

Journal of Algebra and Applied Mathematics

Vol. 23 (2025), No.1, pp.35-47

ISSN: 2319-7234

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URL : www.sasip.net

Application of Lie Theory in Technical Progress Analysis: An Empirical Study in Vietnam*

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Abstract. Using models of Lie type technical progress first introduced by Sato in 1980, we analyzed the contributions of technology in the two service and industrial sectors in Vietnam during the period 2011-2020. As a result, we estimated the production functions in both sectors and showed the contribution of technology in each sector, and it also showed the increasing trend of technology contribution over time. In addition, the results also deepen the applications of Lie theory in economics.

AMS Subject Classification (2020): Primary 62H12, 62J05; Secondary 22E70, 91B62, 91B38

Keywords: Lie type technical progress, Cobb-Douglas function, Lie theory

*This research is funded by Vietnam National University Ho Chi Minh City (VNU-HCM) under grant number B-2023-34-01. The authors would like to thank VNU-HCM for financial support.