

Full Length Research Paper

Residential satisfaction and construction

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The failures of many housing projects stems from lack of knowledge on the determinants of Residential Satisfaction (RS) concept. This paper has utilized archival methodology for the past 13 years starting from 1997 until 2010. It aimed to compile existing definitions of RS in order to determine the core and principle of those various definitions. It was found out that RS is a subjective dependent variable which depends on many physical and social parameters. However, the propriety of those parameters could vary for different people with different social cultural and professional back grounds. The result of the study indicates that, urban planners and designers and architects have similar points of consideration on the parameters of RS such as neighbourhood, social demographic, and housing and estate management. Nonetheless, some rubrics such as dwelling unit features, dwelling unit support services, housing conditions, structure types, and environmental features of the housing are mostly emphasized by architects. Besides, some rubrics such as environmental features of the housing and neighbour relationship are more emphasized by the urban planners. Meanwhile, some sub rubrics such as police protection and security control, closeness to recreational facilities and user characteristics emphasized by all urban planners, architects and Environment psychologists.

Key words: Residential satisfaction (RS), urban planners and designers, architects, environmental psychologists, policymakers.

INTRODUCTION

The failures of many housing and dwelling projects stems from lacking of knowledge on the determinants of Residential Satisfaction (RS) concept (Salleh, 2008). RS reflects the degree to which individuals' housing needs are fulfilled (Salleh, 2008). The achievement of housing programmers does not only depend on development of housing units, but also on other factors that Influence the needs of residents (Salleh, 2008).

However, RS is a subjective phenomenon and there is a strong relationship between other concept namely residential preferences (Ge and Hokao, 2006). RS has always been cited as one of the most significant factors which should be considered in design and planning process for different nations (vanKamp et al., 2003).

Therefore, the aim of this study is to compile the existing definitions of "RS" to determine the core and principle of those various definitions. Therefore, four

group of experts' namely 1. Urban planners and designers, 2. Architects, 3. Environmental psychologists and 4. policymakers were taken in to the considerations as the scope of this research.

By and large, there is not a concrete and unique definition for RS subject which is not affected by diverse views of various professional perceptions. For instance, urban planners and designers have touched on: the social issues and quality of life whereby (Berkoz et al., 2009) imparts that: dwelling is a social issue which embeds not only its construction and environment but also satisfaction in environmental quality. Considering these parameters in planning phase, increase the quality of life (Berkoz et al., 2009).

Furthermore, urban planners and designers such as Baker (2002), imparts that location characteristics are important parameters in determining RS. Socio-demographic variables and migration is also taken into account by urban planners and designers, whereby Lu (1999) has observed RS as a complex construct which, affected by a variety of environmental and socio-

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demographic variables. Those variables include gender, age, family size, educational level, monthly family income, employment statute, length of residency, and socioeconomic status.

In the meantime architects touched on RS by defining it as the feeling of happiness when one gets what he/ she needs in a house (Mohit et al., 2010). Not recognizing RS in designing projects leads to a severe problems. These problems includes projects do not satisfy the occupant's needs, in terms of comfort, social, cultural and religious needs. Consequently, it influences the quality of life and affects the psychosocial aspects of the inhabitants (Mohit et al., 2010).

Despite above opinions on RS by architects, urban planners and designers in one hand and environmental psychologists in another hand, emphasizes on environmental quality and quality of life as well as people behaviour (van Kamp et al., 2003). On the contrary, policymakers focused on the relationship between the extents of fulfilment of individuals' housing desires and needs without touching the details of RS (Salleh, 2008). In the theoretical aspects, satisfaction studies have been concerned with developing the RS model, which intends to find out the process of RS (Amérigo and Aragonés, 1997).

It seems that there are different interpretations and definitions of RS driven from different opinions of various professional which makes it difficult to be addressed properly and logically. However there are some similarities in those definitions which stems from this notion that there is a core in all of those interpretations. Those cores need to be portrayed clearly to make this concept more understandable in multidisciplinary activities.

It goes without saying that residential satisfaction is significantly positively related to different aspects of people's temporal experience in the residential neighbourhood. That is both linear time as length of residence in the neighbourhood, and cyclic time as daily budget of time spent in the residential area (Bonaiuto et al., 1999).

Studies of people satisfaction with their residential environment have showed complex patterns of relationship. That is the relationship between rated satisfaction and individual, physical and social characteristics (Rioux and Werner, 2011). RS is a concept that influenced by objective and subjective measures of housing attributes. Those attributes includes physical, social/psychological and management attributes and the demographic characteristics of the residents (Amolo, 2009). RS depends on many variables such as shared nature spaces and density of a residential subdivision (Kearney, 2000; Adriaanse, 2007).

MATERIALS AND METHODS

This research employs archival research techniques as well as

content analyzes as the main research methodology of this research.

Content analyzes as another research technique was utilized to address the research objective. This technique which quantifies and analyzes the meanings and relationships of concepts has been cited as an appropriate method of qualitative researches (Krippendorff, 2002).

Archival research technique is employed to facilitate the investigation of documents and textual materials in the realm of residential environmental satisfaction assessment approach. In the classic sense, archival methods are those that involve the study of historical documents. Therefore, an archival research method is conducted over different concept of RS in housing and environmental dissertations; approaches and articles for the time span of 13 years starting from 1997. The documents which were analyzed were articles, which discusses concept of RS in housing and environmental quality, in *Habitat International Journal*, *Journal of European Planning Studies*, *Journal of Environmental Psychology*, *Landscape and Urban Planning Journal*, *Environment and Behaviour*, *Journal of Building and Environment*, *European Journal of Housing Policy*, *Housing Built Environment*, and *Journal of Environment and Planning*. The choice of the journals was based on the frequency of the publications in the realm of RS related subjects. In other word we selected the journals that more than 30% of their publications were related to one of our stated key words. These were the journals which were more famous in this realm of study than other journals. The key words which were used to search were residential satisfaction, and satisfaction of environment.

RESULTS

Utilizing Archival research techniques led us to different interpretations of RS by urban designers, architects, urban planners, environmental psychologist, and policy makers.

Urban planners and designers

Berkoz and his other colleagues have emphasized on six rubrics that increase the level of RS in housing and environmental quality (Berkoz et al., 2009). The first parameter is accessibility to various function areas in the residential area. That includes accessibility to shopping centre, city centre, work, places of entertainment, the market where daily needs are obtained, educational institution, open areas, health institutions, and public transport. The second main parameter is environmental features of the housing. It includes the following factors: environment maintenance of open areas, environment maintenance of green areas, building and traffic density and adequate of environment night lighting. The third parameter is facilities in the inhabited environment. It includes recreational areas, centrality, substructure (water, electricity, natural gas, telephone, and cable television), transportation and social facilities.

The fourth parameter is environmental security. It includes: housing's structural safety, environmental safety, and life and property safety. The fifth parameter is neighbor relationships. It includes: satisfaction in

neighbor relationships, satisfaction in social relationships, acquaintance with many people in the building and neighborhood, sufficient privacy from the neighbors nearby. The last parameter is appearance of the housing environment, including physical appearance of housing estate area and propriety to user status (Berkoz et al., 2009) (Tables 1 and 4).

RS has been cited as a dependent parameter of individual user characteristics which makes those individuals take RS on different levels (Kellekci and Berkoz, 2006). Marans and Couper (2000) presented a new RS model. This model is made between three levels. Those models are: neighborhood, city and community whereby a strong emphasis are attributed to personality variables. Some other parameters such as housing, neighborhood, and users' characteristics attribute in RS (Alison et al., 2002; Lu, 1999). RS has been noted as a dependent variable which depends on a person's life experience and world view (Alison et al., 2002; Lu, 1999). It includes age, sex, marital status and education attainment (Berkoz et al., 2009) (Table 4).

Another urban planner namely Ukoha and Beamish, indicated that accessibility of public transportation, community and shopping facilities, and physical environment parameter are the predictors of RS (Ukoha and Beamish, 1997) (Table 1).

Some planners stated that in a residential environment, housing conditions is the main rubric that contributes to RS (Fang, 2006). This housing group not only satisfies the residents but also maintain the overall health of individuals and public (Ukoha and Beamish, 1997). It is also argued that RS is related to social and technical facilities. These social technical facilities are sports, parks play grounds, green areas, and elementary schools whereby those facilities are the fundamental needs of urbanization (Ukoha and Beamish, 1997) (Table 1). Likewise, van Kamp and his colleagues (2003) noted that the satisfaction with neighbourhood is the main predictor of RS. They included RS parameter on neighbourhood facilities, such as schools, clinics, shops, community halls, etc, (Table 1). Some of the urban planners took in to the consideration the issue of forced migration as an indicator of not having RS (Si-ming LI, 2009). They depicted that, landscaping, estate management and public security are among the most important factors in neighbourhood level which affects RS (Si-ming LI, 2009) (Tables 1 and 3). Moreover, Mohit et al. (2010) remarked that migration is another factor i.e. a process of adjustment with the essential purpose of increasing level of RS.

Some scholars touched on the dissatisfaction. They enumerated the elements of the neighbourhood such as the level of crime (Mullins, Western and Broadbent, 2001). They also discussed on the lack of amenities (Mohit et al., 2010) as well industrial development. The issue of the location of work place is likely to be counted as another obstacle of RS (Table 1).

Nonetheless Berkoz et al. (2009) has emphasized on the correlation between RS, residential environment, and perception of the physical quality of that place. A study by Berkoz et al. (2009), has demonstrated that responses related to the appearance of residential environment (beauty, attraction, cleanliness) have direct and indirect influences on RS in their housing environment (Table 1).

Architects

Architects generally believe that RS is directly related to three main rubrics. That includes dwelling units, services provided by the developers and neighbourhood facilities and finally environment (Salleh, 2008). For a dwelling units variables such as living area, kitchen area, dining room area, bedroom area, washing room area, room arrangement, air circulation, number of socket, level of socket, clothes line facilities, garbage line and noise are important. The second main rubric is: services provided by the developers that include pipe repairs, electrical wiring, water supply, garbage disposal and eventually safety. The last rubric is neighbourhood facilities and environment.

It includes preschool, primary school, secondary school, clinic/hospital, telephone, market, children's playground, public transport, parking lot, place of worship, community hall, facilities for handicapped, police station, fire brigade and nursery (Salleh, 2008) (Tables 1 and 2).

Ukoha and Beamish (1997) have found that RS is influenced by four variables such as habitants' characteristics, building characteristics, management, and environmental and location factors. Moreover, the facilities and services available in a building are very important in determining RS (Ukoha and Beamish, 1997) (Tables 3 and 4). The availability of basic neighbourhood facilities to satisfy the needs of habitants is another rubric. It covers shops, schools, and clinic (Ukoha and Beamish, 1997). On the contrary, there is not RS once habitants should travel long distances to take their children to school, to go to their working place and to go medical centres (Table 1). The knowledge about parameters that shape RS is essential for an appropriate planning (Lu, 1999). Mohit et al. (2010) stated that, there are some housing norms attributes to RS. These housing norms include the following factors:

1. Structure type such as single family, townhouse, multifamily, bungalow (Table 3).
2. space (building features such as location of living room, location of stairs, size of the living room, location of kitchen, location of dining room, size of the bedrooms, size of the kitchen, size of the dining room, number of wardrobes or closets, number of bedrooms (Table 2).
3. Quality includes housing conditions such as the quality of exterior and interior construction, the pressure of the

Table 1. Neighbourhood parameters.

Rubrics	Factor	Architects	Urban planners and Designers	Environmental Psychologists	Policymakers
Neighbourhood	location characteristics of house	√	√		√
	closeness to school	√	√	√	
	closeness to hospital/clinic	√	√	√	
	closeness to shop/market	√	√		
	general cleanliness of the neighbourhood	√	√		
	physical condition and appearance	√			
	physical appearance of housing estate area (beauty, attraction, cleanliness)		√		
	landscape , scenery, green area	√	√	√	
	public transportation and services	√	√		
	closeness to work	√	√		
	parking facilities	√	√		
	police protection and security control	√	√	√	
	life and property safety		√		
	place of worship	√			
	facilities for handicapped	√			
	community hall	√			
	access to public telephone kiosk	√			
	fire brigade	√			
	low incidence of burglary activities	√	√		
	closeness to recreational facilities	√	√	√	
	centrality	√	√		
	nursery	√			
	sports facilities	√	√		
	Park -Play grounds for children	√			√
	educational institution		√		
	accessibility to open areas		√		
	accessibility to city centre		√		
	noise	√			
migration			√		

water, the lighting of the stairwell, the quality of the doors, the quality of the floors (Table 3).

4. neighbourhood facilities such as closeness to schools, landscape of the neighbourhood, closeness to hospitals/clinics, shops/markets, recreational facilities, work, general cleanliness of the neighbourhood, physical condition and appearance, location of the house , public transportation and services, parking facilities for, security (Ukoha and Beamish, 1997) (Table 1).

The quantitative issues in buildings such as size and number of room have been also taken into the account with regard to RS. Moreover, location of stairs, size and location of living room, kitchen, dining room, and

bedrooms, number of bedrooms, and the privacy within the users' house are strongly related to RS (Table 2). RS is considered a subjective term which depends on many variable as well as time and it is not absolute and it depends on housing conditions which are not static (Ukoha and Beamish, 1997). Moreover, poor internal facilities are great obstacles to achieve RS (Ukoha and Beamish, 1997). These internal facilities such as: kitchen, bath, and toilet are more sensible once shared by residents and creates issues related to privacy (Ukoha and Beamish, 1997). Architects have also touched on the relationship between social life of the community and site design as an important parameter which attributes to RS (Abu-Ghazze, 1999) (Table 2). They also emphasize

Table 2. Dwelling unit features and Dwelling unit support services.

Rubrics	Factors	Architects	Urban planners and Designers	Environmental Psychologists	Policymakers
Dwelling unit features	living area	√			
	kitchen area	√			
	dining room area	√			
	bedroom area	√			
	washing room area	√			
	room arrangement	√			
	air circulation	√			
	number of socket	√			
	level of socket	√			
	number of wardrobes or closets	√			
	garbage line	√			
	location of stairs	√			
	location of kitchen	√			
	location of living room	√			
	location of dining room	√			
	internal privacy	√			
	design of the open spaces	√			
	number of bedrooms	√			
	the availability of space for different uses	√			
toilet availability	√				
bathroom	√				
Dwelling support services	pipe repairs	√			
	electrical wiring	√			
	water supply	√			
	garbage disposal	√			
	safety	√			
	corridor	√			
	lift	√			
	cleanliness of drains	√			
	street lighting	√			
	garbage collection	√			

on the effective design of open spaces as another rubric RS (Abu-Ghazze, 1999).

Architects believe that RS is a composite term constituted of various indices of satisfaction and dwelling unit features such as dining and bedroom space, living area, toilet, bathroom, e.t.c (Mohit et al., 2010). It also includes corridor, staircase, lift, cleanliness of drains; street lighting, garbage collection, e.t.c (Table 2). Architects also discussed on public facilities as an indicator of RS which includes, play ground, car park, meditation room, perimeter roads, and pedestrian

walkways (Mohit et al., 2010).

They also considered social environmental constructs including, noise, accident, safety, security control, community relations (Mohit et al., 2010). Apart from the above neighbourhood facilities has been taken as main parameter of RS including, distances to town centre, work place, school, hospital, shopping centre, transportation facilities (Table 1).

Architects believe that RS depends on housing quality and it has two different objective and subjective scales. Objective measurement of RS examines the physical

Table 3. Housing conditions, Structure type, and housing and estate management.

Rubrics	Factors	Architects	Urban planners and Designers	Environmental Psychologists	Policy makers
Housing conditions	the water pressure	√			
	the quality of exterior construction	√			
	the quality of interior construction	√			
	the quality of the floors	√			
	the lighting of the stairwell	√			
	the quality of the doors	√			
	the functioning of the plumbing fixtures	√			
	building age	√			
	dwelling size	√			
	building quality and safety	√			
	hygiene	√			
Structure type	single family	√			
	town house	√			
	bungalow	√			
	multifamily	√			
	room units	√			
Housing and estate management	management procedure for garbage collection system	√	√		
	management procedure for amount of rent paid	√	√		
	management procedure for handling of residents' complaints	√	√		
	management procedure for enforcement of rules	√	√		
	furnishing provided by the management	√	√		
	management responds to necessary repairs	√	√		
	budget constraint				√

aspects of housing features which is not able to evaluate the psychosocial characteristics. This Subjective measurement includes perception, satisfaction, aspiration, and also disappointment is (Nurizan and Hashim, 2001).

Architects has also commented on various dwelling attributes such as building age, floor area per capita, number of bedrooms, and availability of private toilet as important variables of RS (Si-ming LI, 2009). Wu's (2004) found out that dwelling size, building quality and safety, toilet availability, hygiene and estate management, is more important than luxurious facilities such as leisure and sports facilities and broad band networks in achieving RS (Table 3).

Environmental psychologists

Environmental psychology is a science which relates the

work of design professionals and improving the human environment (Kellekci and Berkoz, 2006). Environmental psychology evaluates the linkage between environments and people behaviour. Likewise, In order to understand the human behaviour one should know how people notice their surrounding environment (De Young, 1999).

RS has been imparted as a main concern of cognitive, affective or behavioural studies known as personal characteristics or physical and social aspects of the residential environment (Amerigo, 1997). In the realm of environmental psychology, RS means reflecting the sentiments of satisfaction and joy in residential area (Kellekci and Berkoz, 2006).

In the mean time Berkoz et al. (2009) focused on centrality, socio-physical characteristics of the residential area as the main parameter of environmental psychology. It includes social and neighbourhood relationships, social activities, social facilities, scenery and substructure. Social facilities include health and education institutions,

Table 4. Facilities in the inhabited environment and social demographic characteristics.

Rubrics	Factors	Architects	Urban planners and Designers	Environmental Psychologists	Policymakers
Facilities in the inhabited environment	prayer hall	√			
	perimeter roads	√			
	substructure (water, electricity, natural gas, telephone, and cable television)		√	√	
	pedestrian walkways	√			
	social facilities		√	√	
Environmental features of the housing	environment maintenance of open areas		√		
	environment maintenance of green areas		√		
	adequate of environment night lighting		√		
	building and traffic density		√		
Neighbour relationships	satisfaction in neighbour relationships		√		
	satisfaction in social relationships		√	√	
	acquaintance with many people in the building and neighbourhood		√		
	sufficient privacy from the neighbours nearby		√		
Social demographical characteristics	age	√	√		
	gender	√	√		
	family size	√	√		
	educational level	√	√		
	monthly family income	√	√		
	employment statute	√	√		
	length of residency	√	√		
	Socioeconomic status.	√	√		
	users characteristics	√	√		√

playgrounds for children, and centre for cultural and recreational activities. Besides, security is being cited as another main contributor of RS by this group of professional (Berkoz et al., 2009).

Policymakers

RS has been an important factor for policy makers during the preparation of their guide line of housing construction for the variety of people. RS for policy makers means that the habitants needs have been met and that they are happy in their dwelling unit. As far as those people do not have a desire to move or, perhaps, to alter their home RS has been archived. It is also important that if the habitant have desire to change but they are not able to make it for various reason such as lack of choice or resources, this could result in chronic dissatisfaction which is dangerous

(Ukoha and Beamish, 1997).

Some other policy makers have viewed deficit as the main concept in explaining RS and mobility behavior (Bruin and Cook, 1997). Garling and Friman (2002) noted that RS is a natural criterion to judge the success of policy makers in selecting the appropriate residents.

Policy maker take income location of residence as other rubrics of RS which should be considered during decision making process. In the standard economic model of urban spatial structure, the above term. Moreover, RS encompasses neighbourhood satisfaction and a residence is more than a physical structure, (Garling and Friman, 2002). The deficits in the basic building features which were experienced by the residents might be detrimental to health, and subject inhabitants to substandard housing. It might be important for policies for public housing to specify standard building features and space standards for dwelling units (Ukoha

and Beamish, 1997).

DISCUSSION

Referring to Tables 1, 2, 3 and 4, it was found out the emphasizes of four different disciplines namely urban planners, designers, architects, environmental psychologist and policy makers are on ten rubrics. That includes 1. neighbourhood, 2. social demographic characteristics, 3. dwelling unit features, 4. dwelling unit support services, 5. housing conditions, 6. structure type, 7. housing and estate management, 8. facilities in the inhabited environment, 9. environmental features of the housing, and 10. neighbour relationships.

These rubrics include parameters such as location of the house for neighbourhood, age for social demographic characteristics, living areas for dwelling unit features, pipe repairs for dwelling unit support services, water pressure for housing conditions, bungalow for structure type, furnishing provided by the management for housing and estate management, substructure for facilities in the inhabited environment, environment maintenance of open areas for environmental features of the housing and sufficient privacy from the neighbours nearby for neighbour relationships.

Due to the frequency of the emphasizes of different profession on various parameters, parameters of neighbourhoods were identified as the most common points of consideration. The second rubric which was emphasized by those professional was social demographics. The third rubric which emphasized was housing and estate management. Moreover some rubrics such as 1- dwelling unit features, 2- dwelling unit support services, 3- housing conditions, 4-structure type, 5-environmental features of the housing are mostly emphasized by architects in comparisons to the other discipline.

Besides, some rubrics such as environmental features of the housing and neighbour relationships are more emphasized by urban planners and designers.

Conclusion

It is concluded that despite the fact that RS is a very important subject for many profession however there are different interpretation of RS. In fact, the emphasis of architects is more on dwelling physical features and housing status whereas other professionals take into considerations other social and commercials aspects. It goes without saying for satisfying residents, all of above rubrics and parameters should be considered not only in design process but also in planning process. These parameters should be set as the principal of design and planning based on their priority for different cultures, geographical conditions, and climates.

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