

## Evaluating the Relationship between Place Attachment, Residential Evaluations and Satisfaction in a Medium-sized Romanian City

### 루마니아 도시에서의 장소애착, 거주성 평가, 만족도 간에 상관성 연구

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#### Abstract

The present research aimed at researching the relationships among place attachment, residential evaluations and satisfaction in a medium-sized post-communist Romanian city. Studies on post-communist cities are scarce and this research tried to fill that gap. This research is part of a government project that intended to significantly reform three medium-sized cities in the Western part of Romania and transform the urban space. Since the three of them are relatively small-sized and close spatially, the project intends to undertake massive reforms of the communications and services of the three cities. In this article, we report findings on the city of Hunedoara. A representative random sample was selected, and a total of 384 people were interviewed, with an overall reliability of the sample of 95%. The instruments used to gather the data were the Neighbourhood Perceived Environmental Quality Scale and a composite measure of place attachment was also included. The structure of each scale was checked using exploratory factor analysis. We tested alternative causal models using structural equations modelling. Our model showed a good fit to the data and explains satisfaction in the city adequately. Results show that satisfaction is directly predicted by the general evaluation of the city and by residential privacy. Residential noise and place attachment influence satisfaction indirectly. The results are discussed and some policy recommendations are formulated.

Keywords : Place Attachment, Residential Evaluation, Satisfaction, Causal Models

주요어 : 장소애착, 거주성 평가, 만족도, 인과모델

#### I. Introduction

The question of how individuals perceive the physical environment and how they react to it have been of central importance for the field of Environmental Psychology (Bonaiuto, 2004; Laurence 2002). Environmental perception in general has become part of studies interested in investigating the quality of life of citizens, which has been considered a multidimensional construct and an important indicator of physical and psychological well-being (Utsey et al., 2001). The necessity to know how people perceive different aspects

of their environment had to do with identifying the most relevant aspects for the users of a certain space, area, neighborhood or city and with the need to predict the social response to different urban planning interventions. Furthermore, it aimed at providing important information to political decision-makers. In the newer paradigm of environmental sustainability, environmental perception is also considered important, and the European Environmental Agency has elaborated a set of indicators to measure environmental sustainability, which include "subjective assessment measures" such as citizen satisfaction with the local community.

#### II. Cognitive and Affective Factors in Residential Evaluation

Both cognitive and affective factors have been considered important in determining the evaluation people make of their surroundings. Among the cognitive factors, perceptions and attitudes have been the most studied, while in the affective domain many studies have researched emotions, place attachment and place identity. Environmental evaluation at the urban level refers to the description and prediction of the

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relationship between different attributes of places and a large series of cognitive, affective and behavioral responses (Craik & Feimer, 1987). Environmental evaluation is very relevant in the formulation of public policy that is adequate and adapted to citizen needs. The quality of an urban environment can be evaluated from two different perspectives: a technical, or expert, perspective, or a more user-based, layperson perspective (Bonaiuto, 2004; Gifford, 2002). The layperson assessment offers a measure of the quality of the environment as it is experienced by the people who use it and live in it and influences spatial and social behavior.

Environmental evaluation has been generally studied in relationship with residential satisfaction. Just as the first one, the latter is an important topic of research in the area of people-environment studies, because of its implications for urban planning, social participation and its relationship to perceived quality of life in the urban context (Carp & Carp, 1982; Canter, 1983, García Mira, 1997). It is a multidimensional concept, including physical and social characteristics of space, on the one hand, and cognitive and affective dimensions on the other (Fleury-Bahi *et al.*, 2008; Bonaiuto *et al.*, 1999).

In the Environmental Psychology literature, satisfaction has been shown to be related to the perceptions and evaluations of different elements of the context (Carp and Carp, 1982; Canter 1983; García Mira, 1997; Bonaiuto *et al.*, 1999). It has been defined as the experience of pleasure or gratification deriving from living in a specific place (Bonaiuto *et al.*, 2006). Elements such as noise, residential privacy, pollution, safety, quality and accessibility of services, maintenance, characteristics of neighbors, affective and aesthetic evaluations of the city etc., have a direct impact on experienced satisfaction.

Among the affective dimensions, place attachment has been one of the most studied (Lewicka, 2011). The study of place attachment centers on the feelings people develop toward the places where they have been born and grown and on the study of the function of these places in their life. Place attachment has been considered to involve an affective relationship or connection between people and specific places (Shumaker & Taylor, 1983) and a desire to maintain proximity to the object of attachment (Bowlby, 1980).

Previous studies have also identified different characteristics of place attachment and its effects on well being, resilience and different behaviors. It has been considered that place attachment generates feelings of pride toward one's residential area and its physical aspect, thus influencing the evaluation of a neighborhood or city (Twigger-Ross & Uzzell, 1996); it also generates a general feeling of well-

being (Harris, Werner, Brown & Ingebritsen, 1995); the loss of a place to whom one is attached can generate feelings of mourning for a long time (Fried, 1963); it is a strong source of motivation in mobilizing for supporting the revitalization of degraded areas, thus being a key element in the success or failure of policies designed to revitalize certain urban areas (Devine-Wright, 2009; Saegert, 1989); and it promotes stability, familiarity and a feeling of safety.

Some authors have argued that place attachment is composed of two different dimensions: a physical dimension, referring to feelings of attachment to the physical structures themselves; and a social dimension, including feelings of attachment to people with whom one coincides or shares spaces (Hidalgo & Hernandez, 2001). It has been shown to be related to satisfaction and to influence moving behaviors, well-being and levels of social and political participation (García Mira *et al.*, 1997, Hidalgo & Hernandez, 2001; Brown *et al.*, 2004).

### III. Objectives of Research

The research presented here is part of a larger project which aimed at evaluating three Romanian cities in the Western area of the country, with the objective of identifying urban renewal possibilities. The three cities are medium-sized cities, found at a close distance from each other. Because of this spatial proximity, the urban planning authorities of the area are evaluating the possibility of creating a big metropolitan area with some common infrastructures. This would contribute to the revitalization of the three cities, which have known a period of extended decay since the fall of the communist regime in 1989, characterized by the extensive degradation of buildings and public areas, as well as the emigration of the young population towards bigger, university cities in the country. Also, a significant number of young inhabitants of these areas have emigrated abroad, in search for better economic conditions. This has created cities where the population is growing old and not getting renewed, jobs are hardly available, and options for leisure are scarce. Nevertheless, the three cities have a high potential for revitalization, as they have valuable historic and archeological heritage from pre-Roman, Roman and Medieval times.

In order to ensure an adequate proposal for creating a metropolitan area, local authorities wanted to obtain both the technical evaluation of the strengths and weaknesses of the three cities and the more subjective, human evaluation of the residents of their respective cities and neighborhoods. The first aspects were studied by a team of architects, urban

planners and geographers, and the latter by a team of social scientists at the University of Timisoara (Romania), in collaboration with the University of Corunna.

The purpose of this project was thus to know how the inhabitants of the cities of Hunedoara, Deva and Simeria (West part of Romania) evaluate their cities and neighborhoods and investigate the relationship between these evaluations, place attachment and the satisfaction they experience with their cities.

The specific objectives of the project were:

- To investigate the residential evaluations of inhabitants of three Romanian cities, regarding different aspects of their cities;
- To identify urban preferences among citizens of the three cities;
- To identify the level of satisfaction of inhabitants with their neighborhoods and cities;
- Build predictive models of urban residential satisfaction for the three cities;
- Build indicators of residential evaluations that are suitable for the Romanian cultural, social and urban context;
- Test causal models of satisfaction.

Due to the fact that this is a very large project, the research we present here focuses on the city of Hunedoara and aims at evaluating the relationship among the three mentioned dimensions for this city. The specific objectives for the research presented here was to test a path model in which proximal space variables are considered as exogenous variables that predict evaluations of the larger human environment which, in turn, predict satisfaction as the final criterion variable.

#### IV. Setting

The city of Hunedoara is a medium-sized city in the Western part of Romania, with a population of 71,257 inhabitants. Its origins go back to the Stone Age. During the Middle Age it became a relatively important commercial center, due to the fact that it was rich in iron and its exploitation became the most important source of income for the local population and nobility. Its historical heritage includes archeological sites from the Pre-Roman and Roman times, as well as a medieval castle and other medieval constructions <Picture 1>.

In the 2<sup>nd</sup> half of the XXth century, the city suffered important urban transformations, during the Communist regime. The historic heritage started to be ignored, as it was a testimony of a past that the Communist regime wanted to erase. The city started to grow in size, due to the need to



Picture 1. *The castle of Hunedoara*

construct cheap public housing for the numerous workers that started to come from the rural areas to work in the chemical plants that were established in the city. In 1948, the city had a population of around 7,000, and in 1977, it goes to about 80,000 inhabitants. The Communist regimes transformed all private property into public property, and expropriated land, which put peasants from the rural areas in the situation of either working in the rural cooperatives, generally inefficient and unproductive, or to leave for the cities, to work in factories. Due to this massive wave of immigration, the state constructed blocks of flats where all the workers could live in, as Picture 2 shows. The image of the city changed drastically during this stage.



Picture 2. *Residential buildings in the city of Hunedoara*

After the fall of the communist regime the city started to decline. In the process of privatizing the local industry (which included steel, iron, textile and shoes industries), several factories were closed, due to the reorganization of the economy and the inefficient functioning of some of them. Thus, a new wave of emigration started, this time toward bigger cities or to western European countries such as Germany, Italy, or France. The population has gone from

almost 90,000 inhabitants in 1989, to 71,380 in 2002, and it is still dropping.

## V. Methodology

### 1. Sample

We used a random sampling procedure to ensure a representative sample for the city of Hunedoara. The sample was stratified by residential areas, and in each area a few streets were randomly sampled, ensuring a main street and a reserve street for each of the neighborhoods. Interviewers were instructed to start at number 1 of each selected street, and select every third household for interviewing. Only one adult member per household was interviewed, ensuring a relatively equal gender representation and a reasonable age variation within the sample. Also, a proportional distribution of types of residence was ensured, and thus both blocks of flats, which constitute the majority, as well as houses, were included. The sample was well-balanced in terms of gender, with 50.7% of women, and 49.3% men. The age distribution in the sample is characteristic of the aging trend in the city, due mostly to raising migration of the young population to bigger cities in order to study or work. Thus, 17.8% had ages between 18 and 30; 44.5% belonged to the 31 to 55 group; and 37.7% had ages between 56 and 84 years old. More than half of the interviewees were long time residents of the city, with periods between 20 and 40 years of residence.

The number of selected subjects was 384, belonging to 384 different households, of which only 364 had complete data. The reliability of the sample was of 95%. The interviews were conducted during April and May of 2007. The confidence level of the sample was of 95%, with a margin of error of  $\pm 5$ .

### 2. Instruments

In order to measure the variables for this study, we used several instruments.

- *The Neighborhood perceived environmental quality questionnaire* designed by García Mira in 1997 and translated and adapted for the Romanian context by authors of this paper. This questionnaire includes items that measure the environmental perception of elements such as noise, pollution, privacy, safety etc (23 items); items regarding the perceived importance of different aspects of the urban environment (17 items); and a set of bipolar scales measuring the aesthetic and affective evaluation of the city.

- *The place attachment scale* was designed specifically for this study, and included elements considered relevant in the theoretical literature. It included items that measured both

physical and social attachment (Hidalgo & Hernandez, 2001), and 2 items measuring the feeling of pride related to living in the city and the desire to maintain proximity. A total of 8 items measured attachment to the city.

- *The satisfaction scale*, designed by García Mira (1997) measured the level of satisfaction with the city (4 items).

- A scale measuring the quality of the *public management of touristic sites* was also included, specifically for this study.

Finally, demographic information was gathered and included: type and place of residence, age, gender, socio-economic status, length of residence in the city, number of generations living in the city, and number of family members who have emigrated abroad.

### 3. Procedure

The questionnaires were delivered at the respondents' residence and were applied by voluntary interview operators selected among second and third year Psychology students at the University of Timisoara. The interviewers were trained to explain the general objective of the study, answer questions and inform participants of their rights in order to ensure that informed consent was given. Participants were assured of the confidentiality of their answers, their anonymous nature, and were also informed that they could withdraw at any time or refuse to answer any of the questions. The data was gathered during two weeks.

## VI. Results

The structure of every scale was first checked through exploratory factor analysis, in order to see if the factorial structure was different from previous studies using the same instrument. We obtained a structure of 12 factors accounting for 67.54% of the variance.

The resulting factors were:

- Aesthetic evaluation of the city
- Affective evaluation of the city
- Characteristics of neighbors
- Air pollution
- Traffic-generated noise
- Neighbor-generated noise
- Noise generated by people in the street
- Noise generated by outdoor activities
- Perceived safety
- Residential privacy
- Physical place attachment
- Attachment toward people (social attachment)

After obtaining the factorial solution, we proceeded to testing a path model in which we considered the proximal

space variables as exogenous variables and hypothesized that they predict evaluations of the larger human environment, which, in turn, would predict satisfaction. We considered proximal space variables to be those who affect life in one’s own immediate space, such as perceptions of different types of noise, air pollution, safety and privacy. These aspects of daily life affect the perception of comfort and quality of life in one’s own home and neighborhood. According to the World Health Organization group (1998), these are aspects belonging to the physical environment and physical safety and security, and are part of the environmental domain of the concept of quality of life. A study undertaken by this Group has demonstrated that the environmental domain is at least as important as the other basic domains (physical, psychological, social relationship) in predicting quality of life (Power et al., 1999). Besides these more cognitive aspects we considered physical and social place attachment as affective exogenous variables and hypothesized that they would influence the general evaluation of the city, which, in turn, would predict satisfaction. We considered several latent variables: residential noise (which included traffic-generated noise, noise generated by people in the street and neighbors noise), place attachment (which included both physical and social attachment) and the general evaluation of the city (which included the aesthetic evaluation of the city and the affective evaluation of the city).

We tested this model using structural equation modeling. The adjustment measures show a good fit of the model to the data, with a GFI of 0.95 and an Adjusted GFI of 0.91. These are efficiency measures and it is considered that they should be greater than 0.9 (Jöreskog & Sörbom, 1984; Tanaka &

Huba, 1985). We also used the indicator of the relationship between Chi square and the degrees of freedom and we obtained a CMIN/DF of 3.465, which, according to Wheaton et al. (1977) and Marsch and Hocevar (1985) constitute an adequate fit.

The model shows that satisfaction is predicted directly by the general evaluation of the city, which constitutes a strong predictor, explaining 81% of the variance. It is also directly predicted by residential privacy, which constitutes a weaker and negative predictor. Residential noise and place attachment influence satisfaction indirectly, through the mediation of residential privacy and the general evaluation of the city, respectively. Noise also influences satisfaction through the mediation of the variable of place attachment, with which it has a recursive relationship. Thus, our model fits the data adequately and manages to explain what determines satisfaction with the city.

### VII. Discussion

The present research set out to test a causal model of residential satisfaction considering as predictors variables such as the general evaluation of the city, place attachment, residential noise and residential privacy. The model we tested showed a good fit to the data, and confirmed that the general evaluation of the city is the strongest predictor of residential satisfaction. This means that people’s evaluation if different aspects of the city are very important in determining their level of satisfaction with their immediate and also more distant space. The general evaluation of the city includes both a cognitive evaluation and an affective

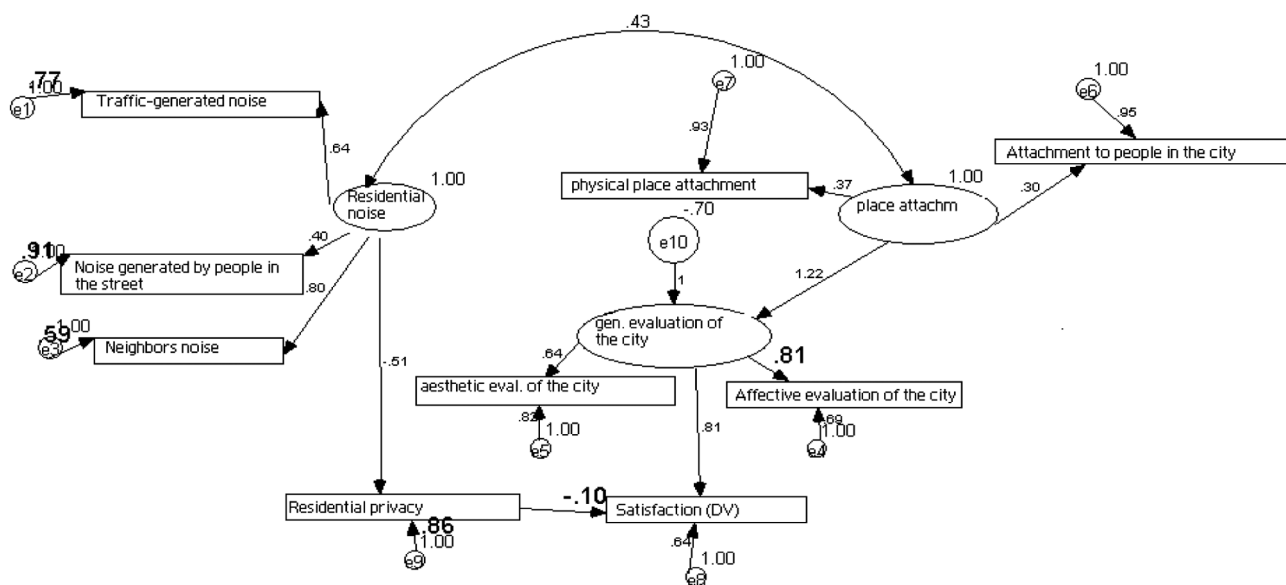


Figure 1. A path model of residential satisfaction

evaluation. The cognitive evaluation refers to the perception of the quality of different aspects of the physical and social environment, which affect life in a neighborhood or in a city and determine the degree of fit between the individual and the physical space (Kaminoff and Proshansky, 1982). The affective evaluation of the city refers to the feelings people experience when thinking about their city and its different characteristics. Both types of evaluations are important in determining satisfaction.

The relationship between place attachment and the general evaluation of the city has been a subject of debate in the field of Environmental Psychology (Bonaiuto *et al.*, 1999; Kyle *et al.*, 2004, Uzzell *et al.*, 2002). The debate about the primacy of affect versus cognition is also old in the field of Psychology in general (Storbeck and Clore, 2007; Zajonc, 2000; Lazarus, 1984). In this study, the relationship between the two dimensions, and their relationship with the variable of satisfaction was studied. We considered place attachment to be a predictor of the general evaluation of the city, considering the affective reaction to precede the cognitive evaluation of the city. This makes sense when the level of analysis is the city, considering that inhabitants have had lots of experiences in the city in which they were born and grew, which go beyond the evaluation of the physical and social environment. Also, from a developmental point of view, it makes sense to consider attachment a predictor of the cognitive evaluation of aspects of the city, because attachment develops before cognitive appraisal abilities in children. This study confirms our hypothesis that place attachment is a predictor of the general evaluation of the city and this is in line with the discoveries of previous studies (Rollero and De Piccoli, 2010; García-Mira, 1997; Bonaiuto, 1999).

Our tested model shows that satisfaction is also directly predicted by residential privacy, which in turn is predicted by residential noise. They are both negative relationships, showing that a high level of residential noise generates a low level of perceived privacy and, in turn, this generates a low level of satisfaction. As residential noise also influences place attachment, it is an important factor to consider when designing strategies for urban revitalization. Satisfaction is thus influenced by both proximal and larger space factors.

There are many implications of this study for designing adequate public policy for urban revitalization and for constructing a metropolitan area which would attract young population and deter the emigration wave. First, it demonstrates the importance of public participation in designing strategies of urban renewal. Public participation allows decision-makers to know citizen preferences and perceptions, and also

to evaluate policies formulated in the past and know which elements have given the expected results and which had not. It also generates feelings of empowerment, appropriation of the projects for urban renewal (Brown *et al.*, 2003), and motivation to get involved in future activities that would contribute to urban regeneration. Without public participation, often urban planning policies fail, entailing political, economic and emotional costs for both regular citizens and decision-makers.

Secondly, the present study shows it is very important to take into consideration not only technical, efficiency-based criteria in designing urban policies, but also affective criteria such as place attachment. In the case of the city of Hunedoara, designing leisure infrastructure and community activities that would enhance the feeling of place attachment would improve the general evaluation of the city and the general level of satisfaction with the city, which would probably constitute an important motivational factor in staying in the city and participating in the city life. Previous studies have also demonstrated that urban changes that do not take place attachment into consideration can fail, or strengthen existing trends of decay (Bonaiuto *et al.*, 1999).

## VIII. Conclusion

The present study demonstrates how social science perspectives can enhance urban planning and contribute to the design of effective strategies of urban renewal that are participatory, motivating and democratic. Decision-makers cannot adopt strategies that stress the improvement of infrastructure according to technical criteria exclusively, but are better off if they consider the citizen perspective on urban space.

The larger project in which this study was carried out is an example of a successful collaboration between architects, urban planners, social scientists and decision-makers in preparing a complex strategy for urban renewal that would reverse the trends of decay and disillusion that mark life in the city of Hunedoara.

Future research should explore further the relationships between the general evaluation of the cities, place attachment and satisfaction, insisting especially upon the controversial relationship between cognitive and affective dimensions of urban evaluations. The question of which comes first I still an open one, and it is likely that the relationship is circular. Nevertheless, the complexities of this relationship should be further explored.

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