The relationship between low income housing and residential satisfaction

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ABSTRACT

This paper calculates residential satisfaction of low income housing inhabitants. A quantitative method was used as a main method of data collection. The main exploration was accepted during January 2022 and March 2022. Features analysis was used to meet the research objects. Discoveries exposed that the overall level of satisfaction of the residential environment, including housing features and services, is moderate. However, this level of satisfaction is not continuous; rather, it alters across the variables for both housing features and facilities quality, with some variables. This paper also tested the factors of residential satisfaction. Two factors emerged as playing an important role in determining residential satisfaction. The first, related to services, concerns basic social facilities. The second, related to housing features, concerns privacy. The overall conclusion is that attempts to develop low income housing and the proximate services may result in improving overall satisfaction.

KEYWORDS: Residential Satisfaction, Social Factors, Housing Price, Architecture, Urbanism

1.0 INTRODUCTION

The Jordan has knowledgeable rapid housing expansion related with high population growth, augmented by recurrent influx of refugees from Palestine, Syria, Iraq and elsewhere, combined with low economic growth [1-18]. At the present time, the estimated population is approximately 7 million inhabitants [18-26]. This rapid urban growth took place despite a lack of natural resources, including energy and water, and in addition to an increased demand for services and housing. The provision of adequate housing is currently one of the most important challenges facing Jordan. Salt is the capital city of the Balqa Governorate. It has a population in the region of 140,000 inhabitants and comprises 80 km2. The National Census in 2004 estimated that between 15,000 and 20,000 Jordanian people live in 2,800 dwellings, i.e. around 7 people per dwelling. The need to develop housing policies that are in keeping with prevailing economic and social conditions has, until recently, never been fully appreciated [27-39]. As the cost of serviced urban land is now extremely high, the capital required to buy even a small plot is now beyond the means of many households. Thus, low income earners now have to choose between purchasing land on the periphery of the city, squatting illegally on government land, or attempting to find accommodation within public housing projects or the joint partnership apartment projects now available between the government and the private sector In order to maximize low income housing, the Jordan government established the Housing and Urban Development Corporation (HUDC) the public agency responsible for executing housing projects for low income earners [40-54]. HUDC seeks to enable people from low income groups to access adequate shelter, and have established comprehensive housing policies and partnerships with the private sector. Over the last four decades, HUDC has implemented 185 residential projects, with more than 42,000 housing units. These housing projects took place based upon contemporary economic and residential standards. Economically, HUDC provides housing for its clients based on minimum monthly payments. Currently, there is an increasing desire to understand how people view their dwelling place, and how it affects their lives [55-74]. In the U.K. and U.S.A., governments conduct regular evaluation programs to assess housing quality, in order to ensure that households are satisfied with the provision of housing and services. Housing is a pivotal factor in sustainable urban development, and has become one of the main critical issues in developing world cities, including cities in Jordan. Therefore, evaluating the domain of low income housing acts as a mirror for the ability of planning and housing authorities to guide housing policies. Such an evaluation would contribute greatly to a better understanding of low income housing situations [75-86].

2.0 LITERATURE REVIEW

In this study, Satisfaction with low income housing is not measured by only one discipline. Planners architects, psychologists, geographers and economists have all addressed the issue of residential satisfaction. A range of studies from different disciplines has resulted in different emphases to describe residential satisfaction. The Theory of Place in environmental psychology defines residential satisfaction as the experience of pleasure stemmed from living in a specific place consider satisfaction as a state in which a person's needs are met [1-23]. Residential satisfaction is a core component when assessing quality of life, and satisfaction with one's dwelling is a source of stability in a neighborhood. Dissatisfaction encourages residents to leave the neighborhood, particularly when they know that alternative opportunities are available and affordable. Therefore, understanding residential satisfaction can play an important role in developing successful housing policies. The gap between actual and desired situations often represents the degree of satisfaction with housing. When the gap is narrow, people tend to be more satisfied with their housing conditions. Conversely, when the gap is wider, people tend to be dissatisfied with their housing conditions [87-92]. Residents usually make judgments about housing situations based on their needs and aspirations. Needs and aspirations are changeable; they do not occur separately, but are associated with social, economic, political and environmental changes. This means that the degree of satisfaction with housing can vary from one time to another and from one place to another [14-29]. Researcher argues that progress in a life cycle leads to changing needs and aspirations for individual households. When evaluating residential satisfaction, two dimensions should be taken into account. The first dimension takes existing housing features into account, in terms of floor area, the arrangement of internal rooms, residential setbacks, domestic utilities, the material used for construction, and the standards of finishing. Satisfaction with housing features denotes that the resident considers the size of the accommodation to be sufficient and that the amenities are satisfactory [30-41]. Satisfaction with housing features is very significant in terms of lifestyle, because it influences the performance of dwellers within their local environment. The second dimension represents the neighborhood characteristics. Satisfaction with neighborhood characteristics implies that the resident considers that the neighborhood has good quality services. Services can be divided into physical and social. Physical services include road networks, electricity supply, water supply, drainage and sewerage systems. Social facilities include waste removal services, health facilities, education services, shopping areas, transport facilities, provision of children's' playgrounds, parking, and worship services [42-53]. Services play an important role in stability, and have a positive impact on housing development and economic activity. Their availability also offers opportunities to expand the number of houses provided. According to other researcher, once the objective attributes of housing and neighborhood characteristics have been assessed, they become subjective; however, they can be analyzed in terms of degree of satisfaction felt by the householders. Several researchers, argue that subjective attributes are influenced by a subject's socio- demographic characteristics and residential quality pattern, a normative component whereby an individual compares their real, existing residential environment to an ideal environment [54-67]. Thus, socio-economic and demographic characteristics are considered in the model illustrated in Figure 1. Housing researchers often use a five point scale to measure the variables of housing and neighborhood characteristics. The scale is comprised of five categories, whereby 1 represents very dissatisfied, 2: dissatisfied, 3: average, 4: satisfied and 5: very satisfied. Housing features include living area, kitchen area, dining room area, bedroom area, room arrangement, residential setbacks, provision of water line for housing units, garbage line for housing unit, windows, external doors, internal doors, painting, lighting, building materials and garden. Neighborhood features include physical services such as the road network, drainage system, sewerage system and water supply; and social services including waste collection, health services, education amentias, public transport, shopping areas, places of worship, children's' playgrounds, parking, police, fire brigade and street lighting. Based on) accurate determination of the degree of satisfaction requires the use of the satisfaction index: Very low = 20–39; Low= 40–59; Moderate = 60–79; High = 80–100. When evaluating residential satisfaction, two dimensions should be taken into account [68-76]. The first dimension takes existing housing features into account, in terms of floor area, the arrangement of internal rooms, residential setbacks, domestic utilities, the material used for construction, and the standards of finishing. Satisfaction with housing features denotes that the resident considers the size of the accommodation to be sufficient and that the amenities are satisfactory. Satisfaction with housing features is very significant in terms of lifestyle, because it influences the performance of dwellers within their local environment [77-84]. The second dimension represents the neighborhood characteristics. Satisfaction with neighborhood characteristics implies that the resident considers that the neighborhood has good quality services. Services can be divided into physical and social. Physical services include road networks, electricity supply, water supply, drainage and sewerage

systems. Social facilities include waste removal services, health facilities, education services, shopping areas, transport facilities, provision of children's' playgrounds, parking, and worship services. Services play an important role in stability, and have a positive impact on housing development and economic activity [85-92]. Their availability also offers opportunities to expand the number of houses provided. The mathematical expression of this index is determined by the following formula: Index = $\sum (N \times A)/ \sum (N \times M) \times 100$. Where N represents the number of respondents, A represents the actual score for the respondent, and M represents the maximum possible score that a respondent could give any variable on the five-point scale; that is, 5.

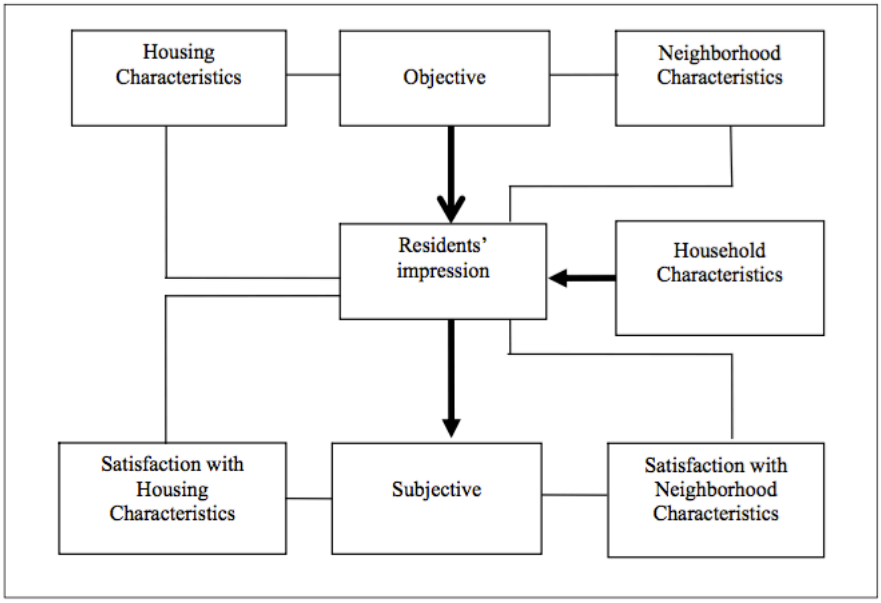

Figure 1: Relationship between objective and subjective attributes of a residential environment

3.0 METHODOLOGY

A cross sectional survey methodology was considered the most appropriate data collection approach for this paper. The research population for the study are the inhabitants of the housing units developed by HUDC in Salt. Low income housing in Salt is comprised of a wide range of housing styles (type, area, level) and services, with a total number of 252 housing units [1-24]. Furthermore, the satisfaction of inhabitants with their housing in this region has not been investigated previously. A questionnaire was used as the main method of data collection; 252 questionnaires were personally distributed by a small team of trained research assistants during January 2014 and March 2014, of which 174 were considered as useable, yielding a response rate of 69%. Reliability was tested through the "Alpha" test, and all scales used in the questionnaire were considered reliable [25-36]. The recommended minimum acceptable level of reliability "alpha" is 0.60, according to the criteria established. The average results of Cronbach's "alpha" was higher than the minimum level of this test. Descriptive statistics in terms of means and frequency were used to describe the respondents' characteristics. Factor analysis was used to answer the research questions. Finally, the principal components of factors affecting residential satisfaction were identified using factor analysis. According to researchers, factor analysis has several advantages including the reduction of number of variables, by combining a set of variables into a single factor, and determination of groups of inter- related variables, to understand how they are related to each other [37-52]. In addition, numerous studies in relation to residential satisfaction have been used factor analysis.

4.0 RESULT

In The This section deals with findings stemming from statistical analysis of the data, including individual characteristics for the respondents, the residential environment, the type of housing, the neighborhood and all other factors affecting the level of residential satisfaction. Assessing residential satisfaction requires an understanding of the socio-economic characteristics of dwellers. Such characteristics have an important role in formulating housing policies. Based on table 1, findings reveal that there is a variation among dwellers [53-74]. The average household size is estimated to be 5.4

members; mean occupant's age is 48.35 years; the overall ratio of males to females is 103/ 100; the average occupant's educational level is determined to be 20% for primary, 52% for secondary and 28% for undergraduate; occupational category for householders is distributed at 68% public sector, 21.6% private sector and 10.4% are categorized as "informal sector" (i.e. jobs that do not provide social security and/ or medical insurance); the average household income is estimated to be JD 5,758.00 per year (i.e., U.S.$8,133.00) [75-86].

Table 1
Characteristics of Respondents

Variables	Average and percent
Household size	5.4 members
Occupant's age	48.35 years
Ratio of males to females	103/ 100
Education	52% for secondary 28% for undergraduate
Occupational category	68% public sector 21.6% private sector 10.4% informal sector
Household income	5,758.00 per year

Empirical findings reveal that the overall degree of resident satisfaction with the residential environment (including both housing and neighborhood characteristics, which together consist of 30 variables), is 64%, which is categorized as "moderate". (See Tables 2 and 3). These results tend to support the work, which determined that the overall residential satisfaction for the residential environment in Kuala Lumpur, the capital of Malaysia, is moderate. They also agree with empirical work in Libya, which also determined the overall level of resident satisfaction with the residential environment was moderate. Finally, the research in Amman, the capital city of Jordan, also agrees with these results [87-92].

Table 2
Resident Satisfaction with Dwelling Features

Dwelling Features	Mean	S.D.	Average	Result
Living Area	3.48	1.142	69.6	Moderate
Kitchen Area	3.57	2.667	71.4	Moderate
Dining Area	3.21	1.047	64.2	Moderate
Bedroom Area	3.29	2.986	65.8	Moderate
Room Arrangement	3.72	1.023	74.4	Moderate
Residential Setback	3.87	1.053	77.4	Moderate
Water Supply	3.76	2.784	75.2	Moderate
Garbage Removal	3.61	2.934	72.2	Moderate
Windows	3.43	1.041	68.6	Moderate
External Doors	2.76	1.063	55.2	Low
Internal Doors	2.81	2.957	56.2	Low
Painting	2.88	1.145	57.6	Low
Lighting	3.42	1.033	68.4	Moderate
Building Materials	2.51	1.101	50.2	Low
Garden	3.14	1.249	62.8	Moderate
Total	**3.30**	**2.015**	**66.0**	**Moderate**

Table 2 shows that the residents in the study area were generally satisfied with their dwelling units. Analysis determined mean scores of 3.30 out of 5, with a value of 66%; this can be described as "moderate" satisfaction for housing characteristics. According to Table 2, residential setbacks, room arrangement, together with quality of the water line and garbage line, were rated highly by recent homeowners [1-24]. These results suggest that HUDC is very interested in improving the basic infrastructure of housing projects for low income people, which is closely related to the residential environment. Residential setbacks are seen as the most important factor which positively affects

resident satisfaction in the study area. Table 2 shows that residential setbacks have the highest mean (3.87); the key purpose of residential setbacks is to ensure the principle of privacy between houses, (which is highly appreciated in the general Jordanian community), by enforcing accepted minimum standards. One of the main characteristics of a housing unit is the floor area [17-36]. Residents were moderately satisfied with the internal space of the housing units, including living area, kitchen area, dining area, and bedroom area. These results suggest that dwellings meet household requirements. The floor area is relatively appropriate for an average family, determined to be 5.4 members per housing unit [37-51].

Table 3
Residents' satisfaction with neighborhood services

Facilities	Mean	S.D	Value	Result
Social Services				
Solid waste collection	3.32	1.014	66.4	Moderate
Health services	3.76	2.745	75.2	Moderate
Education amenities	3.91	2.821	78.2	Moderate
Public transport	2.81	1.245	56.2	Low
Shopping areas	2.57	1.105	51.4	Low
Places of worship	3.37	2.945	67.4	Moderate
Children's playground	2.46	1.345	49.2	Low
Parking	3.29	2.731	65.8	Moderate
Police	3.31	2.836	66.2	Moderate
Fire brigade	3.54	2.879	70.8	Moderate
Street lighting	3.28	2.641	65.6	Moderate
Total of Social Services	**3.24**	**2.359**	**64.8**	**Moderate**
Physical Services				
Road network	2.34	2.944	46.8	Low
Drainage system	2.43	2.829	48.6	Low
Sewerage system	2.35	2.811	47.0	Low
Water supply	2.54	2.769	50.8	Low
Total of Physical Services	**2.42**	**2.746**	**48.3**	**Low**
Total of Social & Physical Services	**3.02**	**2.387**	**60.4**	**Moderate**

Findings reveal that respondents were moderately satisfied with windows, lighting and garden area. Residential satisfaction with these elements illustrates that HUDC is concerned with ensuring the desired level of design for low income households. Residents were dissatisfied with four housing features, including external doors, internal doors, painting and building materials. The level of satisfaction for these features is closely related to their quality [52-74]. For example, external doors are often made from iron in Jordan, to provide higher security; in the study area, all external doors were made from wood, which is cheaper than iron. Building materials achieved the lowest mean (2.51) with a value of 50.2%; this can be described as low. The overall level of residents' satisfaction with neighborhood characteristics has a value of 60.4%; this is deemed as moderate. This result tends to support the proposition of work that public housing satisfies its residents because it is better supplied with services. Neighborhood characteristics can be classified into social services and physical services; although there is a considerable variation between these services, social services tend to be better than physical services [75-83]. This finding agrees with some studies in Turkey, where social services also performed better than physical services. Eleven separate social services were identified in the study; collectively they tend to be moderate, with a total value of 64.8% (See Table 3). Others, found that most social amenities in Kuala Lumpur, Malaysia are also identified as moderate. Reserchers established that the level of social services in low to middle income housing in Amman, Jordan is also moderate. Respondents were asked to state their level of satisfaction with waste collection. Table 3 illustrates that, with a mean score of 3.30 and a total value of 66.4%, respondents were moderately satisfied with waste services. [84-92] This reveals that waste services are relatively adequate, and that municipal waste collection services clearly impact on household satisfaction. Health services in Salt are provided by the Ministry of Health. Table 3 also demonstrates that respondents are moderately satisfied with health services. Other projects argue that satisfaction with health facilities is related to quality, location and cost; however, the number of facilities available relative to the population should also be

considered [1-17]. There is growing proof that the perceived quality of health care facilities has a relatively greater impact on resident satisfaction than access and cost. An investigation of the number of health facilities available in Salt reveals that adequate health facilities are available for the population; by and large, access to medical facilities in the governorate is easy [18-33]. However, it must also be noted that Jordan pays special attention to the provision of free medical care in governmental health centers. Table 3 indicates that respondents are moderately satisfied with education facilities [34-56]. Resident satisfaction with education facilities may be related to the location of schools, which are relatively well distributed within the study area. The empirical findings of projects establish that the level of satisfaction with education facilities is closely related to their location; thus, resident satisfaction can vary over time if services and/or dwellings are relocated. It should be noted that the Jordan government provides free school facilities in the study area; elementary schools are usually the first to be provided with public housing units [78-92].

5.0 CONCLUSIONS

This study has determined criteria to evaluate the factors that have impact on resident satisfaction for the housing units developed by HUDC. The level of satisfaction with the overall residential environment, including housing features and neighborhood characteristics, is moderate. Nevertheless, this level varies from one variable to another in both housing features and neighborhood characteristics. For example, while the overall level of satisfaction with social services tends to be moderate, satisfaction with respect to physical infrastructure is low. This challenge influences both the quality of the built environment and quality of life of residents. Factors which determine residents' needs and expectations are very influential in attempts to establish the overall level of residential satisfaction of low income housing. The principle factors which determine residential satisfaction with housing features are privacy (i.e. residential setbacks, rooms arrangement and presence of a garden) and the floor area of the housing unit. Factors which determine residential satisfaction with neighborhood characteristics are basic social facilities (i.e. waste collection, education services, health amenities and places of worship) and security and safety. Based on the findings of this study, HUDC should reassess the building materials that are used to construct public housing. In addition, attention should be played to improving physical services in the neighborhoods. These efforts should be accompanied by monitoring of government for low income housing programs to ensure that the needs of residents are met. The suitability of housing standards, living environment, and service provision are key elements which must be present for housing programs to be successful. Therefore, urban housing policies in which regulate housing developments must take the above into consideration, by concentrating on the issues of physical infrastructure, transport, design and building materials in order to meet the needs of low-income residents. In conclusion, legitimate attempts to improve low income housing areas should result in improving the overall satisfaction. This paper investigates residential satisfaction from two vital different perspectives: housing features and neighborhood characteristics. Further research into these two areas could improve knowledge and understanding of residential satisfaction, which is believed to be important for the development of more effective housing strategies related to low income housing development. Further research should focus on examining these areas in other Arab cities in the Middle East, where comparative research enriches the knowledge.

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