

**2022 IEEE 28th International
Conference on Engineering,
Technology and Innovation
(ICE/ITMC 2022) & 31st
International Association For
Management of Technology
(IAMOT 2022) Joint Conference**

**Nancy, France
19-23 June 2022**

Pages 1-673



**IEEE Catalog Number: CFP22CJ6-POD
ISBN: 978-1-6654-8818-1**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22CJ6-POD
ISBN (Print-On-Demand):	978-1-6654-8818-1
ISBN (Online):	978-1-6654-8817-4

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Uncertainties Management from the Hard and Soft Approach, in Projects of Brazilian Aerospace Sector.....	1
<i>Teresa Raquel Pereira Domingos, Milton De Freitas Chagas Junior</i>	
Technology Backcasting: Retrospective Case Studies from Mining and Mineral Processing.....	9
<i>Joe Amadi-Echendu, Pavlen Govender, Magretha Vlok</i>	
Designing the Curriculum of the Packaging Design Course Based on the Active Learning.....	13
<i>Narucha Tanaiutchawoot</i>	
The Role of Data Within the Service Prototyping Design Dimensions.....	20
<i>Abdul Rahman Abdel Razek, Daniela Fehrenbach, Christian Van Husen, Marc Pallot, Simon Richir</i>	
Contributing to Monitoring and Evaluation Practices by Conceptualizing a Valuable Insights from Log Analysis (VILA) Framework.....	28
<i>Ane Van Schalkwyk, Prof Sara Grobbelaar, Prof Marlien Herselman, Euodia Vermeulen</i>	
An Investigation into the Challenges and Solutions of E-Learning in Tertiary Institutions During the COVID-19 Pandemic.....	37
<i>Chandini Singh, Schalk Grobbelaar</i>	
Towards an Analytical Framework to Analyse the Evolution of Innovation Systems.....	47
<i>M. McClelland, SS Grobbelaar, N. Sacks</i>	
Investigating the Integration of Public and Private Pharmaceutical Supply Chains.....	56
<i>Jessica Botes, Wouter Bam, Imke De Kock</i>	
Evaluating the Drivers of Frugal Innovation and Its Relation to Sustainability — a Systematic Literature Review.....	65
<i>Tsireledzo Maliehe, Schalk Grobbelaar</i>	
Telecommunications Customer Service Improvement Through Big Data Analytics.....	72
<i>Thabile Shongwe, Masike Malatji, Jan-Harm Christiaan Pretorius</i>	
Implementation of a Digital Twin Framework in the Modular Housing Industry.....	77
<i>Anne Fischer, Jorge Rodriguez Llorens, Zhen Cai, Michael Wilke, Stephan Kessler, Johannes Fottner</i>	
Building PSS-Based Circular Business Model Canvases: An Application in the Waste from Electrical and Electronic Equipment Context.....	86
<i>Claudio Sassanelli, Paolo Rosa, Sergio Terzi, Giorgio Mossa</i>	
Joint-Design of Products and Supply Chain in a Context of Innovation.....	95
<i>Brunelle Marche, Vincent Boly, J. Roland Ortt, Laure Morel</i>	
Identification of Sensor Technologies with the Potential to Support Roadside Ecosystem Services.....	105
<i>Corrigeux Brice, Marche Brunelle, Camargo Mauricio, Bachmann Christophe, Chaudron Clémence</i>	
Ethical Considerations of Artificial Intelligence: Ensuring Fairness, Transparency, and Explainability.....	114
<i>Haroon Abbu, Paul Mugge, Gerhard Gudergan</i>	

The Healthcare Data Management Maturity Model (HDM ³) for the Assessment of Healthcare Data Management in Developing Countries	121
<i>Laubscher Van Der Merwe, Imke De Kock, Wouter Bam</i>	
Supporting the Development of a Mobile Context-Aware Application by an MDA-based Approach	131
<i>Julian Dörndorfer, Markus Schmidtner</i>	
Agilization of Technical Development Processes for Medical Devices	140
<i>Anna Schidek, Holger Timinger</i>	
Evolution of Industrial Symbiosis Scientific Field in Brazil: Insights from a Systematic Literature Review and a Bibliometric Analysis	149
<i>Emilia Faria, Cristiane Barreto, Armando Caldeira-Pires, Alisson Lima-Silva</i>	
What Do We Learn in a Living Lab?	156
<i>Valentine Labouheure, Raphaël Bary, Laure Morel</i>	
Design of an Optimised Value Creation Network for Zero Emission Ferries	162
<i>Jan-Philipp Disselkamp, Tobias Seidenberg, Harald Anacker, Roman Dumitrescu</i>	
The Role of Management of Technology (MOT) in Unlocking Nations' Competitiveness in Post Pandemic and Global Crises	171
<i>Mohamed Azzam, Tarek Khalil</i>	
The Impact of Interactive Technology by Using Artificial Intelligence on the Formation of Social Interactions: A Study in Tourism Industry 4.0	180
<i>Seyede Rojin Sobhani, Negar Armaghan, Saeed Haghiri, Ali Andaji Garmaroodi</i>	
The Influence of Circular Economy Implementation on Competitiveness in Manufacturing Companies	187
<i>Ulla A. Saari, Matthias Schneider, Svenja Damberg, Cornelius Herstatt, Minna Lanz, Leena Aarikka-Stenroos, Christian M. Ringle</i>	
Interconnection of Freight Delivery Transport Service Networks	195
<i>Aurelija Burinskiene</i>	
Becoming Holy Grail of Health on the Move: Identifying and Prioritizing Factors Affecting the Commercialization of m-Health	204
<i>Saeedeh Ghoochkanloo, Mohammad Naghizadeh, Mehdi Goodarzi</i>	
Concept of a Business-Process-Related Digital Twin Based on Systems Theory and Operational Excellence	210
<i>Markus Rabe, Emre Kilic</i>	
On the Use of Low-Code and No-Code Tools for Teaching Data Science in Applied Industrial and University Settings	219
<i>Martin Dobler, Jürg Meierhofer, Klaus Frick, Marcus Bentele</i>	
Digitization Technologies in Transport Logistics: A Systematic Literature Review Protocol	227
<i>John-Dean Kasher, Simon Riedle, Navid Julian Sardarabady</i>	
Investigate Innovation Intermediary in Civilian Space Industry Innovation Network: A Grounded Theory Study	240
<i>Vahid Mohammadi, Mohammad Abooyee Ardakan, Manouchehr Manteghi</i>	
Security Inspection Framework and Its Application to Use Cases	250
<i>Yuto Nakano, Yasuaki Kobayashi, Takao Kojima, Yutaka Miyake, Shinsaku Kiyomoto</i>	

A Research on Iterability of Value Dimension Change in New Product Development Process.....	256
<i>Kiyohiro Yamazaki</i>	
Innovation Management in Firms: A Review and Research Agenda.....	264
<i>Surabhi Singh, Mayur Chikhale, Sanjay Dhir</i>	
Organizational and Personal Self-Concept and Their Moderating Relationships as Determinant to Entrepreneurial Orientation	271
<i>Charl D Theron, Elma Van Der Lingen</i>	
Speech Assistance: Use Cases in Industry.....	282
<i>Manfred Langen</i>	
Household Support to Adopt Preventive Innovations to Mitigate Climate Change: A Case of Finnish Apartment Buildings.....	288
<i>Deborah Kuperstein-Blasco, Jussi Valta, Saku J. Mäkinen</i>	
Cyclical Transformation of Value Creation for Smart Services.....	296
<i>Jannik Reinhold, Christian Koldewey, Roman Dumitrescu</i>	
Dauntless Research and Development Investments of Deficit Senior-Star Biotech Firms in the Valley of Death.....	304
<i>Takao Fujiwara</i>	
Modelling Manufacturing Process Flexibility: A Systematic Review	314
<i>Marika Spamer, Louzanne Bam</i>	
Collaborative Networks Between Innovation Spaces.....	323
<i>Fanny Pruvot, Laurent Dupont, Laure Morel</i>	
Under Which Conditions Will “Flying Taxis” Become Relevant for Inner-City Passenger Transport in the Future?.....	331
<i>Swarnalekha Khandker, Ahasan Ullah Shohag</i>	
From Cooperation to Collaboration: Sociological Insights into Digital Collaboration Platforms in the Automotive Value Chain.....	340
<i>Alexander Ziegler, Eckhard Heidling</i>	
Digitalization and Sustainability in Strategic Management: Research Agenda Toward Dual Transformation	347
<i>Christian Kürpick, Roman Dumitrescu, Tommy Falkowski, Christian Fechtelpeter, Arno Kühn</i>	
Research and Scientific Production in COVID - 19 in Argentina: Analysis of Bibliometric Data.....	356
<i>Miguel Guagliano, Adriana Sánchez Rico</i>	
Components of Digital Assistants in Higher Education Environments	365
<i>Sophie Henne, Vanessa Mehlin, Elena Schmid, Sigurd Schacht</i>	
Systematic Literature Review on Corporate Accelerator: Benefits, Challenges and Critical Success Factors	373
<i>Caroline R. Da Silva, Thaynara B. Vilela, Rodrigo R. B. De Faria, Leonardo B. P. Da Silva, Joseane Pontes, Luis Mauricio M. De Resende, Rui T. Yoshino, Fernanda T. Treinta</i>	
Linking Innovation Dynamics with Scientific Knowledge of Climate Change Mitigation Technologies.....	382
<i>B. Koteswara Rao Naik, Rahul Mishra, Vasu Choudhary</i>	

Sustainable Design of it Systems with Digital Twins - Principles, Application Areas and Advantages	389
<i>Rainer Lutze</i>	
An Empirical Analysis of High Technology Manufacturing Segments of Export Sector.....	397
<i>Amrutha Mary Varkey</i>	
Quantifying the Environmental Impacts of Battery Electric Vehicles from a Criticality Perspective	405
<i>Fernando Peñaherrera V, Maria F. Davila R, Alexandra Pehlken, Björn Koch</i>	
Digital Technology and the Stages of Digital Business Transformation	414
<i>Irmak Mutlu, Erik Den Hartigh, Caglar Ucler</i>	
Determinants of e-Learning User Satisfaction at a South African University of Technology	422
<i>Nhlanhla W. B. Mlitwa, Oluwamayowa O. Ogundaini</i>	
Infrastructure Projects in Sub Saharan Africa, Sensitivity to Political Risk	430
<i>Noah Omondi, Leon Pretorius</i>	
How Can Machine Learning Improve Waste-To-energy Plant Operation	435
<i>Alexandra Pehlken, Henriette Garmatter, Lisa Dawel, Fabian Cyris, Hendrik Beck, Fenja Schwark, Roland Scharf, Astrid Nieße</i>	
Contribute to Open Science with Research-Based Learning: Explorative Research Action Study Applied to Peer-to-Peer Energy Trading	443
<i>Alex Gabriel, Laurent Dupont</i>	
Developing a Rapid Service Prototyping Framework	450
<i>Daniela Fehrenbach, Abdul Rahman Abdel Razek, Christian Van Husen</i>	
Digital Fit(ness) - is 'being in a Fit With' Enough?.....	456
<i>Erich Heumüller, Julia Kossowski, Sebastian Richter</i>	
A Conceptualization for the Integration and Evaluation of Gender Mainstreaming in Energy Project Development	465
<i>Lelani Oosthuizen, Imke H. De Kock, Josephine K. Musango</i>	
Experiences and Challenges with Pandemic Online Learning - A Pforzheim University Survey	473
<i>Acelya Özkan, Katja Josenhans, Layana Berendt, Ludwig Martin</i>	
Applying a Sustainable Business Model for Companies Creating Manufacturing Shared Value with Base of the Pyramid Suppliers.....	480
<i>Zviemurwi J Chihambakwe, Sara S Saartjie Grobbelaar, Stephen Matope</i>	
Why Companies Have Multiple Corporate Entrepreneurship Units	489
<i>Nicolai Heinzelmann, Roland Ortt, Guido H. Baltes</i>	
Development of a Leanness Assessment Tool for Hospitals	498
<i>Bronwyn Joubert, Wouter Bam</i>	
Coopetition: A Critical Review and Directions for Future Research.....	508
<i>Abhilasha Meena, Sanjay Dhir, Sushil</i>	
Risk Management of the Rehabilitation of a Communal Facility on Dolomitic Land: A South African Case Study.....	517
<i>Tshepiso P. Mollo, Jan Harm C. Pretorius, Leon Pretorius</i>	

Case Study on the Impact of Engineering Changes During Power Plant Construction.....	525
<i>P. Mhlongo, M. Munsamy, J. H. C Pretorius</i>	
Case Study: Evaluation of Maintenance Practices on Road Infrastructure.....	531
<i>K. Bele, M. Munsamy, A. Telukdarie</i>	
Socio-Technical Transitions and the Fourth Industrial Revolution: The Need for an Integrated Analysis.....	539
<i>Martha Mukama Asiimwe, Imke H. De Kock</i>	
Supporting Circular Economy in Healthcare Through Digital Reverse Logistics.....	548
<i>Getnet Bogale Fanta, Leon Pretorius</i>	
User-Centered Prototypes-insights from a Design Thinking Workshop Series	554
<i>Laura Rehberg</i>	
Co-Design for Gender Equality in an AI-Based Virtual Assistant for Intensive Care Units.....	560
<i>Nicola Marsden, Suchanda Bhattacharyya, Janine Meyer-Christodoulou, Lukas Martin, Arne Peine</i>	
The Integration of Industry 4.0 in Healthcare Quality Improvement	567
<i>Evethe Nwobodo-Anyadiiegwu, Deborah Baraka Tambwe, Alice Kabamba Lumbwe</i>	
The Forest Industry and Development Within South Africa and Other Southern African Development Community Countries	573
<i>Karen Schmidt, Wouter Bam, Philani Nduna Zincume, Karolien De Bruyne</i>	
Big Data Citizen-Centred Smart City Governance. Evidence from Wuhan and the Coronavirus Battle	583
<i>Didier Grimaldi</i>	
Responsible Research and Responsible Innovation: Have New Concepts Emerged?.....	591
<i>Akbar Mohammadi, Sahar Babaei</i>	
Gamification for Smart and Collaborative Last Mile Networks Knowledge Transfer	598
<i>Anna-Maria Nitsche, Bogdan Franczyk, Christian-Andreas Schumann</i>	
System Dynamics Modeling for Smart and Collaborative Last Mile Networks	607
<i>Anna-Maria Nitsche, Bogdan Franczyk, Christian-Andreas Schumann</i>	
Multi-Objective Modelling of a Roadside Mowing Problem: A Case Study in France.....	616
<i>Adriana-Simona Mihaita, Brunelle Marche, Mauricio Camargo, Iman Rahimi, Christophe Bachmann</i>	
Implementing Lean Manufacturing as a Business Management Strategy to Eliminate Waste: The Case of an Automobile Company	624
<i>E. M. Bakama, S. C. Mukwakungu, N. Sukdeo</i>	
Digital Learning Readiness of Higher Education Institutions in the 4IR Era During the COVID-19 Pandemic: Case of a University in South Africa	629
<i>E. M. Bakama, S. C. Mukwakungu, N. Sukdeo</i>	
Improving Maintenance Management of Reservoir Structures Using Smart Systems	634
<i>Lebogang Makama, Arnesh Telukdarie</i>	

Local Ecosystem Open Innovation Intermediaries as Key Enablers for the Development of Incumbents' Digital Technology Partnerships	639
<i>Clarice Bertin, Véronique Schaeffer</i>	
Smart Campus: Concepts, Development and Future	650
<i>Juan Arenas, Pedro Palominos, Rodrigo Martin, Mauricio Camargo, Raphael Bary, Héctor Kaschel</i>	
Analysis of Innovation Phases in the Different AM Future Scenarios	657
<i>Marianne Hörlesberger, Brigitte Kriszt, Andrea Kasztler</i>	
Influence of Project Parameters on the Decision of an Agile Or Plan-Based Approach	667
<i>Markus Schmidner, Holger Timinger, Claudia Doering, Finn Reiche</i>	
Understanding Inclusive Innovation in Informal Economy, a Conceptual Model.....	674
<i>Milena Legarda López, María Luisa Villalba Morales, Walter Ruiz Castañeda</i>	
Using Data Analytics to Explore Opportunities of Lean Assessments	683
<i>Rostyslav Pietukhov, Mujthaba Ahtamad</i>	
A Resilience Framework for Digital Transformation in the Banking Sector: A Systems Thinking Approach	687
<i>Dumisani Manzini, Rudolph Oosthuizen, Hilda Kundai Chikwanda</i>	
A Literature-Based Categorization Model of Individual Innovation Capabilities to Boost Organizations' Innovation Capacities	697
<i>Mariela Martinez, Laure Morel, Manon Enjolras</i>	
Overview of Challenges and Requirements for Sustainable Energy Transition in Western Balkans with Focus on Bosnia and Herzegovina: A Literature Review	705
<i>Androsevic Damir, Mauricio Camargo, Noureddine Takorabet, Mustafa Music</i>	
Support from Governance, Leadership and Smart People in the Context of Smart Cities Development	713
<i>Marcia Sierdovski, Luiz Alberto Pilatti, Priscila Rubbo, Rosmeiri Apra Ribeiro Ferras, Juliana Vitória M. Bittencourt, Regina N. Pagani</i>	
The Constitution of Technology as an Institutional Order.....	722
<i>Alana Bauer Lacerda, Fernando Dias Lopes</i>	
The Integration of Industry 4.0 into Corporate Social Responsibility Projects: A Review	730
<i>Eveth Nkeiruka Nwobodo-Anyadiegwu, Zinhle Sikhakhane, Alice Kabamba Lumbwe</i>	
The Benefits and Challenges of Implementing Smart Hospital Projects: A Systematic Review.....	736
<i>Eveth Nkeiruka Nwobodo-Anyadiegwu, Mira Njing Ditend, Alice Kabamba Lumbwe</i>	
Benefiting from Power of the Crowd: Contribution of Crowds to the Idea Evaluation Phase	743
<i>Ahmet Çubukcu, Özlem Akarçay, Tuba Ulusoy</i>	
Human-In-the-loop: Explainable Or Accurate Artificial Intelligence by Exploiting Human Bias?	747
<i>Laura Valtonen, Saku J. Mäkinen</i>	
Identification and Evaluation of Development Paths for Technology-Oriented Industrial Companies in Structural Transformation Processes	755
<i>Alessandro Sala, Arko Steinwender, Peter Schieder, Wilfried Sihn</i>	

Technology Roadmapping and 4IR in Defence: Case of Command and Control Systems	763
<i>Linda Malinga, Alwyn Strauss, Petrus Letaba, Marthinus W. Pretorius</i>	
Management of Technological Convergence in New Technology-Based Firms	771
<i>Leandro Omar Lepratte, Rafael Lujan Blanc, Daniel Rodolfo Hegglin, María Alejandra Rodríguez, Leonardo Martin Ruhl</i>	
A Study of Adoption and Effects of DevOps Practices	778
<i>Tyron Offerman, Robert Blinde, Christoph Johann Stettina, Joost Visser</i>	
Towards a Framework to Assess the Impact of Innovative Transportation Technologies	787
<i>Heiko Duin, Klaus-Dieter Thoben</i>	
Digital Technologies to Advance Circular Economy at Territorial Level: Challenges and Solutions	795
<i>Ghada Bouillass, Michael Saidani, José Lameh, Bernard Yannou</i>	
P2B Methodology: from Patents to Business	804
<i>Gabriela Fernandes, Pedro Lucas, Ana Correia Simões, Gustavo Dalmarco</i>	
Adoption of Mobile Applications to Improve the Reading Habits of Rural Readers in Southern Africa's Secondary Schools	812
<i>S Nkomo, W Matli</i>	
Turnover Intention of High-Tech Industry Managers: A Push-Pull-Mooring Model	821
<i>Chih-Hung Hsieh, Cheng-Ru Hu, Chu-Yun Teng</i>	
Scrum's Methodology Adaptations to Meet the Teleworking Needs Experienced by Software Development Teams	826
<i>Luis Fernando Gama, Ana Correia Simões</i>	
iops: A Python Package for the Input-Output Product Space Methodology	834
<i>Michael Du Plessis, Wouter Bam</i>	
Intrapreneurship and Corporate Entrepreneurship: An Integrated Operational and Strategic Model from Dynamic Capabilities Approach	842
<i>José Carlos Curiel Franco, Miriam Delgado Verde</i>	
The Adoption of the Scaled Agile Framework (SAFe) in Non-Agile Organizations	851
<i>Kwete Mwana Nyandongo, Mmammule Grace Madumo</i>	
Assessing the Effectiveness of the Scrum Framework and Its Successful Implementation	859
<i>Kwete Mwana Nyandongo, Mmule Rebecca Madumo</i>	
The Use of Fourth Industrial Revolution Technologies to Improve the Information Technology Auditor's Job Function.....	867
<i>Kwete Mwana Nyandongo, Shenise Sasha Pillay</i>	
The Integration of Industrial Design in the Fuzzy Front-End - FFE	873
<i>Lilian Cristina Schreiner Módolo, Paulo Tromboni De Souza Nascimento</i>	
Towards a Strategic Decision Support Tool for Innovation Ecosystems Stakeholder Management	880
<i>Luca Carinus, Chipso. N. Ngongoni, Sara S Saartjie Grobbelaar</i>	
Is There Education with the Closed School? Long-Term Impacts on Emergency Remote Education (ERE).....	886
<i>Lilian Cristina Schreiner Módolo, Luiz Augusto Modolo De Paula, Edna Maria Barbosa Dos Santos</i>	

Impact of Automation During Innovative Remanufacturing Processes in Circular Economy: A State of the Art.....	893
<i>Perla Nohra, Helmi Ben Rejeb, Swaminath Venkateswaran</i>	
Assessment Model to Support the Technological Integration Within Industrial Companies in the Context of Industry 4.0.....	901
<i>Neal Widmer, Alaa Hassan, Davy Monticolo</i>	
Managing Projects More Successful: Evaluation of a Concept for Implementing Critical Success Factors in Practice	907
<i>Maximilian Schöberl, Simone Tuyisabe, Christoph Hollauer, Johannes Fottner</i>	
Design of Circular Economy Enhancing Journeys for Automotive Manufacturing Industry	913
<i>Siro Dell'Ambrogio, Silvia Menato, Jennifer Nika, Luca Canetta, Marzio Sorlini</i>	
Integrated Digital System in Planning, Scheduling and Logistics Processes at a Petroleum Company	919
<i>Buhle Sihlali, Arnesh Telukdarie</i>	
AI Governance and Ethics in Public Procurement: Bridging the Gap Between Theory and Practice	927
<i>Timo Von Behr, Pekka Abrahamsson</i>	
A Systematic Review of Concepts and Future Directions of Platform Ecosystem Development	934
<i>Chibuike Mbanefo, Sara S Saartjie Grobbelaar</i>	
Analysis of Failure Mode Effects of the Traction Motor.....	945
<i>Bayanda. B. Kunene, A. Telukdarie</i>	
Aligning Open Engineering Practices	951
<i>Matjaz Vidmar</i>	
Migrant Work Inclusion: Designing Research on Entrepreneurship Support.....	960
<i>Yngve Dahle, Kevin Reuther, Dimitris Polychronopoulos, Anh Nguyen Duc, Lars Ueland Kobra</i>	
The e.DO Cube Hackathon – Transitioning to Graduate School.....	968
<i>Brendan P. Sullivan, Monica Rossi, Lucia Ramundo, Paolo Rosa, Sergio Terzi</i>	
Validation of Vehicles with Automated Features Through the Detection of Behavioral Differences Between Humans and Machines.....	974
<i>Di Manuel Schwarz, Luc Rolland, James Bruce Johnston</i>	
Contribution of an IoT Based Cloud Platform in the Realization of Data-Driven In-house Logistics	983
<i>Masoud Zafarzadeh, Wajid Ali Khilji, Jannicke Baalsrud Hauge</i>	
Collaborative Filtering for Mobile Application Recommendation with Implicit Feedback	991
<i>Beatriz Paula, João Coelho, Diogo Mano, Carlos Coutinho, João Oliveira, Ricardo Ribeiro, Fernando Batista</i>	
Identifying Real-World Problems with Automated Vehicles by Detecting Behavioral Differences in Steering Movements Between the Human Driver and Machine.....	1000
<i>Di Manuel Schwarz, Luc Rolland, James Bruce Johnston</i>	
Assisted Reality as an Enabler for Resilient Remote Learning During COVID-19	1009
<i>Thomas Kogias, Adrian Butnaru, Frank Waszink, Jan Smallegange, Nikolaos Gavalakis, Elias Xidias, Dimitris Zissis</i>	

Transition to Remote Work: Peculiarities of Social Networks Use	1014
<i>Vida Davidaviciene, Sigitas Davidavicius, Aurelija Burinskiene</i>	
BCCMS, Authorization Through an Approach for a Blockchain Based Electronic Cards Management System	1022
<i>Ahmed Maghawry, Amr El Hadidi, Mohamed Kholief</i>	
Enabling the Citizen-Driven Renewable Energy Transition.....	1028
<i>Antonia Krebs, Björn Koch</i>	
Technology Transfer, Productive Restructuring, and Reindustrialization Processes. Experience of the Mexican Bajío Region	1034
<i>Lorena Del Carmen Álvarez-Castañón, Pilar Arroyo-López, Rocio Lizarraga-Morales, Gema González-Romero</i>	
Forward Kinematic Based Approach Using Sensor Fusion for Tracking the Human Limb.....	1041
<i>Arthur Johnson, Aswin K Ramasubramanian, Robins Mathew, Brian Mulkeen, Nikolaos Papakostas</i>	
LoT System for the Validation of Conditions in Shipping Couriers	1047
<i>Pedro Filipe, Bruno Mataloto, Carlos Coutinho</i>	
Identification of Critical Success Factors for Circular Start-Ups 4.0: A Literature Review	1056
<i>Bruno Alcantara Rodrigues, Fabio Neves Puglieri, Fernanda Tavares Treinta</i>	
From Need to Requirement: A Methodological Contribution	1062
<i>Vincent Boly, Brunelle Marche, Frédérique Mayer, Davy Monticolo, Manon Enjolras</i>	
Enabling Transfer of Intermediate Technologies - A Rural Business Project Case in Rural Colombia.....	1071
<i>Deycy Janeth Sánchez Preciado</i>	
Uncovering Goals for Corporate Entrepreneurship: A Classification Based on Literature Review	1081
<i>Christina Lang, Isabella Fitzky, J. Roland Ort, Guido H. Baltes</i>	
Exploring Extended Outcomes of Co-Creation Applied for Responsible Research and Innovation.....	1090
<i>Felicitas Schmittinger, Francesca Rizzo, Alessandro Deserti</i>	
Foreign Direct Investment and Host Firms' Technology Development: The Moderating Role of Overall and STEM Education.....	1096
<i>Jihoon Shin, Miguel Amaral, Ana Cristina Barros, M. Granger Morgan</i>	
Self-Assessment Model Based on the ISO 56002:2019 Standard for Evaluating Innovation Management Systems of Science and Technology Institutions	1104
<i>Michelle De Carvalho Botelho Santos, Maria Fatima Ludovico De Almeida</i>	
Measures for Integrated Product Support (IPS) in Early Life Cycle of Aerospace and Defense Systems — Introduction of New IPS Measures with Reference to the ASD IPS Suite.....	1113
<i>Ljubiša Vaskic, Kristin Paetzold</i>	
Design Or Redesign Business Models' Innovation in the Digital Transformation Context.....	1122
<i>Patrick Ratte, Elaine Mosconi, Leandro Feitosa Jorge</i>	
Sustainable Gardens for Smart Cities Using Low-Power Communications.....	1131
<i>Bruno Da Mota, Bruno Mataloto, Carlos Coutinho</i>	

Preliminary Approach to the Functionality of a Technical Remote Sensing Platform Applied to Agriculture in the Colombian Case	1138
<i>Francy Pascagaza-Lara, Sandra Cecilia Bautista-Rodríguez, Victoria Eugenia Vallejo-Quintero, Freddy Alexander Díaz-González</i>	
Concept of a Fuzzy Expert System for Story Point Estimations in Agile Projects	1145
<i>Philipp Hansen, Holger Timinger</i>	
An Empirical Study on the Effects of Leader Behaviour and Resilience on Innovative Work Behaviour	1154
<i>Kimaya Reddy, Kai-Ying Chan</i>	
Determinants of Manpower Utilisation in Manufacturing Firms	1163
<i>Victor Oluwasina Sobanke</i>	
An Integrated Geographical Information and Road Asset Management System for Road Transport Network Sustainability in Developing Countries	1169
<i>Raphael Kafui Natsui, Kingsford Kissi Mireku, Gustave Gameli Kojo Amuzu, Emmanuel Sasu</i>	
Designing a Group Decision-Making Tool Under Living Lab Project Mode: The Case of ConsensUs	1175
<i>Maxence Arnould, Manon Enjolras, Mauricio Camargo</i>	
A Teams Approach to Idea Generation: An Analysis of Personality and Team Learning on Creativity	1185
<i>Precious Mokgala, Kai-Ying Chan</i>	
Designing Out the Risk of Infections Via Aerosols by Updating Restrictions on Indoor Environments Depending on Local Incidence Rates and the Dominant SARS-Co V -2 Strain	1195
<i>Ruth Wallace, Yacine Rezgui, Ali Ghoroghi</i>	
Comparison of Manufacturing/Remanufacturing CO ₂ Emissions Balance: Application to a Mowing Machine	1204
<i>Brunelle Marche, Diego Nicolas Parrado Rodriguez, Olivier Chéry, Mauricio Camargo, Bachmann Christophe</i>	
The Role of Dedicated Organizations in the Governance of Smart City Development: A Multiple Case Study	1211
<i>Guilherme Freitas Camboim, Nathália Amarante Pufal, Denise Barbieux, Paulo Antonio Zawislak</i>	
Innovation Capabilities in Pandemic Times: Evidence from Resilient Manufacturing Firms in Brazil	1220
<i>Ariane Mello Silva Avila, Denise Barbieux, Ricardo Machado Leo, Guilherme Freitas Camboim, Paulo Antônio Zawislak</i>	
Sustainable Renovation Through Modular Semantic Prefabrication	1229
<i>Yacine Rezgui, Salima Hamini, Abdelkader Ramdani</i>	
SemanticLCA: A New Generation of Life Cycle Assessment Methods Applied to Buildings	1236
<i>Abdulrahman Fnais, Ali Ghoroghi, Yacine Rezgui, Thomas Beach, Ioan Petri</i>	
An Investigation of Design in Virtual Reality Across the Variation of Training Degree and Visual Realism	1243
<i>Sylvain Fleury, Laurent Dupont, Noémie Chaniaud, Saadallah Tamazart, Benjamin Poussard, Geoffrey Gorisse, Simon Richir</i>	

Aligning IFC and SRI Domains for BIM Supported SRI Assesment	1250
<i>Calin Boje, Sylvain Kubicki, Annie Guerriero, Sebastien Thomas</i>	
Implementing the Systemic Approach Supporting Territorial Resilience: The Case of the ‘Toile’ Tool.....	1258
<i>Mathilde Schwob, Fedoua Kasmi, Laurent Dupont, Jean-François Vereecke, Claudine Guidat</i>	
Unfolding Innovation Lab Services in Public Hospitals: A Hospital FabLab Case Study	1267
<i>Ambre Scarmoncin, Clothilde Portelli, Ferney Osorio, Guillaume Eckerlein</i>	
Computer-Assisted Career Guidance Systems User Impact: An Evaluation Study.....	1277
<i>Fatima-Ezzahra Hamdani, Marie Gribouval, Barbara Moissa, Davy Monticolo, Vincent Boly</i>	
Literature Development Trajectory of LED Smart Street Lighting by Main Path Analysis	1283
<i>Kuel-Kuel Lai, Adam Kao-Wen Weng, Hsiao-Yun Chang</i>	
Virtual Laboratory, a Learning Resource for Distance Education	1288
<i>Daniel Galvez, Lorena Delgado, Christopher Caceres, Lucas Villarroel</i>	
The Entrepreneurial Function in Digital Entrepreneurial Ecosystems. the Resources Potential of the Innovative Entrepreneur: Analysis Based on the Founders of the Top Five Digital Social Networks (Facebook, Youtube, Whatsapp, Messenger and Instagram)	1294
<i>Sophie Boutillier, Dimitri Uzunidis</i>	
Enabling Entrepreneurs to Build on Their Means: The Effectual Decision-Making Canvas	1301
<i>González M. Marcos, Orestis Terzidis, Benedict Hebllich</i>	
Collaborative Capacity of Open Source Hardware Communities: A Cross-Sectional Study	1309
<i>Robert Mies, Jérémy Bonvoisin</i>	
Green Technology Readiness of Telecommunication Firms in India: An Exploratory Study	1318
<i>Shikha Sargam, Ruchita Gupta</i>	
Managing Structural Integrity of Pipelines Utilising Inline Inspection Data	1326
<i>Cynthia Ntombizanele Mbele, Humna Hassan Malik, Jan Harm C. Pretorius</i>	
Towards a Protocol for Preference Evaluation of Cosmetic Products Using Physiological Sensors.....	1333
<i>Javier Miranda-Mellado, Juliana Serna, Giovanni Arbelaez-Garces, Javier A. Arrieta-Escobar, Véronique Sadtler, Mathieu Kacha</i>	
Entrepreneurial Motivation: An Exploratory Study of Gender and Venture Types	1341
<i>Rebecca C. Off, Kevin Reuther, Guido H. Baltes</i>	
Electricity Productivity in Socio-Economic Context: A Country-Level Analysis	1349
<i>Heidy Montero, Matteo Bulleri, Diellza Salihu, Piotr Krawczyk, Marcin Topolewski, Marc Pallot</i>	
A Research Framework for B2B Green Marketing Innovation: The Design of Sustainable Websites.....	1359
<i>Pauline Lacom, Sylvain Sagot</i>	

Author Index