



## Exploring an Operational and Practical Approach to Improve User's Participation in Housing Decision Making Process An Examination of a Framework

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### Abstract

To provide a healthy society as a key purpose of environmental sustainability considering individuals' -- motivational factors is essential, because; environment is not neutral and value free. It is conveying meaning and messages affecting users' motivations. Thus, to provide a suitable place to live, the interrelationship between living environment and users should be investigated. Regarding the users as the unique reference for decision making, also, it is believed that in the process of housing provision the needs-based approach must be changed to rights-based approach. Consequently, Personalization as the key concept of person-environment congruence (PEC) has been highlighted to fulfill users' motivations. Considering the low effectiveness and expensiveness of personalization in a finished house, the users' motivations have to be involved in the decision making stages to develop the users' proactive participation, and PEC. However, the motivational factors are too varied, and their definition in architectural context is too ambiguous and unclassified. For this purpose, Maslow's hierarchy of needs as a comprehensive and operational approach to motivations has been considered as the ground. Then, different architectural literatures in housing realm are categorized based on his theory to be transferred to housing context. Also, a Framework, to explain the role of these motivations in environmental evaluation, has been developed by looking at different models contributed to the field. Using these both, the study of motivational factors in operational and practical approach will be possible which is too significant for designers and student of architecture as well as other housing practitioners and marketing professionals.

**Keywords:** Person-Environment Congruence, Personalization, Motivational factors, Housing

### 1- Introduction

While there are interrelationships between person and environment, these mutual relations have to be taken into consideration by different disciplines. Because, to provide a sustainable environment these interrelationships have to be reached to a harmonious level fulfilling human needs and environmental requirements, equally. From humanistic point of view, since environment is a place for individual to live, it affects individuals both physically and psychologically. Because, environment is not value free and neutral space, and so it is,

constantly, conveying meanings and messages for people (Moser and Uzzell, 2003). So it affects the individuals' motivational factors determining their level of satisfaction (Paulus, 1991).

It is believed that suitable living environment can be established by individual participation and architectural attributes flexibility facilitating spatial personalization, and then person-environment congruence (PEC) (Jusan,2010; Asad Poor and Jusan,2010). However, clarifying the concept, foremost a few fundamental issues should be considered. Exploring these issues, several articles from different authors in conceptual and empirical realm have been review, which will be discussed later.

## **2- Critical housing type, rightful costumer, and proper housing attributes:**

Housing types is a first fundamental issue that should be considered in the study. Because, it is significant for us to know how different housing physical conditions influence their residents physically and psychologically. In addition, it is really important for us to know the reliability of the study idea for all social groups apart from their economy, culture, and social status. So, housing shortage and its related issues, and low income people and their affordability to buy a house have been emphasized as key factors for housing type selection for the study.

Housing supply shortage, on one hand, makes difficulties for low income people to achieve a proper house (Gang Meng, 2006). On the other hand, such a phenomenon changes the process of housing provision from a humanistic process relaying on cultural roots, to an industrial and economic process relaying on professionals knowledge, especially in low income and mass housing development. Because, serious complicated technological, economic, social, and resources insufficiencies existed in traditional know-how make unable such an individualistic skills to solve the current housing issues in human society (Moser and Uzzell, 2003; Oliver, 2006 a,b). So, housing has been provided by professionals, which cause failure to users' participation, and so failure to respond to their higher levels of needs. Because, since the users' housing needs are too varied, it is impossible for to be considered, thoroughly, by professionals in a housing provision process. Regarding these critical issues, mass housing has been considered as the proper housing type to stress the necessity of paying attention to the whole set of residents needs for assessing housing needs of all social groups.

As another question, the rightful person for the study has to be identified. Based on Francescato (1993), among different customers of housing delivery i.e. investors, governments, professions, observers, etc. the most important one is user. The users have to live and grow here, and must pay for its spatial and functional insufficiencies and shortages, both physically and psychologically. Users spend most of their time and do most of their activities in this location, and as a result they will be affected more than other housing costumers by its spatial characteristics, so far it is believed that their personality and characteristics are formed under the effect of these environmental features (Maslow, 1970). According to Lawrence (2006), more than 50 percent of employed mature individuals' non-sleep activities occur in their house, and for children and housewives the amount is, even, higher than this. Consequently, any insufficiencies in housing quality make serious negative physical and psychological results for their users. Regarding these issues and by referring to the above discussion low income end-users are identified as the most critical costumers in the housing realm and so for the study.

However, as one of the most emphasized objectives of the study, low income end-users have been chosen so far the significant of paying attention to higher levels of needs i.e. safety, social,

and esteem needs, and applicability of a systematic framework based on their motivations for eliciting their housing preferences apart from their economic, social, and cultural situation can be stressed (McCray, 1997).

Regarding Opoku (2010) among different attributes that affect the low income users' satisfaction the attributes that correspond to the users directly i.e. financial/economy, private living environment, as well as aesthetics are the most important attributes than other factors i.e. exterior factors (Opoku, 2010). Considering his findings, it can be concluded that, aside from financial/economy issues, to study the low-income users' preferences the most important issues are the issues related to the interior layout of a house. Among different concrete attributes of housing interior layouts i.e. fixed, semi fixed, and none fixed attributes (Rapoport, 2001), the study focuses, just, on semi-fixed attributes. Because of the deep effectiveness of these attributes in architectural quality of a house unit that influences PEC, and due to difficulties, expensiveness, and low effectiveness of these attributes modifications in post occupancy stage.

### **3- The users' motivational factors in housing context**

While environment is not value free and neutral, conveys meanings and messages for people, so it affects the people physically and emotionally. In other word, people characteristics, personality, and behaviors depend on their related socio-environmental context. As a result, when people perception, attitudes, and behaviors are going to be explored, the environment has to be studied as a key factor, because of its features characteristic (Moser and Uzzell, 2003).

Regarding this issue in housing realm, the significant of the subject will be increased, and the environment plays a more critical role. Because, more than 50 percent of non-sleep activities of every person occur in their house (Lawrence, 2006). So, housing physical features affect its residents physically and psychologically by its attributes capability for satisfying their needs.

Living environment physical conditions, i.e. its characteristics and dimensions, its size and ratio, and quality of its surrounded natural and built environment, all and all influence the residents' physical health and their psychological and social well-being. For instance, lack of connectivity with nature, and depriving from natural scenery, vegetation, and etc. are considered as the most important reasons for boredom and fatigue (Kaplan, 2001). Residents of barren building confront more aggression and violence. Also, it is believed that the level of mental fatigue is higher in barren building and aggression accompanied such a phenomenon (Kuo, 2001). Moreover living in a small house with insufficient space for family members leading to crowded and high population density improve the chance for infectious disease by increasing proximity, and prolonged intensive exposure to the infections (Lawrence, 2006).

Since recently individual's well-being has been considered as one of the most fundamental humanistic issue in different disciplines interested in environmental psychology and its related social studies, such an approach should be highlighted, significantly, in housing realm, either. From this point of view, house image, i.e. the way it reflects the residents personality and characteristics, the way it connects individual to society, the way it facilitate historical continuity, the living environment congruity with residents social status, its aesthetics dimensions, and etc. affects, strongly, its users' psychological well-being (Miller, 2006). Place attachment, confidence, rootedness, and etc. are the issues that correspond to such characteristics (Fullilove, 2004; cf. Weil, 1952; Brown, 2004; Stanley, 2009). Achieving such concepts, a house will be a proper location for withdrawal and restoration, and otherwise, individual confront

placelessness or uprootedness (Deborah, 1996, Utekhin, 2003). As a result, family size, their life style, kinship pattern, income, education, habits, culture, historical background, ethnicity, and etc. reflecting their needs, expectations, ideals, images, dreams, etc. or their values have to be taken into account for decision making of housing provision (Rapoport, 2001).

#### **4- The lack of attention to motivations and the related consequences in housing context**

Modernization causes a series exclusive implications, i.e. mobility, individualization or privatization, professionalization, overall population growth, as well as rapid pack of urbanization and globalization (Rapoport, 2001; Oliver, 2006b; Spencer-Wood, 2007; Gang Meng, 2006). Interruption between the person and his/her past, memories, history, and his/her familiar socio-cultural environment has been subjected to the society as consequence of mobility. Individualization, as a huge barrier, disconnects individual from community. Consequently, an indifference person has been generated in society, a person without any interest to be involved with society and its related responsibilities (Tall, 2007; Mosser and Uzzell, 2003). Moreover, professionalization, disconnects the relationships between individual and decision making process preventing from personalization and specialization (Oliver a, b, 2006).

moreover, overall population growth, rapid pack of urbanization, and global approach to economy along with current environmental issues i.e. natural resources restrictions, energy crisis, air pollution, greenhouse gas crisis, lack of green space, non-recyclable waste materials, and etc. (McHarg, 1969, Gang Meng, 2006) generate various humanistic physical, psychological and social crisis, i.e. infections, heart diseases, lung diseases, blood pressure, boredoms, fatigue, depression, anxiety, also, unemployment, poverty, crime and corruptions and etc.

These phenomena, also, have changed the housing authorities' attitudes toward human society's housing provision requirements, and its related issues. Indeed, they look at the housing problem not only from a mere, quantitative approach, along with a needs-based or up-down approach, but also from an industrial and technological view point, due to their misunderstanding of these phenomena in both economic and environmental aspects. (McHarg, 1969).

So, individuals' sense of place attachment and their sense of confidence have been dropped, significantly (Fullilove, 2004; cf. Weil, 1952). Place attachment, according to Yi-Fu Tuan (1977), is one of the most influential factors in generating humans' psychological characteristics, and so powerful in constructing individual's identity. The importance of place attachment, its effects on individual identity, and the negative effects of interrupting this attachment is also stressed by Oliver (2006a). According to him, only by strong cultural roots these alien phenomena can be eliminated and a special identity for person and community can be established. The main consequence of such a phenomenon is palcelessness or uprootedness that is 'a traumatic stress reaction to the destruction of all parts of one's emotional ecosystem' (Stanley, 2009). Such a person is introduced as an orphan, who has no place to live, and lives alone in the world (Stanley, 2009; c.f. Romanyshyn, 1999).

In general, it is believed that to improve the situation, housing provision authorities should change their attitudes to the human society from needs-based or up-down approach to the rights-based or down—up approach (Mosser, Uzzell, 2003). Using this approach, people's proactive participation can be achieved, properly, and their needs can be satisfied, thoroughly. For this purpose, a practical and operational framework should be established to study the related

psychopathological consequences of aforementioned issues, and to provide a better understanding of housing related needs and their psychological requirements.

### **5- The Motivational factors: Definition, theories, and models**

Motive has been defined as "something, i.e. a need or a desire, that Cause a person to act" (Merriam-Webster, 2007). While motivational factors must be identified in housing realm, not only they have to be defined with a specific and practical approach, but also a specific categorization must be highlighted due to establishing a proper ground for housing practitioners to take them into consideration in the decision making process of housing delivery. So, in this chapter, a few theories have been reviewed so far an overview to the concept and its related issues can be prepared.

The conditioned responses as an initial attitude to motivational factors have been developed by Pavlov. Based on him, a subject has been trained to produce a response normally associated with stimulus A when stimulus B is presented (Skinner, 1965). Expanding from his idea, Thorndike believes that a considerable amount of time should be consumed so far a solution for a problem to be created, but after a few time with the same situation, the problem will be solved more quickly. His efforts facilitate the explanation of sorted, emphasized, and reordered behaviors in complex situations. Based on him, however, satisfaction of a behavior leads to repetition, while, an unsatisfactory or uncomfortable situation leads to behavior weakens, and repetition decrease. His theory has been considered as a ground for the modern concepts of human motivations and behaviors i.e. operant conditioning (Skinner, 1965).

In Operant conditioning, human behavior not only is considered as a complicated series of tendencies, but also as a probability of occurring. This theory makes possible the examination of more complicated interactions. Operant reinforcement, where a subject is conditioned to respond in a desired fashion more frequently, and operant extinction, the slow fading of the increased response frequency when reinforcement has been removed, are the two aspects of the theory (Skinner, 1965). Positive reinforcers and negative reinforcers are the two types of reinforcers in this theory, which means that positive stimuli must be added and negative one must be removed or at least decreased as possible. Attention, approval, affection, submissiveness, and a token can be recognized as the generalized reinforcers for an individual (Skinner, 1965).

Maslow (1970) clarifies the definition and establishes a hierarchical categorization of motivational factors. Regarding his theory, human motivations despite of their superficial differences across the world have the same origins inside everybody. His theory, also, explains how these original motivations can be changed to variety of other source motivational factors, i.e. ideals, dreams, believes, schemata, and etc. reflected under the cover of specific culture with its unique values, created under the effect of external factors including natural and built. When a basic need is gratified another needs with a higher level is going to be arisen (Maslow, 1970; Hughes, 1999). While these needs, as origins of every other humanistic motivation are, equally, satisfied, human society can bring up a perfect and healthy man. On the other hand, any thwarting of these needs, leads to psychopathological results. As a result, the different level of needs play the most important role in character formation of everybody. The theory has been considered as a ground for this study because of its comprehensive, tangible, specific, practical, and operational approach to motivations.

Regarding the above mentioned discussion, it can be assumed that the housing provision process will be more relevant to the needs of the users, and so will lead to the users' higher levels of satisfaction, if the decisions are made based on the different levels of needs. Because, it is believed that the reactive participation approach should be replaced by the proactive participation or consensus building approach (Moser and Uzzell, 2003; c.f. Petts, 1995; Orzechowski, 2007). Also, Orzechowski, (2007) proposes a user-centered design model working based on users' preferences.

For this purpose, the theory of different levels of needs can be considered as the ground. Because, the theory addresses the motivations in the most original, comprehensive, practical, tangible, and operational approach. Transferring and categorizing this psychological information to housing realm, they can be used as a filter to evaluate the congruity of physical cues of housing attributes with users' needs. Consequently, the possibility of developing a specific user-centered design model by using these specific housing needs can be examined to achieve architectural flexibility, proactive participation and so PEC. In this study, referring different literatures, the possibility of transferring these motivations to housing will be examined.

#### **6- The reflection of motivational factors in architectural context and housing realm**

Living environment can be classified into three levels namely shelter, house, and home. (Oliver, 2006a; Bachelord, 1994). A shelter is a place to protect a person, whereas the creation of home represents the deep structures of society, and the distinctions are fundamental, not superficial. The 'house' is a 'small dwelling' reflecting the physical structure of the building so it is denotative, whereas a 'home' is not only a physical structure, it is a symbol of lives spent within it expressing the deep structures of a social system and the way family's relationships can be reflected in the domestic space, and so it is connotative (Oliver,2006a).

Bachelord (1994) addresses personal factors affecting the establishment of home namely, intimacy, daydreams, imaginations, and memories. Also, Schulz (1985) posits that a dwelling functions as a place to meet others for exchanging i.e. products, idea, feeling, coming to an agreement with them, and accepting a set of common values, as well as being oneself. They, in fact, stress on the necessity of connectivity and participation of individual in housing process.

However, Israel (2003) makes an effort to link between Maslow's hierarchy of needs and housing design process. The "Sociogram exercise" is employed by her to translate users' imaginations and memories of their living environment to a specific architectural instrument and physical attribute. Although, her efforts highlights the applicability of Maslow' theory in architectural context, but confronts some shortage limiting the application of the study, because some culturally bounded issues reduced the usage of the idea in other cultural, political, and economic context, i.e. low income groups or mass housing.

McCray's (1977), also, examines Maslow' theory in housing realm by comparing housing related values, aspirations, and satisfactions between a group of low income rural residents living in private housing, and a group of urban low income residents of public housing. He highlights the applicability of Maslow's theory in housing needs identification. Based on him, environmental deficiencies of the urban public housing i.e. location, infrastructure, community services, and social aspects frustrate satisfaction of the higher level of needs. So, it can be concluded that in assessing user's satisfaction of a house, user's higher psychological expectations such as intimacy, love, and freedom play much more significant role than other

factors that only emphasize on physical aspects of comfort, as has been emphasized by Rapoport (2001), either.

As another experience in empirical realm, Stanley (2009) conducts a study to identify the definition of home. Four low income women who live in different public housing project are interviewed by him. Using qualitative research method, he tries to identify their spatial perceptions and their attitudes toward the spatial characteristics to assessment their level of satisfaction and aspirations. Consequently he understands that they have tried to personalize the space by modifying architectural attributes to improve the spiritual and emotional congruity of the environment. In some cases, they address especial objects relating them to the past and memories. In other cases, they create a particular location for spiritual exercises and worship, or make a proper location to be solitude, or to do their interested artistic activities. Based on him, to be a home, psychological needs have to be fulfilled than other factors affecting physical comfort.

Eventually, addressing these literatures, congruity of Maslow's theory with housing realm, and the existence tendencies to apply the idea in housing context can be highlighted. Consequently, it can be concluded that applying the theory in housing realm helps practitioners to improve PEC, which is the key concept of environmental psychology leading to environmental sustainability.

#### **7- Transferring different levels of need to housing realm using triangulation:**

To transfer Maslow's motivational factors to housing realm, some of the literatures in housing context addressing users' motivations, i.e. Schulz (1986), Israel (2003), Oliver (2006), Miller (2007), Stanley (2009), have been reviewed. Using triangulation, a comprehensive effort to tabulate their notions to identify their related variables, instruments, contexts, and the purposes based on the theory of Maslow has been done. Regarding the frequency of the motivational factors applied in these articles, their overlaps, and the highlighted stresses for each factor, different variables have been categorized. Ultimately, variety of key factors in different realm of Maslow's theory are classified as housing motivational variables, i.e. basic needs of shelter, safety, security, protection, place attachment, confidence, ownership, self expression, intimacy, warm and inviting environment, being reference, self sufficiency, privacy, independence, resistance, competence, withdrawal, retreatment, restoration, social status reflection, mysterious and oneiric quality, personalization, specialization, self-awareness, personal curiosity, world discovery, beauty, order and structure, which can be used as users' housing preferences.

Expanding from this study, the interrelationships between the physical cues and motivational factors should be explored. On the other hand, the most effective architectural components have to be identified, and their physical cues have to be classified based on their applications in spatial personalization. Also, housing criteria should be revised to improve their congruity with end-users' motivations. Applying these objectives improves end-users' proactive participation by improving the flexibility of architectural design, and user-centered approach.

Applying these factors, in addition, provide a suitable ground in order to clarify the housing decision making requirements based on end-users' actual needs helping the housing practitioners to make their decisions based on the criteria arisen from users' motivational factors leading to PEC as a key concept of environmental psychology, and so environmental sustainability.

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