

기후변화적응을 위한 빅데이터분석기반 호텔에너지 사용량 예측 (클러스터링과 회기분석)

Hoang TuanViet, Joseph J. Deringer<sup>1</sup>, Usman Safder,  
남기진, Tran NgocQuang<sup>2</sup>, Van-Dat Mac<sup>2</sup>, 유창규<sup>†</sup>  
경희대학교; <sup>1</sup>American Institute of Architects;  
<sup>2</sup>National University of Civil Engineering  
(ckyyoo@khu.ac.kr<sup>†</sup>)

The hotel buildings are categorized as the highest energy consumption and considerably contributes to GHG emissions to our atmosphere, which have had a significant impact on global climate change. Thus, this paper aims to estimate the energy use intensity (EUI) of hotel buildings using MLR models. Large dataset of building, energy usage and energy consumption had been collected from 32 different hotels by survey. The survey data includes: heating, ventilation, and air-conditioning, lighting, plug equipment, lift, location, and floor area, which can be considered relatively big data. The KNN algorithm is used to cluster the hotels according to the EUI results. Finally, a three-cluster management strategy accompanied by smart monitoring to reduce CO<sub>2</sub> using EUI was suggested to meet local emission goals. Some suggestions are put forward to improve energy performance of hotels and their environmental impact to adapt climate change. This work was supported by Korea Ministry of Environment (MOE) as Graduate School specialized in Climate Change.