

論 文 内 容 の 要 旨  
Abstract of Dissertation

氏 名 Name **Merenchige  
Chathura Kovida  
De Silva**

With the growth of online retailing, logistics and supply chain systems had undergone a significant change. The contemporary research focused more on the mobility aspect and direct impacts of these dynamics, including the locations of last-mile delivery systems and logistics facilities. However, a lip service had paid on the first-mile logistics facilities and their locations. In that context, this research investigates the location and spatial organization of these logistics facilities. This study performs a multi spatial scale analysis with particular reference to Amazon company who pioneered the fulfillment logistics while Tokyo Metropolitan region as the geographical focus. Firstly (1), *the spatial organization of Amazon logistics facility in the UK and Japan* is studied. The results indicate the variation of spatial organization patterns with the settlement form and accessibility to transport infrastructure, especially for expressway interchanges. Secondly, (2) investigate how the spatial pattern of e-commerce logistics varies on a firm with different products and business focus. The firms include pure online retailers, Third-Party Logistics Firms in fulfillment sectors, and omnichannel retailers in the Tokyo Metropolitan region. The empirical analysis revealed the different patterns of spatial organization between the chosen firms. Thirdly (3), neighborhoods of all large-sized (over 100,000 sq. ft.) Amazon logistics facilities worldwide. The results indicate how the number and type of facilities vary by the urban form at the National scale. The analysis at the neighborhood scale analyzed the spatial patterns of clustering and infill development at dense locations associate with Amazon facility locations. Fourthly (4), develop a location choice model to demonstrate the variations in location choice between different firms related to e-commerce logistics facilities. This multinomial logit model incorporates a range of variables representing firm attributes, accessibility, zonal, and land characteristics. A new accessibility measure by constraining the typical market representation is introduced to represent the attractiveness of different locations e-commerce logistics facilities, that are serving national and regional markets. The analysis reveals the relationship between the location choice of pure e-tailers with the multiple variables, including the accessibility level of each location to potential e-commerce markets, the existing socio-economic trends, and patterns distribution and trends associated with the transport sector establishments. The location model for the omnichannel store location affirms the differences conditions that influence the location selection of omnichannel store locations. The core knowledge contributions of this study are as follows: Firstly, to the

knowledge of the geography of logistics facilities by emphasizing e-commerce logistics facility locations. Although e-commerce, as seen as a driving force of changing geographies of logistics facilities, the geography and spatial organization of these facility types, had not been studied so far. Secondly, the specific case study of Amazon contributes to expanding the scope of research focused on e-commerce companies and their strategies, which also include the logistics strategies. Thirdly this study contributes to the existing location choice models developed for logistics facilities by introducing new variables to incorporate the e-commerce logistics dimension.