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Title: Combined economic and social impact assessment of affordable housing investments.

Year: 2017

Version: Publisher's PDF

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Please cite the original version:

Kunttu,S., Räikkönen,M., Uusitalo, T., Forss, T., Takala, J., & Tilabi, S., (2017). Combined economic and social impact assessment of affordable housing investments. *RISUS – Journal on Innovation and Sustainability* 8(3), 85–93.
<http://dx.doi.org/10.24212/2179-3565.2017v8i3p85-93>

COMBINED ECONOMIC AND SOCIAL IMPACT ASSESSMENT OF AFFORDABLE HOUSING INVESTMENTS

Avaliação De Impacto Econômico e Social Combinado Referente a Investimentos Habitacionais Acessíveis

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Abstract: A method combining economic evaluation and social impact assessment creates information that can be applied when making decisions about a new tenement building or renovation of existing buildings. The aim of the economic evaluation is to ensure that economic aspects are adequately considered and investment is realizable from a monetary point of view. Social impact assessment reveals intangible pros and cons related to an investment or investments to be considered. This paper presents a framework that combines economic and social aspects and supports decision making related to affordable housing.

Key words: Decision-making; Investment; Affordable housing; Impact assessment; Economic; Social

Resumo: Um método que combina avaliação tanto econômica quanto do impacto social cria informações que podem ser aplicadas ao tomar decisões sobre um novo prédio ou renovação de edifícios existentes. O objetivo da avaliação econômica é garantir que os aspectos econômicos sejam adequadamente considerados e o investimento seja realizável do ponto de vista monetário. A avaliação de impacto social revela prós e contras intangíveis relacionados a um investimento ou investimentos a serem considerados. Este artigo apresenta uma estrutura que combina ambos os aspectos econômicos e sociais, e apoia a tomada de decisões relacionadas a habitação acessível.

Palavras-chave: Tomada de decisões; Investimentos; Habitação acessível; Avaliação de Impacto Econômico e Social.

Recebido em: 23/09/2016

Aceito em: 01/09/2017

INTRODUCTION

The aim of social or affordable housing is to ensure ‘a decent home for every household at a price they [can] afford’ (Scanlon, , Whitehead, Fernandez, 2014). Access to decent and affordable housing is a critical condition for economic growth and a stable society (King,2006). Thus governments and communal municipalities in different countries allocate tax revenues to support the housing of people with low income. Mechanisms to offer affordable housing vary in different countries as well as the proportion of social housing of the overall housing stock (Scanlon, Whitehead, Fernandez, 2014). In Finland the Housing Finance and Development Centre of Finland(2015) implements housing policy by providing subsidies for new construction, renovation and purchase of housing. These subsidies can be applied for by individual citizens as well as local authorities or public and other corporations that fulfil certain preconditions.

Investment decisions on affordable housing can be considered through three levels that are presented in Figure 1; macroeconomic, company management and operation processes (Forss,2013). On the top is the macroeconomic level where housing policies and allocation of tax revenues for different affordable and social housing interventions are defined. A company’s strategic decisions, which follow national housing policy, are done on the company management level. Operational level decisions are for practical implementation of national policy and a company’s strategy. In this paper the focus is on practical tools to support decisions on new investments, i.e., operational-level decisions.

Figure 1 Decision-making Levels



When making investment decisions on new construction or renovations of affordable housing estates, economic values and affordability are typical criteria while the importance of other issues like housing location and quality is sometimes underestimated (Mulliner,et al,2013). Economic issues create boundaries to practical-level social housing interventions, which is a clear reason for its important role in decision-making. For example, a non-profit but self-financing company that builds, owns and rents out houses, must balance costs and income to be able to continue in market. Benefits achieved by investing in affordable housing cannot only be measured by economic values. It is important to include an assessment of intangible values in investment evaluation as well. Thus, a method combining evaluation of economic and intangible values is needed.

In recent years, there has been rising interest and activity in impact investment, which are “investments made into companies, organizations and funds with the intention to generate social and environmental impact alongside a financial return” (CA, 2015). The ability to measure and demonstrate the impact of these investments has become increasingly important. In a recent review of state-of-the-art of impact assessment, the following types of impact assessment are covered (W.K,2014; Clark, et al, 2004; Hehenberger, et al,2013; Wilson,2014; Bond and Pope, 2012): Environmental Impact Assessment (EIA); Strategic Environmental Assessment(SEA); Policy Assessment; Social Impact Assessment (SIA); Health Impact Assessment (HIA); and Sustainability Assessment. EIA emerged from the National Environmental Policy Act 1970 (NEPA) in the USA. It can be considered the origin of impact assessment. EIA can be seen as a term that captures the idea of assessing proposed actions for their likely implications for all aspects of the environment, from social to biophysical, before decisions are made to commit to those actions, and the development of appropriate responses to the issues identified in that assessment (Morgan,2012). However, these methods are not directly focused on affordable housing, but rather on assessing impacts of investments towards sustaining development processes and generating a positive impact on society as a whole and especially in a less developed countries. Therefore, there is a clear need for a method focusing only on affordable housing and taking into account the specific needs of social housing financing system and housing policy in Finland.

This paper presents a conceptual model to support investment decision-making, taking into account economic and intangible aspects. The model is developed as an ongoing project and thus the results from method implementation are not yet available.

RESEARCH OBJECTIVE AND METHODS

The aim of this paper is to contribute to the understanding of social and economic aspects of investment decision-making, addressing how to ensure that the most suitable investments get appropriate focus. Consequently, the paper contributes to the practical assessment on the new construction and renovation investments in affordable housing in a way that the goals of the decisions can be reached. The underlying research question of this paper is: how can the economic and social impact of affordable housing be assessed in a practical manner?

The paper is based on research carried out in the research project ‘Towards risk-conscious investment decision making and value creation’ partly funded by Tekes (the Finnish Funding Agency for Innovation) by the fund “New value creation”. The project responds to the growing need to enhance the sustainable competitiveness of value networks. It aims to advance companies’ ability to create value and to provide decision models and tools to evaluate investments and to assess uncertainty and risk.

The main research methodology is constructive research. The actual framework development is based on problem solving and solution building.

CASE DESCRIPTION

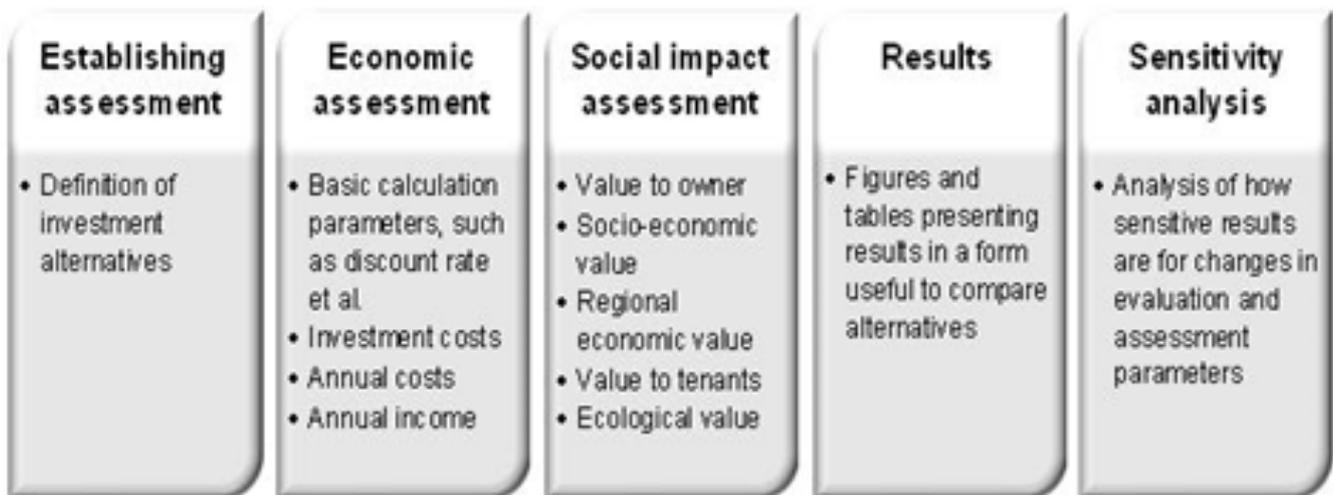
The case company TVT Asunnot is a real estate company owned by city of Turku, i.e., it is a public non-profit corporation that offers affordable rental housing aiming to maintain and promote the wellbeing of individual citizens and society. TVT owns almost 11,000 homes providing a wide variety of residential options in blocks of flats, terraced houses and small private homes throughout Turku. The value of real property is over 1 billion €. In 2015 the company has yearly turnover of 75 M €; administration, maintenance and repairs add up to 48 M € and finance costs are 23 M €.

The aim of the case is to develop the company's own investment decision-making and to provide more information about investment alternatives to city authorities and other stakeholders. The developed method is aimed at supporting a selection of the suitable investment to be realised out of the 2 to 10 alternatives. To promote method utilisation in practice, a calculation tool that supports the decision-making will be created. It includes all required equations and templates and thus the user only needs to input case-specific parameter values.

METHOD FOR ECONOMIC AND SOCIAL IMPACT ASSESSMENT

The method that yields information about the economic values and social impact of different investment options can be presented as a process with five main phases. In the first phase, all the investment alternatives to be compared are defined. In the second phase, monetary values for all alternatives are given and the options that are acceptable from an economic point of view are selected. In the third phase, intangible social impact generated by investment alternatives is assessed. Both economic and social impact assessments are presented in more detail in the following sections of this paper. Results of the assessments are presented by figures and tables that combine economic and social viewpoints in a way that supports the selection of the investment to be proceeded with. Case-specific values used in such an assessment are inherently uncertain since they will be realised only after the investment has been implemented. Sensitivity analysis will reveal how the ranking of alternatives will change if the results are recalculated by values deviating from original estimates.

Figure 2 Phases of Economic and Social Impact Assessment Method



Economic assessment

The aim of the economic assessment is to support investment decision making by providing information on economic profitability of different investment options. The case company has two main economic restrictions related to renovations and new buildings. Although the case company is a non-profit corporation, it needs to cover expenses. Public funding is used in investment financing, when terms of loans are more favourable than terms in an open financial market, but housing expenses are not directly compensated by tax money. The other restriction limits rents to a level that is about 10% lower than in the same kind of tenements in free markets. Via economic evaluation, a real estate company can assess whether the intended rent level can be achieved by the planned investment and which of the planned investments leads to the most cost-effective outcome

The economic evaluation method applied in this case consists of five phases described below.

1) Basics of evaluation

The first phase is to define investment options to be compared and basic information related to investments. The intended area of buildings and type of the investment that can be either renovation or a new construction are examples of the basic information on buildings. Basic economic parameters used in calculations are discount rate, inflation of expenses, inflation of rent and the expected lifetime of the investment.

2) Investment cost

The second phase includes the definition of investment cost structure, the valuation of cost elements and the calculation of the total investment cost for each of the investment options. Investment costs consist of various cost elements and thus a structured approach is needed to incorporate all relevant cost items in the calculation. The numerical values for all costs items related to investment cost can typically be obtained from offers and other documents. The total investment cost is typically calculated simply by summing up different cost values.

3) Annual costs and income

To balance investment and lifetime cost with expected incomes, the next phase of the process focuses on the definition of the structure for annual costs and income related to each investment alternative. Compared to investments costs, lifetime costs and income are more challenging to value because the values will be realised only in future and are inherently more uncertain than investment cost. Expected annual costs in the real estate business can be estimated rather accurately utilizing data and experiences from other kinds of tenement buildings. Incomes of a tenement building consist of rent payments, water costs and other living costs, e.g., parking, use of laundry, etc., paid by tenants. In this kind of situation when income needs to cover expenses, required income and rent per square meter can be calculated based on investment and annual costs.

4) Results

Results of economic evaluation provide information on which investment options are acceptable according to required rent per square meter. In addition, investment options can be compared by rent payments and payback times. By combining economic evaluation and intangible impact, it can be considered whether desirable intangible forms of impact are achieved by reduced rent.

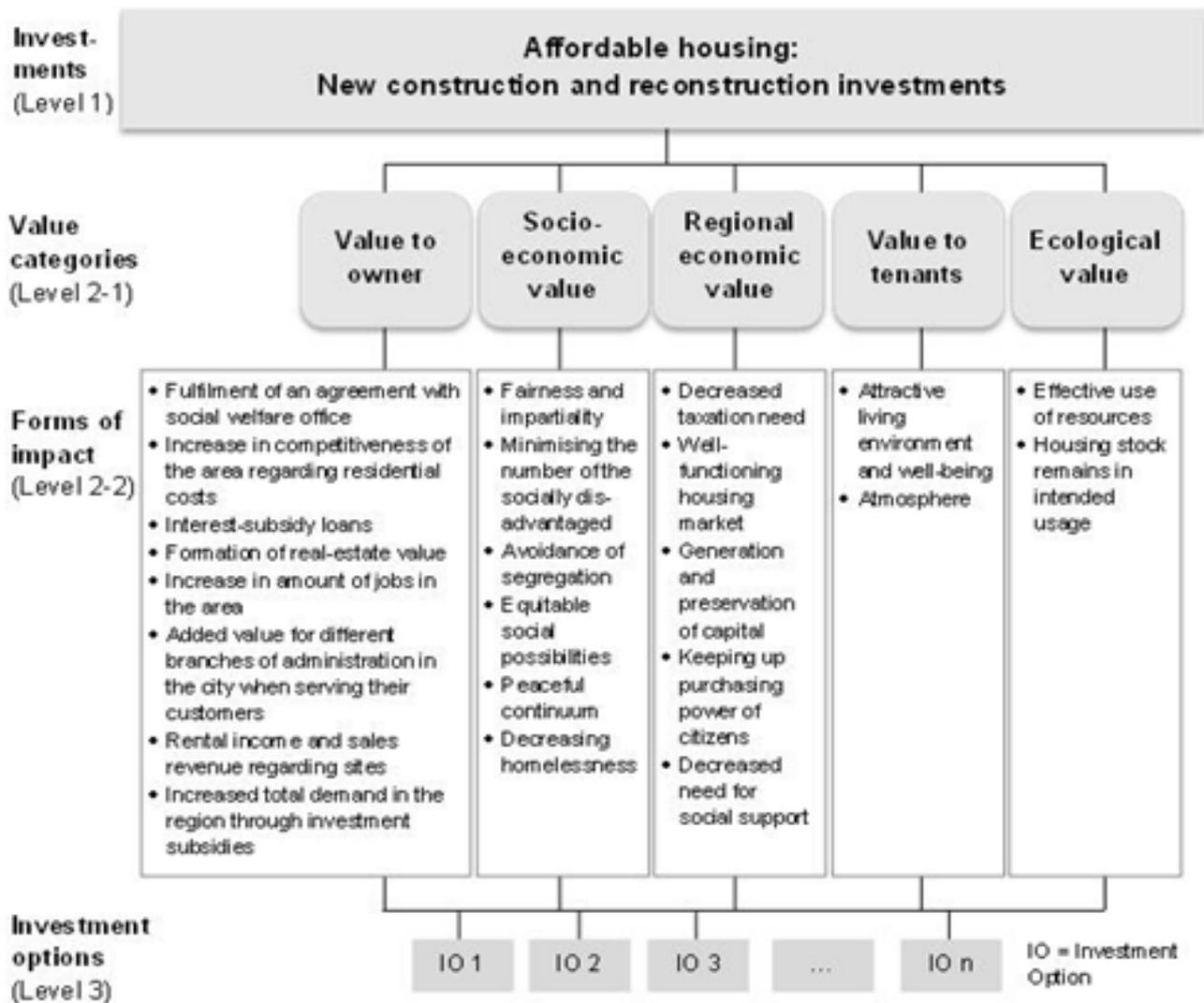
5) Sensitivity analysis

Uncertainty is inherently related to basically all decision-making situations. However, this case features fewer uncertain elements than many other cases. The simplest form of the sensitivity analysis is the what-if analysis that provides new results after the calculation values are changed. The main source of uncertainty is the utilisation rate of houses. Low utilisation rate decreases income while costs remain fixed, which causes a pressure to raise rental rates. The sensitivity analysis creates information about the lowest utilisation rate that still provides an acceptable rent level and covers costs.

Social impact assessment

The social impact assessment in this case study is made by applying multi-criteria decision-making techniques. The method used to assess the non-monetary impacts of affordable housing is derived from the work of Keeney & Raiffa (Götze, et al, 2008; Keeney and Raiffa, 1993) who presented the multi-attribute utility theory (MAUT). The multi-attribute utility theory provides a tool to aggregate different aspects, which can be tangible and/or intangible, into one index that enhances the comparison of investments from a social standpoint. Weights needed in calculations are defined by an analytical hierarchy process (AHP) (Saaty, 1980). The underlying objective is to establish relative weights for the main criteria and factors by means of pairwise comparison. Generally, the more critical a factor is, the more weight it should be given. These methods were chosen since they provide a flexible and easily understood method of analysing complicated problems, while also allowing consideration of subjective and objective factors in decision-making processes and being able to handle conflicting factors.

Figure 1 The Proposed Impact Structure for New Construction and Renovation Investments in Affordable Housing



In the case study, the hierarchy for categorizing the social impact of new construction and reconstruction investments was developed (Figure 3). It was created by analysing and combining the knowledge and opinions of TVT Asunnot Ltd. and the results of literature review conducted by the researchers. In addition to the top level, “new construction and reconstruction investments in affordable housing”, the structure includes levels of value categories (value to owner, socio-economic value, regional economic value, value to tenants and ecological value), impacts and alternative investment options.

In the next phase of the research project, the structure described in Figure 3 will be further tested and applied by assessing the company’s current investments and investment proposals.

The weighting of value categories and evaluation of various impacts is done by using expert judgment. Each value category is compared in relation to the others and the results are presented in a matrix form. After the weighting is completed, the impacts are ranked and evaluated. In order to increase the objectivity of the evaluation, the impact scoring is determined based on a fixed scoring system. The scales, i.e., the scores for various impacts are mainly modelled on a “very high (5)”, “high (4)”, “medium (3)”, “low (2)” and “very low (1)” scale. By multiplying the weights and the impact scores, the profile for different investment options can be illustrated. The weighted score for individual investment can be calculated, and thus the order of superiority of alternative investments can be determined.

CONCLUSIONS

This paper presents a framework with the aim of creating information that supports affordable housing investment decisions. The framework integrates economic and social impact assessment in a way that supports multi-criteria decision-making and thus enhances the selection of the most attractive investment alternative from the tenement owner as well as from a tenant point of view. This makes the proposed method unique as often the assessment of investments focuses almost exclusively on the direct economic impacts, rather than indirect or intangible impacts. During the development, the structures for investment and annual costs and income as well as for intangible impacts of affordable housing were determined. Moreover, result indicators for both economic (required rent per square meter, payback time) and social impact assessment (weighted score) were developed. By combining economic and social impact and viewpoints of different stakeholders, the framework supports holistic assessment and increases the capability to handle multifaceted situations. It also assists in making decisions on whether desirable intangible impacts of investments can be achieved by reduced rent. Moreover, the structured assessment process will enhance the transparency of decision-making.

In the next phase of the research project, the proposed framework will be further tested with TVT Asunnot Ltd.'s current and planned investments in new tenement buildings and renovation of existing buildings. It is expected that in most cases the method can be used as such as it is developed in close co-operation between researchers who were responsible for the theoretical background and scientific knowledge on investment appraisal and impact assessment methods and experts in affordable housing who brought their domain competence on social housing and related investments to the development work. This contributes also to the adaptability and scientificity of the method. On the other hand, these future tests can reveal challenges in data collection that are crucial for the reliability of the eventual results. Economic evaluation and especially social impact assessment rely on expert judgements, i.e., on the knowledge and experiences of decision-makers and other possible stakeholders. This is because there is typically no collected data available for this kind of analysis. However, as both scientific and practical viewpoints are taken into account in the development, it can be concluded that limitations related to, e.g., data collection and the ability to ensure the fulfilment of practical requirements are considered, even while the results of empirical tests are as yet not fully available.

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