Transparency Through the Use of International Standards

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SUMMARY

Transparency is key to a well-functioning real estate assessment process. Whether it is standardization of data quality control or the standardization of measurement practices, standards will improve the transparency of the different subprocesses. This paper will give an overview of standards used in the Netherlands. The Netherlands tries to adopt international standards as much as possible. Furthermore, the Netherlands participates in keeping these standards up to date. Important standards are the international standard on valuation information (ISO/AWI 19152-4, Geographic information, Land Administration Domain Model (LADM), Part 4: Valuation information) and the standards developed by the International Association of Assessing Officers (IAAO). The paper will identify benefits and challenges that are intertwined with the use of international standards.
Special interest will be given to the IAAO Standard on Ratio Studies, which is used for the quality control of automated valuation models. In combination, the standard on automated valuation models will be addressed. Furthermore, the Dutch national standard on property measurement will be addressed in relation to the International Property Measurements Standards (IPMS).

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1. INTRODUCTION

Standards and standard setting agencies have always been important. Whether it was the local definition of an exchange rate of certain currencies, or the measurements made by the early Egyptians to divide arable land from the flooded river Nile. Standards themselves have changed the world on multiple occasions. Developments such as the metric system and the definition of the imperial system have made measurements interoperable from region to region and from country to country. Standards have made our world "smaller" for instance by defining the standard measures for containers used in shipping. Each and every industry has examples of standards which benefit them. Standardization itself has been dubbed the very reason the so-called 4th industrial revolution has been taking place (Velásquez et al., 2019).

Certainly, in the contemporary world, standards affect every product on the market. Whether that are physical products or information products. An example is the definition of the shapefile for the dissemination of geographic information layers. Now some standards are, and must be, of international character. These international standards are published and shared by the International Standards Organization (ISO). Other standards, for instance national standards like building codes or specific measurement standards are set by national agencies such as *Stichting Nederlands Normalisatie Instituut* (NEN) in the Netherlands.

Therefore, like any other industry, the real estate valuation and assessment practice is affected by standards and standard setting agencies. This paper will give a brief overview of the most important standards that are used in the assessment of real estate and the way the industry can benefit from these standards.

In the real estate valuation and assessment industry different disciplines come together. This also implies that standards from these different disciplines can influence the work within the valuation and assessment industry. Examples of these international standards that are used in the valuation and assessment industry are described in this paper and also how these standards can be used. This paper is written from the perspective of the Netherlands assessment practice.

After describing the different standards and the way they are used in property assessment and property taxation in the Netherlands we draw some conclusions and make some final remarks are made. The goal of this paper is to shed light on the importance of using standards as well as the importance of collaboration on continuous improvement of standards. Because, to cite the International Standards Organization:
"Great things happen when the world agrees."

2. THE NETHERLANDS

Government
With roughly 17.5 million inhabitants and an area of 41.543 km², the Netherlands is a densely populated country located in Western Europe. The Netherlands has three layers of government: the central government, the regional (provincial) government and the local government:

- The central government consist of the administration, departments and advisory committees. The current cabinet has 20 ministers for 12 departments.
- As regional government the Netherlands has 12 provinces.
- At local level the Netherlands had two separate forms of decentralized government: 21 polder boards and 342 municipalities. The municipalities and the polder boards are both types of local governments and spread the whole country. The figures 1 till 4 show the distribution of the governments.

Figure 1. Location of the Netherlands. Figure 2. Provinces of the Netherlands

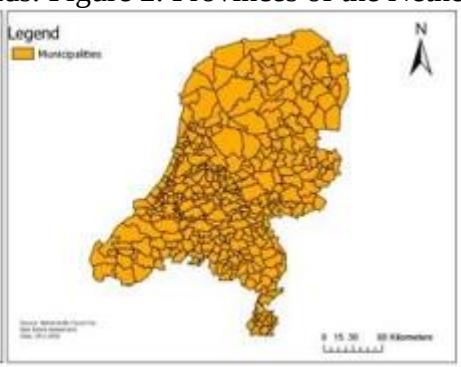

Figure 3. Dutch Polder boards Figure 4. Dutch Municipalities.

Both the central, regional and the local government have the authority to levy taxes and the central and both local governments have a type of property tax that makes use, among other things, of the value of real estate properties. The assessment of real estate is therefore important for the central government, polder boards and municipalities in the Netherlands.

Real Estate Market

In the Netherlands there are around 9 million (taxable) properties. 8 million of these are residential properties. Of these residential properties 4,5 million are owner occupied houses (60 %) and 3,5 million are rental houses (40 %). Of these rental houses over 60% are subsidized social houses with a regulated rent price.

In the Netherlands transfer of Real estate is done by registering a notarial deed in the cadastral registration. The Cadaster in the Netherlands is a central organization, and this results in a central registration of ownership of real estate, of all real estate transactions and of sales prices. These notarial deeds as well as the sales prices registered are highly accurate since most homebuyers use a mortgage of about 100% of the sales price for their purchase.

There are around 200.000 sales each year registered by the Cadaster, most of them concerns residential property. At the start of 2023, the average sale price for a house is € 425.000. There are large regional differences in market prices for houses ranging from around € 1.800 per square meter in some municipalities to around € 6.500 per square meter in average in the more expensive municipalities.

Recently, the increase in transaction prices is halting. The Dutch National Statistics Bureau and the Dutch Cadaster publish a price index for existing residential property transactions each month. The example from January is visualized below in figure 5.

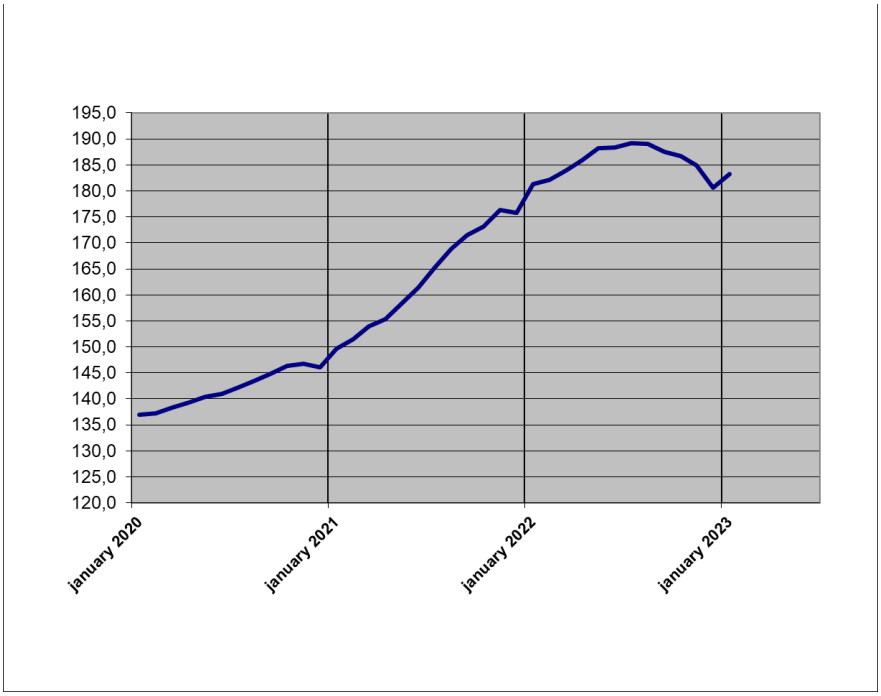

Figure 5. Price index existing residential real estate transactions. (Source: CBS 2022)

Real Estate Assessment

All levels of government use the same assessment of real estate for their taxation. These assessments are done on an annual basis by the municipalities. For these assessments the municipalities use market data on transaction prices from the cadastral registration. But for the assessment of non-residential real estate municipalities also collect data on rent prices (for instance rental prices for offices and shops) as well as building costs for alle non-marketable properties like schools, hospitals, industrial estates etc.

The market data is combined with data on object characteristics of all properties within the municipalities. Using Automated Valuation Model or more precise Computer Assisted Mass Appraisal (CAMA) systems the estimate the assessed value for all properties. The assessed values are, after a proper procedure for objection and appeal, are used by municipalities, polder boards and central government for their property tax. Because of this use of the assessed value the trust in these assessed values must be high and using international standards must help to gain trust of the taxpayers.

3. NETHERLANDS POLICY TOWARDS INTERNATIONAL STANDARDS

In the Netherlands property valuation and assessment industry we try as much as possible to incorporate international standards especially for elements that directly influence the information taxpayers get on their assessed value. The fact that international standards have a major group of users make these standards easily been accepted by people working in the industry as well as by the taxpayers.

On the other hand we also want that working procedures are efficient and the information that is given as a result of the process can easily been understood by all taxpayers. Therefore it is important that these international standards will not generate extra workload or information or concepts that are too complex for the general public. For that reason we embrace international standards, but we also try to cooperate in optimizing the international standards.

For that reason the Netherlands cooperate in several standard setting organizations. By this cooperation we can not only influence the text and scope of the standards, but we can also learn from other organizations how these standards can be used, but also how the standards can be explained. We learned that cooperation on international standards is more efficient that setting up detached national standards.
But for acceptance of the international standards it can be necessary to translate the standard to the national situation. For the Netherlands translation does not only mean translating from English to Dutch, but also to the Netherlands legal system etc.

For that reason the formal standard setting organization in the Netherlands (Nederlands Normalisatie Instituut, NEN) in general as well as the Netherlands Council for Real Estate Assessment (Waarderingskamer) especially for the assessment industry have published standards that are derived from international standards.

4. INTERNATIONAL (EUROPEAN) VALUATION STANDARDS (IVS/EVS)

The International Valuation Standards give within many things the accepted definition of market value. This concept of market value is used in the financial institutions and therefore plays a very important role in the real estate market. For all valuations for transactions and mortgages this concept of market is important.

For the annual assessment of real estate in the Netherlands the same concept of market value is used. For that reason also other elements of the International Valuation Standards can be important for the assessment industry, like standards on valuation methods and standards on the independency of the valuation expert from the parties involved in the financial transaction.

Because of European regulations and the fact that valuation standards must be in accordance with the formal regulations the International Valuation Standards are also translated into a set of European Valuation Standards. The Netherlands in general and also the Netherlands Council for real estate assessment are participating in TEGoVA (The European Group of Valuers Associations) the standard setting organization for the European Valuation Standards (EVS).

Next to a very stable definition of the concept of market value and of general methods for valuation in this standard setting organization there are also very present-day discussions about the pros and cons of Automated Valuation Models and defining quality and reliability of the outcomes of these models as well as discussions of the concept of value in an unstable financial market. Being part of these discussions helps to keep the assessment system in the Netherlands up to date and accepted.

5. LAND ADMINISTRATION DOMAIN MODEL (LADM)

As stated on the site of ISO (International Standards Organization) the ISO 19152:2012 standard on Geographic information - Land Administration Domain Model (LADM):

- defines a reference Land Administration Domain Model (LADM) covering basic information-related components of land administration (including those over water and land, and elements above and below the surface of the earth);
- provides an abstract, conceptual model with four packages related to parties (people and organizations); basic administrative units, rights, responsibilities, and restrictions (ownership rights); spatial units (parcels, and the legal space of buildings and utility networks); spatial sources (surveying), and spatial representations (geometry and topology);
- provides terminology for land administration, based on various national and international systems, that is as simple as possible in order to be useful in practice. The terminology allows

a shared description of different formal or informal practices and procedures in various jurisdictions;
- provides a basis for national and regional profiles; and
- enables the combining of land administration information from different sources in a coherent manner.

Of course establishing as system of real estate assessment and property taxation requires a lot of data on land and property. The general standard on LADM is primarily directed towards cadastral registration of land and all rights, restrictions and responsibilities. This registration is an important base for a system for assessment and property taxation, but not a sufficient base.

Within the system of LADM work is done also on an extension of LADM for taxation purposes as well as an extension for valuation information. This extension deals with the (3D) information on object characteristics of real property for the valuation as well as the registration of different kinds of market data.
The Netherlands has been cooperating on the extension for valuation information by for instance creating a national profile based on the model. This country profile is not intended to create a new information system for the assessment in the Netherlands, but helps to compare the information infrastructure for the assessment in the Netherlands with experiences in other countries and improve the information system using best practices form other countries.

6. STANDARDS BY THE IAAO

Introduction
The International Association of Assessing Officers (IAAO) is a nonprofit, educational, and research association. The IAAO was founded in 1934 and currently has over 8,500 professional members from government assessment officials to others interested in the administration of the property tax. Because of its long history and large group of members the standards set by this organization are widely accepted in the assessment industry all over the world.

The topic of the standards of IAAO are dealing with data to be used, valuation methods and valuation models and the quality control of these value estimates. IAAO also publishes standards on property tax policy.

Standard on Data Quality
The IAAO standard on data quality is one of the more recently renewed standards, being approved in April 2021. The Standard on Data Quality focusses on defining key principles of data quality. The standard identifies four dimensions: accuracy, currency, consistency and completeness.

With accuracy, the standard reflects on the relation between reality and the data that is recorded, it suggests that assessors and other real estate assessment professionals should specify how and why data is collected, this enhances credibility and precision. The IAAO Standard on Data

Quality defines currency as the specificity of the collected data, the collected data should be fit for purpose and up-to-date. With fit for purpose, the standard suggests that the data that is captured should reflect current market preferences. Because market preferences change, this fit for purpose should be reconsidered regularly. Furthermore, the moment of data collection should be as close to the date of use as possible to ensure further currency. Consistency refers to the data collection between objects and object types. Data collection should always be consistent. In line with consistency, the fourth dimension that is identified by the IAAO Standard on Data Quality is completeness. This means that all data that is collected should be collected for every object.

Next to the four dimensions of data quality, the standards addresses and presents ways for data management. The standard makes suggestions on what methods can be used in order to ensure adequate data management. A wide variety of these approaches are elaborated on in the appendices of the standard. The creation of the Standard on Data Quality aids the real estate assessment practice mostly at the beginning of almost all processes. Data and data management are increasingly important in a digital age. Furthermore, data is used to make automated valuation models and many other processes that directly impact assessment and decision making.

By using this international standard is was easier to accept for municipalities that the demands for data quality requires them to inspect all properties within the municipality one way or the other at east once every five years.

Standard on Automated Valuation Models (AVMs)
The Standard on Automated Valuation Models (AVM's) give guidelines how to use these models within the assessment process. Because of the large scale projects in which large numbers of properties are valued on the same valuation date, within the assessment process these AVMs are often described as systems for Computer Assisted Mass Appraisal (CAMA). Computer Assisted Mass Appraisal in fact is combining market data with object characteristics and calculating an estimated value. Before using this estimation as a formal assessed value for the property tax quality control is essential.

The result of this is that standards sometimes overlap. The IAAO Standard on Data Quality (2021) and the IAAO Standard on Automated Valuation Models (2018) are a good example of this, because the Standard on AVM's also give guidelines for the object characteristics to be used in the model. This phenomenon of overlapping standards poses no problem as long as the standards are updated simultaneously or edited when a linked standard gets changed. The IAAO Standard on Automated Valuation Models has a similar overlap with the IAAO Standard on Ratio Studies which we will address in the next section.

The IAAO Standard on Automated Valuation Models gives a definition of an automated valuation model. Furthermore it identifies five different forms of automated valuation models:

- preliminary data AVMs are automated valuation models which are influenced by the assessor before the assessments are done;
- interactive valuation application AVMs are similar however the influence of the assessor is at the end of the cycle rather than the input. The assessor uses an interactive valuation application AVM and checks the results produced by the automated valuation model and if the results are not satisfying he calibrates the model further;
- repetitive AVMs are a form of AVMs which have intended ongoing use without thorough calibration in the value producing phase;
- blended AVM, is an automated valuation system in which multiple different models are combined to get a value;
- research AVMs is the last type of automated valuation model according to this standard. These models are used for testing theories and other research activities.

Standard on Ratio Studies

This standard defines different key figures to describe the quality of the results of a valuation model or a valuation process. Alle these key figures are based on comparing the estimated value of a property with a recent transaction price. This ratio between the estimated value and the sales price is used to calculate the key figures on appraisal level (are all estimated values on true market level), on variability (are all differences between estimated values in accordance with the differences in market prices for these properties), on reliability and on vertical inequities (are lower priced properties on the same market level as higher priced properties).

The standard on Ratio Studies are very much related to the use of AVMs and primarily to the use of linear regression models. Because in the Netherlands also other types of valuation models were used, not all of the key figures from the Standard on Ratio Studies could be implemented. But the ratio as underlying concept of defining the quality of value estimates was used in the Netherlands from the beginning of the system of formal assessments for taxation purposes.

But now the Standard on Ratio Studies is also in a revision state in which also the key figures for defining quality are reviewed, for instance to deal with the specific characteristics of AVM's base on artificial Intelligence and Machine Learning. From the Netherlands we cooperate in this review of this very important standard for the assessment industry.

7. INTERNATIONAL PROPERTY MEASUREMENT STANDARD (IPMS)

The size of a property of course is very important for estimating the market value. But measuring property is not only done for valuation purposes. For this reason there are numerous international standards on measuring various kinds of property.

In the Netherlands there is a national standard for measuring buildings not depending on the purpose of the measurement. This standard (NEN2580) is used in the Netherlands and also incorporated in laws and other forms of legislation. This makes it for a lot of purposes hard to diverge from this national standard.

However in practice this standard is very hard to understand for ordinary homeowners and people interested in the residential property market. For that reason in a public private partnership between real estate agents, valuers, municipalities and the Netherlands Council for Real Estate Assessment a measuring standard for measuring residential properties based on NEN2580 was set.

This more informal measuring standard is widely used in the residential property market (in all real estate listings etc.) and therefore also essential for the valuation and assessment industry.

The same idea of a property measurement standard that can easily be understood and is not depending on the purpose of the measurement is the basis for the development of the International Property Measurement Standard (IPMS). In spite of the fact that the idea behind the International Property Measurement Standard and the informal Netherlands measuring standard for residential properties are quite comparable, there are differences in definitions and therefore also differences in outcomes of the measurements. Until now the IPMS in the Netherlands is primarily used to optimize the informal standard on measuring residential property. Because of the large "installed base" of the informal standard it will be hard to fully implement this international standard.

8. CONCLUSION

A stable system of property taxation based on the assessed value of property is depending on the trust of taxpayers in the fairness of the system. This also means trust in the quality of the assessed values.

Transparency on the data used for the assessment is very important for this trust. But also transparency on the assessment process helps to retain the trust of taxpayers. Showing the standards that apply to the work of municipalities helps to be transparent. International

standards have an higher influence on gaining and retaining trust than standards and working procedures set by municipalities themselves.

For that reason we have experienced that cooperating in setting up and updating international standards is a very efficient way of improving quality and efficiency of all data, working procedures and results around property assessment and property taxation as well as a efficient and enjoyable way of retaining trust of taxpayers.

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BIOGRAPHICAL NOTES

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