

Empirical Models Development and Analysis of Green Supply Chain Management of Manufacturing Sector in Malaysia

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Abstract

Green Supply Chain Management (GSCM) is a supply chain with integration of green aspects. This research proposal will develop an empirical model of the green supply chain in Malaysian manufacturing and energy sector. Three areas will be focused including small and mid size manufacturing for household items, wind turbine manufacturing and returnable containers for electronics and automotive. Reverse logistics will be considered. A survey will be used. Smart PLS SEM tools will be used for various analysis. Statistical data analysis i.e. hypothesis test, regression model and design of experiments will also be used. Empirical models will be from regression models, design of experiments and ANOVA analysis. Some interviews will be conducted. It will be based on qualitative and quantitative analysis. Lean manufacturing technologies will be used for waste reduction throughout the supply chain. A framework will be developed for effectiveness of the green system in supply chain. It will help Malaysian manufacturing and energy sector with sustainability and green system throughout their supply chain network. Since Malaysia is a hub of the supply chain in Asia, the proposal research will add a greater value for ASEAN countries and it will be helpful for greater sustainability.

Biographies

Roshna Ahmed Shipa is a Ph.D. Student in Technology Management at Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, Parit Raja, Batu Pahat 86400, Johor, Malaysia. She has MBA from Bangladesh Islami University in 2020 and bachelor in social science in sociology from Jagannath University, Bangladesh in 2012. She worked as a Public Relation Officer (PRO) as Data Collector & Data Enterer, BMS Medical

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Abdul Talib Bon is a professor of Production and Operations Management in the Faculty of Technology Management and Business at the Universiti Tun Hussein Onn Malaysia since 1999. He has a PhD in Computer Science, which he obtained from the Universite de La Rochelle, France in the year 2008. His doctoral thesis was on topic Process Quality Improvement on Beltline Moulding Manufacturing. He studied Business Administration in the Universiti Kebangsaan Malaysia for which he was awarded the MBA in the year 1998. He's bachelor degree and diploma in Mechanical Engineering which his obtained from the Universiti Teknologi Malaysia. He received his postgraduate certificate in Mechatronics and Robotics from Carlisle, United Kingdom in 1997. He had published more 150 International Proceedings and International Journals and 8 books. He is a member of MSORSM, IIF, IEOM, IIE, INFORMS, TAM and MIM.

Ahad Ali is an Associate Professor and Director of Industrial Engineering Program and Director of Smart Manufacturing and Lean Systems Research Group, A. Leon Linton Department of Mechanical, Robotics and Industrial Engineering at the Lawrence Technological University, Southfield, Michigan, USA. He earned B.S. in Mechanical Engineering from Khulna University of Engineering and Technology, Bangladesh, Masters in Systems and Engineering Management from Nanyang Technological University, Singapore and Ph.D. in Industrial Engineering from University of Wisconsin-Milwaukee. Dr. Ali was Assistant Professor in Industrial Engineering at the University of Puerto Rico - Mayaguez, Visiting Assistant Professor in Mechanical, Industrial and Manufacturing Engineering at the University of Toledo and Lecturer in Mechanical Engineering at the Bangladesh Institute of Technology, Khulna. He received an Outstanding Professor Award of the Industrial Engineering Department, University of Puerto Rico -Mayaguez, (2006-2007). He has published 50 journal and 121 conference papers. Dr Ali has conducted research projects with Chrysler, Ford, DTE Energy, New Center Stamping, Whelan Co., Delphi Automotive System, GE Medical Systems, Harley-Davidson Motor Company, International Truck and Engine Corporation (ITEC), National/Panasonic Electronics, and Rockwell Automation. His research interests include manufacturing systems modeling, simulation and optimization, intelligent scheduling and planning, artificial intelligence, predictive maintenance, e-manufacturing, and lean manufacturing. He has successfully advised seven doctoral students. Dr. Ali has involved with many international conference committees. He is serving as an Executive Director of IEOM Society International and Conference Co-Chair of the International Conference on Industrial Engineering and Operations Management and hold events in Dhaka, Kuala Lumpur, Istanbul, Bali, Dubai, Orlando, Detroit, Rabat, UK, Bogota, Paris, Washington, DC, Pretoria, Bangkok, Pilsen, Toronto, Costa Rica, Sao Paulo and Riyadh. Dr. Ali has visited 20 countries for professional events. He is a member of IEOM, INFORMS, SME and IEEE.