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The role of evaluation tools in the urban policies for the development rights transfer/compensation: the isovalue maps for properties*

This essay describes the most relevant steps of the urban system analysis procedure and of the isovalue maps compilation for the main urban functions, to prove the urgency of using these methods to reply to the increasing need for equity and liberalism that recently came out from the urban planning process in Italy, especially, after the acknowledgement of some "new" mechanisms in most of the regional legal orders: the so called "equity tools". The regressive models results in the experimentation have shown that the isovalue maps could be a significant tool for several meanings in the public decision process, as it is a noteworthy estimation and evaluation method, that should be largely implemented and constantly reviewed and improved.

Keywords: *isovalue maps for properties, development right transfer, Geographic information systems and databases*

1. The urban policies for the development rights transfer/compensation in Italy

As two of the most effective urban planning tools introduced by the Italian law in the last years, the development rights transfer (Drt) and the compensation (Drc), with the increasing use of incentives and mitigation methods, could define a new balance in the relationship between public and private interests and values[1]. As supported from these assumptions, the Drt/Drc should be considered as primary mechanisms for the implementation of local policies focused on equity and liberalism principles. The acknowledgement of the so called "equity tools"[2] in most of the regional legal orders in the last ten years caused the increase of the demand for impartiality that citizens express towards the Public Administration, that should ensure the citizenship the fair access to the same opportunities.

* The paper is the result of a common elaboration of the three authors. More in detail, S. Mattia has developed the fourth paragraph, A. Oppio the second and the fifth, A. Pandolfi the third. The first and the last paragraph must be ascribed to all of the three authors.

[1] According to the current debate, the development rights transfer (Drt) in the Italian law should be meant as a new way of defining the relationship between public and private interests and values, in order to ensure their effective balance, and it is a fundamental tool for the implementation of local policies focused on equity and liberalism.

[2] The development rights transfer, plan incentives and different techniques of planning mitigation and compensation (Spallino, 2005).

As a matter of fact, most of the Italian regional legal orders acknowledged the same basic principle of the French model (the so called "*plafond legal de densité*"), rewarding only the owners of those properties involved in some local transformation interventions with development rights to be transferred and capitalized on specific areas, in order to obtain for free[3] that parts of the city that should be used to develop the necessary public functions. This planning tools should work through appropriate sharing methods of the expected advantages and disadvantages, thanks to the assignment of an identical development index. Therefore, the allocation of additional development rights on different areas should be established, first of all, as compensation for the free transfer to the Township of that portions of land planned for the implementation of public interest functions, and, moreover, as incentives for those interventions that are meant to achieve significant public benefits as well, such as the urban regeneration support, the bioclimatic housing and energy savings promotion, and, more generally, the guarantee of pursuing any other level of social and environmental sustainability (Forte, 1999[4]).

The most effective way to apply the equity and liberal principles in the urban planning policies seems to be the Drt/Drc based on values[5], implemented through isovalue maps for properties, that should be able to draw the trend of local real estate markets, thanks to specific econometric models and Mass appraisal tech-

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[3] In this way the Public Administration could replace the conventional mechanism used to obtain the areas on which the public city functions should be developed, in order to reduce the inequality that was traditionally embedded in that procedure. As a matter of fact, the conventional mechanism applied in Italy, consisted, on one side, of the free transfer to the Township of some portions of land planned for the basic public works, in return of the development rights that the City plans granted to the entire property, and, on the other side, of the expropriation (to a nominal market value, that could only pretend to be close to the actual price) of that urban parts designed for the main public functions. It is clear, then, that the traditional planning tools in Italy used to create a significant inequality between the owners of different kind of areas, referring to the specific activity for which they were planned (e.g. residential, industrial, and tertiary interests vs. public services).

[4] In this book, the author specifically addressed the relationship between development rights transfer, equity and ethics in the most appropriate manner, as the Dtr are meant as the search for new ways to define the relationship between public and private interests, organized through formal rules, translating the widespread inspiration to reformism and ethical goals, that represents the main values of the last years in the planning debate, such as sustainability, subsidiarity, transparency, efficiency, participation, consultation, and so on. Because of the separation between public and private interests, relating to the land use rules acknowledged in the Italian law in 1942, the main advantages and disadvantages of the city implementation were not proportionally divided, as the main costs of the public functions development were born only from the public interests.

[5] Actually, the Drt based on values method should be used and promoted to apply the equity principle in the urban planning process through isovalue maps for properties, that represent the trend of local real estate markets thanks to econometric models. The most recent international approach to this problem is to use the Mass appraisal techniques, as the regression analysis (Ra), which is a multivariate statistical procedure for the real estate market that identifies a functional relationship of cause/effect between the price of properties and their features (see the Code of real estate appraisal, 2006; Mattia, 2007).

niques, such as the regression analysis (Ra). The Drt/Drc model based on values has been experimented different times in the last years[6], but it has not been recognized yet, both in the Italian national law, and in the regional legal orders, especially referring to the practical application of these mechanisms through the City plans. Another essential part of this equity vision in the urban planning policies is the implementation of the development rights market, that has been proposed in some situations, to promote the liberal principles in the city development process.

Starting from these assumptions, the estimation and evaluation disciplines could play a new, fundamental role in the public decision making process and for the urban planning tools involved in that procedure[7]. The only problem in this sense could be the identification of stable models able to provide for an advanced and continuous input to ensure the development of the planning process in the wider availability of information on the real estate market values (both land and buildings) in the entire Township area and, therefore, of a targeted application in the real estate assessments, at least referring to the main urban systems. This problem has been solved thanks to the techniques of mass appraisal, towards which the latest research works about isovalue maps are aimed, using the regression analysis methods, both in a simple and in a multiple configuration (MRA)[8], as also described in the Code of real estate appraisal (2006). The model developed in these research activities, then, has a very strong potential, because it offers an alternative to the definition and attribution of real estate market values, in order to offer at the same time a transparent and repeatable model for this purpose.

As a matter of fact, in the knowledge/determination of the data relating to the building for a sufficiently representative sample of goods belonging to a particular building sector (e.g. residential housing) – and, therefore, functionally homogeneous –, localized in areas that are considerably diversified (both for their relations with the reference central part of the city and regarding the 'environmental quality'), the research activities have actually confirmed the possibility to determine isovalue maps for the entire municipal system for that urban function, and, operating in the same way, for any other functional use in consideration[9]. The

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[6] This essay describes the procedure of urban system analysis and of isovalue maps drafting, applied in three different experimentations (Milan, 2005; Trezzano sul Naviglio, 2008; Monza, 2010) and used to define the evolution of market prices for the main urban functions (residential, tertiary, commercial, and industrial).

[7] As a matter of fact, in order to achieve the purpose that the experimentations resolved, the research groups proceeded to verify the model compliance with estimate theories basics and the related methodologies, starting from two of the Economy and Valuation primary principles, that are value and income; the research works have been consequently pursued with the consideration of the nature of the real estate market and the related properties, creating solid theoretical basics for the subsequent treatments and applications.

[8] Cfr. Blalock, 1980; Cox, 1987; Kelejian, Oates, 1989; Brotman, 1990.

[9] This is pursued through the use, at the end of the MRA application, of the transformation value rule and, thus, making the estimation model a statistical evaluation tool.

Mass appraisal procedure (MRA)[10] can essentially become the procedure for the definition of sustainable urban development policies in a framework that should be sufficiently clarifying of the economic importance of portions of land – and, as a result, of the market value of any existing building[11] –, determined by an advanced evaluative approach and, then, able to allow the broader retention of time and costs in the investigation activities.

2. The need for dynamical isovalue maps for properties

The authors recognized, then, both the need for the widespread application of the interpretative analysis of real estate markets and the necessity of defining isovalue maps for properties that could dynamically describe the local changes, in order to effectively support the most important choices implemented by physical planning tools. For these reasons the paper describes the general model elaborated (and repeatedly falsified, according to Popper's approach) to define the trends of real estate market prices for the main local urban functions (residential, commercial, tertiary, and industrial activities). The results of these research activities have been designed as a part of the preparatory studies for local urban planning tools, with a specific reference to the identification *a)* of organizational, economical and functional issues of local urban systems for the development rights transfer, and *b)* of advanced decisional tools for the planning practice activities that involve any possible value judgment (e.g. the definition of monetization and expropriation coefficients, or incentive mechanisms, the disposal to the local Public Administrations of some areas planned for the implementation of public services, and so on).

Furthermore, the experimentations has allowed the authors to establish the real possibility to define, in accordance with the mass appraisal procedures, isovalue maps that could be continuously updated over specific periods. It means to immediately report the observed need to overcome a significant first obstacle, determined by the fact that, for the initial period of time in the widespread application of these techniques, evaluators will be forced to use fractional databases, that only represent part of the data that should be used to obtain very consistent results, as, on the one

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[10] Among the estimate procedures the regression model can be classified as: *synthetic*, as it operates through the direct comparison between the object of the evaluation and some similar goods; *quantitative*, as it considers both quantitative and qualitative variables, but it expresses all the components in quantitative terms; *mono-equational*, as it is a schematic drawing of the phenomenon in study through a single equation; *mono-parametric* (for the simple regression), as it operates the comparison on the basis of a single parameter, or *multi-parametric* (for the multiple regression), as it operates the comparison on the basis of multiple parameters; *probabilistic*, since the prediction function consists of a deterministic and a stochastic component (Morano, 2001).

[11] The determination of these values can also be decided in another useful manner with the direct application of the validated regression rules at the estimation and statistical levels for each specific element.

hand, the existing information is not completely reliable, and, on the other hand, the Dr market based on values will surely need a preliminary testing period (Pompei, 1997). This problem is directly related to the real estate market characteristics, as it is fragmented and asymmetric, and it will probably affect the initial prices estimation. In the light of these assumptions, the updating process in the compiling of isovalue maps seems to be more fundamental than for other cartographic tools, and it looks even more imperative (compared to other planning devices) referring to the fast obsolescence of the information on which these plots are based.

3. The contribution of Geographical information systems to the localization relevance

In this kind of research program, the contribution of Geographical information systems (Gis) is essential, as they represent a crucial software requirement to the localization relevance analysis, carried out through a correlative comparison between a huge number of context variables and of values indicators that should be consequentially obtained from the real estate market investigation. Actually, from one side, the research should start from the local real estate market study trough a specific data retrieval activity, identifying, on one hand, homogeneous and stable samples representing the market prices trend, the local real estate assets and the specific building types; on the other hand, thanks to the analysis of the global context through official databases (with a Gis system), it should analyze the most important variables, such as accessibility, facilities, services, the environmental quality and the conformation of the different neighborhoods and areas.

As previously described, different experimentations have been carried out to investigate the effectiveness of this econometric model to estimate the most likely real estate market values through the local market analysis procedure that has been developed from the research groups involved in the testing process[12]. The analysis procedure starts from the development of a sample review, to undertake an in-depth study of the spatial variables that affect and determine the real estate market values, and, finally, to describe the construction of the final model, in a typical recursive process. The research elements concerning the local market analysis have been carried out by using a Gis software[13] in the last two experi-

[12] The model has been developed from an original idea of Professor Sergio Mattia, that supervised each research group in the three different experimentations. The first testing program was carried out for a thesis experience, discussed in 2005, from Raffaella Menegante and Cristiano Nava, with Roberta Bianchi and Alessandra Oppio as assistant supervisors. The second experimentation was meant to build a part of the preparatory studies for the City plan of Trezzano sul Naviglio in 2007, and it involved Alessandra Pandolfi and Raffaella Menegante. The last experience consisted in a thesis, discussed in 2010, developed by Elettra De Pellegrin and Beatrice Fanchini, with Alessandra Oppio and Alessandra Pandolfi as assistant supervisors.

[13] In the first experience the research group developed the territorial analysis through a Cad tool.

mentations[14], in the aim of investigating and understanding the area, on which the model has been applied: in this part the research group considered and developed the main local variables affecting the real estate market trends, as the accessibility, the presence and density of services, the environmental quality and the features of the urban fabric, with the final purpose to create, through the application of these techniques, a model of 'Locational Quality', meant as an indicator of the quality of a given portion of the municipal area. This step is crucial, because the Locational Quality has been used as the only independent variable, that within the model has been put in relation to the market prices emerged from the observed sample. Once the research phase is completed, the collected data are analyzed through a regressive analysis model, as previously said, in order to relate the market value of properties with the Locational Quality, emerged from the local market analysis and built through the use of a set of Gis procedures.

The choice of the exogenous variables to be included in the MRA model is a crucial step in the proper specification of the analysis procedure, as it allows to avoid the underestimation effect, caused by a small number of variables, or the overestimation phenomenon, due to a redundant presence of independent variables, producing the so-called multi-collinearity problem. In the carried out experimentations, these variables have been defined on the basis of the authors experience and of the existing literature, in which the most commonly used dependent variable is the unit price, that is able to determine the marginal prices of every independent variable. As a matter of fact, however, if the properties size increases, the weight of every feature is a result that affects the market value in different ways and in a manner that is not constant, therefore, the MRA methods have been developed using the total price variable, which required the multiplication of all the independent variables for the property size and, thus, obtaining a compound set of variables.

The measurement of the independent variables has been done through the urban system analysis (applied thanks to Gis tools), in which the real estate assets are placed, by retrieving the referring data in three main levels, namely the information related to the building, to the reference area and to the single property with its own appurtenances and facilities. Actually, in the early stages of implementation of the MRA procedure in the carried out experimentations, the authors calculated and used a set of independent variables that was larger than the cluster that was found to be statistically significant. In particular, the model has been focused on the elements that determine the differential value of real estate units within the urban systems, that are mainly the issues about the building localization and the local environmental quality, an increasingly decisive parameter in this sense.

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[14] The purpose of the research is, therefore, to define the estimates of isovalue curves for properties of the municipality area, in order to apply and use these tools in the context of planning activities, with particular reference to the principle of equity at the base of the Dtr provided by the regional law of Lombardy n. 12/2005.

The parameters that have been calculated to develop the independent variable in the model (thanks to the integrated use of statistical and Gis tool), the so-called 'Locational quality', are: the accessibility, the services availability and localization, the environmental quality and the urban fabric attributes. The *accessibility* to the central area has been evaluated in reference with the travelling time with the quickest transportation mean. On the basis of the transportation time, the municipality area has been divided into homogeneous zones, combined in a scale of weighed values[15]. The *services availability and localization* have been analyzed in an area with a radius comparable to the distance that is typically representing an adequate catchment area for neighborhood units and considering the relative importance of these functions for the referring residents, which has been used to assign to each variable its own specific weight. The overall score is, therefore, the result of a weighted summation, expressing the presence and the importance of the different kind of services. The *environmental quality*, analyzed in a significant area from the point of view of the neighborhood logic, has been evaluated on the basis of different criteria, such as the image of the natural landscape. The *urban fabric attributes* that have been analyzed include different features, such as: the architectural pattern readability; the neighborhood figuration[16]; the existence of panoramic places and paths; the age and efficiency of the urban system; the street furniture; the building fronts; the local environmental pollution; and so on. The total result has been awarded to every single variable through the attribution of specific weighted scores.

All the variables included in the model have been calculated and synthesized by using Gis procedures, with a particular reference to the discretization techniques introduced to divide the entire municipality area in a regular pattern of cells, whose size have been determined in each experimentation in reference with the target width of the referring catchment area.

4. The evaluation model

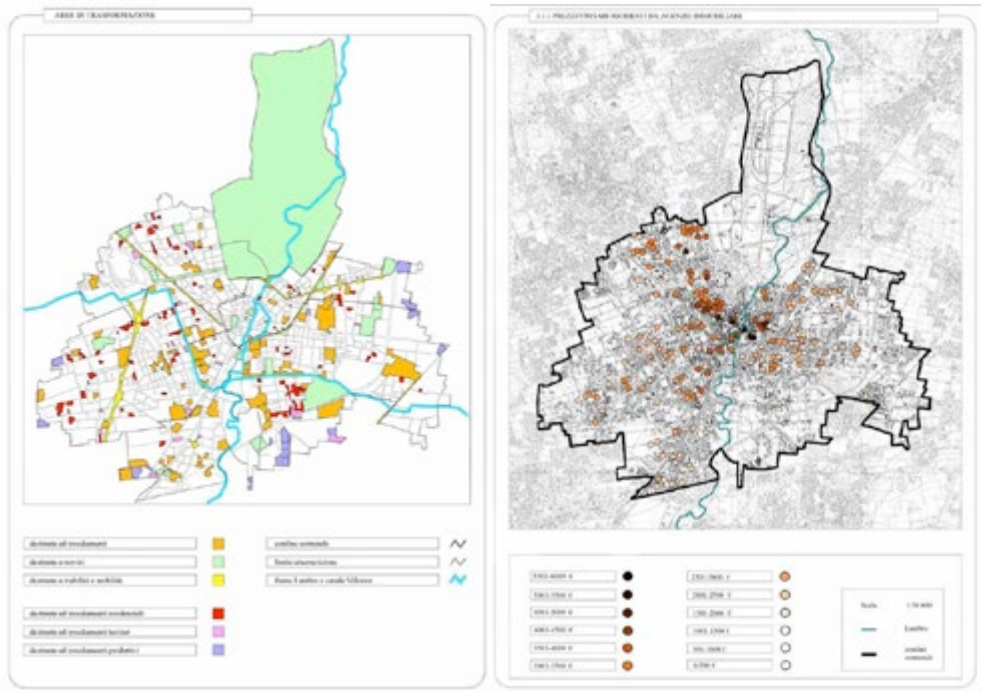
The research articulation started with an initial local real estate market knowledge phase through the selection of specific samples[17], followed from the research

[15] As a clarification for this matter, the measurement has been made on the basis of a model that leads to the scores awarding according to different criteria, with the application of corrective factors in case of proximity to the lines stops of the local public transport and to the main streets.

[16] The readability refers to the ease, with which the elements of the natural landscape can be recognized and organized into a coherent system, whereas the figuration is the possibility that the natural landscape could remind in each observer an image of strong emotional impact.

[17] The sample 'residential properties' included existing buildings, new or in restructuring constructions, whereas construction sites and buildings that were not yet completed haven't been comprised in the case studies by choice. The option of excluding uncompleted buildings and the referring real estate units was also reflected in the need to make in situ measurements, in order to carry out further examinations on the size of each real estate property.

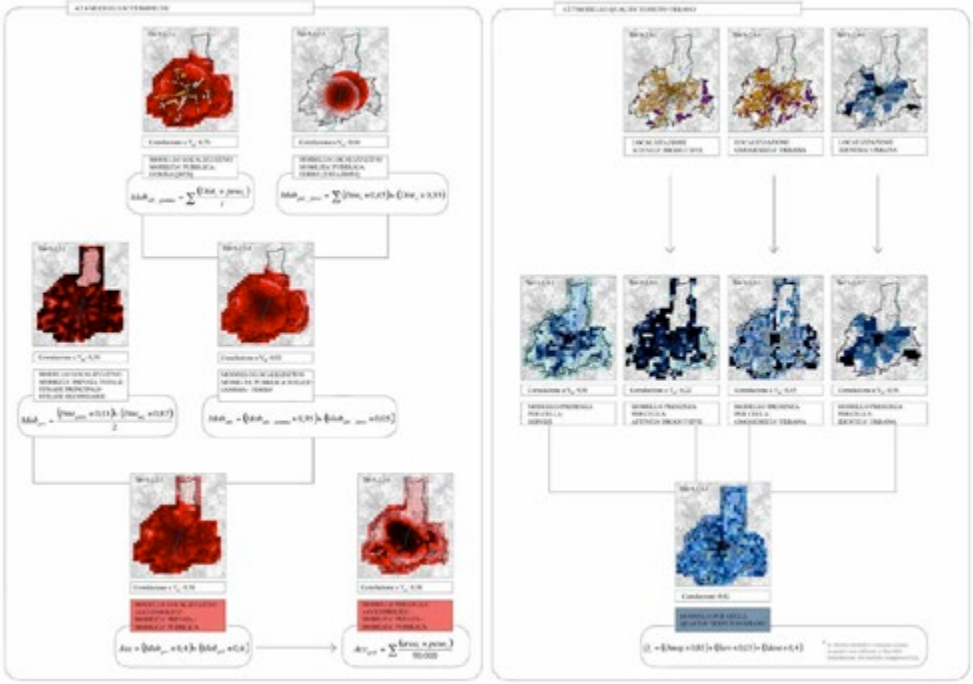
Figure 1. Intervention areas in the City plan of the Township of Monza and the real estate units considered in the consequent sample.



step developed to select and measure the variables about the 'Locational quality' (as previously described, accessibility, services supply, environmental quality and urban fabrics quality, all summarized in that same index, that is the only independent variable in all the possible and calculated regressive models) and from the regressive analysis model application. Referring to the procedures applied to calculate each part of the model, the research activities started from the local real estate market study, on one hand, identifying homogeneous and stable samples representing the market prices trend[18], on the other hand, with the analysis of the global context through official databases (thanks to a Gis system), as also previ-

[18] The data about goods in question have been all obtained by real estate agencies (with direct interviews and surveys and from the information in the internet announcement websites): having to do some reflection on the availability, transparency and comprehensiveness of the available data, it must be recognized that only sometimes we met a full cooperation from the real estate agents and, in the contrary cases, the real estate units haven't been used in the analysis as the referring data were not considered as verified and reliable.

Figure 2. Accessibility and urban fabric quality variables in the Township of Monza.



ously described. To determine the research sample[19] it was necessary to define an *homogeneous elementary market*, within which the data for similar residential units have been retrieved. The need for a high number of observations, imposed by the Mass appraisal techniques, orients the training activities about the base total sample, in reference with the residential real estate units belonging to specific submarkets that have been selected to form the sample itself.

To assess the *quality of the building* the model considered the most reliable variables in this sense, such as: the principal materials explored with a view analysis (facades and roofs); the state of preservation (facades, roofing, sheeting); the typological characters; the construction or integral renovation period of the building; appliances (garden, park, patio, court accessible or not to cars, and so on). These components have been evaluated with a scores scale, on an existence range that

[19] The observed sample, as a matters of fact, has been restricted in several case studies to just for sale residential properties in the reference Township area. Since this sample should become the fundamental database for the application of the econometric model, the authors tried to find as many comparable cases as possible in the data collection phase, in order to make the application of the aforementioned model significant for the subsequent steps.

goes from 0 to 10 to standardize the results obtained by estimating the approximate intervention costs for the removal of the conditions that represent the *physical* (DF) and the *economic deterioration* (DE). The model considers also the *aesthetic quality* that has been evaluated through the determination of specific weighted scores, applying all the existing methods to reduce the subjectivity of evaluations. Moreover, the model considered even some specific topics concerning the single real estate unit, such as the *commercial size*[20] and the *location*[21] in the building.

After the data exploration and database systematization phase, the research group applied the Ra model, and developed the indexes that represent the 'Locational quality' (the summing up of the main parameters that influence the local real estate market, the only independent variable used in the different regressive models). At the end of the analytical studies, the isovalue maps for properties have been compiled for every different function, applying the statistical results of the regressive analyses application through the most suitable model for the subsequent uses (mainly, the non-bound linear techniques[22]); the cartographical outcomes that have been produced concern, for every land use, both the property market value (*Vm*), the soil market value (*Vs*) and the existence range of the incidence of the soil value on the whole market value (*Ivs*)[23]. The study results were

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[20] The commercial size of real estate units has been calculated using the techniques described from the Collegio Ingegneri e Architetti della Provincia di Milano in the referring materials.

[21] Also this variable has been calculated by using specific weighted scores scales.

[22] In the different experimentations, the sample was first analyzed on the basis of the requirements for the application of multiple linear regression (such as the linear relationship between dependent and independent variables and the variance homoscedasticity), although the end result has been obtained, for reasons of scientific evidence, through a linear nature. The final results obtained from all the regressive models showed that the nonlinear methods are definitely more important and consistent from a theoretical point of view, thanks to the high correlation values between variables (especially in the case of quadratic and cubic models), however, these same methods have a huge number of operational shortcomings that do not allow their proper and straightforward application in all the possible practical uses, as the results of these activities have been designed as part of the preparatory studies for local urban planning tools, with a specific reference to the identification *a)* of organizational, economical, and functional issues of local urban systems for the development rights transfer, and *b)* of advanced decisional tools for the planning practice (e.g. the definition of monetization and expropriation coefficients).

[23] Considering the final results of this analysis from the point of view of all variables of local nature and those relating to the diversity of qualitative and quantitative characters of the assets included in the sample, for the complete sample and in reference with the economic data made homogeneous, the research group applied the simple regressive model with the following meaning of the variables: *Vm* as the dependent variable (the unit market value of each asset) and *Qloc* as independent component (the Locational quality). The first step in the overall evaluation of the model is to analyze the existence, the shape and strength of the hypothesized relationships between variables, as well as the capacity of the selected independent variable to predict the values of the dependent variable. The first verification concerned the hypothesis of the existence of a linear relationship between the dependent variable and independent variable used in the model. The research group proceeded, then, to apply the analysis of simple correlation coefficients, the verification of the significance of the correlation and the

isovalue maps for properties for the existing functions, whose cartographic representation drafts the market value of buildings and land, and of the corresponding percentage relationship. It is clear, then, that the model and its cartographic representation can be an extremely useful support for local decision-making, planning and evaluation tools, as ex-ante appraisal used to predict the local properties values (ensuring in this way the full pursuit of the equity principle), as well as to provide updated maps for the urban regeneration.

5. A case study: the city of Monza

The last experimentation carried out in 2010 has pointed out the most relevant issues of the urban system analysis procedure and of the isovalue maps definition by the use of the aforementioned econometrical model applied to the principal functions of the Township of Monza. The research has been developed with the aim of contributing to the preparatory studies of the City plan (the so-called "Piano di Governo del Territorio") and, at the same time, answering to the call, expressed by the Lombardy Regional Act n. 12 of 2005, for a deep knowledge of the urban system in order to determine rules for the development rights transfer (see art. 11 of the same Act). Therefore, the most recent application of the evaluation model has led to the definition of different isovalue maps for properties of the city of Monza, dividing the Township area for the different urban functions according to the statistical findings resulting from the regressive analysis.

The cartographic representation for each single functional category highlights the market value of buildings (*Vm*) and of portions of land (*Va*), as well as the incidence of the impact of the land value on the market value of assets (*Ivs*) in a georeferenced context. It is clear, then, that the model and its cartographic output can be an extremely useful support for local decision-making and planning, as ex-ante appraisal method to be applied with the aim to predict the local properties values (ensuring in this way the full achievement of the equity principle), as well as to provide updated maps for the urban regeneration processes.

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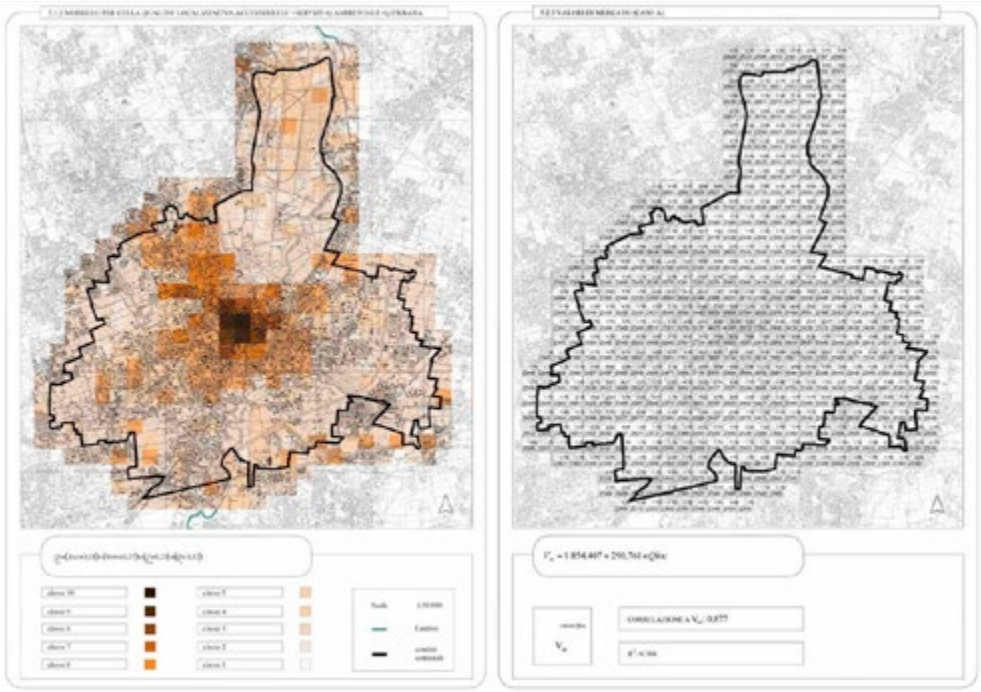
consistence of the sign of the correlation coefficient with the scores scale defined for the independent variable and the initial hypothesis. The linear relationship between the dependent variable and independent component has been graphically analyzed through the cloud diagram of points and through the comparison of these diagrams with lines of simple regression, i.e. calculated for only the x_i in consideration. For the multiple regression, the existence of the relationship is established using the t-statistic techniques. The so-called statistical t-test significance has been performed for each variable and from the analysis of the regression equations the research group obtained a level of significance (Sig. T), that confirms the hypothesis of the relationship between variables and allows, therefore, to reject the null hypothesis of the absence of such a link. Finally, the results obtained from the application of the MRA techniques through the use of a statistical software, Spss, to the sample has been verified through the application of other statistical tests and coefficients.

Figure 3. The Locational quality and the market value models for the Township of Monza.



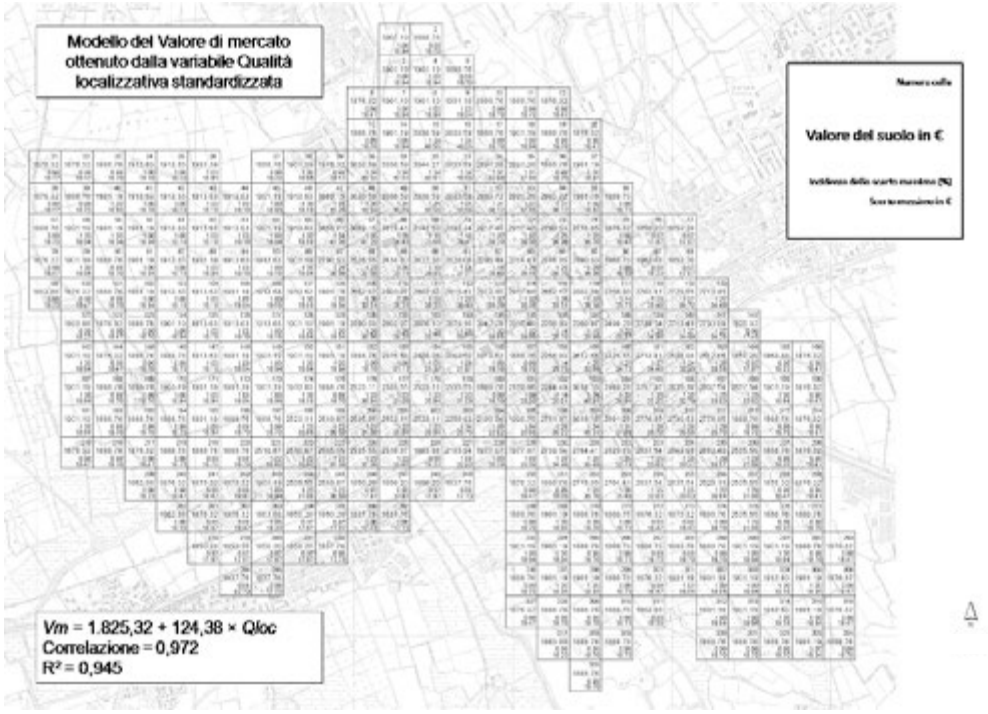
6. Conclusions

As initially remarked, the main implementing of this model is that of town planning and land management, especially, in the current debate concerning the urban planning activities and, in particular, the equity models and tools; this is the reason why the research described in this essay proposes and promotes a new and important role to the disciplines of the Estimate and the Evaluation. As a matter of fact, the model improvement highlights the problem of the lack of predicting models that could be able to provide a refined and continuous contribution to ensure the development of the physical planning process in the wider availability of information on real estate market values (Mattia, 2007).

The three experimentations applied by the research group have been compared the one to each other, in order to give, at the same time, a reply to the topic of the relationship between public and private interests, that has been widely discussed in the existing literature. These links become even stronger within the spatial planning activities, as they are implicit in the Italian soils property system, with specific reference to the application of the mechanism of the Dtr, recently introduced in our legal order. Actually, the debate that resulted in our country to the adoption of the

Dtr in most of the regional legislation and, consequently, in the planning practice of many city plans dates back to 1960, the year in which the INU (Istituto Nazionale di Urbanistica, the National Institute of Planning) presented the Code of the Urban planning, that acknowledged the Dtr model within the urban sector (even if it has been already introduced by the Act of 1942), adding an important distinction between the procedures based on the simple Dtr techniques and the mechanisms centered on values. After the proposal of the INU in 1960, many different law applications followed, such as the so-called Sullo Bill in 1962, the law scheme proposed by the Commission of urban planning studies of the Social And Political Information Centre (Commissione di studi Urbanistici del Centro Informazioni politiche e sociali, CIPS) in 1964, the regulation draft made by the Lombardy Socialist Party in 1970, the ruling of the Constitutional Court n. 5 in 1980, the so-called Cutrera-Pagani-D'Angelo bill in 1990, and the formalized statement made by the INU in 1995 on the occasion of the XXI Congress of the Institute (Pompei, 1998). In these steps, the pattern of the simple Dtr techniques (acknowledged in Italy by the Act of 1942) joined the mechanisms based on values, even if this last ones prevailed on the first method after the results of the works of the referring INU Permanent Commission, chaired by Giuseppe Campos Venuti, in order to assess the economic effects arising from the application of this system in many Italian cities.

Figure 4. The market value model for the Township of Trezzano sul Naviglio.



The application of the equity principles in the urban planning activities, meant as the pursuit of new ways for defining the public-private relationships, has the purpose of ensuring an effective balance of their interests and values and is a crucial moment for the transition from the phase of the simple declaration of the good governance principles (such as, openness, participation, accountability, effectiveness, coherence, proportionality and subsidiarity) to the implementation of these assumptions in the government policies, having as main goal the urban transformation in the automatic exclusion (or, at least, in the substantial limitation of weight) of the ring in the decisional chain represented by the private networks of power and influence, manipulated by the land interests that embody the main distortion and uncertainty factor for the success or failure of these policies (Mattia, 2002). These principles are the foundation of democracy and the rule of law in the European Union, and they should be applied at all levels of Government: global, European, national, regional and local (Commission of the European Communities, 2001).

The creation of this condition of indifference between the positions of different owners is also susceptive to determine the overcoming of the extremely serious situation of the current planning system, that is edging away from the pursuit of the equity principles and of the equal treatment, referring to whom there is a striking similarity between our constitutional law (in particular, the art. n. 3 of the Italian Constitution) and the first rules of the European Community, acknowledged in the referring Treaties. Even if the actual context is still unsatisfactory from the point of view of the planning practices, there are some significant signals that, at least, stand for an higher demonstration of interest to the achievement of the objectives of a urban planning discipline based on the equity principles and tools. As a matter of fact, the attempts of the prescriptions contained in many city plans are surely significant, as they are aimed to pursue the willingness of all the owners involved in the urban transformation process to implement the Dtr mechanisms in the reference urban sectors, characterized by the assignment of an undifferentiated, homogeneous index between different owners.

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