reflected by the attitude of employees who dedicate their abilities and expertise, do work with responsibility, are honest and disciplined at work. The work loyalty of employees to the company will be able to create a sense of responsibility and create enthusiasm and work motivation (Nitisemito, 2015). In order to create employee loyalty to the company, the company must try to make employees feel they belong to the company. With the feeling of belonging to the company, employees will also feel the development of the company. Based on the definition expressed by the experts above, it can be concluded that work loyalty is an employee's loyalty to the company which is shown through a strong desire to remain in the company and work well for the progress of the company as well as being willing to sacrifice and carry out activities to achieve company goals.

Steers and Porter (1983) describe several aspects of loyalty, including: strong motivation to remain a member of the company, motivation to work as well as possible and have a definite belief in company values. Meanwhile (Nitisemito, 2015) emphasizes aspects of loyalty to employee work activities, including: obeying regulations, showing a responsible work brush. The attitude of obeying the regulations is shown by having the determination and willingness to comply with all regulations, orders from the company and not violating the prohibitions that have been set, both verbally and in writing. Responsibility which is characterized by the willingness of employees to do the work with the best results and awareness of the risks in carrying out the task will provide an understanding of the willingness and courage to bear this sense of responsibility will create work loyalty. Aspects of loyalty according to Kurniawan (2015) are as follows: a) Obedient and obedient, b) responsibility, c) devotion and d) honesty. Obedience is the ability of an employee to comply with all applicable company regulations and obey orders from superiors, and is willing not to violate the prohibitions set. Responsibility is characterized by the willingness of an employee to carry out the work to completion with good results, on time and dare to take risks for decisions made or actions taken. Devotion, namely the contribution of thought and energy to the company with sincerity and honesty, there is harmony between what is said and reality. From the information above, it can be concluded that work loyalty is an employee's loyalty to the company. An employee with high work loyalty will have a strong motivation to remain in the company, high motivation to develop the company, have high trust in the company.

Simamora (2002) explains that there are three main reasons for loyalty, namely, a) rational factors related to something that can logically be explained, such as: wages, bonuses, career paths, facilities provided by the company, b) emotional factors related to feelings or emotions. self-expression, such as: a comfortable work environment, a challenging job, a feeling of security because in the long term you can still work in the company, a proud job, a charismatic leader, work culture, awards from the company, c) Spiritual factors related to spiritual needs such as: spiritual work, spiritual satisfaction, religious leaders, company attitudes towards spiritual missions, opportunities to carry out spiritual activities. Furthermore, Steers & Porter (1983) suggested several factors that influence the emergence of work loyalty: a) personal characteristics, which consist of gender, education level, age, years of service, achievements, personality traits and race. b) Job characteristics, consisting of: challenging work, job enrichment, task identification, task feedback, job stress, opportunities for social interaction, and task suitability c) organizational structure characteristics, which can be seen from the level of formality, centralization, level of involvement In decision making, at least it has shown various levels of association with corporate responsibility, functional dependence and corporate control functions, d) experience gained in the company, in the form of a positive attitude towards the company after carrying out tasks in the company so as to create a sense of security, personal satisfaction that is felt comes from the company. Based on the explanation above, it can be concluded that work loyalty is influenced by rational factors such as wages, career paths and bonuses, emotional factors such as a

comfortable work environment, challenging work, and spiritual factors including spiritual needs such as freedom to worship. Several empirical studies conducted by several researchers (Pradana and Nugraheni, 2015; Tamba and Sambul, 2018) prove that work loyalty has a dominant effect on employee performance.

H1: work loyalty affects employee performance

### 2.3 Organizational Commitment

Sutrisno (2016) explains that organizational commitment is a high effort for the organization and a certain belief in acceptance of organizational values. Commitment to the organization also discusses employee closeness reflecting the strength of employee involvement and loyalty to the organization. Organizational commitment is seen as a value orientation towards the organization that shows individuals really think about and prioritize their work and organization. Individuals will try to give all the effort they have in order to help the organization achieve its goals. The success of organizational management is largely determined by the success in managing human resources. The high and low commitment of employees to the organization where they work, greatly determines the performance to be achieved by the organization. In the world of work, employee commitment has a very important influence, there are even some organizations that dare to include the element of commitment as a condition for holding the position/position offered in job advertisements. However, not infrequently employers and employees still do not understand the meaning of commitment seriously. Whereas this understanding is very important for the organization to create conducive working conditions, so that the organization can run effectively and efficiently. According to Robbins (2015), stated commitment to the organization is defined as a condition in which an employee sided with a particular organization and its goals, and intends to maintain membership in that organization. High commitment can be interpreted that siding with employees (loyalty) in the organization that employs them is high. Griffin (2017), states that organizational commitment is an attitude that reflects the extent to which an individual knows and is bound to his organization. Employees who feel more committed to the organization have reliable habits, plan to stay longer in the organization, and devote more effort to work. According to Nasution (2017), organizational commitment is the bond between an individual and an organization, an idea or project that is realized in dedicating himself to the achievement of the organization's mission. So, organizational commitment is the attitude of employees to remain in the organization and be involved in efforts to achieve the company's mission, values and goals. Commitment is a more concrete form of loyalty that can be seen from the extent to which employees devote attention to ideas and responsibilities in the company's efforts to achieve organizational goals.

According to Greenberg (2015) the forms of organizational commitment are:

1. Effective commitment is the strong desire of a person to work for an organization or company because he agrees with the goals of the organization and wants to do it.
2. Continuance commitment is a person's strong desire to continue his work for the organization because he needs the job and cannot do other work.
3. Normative commitment is the strong desire of a person to continue his work for the organization because he feels obligated by others to be maintained.

Commitment to employees does not just happen, but through a process that is so long and gradual. Employee commitment to the organization is also determined by a number of factors, Steers in Sopiah (2015) identifies three factors that influence organizational commitment, include:

1. Personal characteristics of performance, including tenure in the organization, and the variety of needs and desires of each employee.
2. Job characteristics, such as task identity and opportunities to interact with coworkers.
3. Work experience, such as past reliability of the organization and the way other workers express and talk about their feelings about the organization.

Organizational commitment arises gradually in the employee's personality. Starting from a personal need for the organization, then moving into a shared need and a sense of belonging from members (employees) to the organization Wursanto (2015) suggests that the sense of belonging from members (employees) to their group can be seen in the following ways:

1. The existence of loyalty from members to other members.
2. The existence of loyalty of members to the group.
3. Willingness to sacrifice sincerely from the members for the survival of the group.
4. There is a sense of pride from group members when the group gets reproach, whether it is done by individuals or other groups.
5. The existence of good intentions from group members to maintain the good name of the group under any circumstances.



Several previous studies conducted by Ratnasari et al., (2020), Amri et al., (2021), and Elisabeth et al., (2021) proved that organizational commitment has a significant effect on employee performance, and work loyalty has a significant effect on organizational commitment. Therefore, the following hypothesis can be formulated:

H2: work loyalty affects organizational commitment.

H3: organizational commitment affects employee performance

H4: organizational commitment is able to mediate the effect of work loyalty on employee performance

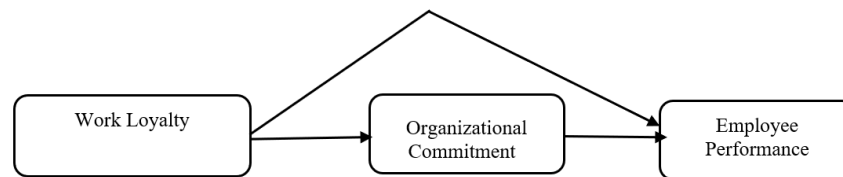


Figure 1. Research Model

### 3. Methods

All employees of PT Air Bersih Jawa Timur, a government-owned clean water company in Surabaya, East Java, Indonesia, as many as 63 people were taken as research samples. The questionnaire technique is used to obtain data related to the research variables. The questionnaire is arranged in the form of a closed statement with 5 (five) alternative answers using Likert scale and data analysis technique used is Partial Least Square (SmartPLS).

### 4. Result and Discussion

#### 4.1 Discriminant Validity

According to Ghozali (2014) discriminant validity can be known by looking at the average variant extracted (AVE) value for each indicator, the required value must be  $> 0.5$  for a good model.

Table 1. Average Variant Extracted (AVE)

Variable	AVE
Employee Performance	0,823
Organizational Commitment	0,854
Work Loyalty	0,844

The data presentation in table 1 above shows that the AVE value of employee performance, organizational commitment, and work loyalty are above 0.5. So it can be concluded that each variable has good discriminant validity.

#### 4.2 Composite Reliability

Composite Reliability is the part that is used to test the reliability value of indicators on a variable. A variable can be declared to meet composite reliability if it has a composite reliability value  $> 0.6$  (Ghozali, 2014). The following is the composite reliability value of each variable used in this study:

Table 2. Composite Reliability

Variable	Composite Reliability
Employee Performance	0,959
Organizational Commitment	0,946
Work Loyalty	0,956

The results in the table above state that all variables have a composite reliability value higher than 0.60, which means that all of these variables have good reliability.

#### 4.3 Cronbach Alpha

The reliability test with the composite reliability above can be strengthened by using the Cronbach alpha value. A variable can be declared reliable or meets cronbach alpha if it has a cronbach alpha value  $> 0.7$  (Eisingerich and Rubera 2010). The following is the cronbach alpha value of each variable:

Table 3. Cronbach Alpha

Variable	Cronbach alpha
Employee Performance	0,946
Organizational Commitment	0,914
Work Loyalty	0,938

From the table 3 above, it can be concluded that all variables have a high level of reliability. It can be seen that the Cronbach alpha value of all variables are bigger than 0.7. Thus these results indicate that all variables have met the requirements for the Cronbach alpha value.

#### 4.4 Path Coefficient

Path coefficient evaluation is used to show how strong the effect or influence of the independent variable on the dependent variable

Table 4. Path Coefficient

Variable	Original Sample
Work Loyalty -> Employee Performance	0,334
Work Loyalty -> Organizational Commitment	0,390
Organizational Commitment -> Employee Performance	0,470
Work Loyalty -> Organizational Commitment -> Work Performance	0,183

Referring to the inner model scheme that has been shown in the table above, it can be explained that the largest path coefficient value is indicated by organizational commitment to employee performance of 0.470. Then the second biggest influence is work loyalty to organizational commitment of 0.390. Then next is work loyalty to employee performance of 0.334. Next is work loyalty to employee performance through organizational commitment of 0.183.

#### 4.5 Hypothesis Testing

The result from data processing can be used to answer the hypothesis in this research. Hypothesis testing in this research was carried out by looking at the comparison between T-Statistics value and the P-Values value. The research hypothesis will be accepted if the P-Values value  $< 0.05$  (Yamin and Kurniawan 2011). The following are the results of hypothesis testing obtained in this research through the inner model:

Table 5. Uji Hypothesis

Hypothesis	Correlation	T-statistics	P-Values	Result
H1	Work loyalty -> employee performance	3,029	0,003	Accepted
H2	Work loyalty -> organizational commitment	3,507	0,002	Accepted
H3	Organizational commitment -> employee performance	3,149	0,000	Accepted
H4	Work loyalty -> organizational commitment -> employee performance	2,032	0,043	Accepted

Referring to the data presentation above, it can be seen that all hypotheses proposed in this study can be accepted because all of them have a P value smaller than 0.05. The effect of loyalty on employee performance has a P value of 0.003 or less than 0.05. This means that the loyalty variable has a significant effect on employee performance. The effect of loyalty on organizational commitment has a P value of 0.002 or less than 0.05. This means that the

loyalty variable has a significant effect on organizational commitment. The effect of organizational commitment on employee performance has a P value of 0.000 or small and large from 0.05. This means that the organizational commitment variable has a significant effect on employee performance. The effect of loyalty on employee performance through organizational commitment has a P value of 0.002 or less than 0.05. This means that the loyalty variable has a significant effect on employee performance through organizational commitment.

## 5. Conclusion

The results showed that work loyalty had an effect on employee performance. This is based on the results of hypothesis testing where the P value of work loyalty on employee performance is less than 0.05, which means work loyalty has a significant effect on employee performance. This shows that the more positive work loyalty, the higher the employee's performance. Vice versa, the more negative work loyalty, the lower the employee's performance. The results showed that work loyalty has an effect on organizational commitment. This is based on the results of hypothesis testing where the P value of work loyalty to organizational commitment is less than 0.05, which means that work loyalty has a significant effect on organizational commitment. This means that the better the work loyalty, the better the organizational commitment will be. The results showed that organizational commitment had an effect on employee performance. This is based on the results of hypothesis testing where the P value of organizational commitment to employee performance is less than 0.05, which means organizational commitment has a significant effect on employee performance. This means that the more positive organizational commitment, the more positive impact on employee performance. Conversely, the more negative organizational commitment, the more negative impact on employee performance. The results showed that organizational commitment was able to mediate the effect of work loyalty on employee performance. This is based on the results of hypothesis testing where the P value of work loyalty on organizational commitment and employee performance is less than 0.05, which means organizational commitment is able to mediate the effect of work loyalty on employee performance.

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