Moderating Effect of Supply Chain Complexity on Supply Chain Alignment and Resilience: A Study of Blockchain Applications on Logistics Service Providers

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Abstract

Supply chain alignment is one of the blockchain roles in supply chain digitization. In this study, supply chain alignment is the ability to integrate processes of all supply chain members for better logistics service company performance; supply chain complexity relates to the number, variety, variability, and uncertainty performed by the services, processes, and network of the logistics service provider; supply chain resilience refers to supply chain capabilities of logistics service providers to prevent and minimize the disruption impacts by developing readiness, quick response and recovery abilities. The study intends to examine the moderating effect of supply chain complexity on the effect of supply chain alignment on resilience. Supply chain alignment consists of three indicators: internal, suppliers, and customer integrations. Furthermore, Supply chain resilience constitutes an endogenous variable with five indicators: relevant information, timely information, accurate information, collaborative plan, and flexibility. Supply chain complexity is a moderating variable with three indicators: product complexity, process flow complexity,

and network complexity. In collecting data, electronic questionnaires or g-form and purposive sampling technique with sample size consisting of 48 respondents. The study examined two hypotheses using SEM (Smart-PLS), both direct and moderating effects, then the results were discussed further and their implications.

Keywords
Supply Chain Alignment, Supply Chain Resilience, Supply Chain Complexity, Logistics Service Provider

Biographies
Dicky Hida Syahchari is an Assistant Professor and a faculty member of the Management department's Bina Nusantara Business School undergraduate program. He is also an SCC in Business Development Management and E-Business Management. He received his master's degree in the Magister Management Program from Prasetiya Mulya Business School, Prasetiya Mulya University in Jakarta, Indonesia. He earned his Doctor of Philosophy from Universiti Utara Malaysia's Othman Yeop Abdullah Graduate School of Business. He has been a lecturer for almost 15 years and has published over 31 Scopus publications. Interest in research and areas of expertise are digital business, innovation management, project management, and business development

Darjat Sudrajat is an Assistant Professor and Head of the Business Management Program at Bina Nusantara University, Jakarta, Indonesia. He earned a Bachelor of Production Management, Master of Business Administration Technology, and Doctoral in Management Science. He has published journal and conference papers (28 Scopus-Index papers). His research interests include logistics service, service management, supply chain management, and strategic management. He earned international certification in supply chain management (CSCA & CSCM) from ISCEA-USA. Before joining BINUS University as a Full Faculty Member, He once worked for some companies in various managerial positions for 20 years (15 years in the logistics service industry). He received the best paper award at International Conference on Global Innovation and Trends in Economy (INCOGITE, 2019) and International Conference on Information Management and Technology (ICIMTech, 2020).

Hardijanto Saroso is an Assistant Professor and Dean of the BINUS Business School Undergraduate Program, Bina Nusantara University, Jakarta, Indonesia. He earned a Bachelor of Electrical Engineering, Master of Business Management and Applied Finance, and Doctoral in Strategic Management. He has published journal and conference papers (Scopus-index). His research interests include strategic management and supply chain management.

Hendry Hartono is an Assistant Professor and Research Cordinator of the BINUS Business School Undergraduate Program, Bina Nusantara University, Jakarta, Indonesia. He had a bachelor's degree in Accounting and master degree in Human Resources Management with over 4 years of experience in various fields such as Internal Auditor, Cost Controller, and Human Resources Development, Manufacturing, seeking the opportunities in order to use my experience working in different fields and operating environments to efficiently increase the production and share this knowledge with the rest of the team in order to achieve company objectives and shareholder satisfaction.

Andre Kreie (PhD) is Director of Global Logistics Education with the Kühne Foundation based in Schindellegi, Switzerland. He is a Business Economist and holds a PhD and Masters's in Logistics and Supply Chain Management from Heriot-Watt University, Edinburgh, UK. Dr Kreie completed a professional multi-year traineeship with a logistics company to understand and apply all operational procedures required in sea-, air-, and land transportation. Before joining the Kühne Foundation, Dr Kreie gained further work experience in the supply chain business with a globally operating logistics service provider and worked as a project manager for logistics design and operations with a leading European DIY retailer. Dr Kreie has been teaching intensively in business programs at different universities and further education institutions. His research interest is on organizational and network learning, and supply chain risk management to adapt logistical systems to a changing environment. Dr Kreie won the International Emerald/EFDM Outstanding Doctoral Research Award for his PhD thesis on "The Adaptation of Supply Chains to Climate Change". In his current role, Dr Kreie leads the LSCM Education unit of the Kühne Foundation that addresses logistics and supply chain management topics, leadership and strategic elements for academics and professionals. Present activities involve global projects in higher education and vocational training with a particular focus on university capacity building in logistics and supply chain management, i.e. Bachelor, Master, and PhD-Degree programs.