

Modelling the Antecedents of Supply Chain Enablers in Online Groceries Using Interpretive Structural Modelling and MICMAC Analysis

Authors : Rose Antony, Vivekanand B. Khanapuri, Karuna Jain

Abstract : Online groceries have transformed the way the supply chains are managed. These are facing numerous challenges in terms of product wastages, low margins, long breakeven to achieve and low market penetration to mention a few. The e-grocery chains need to overcome these challenges in order to survive the competition. The purpose of this paper is to carry out a structural analysis of the enablers in e-grocery chains by applying Interpretive Structural Modeling (ISM) and MICMAC analysis in the Indian context. The research design is descriptive-explanatory in nature. The enablers have been identified from the literature and through semi-structured interviews conducted among the managers having relevant experience in e-grocery supply chains. The experts have been contacted through professional/social networks by adopting a purposive snowball sampling technique. The interviews have been transcribed, and manual coding is carried using open and axial coding method. The key enablers are categorized into themes, and the contextual relationship between these and the performance measures is sought from the Industry veterans. Using ISM, the hierarchical model of the enablers is developed and MICMAC analysis identifies the driver and dependence powers. Based on the driver-dependence power the enablers are categorized into four clusters namely independent, autonomous, dependent and linkage. The analysis found that information technology (IT) and manpower training acts as key enablers towards reducing the lead time and enhancing the online service quality. Many of the enablers fall under the linkage cluster viz., frequent software updating, branding, the number of delivery boys, order processing, benchmarking, product freshness and customized applications for different stakeholders, depicting these as critical in online food/grocery supply chains. Considering the perishability nature of the product being handled, the impact of the enablers on the product quality is also identified. Hence, study aids as a tool to identify and prioritize the vital enablers in the e-grocery supply chain. The work is perhaps unique, which identifies the complex relationships among the supply chain enablers in fresh food for e-groceries and linking them to the performance measures. It contributes to the knowledge of supply chain management in general and e-retailing in particular. The approach focus on the fresh food supply chains in the Indian context and hence will be applicable in developing economies context, where supply chains are evolving.

Keywords : interpretive structural modelling (ISM), India, online grocery, retail operations, supply chain management

Conference Title : ICSCLE 2017 : International Conference on Supply Chain and Logistics Engineering

Conference Location : Rome, Italy

Conference Dates : December 11-12, 2017