

Editorial and outline of the special issue

This special issue of the *Australasian Journal of Regional Studies* (AJRS) contains a selection of full papers presented at the 45th Annual Conference of the Australia and New Zealand Regional Science Association International, which took place in hybrid mode on 1-2 December 2022 at the Charles Sturt University, Wagga Wagga, Australia. The complete program of the conference is available at <https://www.anzrsai.org/assets/Conferences/ANZRSAI-2022-Conference-Programme-Book-of-Abstracts-Final.pdf>.

All the initially selected papers have been handled according to the AJRS's reviewing guidelines. So, only a high-quality manuscript was accepted for publication. There are seven articles included in the special issue.

The first article, by David Maré and Jacques Poot, proposes a novel social difference-based measure of cultural diversity for New Zealand cities at different levels. Using administrative data, the authors have examined the level of, and change in, their measure of cultural diversity in 31 urban areas between 1976 and 2018. In this way, they cover a wide range of geospatial areas and periods. The article also compares the new findings with those derived from a standard fractionalisation measure of diversity to demonstrate a degree of robustness of the technique. In my view, this is a very timely and vital article that bridges new development with standard practices in measuring social and cultural diversities. This article won the best paper award at the conference.

The second article, by Walker et al., looks at the question of why the relationship between the supply of whole milk production and both domestic and international markets' demand changed over time from 1980 to 2021 with policy variables. It finds that while there is a significant relationship between total whole milk production and domestic demand, a relationship between supply, deregulation, and export market was not identified. The article offers essential data about four key issues including inflation factors, CPI, farmgate price and policy change that affect dairy production supply, demand and export approach for NSW and Australia. One of the interesting findings is that the higher the export price, the more the volume of milk production in NSW and Australia. In contrast, the scenario is quite the opposite for the domestic market. The paper shows that deregulation impacts in the reduction of number of dairy farms and recommends that the Australian dairy industry look at how to increase volume in the export market without reducing the supply to the domestic market.

The third article, by Dongkai Li and Xin Janet Ge, is a review paper on an interesting topic that aims to identify the potential factors that make households move away from metropolitan areas to regional areas. It analyses the spillover effect of internal migration by considering economic, geographic, demographic, and social characteristics. It covers a group of significant variables: the demographics (including population, age structure, population migration barriers), land (or land supply, urban land development network), economic fundamentals (GDP, per capita income, employment), society and government (education, crime, the government controls), and information (mainly by investor sentiment) that affect housing prices. The findings of this research could help various industries, including real estate valuation authorities, relevant government departments formulating regional planning and land policies, developers composing commercial strategies, and buyers wanting to make informed choices.

The following article, by Ferdous et al., studies the causes and effects of pharmaceutical supply chain (PSC) disruptions through a scoping review, and proposes an analytical framework for further study in Australia and overseas. Findings reveal significant disruptions to PSC where important contributing factors include: (i) reduction in product supply due to production disruptions and border closures; (ii) increased demand for healthcare products; and (iii) changes in consumers' purchasing behaviour. The analytical framework proposed can be used to systematically map PSC disruption at a precise geospatial scale in Australia and overseas.

The fifth paper, by Mohiuddin et al., employs a data science technique, i.e. a five-compartmental deterministic mathematical model, to analyse the transmission dynamics of COVID-19 disease. The authors research the basic reproduction number, solution existence, equilibrium states stability analysis, sensitivity analysis, and behavioural dynamics of COVID-19 through numerical simulations. Their findings would assist in quantifying diverse parameters to assess disease severity and formulate effective control strategies, thereby accelerating the containment of the virus spread at regional, division and country levels in Southeast Asia.

The subsequent article, by Hossain et al., studies a vital issue in climate change, i.e. the extreme rainfall in different regional domains of Bangladesh, and estimates predictive return levels using the Bayesian inference and data analytics. Their results demonstrate that in the case of the Generalized Extreme Value (GEV), once every 100 years, on average, it could be expected to record daily rainfall levels exceeding 400 mm in some locations. The findings differ greatly from those obtained with the Generalized Pareto Distribution (GPD) approach and in various regional

locations. This paper also provides a reliability measure for their estimation that could be used to identify regions particularly vulnerable to the kind of heavy rain that causes flooding. This article won the best student paper award at the conference.

The last article in this issue, by Yuko Akune, uses a different approach to empirically examine the impact of sanitary and phytosanitary measures (SPS) and technical barriers to trade (TBT) on agri-food trade in the Asia-Pacific region using a gravity model. Yuko subdivides edible agri-food trade in the region into two processing stages (i.e. primary and processed agri-foods) and two destinations in the supply chain (i.e. supply to industries as intermediates and household demand as final consumption goods). Findings reveal that SPS and TBT become non-tariff barriers in several agri-food sectors in the Asia-Pacific region. It also suggests that for some commodities, more transparency encourages trade, despite the more significant bilateral divergence of rules and regulations.

The broad range and depth of papers in this special issue highlights the high quality of presentations at a successful 45th Annual Conference of the Australia and New Zealand Regional Science Association International. Finally, the editor would like to sincerely thank all reviewers for their kind time and valuable input throughout the review process. My thanks are also due to the authors for their dedicated works, revisions, and high-quality contributions at the end.

Associate Professor Azizur Rahman
Editor of the Special Issue – AJRS
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Email: journal@anzrsai.org