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ID 189 Advantages and Requirements for a Successful Introduction of an Industrial Tele Maintenance System

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ID 190 Breaking paradigms of lean and six sigma improvement models, new perspective of implementation.

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ID 193 The Impacts of Second Order Construct of Personal Resources on Employees' Job Performance and the Mediating Role of Affective Commitment: SEM Analysis Approach

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ID 194 The Relationship between Price Satisfaction, Non-financial and Financial Performance

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ID 195 Developing a Discrete Event Simulation Methodology to support a Six Sigma Methodology

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ID 199 Analysis of Factors Undermining the Reliability of Permanent Way Infrastructure in the South African Railway Industry

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ID 200 Logistics Performance and National Culture

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ID 201 Wind Energy: A Case Study On Wind Power As An Alternative Source Of Renewable Energy

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ID 202 The storage and management of Natural Resources: A case study on water and energy usage and management in hotels in Gauteng

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ID 203 Lean and Green Manufacturing Practices: A multiple case study about synergy

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ID 204 A Fuzzy-Network Analysis Approach for Modeling and Analyzing the Critical Success Factors for the ERP Implementation Projects

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ID 205 Proactive orientation towards the market and the degree of novelty of innovation in the exporting intensity of the business sector in Colombia

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ID 206 The Cost-Effectiveness Of Solar Energy In South Africa

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ID 207 Customer Churn Prediction Using Artificial Neural Network: An Analytical CRM Application

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ID 208 A method to construct driving cycles based on micro-trips and cluster analysis

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ID 209 Decrease in Loading Times for Trucks at a Steel Company

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ID 210 Activity-Based Costing (ABC) for Manufacturing Costs Reduction and Continuous Improvement: A Case Study

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ID 211 Making the Profitability Paradox of Bad Banks: A System Dynamics Approach

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ID 212 Improvement Plant Layout of Production Line in Textile Company: A Case Study

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ID 213 Implementation of a metaheuristic in a simulation model for programming in a port system

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ID 214 The effect of monitor type on the front head posture (FHP)

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ID 216 A double layer decision modeling for evaluating the conceptual arena of air pollution and linked measures

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ID 217 An Approach of Designing Robust Plant Layout Using Genetic Algorithm

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ID 220 Analysis and Optimization of Wire Electric Discharge Cutting Parameters for Micro-hardness of Ni55.8Ti Shape Memory Alloys

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ID 221 Taguchi integrated Grey Relation based Multi-Performance Optimization for Productivity and Surface Quality in Dry Machining of SS304

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ID 222 Investigation on Wire Electric Discharge Cutting of Ni55.8Ti Shape Memory Alloy for Recast Layer Thickness

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ID 223 A Case Study on Effectiveness of 4S Implementation in a Machine Shop

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ID 224 Implementation of Shitsuke for Sustaining with 5S Culture in a Mechanical Workshop

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ID 225 Industrial IoT integrated with Simulation – A Digital Twin approach to support real-time decision making

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ID 226 Biogas Power Generation Plant with Power of Hydrogen (PH) and Gas Flow Regulation

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ID 227 Nonintrusive Appliance Load Monitoring (NALP) Power Data Aggregation System

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ID 228 Integrating Production Assessment with PPAP – A QFD Approach

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ID 229 Plagiarism in Colombian Universities – Regulatory Aspects

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ID 230 Adoption of product-service system and the potential as a sustainable solution: A literature view in the fashion industry

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ID 231 A new climate indicator to be used in prediction of cooling energy in hot and humid regions

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ID 232 Measuring Sustainability Performance of SMEs in A Developing Country – A study of Southern Vietnam

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ID 233 Design & Fabrication of Smart Louvered Roof

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ID 235 Digitalization in Industry 4.0, Knowledge Management

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ID 236 A Two-Step Stochastic Optimization and Simulation Approach for Scheduling Operating Rooms in an Ophthalmology Surgery Department

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ID 238 Selection of a biomass product using a hybrid approach of BW-PROMETHEE

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ID 239 Augmented Reality in Industrial Applications: Technologies and Challenges

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ID 241 Challenges in managing oil and gas supply chain – An exploratory study

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ID 242 Optimal policy for a vendor-buyer inventory system with price-dependent demand, production cost discount and reliability consideration: A geometric programming approach

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ID 243 Antecedents and Consequences in Green Manufacturing: A Review Literature

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ID 244 Optimal Design of Additive Manufacturing Supply Chains

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ID 245 The Effect of Implementing International Public Sector Accounting Standards on the Financial Reporting and Internal Control Systems in United Nations Agencies

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ID 246 Design of Glass Reinforced Concrete Wall for Improved Utilisation of Natural Light and Aesthetics without Compromising the Strength

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ID 247 A Portable Workstation: Implementing Techniques of Product Design Process

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ID 251 Two-stage Meta-Heuristic Algorithm for Parallel Machine Scheduling with Additional Resource Input in Shipyard Manufacturing

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ID 252 Performance assessment of buck converter using single and cascade control loops

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ID 253 locating battery swapping stations for smart e-bus system

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ID 254 Life Cycle Assessment Of Needle Roller Bearing

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ID 255 Life Cycle Assessment of Corrugated Box

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ID 256 A Systematic Literature Review of Blockchain Technology in Agriculture

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ID 257 Knowledge Management to Minimize the Marketing Challenges using Strategic Management as a Tool

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ID 258 Probabilistic Control of Projects Based on Earned Value Management

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ID 260 Optimization of customers' trust in the insurance industry by data envelopment analysis: An actual case study

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ID 261 Electric-Vehicle Traveling Salesman Problem with Battery Swapping

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ID 263 Assessing Assimilation Gap in Higher Technical Educational Institutions: A Conceptual Framework

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ID 264 Investigating the Motivators, Barriers and Enablers Associated with the Implementation of Sustainable Supply Chain in Saudi Manufacturing Industry

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ID 265 Investigating The Impact Of Green Supply Chain Managemnet On Organisational Performance. A Case Of Seleceted Johannesburgbased Corporates

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ID 268 Factors of the innovation ecosystem by example of Latvian technological startup

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ID 269 Analysis Of Organizational Management And Supply Chains In Ecotourism Companies Of Lejanías, Uribe And Mesetas- Meta-Colombia

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ID 270 Ecotouristic foresight in the Colombian post-conflict for the sustainability of the tourist service with emphasis on ecological marketing. Buenaventura Case

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ID 271 Prevalence Study of Lean Management in Academic Education

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ID 272 Use of web application in the reactivation of freight intermodal transport in Colombia

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ID 274 Real-Time Fuzzy Rotation-Insensitive System for Motion Image Recognition

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ID 276 Critical Competencies in Project- Based Organizations: An Interpretive Structural Modelling approach

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ID 277 SAP System Implementation: A Case Study in a Public Institution of Turkey

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ID 278 Application of Six Sigma in Improving the Quality of Recyclable Polymer in Collection Centers

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ID 279 Mobile Robotic Platform for Simultaneous Localization and Mapping (SLAM) Experiments Based on Range Sensors

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ID 280 A Simulation Approach for Spare Parts Supply Chain Management

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ID 281 Ethics in the Development and Engineering of Software Jeanette Del Pilar

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ID 283 Professional Drivers' Motivations for Eco-driving Behavior

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ID 284 Important Conditions for integrating a Logistics Cluster

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ID 285 The Impact of Consumer Return Strategies on Omnichannel Retailing

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ID 300 Fruiting Patterns of Cacao as Affected by Shading Regimes

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ID 301 Evaluation of Saturated Hydraulic Conductivity at Adaptable Depths in a Sandy Loam Using the Beerkan Method

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ID 302 On Applying Big Data to Transform the Inspection Lines

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ID 303 A Study of Workforce Assignment Problem in Lean Factory on Machine Tool Industry

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ID 304 Process View on E-Health with Risk Analysis

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ID 305 Optimization of operating parameters of an ingot mold during continuous casting – case of a content high carbon slab

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ID 306 Promoting Supplier's Environmental Innovation via Emission Taxation

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ID 308 Harmonics in Power Systems and Mitigating Techniques

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ID 315 Evaluation of Outfit Rental Fee Payment Processing System of LMFH Company

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ID 316 The Comparison of Characteristics Profile of the Traditional Fishing Boats in Lamongan, Probolinggo, and Pasuruan, Indonesia

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ID 317 Towards Using Advanced Analytics for Port Performance Management

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ID 318 Guidelines to Create a Student CAD Portfolio

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ID 319 Prediction of the Friction Coefficient of 13Cr5Ni2Mo Steel Using Experiments Plans-Study of Wear Behavior

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ID 327 Ranking of the Factors for Resilient Humanitarian Supply Chain: A TOPSIS Approach

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ID 328 Optimizing Production Overtime Period and Backorder Quantity in Joint Production and Maintenance Scheduling

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ID 329 Analysis Of Accidental Deaths During Songkran Festival Using Data Mining

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ID 330 The Impact of Carbon Accounting on Corporate Financial Performance: Evidence from the Energy Sector in Jordan

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ID 333 Understanding Capacity Planning Through a Dynamic Performance Management Approach for Public Sector

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ID 334 A Method to Measure Logistic Interoperability using Structural Equation Modelling

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ID 335 A Review of Adomian Decomposition Method

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ID 336 Review Methods to Solve Fractional Black-Scholes

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ID 337 Review Strategies of Optimal Crop Insurance Selection Based on Climate Change

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ID 338 A Review Climate Index Insurance in the Field of Agriculture Using the Copula Model

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ID 339 On the Impact of Cargo Capacity and Cost on Shipment Consolidation

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ID 340 Analysis Of Credit Scoring Using Particle Swarm Optimization Algorithm In Logistic Regression Model

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ID 341 Generalized Transportation Relay Network Design

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ID 342 Improvement Production Capacity of Recycled Plastic Wood through Six Sigma DMAIC

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ID 343 Development of Industry 4.0 Virtual Lab for Manufacturing Engineering Education

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ID 344 The stability test of traditional fishing boats in East Java, Indonesia based on the International Maritime Organization Standard

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ID 345 The Inventory Control Analysis of Head Truck Spare Parts with Continuous Review Policy in Container Terminal Company

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ID 358 Requirements for Education 4.0 and study programs within Industry 4.0

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ID 359 Determination of changes between Lean management and Lean 4.0

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ID 360 An Assessment On The Implementation Of Sustainable Supply Chain Management (Green Public Procurement) A case study in the city of Johannesburg Municipality

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ID 361 An Investigation of Supply Chain Operational Improvements for Small and Medium Enterprises (SMEs): A UK Manufacturing Case Study

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ID 362 Gold Value Addition and Beneficiation for Women in the Mining Sector

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ID 363 Mathematical Modelling of Multi-Product Ordering in Three-Echelon Supply Chain Networks

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ID 364 Reviewing the use of Multi-Criteria Group Decision Making Methods for Transportation Problems: Case of Transport Mode Selection Problem

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ID 377 Sustainable Manufacturing Practices, Sustainable Performance and the Moderating Effect of Innovation

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Nithya P. Parameswara, Department of Decision Sciences,, University of Sri Jayewardenepura, Nugegoda, Sri Lanka.

ID 378 Applicable Models of Customer Analytics for a Retail Company in Mexico

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Juan Ignacio González Espinosa, Engineering Department, Universidad de Monterrey, Nuevo León, México
Luz María Valdez de la Rosa, Engineering Department, Universidad de Monterrey, Nuevo León, México

ID 380 TKFR2: A Multi-function Robot

Turki Ahmed Yanbu, Industrial College, Yanbu Industrial City, AlMadinah, Saudi Arabia

ID 381 The Effect of The AIDC On JIDOKA's Performance via VSM to Reduce the total Manufacturing Lead Time

Ahmed M. Abed, Industrial Engineering Department, AIET, Alexandria
Dr.Tamer S. Gaafar, Computer and systems dept., Zagazig University

ID 382 Preliminary Study on Neural Correspondence of Human Trust

Seeung Oh, Adjunct Professor, North Carolina A and T state university

Younho Seong, Associate Professor, North Carolina A and T state university
Eui Park, Professor, North Carolina A&T State University

ID 383 Student Satisfaction and I-E-M Method Proposal for Improved Learning Experience of Generation Y and Generation Z Engineering Students

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ID 385 Developing Rasterization Using Unstable Modalities

Heejoo Choi, SEOUL SEOUL, South Korea
Sangsoo Park, SEOUL SEOUL, South Korea

ID 386 Title: The Move It Forward Theory (MIFT) offers a better method to manage major machine failure in a serial flow line.

William Edward, Ph.D. , ISE Department, Oakland University,
Sankar Sengupta, Ph.D., Professor, ISE Department, Oakland University
Michael Latcha, Ph.D., Associate Professor, Mechanical Engineering, Department, Oakland University

ID 387 The Effects of the Fourth Industrial Revolution on the Career Progression of Engineers in the South African Packaging Industry

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ID 388 Usefulness of System Dynamics Models in Systems Engineering: the Systems-Thinking Educational Perspective

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ID 389 Dynamic perspectives in Colombian Swine Supply Chain

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Milton M. Herrera, Universidad Militar Nueva Granada
Hugo Rene Sarmiento, Escuela Colombiana de Ingeniería Julio Garavito

ID 390 Identifying Barriers of Lean Six Sigma Implementation in RMG Sector: A Case Study

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Farzana Islam, Bangladesh University of Engineering & Technology
Md Sadman Sakib , Bangladesh University of Engineering & Technology
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ID 391 Hybrid System Operating LED Streetlight

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ID 392 Energy Performance of Insulation Material

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ID 393 New Approaches to Fast the Iterative Closest Point (ICP) Algorithm: Application to the Inspection of Freeform Surfaces

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ID 394 Effects of Collaborative Learning Blended Knowledge Management E-learning Approach on Students' Motivation in Higher Education

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ID 395 A Review of Adomian Decomposition Method and Applied to Deferential Equations

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ID 396 Literature Review on Employment of Unmanned Aerial Vehicles for Disaster Management

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ID 400 Real time car engine condition monitoring by using instantaneous angular speed analysis (IAS)

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ID 401 Production Employees Knowledge in Digitized Production Environment

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ID 402 Mistakes in Managing Local Community; Exploring the Case of Repsol in Canary Islands

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ID 403 Assessing Due Date Fulfillment for Lumber Manufacturing Production Orders

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ID 404 To understand the applications of cloud computing adoption in various sectors

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ID 406 Prediction of the fracture of a non-alloy steel calm to aluminum by simulation in direct tensile test

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ID 407 Needle Stick Injury: Occupational Hazards from Medical Waste among Healthcare Workers

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ID 408 Rebuilding Organization's Legitimacy in the Eyes of Local Community; Case Study of Oil and Gas Megaprojects

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ID 416 A Clustering Algorithm for Location Routing Problem with Outsourced Delivery

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ID 419 Development of a Campus Carbon Footprint Intervention Framework

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ID 421 Compressed Air Driven Car

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ID 423 Teaching Assistantship Assignment Optimization using Hungarian Algorithm – A Case Study

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ID 424 Life Cycle Assessment of Residential Buildings Considering Photovoltaic Systems

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ID 425 Statistical and Kinetic Modeling for Investigating Acetyl Salicylic Acid Stability

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ID 426 Multi-criteria Supplier Selection for Implementing Lean Six Sigma Using Fuzzy AHP

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ID 427 Optimizing a Solid Waste Management Model using Particle Swarm Optimization

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ID 428 Business Process Modeling for Tracing Halal Food using BPMN

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ID 429 Solving the Dynamic Facility Layout Problem using Dynamic Programing

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ID 430 Sustainability of Sago Agro-industry Using Rapid Appraisal (Case study : Sago Industri X in South Sorong, Papua)

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ID 431 Study of Inhibitory Efficacy of Natural Extract of Opuntia Ficus Indica as Green Inhibitor for Corrosion of Mild Steel in Drilling Water

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ID 432 The alkali concentration effect on quality of semi refined carrageenan production : a meta-analysis

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ID 433 A Hierarchical Facility Location-Allocation Model for the Maternal Healthcare in India

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ID 434 Inverted Hockey Stick Effect In The European Industry: Inventory Reduction In The Last Fiscal Quarter

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ID 435 Sustainable UK Food Manufacturer Supplier Selection: A Conceptual Framework for the Responsive Supply Chain in the Era of Industry 4.0

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ID 437 Operational Excellence and Feasibility Analysis of raw material

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ID 438 Horizontal Collaboration to Reduce Traffic Congestion: Opportunities for Industries of Bangladesh by improving Smart Conveyance

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ID 439 The Ecological Footprint of Polyethylene Teraphthalate. A Case Study

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ID 450 Governance Arrangements for Agile Projects

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ID 451 Assessing the use of Project Management Information Systems and Its Impact on Project Outcome

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ID 452 Technical and Environmental Assessment of Lignite-fired Electricity Generation in Greece

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ID 453 Change Management as the bridge from Operational to Organizational Excellence

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Arlethe Yarí Aguilar-Villarreal, Universidad Autónoma de Nuevo León, San Nicolás de los Garza, Nuevo León, México

ID 454 Culture & Personality: Directional influence on Consumer Switching

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ID 455 Efficiency analysis of public primary schools: the case of a medium-sized Brazilian city

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ID 456 Greenhouse Gas (GHG) Emissions from Land Transports in Malaysia: Modelling and Policy Analysis

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ID 458 Use of Clean Technologies in Agribusiness in Mexico: A literature Review

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ID 459 Transport Operations Optimisation through Lean Implementation – A Case Study

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ID 461 Minding the gap between Smart Factory Systems and sustainability performance

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ID 462 Stylistic Design Engineering (SDE) applied to a new E-Segment sport sedan

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ID 463 A new SUV conceived by Stylistic Design Engineering (SDE)

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ID 464 Stock Return Prediction Based on Some Forms of Capital Asset Pricing Model (CAPM)

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ID 465 Stock Assessment Using a Dividend Discount Model with Growth Rate Following a Time Series Pattern

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ID 466 Problems of Demand and Effects in Portfolio Based Selection of Utility Functions

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ID 467 Unit Link Single Life Premium Calculation for Unit Link Lifetime Insurance Using the Ratchet Compound Method

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ID 468 Graph Algorithm Vertex Coloring

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ID 469 Solving Traveling Salesman Problems Using Branch and Bound Methods

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ID 470 Comparison of Double Exponential Smoothing Holt and Fuzzy Time Series Methods in Forecasting Stock Prices (Case Study: PT Bank Central Asia Tbk)

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ID 472 Modelling And Mapping University Business Process

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ID 473 Automatic Sawing seeds Machine

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ID 485 Developing a risk covering based model for locating rescue and relief centers in hazardous materials transportation (An empirical study: Guilan province of Iran)

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ID 486 Enhance The Thermal Properties Of Poly-Propylene Polymer

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ID 488 Assessing Critical Failure Factors for Implementing Lean Six Sigma Framework in Indian Manufacturing Organizations

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ID 489 Prioritizing Service Quality Factors for Polytechnic Institutions as Per Student's Perception in the State of Madhya Pradesh, India

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ID 490 Towards a patient rule induction based classifier

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ID 499 Enhance the Thermal Properties of Poly-propylene

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ID 500 A Continuous Review Inventory Model With Backorders And Equivalencies

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ID 501 The Impact of Learning Orientation on Innovation Performance: Mediating Role of Operations Strategy and Moderating Role of Environmental Uncertainty

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ID 508 Design, Fabrication and Testing of a 3D Printer

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ID 509 Multi-criteria Decision Approach to Measure Complexity Level in Supply Chain

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ID 510 Material and Energy Wastes Reduction in Steel Production through the Application of Lean Manufacturing Tools

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ID 511 Ranking of Technologies for Energy Recovery from Municipal Solid Waste in Bangladesh Using the Analytic Hierarchical Process (AHP): A Case Study

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ID: 513 Scheduling of M jobs on N machines by a novel sequencing approach

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ID 515 Supply Chain 4.0: A Shift in Paradigm

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ID 516 Handling Mercury (Hg) Waste through Utilization of Lapindo Activated Mud HCl to Realize Environmentally Friendly Gold Mining Industries

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ID 517 Optimization of Granite Cutting in Abrasive Water Jet Machining using Taguchi Technique

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ID 519 Mobile Application Development: A comprehensive and systematic literature review

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ID 527 Process View on E-Health with Risk Analysis

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ID 528 Employee Productivity Improvement & Skill Enhancement in Pharmaceutical Industry

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ID 529 An Assessment of Presence of Palm Kernel Shell Ashes and Sawdust Ashes on Strength Properties of Lateritic Soil

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ID 530 A Real Study-Based Modeling of Stochastic Behavior of Traffic Crash Counts Using Penalized Poisson-GzLM

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ID 531 Tools and Leadership Qualities for Change Implementation

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ID 532 Introducing a Measurement Framework to Assess Lean Readiness Level within Emergency Departments in Kuwait

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ID 533 Performance and Evaluation of Perforated Bamboo as Reinforcement for Concrete

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ID 534 Monitoring of Simple Linear Quality Profiles Using dEWMA Statistic under Uncertainty of Process Deviations

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ID 542 Managing student technology innovations of rural engineering campuses

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ID 545 Case Study: Lean and Green Technique of Manufacturing Industries

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ID 550 Ergonomic Evaluation of Vehicle License Plates used in Saudi Arabia

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ID 558 Strategic Sourcing in Manufacturing Sector: A Case of an Indian Company

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ID 561 Measuring the effect of entrepreneurial competence and social media marketing on small medium enterprises' competitive advantage: a structural equation modeling approach

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ID 563 Design, Fabrication and Testing of a 3D Printer

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ID 565 Model of Treatment Media and Hand-Eye Coordination, Experimental Studies on Altras Softball Team

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ID 566 Model of Students' Understanding on Thermodynamic Concepts in Learning with Virtual Labs

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ID 567 Model of Triple Jump Achievment: The Effect Method Learning and Motor Skills Youth 18 – 20 Age

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ID 568 The role of academics' organizational commitments on their extra role behavior in academic contexts

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ID 569 Model of Physical Condition of Leg Muscle Explosive Power, Nutrition Status and Confidence Towards Skill Smash Sepaktakraw

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ID 570 Empowerment Community in Buru Regency

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ID 571 Utilization of Qualitative Methods in Research Universities

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ID 572 Interactive Multimedia Product Based on Green Chemistry in the Acid-Base Concept of Chemistry Learning Process

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ID 573 Analysis Characteristics Organoleptic of Sorghum Pie for Quality Entrepreneurial Products with The Influence of Varieties and Concentration of Flour

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ID 574 Analysis of Design Product Entrepreneursip Syrup Based Purple Sweet Potato (Ipomoea batatas)

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ID 576 Linking Organizational Learning, Organizational Culture, and Market Orientation on Innovation Culture: A Case Study in Indonesian MSME's

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ID 588 Technology CLL to Foster Student's Speaking

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ID 589 Service Quality of Patient's Perceived Value in Private Hospital Surabaya, Indonesia

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ID 590 Islamic social reporting disclosure and firm value: Empirical Study of Firms Listed in Jakarta Islamic Index

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ID 591 Model of Skill Sprint 100 Meters, Experiment Study The Method of Exercise and Reaction Time on Male Students of Physical Education

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ID 593 Model on Butterfly Swimming for Athletes in the Age 11-13 Years Group

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ID 594 Analysis of Factors Considered in Policy Making Placement Officer in Structural Position (Studies in the Uinversity of Mataram)

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ID 595 Model of Competence and Organizational Citizenship Behaviour (OCB) on Performance of Hotel Employeees in Batam City with Organizational Commitment as Intervening Variables

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ID 597 Model Knowledge Fiscal Potential Impact on Economic Growth and Public Welfare of East Java, Indonesia

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Categorization of Supply Chain Sustainability Risks in SMEs: A Preliminary evidence from a Developing Country

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Abstract

Small and Medium Enterprises (SMEs) are an important contributor to the global economic growth. Nevertheless, owing to their lack of managerial capability to manage the impact of business uncertainty, they are prone to business failures. To prevent this situation, identification of risks affecting sustainability of SMEs and preparing appropriate risk mitigation strategies are important. Most of the previous supply chain risk management studies discussing the sustainability risks are focused mainly on large enterprises and fail to address this in the SMEs context. To address this research gap, this paper presents a preliminary study of the typology and categorization of supply chain sustainability risk faced by SMEs in the context of a developing country Indonesia. A preliminary survey to identify and categorize supply chain sustainability risk faced by Indonesian SMEs is accomplished by deriving sustainability risk dimensions and variables based on the triple bottom line concept. The study presents supply chain sustainability risk dimensions and variables from SMEs of various sectors. We have also identified opportunities for further study from this initial effort.

Keywords: Small and Medium Enterprises (SME), Sustainability Risk, Supply Chain, Triple Bottom Line.

1. Introduction

Contributing to more than 60% of the global domestic product in developed and developing countries (Khalique et al., 2014), Small and Medium Enterprises (SMEs) are the back bone of economic growth at both of developed and developing countries (Gunasekaran et al., 2013). Thus, maintaining sustainability of SME operation will imply to assure security of global economic growth. Similar to larger business enterprises, SMEs operate business with their tiers. In this regard, sustaining business operation of the SMEs within supply chain context is undoubtedly important. However, characterized by their limitations such as lack of educational and managerial capability and limited operational fund makes SMEs business prone to the business death. According to Tong et al., (2018) only 13% of the SMEs survives after 10 years of their business operating ages. On the other side, pressure from global customer, stakeholders and market pressures enforce business owner to implement sustainability initiative in running business with their networks (Sarpong et al., 2019). This situation demands the need to identify risk factors affecting sustainability that relevant sustainability mitigation strategies could be formulated. Despite this demanding situation, attention of researchers to improve understanding on risk management practices at SMEs supply chain context are rarely found (Verbano and Venturini, 2013), as most of earlier references on managing supply chain risks are focusing on large enterprises and in a developed economy settings (Lavastre et al. , 2013), (Vijay et al., 2019),(Qazi and Gaudenzi, 2016), Ghadimi et al., (2019). The previous existing studies on managing supply chain risk management at SMEs environment by Ellengard (2008) and Faisal (2015) mostly focus on operational type supply chain risks. Evolving as an important risk factors affecting existential of businesses in yearly time horizon (Fahimnia et al., 2015), investigative efforts in managing sustainability risk of SMEs in developing country settings is very rare in reference databases. Motivated by scarcity of studies on supply chain risk management at SMEs level with a focus to sustainability risks and in developing county context, this study presents an initial investigative effort on categorization of supply chain sustainability risk in the context of SMEs in Indonesia. The goal of this study are two folds; first to categorize supply chain sustainability risk in the SMEs, and second to categorize degree of importance among sustainability risk dimensions in the context of SMEs in developing countries. The structure of this paper is in the followings, in section 2, overview and characteristics of the Micro-Small-and Medium Enterprises based on the Indonesian regulatory perspective is presented. This is followed by categorization of supply chain sustainability risk in section 3. Categorization of supply chain sustainability risks of some typical SMEs using case example of Indonesia is presented in section 4. Section 4 and 5 relates to findings and conclusions from this study.

2. Overview and Characteristics of the Micro-Small and Medium Enterprises in Indonesian Context

On the basis of geographic locations and legislative regulations, definition of micro, small and medium enterprises varies among countries (Smith and Watson, 2012). In Indonesia as one of developing countries, categorization of Small and Medium enterprises is based on assets and financial income. According to the Indonesian Act number 20 2008 on the small and medium enterprises, Small and Medium Enterprises are classified as depicted in Table 1.

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Table 1. Categorization of SME According to Indonesia Act Number 20 2008 on Small and Medium Enterprises

SME Category	**Criteria**	
	Assets	**Annual Income**
Micro	Up to 50 Million IDR	Up to 300 Million IDR
Small	50 – 500 Million IDR	300 – 2,5 Billions IDR
Medium	500 -50 Billions IDR	2,5 Billions – 50 Billions IDR

Until 2016, the number of SMEs in Indonesia has reached almost 90% of the business players and contributing to 59% of the National Product Domestic Brutto (PDB) (Arsiwi et al., 2018). Similar to other developing countries, SMEs in Indonesia absorbs most of the work force (Kusumawadhani et al., 2018). From the business point of view, the business model of the SMEs in Indonesia consists of seven categories ranging from Trade, Processing Industries, Agricultures, Farming, Fisheries, Animal Breeding and services. Compared to large business enterprises in Indonesian settings, limitations impeding development of the Indonesian SMEs business are lack of access to financial institutions, short product life cycle, low market access and lack of competent human resources (Adawiyah, 2013).

3. Risk and Supply Chain Risk Management

Following Aven (2012), the term risk is connected to the occurrence of forthcoming events with uncertainty on the time of their occurrence and consequences in terms of uncertain modes and duration. In expressing the occurrence rate of those event, the probability occurrence which is based on the prior decision makers knowledge is used. In expressing the scale of risk event consequences, when the monetary data is obtainable, the cost basis impact assessment is used (Ahsen, 2008). Otherwise, decision makers usually use ordinal scale ranging from 1 to 10 or 10 to 100 with their corresponding linguistic interpretation scale. Emerging as a new research stream in supply chain management discipline, supply chain risk terminology has many interpretations (Ho et al., 2015). Despite varying existing definitions, the principle of supply chain management is consisting of identifying and categorizing risk events, evaluating criticality of the impact of their occurrences and finding relevant risk mitigation strategies and monitoring the impact of the implemented risk mitigations against critical risks (Dani and Deep,2009).

Supply chain risk management is a new discipline that has evolved of the need to assure smoothness of business process flows along its chains against the impact of business uncertainties. Emerging as a new research stream in the supply chain management area, supply chain risk management deals with collaborative effort among supply chain tiers intended to identify and manage risk with the ultimate goal to reduce vulnerability against risks and ensuring profitability and business continuation (Hudnukar et al., 2017). Depending on classification criteria, supply chain risk categories can be broken down into various type of risks. According to Louis and Pagel (2019), based on newness of the risk modes taken into consideration, supply chain risks are classified as ordinary and sustainability risks. Ordinary risks are typology of risk disruptive events having temporary impact on the operational aspect of the enterprises and usually having no impact to their existential. On the other hand, sustainability risks are any kind

of risks that operational, environmental and social implications and threaten the existential of firm business in the longer time horizon.

3.1. Classification of Supply Chain Sustainability Risks

Becoming the buzzword in nowadays business world since the release of a book entitle Our Common Future by Brundtland in 1987, sustainability can be defined as the ability to provide the need of future generation without losing capability to provide the need of current society. In its definition context, sustainability is closely related to the three pillars; economical, environmental and social. Economical pillar related to capability to provide the need of customers based on the economic context. Environmental and social context demands on the need to consider impact of operations against environments and societal aspects. In parallel with efforts to extend sustainability initiative outside the company, the term sustainable supply chain is coined and has emerged as a new research stream in supply chain management discipline. Basing on above mentioned definition, supply chain sustainability risks can be defined as any risk factors that have an impact on environments and society that could threaten the capability to provide the need of future generations

In order to gain success in sustainability risk mitigation strategies, identifying sustainability risk modes is the first important step. By knowing and categorizing supply chain sustainability risks will provide better understanding of conditions affecting the occurrence of risk events, their causes and relevant mitigation strategies. Classification of sustainability risk dimensions can be referred to the work of (Sutrisno et al., 2019)

Table 2. Typological of Sustainability Risk (Adopted from Sutrisno et al., 2019)

Risk Dimension	**Example of Risk Variable**
Reputational Risk	Defamation of company reputation
Competition Risk	Price war among competitors
Innovation Risk	Lack of innovation capability
Environmental Risk	The use of forbidden chemicals in producing goods
Social Risk	Riots, sexual harassment, the use of child labor, substandard working facility
Regulatory Risk	Non-Compliance with regulatory standard
Human Resources Risk	Loss of Talent, absenteeism
Security Risk	Theft, Vandalism, Riot
Political Risk	The change of governmental policy
Behavioral Risk	Opportunistic Behavior, Impatience, disobedience or any other negative habitual
Collaborative Risk	Information leakage, distrust among partners
Corruption Risk	Purchasing substandard quality of goods and services from partners at standard rate, misuse of funds and or authority for personal interest

4. Research Methodology

This study uses the following steps to undertake this research. In the first stage, SME criteria were selected for interview and observation based on criteria taken from the Indonesian Law on Small and Medium Enterprises as described in the previous part. In the second step, literature review on studies related to SMEs, supply chain risk assessment, and sustainability were conducted to identify dimensions and variables of supply chain sustainability risk to establish theoretical model that was used as reference points. This study follows the work of Gianakis and Papadopoulos (2016) on categorization of sustainability risk variables and dimensions. In the third stage, selection of sampling method and respondent criteria was determined. As large number of SMEs exist in Indonesia, it is impossible and very costly to undertake survey covering all SMEs. Considering this situation, a decision to conduct semi-structured interview was considered more appropriate to evaluate relevance of the previous supply chain sustainability variables in the context of developing country and identification of the type of sustainability risk modes being obtained from the SMEs. This preliminary study was conducted with the help of some SMEs from various business sectors in Indonesia with at least three years in existence. Ten SME owners were visited and interviewed using semi structured questionnaires. Questions involved information on the company data (business core, product type, age of business, gender of the respondents and level of education), typologies of sustainability risk they faced in their everyday business activities and kind of sustainability risks they perceived importantly affecting to sustainability of their businesses using linguistics interpretations such as high, medium, low and no risk at all. Interview sessions were accomplished on average of 1 hour.

5. Findings

Table 3 presents the profile of the respondents from SMEs that participated in semi-structured interviews.

Table 3. SME profile of the survey sample

Respondent profile	Business Core	Role	Level of Education	Age of Business (years)	Gender
Company 1 (C1)	Wooden handicraft	Owner	Secondary High School	15	Male
Company 2 (C2)	Wooden handicrafts	Owner	Master Degree	6	Male
Company 3 (C3)	Flower Farming	Operating supervisor	Senior High School	8	Female
Company 4 (C4)	Fish Breeding	Owner	Senior High School	6	Male
Company 5 (C5)	Traditional Clothing Manufacturer	Owner	Bachelor	8	Female
Company 6 (C6)	Ceramics Pottery Maker	Owner	Senior High School	20	Male
Company7	Wooden Furniture	Owner	Senior	15	Male

(C7)			High School		
Company 8 (C8)	Traditional Agriculture Utensils	Owner	Elementary School	10	Male
Company 9 (C9)	Snack	Store Manager	Senior High School	7	Female
Company 10 (C10)	Traditional Coffee roaster and distributor	Owner	Secondary High school	15	Male

5.1. Identification and Categorization of Sustainability Risks of the SMEs

In our initial study, three-dimensional sustainability risk variables namely environmental, economic and social risk dimensions are used as basis to determine typology of sustainability risk perceived by the respondents. Using semi structured interviews to the respondents, sustainability supply chain categories and their variables identified are presented in Table 4.

Table 4. Representation of dimensions, variables and typological of sustainability risk variables perceived by the SME practitioners

		SMEs type										**Count**
Supply Chain Risk Category	**Supply Chain Risk Variable**	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	
Reputational Risk	Product Hygienic									x		1
	Short product life cycle risk	x	x			x						3
	Aesthetical (Packaging) risk									x	x	2
Regulatory Risk (Compliance Risk)	Product certification					x				x		2
	Governmental regulation	x	x	x				x	x		x	6
	Imported Products								x			1
Competition Risk	Price War among competitors	x	x	x	x	x	X	x	x	x	x	10
	Change of Customers preference	x	x	x	x	x	X	x	x	x	x	10
	Entrance of new competitors	x	x	x	x	x				x		6
	Business Information Leakage	x	x	x	x	x				x		6
	Imitating competitors' product	x	x			x	x	x		x		6
Innovation Risk	Lack Innovation Capability	x	x				x	x	x			5
	No sense of innovation initiative	x	x				x		x			4

Human Resource Risk	Scarcity of Talented People	x	x			x		x			x	5
	Hijacked Talents					x		x	x	x		4
Business Disruptions	Workers absenteeism	x	x	x	x	x	x		x	x		8
	Equipment obsolescence	x	x			x		x	x	x	x	7
	Equipment breakdown	x	x				x	x	x		x	6
	Water and electricity shortage	x	x	x	x	x	x	x	x	x	x	10
	spare part cannibalization											
Security Risk	Criminals act	x	x	x	x							4
Property Damage	Natural Disasters	x	x	x	x	x	x	x	x		x	9
Social Risk	Unethical Treatment of animals											
	Unfair salaries											
	The use of pirated software											
	Bribery											
	The use of children workforce				x				x			2
	Ignorance on working place comfort	x	x	x	x	x	x	x	x	x	x	10
	Ignorance on using working safety apparatus	x	x	x			x	x	x		x	7
	Discrimination											
Environmental risk	Noise							x				1
	The use of forbidden chemicals											
	Packaging waste											
	By product waste	x	x		x	x	x	x	x			7
	Emission											
	Environmental accidents	x	x	x	x			x				5
Economic Risk	Tax Avoidance	x	x		x		x	x	x			6
	Patent Infringement	x				x				x		3
	Price Fixing											
	Dishonesty					x						1
	Increasing fuel and electricity tariffs	x	x	x	x	x	x	x	x	x	x	10

In reputational risk dimension, short product life cycle risk is perceived as the most perceived sustainability risk. Price War and the Change of Customers' Preference emerged as the two

mostly perceived economic risk factors. Flagging governmental support and product certification are the two kinds of regulatory -related sustainability risks. Governmental regulations in this paper is concerned with the discontinued support by the government to provide monitoring of the effectiveness of training and other type of capability building activities for the SMEs. Low awareness of the SMEs in recognizing and adopting the Indonesian National Standard for product sold by the SMEs is the second important compliance risk causing difficulty in widening product market segment and impeding production quantities. In Competition Risk, Price War Among Competitors and The Change of Customers Preference are the two sustainability risk factors perceived by the respondents. Lack of Innovation Capability and the Scarcity of Talented People are two kinds of sustainability risk emerging from Innovation and Human Resource Risk category. Criminal Act and natural disasters are two kinds of risk emerged from security and property damage dimensions. In business disruption risk category, Water and Electricity Price Rate and Workers Absenteeism are two kinds of most perceived sustainability risk. In Social Risk category, Working Location Comfort and the Ignorance on Using Safety Apparatus are the two most perceived as sustainability risk. In Environmental Risk category, by product waste is becoming the most perceived sustainability risk. In Economic Risk category, Increasing Fuel and Electricity Tariffs, Tax Avoidance and Patent Infringement are the three types of sustainability risk.

5.2. Degree of Sustainability Risk Importance

Each of sustainability risk category is having different impact on business sustainability. Considering this situation, this study attempts to present on the degree of sustainability risk importance among the respondents and the result is presented in Table 5. Among the ten sustainability risk categories the top three sustainability risks are fallen into regulatory, economic and competition Risks.

Table 5. Degree of Sustainability Risk Importance

Number	Sustainability Risk Category	Rank of Risk Importance
1	Reputational Risk	6
2	Regulatory Risk	1
3	Competition Risk	3
4	Innovation Risk	7
5	Human Resource Risk	9
6	Business Disruption Risk	5
7	Property Damage	4
8	Social Risk	10
9	Environmental Risk	8
10	Economic Risk	2

Using a very few respondents, certainly the results reported by this initial study do not provide high robustness and must be used cautiously. In addition, this study only considers the perception of the SMEs practitioners' and exclude perception of other stakeholders such as the government. Nevertheless, as this study is a kind of preliminary investigative effort, extension of this initial study using larger respondents representing different SME business sectors in Indonesia will provide a clearer portrait of sustainability risk category and variables affecting business continuation of the SMEs in the context of developing country.

6. Conclusions

SMEs are prime movers of economic development in both of developed and developing countries. Nevertheless, in spite of their strategic role in widening opportunity for job creation and boosting economic growth, the fate of SMEs business is often ended with death, signaling the need to prevent this unwanted condition. To prevent this unintended situation, identifying risk affecting the existential of their business is important as it is becoming first step in making relevant risk prevention strategies. In this paper, an initial survey is presented to identify and categorize supply chain sustainability risk types in the Indonesian SMEs. Our initial findings indicate that priority to focus attention on improving SMEs sustainability is related to mitigate economics, regulatory and competition risks as those are perceived as the most important sustainability risks. Innovation risk although have impactful to sustain competitiveness of the SMEs in longer time horizon is not perceived as important risk. Opportunities for further study from this initial effort are viable in the following paths. In future research, a deeper study to understand relationship among sustainability risks and their hierarchy is important to provide appropriate mitigation strategy for the most important sustainability risk drivers. Additionally, scholars can also investigate what can be learnt from project and quality management disciplines on improving manageability of SMEs supply chain sustainability risk using vast arrays of quality and project management techniques and tools such as establishment of intelligent method to estimate sustainability level of the SMEs. Finally, future studies can focus on identifying relevant risk management tools to select sustainability risk mitigation strategies in the SMEs context as well as using business scanning tool such as SWOT Analysis that are missing in references.

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PhD degree in Intelligent Manufacturing is obtained from Pukyong National University in 2015. His research interests are in intelligent manufacturing and Production Management

Welcome Address: Tuesday, 9:30 am, July 23, 2019

Associate Professor Dr. Miroslav Holeček graduated from the Faculty of Mathematics and Physics of Charles University in Prague. He obtained his doctorate from the University of West Bohemia in Pilsen in the field of mechanics and he was appointed Associate professor in the same field. He started as a researcher at the Skoda Pilsen Research Institute, and in 1996 he moved to the

University of West Bohemia in Pilsen, where he teaches subjects focused on physics and mechanics. Since 2007, he has been the Director of the New Technology Research Center. Since 2015 he has been the rector of the UWB.

Opening Keynote I: Tuesday, 9:40 am – 10:20 am, July 23, 2019

Wolfgang Weissler started working for Siemens in 1986, right after graduating from University Erlangen as Electrical Engineer in Drives Technology. Since that time, he worked in different managerial roles across the world – as a CRM Director in the USA, General Manager Electrical Drives in Australia, Head of Business Development Large Drives in Germany and Head of Division Drive Technologies in India.

Since October 2014 his responsibility is leading Siemens divisions Digital Factory & Process Industries and Drives in the Czech Republic. He has a professional interest in digitization and Industry 4.0 and made several presentations and key note speeches on conferences.

Opening Keynote II: Tuesday, 10:20 am – 11:00 am, July 23, 2019

Topic: "***Evaluating Company Readiness in the Context of Industry 4.0"***

Prof. Josef Basl works at the Department of industrial engineering and management at the Faculty of mechanical engineering at University of West Bohemia in Pilsen. His research area is focusing on enterprise information systems, business process optimisation and industry 4.0 readiness. He is the president of the Czech Society for Systems Integration. He is author many publication in international journals and books. He has completed several foreign internships in Poland, Germany, the UK and the USA. He is a member of several scientific councils, doctoral degree programs, a member of the program committees of several major conferences.

Abstract: The contribution deals with the analysis of available readiness indexes and maturity models for Industry 4.0. The main goal is to determine the extent to which these models and indexes are able to show a company's readiness, primarily within the countries of Europe.

11:00 am – 11:30 am – Networking Break

11:30 am – 1:00 pm – Parallel Technical Sessions: Room 1-6

Lunch 1:00 – 2:30 pm

1:30 am – 2:00 pm, July 23, 2019 – Tuesday Lunch Keynote

"Industrial Engineering and the Fourth Industrial Revolution: Education and Skills"

Dr. Zain E A M Tahboub has been the Chief Strategist and Advisor since 2018 for Dubai Aviation City Corporation, in addition to his work for Dubai Aviation Engineering Projects for the last years as Chief Advisor. He has been managing different functions including Research, Knowledge Management, Future Foresight, Innovation, Excellence, Strategy and others.

Dr. Tahboub was known for his work with academia, industry and business. He led corporate development program for major organizations, establishment of new entities, putting forward and contributing to national strategies in the fields of aviation, competitiveness, investment, logistics and most of all Dubai Plan 2021. He has established the DAEP Innovation team and more recently advises the new team on Future of Things (Aviation).

In academia, he was one of the four founding members of the Industrial Engineering Program at the University of Jordan, led the Engineering Management Master of Science program for 10 years, directed the office for outreach to industry and was the Dean of Majan University College in Oman. Currently, he serves on a number of boards in academia and is still active in establishing new fronts of collaboration in academic research with University of Sharjah UoS, Linköping University in Sweden, American University of Sharjah AUS and British University in Dubai BUiD.

Wednesday Morning Keynote I, 9:40 am – 10:20 am, July 24, 2019

Dr. Seifedine Kadry received in 2007 the Ph.D. degree in Computational and Applied Mathematics from the Université Blaise Pascal (Clermont-II) – Clermont-Ferrand in France, and completed in 2013 the Higher Doctorate in research from INSA university, France. Currently, he is a Professor with Beirut Arab University, Lebanon. His research focuses are system prognostics, stochastic systems, and probability and reliability analysis. In addition, he serves as Editor-in-Chief of the Research Journal of Mathematics and Statistics and the ARPN Journal of Systems and Software, as well as an IET Fellow and IEEE Senior Member. He has published many books and more than 90 papers on applied math, reliability analysis, and stochastic systems in peer-reviewed journals and conference proceedings. He is an ABET program evaluator.

Wednesday Morning Keynote II, 10:20 am – 11:00 am, July 24, 2019

"Thermal Management Challenges for Next Generation of Electric Vehicles"

Biography

1994 – 2000
Czech Technical university in Prague, Czech Republic, Faculty of Mechanical engineering in field of Thermodynamics and applied mechanics

1996 to 2000
Techsoft Engineering s.r.o. as customer support engineer for 1D CFD simulation software

2001 – 2003
Temac a.s. – R&D Manager for industrial gasket development

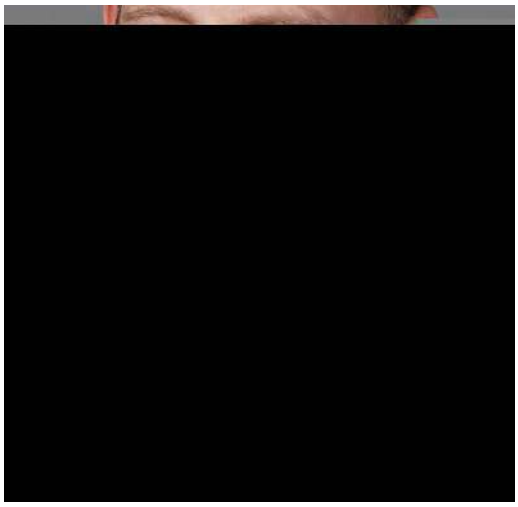
2003 – presence
Valeo Autoklimatizace k.s. on different position in simulation department, laboratories and product engineering.

Lunch: 1:00 – 2:30 pm

Wednesday Lunch Keynote I, 1:30 0m – 2:00 pm, July 25, 2019

Roman Žák graduated from the University of West Bohemia with specialization in Technical Cybernetics. After his studies, he joined a small Pilsen company as a developer and later worked for Deloitte, where he met Jaroslav Follprecht. In 1996, they founded Aimtec specializing in consulting and software solutions for manufacturing and logistics companies. As Chairman of the Board, he is the bearer of the company's vision and strategy.

Thursday Morning Keynote I, 9:30 am – 10:00 am, July 25, 2019



"Digitalization and 5G"

Dr.-Ing. Sascha Gierlings, born in 1981, studied mechanical engineering with a focus in production technology at RWTH Aachen University. He did his Diploma-degree within a project working in Shanghai/ China between 2006 and 2007.

From 2008 to 2015 he was research associate at the Laboratory for Machine Tools and Production Engineering (WZL) in the department for process and product monitoring. His research focus was in the field of process monitoring for safety-critical aero engine components. In 2015 he published his dissertation "Model-based Temperature Monitoring for Broaching Safety-Critical Aero Engine Components".

Since August 2015 he is working for the Fraunhofer-Institute for Production Technology (IPT) where he is leading the department for prototype manufacture and he is responsible for the business development turbomachinery. Since the beginning of 2019 he is responsible for the entire Business Division Turbomachinery at the Laboratory for Machine Tools and Production Engineering (WZL) and Fraunhofer-Institute for Production Technology (IPT) in Aachen.

Besides the development of advanced manufacturing technology solutions Dr. Gierlings together with his team are strongly focusing on digitalization strategies as an enabler for next generation aero engine components. A further field of work focuses on the interdisciplinary exchange with the component designers and disciplines such as aero dynamics and structure mechanics with the aim to discuss and iterate future components that have the highest possible performance in terms of producibility, functionality and efficiency in operation.

Thursday Morning Keynote II, 10:00 am – 10:30 am, July 25, 2019

Being a graduate of University of West Bohemia in Pilsen, Tomáš Vondrák started his career in Continental Automotive Brandýs nad Labem in 2006. After three successful years as Business Development Project Manager he accepted a management position for New Product Launch team in one of Brandýs' Focus Factories. His further career steps led first to Business Unit Infotainment & Connectivity (BU IC) headquarters in Germany where he assumed responsibility for Supplier Quality Management on Business Unit level, and after that to one of Continental's manufacturing plants in Mexico. He completed a full circle and returned to Brandýs in 2017 as Head of Focus Factory for BU IC. In March 2019 he became Plant Manager for Continental Automotive in Brandýs nad Labem, one of the biggest Automotive plants within Continental worldwide.

As a manufacturing plant with everyday operational challenges, Continental Automotive Brandýs nad Labem is taking advantage of Industry 4.0 technologies in many areas. Automation, digitalization, cobotization, predictive maintenance, paperless work environment – these are just a few examples of what Tomáš and his team are currently working on. In his key note, Tomáš will focus on the topic of operational excellence to give you an insight in Continental Automotive's approach.

Thursday Morning Keynote III, 10:30 am – 11:00 am, July 25, 2019

Luděk Janík has been focusing his whole professional career on the Innovation and Development. He graduated at the Technical University in Ostrava as a Chemical Engineer, studying the Polymer Electrolyte Fuel Cells and continued with Ph.D. in the area of Inorganic Technology at the Chemical Institute in Prague.

Starting his career in the chemical laboratory, producing advanced radio pharmaceutics, he realized that his passion is in the combination of electrochemistry and transportation. He utilized his passion at the Nuclear Research Institute REZ (UJV Rez), where he was responsible for the Hydrogen Technologies. The most visible outcome from that timeframe was the development – and later test operation – of hydrogen triple hybrid bus (TriHyBus) and hydrogen filling station. During that time, he also led the Czech Hydrogen Technology Platform.

Later, he became responsible for the development of the new Electro Deionization Module (EDI) at the MemBrain (MEGA) company.

In the last 7 years, he has been working at the Eaton Corporation at the Eaton European Innovation Center in Prague. Starting in the Vehicle group, developing new technologies within the Engine Air Management team, he then became responsible for the whole site as an EEIC Director.

Thursday Lunch Keynote, 1:30 0m – 2:00 pm, July 25, 2019

Jose-Luis Guerrero-Cusumano holds a Ph.D. in Industrial and Mechanical Engineering from the University of Illinois and a Master of Sciences in Statistics from the Mathematics Department of the University of Illinois. He is also an Economics Statistician from the School of Economics Science, Rosario University, Argentina. Jose-Luis Guerrero-Cusumano is a Tenured Associate Professor at the Georgetown University School of Business. Prof. Guerrero-Cusumano has been a member of the faculty at Georgetown since 1989

in the School of Business. He is also the recipient of the Gold Medal for service at Georgetown University. Professor Guerrero-Cusumano was the Academic Director of the Corporate International Master's at the Georgetown University School of Business (2012-2017). He is former co-Director of the International Institute on Government, Management, and Policy at Georgetown University.

In 2008, Professor Guerrero-Cusumano was awarded an Honorary Doctorate, Doctor Honoris Causa in Administration by Ovidius University (Romania). Also in 2008, he was elected Fellow at the Judge Business School, Cambridge University, England. In 2017, he was recognized by the International Institute for Applied Knowledge Management with the Fellow & Distinguished Scholar Award. Among his research areas are Big and Small Data, Data Mining, Text Mining, International Business, Social Responsibility, Business Forecasting, Six Sigma and Quality Improvement.

In 2017, he was the Co-Chair of the international conference on Responsible Organizations in the Global Context. He was also the Deputy Director and Executive Editor of the journal Globalization, Competitiveness and Governability, Spain, 2007-2011. Dr. Guerrero-Cusumano has published over fifty articles in leading journals. Prof. Guerrero-Cusumano has been a member of the faculty at Georgetown since 1989 in the School of Business. He is also the recipient of the Gold Medal for service at Georgetown University. Professor Guerrero Cusumano was the deputy Director and Executive Editor of the journal Globalization, Competitiveness and Governability, Georgetown U-Universia, Spain, 2007-2011.

Professor Guerrero-Cusumano was also the Vice-president of the Latin American Foundation for Quality and he is also a founding member of The Multinational Alliance for the Advancement of Organizational Excellence (MAAOE). In February 2004, he was the technical chairperson for the 3rd Latin American Quality Conference held in Managua, Nicaragua. He was also a member of the International think Tank on Quality and Social Responsibility for the American Society for Quality.

He won the Belgian-American foundation research grant 1995, and spent Spring 1995 as a visiting professor at Institut d'Administration et de Gestion (IAG), Université Catholique de Louvain, Louvain-La-Neuve (Belgium) and at Vesalius College (Vrije Universiteit), Brussels. In the fall 1997, Professor Guerrero-Cusumano spent his sabbatical year at Ghent University (The Vlerick School of Business), Ghent, Belgium as an invited professor, where he researched European Quality Certifications for Academic Institutions. In spring 2006, he was invited by Escuela Superior de Administración y Dirección de Empresas (ESADE) in Barcelona, where he spent part of his sabbatical.

Professor Guerrero-Cusumano has also lectured widely internationally. He is also a researcher at "Laboratoire de Recherche en Management" (University of Versailles, France) in the area of Comprehensive Management, Quality and Innovation. He has lectured at European Quality Master Program system (Versailles University, France; University of Limerick, Ireland; Tor Vergata University, Rome, Italy; University of Piraeus, Athens, Greece; Universidad Complutense, Madrid, Spain), the Master of Total Quality Management (Vaxjo University, Vaxjo, Sweden), the Master of Quality Management (Hebrew University, Jerusalem, Israel), and the Master of Industrial Engineering (Ghent University, Ghent, Belgium) as an invited professor.

Dr. Guerrero-Cusumano was an examiner for the American National Science Foundation in the areas of "Transformations to Quality Organizations Program", the "Production and Operations Research Program" and "the Innovation and Organizational Change Program". Also, Professor Guerrero-Cusumano served as an examiner for the American National Research Council in the area of Benchmarking and for Institute of International Education. Internationally, Professor Guerrero-Cusumano was an examiner for the European Foundation for Quality Management (E.F.Q.M.). He is a member of the Consumer Interest Forum of the American National Standards Institute.

He has been an external judge for several Ph.D. thesis defenses for prestigious international universities as well as a reviewer for many publications such as Management Science, the Journal of Multivariate Analysis, Information Sciences, etc. Professor Guerrero-Cusumano has been a plenary speaker in many conferences around the world and has appeared repeatedly in the media, such as America's Voice, French TV5, National Public Radio, the international Spanish channel Univision, the Voice of America and CNN international and Jim Lehrer's News Hour. He speaks seven languages fluently (Dutch, English, French, German, Italian, Portuguese, and Spanish).

Conference Awards Dinner, 7:00 pm – 10:00 pm, Thursday, July 25, 2019

Awards Keynote (Thursday), 7:30 – 7:45 pm

PERHATIAN

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3. Harap memperhatikan ketentuan kehilangan kewarganegaraan Republik Indonesia yang diatur dalam Pasal 23 Undang-Undang Nomor 12 Tahun 2006 tentang Kewarganegaraan Republik Indonesia.
4. Harap meminta keterangan atau visa terlebih dahulu dari Perwakilan Negara Asing yang akan dikunjungi.
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NAMA LENGKAP / FULL NAME: RUDI KURNIAWAN ARIEF

KEWARGANEGARAAN / NATIONALITY: INDONESIA

TGL. LAHIR / DATE OF BIRTH: 23 JUN 1981

KELAMIN / SEX: L/M

TEMPAT LAHIR / PLACE OF BIRTH: BUKITTINGGI

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