

Book of Abstracts on  
International Conference on  
**Advances in Industrial Engineering  
and Management**  
**ICAIEM 2022**

 March 18-20, 2022

**Editors**

**Dr. Jnaneswar K.  
Dr. Mithra Manmadhan  
Dr. Suresh Subramoniam  
Dr. Unnikrishnan V.S.**

**Organized by**



**CET School of Management  
and  
Department of Mechanical Engineering,  
COLLEGE OF ENGINEERING TRIVANDRUM**



**In association with**



**Department of Humanities,  
Indian Institute of Space Science and Technology,  
Trivandrum**



**Institute of Management in Kerala,  
University of Kerala**

Book of Abstracts on  
International Conference on  
**Advances in Industrial Engineering  
and Management**  
**ICAIEM 2022**

**Editors**

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**Dr. Jnaneswar. K**  
**Dr. Mithra Manmadhan**  
**Dr. Suresh Subramoniam**  
**Dr. Unnikrishnan V. S.**  
**Dr. K.S. Chandrasekar**  
**Dr. V. Ravi**

**First Edition: March 2022**

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**Title: *Book of Abstracts on International Conference on Advances in Industrial Engineering and Management (ICAIEM 2022)***

**Editors: *Dr. Jnaneswar K., Dr. Mithra Manmadhan, Dr. Suresh Subramoniam, and Dr. Unnikrishnan V.S.***

**ISBN: 978-93-91355-49-4 (eBook)**

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*Published by*

**EXCEL INDIA PUBLISHERS**



91 A, Ground Floor  
Pratik Market, Munirka, New Delhi-110 067  
Tel: +91-11-2671 1755/ 2755/ 3755/ 5755  
Cell: 9899127755, 9999609755, 9910757755  
Fax: +91-11-2671 6755  
E-mail: [publishing@grouppexcelindia.com](mailto:publishing@grouppexcelindia.com)  
Web: [www.grouppexcelindia.com](http://www.grouppexcelindia.com)

*Typeset by*

Excel Prepress Services, New Delhi-110 067  
E-mail: [production@grouppexcelindia.com](mailto:production@grouppexcelindia.com)

## Message from the Conference Chair

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I am happy to note that CET School of Management and Department of Mechanical Engineering at College of Engineering Trivandrum is organizing an International Conference to commemorate 80th Anniversary of CET, in association with Department of Humanities, Indian Institute of Space Science and Technology Trivandrum and Institute Management in Kerala, University of Kerala. Sustainable development is the need of the hour in today's dynamic business world. The International conference on Advances in Industrial Engineering and Management, 2022(ICAIEEM 2022) provides a platform for academicians, researchers and practitioners to disseminate research and the use of analytical tools in technology and management domains for sustainable development. It also provides insights into the challenges, opportunities, and emerging paradigms in innovation. In this international conference quality papers, both theoretical and applied, are discussed with participation from students, researchers, professionals and policy makers. This conference has given us the possibility of exploring a different format to the conference by going for hybrid mode in this phase of the pandemic. I would like to place on record the acknowledgement for the excellent work done by the conference team and I wish them all success.

**Dr. Jiji C.V.**  
*Principal*

## Message from the Organizing Secretary

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It is a matter of great pride for us that CET School of Management and Department of Mechanical Engineering at College of Engineering Trivandrum is organizing an International Conference to commemorate the 80th Anniversary of CET, in association with Department of Humanities, Indian Institute of Space Science and Technology Trivandrum and Institute of Management in Kerala, University of Kerala. During this year long celebrations, a great deal of effort has gone in for the conduct of this conference. I do hope this conference will open the doors for academic research in new frontiers. I would like to express my deepest appreciation to the authors whose technical contributions are presented in the book of abstracts. It is because of their excellent contributions and hard work that we have been able to prepare this book of abstracts. I would also like to thank all our keynote speakers who made all the efforts to synthesize the materials and their wide and rich experience to deliver talks. Last but not least, I thank scholars, industry delegates and various other stakeholders for their support in organizing this International Conference. I look forward for the active participation of you all and wish the conference all success.

**Dr. Jnaneswar. K**  
*Associate Professor, CET School of Management*  
*Organizing Secretary, ICAIEM 2022*

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**Dr. Mithra Manmadhan**  
Joint Organizing Secretary & Assistant Professor, CET School of Management



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## KEYNOTE ADDRESSES

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### **Inaugural Keynote Address:**

#### **Prof. Dr. Jatinder Gupta**

Professor, University of Alabama in Huntsville, Alabama, USA

**Topic:** Enabling Innovation for Sustainable Development

### **Keynote Address 2:**

#### **Dr. Ramesh Subramoniam**

Clinical Associate Professor, Naveen Jindal School of Management, USA,  
The University of Texas at Dallas

**Topic:** Supply Chain Disruption and Mitigation Strategies

### **Keynote Address 3:**

#### **Prof. Dr. Gopala Vasudevan**

Professor of Finance, Charlton College of Business,  
University of Massachusetts, USA

**Topic:** Special purpose Acquisition Company

### **Keynote Address 4:**

#### **Prof. Dr. Md Hamid Uddin**

Associate Professor, University of Southampton, Malaysia

**Topic:** Cyber security Risk Disclosure and Value Effect for Banks

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## PANEL DISCUSSION

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### **Panel Discussion on Fintech Revolution:**

Ease of doing business

#### **Dr. K.G Satheesh Kumar**

Professor, Digital University, Kerala

#### **Mr. Biju R S**

Zand Bank, Dubai

#### **Mr. Gautham Pillai**

Goldman Sachs, UK

#### **Mr. Sunil Cherian**

Founder & CEO, Copperwire Systems, USA

#### **Mr. Jithesh,**

Head-Fintech, Federal Bank

**MASTER SCHEDULE**  
**for the International Conference on**  
**Advances in Industrial Engineering & Management (ICAIEM 2022)**  
**Organized by**  
**CET School of Management & Department of Mechanical Engineering,**  
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**in Association with**  
**Indian Institute of Space Science and Technology Trivandrum &**  
**Institute of Management in Kerala, University of Kerala**  
**during 18-20 March, 2022**

<b>March 18, 2022</b>	
8.30 AM – 9.30 AM	Registration
9.30 AM – 10.30 AM	Inauguration
10.30 AM -10.45 AM	Tea Break
10.45 AM -11.30 AM	Inaugural Keynote Address: Enabling Innovation for Sustainable Development Prof. Dr. Jatinder Gupta Professor, University of Alabama in Huntsville, Alabama, USA
11.30 PM-12. 30 PM	Keynote Address: Supply Chain Disruption and Mitigation Strategies Dr. Ramesh Subramoniam Clinical Associate Professor, Naveen Jindal School of Management, USA The University of Texas at Dallas
12.30 PM– 1.30 PM	Lunch Break
1.30 PM-3 PM	Track I: Finance & Accounting I Track VI: Human Resource Management
3. 00 PM- 4.30 PM	Track II: Finance & Accounting I Track VII: Technology & Operations Management I
4.30 PM	Tea
<b>March 19, 2022</b>	
9.30 AM – 10.30 AM	Keynote Address: Special Purpose Acquisition Company Prof. Dr. Gopala Vasudevan Professor of Finance, Charlton College of Business, University of Massachusetts, USA

10.30 AM -11 AM	Tea Break
11.00 AM -1 PM	Track III: Industrial Engineering
1.00 PM– 2.00 PM	Lunch Break
2.00 PM- 4 PM	Track IV : Marketing I Track VIII: Technology & Operations Management II
4. 00 PM	Tea
<b>March 20, 2022</b>	
9.30 AM – 10.30 AM	Keynote Address: Cyber Security Risk Disclosure and Value Effect for Banks Prof. Dr. Md Hamid Uddin Associate Professor, University of Southampton, Malaysia
10.30 AM -11 AM	Tea Break
11.00 AM -12.30 PM	Track V : Marketing II
12.30 PM– 1.30 PM	Lunch Break
1.30 PM-2 .30 PM	Panel Discussion: Fintech Revolution: Ease of Doing Business Dr. K.G. Sathesh Kumar, Professor, Digital University, Kerala Mr. Biju R S, Zand Bank, Dubai Mr. Gautham Pillai, Goldman Sachs, UK Mr. Sunil Cherian, Entrepreneur, USA Mr. Jithesh, Head-Fintech, Federal Bank
2.30 PM– 3.30 PM	Valedictory Session
3.30 PM	Tea

<b>Track I</b>		
<b>Date: March 18, 2022 Time: 1.30 PM- 3 PM</b>		
<b>Topic: Finance &amp; Accounting I</b>		
Session Chair: Dr. Regi Kumar V		
Session Co-chair: Dr. Vijaya S. Uthaman		
Session Manager : Mr. Milan Sam Mathew		
ICAIEM- 2022- 08	Surfing through the Overtones of Customer Loyalty in Mobile Banking	Unnimaya P Devan & Manju Das S.K.
ICAIEM- 2022-14	A Study on the Impact of FOMO Investor Behaviour in Kochi	Nidhin Johny & Rahul Vancheeswaran

ICAIEM- 2022- 15	A Study on Level of Tolerance of Uncertainty among Retail Investors in Kochi	Nidhin Johny & Nivedh Premkumar
ICAIEM- 2022-16	A Study on the Impact of Foreign Institutional Investors on Indian Stock Market Indices	Sreenish S. Ramaswamy & Mekha Babu
ICAIEM- 2022-17	Technical Analysis of FMCG Stocks in India	Helen Mary Nelson & Sreenish S. Ramaswamy
ICAIEM 2022-45	Risk Perception of Mobile Banking Application	Abhilash V S, Raju G & Manjari S
ICAIEM-2022- 58	Assessing Financial Risk Tolerance from a Heuristics Theme Bias Perspective: A Study on Individual Investors of India	Abhijith R & Bijulal D

## Track II

**Date: March 18, 2022 Time: 3. 00 PM - 4.30 PM**

**Topic: Finance & Accounting II**

Session Chair: Dr. Bijulal D

Session Co-chair: Dr. Raju G

Session Manager : Ms.Linda Susan Mathew

ICAIEM- 2022-22	Volatility of Currency Futures Traded in BSE India	Surya Robert & S. Jayadev
ICAIEM- 2022-23	Assessment of Awareness Level of Financial Inclusion Schemes among the Working Women – An Empirical Investigation in Palakkad District, Kerala	Frackson C Viyano, Riyas K P & Muhammed Rasfan T
ICAIEM- 2022-28	A Study on the Impact of Behavioural Finance on Risk Management with Special Reference to New Age Investment Platforms and Its Impact on the Youth	Abhirej J R Nair, Adhirej J R Nair, Gokul S A & Swaroop S Dharan
ICAIEM- 2022-21	Prediction of Credit Risk of Regional Rural Banks using Gray Forecasting Model	Joshy Mathew K & Regi Kumar V
ICAIEM-2022- 52	Financial and Social Sustainability of Indian Microfinance Institutions	Kavya C P & Vineetha S Das
ICAIEM-2022- 53	Exploration of Efficiency Analysis Tools for Various Banking Sectors	Harikrishna P S & Regi Kumar V
ICAIEM- 2022- 63	An Analysis on Oversubscription of Indian IPOs of 2021	Subi Suresh & Regi Kumar V

<b>Track III</b>		
<b>Date: March 19, 2022 Time: 11.00 AM - 1 PM</b>		
<b>Topic: Industrial Engineering</b>		
Session Chair: Dr. Binoosh S A		
Session Co-chair: Dr. Vineetha S Das		
Session Manager: Ms. Gayatri Ranjit		
ICAIEM 2022-34	Significance of Industrial Safety	Balakrishnan Nair
ICAIEM- 2022- 62	Evolutionary Algorithmic Approach for Cyclone Shelter Location Allocation Problem	Vishvesh Khanzode, Vinayak Darvesh, Shyam Jawade, Swarup Panchal & Onkar Sonare
ICAIEM- 2022- 71	Zero Covid <i>vs.</i> Living with Covid: Impact on Supply Chain Activities of R&D Organizations	Anil Kumar M & Suresh Kumar C
ICAIEM- 2022- 68	Analysis on the Conception and Implementation of Six Sigma for Process and Quality Improvement Strategies in Medical Device manufacturing Industry in India	Venugopal.S & K.S. Chandrasekar
ICAIEM- 2022- 27	Sustainable Project Success with Benefit Management Approach	Rakesh Kumar, Dhrupad Mathur & Pranab Kumar Pani
ICAIEM 2022-44	Exploratory Analysis of Internal and External Ergonomic Factors Affecting the Driving Comfort of Heavy Vehicle Drivers	Asok Kumar N & Regi Kumar V
ICAIEM 2022-48	Hybrid Ergonomic Approach for Addressing Musculoskeletal Disorders	Gorakshanath Hanagi & Mahesh Dhawalikar

<b>Track IV</b>		
<b>Date: March 19, 2022 Time: 2.00 PM- 4 PM</b>		
<b>Topic: Marketing I</b>		
Session Chair: Dr. Vivek Khanzode		
Session Co-chair: Dr. Suresh Kumar C		
Session Manager: Mr. Abhilash V S		
ICAIEM 2022-33	Sustainable Marketing as a Sustainable Competitive Advantage for the Corporates	Leeba Babu

ICAIEM-2022- 65	Consumer Intention towards Buying Used Clothes	Nima Ravi, Ani Sam Varghese, Lekshmi Nair M, Sreekutty O U & Mohamed Azim
ICAIEM- 2022- 79	Building a Retail Digital Ecosystem	Azhar Basheer & Vinod R
ICAIEM- 2022-25	Internal Stimuli and Its Influence on Online Impulse Buying Behaviour— A Study on Multibranded Multiproduct e-Commerce Websites	Neethu Jose, F.J. Peter Kumar & Cris Abraham K
ICAIEM- 2022- 29	Role of Advertising Effectiveness on Customer Engagement and Purchase Intentions among Youth	Jitha G. Nair & Ansa Mary Jacob
ICAIEM- 2022- 30	Effect of Online Product Review, Celebrity Endorsement, Product Involvement, Information adoption on Online Purchase Intention among Young Shoppers during Covid-19	Manju Das S K & Anagha K G
ICAIEM 2022-32	The Impact of Content Market Strategies on Consumer’s Purchase Decision with Special Reference to Food & Beverage Industry	Bitha S Mani & Priya Prasad
ICAIEM 2022-49	Study of Challenges faced by Startups in Kerala	Bobin Chandra B MSR Mariyappan & Sruthy S Krishna

### **Track V**

**Date: March 20, 2022 Time: 11.00 AM -12.30PM**

**Topic: Marketing II**

Session Chair: Dr. Ajith Sankar

Session Co-chair: Dr. Vinod M

Session Manager : Ms. Jisha Gopi

ICAIEM- 2022- 06	Delving into the STP Marketing of Health Tourism in Kerala	Rajeev Kariyil & Rincy V Mathew
ICAIEM- 2022- 09	A Study on the Purchase Intention of Textile Products through Social Commerce among Young Consumers	Anupa Sara George & Jithin Benedict

ICAIEM- 2022-10	A Study on Influence of Online Promotional Activities on Impulse Buying in Flipkart Among Youth in Kerala	Mahesh S & Jithin Benedict
ICAIEM 2022-40	Passenger Satisfaction of Public Bus Transport during Covid-19 Pandemic	Al Hafeez N & Regi Kumar V
ICAIEM-2022- 64	Consumer Perception and Purchase Intentions of Buying EVs in Trivandrum	Nima Ravi, Munnu S.M, Bijo J & Akhil Raj
ICAIEM- 2022- 70	A Review on Innovation Possibilities in the Handloom Clusters in Kerala	Nidhi M B, P V Unnikrishnan & Arjun R Nair
ICAIEM- 2022- 83	METAVVERSE - A Emerging Trend for Better Customer Experience	Miraj Taggala, Ajay Daniel Samraj Vijayaseelan, D.Divya Prabha & V B Mathipurani

### Track VI

**Date: March 18, 2022 Time: 1.30 PM - 3 PM**

**Topic: Human Resource Management**

Session Chair: Dr. R.Vasanthagopal

Session Co-chair: Dr. Hareendrakumar V R

Session Manager: Ms. Nima Ravi

ICAIEM- 2022-18	Comparison of Aptitude Skills of Engineering and Non-engineering Graduates for Effective Talent Management	Geevarghese K. Mathews & Siby Zacharias
ICAIEM- 2022-24	Influence of Workplace Experience on Burnout and Employee in difference among Managers in Retail Sector	Merlin B Joseph, F J Peter Kumar & Cris Abraham K
ICAIEM 2022-39	Women Empowerment Through JLG and SHG: A Case Study on Rayagda District, Odisha	Karteek Madapana, N V J Rao & Ashis Ranjan Mohapatra
ICAIEM 2022-50	A Study on the Challenges of Learning during Pandemic	Pavin Shaji Mathew & Arunlal P L
ICAIEM-2022- 55	Employee Engagement—An Analysis on Information Technology (IT) Sector Amidst Covid-19 Pandemic	Anchu P. R & Santhosh. P. Thampi

ICAIEM- 2022- 75	A Study on Emotional Dissonance and Job Involvement	Amal B S
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<b>Track VII</b>		
<b>Date: March 18, 2022 Time: 3 PM – 4.30 PM</b>		
<b>Topic: Technology &amp; Operations Management I</b>		
Session Chair: Dr. Sini V Pillai		
Session Co-chair: Dr. Reuban Jacob		
Session Manager : Ms. Seema S		
ICAIEM-2022- 05	Naïve Bayesian Classifier for Assessment of Sustainability of a Project	Cinta Joseph Choondal
ICAIEM-2022- 02	Lean Power Consumption—The Importance of Atmosphere into Lean Estimation	Deepak Asthana & Apurva Anand
ICAIEM-2022- 12	Elimination of Stator Machining Bottleneck Activity by Fatigue Reduction and Cycle Time Optimization through PMTS Approach in a Motor Manufacturing Industry	Amod Desai & Mahesh Dhawalikar
ICAIEM-2022-26	The Impact of e-Commerce on Inventory Management—A Study with Effect from Pandemic Period	Jubi R & Nayana S Rajeev
ICAIEM 2022-37	Recall of Medical Devices – The Determinants	Sandhya C G, K Srinivasan & S Balram
ICAIEM 2022-41	Modeling of Food Supply Chain Resilience Using Haddon Matrix	T N Mubarak & Regi Kumar V
ICAIEM 2022-43	Review on Sustainable Practices in Supply Chains	Mohammed Riazur Rahaman & Subramanya K N
ICAIEM 2022-46	Identifying the Relevant Project Management Tools in Implementation of e-Governance Projects – Journey from Traditional to Agile	Gayathri Chandrachoodan, Radhika R & Ramesh Palappan

<b>Track VIII</b>		
<b>Date: March 19, 2022 Time: 2.00 PM- 4 PM</b>		
<b>Topic: Technology &amp; Operations Management II</b>		
Session Chair: Dr. Nidhi M B		
Session Co-chair: Dr. Noorudeen M		
Session Manager : Mr.Abhijith Rajkumar		



ICAIEM- 2022-11	A Two Dimensional Vehicle Loading and Routing Problem with Release Dates and Delivery Deadlines	RahulPatil & Jai Kishan
ICAIEM 2022-36	Insights for Supply Chain Resilience from the Global Chip Shortage	George Joseph & Deepak Babu
ICAIEM 2022-47	Resistance to Telemedicine: Perceptions of Digital Natives in an Emerging Economy	Muhammed Sajid, Zakkariya K.A, Mukul Dev Surira & Libin Thomas
ICAIEM-2022- 51	Line Balancing in a Telecommunication Firm using Simulation Optimization	Ekansh Tari & Mahesh Dhawalikar
ICAIEM- 2022- 56	Reduction of PCB Scrap in Base Station Antenna (BSA) Manufacturing Industry by using FMEA Technique in Six Sigma Approach	Sirajuddin Mulla & Mahesh Dhawalikar
ICAIEM- 2022- 60	An AHP Approach to Prioritize Sustainability Enablers in Vaccine Supply Chain	Abyson Scaria & Edison George
ICAIEM-2022- 61	Integrating Telemedicine Services in Primary Healthcare Network for Regulating Out-of-Pocket Expenses	Kaushal Kumar
ICAIEM- 2022- 73	Selecting Sustainable Suppliers in an Electronic Supply Chain: The Indian Context	Rakesh R Menon & Ravi V
ICAIEM- 2022- 74	Supply Chain Resilience through Digitalization: Prioritization of Key Factors and Designing of Model for Selecting Suitable Digital Solution	Deepu T S & Dr. Ravi V

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ICAIEM-2022- 02

## **Lean Power Consumption—The Importance of Atmosphere into Lean Estimation**

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### **Abstract—**

This work is supported through a case observe with the identity and quantification of the financial and atmospheric effect in the addition of the two concepts (Lean and Power) in an Indian SME, wherein the principle production technique is the robotized welding technique. Given the developing ecological consciousness, atmospheric achievements of lean production additionally include a strong financial relevance. This paper reveals that through the use of Lean Power Consumption, the price of material, money and labor etc. decreased in the manufacturing unit and the price of manufacturing comes down and our atmosphere too is protected.

**Keywords:** Lean, Power, Muda, Productivity, Sustainable Production

ICAIEM-2022- 05

## **Naïve Bayesian Classifier for Assessment of Sustainability of a Project**

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### **Abstract—**

Sustainability is an art of balancing a fine line between competing needs – the need of moving forward with emerging trends and technologies and the need of protecting the environment and natural resources. It is a fact that most of the projects are failing due to the lack of a suitable sustainable plan. Thus, it is important to analyse the factors governing the degree of sustainability of a project. Determining the sustainability of a project in its early stages will help us reduce the future losses. In line with these objectives, this paper examines the effects of such factors to identify a sustainable project screening tool using limited information with the help of a mathematical approach. The Naïve Bayesian classifier is used to analyse the correlation between the factors and to determine the screening tool. Thus, the proposed model will help the users decrease the losses as a result of early abandonment of unsustainable projects and to identify and promote the sustainable ones.

**Keywords:** Sustainability, Factors, Screening Tool, Naïve Bayesian Classifier, Correlation



ICAIEM-2022- 06

## **Delving into the STP Marketing of Health Tourism in Kerala**

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### **Abstract—**

Tourism boosts the economy, creates thousands of jobs, improves a country's infrastructure, and encourages cultural exchange between tourists and locals. Tourism supports a large number of jobs in a range of businesses. It also provides a one-of-a-kind medical tourism alternative, in addition to its environment and culture. Kerala's ancient medical systems, such as Ayurveda, Sidha, Naturopathy, Panchakarma, Kalari, and others, have drawn visitors from all over the world. Patients from the West and the Middle East are flocking to India, specifically Kerala, for cardiology, nephrology, orthopaedics, cancer, and other medical procedures. STP Marketing- Segmentation, Targeting and Positioning, is easy to understand and application in the business will definitely make a change the economic status. As Kerala is preferred as an option for patients seeking healthcare solutions in India, the study helps to identify the markets to be segmented, positioning of the products (facilities) by the health providers.

**Keywords:** Tourism, Marketing, STP Marketing, Health Tourism

ICAIEM-2022- 08

## Surfing through the Overtones of Customer Loyalty in Mobile Banking

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### **Abstract—**

Mobile banking has become a major differentiator for banking leaders, since it allows customers to make deposits, account transfers, and track their spending and earnings. Nearly 80% of those who have used mobile banking claim it is the primary way to access their bank account. Customers, particularly Gen Zers, are driving the future of banking technology. Mobile banking is often available 24 hours a day, seven days a week. The study explains drive effects of factors like satisfaction, ease of use, mobile atmosphere, trust and security towards mobile banking. The data was gathered from 205 users of mobile banking through structured questionnaire of five scale point. This study contributes to the information on an understanding of customer's loyalty towards the various factors identified: mobile banking, its estimation of relationship between perceived ease of use, perceived security, mobile atmosphere, customer trust and customer satisfaction.

**Keywords:** Mobile Banking, Trust, Ease of Use, Security, Customer Satisfaction

ICAIEM-2022- 09

## **A Study on the Purchase Intention of Textile Products through Social Commerce among Young Consumers**

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### **Abstract—**

With the development of e-commerce, social commerce has also developed. There are more and more varied kinds of social e-commerce as network technology and social media advance. Scholars have classified social e-commerce based on various business models, activity subjects, business priorities, and operating modes, among other things. The study aims in understanding the Consumer Purchase Intention for textile products in social commerce. The data was collected from 209 respondents using a structured questionnaire, focusing on few variables and its relationship with purchase intention in social commerce. The results of the study showed that customer satisfaction is the factor that contributes the most to the purchase intention of textile products through social commerce. The ultimate goal of the development of social commerce is still to promote users' buying behaviour, and it is influenced by purchase intention, hence factors that influence users' purchase intention are an important aspect of social commerce study.

**Keywords:** Social Commerce, Ease of Use, Rating, Informational Value, Customer Satisfaction

ICAIEM-2022- 10

## **A Study on Influence of Online Promotional Activities on Impulse Buying in Flipkart among Youth in Kerala**

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### **Abstract—**

Consumer researchers have been exploring impulse buying of shoppers for nearly 50 years. Online Impulse buying behaviour is the growing dimension of consumer behaviour getting popular after IT act 2000 when most of the consumer transactions started taking place online. Now customer takes decisions faster and impulsively. So, this paper tries to explore simple concepts like online shopping, Impulse buying and understand the reasons for impulse buying during online shopping with special impetus on Indian e-commerce giant Flipkart. The main aim of the study is to understand the promotional factors of Impulse buying through a literature review and thereafter to group important reasons for Impulse buying based on similarity and create factors and relationships among them. The outcomes of this research can be used by Industrialist who is dealing in e-commerce and online trade of goods for the careful planning of their marketing activities for promoting their online products.

**Keywords:** Impulse Buying, Nitty-Gritty, Promotional Factors, E- Commerce.

ICAIEM-2022- 11

## A Two Dimensional Vehicle Loading and Routing Problem with Release Dates and Delivery Deadlines

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### Abstract—

Capacitated vehicle routing problem (CVRP) with loading constraints has recognized the importance of the loading activity and incorporated various loading constraints while designing vehicle routes (16). Vehicle routing problem with two-dimensional loading (2L-CVRP) is an important variant in this literature that studies the problem faced by freight distribution companies that handle and transport non-stackable goods. The 2L-CVRP does not consider the height dimension while loading because vertical stacking can cause damage to fragile items or trouble during the unloading operations for the heavy and bulky items.

2L-CVRP literature has proposed decomposition and approximation algorithms to solve the instances of the studied variants. This stream of research has not so far proposed an integer programming formulation that integrates both the routing and loading aspects of the problem in the presence of release times and delivery deadlines. The integrated mathematical formulation is useful to many firms that want to solve small to medium-sized real instances to optimality without investing time to program decomposition and approximation algorithms. Therefore, it is proposed to use an integrated novel integer programming formulation to solve the 2 Dimensional- Vehicle Routing Problem with Release Times and Develop Deadlines by using the principles embodied in bin packing and disjunctive formulations. The objective is to minimize the sum of transportation, inventory, tardiness, and backorder costs. The numerical experiments show the influence of cost structures on the loading configurations and route designs. Our approves not only improve the utilization of the vehicle but also reduce the distance travelled and thus reduce the total logistics costs.

**Keywords:** Supply Chain Analytics, Modeling, Simulation, Routing, Delivery Deadlines

ICAIEM-2022- 12

## **Elimination of Stator Machining Bottleneck Activity by Fatigue Reduction and Cycle Time Optimization through PMTS Approach in a Motor Manufacturing Industry**

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### **Abstract—**

This paper deals with a modified PMTS approach applied to the bottleneck of India's leading motor manufacturing company having its manufacturing setup in Goa. The company has been producing motors for over 25 years catering to local as well as international requirements of industrial motors and has a reputation of producing high quality motors at competitive price. This paper presents the work carried out to increase the output of the workstation for stator machining which was identified as the bottleneck for all the models manufactured by the company. The methodology consisted of analysis of work cycle through PMTS and study of videos of the work cycle which resulted in opportunities for improving the method. The improved work cycle through ergonomic design considerations resulted in reduced operator fatigue and an impressive 20% increase of productivity of the bottleneck. This is expected to result in significant impact on the bottom line of the company through an expected increase of 20% in the motor output per shift.

**Keywords:** PMTS, Method Study, Cycle Time Optimization, Ergonomic Design, Productivity Improvement

ICAIEM-2022- 14

## **A Study on the Impact of FOMO Investor Behaviour in Kochi**

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### **Abstract—**

Fear of missing out is a situation where people fear about missing out on what is happening around them which is commonly known as FOMO. FOMO stocks, FOMO crypto etc are FOMO relating to finance and investment. Symptoms of “severe FOMO” exist today, yet FOMO is nothing new. Many individuals all around the world think that someone somewhere is doing something better that he/she is missing out, this is FOMO. People who are prone to sensations and people who wants to blend in now-e-days are affected by FOMO. The study tries to explain how the phenomenon of fear of missing out affects investment decisions in the city of Kochi. A self-administered questionnaire was used to conduct the survey and SPSS software was used to analyse the data. The study was an attempt to find out the relationship between various facets that describe FOMO and their impact on investment decisions.

**Keywords:** Hedging behaviour, Regret theory, Loss aversion, Experimental bias, FOMO

ICAIEM-2022- 15

## **A Study on Level of Tolerance of Uncertainty among Retail Investors in Kochi**

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### **Abstract—**

This study is an attempt to measure the impact tolerance of uncertainty on investment decisions. This study seeks to answer the question of whether uncertainty plays a vital part in the decision-making process by a retail investor. Innovations in information technology and increased financial disclosure have created a friendly environment among retail investors. The research paper seeks to answer how the demographic variables influence the level of risk tolerance among retail investors in Kochi. Besides, the study also focus how risk tolerance is affecting the mind-set of retail investors. Risk tolerance is the key to every investor's decision because it affects the investor's courage and confidence. A self-administered questionnaire was used to conduct the survey and SPSS software was used to analyse the data. The study seeks to know whether tolerance of uncertainty has an impact on retail investors while investing.

**Keywords:** Intolerance of uncertainty, IUS, Anxiety, Risk Avoidance, Worry.



ICAIEM-2022- 16

## **A Study on the Impact of Foreign Institutional Investors on Indian Stock Market Indices**

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### **Abstract—**

Investment provides a country all that it needs for prosperity and economic development. Although banking, stock market, Federal Reserve's etc. are important, foreign investments are equally important. Foreign Institutional Investors (FIIs) have recently emerged as a significant player in the Indian equity market, and they are quickly becoming one of the most important factors driving financial market growth. The major problems developing countries have is that they have low capital accumulation. Lack of domestic funding is one of the main factors that requires foreign investment in an economy. In many instances, the Indian economy has faced capital shortage. Due to a lack of resources, India has opened its doors to many foreign countries to start investing in India. Similarly, we received funding from Russia, UK, and Germany to build steel plants in Bhilai, Rourkela, and Durgapur. The purpose of this research paper is to look into the impact of foreign institutional investment on the Indian stock market, with a focus on the BSE SENSEX India index.

**Keywords:** Foreign Institutional Investors, Stock market, BSE, Sensex, Impact

ICAIEM-2022- 17

## Technical Analysis of FMCG Stocks in India

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### Abstract—

Technical analysis is a study of price movements in predicting future financial price changes. In terms of predicting, technical analysis does not yield absolute forecasts about the future. Technical analysis, on the other hand, can assist investors in predicting what is “possible” to happen to prices over time. Technical analysis is the study of predicting future values of securities. The stock market indicators can assist the investor in identifying opportunities. SMA, LMA, ROC, RSI and Chart were used for the analysis. This is a detailed technical analysis of selected FMCG stocks in India based on market capitalisation, which aids in understanding price behaviour, signals, and major market price turning points. The purpose of this article is to conduct a technical analysis of the securities of selected FMCG stocks and to recommend suitable stocks for investing in this sector.

**Keywords:** Technical analysis, FMCG Stocks, Behaviour Finance, Investment, Prediction

ICAIEM-2022- 18

## Comparison of Aptitude Skills of Engineering and Non-Engineering Graduates for Effective Talent Management

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### Abstract—

This study compares the performance of final year engineering students with final year non-engineering students in terms of their talent to ace aptitude tests. The study intended to highlight the performance of engineering graduates with non-engineering graduates in their ability to become a potential for talent acquisition teams of reputed employers. The researcher used cluster sampling for the present study. Two batches of final year engineering students are selected at random from the institutions affiliated to Kerala Technical University (KTU) and another two batches of final year non-engineering students are selected at random from the institutions affiliated to M.G. University. There is a significant difference between the quantitative ability of engineering students in comparison with non-engineers. Verbal ability mean score of non-engineering students is better than engineers. The logical reasoning ability of both groups is not significantly different.

**Keywords:** Talent management, Aptitude test, Core Engineering, Recruitment, Employability skills

ICAIEM-2022- 21

## **Prediction of Credit Risk of Regional Rural Banks using Gray Forecasting Model**

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### **Abstract—**

The Regional Rural Banks (RRB) are considered to be an effective way to reach banking to rural areas in India. Identified as RRBs with a broad mission of financial inclusion in niche areas, this paper tries to analyse credit risk from 2011 to 2020 and forecast credit risk for the next 5 years using Gray Forecasting Model. The finding from the analysis speaks that the credit risk of the RRBs will increase constantly over the next 5 years. It shows the need for improving effectiveness of policies like refinance, restructuring and prompt loan repayment policies. On economic activities ground, it can be interpreted that the income generation from economic activities is getting affected and it requires fine tuning of Government support schemes and developmental activities in rural areas of India.

**Keywords:** RRB, Credit Risk, GNPA, NNPA

ICAIEM-2022- 22

## Volatility of Currency Futures Traded in BSE India

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### Abstract—

The main objective of the study is to forecast the volatility of Volume and Turnover of currency futures traded in BSE India using Econometric model. The analysis is based on time series data of daily turnover and trading volume of currency futures traded in BSE, from January 1st 2015 to 31 st December 2021 which is collected from the Historical Data of BSE India. It helps to forecast the volatility of daily turnover and trading volume of currency futures India traded in BSE, for the period January 1<sup>st</sup> 2022 to 31<sup>st</sup> December 2022. This article examines the time series model to forecast the volatility of turnover and traded volume of currency futures traded in India. The time series plot depicts the original pattern of series of currency futures of BSE India. The study employs Time Series Plot to check the Random Walk Pattern of the series and Unit Root Test was employed to test the Stationarity of the series. A long run relationship between prices of currency futures was tested using Johansen Co-integration method. Vector Error Correction Model described the short run dynamics of variables. GARCH (1, 1) model was used to obtain and forecast the currency futures volatility of BSE.

**Keywords:** Currency Futures, Time Series Plot, Unit Root Test, Volatility, GARCH

ICAIEM-2022- 23

## **Assessment of Awareness Level of Financial Inclusion Schemes among the Working Women—An Empirical Investigation in Palakkad District, Kerala**

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### **Abstract—**

In India, the financial inclusion mission started with the aim of encouraging the habit of enjoying the financial services for the common people. Since its launch, the mission extended to every corner of India and now it is attaining a considerable growth slowly. But the question is to what extent this mission is aware amongst the Vulnerable or Unbanked population in the country? To answer such question, the present study attempted to measure the awareness level about the financial inclusion schemes amongst the working women in the Alanallur Panchayat, Palakkad district. For this purpose, the primary data has been collected using a structured questionnaire among 120 selected working women by dividing the Alanallur Panchayat into 3 wards. In order to test the awareness level, the statistical tools like Percentage analysis, ANOVA & Weighted Average Ranking method were performed. The result demonstrated that this financial inclusion mission is now in good progress as it is supporting all the citizens irrespective of their social status. But it is still having more loop holes to be fixed up among the unbanked, rural population and working women, in particular.

**Keywords:** Financial Inclusion, Awareness level, Working Women, Kerala, Banking

ICAIEM-2022- 24

## **Influence of Workplace Experience on Burnout and Employee Indifference among Managers in Retail Sector**

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### **Abstract—**

The changing workplace and its practices can influence the attitude and commitment of employees. Emotional exhaustion is considered to be the core element of burnout, resulting in cynicism towards one's work and colleagues and low efficiency levels. Previous literature on indifference focuses mainly on indifference management, issues related to indifference and challenges due to indifference. Hence, a gap of influence of workplace practices on employee indifference is found relevant, especially during this pandemic time. This study attempted to investigate whether workplace practices have any significant influence in creating burnout and indifference among employees. Employee Indifference was studied based on indifference to indifference to Job, burnout is studied based on emotional exhaustion, inefficacy and depersonalization and workplace practices are categorized as ability enhancing practices, motivation enhancing practices and opportunity enhancement practices. The objective was achieved through a quantitative research approach. The population includes the managerial level employees in the retail sector. The data for the study was collected using well-structured questionnaires. The data collected were analyzed using appropriate statistical methods.

**Keywords:** Employee Indifference, Burnout, Workplace practices, Workplace Experience, Emotional Exhaustion

ICAIEM-2022- 25

## **Internal Stimuli and Its Influence on Online Impulse Buying Behaviour—A Study on Multibranded Multiproduct E-commerce Websites**

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### **Abstract—**

E-commerce volumes vary severely across countries due to Covid 19 pandemic. Due to the increasing importance of e-commerce, the study of online impulse buying behaviour is of specific importance. The study focuses on understanding different internal stimuli which leads to online impulse buying behaviour. Internal Stimuli during Online Purchase is studied based on different elements namely trust propensity, willingness to buy, self-efficacy and ease of use. The current study helps to understand the relationship between Internal Stimuli and Online Impulse Buying Behaviour. The result of the study will be useful for online retailers. It will help to understand how Internal stimuli of an Online buyer influences Online Impulse Buying Behaviour. In the study data has been collected from respondents who belong to Generation X. A sample of 192 respondents are collected for the study. The analysis of the hypothesis has been done using correlation, Regression, Independent Sample t-test and One way ANOVA.

**Keywords:** E commerce, Trust Propensity, Willingness, to Buy, Self – Efficacy, Ease of Use



ICAIEM-2022- 26

## **The Impact of E-Commerce on Inventory Management— A Study with Effect from Pandemic Period**

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### **Abstract—**

In March 2020, much of the world went into lock down, forcing many businesses to temporarily shut down. Countries are gradually relaxing restrictions, but the future is still uncertain. Even businesses that are reopening have restrictions enforcing social distancing, the wearing of masks, and limits on how many customers can enter a space at one time. When traditional shopping becomes difficult, or may even be scary, people are increasingly inclined to shop online. There's a good chance that this increasing trend will continue in the post-quarantine world. The advantages of online shopping aren't going to disappear even when retail businesses reopen fully. Inventory management helps you maintain the right amount of inventory to meet your customers' demands. It includes picking a product from the warehouse, packing it, shipping it through the logistics partner and finally ensuring delivery to the customer. This paper throws light towards the role of inventory management in time bounded delivery and customer satisfaction.

**Keywords:** Temporarily Shut Down, Traditional Shopping, Inventory Management, Customer Satisfaction

ICAIEM-2022- 27

## Sustainable Project Success with Benefit Management Approach

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### Abstract—

This paper draws attention from the literature on evolving success ingredients in projects and call for refreshing the project success understanding from the benefits and value perspectives. This study is presented from the ongoing study on benefits management discipline as part of the author's doctoral study. A systematic literature review is conducted on project success and benefits management from 1995 to 2021. From the literature, the themes of project success are determined by keeping the benefits in the nucleus and from the lens of sustainability. A preliminary sustainable project success model is then formulated from the study of the literature and a hypothesis is developed. The hypothesis "Does benefit management approach leads to sustainable project success" is tested with pilot study data (n=50) using Adanco 2.0.2 application. The results confirm the hypothesis. The limitation of the small sample size is mitigated to an extent with validation of results with five industry experts. The paper contributes to answering a portion of the ongoing debate in the project studies on sustainable project success and opens avenues for researchers to empirically test the sustainable project success model from the benefits management approach.

**Keywords:** Benefit Management, Sustainable Project Success, Sustainability, Model, Project Studies

ICAIEM-2022- 28

## **A Study on the Impact of Behavioral Finance on Risk Management with Special Reference to New Age Investment Platforms and its Impact on the Youth**

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### **Abstract—**

This paper attempts to find out are trying to find how the new apps have made it easier for this generation to start investment with a nominal amount and with ease of access with the smartphone. One another factor the paper looks into is the financial education they are receiving from various sources and the urge to get money the fastest way possible. This urge is what motivates them to follow blindly and take huge risks. Everyone is behind the success of bitcoin and considering how small the value was at the start people have started investing in many low value crypto currencies blindly. But these investors are not considering the risk they are taking as till now crypto currency is not legal in India and no protection will be given unlike the SEBI which protects the investors. The data for this research will be collected using primary sources of data by handing out questionnaires to investors specifically who are new to investing. The main objective of the study would be to find out how the respondents have come into investing and their personal goal behind this objective. The study also looks into what made the young investors get into investments through these apps even though investment opportunities were available early on itself. This study finds out how the investors mind reacts to ups and downs of the market and the decisions that they take based on those.

**Keywords:** Behavioral Finance, Risk Management, Investment Platform, Cryptocurrency

ICAIEM-2022- 29

## **Role of advertising Effectiveness on Customer Engagement and Purchase Intentions among Youth**

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### **Abstract—**

The increased use of social media platforms by users have enhanced opportunities for the marketers for selling their products to the customers. The social media influencers have identified this opportunity whereby they promote various products in return for some amount of money. Specifically, the purpose of the study is to find out if social media influencers play a significant role in increasing the Customer engagement and Purchase intention by exploring various independent factors like source credibility, source attractiveness, meaning transfer and product match up. A self-administered questionnaire was used to conduct the survey and the model was tested using SEM analysis. It is concluded that the influence of social media influencers on customer engagement does not necessarily lead to purchase intention.

**Keywords:** Customer Engagement, Purchase intention, Social media influencers, Influencer marketing, Social media marketing

ICAIEM-2022- 30

## **Effect of Online Product Review, Celebrity Endorsement, Product Involvement, Information Adoption on Online Purchase Intention among Young Shoppers During Covid-19**

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### **Abstract—**

The spread and assortment of products on e-commerce platforms have winded out many practices, norms and routines of traditional marketers in their understanding of their customers. This research tries to explore the effect on the online purchasing behavior of digital customers. A pandemic like Covid-19 disrupted and triggered the need to adapt to a new order of purchase behavior. The study focused on the understanding of the effect of factors like Product Review (PR), Celebrity Endorsement (CE), Product Involvement (PI), Information adoption (IA) on Purchase intention among young shoppers during the Covid-19 pandemic. Applying the S-R model theory, this study aims to understand the percussions of the above said constructs on consumer's purchase intention. A total of 246 participants answered the questionnaire. Results showed that there is a significant relationship between the constructs. Data collection is carried out by online survey method and uses Structural Equation Modeling for data analysis. The findings of the study shows that there is a significant relationship between Product Review, Celebrity Endorsement, Product Involvement, Information adoption and Purchase intention. This study highlights the relevance of the percussions of these factors on purchase intention. The findings of the study can help practitioners gain a better knowledge of consumers' perceptions of online shopping during the Covid-19 period which can be used to develop business strategies and trust-building methods to promote online purchasing.

**Keywords:** Purchasing intention, Celebrity endorsement, online product review, product involvement, information adoption

ICAIEM-2022- 32

## **The Impact of Content Market Strategies on Consumer's Purchase Decision With Special Reference to Food & Beverage Industry**

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### **Abstract—**

The topic “the impact of content market strategies on consumers’ purchase decision with special reference to the food and beverage industry” is aimed to describe content marketing and purchase decision, analyze the influence of content marketing on purchase decision, and analyze the dominant variables of content marketing on online purchase in food and beverage industry. Content marketing can attract consumers by creating an engagement between customers. The influence of content marketing on purchasing decisions is very important because it is considered a fairly effective communication channel. The objectives of the studies are to understand the demographic profile of customers and to identify the impact of content marketing on purchase decisions of people in the food and beverage industry. Users of food and beverage in Alappuzha district constituted the population for the study. From testing the hypothesis of the variables of content marketing, it turns out to be the dominant influence on purchase decisions. From the study it was found that content market strategies have a positive impact on customers’ purchase decisions in the food and beverage industry.

**Keywords:** Content market strategies, Purchase decision, Consumer behaviour, Social media, Online purchase

ICAIEM-2022- 33

## **Sustainable Marketing as a Sustainable Competitive Advantage for the Corporates**

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### **Abstract—**

Sustainable marketing has created strategic opportunities for successful business firms as it helps to identify the potential challenges and build sustainable competitive advantages for the corporate houses. Sustainable marketing paves a way for the company to exercise its rights, obligations, privileges and ensure responsible marketing in all spheres. The purpose of the study is to address the importance and need of sustainable marketing to all those who are involved in the process of marketing viz., the researchers, marketers, scientists, entrepreneurs, managers and professionals in business. This paper necessarily focuses on the innovative practices in the industry with respect to sustainable marketing. How the firms can strategize itself in meeting the sustainable goals of the enterprise through marketing initiatives is discussed in the paper. The study also brings out the relationship of sustainable marketing with sustainable competitive advantages, core competencies and critical success factors of business considering the Triple Bottom Line approach.

**Keywords:** sustainable marketing, core competence, sustainable competitive advantage, triple bottom line, customer value

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## **Significance of Industrial Safety**

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### **Abstract—**

Industrial safety refers to the safety management practices that apply to the industrial sector which in turn aim to protect industrial workers, machinery, facilities, structures, and the environment. Convention C155 and Recommendation R164 were instrumental in bringing about an awareness as well as prominence on the lives of industrial workers. Industrial accidents have taken a heavy toll of lives on the workers and the subsequent life style changes carry on a stigma in their social life for a very long time. Every organization cannot function like High Reliability Organisations where they assess and analyse even minor risks in their operations through dynamic risk assessments. They invest in training and enhance competence level of staff for decision making and carry out management by exception. All these are possible mainly due to mindful leadership.

**Keywords:** Industrial Safety, High reliability organization, Competence, Mindful leadership, Job Safety Analysis



ICAIEM-2022- 36

## Insights for Supply Chain Resilience from the Global Chip Shortage

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### Abstract—

This research aims to uncover the causes of the global chip scarcity and supply chain disruption, which is occurring despite supply chain management strategies. Because the supply chain has been substantially impacted, business and regulators are concerned about how to respond to global disruptions. As a result, the goal of this study is to look into the supply chain's vulnerability and capability aspects, their relationship, and how these variables affect global chip business. The study used a qualitative research design. The first step was to do a content analysis. Because this shortage and its magnitude are unfamiliar territory, websites and newspapers were used to educate oneself with the vulnerability, following Pettit et al principles (2010). In-depth interviews with key informants were undertaken in the second stage to study the link between the variables and how these factors may influence supply chain resilience. This study outlines six reasons for global supply chain disruption as well as methods to strengthen resilience to vulnerabilities, particularly in the context of the COVID-19 pandemic. This paper looks at the causes for the global chip supply chain disruption and offers remedies. Furthermore, in the context of COVID-19, this article maps capabilities against current weaknesses.

**Keywords:** Global Chip Shortage, supply chain disruption, vulnerabilities, capabilities, Qualitative research

ICAIEM-2022- 37

## Recall of Medical Devices—The Determinants

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### Abstract—

Medical devices is a product segment that calls for assurance in safety and performance in its product lifecycle, as it is lifesaving in many cases or enhances the quality of life of humans. Medical devices have stringent regulatory procedures to be complied with before it is released to the market. Mechanisms are in place where the failure and subsequent health hazards are reported to the regulatory authorities when the device is in use. Recall of the medical device is done when the health hazards become more risky causing serious adverse events. The article tries to discuss the case of recalls in the cardiac implantable medical device segment to analyze the increase in the recall rate. The linkage of the increase in innovation contributing to the recall is also discussed. The article probes further research into other determinants that would have an effect on the recall.

**Keywords:** Medical Devices, Product Lifecycle, Risk, Innovation, Safety,

ICAIEM-2022- 39

## Women Empowerment through JLG and SHG A Case Study on Rayagda District, Odisha.

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### Abstract—

Woman plays a significant role to the economic development of their families and communities but certain obstacles such as social stigma, low level of education, poverty and unemployment, mostly in developing countries have hindered their effective performance of this role. Micro-Finance institutions provide small loans to customers in different ways without any collateral. One of the most important innovations that makes this possible is group lending, where poor borrowers act as guarantors for each other by assuming joint liability for the loans. This study adopts multi-stage, non-probability sampling methods, particularly purposive and snowball sampling methods. For selection of the study area, i.e. Rayagada district in Odisha state was based on purposive sampling method. For selection of the respondents the multi-stage sampling method was used. The idea of present study was to evaluate the impact of SHG and micro-finance programme on women and their contribution in empowerment in the study area. A multistage sample design was adopted for selecting the sample of SHG and Microfinance companies for collection of primary data through interview schedules during the survey.

**Keywords:** Women Empowerment, Microfinance, SHG, JLG, Odisha

ICAIEM-2022- 40

## **Passenger Satisfaction of Public Bus Transport during Covid-19 Pandemic**

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### **Abstract—**

A large group of people in our population depends on the public transport for their day-to-day needs, and with the pandemic taking rise it made a lot of difficulties to the working as well as passengers depending on the bus transports. A case study of public bus transport in Kerala has been taken into consideration for the analysis. The objective of the study is to find the customer preference towards the public bus transport during the covid-19 pandemic and the overall satisfaction of the customers within the service provided to them. A methodological frame work for data collection using online survey with relevant questionnaire is introduced. Based on the analysis results passenger satisfaction can be assessed and suggestions to augment the public bus transport services during pandemic period can be recommended.

**Keywords:** Customer Satisfaction, Public Bus Transport, Online Survey, Covid 19, Pandemic

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## **Modeling of Food Supply Chain Resilience using Haddon Matrix**

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### **Abstract—**

The ongoing Covid-19 pandemic has disrupted almost every global firm and their connected supply chains. Strict lockdown measures implemented by the government and lack of transportation have halted normal logistics activities. The idea of supply chain resilience has more relevance in such situations. Resilience is demarcated as the capacity of a firm to regain its initial level of performance after facing a sudden disruption. Ensuring the resilience of supply chain firms helps to maintain food security during disruptions. Haddon matrix is a tool used to compare and contrast between causes of an event with its distinct phases. In this paper, the Haddon matrix is used to analyze how food supply chain firms have managed to maintain resilience during the Covid-19 pandemic. With the aid of this tool, a conceptual framework is developed for tackling future disruptions to food supply chains.

**Keywords:** Supply Chain Resilience, Food Security, Haddon Matrix, Covid-19, Disruption

## Review on Sustainable Practices in Supply Chains

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### Abstract—

Several studies have investigated and reported sustainability practices impacting the performance of the supply chains. But, there is no paper found consolidating these practices in a comprehensive manner in recent years. A systematic literature review of over 100 studies from top-rated peer-reviewed journals during the 2016-2020 timeframe is conducted. A descriptive analysis followed by a categorization analysis based on content analysis was carried out to identify research methods, and sustainability practices assessed. Studies pertaining to sustainability practices influencing the performance of the supply chains is gaining growing attention among researchers. Environmental, followed by social dimensions of practices impacting the performance of supply chains is widely studied in the literature. While there are several factors including practices, drivers, capabilities, enablers, strategies, and barriers impacting the performance of sustainable supply chains, this review paper has limited its scope to sustainable practices alone. Future studies could delve into the other factors – drivers, capabilities, enablers, strategies, and barriers. This review provides a comprehensive list of sustainable practices for practitioners to consider when implementing sustainability in supply chains. The novelty of this review paper lies in its exhaustiveness of consolidating around 200 sustainability practices influencing the performance of the supply chains. These practices, apart from augmenting the academic knowledge base, could be deployed by the industry practitioners in decision-making for sustainability strategy-building.

**Keywords:** Sustainability, TBL, Performance, Supply Chain, Practices

ICAIEM-2022- 44

## **Exploratory Analysis of Internal and External Ergonomic Factors Affecting the Driving Comfort of Heavy Vehicle Drivers**

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### **Abstract—**

As heavy vehicle drivers are subjected to prolonged period of working time, driving comfort is very important for them. It is an important attribute they expect from a vehicle and demand more and more. Due to the limited application of principles of ergonomics in the design of seat and workstation, the vehicle drivers are subjected to fatigue that ultimately lead to accidents. An ergonomically designed driver's seat and workstation are essential for comfort and safe driving. A study pertaining to the present scenario is required to identify the internal and external factors which increase driving comfort and to develop recommendations considering the ergonomic aspects of these factors to improve heavy vehicle driver's comfort level. The posture comfort of driver is an important aspect in driver's seat design. Prolonged sitting during extended period of driving and vibrations transmitted to the body cause the heavy vehicle drivers to high risk of developing physical problems such as pain in the low back and neck regions. As a result, the drivers are susceptible to work related musculoskeletal disorders (WMSD) which may ultimately lead to losses to the society. This paper explores the internal and external ergonomic factors which linked to the comfort level of heavy vehicle drivers' seat and work environmental factors related to driving comfort. The paper also proposes a frame work to investigate and recommend improvement suggestions for internal and external ergonomic factors connected to heavy vehicle drivers.

**Keywords:** Ergonomics, Driving Comfort, Heavy vehicle drivers, Fatigue, Workstation

ICAIEM-2022- 45

## Risk Perception Of Mobile Banking Application

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### Abstract—

India's banking sector has seen dramatic shifts in the use of information and communication technology in the workplace. The banking service has transformed from the traditional brick and mortar system to the Anytime- Anywhere Banking Channels. Increasing usage of smart devices, improved connectivity and demand for high end-user experience are among the key aspects driving the digital transformation trend, taking services to the customer doorstep. For the success of every business enterprise, customer support is significant. The paper focus on evaluating the performance of YONO App, the mobile application by the largest public sector bank in India by identifying the perception of existing customers and potential customers towards the app. A Cost benefit analysis of YONO app is also carried out based on primary and secondary data. The research aims to understand the skill of the banking company in the area of service quality by reducing the customer anticipated risk that is performing well and shows those areas which require improvement.

**Keywords:** Risk Perception, Mobile App, SBI Yono App, Digital Banking And Risk Reduction.



ICAIEM-2022- 46

## **Identifying the Relevant Project Management Tools in Implementation of e-Governance Projects— Journey from Traditional to Agile**

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### **Abstract—**

Implementation of IT systems in Government are different from IT implementations in other sectors since there are rigid requirements of compliance as well as adaptability to agile requirements. Monitoring the implementation of these IT programs in the Government sector require adoption of Project management tools from both traditional and agile project management methods. This study involves identification of relevant project management tools required for e-Governance projects which will help the project managers in the smooth implementation of the projects. A Delphi study was conducted among 50 professionals in the e-Governance sector to identify the most commonly used project management tools adopted in their projects. The results helped to build three categories of project management tools as high, medium , low and aligned to the various phases of project management. The results of this study will serve as a toolkit for practicing project managers in e-governance, on the most essential project management tools required for monitoring their projects to ensure compliance as well as meeting the dynamic requirements of e-governance projects.

**Keywords:** Information Technology, e-Governance, PMBOK, Agile, Project Management tools

ICAIEM-2022- 47

## Resistance to Telemedicine: Perceptions of Digital Natives in an Emerging Economy

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### Abstract—

Telemedicine is an ICT breakthrough that has bolstered the healthcare industry, especially regarding access to healthcare for people in underdeveloped rural areas and other secluded communities. However, the acceptance rate of telemedicine is low when compared with other technological innovations. This study aims to analyze the reasons that hinder patients from adopting telemedicine. The study equips the theoretical scaffoldings of the innovation resistance theory (IRT). This cross-sectional study is based on a web survey conducted among 377 digital natives who have not used telemedicine services yet. The resulting data is analyzed with partial least square structural equation modeling (PLS-SEM). The statistical analysis revealed the positive influence of the usage barrier, value barrier, and tradition barrier on telemedicine resistance. Further, the study also reports the moderating role of perceived benefits on the relationship between value barrier, tradition barrier and telemedicine resistance. The study offers several managerial implications to the telemedicine service providers that would aid them in formulating marketing strategies. The present study has remarkable significance as it is the pioneering study examining the resistance towards telemedicine services. Further, the study attempts to validate innovation resistance theory in the telemedicine context.

**Keywords:** Telemedicine, IRT, Resistance, PLS-SEM, Tradition barrier

ICAIEM-2022- 48

## Hybrid Ergonomic Approach for Addressing Musculoskeletal Disorders

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### Abstract—

The article presents a comparative analysis of musculoskeletal disorders using different ergonomic tools for measuring musculoskeletal disorders and the risk of developing musculoskeletal disorders. In all such methods, load assessment consists of defining input data, procedure and assessment system. Every tool of finding musculoskeletal disorders has its unique features, advantages and limitations. This article uses hybrid ergonomic approach for estimating the risk of getting musculoskeletal disorders associated with manual material handling in industry. The approach can be useful in estimation of risk of getting MSDs in situations where the load conditions are known and in arriving at limiting loads for restricting the risk to acceptable levels. The paper presents the application of this approach to manual handling of shippers in a pharmaceutical industry, which resulted in redesigning of size of shippers for the acceptable risk levels.

**Keywords:** Musculoskeletal Disorders. Ergonomic tools, Load assessment, Risk assessment RULA

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## Study of Challenges Faced by Startups in Kerala

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### Abstract—

This paper presents new approach on the challenges and opportunities faced by the startup in Kerala. India is the 3rd largest Start up eco system in the world with 12 % to 15% annual growth. According to the Indian Startup Ecosystem Report 2020, there are 55,000 Startups in India among them 40,000 are active startups. 3202 Startups are the funded startups and raised an amount of \$ 63 billion. The major driving factors of Startup Ecosystem are Corporate connects and Government Supports. The study summarizes the challenges faced by the IT startups in Kerala. By the end of the study we will get the clear factors which are the driving forces of startups toward success and also the negative factors that need to be consider to avoid failure. Final objective of the study is to provide a solution which helps in bridging the gap between all the funding, government entities, mentors, pool of recourses and Startups along with new ear of technology for the scaling up of startups in global level

**Keywords:** Entrepreneurship, Startup, Startup Eco-system, Technology and Innovation

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## A Study on the Challenges of Learning during Pandemic

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### Abstract—

E-learning is a learning system based on formalized teaching with the help of electronic resources. COVID-19, as a global threat, has called for social distancing and has made people sit indoors. Every arena in the world got struck by the pandemic. Education sector too had the sore experiences of lockdown. Our study is to assess the impact of “Internet availability” and “IT skills” of students on their “Perception of the Effectiveness” and “Satisfaction” in online classes. Data has been collected from students across Kerala through structured questionnaire and analyzed using ANOVA and Correlation. We could establish a positive relation between “Computer and IT knowledge” of students and their “Perception of Effectiveness” and “Satisfaction” in online classes. However, we could not find a relation between “Internet availability” and students’ “Perception of Effectiveness” and “Satisfaction” in online classes based on the study.

**Keywords:** e-learning, Online learning Challenges, IT knowledge, COVID – 19, Pandemic

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## Line Balancing in a Telecommunication Firm using Simulation Optimization

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### Abstract—

Simulation optimization is a process of finding the best possible input variable values, without having to evaluate each possibility. The objective of this paper is to optimize the process of a telecommunication industry using a Simulation Optimization approach by generation of a simulation model of current process scenario. This would help in identifying the bottlenecks and enhance the productivity. Since the unfortunate rise of COVID 19 across the globe, the entire world had to adapt to a new routine with people resorting to alternate modes of communication as physical interactions became minimal. This gave rise to increased demand for tele-communication devices used for ground signal transmission. The telecom industry had to meet this rising demand with limited manpower and resources. Thus, there was a need to review the system to meet the rising demand without disturbing the ongoing production. This paper considers the SALBP (Simple Assembly Line Balancing Problem) for production of 4ft microwave antenna in a tele-communication firm. The Simul8 simulation software is used for creating the model that would consider real life constraints, failure rate and factors affecting the total efficiency of the production. The Spaghetti diagram has been used to trace the paths of items and the activity from station to station. The Simulated optimization approach will result in productivity enhancement when practically applied to balance the production line to meet the rising market demands.

**Keywords:** Simulation optimization, SALBP, Spaghetti diagram, Productivity, Telecommunication

ICAIEM- 2022- 52

## **Financial and Social Sustainability of Indian Microfinance Institutions**

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### **Abstract—**

Microfinance institutions (MFIs) are financial companies that provide small loans to people who do not have any access to banking activities. The sustainable performance of these institutions helps in the development of the nation by providing financial support to the weaker sections of society. The actors influencing the performance of these institutions need to be identified and studied so as to support their sustainable functioning. The financial and social sustainability of MFIs can be ascertained using the ratio analysis approach. This paper analyses the data pertaining to fifty MFIs in India for last ten years and presents valuable insights that may help MFI's balance and improve their financial as well as social sustainability.

**Keywords:** Microfinance institution, Financial sustainability, Social sustainability, Sustainable Performance, Ratio Analysis

## Exploration of Efficiency Analysis Tools for Various Banking Sectors

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### Abstract—

Efficiency analysis is a thrust area in banking to assess and improve its performance. Many researchers have contributed insights to the field of measuring efficiency of banks, companies, hospitals and other decision-making units over the past decades. In this paper, an attempt is made to review the researches conducted on the efficiency measurement and performance of the various banking sectors around the globe. Most of the studies in the past used conventional ratio analysis, which include asset return, return on equity, return on capital employed etc. to find the efficiency. Majority of these studies are concentrating on the cost, profit, income or revenue efficiencies. Later, researchers in this area used various measure of performance which include Data Envelopment Approach (DEA) which is a non-parametric approach and Stochastic Frontier Approach (SFA) which is a parametric approach. DEA is a linear non-parametric programming approach used to find the efficiency of multiple homogeneous decision making units (DMUs). DEA is used when the DMU have more number of inputs and outputs. DEA has two models CCR model and BCC model. In CCR model, constant return to scale assumption is used and variable returns to scale assumption is used in BCC model. In the CCR model, the technical efficiency value calculated is an aggregate of pure technical efficiency value and scale efficiency. By relaxing the CRS assumption, the BCC model converts the technical efficiency obtained from CCR model into components of pure technical and scale efficiency components. Decomposing the overall efficiency gives a clear picture of risk and performance associated with the banking sector. SFA is a parametric approach, which assumes a stochastic relationship between input and output. SFA is used for calculating the technical efficiency and an advantage is that variations in catch can be accommodated. It can also test hypotheses. In the light of conducting an exploratory analysis using various papers on DEA and SFA for banking efficiency calculation, this paper summarises the pros and cons of each method in the Indian banking efficiency calculations.

**Keywords:** Banking, Efficiency, Data Envelopment Analysis, Stochastic Frontier Analysis, Efficiency Analysis



ICAIEM-2022- 55

## **Employee Engagement—An Analysis on Information Technology (IT) Sector Amidst Covid-19 Pandemic**

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### **Abstract—**

The main motive of this study is to examine the relationship between employee engagement and organizational commitment in the pandemic situation. The authors propose that employee engagement during the time of pandemic has a positive effect on organizational commitment. This study empirically tests the relationship of employee engagement and organizational commitment. The study includes the employees working in the IT sector of Kerala. A structured questionnaire was administered for collecting data from employees of Information Technology sector. Analysis was conducted with data from a sample of four hundred and thirty seven employees working in the IT companies of Kerala. Results demonstrate that employee engagement has a positive significant effect on organizational commitment during Covid 19 pandemic. The findings revealed that employee engagement was significantly related in all the three dimensions of organizational commitment in the pandemic situation. This study contributes to the research on employee engagement and organizational commitment by providing new insights particularly in the context of pandemic. The study data was collected from the employees working in IT sector of Kerala. The study can be enhanced by including more factors of employee engagement and organizational commitment. The research can give positive insights to the industrialist and employers who are striving hard to keep their employees engaged amidst the Covid-19 pandemic. Hence the result of the study has got significant implications for such organizations. This study provides support for the proposition that employee engagement has a positive effect on organizational commitment. The research also tries to highlight some of the methods that the companies are adopting to increase employee engagement and summarizes that organizations must give at most importance to employee engagement.

**Keywords:** Employee Engagement, Organizational Commitment, Information Technology (IT), Covid-19, Pandemic

ICAIEM-2022- 56

## **Reduction of PCB Scrap in Base Station Antenna (BSA) Manufacturing Industry by using FMEA Technique in Six Sigma Approach**

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### **Abstract—**

Globalization, advanced technology, and increased sophisticated customer demands change the way of conducting business. Old business models no longer work in new economy. Scrap rate of product plays an important role for the improvement of yield and financial conditions of any company. The objectives of this paper are to study and evaluate processes of the case organization, to find out current sigma level and finally to improve existing sigma level through process improvement. According to the objectives, current sigma level has been calculated and given suggestions for improvement. This has been done by using six-sigma DMAIC cycle. Different improvement tools are used to investigate defects, root causes using Failure Mode Effect Analysis (FMEA) in Six Sigma Approach and provide a solution to reduce/eliminate scraps, a considerable cost saving due to process improvement by reducing defects. By using these, it has been possible to improve productivity without compromising quality, reducing defect rate and successively reducing scrap. This research work has been carried out in a Base station antenna manufacturing company to show how to improve its productivity and quality by using Six-sigma. The findings from this paper can not only be applied to Base station antenna manufacturing company, but also in any other types of organizations. By implementing Six-sigma a perfect synchronization among cost, quality, production time and control time can be observed.

**Keywords:** PCB, DMAIC, FMEA, Scrap Reduction, Six-Sigma

ICAIEM-2022- 58

## **Accessing Financial Risk Tolerance from a Heuristics Theme Bias Perspective A Study on Individual Investors of India**

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### **Abstract—**

Risk taking tolerance of individual investors are influenced by many factors like cognitive errors, emotional biases and heuristics. During the time of uncertainty and prompt investment decision making, investors are subjected to many heuristic biases and relies on rules of thumb. Under this scenario, it is very crucial to identify the major heuristic biases and assess their relationship with financial risk tolerance of investors. The main objective of the study is to determine the impact of heuristic biases on financial risk tolerance of individual investors. The study also focuses on identifying the relationship between different investor personality and the heuristic biases associated with them. The study is quantitative in nature and uses a structured questionnaire to categorize the investors into four types based on their personality as conservative, moderate, growth and aggressive. Further ten items in the questionnaire are used to identify and study heuristics constructs like availability, overconfidence, anchoring, representativeness, and gambler's fallacy due to excessive optimism. Financial risk tolerance of investors is scaled by thirteen items comprising of behavioral statements and personality assessment questions. The research hypotheses are intended to be tested using Structural Equation Modelling (SEM) approach using regression and correlation tests.

**Keywords:** Heuristic Biases, Financial Risk Tolerance, Anchoring, Representativeness, Excessive Optimism, Behavioral Biases

ICAIEM-2022- 60

## **An AHP Approach to Prioritize Sustainability Enablers in Vaccine Supply Chain**

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### **Abstract—**

The pharmaceutical industry that discovers, develops, manufactures and market drugs are considered as one of the key contributors to the growth of India's GDP. One of the key products of the pharmaceutical industry is the vaccine, which plays an important role in saving human lives. The incorporation of sustainability into the Vaccine Supply Chain (VSC) has become a key focus for pharmaceutical companies. To achieve this, fifteen means for attaining sustainability in the supply chain of basic vaccines have been identified based on literature review and experts' opinion. These fifteen means are then categorized into four main classes - economical, environmental, operational and social. These criteria (classes) and sub-criteria (means) are then evaluated to determine their relative importance using an Analytical Hierarchy Process (AHP) technique. Based on the results of AHP, the sustainability enablers in VSC can be prioritized. The results of this work provides guidelines for the managers in taking right decisions for making VSC sustainable.

**Keywords:** Sustainability, Vaccine Supply Chain (VSC), Analytical Hierarchy Process (AHP), Pharmaceutical Industry, Enablers

ICAIEM-2022- 61

## **Integrating Telemedicine Services in Primary Healthcare Network for Regulating Out-of-Pocket Expenses**

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### **Abstract—**

In resource-constrained developing countries like India, delivering low cost primary care services is a challenge. Patients requiring primary healthcare spend a sizeable amount on travel, medicines, diagnostic services etc. due to varied reasons. As a result, a rise in patient out-of-pocket (OOP) expenses has been observed. Encouraging telemedicine practices for primary healthcare can be helpful in reducing OOP payments by patients. Additionally, telemedicine also holds the potential to handle sudden healthcare demand in pandemics like COVID-19. This article presents an optimization model aimed at reducing OOP payments through integrating telemedicine services in existing primary healthcare network. An optimization model aimed at reducing OOP payments is proposed for integrating telemedicine services in existing primary healthcare network. Numerical experiments are conducted for validating the model and to derive policy directives. The social concern of increasing OOP expenditure requires a sustainable solution. Making telemedicine an integral part of primary healthcare system has been advocated to address this concern. Moreover, telemedicine can supplement existing network of facilities to satisfy the healthcare requirements of an abrupt demand during pandemics like COVID-19. Therefore, a healthcare network integrated with telemedicine services is needed for regulating OOP expenses and improving the utilization of network of healthcare facilities.

**Keywords:** COVID-19, Location-allocation, Out-of-pocket expense, Primary healthcare, Telemedicine

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## Evolutionary Algorithmic Approach for Cyclone Shelter Location Allocation Problem

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### Abstract—

Global warming and climate change is a daunting reality causing disasters worldwide to be more frequent as well as more severe. Vulnerable communities across the globe are facing larger losses of life and property. On the west coast of India, cyclone patterns have been changing. While cyclones are a regular occurrence in the Bay of Bengal historically, it is a newer phenomenon for the Arabian sea. The heating of water temperatures has been attributed to this change. A proper network of shelters has proven to be an effective strategy to minimize losses. However, the west coast of India lacks the presence of such disaster mitigation infrastructure. People residing outside the service area of cyclone shelter are highly vulnerable due to low elevation of land and poor housing structure. Although funds are available for shelter planning from several sources, they can be effectively utilized only when the optimum number of shelters and allocations are known in advance. In this paper, we apply the concept of location-allocation problem to planning of shelter locations and population allocation in the pre-disaster stage of cyclones. The problem was formulated as p-location allocation problem. Data from coastal sub-districts from the state of Maharashtra were used to validate the model and obtain solutions. This type of results obtained from the model can be used by the district administration before the onset of the cyclone to shift the vulnerable population to safe locations. Further, the Model can also be used in the development of an App or dashboard, where citizens themselves can gain information about the nearby shelters' capacity and condition of routes, etc. This model can further be extended for dynamic allocation decisions in changing route conditions due to heavy rains, landslides and other interruptions to relief routes. For this, real time GIS data can prove useful. The model can also be tailored to cater to the specific needs of vulnerable populations of senior citizens, socioeconomically disadvantaged sections of society, and specific sections of population, if any.

**Keywords:** Humanitarian Logistics, Decision Modeling, Metaheuristics, Nested Genetic Algorithm, Cyclone Shelters, Location Allocation Problem

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## An Analysis on Oversubscription of Indian IPOs of 2021

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### Abstract—

Investors' demand is one of the crucial parameter that measures the success of an initial public offering (IPO), which is tracked through the subscription levels of the issue. An IPO is said to be successful if it is oversubscribed and failure if it is undersubscribed. Oversubscribed is a term used when the demand for a new issue of stock is greater than the number of shares available. Indian stock market has seen an unprecedented influx of IPOs in 2021 - 63 companies collectively raised Rs 1.2 lakh crore through initial public offerings – the highest amount ever raised in a single calendar year. IPO markets in India are broadly divided into mainstream IPOs and Small and Medium Enterprise (SME) IPOs. Pricing of IPOs are done by underwriters (investment banks) who does due diligence on the company and discloses it in the offer document (red herring prospectus) of the public issue. Underwriters works closely with the issuing company to determine the initial offering price of the securities, buy the securities from the issuer, and sell the securities to investors. There are three methods wherein IPOs are priced by investment bankers globally: book-building, dutch-auction, and fixed-pricing. Book-building is the de-facto pricing mechanism that the companies in India employ to price their IPOs and is highly recommended by all the major stock exchanges around the world. All mainstream IPOs in India are priced using the book-building method, but SME IPOs majorly employ the fixed-pricing method, where the price is set prior to investor participation. A recent trend in the primary markets are that the IPOs of young companies (companies with no long history of operations) are being oversubscribed heavily. These new age companies are backed by technology and presents themselves as growth stocks. There is a significant information asymmetry (some investors having more information than the others) associated with these IPOs. The objectives of the work is to examine the influence of pricing mechanism, investigate the extent to which reputed advisors (underwriters) impact investors' demand, examine the impact of information asymmetry effects, and identify the impact of other major factors- issue size, issue price and firm size, on oversubscription of Indian IPOs for the year 2021. Tail events such as covid-19 has altered the way investors behave and have a serious impact on financial markets. Therefore, it is essential to study the demand for IPOs in 2021 and the factors that influenced the same.

**Keywords:** Oversubscription, IPOs, SME IPOs, Underpricing, Investor sentiment, Information asymmetry

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## Consumer Perception and Purchase Intentions of Buying EV's in Trivandrum

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### Abstract—

Electric vehicles provides an opportunity to replace fossil fuels which in turn will reduce the air pollution and emission of greenhouse gases which can make towards improving air quality in towns and cities. As of 2021, India is 5<sup>th</sup> largest automobile market in the world. The carbon emissions from vehicles can cause damage to lung tissues, which in turn leads to aggravate respiratory diseases, such as asthma. The pollution also emits greenhouse gases that cause acid rain and climate change. In the given scenario, a shift to electric vehicle is one of the smart ways to address the environmental issues that we are facing. Now many car manufacturers are introducing electric vehicles. This research focuses on understanding the intention of people from Kerala to purchase electric vehicle. The intention to purchase electric vehicle is studied with the help of theory of planned behaviour. (TPB). Purposive sampling technique is used to collect data from 214 people. Data analysis techniques like Correlation and Multiple Regression are used to draw inferences.

**Keywords:** Electric vehicles, Purchase Intention, Theory of Planned Behaviour, Pollution, Automobiles



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## Consumer Intention towards Buying Used Clothes

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### Abstract—

India is estimated to have textile waste of around 1 million tons every year according to the Indian Textile Journal and most of it is from household sources. About seventy three percentage of these clothes which are discarded ends up in landfills and some of it even in water resources. According to research, ninety three percentage of thrown away clothes can be reused or recycled to avoid extensive garbage disposals. India had a culture of recycling and upcycling materials including used clothes as a part of our heritage. However, in the last two decades this has changed to a 'Use and Throw' culture. In this context the second hand fashion market has great relevance. Cloth life extension and consumption is highly recommended by environmental activists to emphasis on sustainability. A study on the customer preferences and apprehensions in buying used clothes is relevant in this scenario, which will directly contribute to sustainability. This study is carried out with the purpose of identifying the relation among attitude, perceived behavioural control, subjective norms, perceived hygiene, functionality and purchase intention of used clothes. The population of the study is consumers in Kerala. A sample size of 169 were selected using purposive sampling. The data was collected using a structured questionnaire. Analysis like Correlation and Multiple Regression were performed using SPSS software. The findings of the study shows that the independent variables attitude, perceived behavioural control, subjective norms, perceived hygiene and functionality have a strong association to consumer intention towards buying used clothes.

**Keywords:** Used clothes, Purchase Intention, Sustainable Clothing, TPB, Cloth life extension

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## **Analysis on the Conception and Implementation of Six Sigma for Process and Quality Improvement Strategies in Medical Device Manufacturing Industry in India**

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### **Abstract—**

Six sigma is the most effective strategy and philosophy and set of methods companies use to eliminate defects in their products and processes. Six sigma seeks to reduce variation in the processes that lead to product defects. It enables companies to make substantial improvements in their bottom-line by designing and monitoring every day business activities in ways which minimizes all types of waste and non-value adding activities and maximizes customer satisfaction. The study is intended to increase the productivity of male contraceptive condoms by 13 mpcspcr annum and reduction on visual defects of male condoms during the condom production due to beading related defects by 80%. The study also aims in the reduction in edge roller failures in moulding machines during condom production by 80% reduction) and in enhancing internal customer satisfaction from the existing level of 60% to 80% in terms of condom rolling at product testing. Systematic sampling technique was used to collect data.

Using DMAIC approach followed in the define phase, the problem was analyzed using various six sigma tools and SSV's were listed. DOE tools were used in the measure and analyze phase to pinpoint the root causes from the listed SSV's. In the improve phase, root causes identified were further validated using DOE tool. Improvements were made to prevent the occurrence of the root cause. In the control phase SOP was amended for including the preventive maintenance system for the modified beading unit.

**Keywords:** Process Capability, Customer Satisfaction, Cost Of Quality, Gemba Audit, Root Cause, Pokayoke

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## A Review on Innovation Possibilities in the Handloom Clusters in Kerala

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### Abstract—

Indian handloom industry is the traditional cottage industry catering to nearly 95 percent of the world's handwoven textiles. It is known for its employment potential to the rural population, product varieties and unmatched craftsmanship. The co-operative sector of Kerala textiles falls under two categories power-loom and handloom. The production of handloom cloth by co-operative sector in 2019-20 was 3.023 crore metres valued at ₹89.9 crore and for the power-loom 64.17 lakh meters valued at ₹534.36 lakh. Out of the 408 cooperatives working as handloom societies in 2019-20, only 145 were profitable and 263 were in loss according to economic review. Despite their cultural and economic importance, handloom clusters nowadays suffer from perennial problems of weak infrastructure, inadequate availability of raw materials at regular prices, poor supply chain systems and ineffective marketing and sales practices. In addition, the major challenges reported by sample clusters under preliminary study indicated need for innovative designs, product diversification on niche market and lack of access to market, etc. The industry is limping with present problems and lack of innovation intervention leveraging technology and digital platforms. This paper aims on a detailed study of possible innovations intervention on the handloom clusters that can lead to nonlinear growth from incremental growth, identify potential clusters providing intervention opportunities in design, marketing and traceability. The methodology adopted for cluster growth is enabled under One district One idea program (ODOI) facilitated by KDISC. The review of successful apparel and handloom business models and innovation possibilities are conducted. A framework to aid in betterment of the enterprise by providing intensive interactions, facilitating the exchange of knowledge and expertise and by contributing effectively to technology transfer, networking and information dissemination among the undertaking in the cluster is also suggested.

**Keywords:** Handloom Industry, Apparel industry, Framework of Innovation, Business models, Intervention

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## **Zero Covid vs. Living with Covid: Impact on Supply Chain Activities of R&D Organizations**

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### **Abstract—**

The spread of Covid 19 pandemic has impacted the supply chains globally, especially that of Research & Development organisations. During the initial phases of the pandemic, 'Zero Covid' strategy was followed by organisations. Later, it was switched over to the strategy 'Living with Covid'. This paper draws out the impacts on supply chain activities of R & D organisations during these two periods and their comparison. The study investigates the selection of strategies for realisation of liquid stages for satellite launch vehicles. The supply chain activities towards procurement of materials for realization of rocket engines were studied in detail. The supply chain activities towards procurement of material and their lead times during the periods of Pre Covid, Zero Covid strategy and Living with Covid strategy were analysed for both indigenous procurement and import. From analysis, it was concluded that, under the new strategy 'Living with Covid', with the various measures taken by the organisations to protect their supply chain operations, lead times were reduced significantly.

**Keywords:** Supply Chain Management, R&D, Zero Covid, Living with Covid, Launch Vehicle, Procurement, Lead Time

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## Selecting Sustainable Suppliers in an Electronic Supply Chain: The Indian Context

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### Abstract—

There is an important role played by suppliers in realizing the sustainability goals of an organization. An organization can implement a sustainable supply chain by engaging sustainable suppliers and ensure that their commitment to environment and society. Selection of a sustainable suppliers is a challenging task, as it involves different conflicting objectives. To solve this problem, considering the uncertainty involved and evaluate the quantitative and qualitative data, a combined AHP-TOPSIS multiple criteria decision-making approach is utilized. The three dimensions for sustainable supplier selection criteria have been divided into sub-criteria to evaluate the suppliers. The importance of each sustainability sub-criteria is determined by AHP. TOPSIS evaluates and ranks the optimal supplier for a sustainable supply chain. The model is evaluated by its application to select a sustainable supplier in an electronics case company. The results indicate that economic factors dominate during sustainable supplier selection, followed by social factors. The application takes into consideration the evaluation of tangible and intangible sustainability criteria in selecting a supplier. A ranking for the suppliers is derived as outcome by showing their distances from the positive ideal solution of a sustainable supplier. The model gives the managers insights into applying and selecting a sustainable supplier based on triple bottom line.

**Keywords:** Sustainable Supply Chain, Sustainable Supplier, AHP, TOPSIS, Electronic Industry.

ICAIEM-2022- 74

## **Supply Chain Resilience through Digitalization: Prioritization of Key Factors and Designing of Model for Selecting Suitable Digital Solution**

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### **Abstract—**

Supply chain resilience management through digitalization is one of the key areas, which is gaining significance in the digital era. The requirement of advanced research in the process of digitalization in attaining resilience is highlighted in the literature. This paper has identified and ranked the key factors affecting the process of resilience through digitalization. A model for selecting appropriate digital solution for achieving supply chain resilience is also proposed. An integrated approach of AHP-TOPSIS method is applied to select the most appropriate digital solution considering the key factors. This paper has identified key factors that influence the process of digitalization, which assists in attaining resilience. The key factors were identified and the model developed was validated through case evaluation and existing literature. The practical and theoretical implications, limitations and scope for further studies are also explained.

**Keywords:** Digitalization, Supply Chain Resilience, Key Factors, Decision Making Model, AHP-TOPSIS

ICAIEM-2022- 75

## A Study on Emotional Dissonance and Job Involvement

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### **Abstract—**

Industries are the one of the vital pillars of Indian economy and its development. It caters to the financial needs of all the dimensions of the country. It also provides the government a perfect platform to roll out the social benefit schemes for the citizens. A major portion of the industry in India is owned and run by the government, which mainly includes public sector and regional rural. In the past few years, due to various factors such as increasing work schedules, technological changes, government policies and tax regulations, managerial policies and pressures, competitive challenges etc., the level of emotional dissonance and job involvement has increased very rapidly. Emotional dissonance and job involvement costs the organization with low morale, poor motivation, high absenteeism, conflicts and low productivity. Emotional dissonance can affect all aspects of an individual's life, including his/her feelings, behavior, thinking ability, and physical health. Symptoms of stress can be emotional, physical, cognitive and behavioral. Emotional dissonance is one of the unavoidable situations for employees in industries as the part of their job and organizational commitments and achievements. Most of the employees joining in industries sector for pursuing their career in a successful way. As per the previous studies and researches stating that most of the employees are working in Industries sector only because of the factor that they really like a job which can ensure an effective public interaction thus stimuli the socializing nature of an individual.

Due to the nature and requirements of assigned works and target oriented work schedules in industries, jobs leads employees to various emotional dissonance characteristics, which is directly affecting to his/her job involvement activities. In the workplace, emotional dissonance is the conflict between experienced emotions and emotions expressed to conform to display rules. Emotional dissonance arouse feelings of job dissatisfaction and reduced organizational commitment among high self-monitors. In contrast, social support lessened the negative impact of emotional dissonance on organizational commitment. Present study titled is an effort to evaluate and analyze various factors and attributes which influence the relationship between the variables of emotional dissonance and employs job involvement.

**Keywords:** Emotional Dissonance, Job Involvement, Stress Level Management, Organizational Commitment, Job Dissatisfaction

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## Building a Retail Digital Ecosystem

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### Abstract—

The buying behaviour of consumers have undergone a paradigm shift from brick-and-mortar to e-commerce in the past 2 decades. E-retail market in India over the next five years is projected to exceed 300-350 million shoppers, propelling the online Gross Merchandise Value (GMV) to US\$ 100-120 billion by 2025. The local retailers, especially those who are digitally illiterate are literally expelled from the digital ecosystem. The introduction of digitalization and intelligent technologies should be in no way perceived as a threat to local retailers, especially those in unorganised sector, but should be seen as an opportunity to add additional revenue. This article is intended in giving recommendations for establishing a Retail Digital Ecosystem, which is beneficial for the unorganised sector. The functional implementation of these recommendations will help in creating a proper digital ecosystem which enable an unbiased level playing field for all retailers.

**Keywords:** Unorganised, Digital, Retail, Ecosystem, E-retail



ICAIEM-2022- 83

## METAVERSE—A Emerging Trend for Better Customer Experience

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### Abstract—

Technology has been rapidly growing and shifting. We are seeing innovations that were previously unimaginable. One of these innovations for many people includes the metaverse—a unique, immersive virtual environment that is quickly taking over the internet. The age of digital dependency has transformed consumer behavior. Partly because of the coronavirus pandemic, more people are shopping, working, playing, and learning online. The metaverse promises a “phygital” (physical and digital) solution. It seeks to blur the line between physical and virtual reality and change how we experience the world. For companies, this presents an opportunity to reach new audiences, improve consumer confidence, and explore a potential revenue stream. This paper gives a detailed view of the companies that have already invested in metaverse and reaping the benefits.

**Keywords:** Metaverse, Phygital, Convulsions, Virtual reality



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