SOUTHERN LUZON STATE UNIVERSITY

College of Engineering

COMPUTER ENGINEERING DEPARTMENT

CPE15 Cognate and Professional Course 1

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Section: GF	**Machine Learning Cognate 1 Project**

Topic: Identifying Next-Wave IT-BPM Hubs in the Philippines Using GPS Connectivity and Employment Data

PROBLEM STATEMENT

The Philippine economy is dealing with an ongoing digital and spatial divide which is quite pronounced. The IT–BPM jobs of the highest value, with a total of more than 1.82 million, are being concentrated mostly in Metro Manila and some urban growth centers. As a result, skilled workers in the provinces are getting very few opportunities to use their qualifications (Desiderio, 2025). Such an imbalance creates migration pressures, makes regional inequalities more pronounced, and mainly restricts the realization of the economic potential of the whole country. The major task is the combination of different methods to find the exact locations at the municipal level that are suitable for IT–BPM expansion. This is done by integrating geospatial connectivity data, population and labor force characteristics, and also spatial accessibility. The machine learning techniques, particularly K-Means clustering, were used as a tool in this research to uncover the regional characteristics and classify the municipalities according to their digital readiness, availability of talent, and market potential. The mapping out of hidden opportunities in a systematic manner beyond the traditional urban centers is what this approach does, giving insights that can be acted upon for targeted infrastructure development and investment strategies, thereby closing the digital gap and promoting fair socioeconomic progress in the Philippines.