

## **Exploratory Spatial Data Analysis for Identifying Digitalization Factors to Farmers' Associations in Taiwan**

Chien-Tso Chen, Hsiu-Ping Yueh  
*Department of Bio-Industry Communication and Development,  
National Taiwan University  
Taiwan*

Tzy-Ling Chen  
*Department of Bio-Industry Extension and Management,  
National Chung Hsing University  
Taiwan*

Jinn-Guey Lay  
*Department of Geography, National Taiwan University  
Taiwan  
r96630003@ntu.edu.tw*

### ***Abstract***

The rapid advancement in information and communication technology has driven all industries to the digital era. Although the level of adaptation varies, agricultural industry in specific is relatively lacking in promptness and willingness toward informationization. To approach this problematic phenomenon, this study concentrates the attention on Farmers' Association, for its role as the key agent to activate agricultural innovations and development in Taiwan. Alternative from the previous studies which employs user data such as attitudes and behaviors as the major resources, this present study focuses on the spatial and institutional features of Farmers' Associations. An exploratory spatial analysis was conducted using geographic information system to find out whether the institutional features, local industry development and the neighborhood farmers' associations will affect the institutional decision and adaption on information service. Census data from the several national surveys including "2005 Survey on NFA Informationization", "2005 Yearbook of Taiwan Farmers' Associations", and "2005 Agricultural, Forestry, Fishery and Husbandry Census" were cited and used with spatial regression model in this present study. Results of this study shown that geographical neighborhood significantly affects the decision and level of institutional informationization, while the development and features of the local industry exerts no significant influence. This study further made suggestions for future research of GIS in agricultural information studies and practical applications.

***Keywords:*** *Digitalization, Farmers' Association, Geographic Information System (GIS), Spatial Analysis, Taiwan*