Big data analytics capability, internal supply chain resilience, and operational flexibility: A case study of hospitals in China

Conference or Workshop Item

Big data analytics capability, internal supply chain resilience, and operational flexibility: A case study of hospitals in China

Gen Zhao[1], Wantao Yu[2], and Oznur Yurt[3]

[1*] University of Roehampton, United Kingdom, zhaog@roehampton.ac.uk, [2] University of Roehampton, United Kingdom, Wantao.Yu@roehampton.ac.uk, [3] The Open University, United Kingdom, oznur.yurt@open.ac.uk

Purpose

The need for hospitals to manage their supply chain resiliently and flexibly has become crucial especially with the aim of managing the uncertain demand and market volatility caused by the COVID-19 outbreak. However, supply chain resilience (SCRes), more specifically the internal resilience, and operational flexibility received little attention in the healthcare literature. To address this gap, drawing upon on the resource-based view (RBV), this research aims to define internal resilience in hospital supply chains and explore how internal SCRes can enhance operational flexibility, as well as how hospitals can build big data analytics capability (BDAC) to improve internal resilience.

Research Approach

The study conducts multiple case studies with four large hospitals in China. Primary data are collected via interviews with hospitals' directors. Internal documents of hospitals are screened.

Findings and Originality

To the best of our knowledge, this study is the first attempt to investigate internal SCRes of hospital in a global pandemic. The empirical data suggest that BDAC facilitates internal resilience by providing timely insights derived from healthcare data, and internal resilience can improve operational flexibility via optimising the allocation of medical resources. Moreover, specific practices that can be adopted by hospitals to develop internal SCRes are identified.

Research Impact

The study extends RBV to the hospital context by operationalising internal resilience as a set of practices and revealing the associations among BDAC, internal resilience, and operational flexibility. Provides insights of the role of BDAC in developing hospital's internal resilience.

Practical Impact

The study provides hospitals with timely guidelines on which practices of internal resilience can support the mitigation of disruptions and how internal SCRes can be supported by BDAC.

Keywords

Big data analytics capability, hospital supply chain resilience, operational flexibility