

Recent technological developments and improved data-gathering techniques have changed real estate evaluation from applied and theoretical perspectives. Large volumes of data are being collected, transformed and analysed to predict market trends. Moreover, access to public resources became easier. In many countries, real property data has significantly improved regarding geographic coverage, depth and granularity, availability of new information, the currency of information, and the integrity and accuracy of available data sources. In the case of Poland, there was a massive change in the possibility of obtaining information on the property transaction.

Nowadays, these data are to be accessed in electronic form from the Land Registry, while ten years ago, one had to rewrite it directly from notarial deeds. This information has limitations in describing properties; however, it is always a huge step forward. Considering the ease of gathering data from different online sources (e.g. information on properties or sales, GIS data – coordinates, layers shared by municipalities or data from OpenStreetMap project) gives the possibility to merge data, estimate models with new variables, and elaborate new ideas and solutions.

The value of the project lies primarily in presenting the idea of AVMs (automated valuation models), which have not yet been explored, not only in Polish conditions but also in others (e.g. offer indices as a way of dealing with transaction delays in AVMs and accuracy in different phases of the housing cycle). Furthermore, we will compare the valuations of dwellings for mortgages prepared by valuers with values determined by AVMs. The models will be estimated based on different assumptions. The data will be split into sub-periods to test their effectiveness in various phases of housing cycles.

The research will be conducted on own appraisal emulations, hedonics, and machine learning approaches in the emerging market. Moreover, the study will be investigated on large, original datasets with a detailed description of properties in long-horizon time.