Model-To-Model Validation: Using Validation Models in Real Estate Assessment

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SUMMARY

Recent developments in the Dutch real estate assessment market have led to the availability of "so-called" validation models, these validation models run alongside initial valuation models. This paper presents a framework to combine and compare the output of two separate automated valuation models with one another. The framework identifies the differences that can occur between the output of both models at the level of individual objects. Because of the results on this object level the framework allows for a spatial comparison between the output generated by two separate models regardless of their statistical approach. This spatial comparison can be performed in a GIS-system and can help to find the weaknesses in the valuation model and can help the calibration of the model. The proposed framework will be applied to the data of a Dutch municipality.

This paper stresses that two separate models can be used alongside one another to improve the results of a valuation process instead of analyzing which automated valuation model outperforms the other with respect to accuracy and uniformity. Furthermore, this paper calls for a 're-operationalization' of market value with respect to ratio studies, because spatial analysis is a new element within ratio-studies.

Using multiple models and especially models based on different approaches such as multiple regression, machine learning, geo-weighted regression, within a mass valuation process is becoming achievable because of the availability of (open) data and computer power. The use of a valuation model supported by a valuation model has important advantages above combining the results of two model for instance by taking the average of both models. The main advantage is the fact that the explainability of the valuation model can be used to explain the results of the mass valuation process.