Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 223 (2016) 69 – 76

Procedia
Social and Behavioral Sciences

2nd International Symposium "NEW METROPOLITAN PERSPECTIVES" - Strategic planning, spatial planning, economic programs and decision support tools, through the implementation of Horizon/Europe2020. ISTH2020, Reggio Calabria (Italy), 18-20 May 2016

Determination of Synthetic Recovery Cost for Historical Towns in Deficit of Information Conditions: an Experimental Model

Francesco Calabrò[a], Tiziana Meduri[a], Carmen Tramontana[a,]*

[a]*PAU Dept. Mediterranea University of Reggio Calabria, Salita Melissari, 89124 Reggio Calabria, Italy*

Abstract

This paper is the result of an activity of still being tested research. It aims to provide a tool for the synthetic estimate of recovery costs for historic buildings in the phase of planning of measures, to be used in situations where it is not possible to have the necessary information for the application of more sophisticated instruments. The estimation method proposed arises from the need to program the recovery plans for old towns, especially those which are abandoned. This will take on a particular importance in view of their considerable potential new functions aimed at the sustainable development of territories as they fall, constituting an important part of the cultural landscape that characterizes the Inner Areas: areas in which identity resources, such as historical buildings, still remain and are a tool that can also give an economic perspective for these territories.

Peer-review under responsibility of the organizing committee of ISTH2020

Keywords: Inner areas; conservation; historical towns; enhancement; recovery cost.

1. Introduction

After long being underestimated, the role that Inner Areas have to ensure the balanced development of territories has finally been recognized, implicitly recognizing the anticipatory character of many studies on the subject by

* Corresponding author. Tel.: +39 349.4091348.
E-mail address: carmen.tramontana@unirc,it

Peer-review under responsibility of the organizing committee of ISTH2020
doi:10.1016/j.sbspro.2016.05.302

Edoardo Mollica (Mollica E.,1997). Infact, in 2014/2020 programming, Inner Areas, like the City and the South, are counted among the strategic priorities (Ministro per la Coesione Territoriale, et al., 2012), so as to have developed a specific National Strategy (Strategia nazionale per le Aree interne, 2012).
Without discussing here, organically, the policy in favor of such areas, one of the aspects of greatest interest is the enhancement of identity resources, as a tool that can also give an economic perspective in these Inner Areas. In such policies, the enhancement of historical towns, especially those now abandoned, is of particular importance due to their considerable potential, in spite of tampering suffered before their final abandonment (Calabrò, F., Campolo D., Cassalia G., Tramontana C., 2015). This paper aims to provide a tool for the synthetic estimate of historical building heritage recovery costs in the phase of intervention planning: the application field of this tool refers to situations where there is no required information for the application of more sophisticated tools.
The principal difficulty for Municipalities, when they want to program recovery and enhancement interventions for abandoned historical built heritage, is the recurrent impossibility to access inside the buildings, to be able to see the actual conditions of degradation and, therefore, to clearly define the type and the amount of interventions to be carried out (Antoniucci, V., & Marella, G. 2014). The developed procedure, called De.S.C. (Determination of Synthetic costs) currently in the testing phase, is based on some considerations arising from field observations:

- In the case of abandoned historical heritage buildings, for the purpose of its reuse, its interior must be essentially repaired: interventions as systems, finishes, sanitation are recurrent actions whatever be the building's structural condition.
- As long as the roof is in a good state of conservation, the floor's structures inside will hardly have structural problems;
- In case of roofs in good conservation status, structural problems can be caused only by foundation structures failure.

Based on these consideration and considering when it is not possible enter in buildings to verify better decay conditions, for the purposes of a synthetic estimate, the proposed method gathers the recovery interventions in three classes, related to the buildings' structural conditions, evaluated through an external inspection.
Through the use of sample buildings, representing the three degradation levels and where it is possible to enter inside, we can estimate estimated the parametric costs to apply then to all the buildings to be recovered.
With these premises, the tool proposed cannot be characterized by high reliability levels, such as during the programming phase of the building process however this may change the intended meaning. On the other hand, can support the decision maker to reduce the estimate's uncertainty to acceptable levels, during a phase of the building process such as the programming which is susceptible to suitable corrections in subsequent project phases.

2. The scientific base

Among the rapid estimation procedures of costs, based on a buildings' conservation status, is enumerated, first by the Rapid Estimative Method, M.E.R. According to this approach, once the level of degradation of individual functional elements that compose a building is determined, we can then determine the overall degradation index. This is given by a single degradation level of functional elements multiplied by the weights attributed to the influence of the interventions provided on the cost of total recovery. Therefore by Multiplying this index with the economic index (which is the function of price evolution for the impact of individual production factors on the local market), the total recovery cost is achieved. (Vicari J., Merminod P., 1981).

Another present method in literature is the Early Determination of costs, DAC, certainly more akin to situations proceeding regarding a large number of buildings, such as the Common building of historic centers, which, although belonging to the same urban area, have different characteristics and degradation levels. After defining the prevailing building typology in the territory of study and after having identified the related sample buildings for each type, a metric calculation estimative for interventions to be incurred to recover is drawn up. For each planned intervention, related to each functional element, a weight percentage on the total intervention cost is attributed, which defines for each sample building, the cost per square meter. To get the intervention, total cost must be multiplied with the parametric cost attributed to each sample building (of each type) for the sum of the surfaces of buildings to be included in the restoration project. This method is fairly fast and requires careful preliminary discernment to be able to identify the sample buildings. (Mollica E., 1995) (Musolino M., 1994).