


Chapter 53

Enhancing Business Performance of Pakistani Manufacturing Firms via Strategic Agility in the Industry 4.0 Era: The Role of Entrepreneurial Bricolage as Moderator

Qaisar Iqbal

 <https://orcid.org/0000-0002-6619-7243>
Universiti Sains Malaysia, Malaysia

Noor Hazlina Ahmad

Universiti Sains Malaysia, Malaysia

Heru Kurnianto Tjahjono

Universitas Muhammadiyah Yogyakarta,
Indonesia

Adeel Nasim

PricewaterhouseCoopers (PwC), Canada

Muhammad Mustafa Muqaddis

PriceWaterhouseCoopers (PwC), Canada

Majang Palupi

Universitas Islam Indonesia, Indonesia

ABSTRACT

Manufacturing plays a substantial role in the economic development of any country because of its multiplier impact on the growth of value addition. Currently, industry 4.0 requires manufacturers to deliver highly customized products without compromising on quality at a reduced life cycle. The objective of this study was to find out a solution for the optimum operation of manufacturing firms. By applying resource-based view, dynamic capability, and effectuation theory, this study has proposed an integrated framework of the organizational network, entrepreneurial bricolage, strategic agility and business performance in the context of the industry 4.0. Moreover, the positive effect of the organizational networks on the strategic agility ultimately improves the business performance of manufacturers. Furthermore, strategic agility is also claimed to play its role as mediator between organizational networks and business performance.

DOI: 10.4018/978-1-7998-8548-1.ch053

INTRODUCTION

The characteristics of the industry 4.0 such as advanced manufacturing technologies, big data analytics, and efficient automation has changed the shape of manufacturing on the large scale. The industry 4.0 has actually integrated human, objects, and machines with each other that has enabled dealing with complex manufacturing systems (Bauer, Hämmerle, Schlund, & Vocke, 2015). Such integration has been categorized into three classes i.e. horizontal, vertical, and end-to-end integration (Brettel, Friederichsen, Keller, & Rosenberg, 2014) where manufacturing industry has emerged as highly dynamic (Kagermann, Hellwig, Hellinger, & Wahlster, 2013). Such dynamic manufacturing market requires manufacturer to deliver highly customized and high-quality products on an efficient and effective basis (de Sousa Jabbour, Jabbour, Godinho Filho, & Roubaud, 2018) where customary process and workflows are not suitable (Srai et al., 2016).

Enormous challenges such as poor quality products, low productivity, lack of innovation, low value-added creation, high cost of production, weak infrastructure and issues in the regulatory framework/policies hinder the manufacturers to compete and ultimately make their survival hard in the realm of fourth industrial revolution (Kemal, 2006; Khan & Turowski, 2016). There has been a lack of academic research in order to investigate and claim the enablers and inhibitors in this domain (Khan & Turowski, 2016; Memon & Tahir, 2012). Fourth industrial revolution brings about simultaneously; the opportunities and challenges for manufacturers in parallel (Khan & Turowski, 2016). Challenges of industry 4.0 varies across industries based on the nature of their operations.

Advancement in the technologies of industry 4.0 has shortened the life cycles of products than before, therefore large manufacturers need high level of innovation and swift response to customer's requirements to compete (Khan & Turowski, 2016). Industry 4.0 results in the diverse product requirements of customers so that even with small demand of traditional products such as textiles and food, consumers exhibit diverse preferences for customization and quality products (Yousfi, Saidi, & Dey, 2016). Therefore, the lack of innovation and diversification makes it difficult for large manufacturers to perform in today's dynamic business environment. Given that the contemporary business landscape has changed with emergence of sophisticated and customized products with higher standard of quality and shorter life cycles of various technologies signifying that only manufacturers with innovative characteristics will compete (Kemal, 2006; Memon & Tahir, 2012). An efficient, dynamic, diversified and rapidly growing manufacturing sector ensures maximum value addition (Khan & Turowski, 2016; Yousfi et al., 2016).

The above-mentioned challenges clearly depict that Industry 4.0 necessitates novel ideas and adaptive behaviors to perform at optimum level (Shin, Lee, Kim, & Rhim, 2015). Manufacturing firms are required to quickly and efficiently respond to the emergence of new technologies (Tipu & Fantazy, 2014). Dynamic characteristics of the manufacturing market requires manufacturer to be highly agile enabling them to deliver with high flexibility and customization (Shin et al., 2015). According to Shin et al. (2015), strategic agility that encompasses technology capability, collaborative innovation, organizational learning, and internal alignment is crucial to survive in this type of environment. The flexibility-agility association is similar to the competency-capability affiliation (Shin et al., 2015). Being internally focused competency, flexibility is considered as antecedent of agility (P. M. Swafford, S. Ghosh, & N. Murthy, 2006a). Furthermore, Christopher (2000) has claimed that manufacturing firms can respond to the market requirements on the basis of competencies of their networking that will ultimately make their performance better (Shin et al., 2015). Such agility is also depended upon organizational networks (Nadkarni & Narayanan, 2007). It has been argued that organizational networks are vital to enhance

18 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/enhancing-business-performance-of-pakistani-manufacturing-firms-via-strategic-agility-in-the-industry-40-era/276863

Related Content

Process Optimization and NVA Reduction by Network Analysis and Resequencing

Anand Sunder (2019). *International Journal of Applied Industrial Engineering* (pp. 29-45).

www.irma-international.org/article/process-optimization-and-nva-reduction-by-network-analysis-and-resequencing/222794

Integrated Quality Function Deployment as a Tool for Quality Achievement in Healthcare

Chintala Venkateswarlu and A. K. Birru (2012). *International Journal of Applied Industrial Engineering* (pp. 80-92).

www.irma-international.org/article/integrated-quality-function-deployment-as-a-tool-for-quality-achievement-in-healthcare/93016

Organizational Effects of Information Technology: Investigating Information Technology Use in the Context of Lean Manufacturing

Johan Tetzlaff and Jonny Holmström (2010). *Industrial Informatics Design, Use and Innovation: Perspectives and Services* (pp. 157-173).

www.irma-international.org/chapter/organizational-effects-information-technology/44243

Blockchain Technology Concept for Improving Supply Chain Traceability in the Ivory Market

Norman Gwangwava (2021). *International Journal of Applied Industrial Engineering* (pp. 1-14).

www.irma-international.org/article/blockchain-technology-concept-for-improving-supply-chain-traceability-in-the-ivory-market/287873

Production Competence and Knowledge Generation for Technology Transfer: A Comparison between UK and South African Case Studies

Ian Hipkin (2013). *Industrial Engineering: Concepts, Methodologies, Tools, and Applications* (pp. 159-171).

www.irma-international.org/chapter/production-competence-knowledge-generation-technology/69282