Contributions to improve the real estate valuation process: The proposal of a report template

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***Abstract* — The main purpose of this dissertation was the creation and proposal of a draft model to produce an Evaluation Report, for the Real Estate Appraisal. The Evaluation Report is the core of a Real Estate Appraisal. There is no Real Estate Appraisal without an Evaluation Report and in this process, there are several stakeholders, from the client, the valuation expert or company, to the requesting entity.**

Based on the information gathered, it was created a generic draft template to produce an Evaluation Report, which, due to its independence, objectivity, content and ease of completion and reading, may be adopted as a single model, standardized in all Real Estate Appraisals. Finally, the draft model was tested with three practical examples to evaluate and prove its functionality and applicability. Also, it was spread out a survey, among real estate valuation professionals, to test the acceptance's degree of the proposed model.

Keywords
Real Estate Appraisal; Evaluation Report; Standardized model; Evaluation Constraints.

I. Introduction

The aim of this paper is the field of Real Estate Appraisal, more specifically the Evaluation Report, an inherent and essential tool to any Real Estate Evaluation process, which should illustrate and translate the assumptions and methods used in the evaluation of a property.

The real estate appraisal is an activity of the economic sector and has a great importance nowadays. The purpose is to estimate the market value of assets for certain purposes, such as inheritance, purchase or sale of assets, economic and financial study of projects or credit financing, fair compensation in case of expropriation, records as tax base, definition gross premiums written, fair value of lease for exploration, among others.

Some international institutions and organizations, such as RICS, TEGoVA or IVSC, have created norms and guides of procedures considered mandatory in a Real Estate Appraisal and in the Evaluation Report production. However, standardization and homogenization have not yet been achieved. Since they're standard, the elements included in the different Evaluation Reports repeat themselves, but with differences in the way the fields are filled, and the omissions and gaps that lead to a different interpretation of the evaluation.

The main goals of this dissertation are:

- Identify and develop the material and information that have relevance to a contextualization and framing of the proposed dissertation (evaluation methods, normative framework and constraints of the real estate evaluation);
- A survey of all elements considered mandatory and recommended, indicated by the most representative organizations and institutions of the activity;
- A comparative study of the elements included in the existing minutes applied by the different entities;
- The creation of a proposal for an Evaluation Report template's draft, more efficient, objective, simple and enlightening for all stakeholders;
- Test the model of the proposed Appraisal Report's draft with three practical examples;
- Through an inquiry, evaluate the degree of acceptance of the model, by real estate appraisal professionals.

II. Knowledge Review

The purpose of the Real Estate Appraisal is to estimate the market value of real estate assets for several circumstances, in view of the destination, for which the property is intended to, and based on the highest and best use. In an evaluation, the assets should be described, characterized and identified for the development and definition of strategies appropriate to their management. The ultimate goal of an Evaluation Report is to provide an accurate opinion. “Every parcel of real property is unique. So too is each appraisal of a property’s market value. Effectively appraising real estate is both an art and a science” (Kratzer, 2004).

The Real Estate Appraisal is an important activity for the financial market and institutions related to the real estate market, and it is imperative to use universal methods, applied by the valuation experts, with the objective of producing reliable and accurate valuations (Vaz, 2015). According to Figueiredo, real estate assets can be evaluated according to different objectives, purposes or perspectives, obtaining a divergence of values as the assumption and perspectives used (Ruy Figueiredo, 1996). "References to the influence of external factors to the appraisal as the economic situation and the perception (or induction) of the appraiser are transverse to the literature of real estate valuation, being subjectivity commonly accepted by this scientific area authors as underlying to the valuation process" (Vaz, 2015). Given the multiplicity of situations, several different approaches were developed and defined, which originated the distinct evaluation methods used today (Gameiro Henriques, 2012).
As a result of the activity, the realization of a perceptible, coherent and objective Evaluation Report for all is essential, in order to make the whole process more transparent. That is, the objective is to standardize and define criteria by typifying an Evaluation Report template, which satisfies the needs of all stakeholders in the evaluation process, in order to make the whole process and its outcome more intuitive and of "common sense".

Generally, the process of evaluating a real estate asset is triggered by the need of the client, where it is necessary to assess the market value of an asset. From that moment, an assessment is requested by an entity on behalf of the customer. There are several real estate valuation companies, designated by service providers, who work with expert external evaluators, who visit the property, as well as the creation of an evaluation report, based on the assumptions and constraints defined by the requesting entity. The Evaluation Report will be verified and validated by all stakeholders, until the final version will be delivered to the client.

An Evaluation Report is a detailed and written presentation of the assessment of a property, which includes the analysis of all relevant factors and data that lead to the determination of the value of the property and represents the best effort of the appraiser. All assumptions, premises and conclusions should be justified and explained in the report (International Association of Assessing Officers, 2014).

A schematic representation of the circuit of an evaluation process is shown in Figure 1.

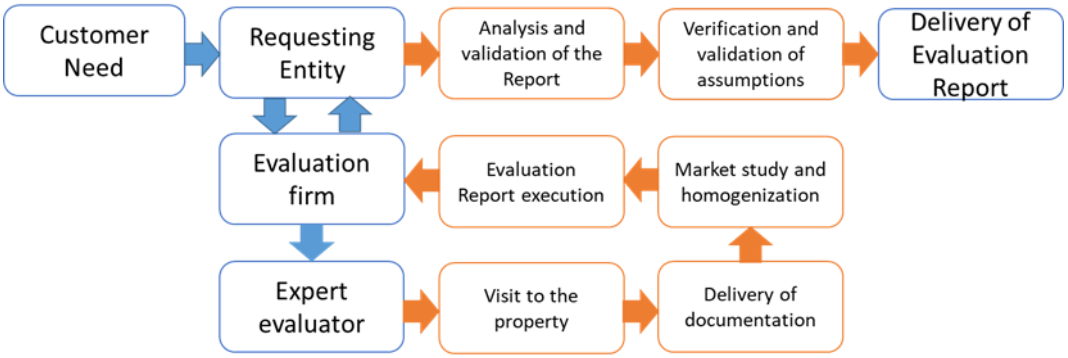

Figure 1 - Example of the real estate valuation process.

Three types of valuation methods are used: comparative method, cost method and income method.

The comparative method consists in comparing the asset to be estimated with others with similar characteristics, allowing to determine its value in an approximate way (Figure 2).

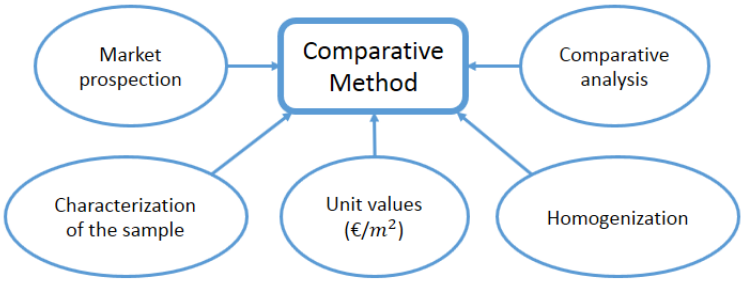

Figure 2 – Comparative method.

The cost method consists of imagine constructing again the construction and evaluating step by step the costs that will be involved. However, the cost method can be applied to any type of asset, its value being obtained through construction cost and associated charges, as well as land value, incorporating profit margins and depreciation (Figure 3).

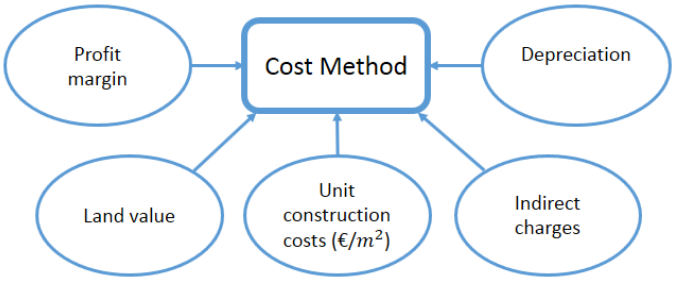

Figure 3 – Cost Method.

Finally, the income method consists of evaluating not only the value of the construction itself, but also all the revenues and expenses that may take place and that are directly or indirectly involved with this construction. This method is indicated for assets that have sources of revenues from their exploitation (Figure 4).

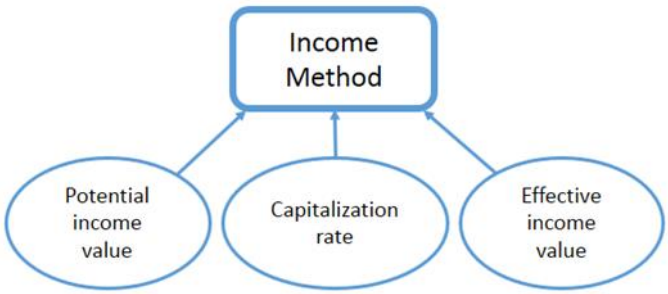

Figure 4 – Income Method.

The determination of the property's market value is central to all the decision-making processes of a real estate investment. It is crucial to understand how asset values are created, maintained, raised or destroyed (David, Ling, Wayne, 2013).

In many cases of property evaluation, it is necessary to carry out to the evaluation based on assumptions, hypotheses or assumptions. These have to be subject to confirmation and verification, so that the real value of the property can be measured and assumed. In current assessments, these assumptions are referred to and explained in the evaluation reports, being the evaluation conditional upon their confirmation, or in other cases, with amounts in reserve, which may be added if they are confirmed. The evaluating expert should include, in the report, all the considerations made and how they are reflected in the evaluation, as it may have an impact on the value of the property. Thus, a list of assumptions, reservations or constraints was defined and included in the draft created (Table 1).

Table 1 – Reserves and constraints.

Reserves and constraints	
Measured areas vs. Registered areas	Illegal areas
Property without habitable conditions	Property in construction
Multiplicity of articles	Land with agricultural income
Outdated documentation	Registry errors
Non-traditional structure	Property building cooperative
Areas of non-residential use	Undivided aves
Property leased / occupied	Others
Onus	Conditional evaluation

III. Normative Framework

The work, developed by different professional organizations in real estate activity, has had as main objectives to create and implement standards and norms to be adopted universally and, at the same time, to train qualified and certified professionals that guarantee compliance with accepted procedures. However, there isn't yet a single model of real estate appraisal internationally accepted, which, by standardizing procedures, makes it possible to carry out property evaluation in an efficient and comparable manner throughout the European Union.
At the international level, three organizations stand out, because of their responsibility for universally recognized guidelines and standards, which serve as reference to several entities. These organizations have also their own calculation methods for different scenarios and purposes, with regard to the evaluation of property. The are: TEGoVA - The European Group of Valuers Associations (responsible for the Norma European Valuation Standards); RICS - Royal Institution of Chartered Surveyors (responsible for Redbook); IVSC - International Valuation Standards Committee (responsible for the Norma International Valuation Standards). At national level, the highlight goes to the Securities Market Commission (CMVM). It was created in 1991 and is responsible for regulating and supervising the activity of property appraisal experts and Banco de Portugal, which has functions of supervision and legal regulation of credit institutions.

Based on the legal documentation, regulations, standards, guides and procedures already discussed, a survey with this information was carried out and were defined the fields and elements understood as relevant and mandatory to be present in an evaluation document (Table 2).

Table 2 - Set of elements and fields present in the Evaluation Report.

Set of elements and fields present in the Evaluation Report	
Envelope analysis	Identification of the entity that owns the property
Property areas	Identification of the requesting entity
Signature of the expert evaluator	Identification of constraints in the visit to the property
Value base	Client ID
Property characterization of the property	Property ID
Review of value as collateral	Identification of the expert evaluator
Evaluation date	Identification of evaluation values of the property
Date of previous evaluation	Indication of the liability insurance policy
Visit date	Value of the works
Date of the service agreement with the requesting entity	Assessment methods - application and rationale
Evaluation Request Date	Onus
Evaluation report date	Evaluation parameters
Declaration of conformity	Assumptions used
Definitions and concepts	Prospecting for comparable real estate
Description and characterization of the property	Occupation state
Documents provided	Analysis reserves
Extension of the research	Potential alternative uses
Purpose of the evaluation	Evaluation value
Information sources	Income amount
Evaluation history	

IV. Analysis of the models (Benchmark)

The requirement of a written report derives from the need to translate the result of the appraisal made and the respective value of the property. The Evaluation Report drawn up by the evaluating expert to be based on a single model, following the international evaluation standards. This will meet the need of the users and the purpose for which they are intended, showing the conclusions, assumptions and premises used with the same quality and structure in all evaluations (Spies, F Ferdinand, Wilhelm, 2005).
According to previous references, several elements, essential to the evaluation, need to be included in a Model Evaluation Report (Table 2). To these elements, other components have to be added, resulting from a research and analysis of the different drafts of Evaluation Reports and currently used in the national and international real estate market.
As expected, the new elements added to Table 2 are linked to more practical and objective issues such as budget analysis, energy certification, document delivery date, the need for a chamber procedure, the person accompanying the visit, the location plan, the summary evaluation table, the photographic report and the immediate sale value. However, not always the presentation and content provide enlightening and objective information, admitting gaps and omissions that call into question the reliability of the Evaluation Report and, therefore, should be eliminated. All the information gathered and conclusions drawn from this analysis serve as a reference and reflection for the preparation of the generic draft to be developed.

V. Generic Draft Model Proposal

A generic draft is presented for the appraisal of real estate for housing. The purpose of this methodology will be the simplification of the read and analysis by third parties, the coverage and schematization of information, as well as the elimination of omissions and constraints that result from the use of current minutes. It is important to note that all considerations take into account legal and regulatory constraints. Its main objectives are outlined in Figure 5.

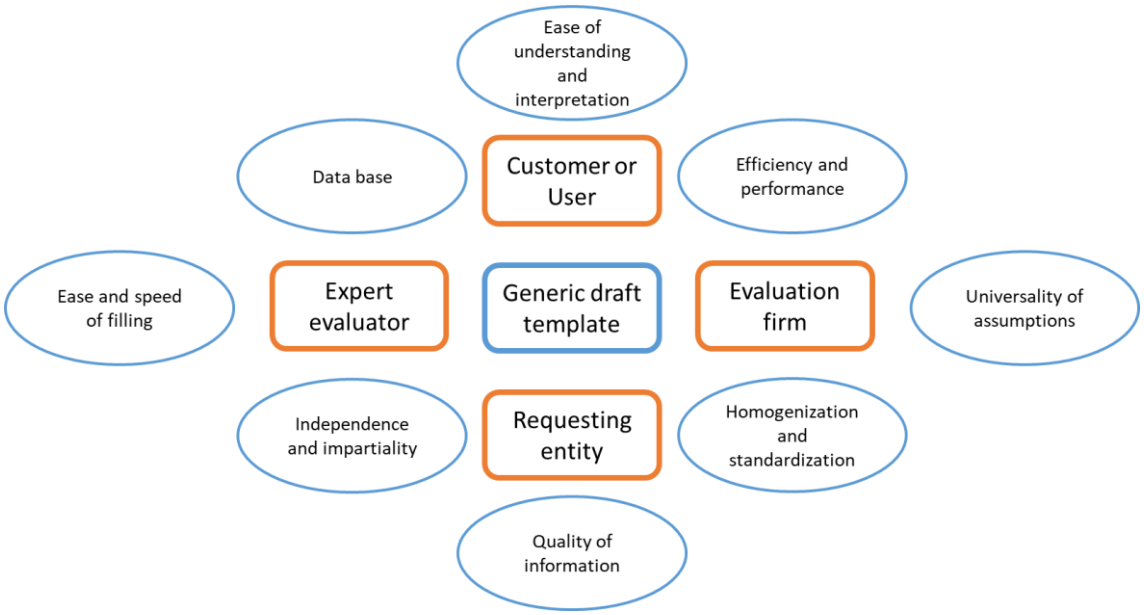

Figure 5 – Objectives of the generic draft template.

The proposed generic draft model was structured and organized into ten independent fields. Each of these fields ("chapters") refers to a distinct phase or task from the evaluation process, so the information contained therein is in accordance with the objective of each. In Table 3, there is an outline of the organization model and methodology for completing the draft of the proposed Assessment Report.

Table 3 - Generic draft template of the Evaluation Report - Housing.

Generic draft template of the Evaluation Report - Housing	
(1) Order form The evaluation request should be identified, expressing its objectives and introducing the data that characterize it. Any information entered at this point is an absolute datum.	**1. Order details** In this point, will be indicated the Name of the Client, the holder of the property under evaluation, the requesting entity, purpose of the request, as well as the equity value of the property and value of deed, if applicable.
	2. Evaluation dates According to the evaluation process, the relevant dates for the same will be inserted, as well as the previous evaluation value, if any.
	3. Property ID Fill in the data identifying the location of the property, the type of asset under evaluation, its type of use and typology.
	4. Property characterization of the real estate Fill in the information on the property documents of the real estate, including also the Construction License and Use License (if applicable), with its number, registered or submitted assignment and expiration and issue date (in the case of Construction and Use License). These will be the main documents that ensure the correct registration and legality of the property under evaluation.
	5. Property location There are situations (mainly isolated areas), where the identification of the location of the property is not possible using the address, given the omission or alteration of the same in the databases. Evaluations in contentious proceedings, revaluations or assessments of funds, may not have intervention with the Client or owner of the property. For this reason, it is necessary to introduce a location plan, coordinates, confrontations and reference points, taking into account, as far as possible, situations such as those described. In other cases, this data will also simplify the location of the property.
(2) Evaluation process Its purpose is to mirror all the data, constraints and incidents that occurred during the evaluation.	**1. Documentation** With the use of blanks inside the boxes, the option "Yes" or "No" should be chosen, whenever the respective document has been present for evaluation purposes. The delivery date of the documentation must be indicated. All documentation must be attached to the Evaluation Report produced.
	2. Visit details In this subtopic, all the necessary information for the appointment of the visit must be included, as well as reference to any incidents that occurred during the visit, using and filling in the spaces for the purpose. The steps taken and the sources of information collected must be explained in order to justify occurrences, difficulties and assumptions.
(3) Property characteristics Description and characterization of the property, at the level of its constitution, construction and location.	**1. Property description** In the description of the property it is important for those who are analyzing the Report, to perceive what is being evaluated, that is, what is the constitution of the property, both current and future. In the case of construction works, there may be expansions or alterations in the subdivisions of the property, being necessary a second description of the composition of the same. The purpose of this second description is to understand the changes to be made to the property and to verify the conformity of the existing one in face of the registered in the building documentation.
	2. Location characteristics This subtopic practically consists in choise fields of options to fill, according to the framing of the property.
	3. Constructive characteristics The constructive characteristics and their description must be selected in accordance with the verified, including structural elements and workmanships, as well as enumerated the equipment that the property disposes.
	4. Current state Elements that must describe and characterize the current state of the property and consequently assumptions to be used in the evaluation.
	5. Future state Elements that must describe and characterize the future state of the property and consequently assumptions to be used in the evaluation, in case of habitability conditions and occupancy regime. It should also be included, if

	applicable, the budget value of the works to be carried out and their respective appreciation.
(4) Assumptions An assumption is a clear idea that can be presumed or assumed. It is a fact or circumstance that is considered as a necessary antecedent of another. The value of evaluation always requires verification and validation, that all assumptions assumed are true.	**1. Areas** It should be pointed out what reference is made to the areas assumed in the table, within the existing options. The field of observations should be used to specify the contextualization of the inserted areas, if this is justified.
	2. Reserves and Constraints
	A. Types of reserves Using the box option, the "X" should be market whenever one of the analysis reserves described exists, conditioning the evaluation.
	B. Constraints and assumptions to be confirmed Whenever the assessment assumptions depend on unavailable and verifiable data and information. In this field, the constraints of the evaluation and its respective associated reserve should be identified, explaining its origin, in a succinct and objective way, so that, if applicable, can be overcome. In order to assess these constraints, their respective reserves should be eliminated. The evaluation value requires verification and validation that all assumed assumptions are true.
	C. Reserve values Value added to the value of the evaluation, under circumstances in which a certain assumption is verified. In this subtopic, the reserve values that may be added to the evaluation value should be identified, if the veracity or change of an assumption assumed for evaluation is proven. These values will also be generally associated with an analysis reserve that should be identified.
	D. Remarks Any remarks, additional information or recommendations regarding evaluation assumptions should be referenced in this subtopic.
(5) Evaluation A definition of market value and the evaluation methods used are presented.	**1. Evaluation methods**
	A. Comparative method The Comparative Method will be justified and sustained by the prospecting and market survey carried out and presented in field 9, called Market Prospecting - Attached Table.
	B. Income method Through the Income Method and from the sources of income of the property, its value will be calculated.
	C. Cost method The Cost Method aims to determine the current value of the property, using the calculation of costs necessary to reproduce a property with the same characteristics.
(6) Evaluation summary It aims to summarize and synthesize the evaluation, with the conclusions, indications and values obtained, in a clear, succinct and directed to the final user. This chapter translates into a page, which in itself may be sufficient to understand the outcome of the evaluation.	**1. Approach / Methods / Alternative Uses** A brief summary of the methods used in the evaluation, assumptions and analysis performed. Indication, if applicable, of possible use or alternative scenario.
	2. Areas considered in the evaluation Introduce the areas considered in the evaluation, as previously.
	3. Works / Construction, if applicable It is a repetition of information. In the summary of the evaluation, there are indications and schematic tables of the overview of the evaluation and more relevant information, so it should have the same fulfillment of the previous construction, if applicable.
	4. Current occupation regime It is a repetition of information, as point 3.
	5. Living conditions It is a repetition of information, as point 3.
	6. Reserves It is a repetition of information, as point 3.
	7. Conditional evaluation It is a repetition of information, as point 3.
	8. Reserve values It is a repetition of information, as point 3.
	9. Evaluation constraints Identify the constraints of the evaluation, inherent in the analysis reserves marked, bound to verification and later validation. It is only after the elimination of these constraints that the evaluation value can be assumed. It

	is indicated which documentation has to be present in order to solve the constraints.
	10. Recommendations to the Entity/Client In this subtopic, any comments, recommendations or suggestions by the evaluator should be included, but they do not constitute constraints of the evaluation. Such observations result, for example, from situations in the course of evaluation or from documentary inconsistencies. These should be addressed by all stakeholders and parties involved. Due to its future relevance, it is indicated the need to present an energy certificate and license to use for deed purposes.
	11. Evaluation Indication of the key values of the evaluation. The final evaluation value will be the lowest among the methods considered. Declaration of conformity of the evaluation.
	12. Certification Under legal procedures, the assessment must be certified. It should include the identification and signature of those responsible for the evaluation, as well as a declaration of conformity of the evaluation.
(7) Photo report Photographic reporting is an important aspect of an Evaluation Report, in the sense that it helps to understand and verify certain situations, by those who have not visited the property in question, and who may have an impact on the assumptions and value attributed.	
(8) Cost structure The Construction Cost Structure of a property is a matrix consisting of activities to be carried out, in which it allocates the costs of constructive elements and procedures to an activity. In the form presented, it is based on the decomposition of its constituent elements in activities to be carried out and their respective percentage weight on the total value of construction.	
(9) Comparative method - Attached table - Market research It presents the prospecting and market survey made that will justify the evaluation value attributed. There should be carried out a characterization of the local market, a characterization of the sample, the reference of which examples most similar to the property in evaluation and justification of possible value lags, if not framed. Whenever the advertisement of the property is identified, its value should be mentioned, for information.	
(10) Glossary List organized by genre of information, acronyms and respective terms of a given domain of knowledge, with its definition.	

VI. Practical examples of the generic model

Three practical examples of the application of the proposed Evaluation Report model were carried out: an apartment, a building plot and a house, which are presented in this chapter.

The first one, a two-bedroom apartment, located on Guarda Joias Street, n.º38, Ajuda parish, in Lisbon. The owner of the apartment intends to know the market value of the property in its current state and its expected future appreciation, in view of some works to be carried out, for which it presented a budget with an estimate of cost. Therefore, the purpose of the evaluation will be to determine the market value of the property in its current state and after the works are carried out.
In the second example, a property was assessed: a plot with 356 m2, located in Alcabideche parish, in Cascais. Mr. José Rosado asked for this evaluation, since he wants bank financing to acquire it and for the subsequent construction of a V4 housing, where he intends to live. The client doesn't intend to move forward with negotiating with the current owner without knowing the current market value of the land and the future market value of the dwelling, that he intends to build, and consequent financing amount to obtain.
Finally, in the third example, it was carried out an evaluation of a house with four rooms in the town of Alfarim, Castelo parish, in Sesimbra. Mr. Paulo Duarte requested an evaluation, from the bank, of a property that is already his. He intend to obtain bank financing to invest in a business that he wants to promote. It should be noted that the house under evaluation is leased by Mr. Paulo Duarte to third parties.

The Evaluation Report produced for the properties under study presents the results of the appraisal carried out and the evidence of all the assumptions made throughout the process, following the structure, organization and fulfillment of the proposed generic draft model.

Survey

The objective of the survey was to collect opinions about the proposed Evaluation Report model, with the professionals related to the real estate valuation area. The survey was carried out in order to perceive the necessity of the model existence and measure its level of satisfaction.
The survey contained ten questions, with a gradual sequence of evaluation (evaluation scale) and open-ended query. The answers allow to assess the level of satisfaction and agreement of the respondents in relation to the Assessment Report model, trying to see if there is an aspect differentiating it in the same one, evidencing its advantages and disadvantages, in relation to the current models, as well as to extract their opinion about to the subject of the normalization and universalization of the Evaluation Reports.
Its diffusion was carried out through contact with evaluation companies registered with ASAVAL (Professional Association of Evaluation Societies) and appraisers belonging to the APAE (Portuguese Association of Engineering Evaluation Experts).

Succinctly, it can be said that despite the degree of satisfaction of the respondents with the Evaluation Reports in use, there is a majority of 77% who expressed their agreement with the implementation of a standardized and unique model. The model proposed in this document was accepted by more than 50% of the respondents in order to contribute to the creation of a transversely accepted model, and more than two thirds (67.6%) stated that they would use it in their activity professional.
Perfection is unattainable, but improvement is a constant and unfinished process, so all comments, observations and criticisms are an asset to achieving a high quality product.

VII. Conclusions and future work

It was intended to develop a draft Evaluation Report that, due to its content, objectivity and exemption, can be assumed as a unique model in the Real Estate Appraisal. An Evaluation Report is the final product that should illustrate the entire evaluation process. In practice, it will have to "tell the story" of the evaluation made, from the request stage to the appointment contact, the visit to the property, the documentation delivered, all determinations of the value of the property using methods of evaluation, until the execution and completion of the draft Evaluation Report. Therefore, all incidences, diligences, constraints, observations, premises and assumptions must be indicated and marked. They are all part of the "history" of the evaluation.

The proposed Evaluation Report differs from the existing ones in its organization, structure and content and presents some innovations considered relevant. It includes all the content considered as mandatory, relevant and advisable in a real estate evaluation, aligned in a coherent way, making all the information collected consistent, objective and enlightening, not allowing omissions, gaps or any other type of subterfuge. It should be mentioned that the structure adopted for the proposed model uses simple and fast fill spaces with options selection.

It is considered that the proposed objective has been fulfilled, by creating a standard generic draft model, which is considered comprehensive and applicable to different scenarios in the Real Estate Appraisal. Its practical application to three real examples has been fulfilled also, presenting the expected results, with regard to the effectiveness, objectivity and simplicity of the procedure.
The assessments of the respondents to the proposed model, expressed in percentage results and comments, although based only on the theoretical analysis of the model, give it qualities of presentation, structure and contents that justify its existence and are a valid base of departure for the standardization of Evaluation Reports.

From everything that has been exposed, it can be concluded that this model is different from all the existing ones, adding value when bringing something new. However, it is not enough to design a model, it is necessary to implement it and test it. Without testing all the possible cases and particularities that may arise in real estate activity, there are no limitations. Only repeated practical application can highlight any limitation and there is a need to review the process. It has

to enter in the cycle of continuous improvement in order to improve its performance, always ensuring quality.
By pretending that the proposed generic draft for Evaluation Report be adopted as the standard model, unique in all the activity of the Real Estate Assessment, it is necessary to keep in mind what is standardization. A lot of work will have to be done to achieve this goal. Disseminating the model to real estate entities and gaining acceptance by them to use it on a trial basis are probably the first steps. The following will depend on the proof that the model complied and fulfilled the intended purpose.

Another issue, which is related to the need to have a generic, standard and single draft model, is the concept of portability. In the real estate sector, the discussion on portability in evaluations has been increasing. Currently, a customer can not use an Evaluation Report executed in one particular entity, in another different one. This situation occurs because different entities use different models and assumptions. The solution to this problem appears to be a single, uniform and standardized model in which the principles of impartiality and exemption will be ensured.

It would be extremely useful and interesting, as a possible future development, the creation of a database, based on this generic draft model. This step would be possible with a computer interface, which would assume the values filled in the fields of the Evaluation Report. This way, a repository of data would be obtained, allowing its consultation, management and updating of information, as well as historical and comparative analysis of the same. A database of this type would foster the development of automated real estate revaluation models, based on statistical indices, which would be beneficial in the management and monitoring of real estate portfolios (Commercial Bank Examination Manual, 2011). The existence of a database would facilitate the work of regulators in auditing and quality control situations of the evaluations carried out and respective registration data of the real estate.

Bibliography

Commercial Bank Examination Manual. (2011). Real Estate Appraisals and Evaluations: Appendixes A – D Section A.4140.1.
David, Ling, Wayne, A. (2013). Real Estate Principles: A Value Approach.
Figueiredo, R. (1996). Risco individual e de Carteira no Investimento Imobiliário.
Henriques, P. M. (2012). Avaliação Imobiliária - Folhas de Apoio da Disciplina.
International Association of Assessing Officers. (2014). Guide to Real Property Demonstration Appraisal Report Writing: Residential Property.
Kratzer, M. M. (2004). Working with Real Estate Appraisals - in the United States. October. Shearman & Sterling.
Spies, F Ferdinand, Wilhelm, D. B. (2005). A critical analysis of US real estate appraisal methods when used for financial reporting according to the International Financial Reporting Standards (IFRS). 11th Annual Conference of the Pacific Rim Real Estate Society.
Vaz, J. F. (2015). Real Estate Appraisal and Subjectivity. European Scientific Journal, 7881(March), 55–66.