

The role of projects economic evaluation research in a Ph.D. Course focused in regional planning and public policy

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1 Evolution of doctoral research in real estate appraisal

This short essay try to discuss the key issues about doctoral research in real estate appraisal within a Ph.D. Course in regional planning and public policy, which is held at IUAV University of Venice.

Until the first decade of 21st century, IUAV University assigned founds at University of Padua for a joint Ph.D. scholarship in real estate appraisal.

Ph.D. Course in real estate appraisal at University of Padua, was set up in 1987, and has been always organized as a consortium with others Italian Universities, it is the only Italian Ph.D. Course focused exclusively in real estate appraisal and environmental economy, and is organized to integrate expertise coming from different discipline such as engineering, architecture and agronomy¹. The main research topics developed within the Ph.D. Course of real estate appraisal are the assessments theory and methodology, the evaluation of urban housing stock, the assessment and management of architectural and historical heritage, the local economy, the

assessment of the mountain areas economy and the assessment and management of environment ².

After some organizational changes, funds assigned by IUAV University at University of Padua where took back and redirected to the Ph.D. Course in regional planning and public policy, in order to develop at least one research concerning projects economic evaluation.

Therefore, research in the field of real estate evaluation has to face with other research on related disciplines such as town planning, urban economy, transportation engineering, public policies analysis, etc

This contribution try to point out pros and cons of this expected integration, with regards to the influence of others subjects involved in the Ph.D. Course on the development on specific research topics.

Consulting the titles of thesis carried out from 1992 to today at the Ph.D. Course in real estate appraisal at University of Padua it is possible to outline a general evolution on issues addressed by doctoral research, and on methods used in such research. The evolution consist in three phases.

In the first phase, research focused in theoretical and empirical issues strictly developed within the boundaries of Italian real estate appraisal discipline and practice.

A second phase is characterized by an extension of research topics in the field of projects

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¹www.gest.unipd.it/it/dottorati/ingegneria-gestionale

²www.gest.unipd.it/it/dottorati/ingegneria-gestionale/indirizzo-estimo

financial evaluation, and real estate finance. The transition from first to second phase reflects a global progress in the Italian real estate appraisal practice and research. The Italian real estate appraisal discipline, was already characterized by a strong economic theoretical foundation derived from the historical development of the discipline itself. Starting from the early years of the millennium, it opened to practices, methods, and also European and international standards, e.g. the introduction of Discounted Cash Flow Analysis instead of cost-income analysis for projects financial evaluation [3].

The described evolution may be identified as “internal”: with regards to research topics, contacts of real estate appraisal with other disciplines was limited mostly to urban planning, design and agronomy; with regards to methodology used, the first phase were characterized by the use of typical tools of real estate appraisal and statistical techniques such as hedonic price methodology (included in Italian real estate appraisal literature since the nineties of the twentieth century) [4], while the second phase shows the introduction of financial analysis.

The third phase of evolution in doctoral research in real estate appraisal is characterized by an expansion to other disciplines: as far as technical subjects, like environmental physics, geology, etc., are becoming increasingly important in urban planning and design, also evaluation has to deal with this progress. The evaluation techniques most used in this phase belong to the category of multi-criteria analysis. The use of these evaluation methods is not new in doctoral research, and dates back at the beginning of the nineties. Initially, the use of these methodologies has focused mainly on issues related to urban design, resource allocation, and land use.

What can be noticed in this phase, is a sort of shift of research interests to the evaluation of decisional processes and policies due to the increase in the number of professionals and stakeholders involved in environmental transformation choices. The multi-criteria

approaches used in this phase, derives from models developed as part of the operational research and decision making support.

2 Doctoral research in real estate appraisal within a Ph.D. Course in regional planning and public policy

The shift described above is much more pronounced in the transition from PhD Course in real estate appraisal at University of Padua to the Ph.D. Course in regional planning and public policy at IUAV University of Venice.

Doctoral research I’m carrying out is part of this evolution, and in part reflects it. The research is investigates the convenience in investing in buildings energy retrofit, both for public sector and private subjects.

Last year, with another researcher of IUAV, we have carried out two studies, the first about impact of energy labels on market value of dwellings in Padua (using a hedonic price model) [1] and the second about the financial evaluation of convenience of buildings energy retrofit (using a discounted cash flow analysis) [2]. These studies have revealed that the savings on energy bill and the increase of buildings market value are not able (at least in the north Italian real estate market) to justify a redevelopment intervention.

These two studies, that use evaluation techniques well-established, and widely documented both in the scientific literature that in professional practice, clashed with the difficulty in obtaining a quite large amount of consistent data.

In particular, the regression model used in the the study about market impact of energy labels, was initially affected by the lack of transparency on real estate transactions, and the absence of a database containing official information about dwellings characteristics and transaction prices.

Information about market values and energy labels were gathered from advertisement listed on websites for property sales. The use of data collected in web advertisement has pros and

cons. Through the web is possible to get a large quantity of data, that are standardized (the information included in the advertisements regards similar variables) and they contain quite good information (sellers are motivated in trying to attract buyers). On the other hand data gathered from web advertisement suffer of a degree of subjectivity in the assessment of qualitative characteristics whose objective verification is hard. Therefore we had to remove doubtful cases from the sample, in order to obtain more consistent results.

Similarly, the second research about the financial evaluation of convenience of buildings energy retrofit had to deal with energetic data whose method of calculation is often unclear and that it's hard verifiable by non-experts.

A major difficulty has been the comparison between energy and economic data on the basis of common surface references. In fact, while in the real estate assessment discipline the reference surfaces differ in the method of measurement according to the different economic meaning that they take on, depending on the nature of the buildings production process or on the formation of real estate values, in the calculation of energy performance indexes, reference surfaces are measured considering technical and physical aspects.

3 Conclusions

The research question that arise from these two studies, that consider only financial aspects of energy retrofit projects, is how to assess all the criteria that stakeholders take into account in a energy lead redevelopment project. Therefore the problem that arises has a multi-criteria nature, both in terms of actors' interests and goals, and in terms of the different technical aspects that are taken into account in the retrofit projects evaluation.

Multi Actor Multi Criteria Analysis seems to be one of the ways that allow to deal with issues posed by the growing complexity of urban choice. The use of these methods allows to easily involve experts from different fields, especially considering that the application and the usefulness of such analysis can be clearly

understood even by researchers not directly involved in evaluation.

The possibility of integrating knowledge from different fields, and both qualitative and quantitative data, suggests that the Multi Actor Multi Criteria Analysis can be the driver of a further development which will contribute to expand the disciplinary boundary of real estate appraisal and projects economic evaluation.

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