INSTITUTE OF MATHEMATICAL SCIENCES
UNIVERSITI MALAYA

SIRI SEMINAR KUMPULAN PENYELIDIKAN

Title: Revisiting businesses vulnerability and classifying the main problems of msmes during the Covid-19 pandemic: Dashboard, data mining, and text mining.

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Venue: Google Meet
Google Meet joining info
Video call link: https://meet.google.com/pfu-xydp-zcq
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ABSTRACT

Design/methodology/approach: The COVID-19 pandemic has caused effects in many sectors, including businesses and enterprises. The most vulnerable businesses to COVID-19 are micro, small, and medium enterprises (MSMEs). Therefore, this research aims to analyze the business vulnerability of MSMEs in Indonesia using the NASPACLUST with various optimization, including Artificial Bee Colony, Intelligent Firefly Algorithm, Particle Swarm Optimization, and Gravitational Search Algorithm. At the same time, We conducted the knowledge management of MSME actors for business, agriculture, and industry sectors with the in-depth interview result using text mining Latent Dirichlet Allocation Mallet to obtain information on their problems.

Purpose: This research recalculates the MSME business vulnerability index in 503 districts and 34 provinces in Indonesia. Then, we conducted in-depth interviews with MSME actors in Medan, Central Java, Yogyakarta, Bali, and Manokwari West Papua and discussed how they could survive the COVID-19 pandemic and the extent of digital literacy, technology application to maximize sales and business.

Findings: The results showed that NASPACLUST with Flower Pollination Algorithm (FPA)has the best performance in optimizing the clustering result in the business vulnerability context. We found that almost all of the regions in Indonesia outside Java Island have vulnerable businesses. Meanwhile, in most of Java Island, particularly the JABODETABEK area that is the national economic backbone, businesses are not vulnerable. Based on the results of the study, we provide the recommendation to handle the gap between the number of micro and small enterprises (MSMEs) in Indonesia.

Recommendation: From the results of a deep survey of MSMEs involved in this research, which covers three sectors, namely agriculture, trade, and processing, there are 7 (58.33%) of them experiencing a decrease in income during the pandemic, 12.66% experiencing an increase in revenue, and 25 % did not experience changes in income before and during the pandemic. For the sake of sustainability, the Penta-Helix collaboration is needed to get the best solution from the COVID-19 problem for the new normal and especially for Micro, Small, Medium Enterprises' business activities.

Keywords: Data Science; Data Mining; Text Mining; COVID-19; MSMEs