

Illegal Housing in Jordan

Jamal Ahmad Alnsour *

ABSTRACT

This study aims at understanding the phenomenon of illegal housing in Jordan. A mixed methods approach, which combines quantitative and qualitative methodologies, was used to satisfy the study objectives. Data was collected using a valid questionnaire and face-to-face open interviews with households who live in Al-Salt city, based in Wadi Al-Akrad district. Results showed that people sought to have home-ownership rather than housing itself. While economic motives (i.e. closeness to work, job opportunities, low income, cheap rental, low land prices, low cost of construction and irregular financial sources) are the most important motives in making people to live in illegal housing. Social motives (i.e. health, education and marketing services) were found to be less important than economic conditions and cultural motives (i.e. kinship ties, habits and familiarity with area) were less important than social motives. Findings revealed that the illegal housing is a joint decision among different actors including households, neighbours, unskilled workers and master mason. The process of construction took place at short time, limited spaces and unsystematic vertical pattern. This paper suggests that urban renewal approach is an effective way to improve current illegal housing. This can be achieved by the cooperation between local municipality and government, the partnership between local residents and civil society organizations and raising public awareness of significance of urban renewal.

Keywords: Illegal Housing; Construction; Urban Planning; Al-Salt.

INTRODUCTION

In developing countries, many people live in illegal housing (Potter and Lloyd-Evans, 1998: 137). Illegal housing provides shelter for as much as 86% of a city's population in the third world (Sliuzas, 2003: 614). In Jordan, the illegal houses, which were built without construction permits in urban areas, comprise more than half the urban building stock, i.e. where the poorest are located (Jaber and Probert, 2001). Illegal housing is what is built without compliance with planning regulations and residential standards (Alnsour & Meaton, 2009).

Fekade (2000) considers illegal housing to be the illegal occupation of land with non-adherence to building regulations and planning standards. Wu and Webster (2000) argue that in illegal housing people often build what they want, where they want and at the density they want. The inability of local and national governments in developing countries to meet high rates of population growth and urbanization has contributed rapidly to widespread of illegal housing (Sliuzas, 2003).

The review of the literature on illegal housing indicates that little attention has been paid to understand such a phenomenon. Rakodi (2001: 214) encouraged "...attempts to improve the understanding and analysis of the inter-related components of the urban development process in order to arrive at more appropriate priorities and sets of policies." In 2006, Rakodi again states "...more attention needs to be given to the ways in which people organize their lives, engage in social and economic relationships, organize space and

* Head of Regional Planning Department, Faculty of Planning & Management, Al-Balqa Applied University, Al-Salt, Jordan.

Received on 9/1/2011 and Accepted for Publication on 21/6/2011.

produce places at the local level.” (316). Gilbert (1990) notes that there is a gap in research concerning the understanding of illegal housing. Fernandes and Varley (1998) recommends that a “few studies have asked why their housing is illegal, why it matters that it is illegal, or what should be done about it.” (3). Few et al. (2004) recommends that researchers should support policy makers in terms of understanding illegal housing in cities by accurately identifying it and also looking at the application of housing strategies in developing countries. Tipple (2000) recommends that illegal housing in developing countries needs more empirical studies focusing on housing politics and behaviors of both people and government in order to gain a better understanding about this phenomenon. Fekade (2000) argues that, so far, there is no one model demonstrating illegal housing in a comprehensive perspective.

Therefore, this paper is important in two distinct ways.

- It influences planning practices through the benefit from its empirical findings since planning practices can be put on place in order to manage illegal housing quickly and successfully.
- It addresses how understanding illegal housing

can improve the knowledge and generates a new agenda for further research.

The continuous challenges in Jordan justify the need to understand the process of illegal housing. If left unchecked, it may threaten the sustainable environment of urban areas in the long term. However, very little attention has been given to this problem in Jordan.

Theoretical Model

Illegal housing does not exist independently but rather coexists with driving forces, decision, process and pattern (Alnsour, 2006; kombe, 2005; Tipple, 2000; Fekade, 2000). As illustrated in Figure 1, understanding illegal housing can be summarized as four interweaving levels: driving forces, decision, process and pattern. Driving forces are the level proven to be the most influential factor of illegal housing on the macro scale. These include social-economic motives. Pattern is the lowest level, which is a directly observable outcome whether vertical or horizontal. Process indicates the space and time dynamics of illegal housing. Decision indicates the actions of the actors involved in illegal housing.

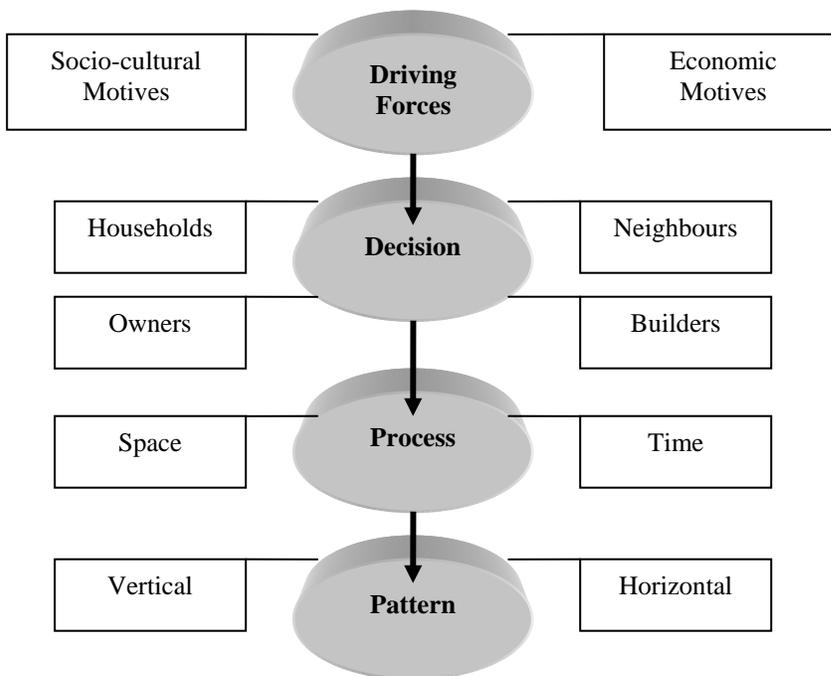


Fig.1: Elements of illegal construction

Driving forces

There is a set of socio-economic factors that play an important role in emphasising illegal housing. These factors include population growth, poverty, income level, urban land prices, finance, urban services and cultural convergence. Each factor has a certain role in influencing illegal construction. Normally, these factors influence illegal housing in different degrees, since the density and the speed of spread of illegal housing can vary from one place to another and from one time to another.

○ Population growth

In Jordan, the total population size is 5.600.000 inhabitants with the vast majority roughly 82.6% living in urban areas (Department of Statistics, 2007). Such a highly urbanized population places immense pressures on housing provision. Despite the extremely limited natural and economic resources in Jordan, it had absorbed large waves of Palestinian refugees over the past five decades as a result of the wars in 1948 and 1967. According to Jaber and Probert (2001), the number of Palestinian refugees in Jordan exceeds 1.5 million. With increasing population growth of over 2.8% annually (Department of Statistics, 2007), the combined impacts of forced migration of Palestinian people and rural urban migration have created dramatic spatial challenges (El-Ghul, 1983). High population growth is a basic motive for rising demand for space. At the same time, when the population growth becomes small it is expected that demand for space will also be low. Under these demographic conditions and poverty, people often tend to illegal housing.

○ Poverty and Low Income

The urban poor in the Arab countries face considerable challenges in obtaining adequate shelter and basic services (El-Ghannam, 2001). Urban poverty is a multidimensional phenomenon where the poor suffering from different deprivations such as, housing, services, infrastructure, unemployment and the lack of access to health and education facilities (El-Ghul, 1983). In Jordan, the poverty ratio is 14.2% (Department of Statistics, 2007). Growing such ratio has been

characterized by three fundamental manifestations: it is large in number; it increases the inequality in urban areas; a large part of the new urban poor is without jobs. This reflects a fundamental change in Jordan economics and the pattern of urban growth. As a result, urban poverty has resulted in an increased illegal housing as it is cheaper as compared with illegal housing (Hall and Pfeiffer, 2000).

The proportion of low income households (i.e. \$2542-5084 annually) represents approximately 45% of the total households in Jordan (Al-Homoud, 2009, P. 235). However, rising house prices, increasing costs of land prices and building materials are not balanced with income levels in Jordan (Alnsour and Meaton, 2009). Most people are unable to purchase or rent dwellings from the private sector because of their high prices. Low income people will, therefore, never be able to find housing without increasing their own incomes at a faster rate than the increase in house prices (Ha, 2004). Moreover, once a household falls into the low-income group, it becomes increasingly difficult to access planned locations (Ha, 2004). These people are, therefore, forced into illegal construction. Indeed, the lower income housing areas in most cities are a major influence on urban form and character.

○ Urban land prices

Land has economic, historic and social values (El Araby, 2003). "Prices for land and property refer either to the amount sought (asking prices) or the sum received (prices paid)." (Adams, 1994, p.18). Many factors influence land prices, such as location, size, accessibility, services, transport costs and demand for housing (El Araby, 2003). Subsequently, the demand for land is derived from the demand for building, including residential construction (El Araby, 2003). The escalating demand for housing will lead to an increased demand for land and, subsequently, increased prices of the land. There are several factors affecting demand for housing such as income, population growth, urbanization rates, economic growth and land productivity (Alnsour, 2006).

One of the factors affecting illegal housing is the prevalence of speculation in urban land. The extent of

speculation depends on the national economy (Alnsour, 2006). If the national economy is strong, there are many varied opportunities for investment. However, when the economy suffers stagnation or inflation, urban land becomes one of the more attractive, stable and reliable opportunities (Fekade, 2000). However, speculators often hoard plots of urban land and create artificial inflation so that prices rise. Land, therefore, becomes less and less accessible to low income urban dwellers (Fekade, 2000). As a result, low income dwellers are forced to move into illegal housing, where land prices are cheaper.

○ **Finance**

According to Al-Homoud (2009, p.235) the sources of housing finance in Jordan can be classified as follows:

1. Private financing by commercial and Islamic banks and some private financial institutions. This source has financed about 18% of the housing units annually.
2. Public financing and loans provided by the Housing and Urban Development Corporation (HUDC).
3. Individual financing through savings, property selling, and money transfers from abroad; this source contributes about 48% of annual housing financing.
4. Irregular financing through borrowing from family members, relatives, small-business and construction material traders, that makes up roughly 34% of annual housing financing.

An estimated study shows that from 75% to 90% of all new housing is built outside the official land development much of it incrementally in developing countries (Ferguson and Haider, 2000, p.4). The weakness of mortgage finance systems has created obstacles for many people to buy residential plots or houses and has resulted in poor quality home construction and neighborhood environments (Datta and Jones, 2001). Roston and Durand-Lasserve (2002) observe that both public and private formal land and housing provision systems are unable to respond to the needs of the poor. Irregular finance fits the expanding illegal construction process used by the low-income majority.

○ **Urban services**

Services refer to a wide variety of facilities that influence the decision of people to buy land and build a house (El-Ghul, 1983). Services can be divided into social and physical facilities. Physical facilities include road and streets maintenance, electricity power supply, water supply, drainage system and sewerage system. Social facilities include solid waste services, health facilities, education services, shopping areas, transport facilities, post office services, banks, cemeteries and worship services. Services have a positive impact on illegal housing development, whereas their availability offers opportunities to expand the illegal housing. However, the level of services is often related to the level of compliance with residential regulations and planning standards.

○ **Cultural Convergence**

Culture is not only a set of people's ideas, beliefs, values, norms, customs, and behaviors but also the design and forms of built environment (Alnsour and Meaton, 2009). Individuals' habits and values can influence, by positive or negative rewards, the legality of housing. People's choice of a certain housing unit is guided by the desired neighborhood and restricted by income (El-Ghannam, 2001). In this paper, the concept of culture refers to the role of kinship ties and friendship relationships in facilitating the process of illegal construction.

Decision

Individuals' decisions in using urban land such as households, neighbours and builders have important implications for urban growth spatially and economically (Meaton and Alnsour, 2006). Their decisions with regard to illegal construction lead to changes in land use pattern. The urban spatial structure, in particular, is a direct outcome of urban housing and growth, and then the individuals' decisions (Meaton and Alnsour, 2006). The multiple decision-makers may change spatial systems and generate new patterns of spatial organization.

Process

Illegal housing is a series of spatial actions that occur over time. Landis and Zhang (2000) define spatial processes as those uses at one location which influence or are influenced by activities at another location. The temporal process can be seen only through its consequences (Laugran, 1992). It refers to the speed of spread of illegal housing. The interaction between driving forces and individuals' decisions in using land illegally results in an increased illegal residential space over time.

Pattern

Pattern is closely related to the way in which illegal housing is arranged overtime whether horizontally or vertically. In developing countries, authors (e.g. Kombe, 2005; Fekade, 2000; Tipple, 2000) demonstrate the pattern of illegal housing. They find that both horizontal and vertical patterns prevailed in developing countries. Pattern is a relative concept depends on the elements that

contribute to the phenomenon of illegal housing. It can be seen as the image of illegal housing itself (i.e. the final picture that represents the form of the settlement) or through the comparison between the patterns of legal and illegal housing. Clearly, pattern is important where development planning is about imposing patterns on a geographical area.

A brief on the Study Area

Al-Salt city has a population of around 110000 inhabitants and comprises approximately 80 KM² (Department of Statistics, Census, 2004). Al-Salt is a relatively short journey from Amman along the 30 KM motorway. It consists of twelve districts. Wadi Al-Akrad lies north-west of Al-Salt city (Fig: 2). It is a small settlement with 693 housing units (Department of Statistics, Census, 2004). Wadi Al-Akrad has a vital location since it very close to the administrative and commercial activities.

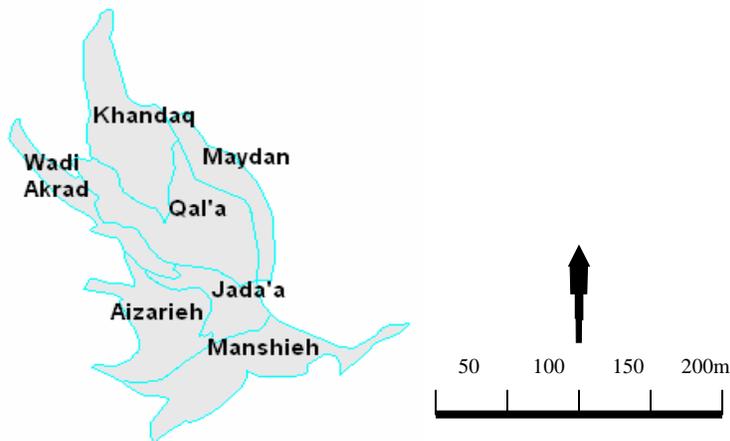


Fig. 2 Study Area

Research Methodology

A mixed methods approach which includes quantitative and qualitative methodologies (Creswell, 2003) is seen as an appropriate method to satisfy paper objectives. The statistical frame of this research is defined as all housing units existed in Wadi Al-Akrad

which equal of 693 housing units (Department of Statistics, Census, 2004). These 693 housing units were targeted.

Data were collected by a valid questionnaire and face-to-face open interviews with households who live in Wadi-Al-Akrad. The questionnaire was distributed by

a number of students from the Department of Regional Planning at Al-Balqa Applied University. According to Punch (2005), using social groups (i.e. students) to help handle the questionnaire is a common approach in social sciences. Of 693 questionnaires 487 were returned as a usable yielding a 70% response rate. However, the questionnaire was pre-tested with experts and academics to assure reliability and validity issues.

Besides the questionnaire, thirty face-to-face open interviews were conducted by the researcher with different households. The main purpose of these interviews was to obtain more detailed information in order to have a better understanding about the way in which people erected their houses.

Descriptive statistics in terms of frequencies, means, standard deviations, and ranks were used to achieve the research objectives and to determine the sample characteristic but, more specifically, to analyze and interpret the findings of descriptive statistics analysis for the research variables.

Results & Discussion

The aim of this paper is to understand illegal dwelling. The next sub-sections present the elements related to illegal construction.

Sample characteristics

The socio-economic and demographic characteristics of respondents are used by policy makers when building urban strategies. The dwellers in the illegal housing units surveyed in this study were clearly varied. The survey results show that the average of household size within the study area is 5.7 persons. This is very close to the average estimated by the Department of Statistics in 2007 of 5.4 members per household in Jordan. This relatively high average is related to the high fertility rates in the study area. The findings show that the sex structure is generally balanced, where 51.5% of the total households is male and 49.5% is female. The majority of the surveyed householders were in the age range 40-59 years old, and most of them are males. Findings reveal that the highest proportion (52%) of all householders in

the study area is secondary educated, 16 % having upper secondary and university degree, 30% having primary school and 2% without any educational level. These results suggest that most respondents had achieved reasonable levels of education. This should equip them with the ability to discuss their problems and to give clear opinions about their properties. In assessing household income, results show that the average household income per month is JD487 (\$688), which is very low.

Access to Wadi Al-Akrad

Empirical findings show that access to illegal housing is through two major ways: ownership and rental. Results show that 65.3% of households were found to be owners and 34.7% tenants. These results suggest that ownership should not be seen as only shelter needs. The key objective may be access to home-ownership rather than housing itself. This is because ownership is a basis of stability for individuals and allows people to do more activities like rental. It can be concluded, also, that most respondents have land for construction.

Ownership in Wadi-Al-Akrad is acquired in several ways:

1. The purchase of land and then building on it.
2. The purchase of the housing unit itself.
3. Inheritance.

The most important way in which homeowners acquired their properties bought a plot and then constructed on it. This fact is confirmed by 70% of home owners. However, 14% acquired the property through buying existing housing units and 16% by inheritance. These three methods of acquiring property are distinguished by the fact that they involve a number of different actors including sellers and intermediaries. These results reveal two issues.

- Land purchase for the purpose of constructing a dwelling is a common way for individuals in Jordan to acquire a home. This suggests that land is more readily available than housing units.

▪ Land purchase indicates that the respondents preferred desired constructing their houses in the way and time they want, rather than purchasing ready made dwelling units.

Rental is another way of accessing illegal housing. The proportion of tenants (34.7%) indicates that the city has attracted low-income households looking for cheap accommodation and job opportunities. In addition, migration movement by the owners from Al-Salt into Amman, on one hand, and the availability of low cost living accommodation in Wadi Al-Akrad on the other,

makes it more attractive for tenants. The early literature suggests that the selection of illegal urban areas as a place to live is part of a series of events that brought people from non-urban areas to inner city rental housing (Datta and Jones, 2001).

Reasons for Living in Wadi Al-Akrad

Table 1 shows three groups of factors, including economic factors, services and cultural conditions, which encourage people to live in Wadi Al-Akrad.

Table 1: Reasons for living in Wadi Al-Akrad

Reasons for living in Wadi Al-Akrad	Max	No.	Mean	Rank	Std. D	
	Min					
Group 1: Economic Factors						
1. Closeness to work	5	1	487	3.95	01	0.803
2. Job opportunities	5	1	487	3.84	02	0.817
3. Low income	5	1	487	3.78	03	0.540
4. Sources of finance	5	1	487	3.65	04	0.967
5. The cost of house	5	1	487	3.58	05	0.563
Group 2: Services						
6. Health centres	5	1	487	3.54	06	0.829
7. Schools	5	1	487	3.45	07	0.514
8. Shopping areas	5	1	487	3.31	08	0.640
Group 3: Cultural Factors						
09. Similarity in behaviour and habits	5	1	487	2.95	09	0.931
10. Close to relative and friends	5	1	487	2.89	10	0.678
11. Familiar with area	5	1	487	2.81	11	0.765

• **Economic factors**

According to Table 1, economic factors include the place of work, the availability of job opportunities, low income, sources of finance and house costs. These were highly rated by recent dwellers in their choice compared with social and cultural factors. These results suggest that people are more interested in improving their economic conditions and that this influenced their choices of housing. Kaufman et al. (2003) find out that the individual decision to select the place is based on a comparison of pros at destination and cons at origin with various weights on each according to specific conditions.

☒ **Closeness to work**

Proximity to the work place is seen as the most important justification for living in the study area. Table 1 shows that proximity to the work place has the highest mean (3.95 out of 5) and the first rank. Distance to the work place as a reason for domicile reflects the spatial allocation of employment possibilities in the settlement. The decision to choose Wadi Al-Akrad is seen as part of a strategy to reduce financial burdens. As most respondents reported that their work is based in Aqabah, it is not surprising that place of work is the most important factor in selecting domicile. This concurs with

the empirical findings of Yapi-Diahou (1995) in which selection of place in cities clearly shows the impact of the location's economic activities on workers' residential practices. Soliman (1996) finds out that closeness to work was found to be the most important factor in affecting the decisions of people in living at illegal housing in Alexandria city in Egypt.

☒ **Job Opportunities**

Searching for job opportunities is considered the second economic motive to select the illegal house, with an average of 3.84 out of 5 and the second rank. This basically refers to the concentration of job opportunities in the central of Al-Salt compared with other surrounding areas. Job opportunities increase, since the settlement is very close to economic and administrative activities. In this context, Halla and Mang'waru (2004) argue that the existence of businesses can lead to increased immigration from rural to urban areas within developing countries. Shakur (1988) finds out that most immigrants came to urban centers due to the availability of job opportunities.

☒ **Low Income**

Low income is the third important factors for living in the study area. Table 1 shows that low income has the third rank with a mean of 3.78 out of 5. Low income groups often have difficulties to access legal housing (Ha, 2004). The literature on household income with respect to illegal housing supports these results in which illegal housing is often associated with low income (Thalman, 2003 and Fekade, 2000). Findings shown that the average of income is very low in Wadi Al-Akrad and, thus, households are unable to build in a legal manner unless their incomes rise at a faster rate than any increases in house and land prices. According to Singh et al. (1996), as a result of a lack of income, the urban poor face problems in accessing the appropriate urban environments. Timothy (1995) finds out that a high proportion of inhabitants in illegal housing areas are on very low incomes in developing countries.

Jordan's economy, which was one of the most promising in the Middle East in the 1970s, started experiencing some structural problems in the mid 1980s. The economic problems continued through the rest of the 1990s into the 2000s, orchestrated by political instability in the Middle East. The poor wages made it impossible for incomes to keep up with the rising cost of building materials and land. These factors had severe ramifications on housing production and affordability and the shortages and poor maintenance of existing stock continues unabated.

☒ **Sources of Finance**

Findings reveal that sources of finance play an important role in illegal housing process, with an average (3.65 out of 5) and the fourth rank. Illegal housing is affordable because it allows constructing in the wherever and whenever they want. Findings indicate that 84% of illegal homeowners built their dwellings based on savings from job, borrowing from family members and/or friends, small business, the sale of wife's jewellery and saving in irregular credit associations. In developing countries, housing finance often takes place through informal channels (Rakodi, 2001; Fekade, 2000; Baross, 1990). Although finance for housing is a central government policy issue, no one has loans from the government. Alnsour (2006) reports that the average government contribution to housing finance does not exceed 20% in Jordan. Sivam (2002) notes that formal channels of finance, including loans from banks and government, are not well used in developing countries. The lack of government support for housing finance resulted in greater levels of illegal housing. It seems that households in Wadi Al-Akrad are not too poor to save but their savings are small in scale and they face problems in obtaining formal finance from the governmental sector.

Besides the government's inability to offer finance for the people, only 16% of respondents loaned from banks. This suggests that most people have no tendency towards financing from commercial banks. This is because Islamic rules forbid dealing with interest (*Reba*).

In addition, the interest rates are relatively high in commercial banks. These rates do not provide appropriate finance to the people because incomes are low. In addition, the restrictions placed by banks, such as housing credit to be provided through warrantors and mortgage, make borrowing difficult. In many cases, people fail to achieve these conditions. Hence, the process of illegal housing in Wadi Al-Akrad normally occurs through household savings and other small finance sources which are mentioned earlier. Authors such as Sivam (2002), Pillay and Naude (2005), Sengupta (2006) and Fruet (2005) confirm that continuing illegal urban housing is strongly related to a lack of financial channels for mortgages.

☒ **The Cost of Construction**

The cost of construction is an important determinant for living in Wadi Al-Akrad with an average (3.58 out of 5) and has the fifth rank. Cost can vary from one house to another. Survey findings show that the cost of construction is ranged from JD10,000 (\$14,125) to JD30,000 (\$42,373). The cost of construction does not represent a house value because the price of the plot does not include the cost of construction.

Such cost advantages are not surprisingly given that illegal homeowners avoid the overhead charges and the different government fees that should be paid by the private developer. Moreover, the developer's profit and risk component of costs does not exist for irregular housing. Most significantly, the homeowner who uses the master mason can avoid the overhead, profits and loan costs which a general contractor would insure.

Observations made by the researcher during the fieldwork indicate that several procedures were undertaken in order to reduce the cost of construction. These procedures are summarized as follows:

1. There are no standards in finishes of house. This supports the findings of Tipple et al. (1998) who find that householders in Berekum at Ghana choose lower standards in finishes to reduce the cost.
2. Owners reduce the total cost through the work of the family itself in construction. Baross (1990) notes

that the self-help housing in developing countries is largely carried out by the household itself.

The costs can also be reduced through negotiations about the prices of building materials and the wages of workers.

- **Services**

According to table 1, the next group of factors is services that attract households to live in Wadi Al-Akrad. These services include health centers, schools and shopping areas. Health centers can be seen as the most important service for attracting people to live in Wadi Al-Akrad. Table 1 reveals that health centers have the highest mean (3.62 out of 5) in the second group (i.e. services), and the sixth rank.

Importantly, it should be noted that social factors were found to be less important than economic motives in selecting illegal housing. This shows that services including health centers, schools and shopping areas are more important than other services such as leisure areas, in choosing illegal housing.

- **Cultural Factors**

Cultural factors are the third group in table 1 that influences the choice of illegal housing. In this group, behavioral convergence was found to be the highest factor to affect selecting the place, with an average of 2.95 out of 5. Kaufman et al. (2003) argue that people choose the place based on their own individual characteristics and the extent of their match to varying combinations of local economic conditions. This suggests that individuals are more concerned with the ability to live with their relatives and/or friends. These results agree with the empirical findings of Shakur (1988) in which most of the people in squatters and camps in Dhaka are living within their relatives. Interestingly, cultural factors were found to be less important than economic and social considerations.

Construction Actors

The illegal homeowner or owner-builder, who manages the construction processes and executes the

whole building task with his family, is the most important actor in the construction process. In the case of Wadi Al-Akrad, the first step was found to be obtaining consent from neighbour(s) before building, where construction is illegal. Most of respondents (93.5%) asked their neighbours to allow them to construct. These results suggest that the consent of neighbour(s) is considered as permission for the building, rather than obtaining authorized permission from related authority.

The homeowner, after getting the go-ahead from close neighbours, starts to arrange construction with the master mason or (*muallim*) in Arabic language. Results show that 97,6% of homeowners had built their houses through arranging with their master mason directly and 2.4% built their dwellings themselves without a master mason. It is likely that these households had some skills in the construction process.

Interviews showed that the homeowner arranges personally with the master mason to undertake construction without permission from authorities and without legal contract. Many homeowners said there was no legal contract between them and the master mason. Master masons are well-known in the community. Sims (1990) found that a key characteristic of the homeowner in Jordan is his close relationship with the master mason or *muallim*. It can be concluded that homeowners do not prefer to have a legal contract with the master mason for two main reasons.

1. More flexibility in paying the money. The homeowner often pays the master mason and workers after long negotiations to reduce the price and if the householder has no money he can postpone the rest of the remaining payment.

2. More flexibility in time. This is considered an advantage to both the master mason and the homeowner. The master mason can be busy on more than one task to gain more profit and the homeowners can build depending on accumulative savings over time.

Construction Process

Construction process consists of a set of elements including approach, design, space and time.

1. Approach and Design

Interviews reveal that the illegal homeowner prepares building materials him/herself using family money and arranges their transport to the site, while the master mason and his workers perform the actual construction. Cement, iron, stone and bricks are the most commonly used materials in building. 43.4% of respondents used yellow and white stone in building their properties (Fig: 3). In general, stone is used as a popular structural component, while cement is used to fill in the space between acting as a type of concrete and insulation. The amount of cement used in construction is estimated by the master mason's experience, rather than engineering estimators. However, many houses were built using iron and brick.

Fig.3: Stone used in building



Interviews' findings show that construction begins building foundations followed by the ground floor which has to accommodate a large family. The floor space is divided into separate rooms. The importance is given to the reception area which is characteristically large to reflect the habits of hospitality. Rooms are big enough to accommodate the furniture. This fact is confirmed by 78.3% of respondents. However, 82% of respondents said that they had 4 and/or 5 rooms within the house. Spaces are required for the bathrooms and kitchens which are normally small or medium sized. 88.6% of respondents reported that they had no complete bathroom consisting of a bath or a shower and toilet in their houses. However, all houses were found to have kitchens as a separate unite within the house. A sitting room is often constructed in the heart of house which completely differs from the main reception room. Small balconies are usually built. Ventilation spaces between houses are not in existence and, thus, the amount of light received is limited and inadequate. No green spaces around the houses, and children often play in the street as a result (Fig: 4).



Fig.4: Construction approach in Wadi Al-Akrad

Internal doors are often constructed of wood. External doors are often iron because of their cheapness, and they ensure more security than wood. On the ground floor external windows are surrounded by iron rods in order to maintain security. Furthermore, all the surveyed houses were found to be supplied with electricity, water pipes and sewerage systems.

2. Space and Time

One of the main characteristics of illegal housing units is the area of dwelling. The survey results show that the housing unit area is ranged between 85m² and 350m². Attached housing, which is not allowed according building regulations, is the main feature of Wadi Al-Akrad. Attached housing that took place in an irregular way resulted in overcrowding. The majority of houses were built with full occupancy ratio to the plot without taking into consideration the ventilation spaces. The house area is relatively appropriate for family size which equals about 5.7 members per housing unit.

Interviews illustrate that the area of house is governed by various factors including the following:

- Plot area and shape.
- Cultural attitudes and habits can be seen as another motive for choosing the space of house.
- Religious beliefs play an important role in determining the space of house. Islamic rules require separation between males and females within a house.

Construction usually occurs over a number of time periods, relative to the availability of finance and the changing needs of the homeowners. In Wadi Al-Akrad, construction took place over two stages. The study findings reveal that 38 % of illegal housing units are built within one stage, and 72% are built within two stages. In contrast, in most developing countries such as Bangladesh, Ghana and Zimbabwe, construction of illegal housing occurred through four or five stages depending on available money until the housing unit is complete (Kombe, 2005; Tipple, 2000; Fekade, 2000). These results suggest that construction phases in Wadi Al-Akrad are relatively converted to the incremental development process.

There were cases in which the size of these extensions was equal to the initial area of the dwelling. Most extensions to the original dwellings were represented by adding additional areas on the roof. Results show that the average extension yields 72.3% of original area to the house in the first stage and 53.6% in the next stage. This suggests that the size of extension is relatively large and, in some cases, represents 100% of

the original house. The smallest area of extension was 50% of the original house area in the first stage and 32% in the second stage.

With respect to the timing of construction activities, results reveal that construction was taken place extensively between 1950s and 1980s. This fact is confirmed by 87.4% of respondents. The short period of time between 1950s and 1980s illustrates the speed of spread of illegal housing in Wadi Al-Akrad. The period between 1950s and 1980s can be seen as one when there was an extremely strong trend towards building. As a result, the space of construction over time within one or two stages means more illegal permanent housing in Wadi Al-Akrad.

Pattern of Construction

Findings reveal that vertical pattern was often taken place (Fig: 5). It seems to be that vertical pattern happens when the plot size is limited. In most cases, vertical pattern is cheaper than horizontal. These results agree with Kombe's argument (2005) in which both vertical and horizontal patterns of illegal housing are prevailing in developing countries. In Wadi Al-Akrad, the homeowner initially constructs two or three rooms horizontally and later on adds other rooms vertically after attaining sufficient financial resources. This agrees with theoretical argument by Fekade (2000) which describes the pattern of illegal housing as not growing consistently or systematically over time.



Fig. 5: Vertical Pattern of Construction

Concluding Remarks

This paper provides an initial step in improving the understanding of illegal housing in Al-Salt city based in Wadi Al-Akrad district. Illegal housing in Wadi Al-Akrad is supported through the desire of people to have ownership rather than the housing itself. The determinants of illegal construction can be ranked as closeness to work, job opportunities, low income, irregular finance, low cost of construction, availability of services and cultural convergence. These motives are widely provided opportunities for low income people to build illegally. Clearly, illegal housing played a critical role in economic growth as a key source of accommodation for lower income people. However, the space and time of construction were specified through the interactions of actors involved as home-owners, neighbours, builders and households. Due to differences in socio-economic conditions between people, the space of construction differs from one house to another; it also differs from one place to another, as well as varying from one time to another. Illegal housing in Wadi Al-Akrad is characterized by overcrowding, poor ventilation spaces, a lack of privacy, inadequate lighting and no green spaces around houses. However, vertical pattern took place randomly. Therefore, built environment tended to be more unsustainable. It is indicative of the desires and motivations of individuals who live their.

Practically, urban renewal can be seen as one of the most effective strategies for upgrading Wadi Al-Akrad. The objective is to transform the settlement under conditions of minimum relocation. This should begin by formal recognition of the actual challenges experienced by residents. The cooperation between local municipality and central government is an important step to achieve the process of urban renewal. Actually, the central government is concerned with emphasizing the social and economic impact of their plans on people's lives. The public and civil society organizations should be involved in this process. The partnership between local community and local municipality could help manage urban renewal of the settlement. However,

media coverage of the importance of urban renewal has an important role to play in raising public awareness.

For academics, it is important to examine illegal housing in other illegal areas in Jordan, where comparative research supports the knowledge extensively. However, academics should take into account the relationship between illegal housing and environment. Such studies will enhance planning

REFERENCES

- Adams, D. 1994. *Urban planning and the development process*. Biddles Ltd, Guilford and King's Lynn, England.
- Al-Hmoud, Majd. et al. 2009. The low-income housing market in Jordan. *International Journal of Housing Markets and Analysis*. 2(3):233-252.
- Alnsour, Jamal. 2006. *Planning and managing the built environment in the context of compliance with residential standards, Jordan*. Unpublished PhD Thesis. University of Huddersfield. Huddersfield: UK.
- Alnsour, Jamal & Meaton, Julia. 2009. Factors affecting compliance with residential standards in the City of Old Salt, Jordan. *Habitat International*. 33(4): 301-309.
- Baross, P. 1990. *Sequencing land development: the price implication of legal and illegal settlements growth*. In: P. Baross, and J. J. Van der Linden, eds, *The transformation of land supply systems in third world cities*: Avebury, 57-82.
- Cheng, Jianquan & Masser, Ian. 2003. Urban growth pattern modelling: a case study of Wuhan city, PR China. *Landscape and Urban Planning*. 62 (4): 199-217.
- Creswell, John. 1994. *Research design: Qualitative, quantitative and mixed methods approaches*. 1st ed. Thousand Oaks: Sage.
- Datta, Kavita & Gareth, A. Jones. 2001. Housing and finance in developing countries: invisible issues on research and policy agendas. *Habitat International*. 25 (2): 333-357.
- Department of Statistics. 2004. *Census of 2004*. Amman.
- Department of Statistics. 2007. *Population & Family Health Survey*. Amman.
- El Araby, Mostafa. 2003. The role of the state in managing urban land supply and prices in Egypt. *Habitat International*. 27 (3): 429-458.
- El-Ghannam, A. R. 2001. *Modernisation in Arab societies: the theoretical and analytical view*. United Arab Emirates University. 21 (11/12): 99-131.
- El-Ghul, Ali. 1983. *An evaluation of housing development in Jordanian society 1970-1980*. Unpublished PhD Thesis. University of Newcastle upon Tyne. Newcastle: UK.
- Fekade, Wubalem. 2000. Deficits of formal urban land management and informal responses under rapid urban growth: an international perspective. *Habitat International*. 24 (2): 127-150.
- Ferguson, B. & Haider, E. 2000. Mainstreaming micro-finance of housing. *Journal of the International Union for Housing Finance*. [On line] available at: <http://www.housingfinance.org/publications/housing-finance-international>
- Fernandes, E. and Varley, A. 1998. *Law, the city and citizenship in developing countries: An introduction*. In: E. Fernandes and A. Varley, eds, *Illegal cities: Law and urban change in developing countries*: Zed Books Ltd, 3-17.
- Few, Roger. et. al. 2004. Informal sub-division of residential and commercial buildings in Sao Paulo and Johannesburg: living conditions and policy implications. *Habitat International*. 30 (1): 427-442.
- Fruet, Maya Genoveva. 2005. The low-income housing cooperatives in Porto Alegre, Brazil: a state/community

- partnership. *Habitat International*. 29 (2): 303-324.
- Gilbert, A. 1990. *The costs and benefits of illegality and irregularity in the supply of land*. In: P. Baross, and J. Van der Linden, eds, *The transformation of land supply systems in third world cities*. Avebury. 17-63.
- Ha, Seong-Kyu. 2004. New shantytowns and the urban marginalized in Seoul Metropolitan Region. *Habitat International*. 28 (1): 123-141.
- Hall, P. & Pfeiffer, U. 2000 Urban future 21: A global Agenda for twenty-first century cities. London: Taylor & Francis group.
- Halla, Francos & Mang'waru, Walihi. 2004. Implications of landed and tied-up capital on urban development: the finished and unoccupied buildings of Dar es Salaam in Tanzania. *Habitat International*. 23 (3): 369-383.
- Jaber, O.J. & Probert, D.S. 2001. Energy demand, poverty and the urban environment in Jordan. *Applied Energy*. 68 (2) 119-134.
- Jordanian Central Bank. 2010. Annual Financial Report, Jordan.
- Kaufman, M. et al. 2003. *Immigration and urban development: Implications for Greater Cleveland*. Cleveland State University.
- Kim, K. H. 1997. Housing finance and urban infrastructure finance. *Urban studies*. 34 (10): 1597-1620.
- Kombe, Wilbard Jackson. 2005. Land use dynamics in peri-urban areas and their implications on the urban growth and form: the case of Dar es Salaam, Tanzania. *Habitat International*. 29 (1): 113-135.
- Landis, J.D. & Zhang, M. (2000) Using GIS to improve urban activity and forecasting models: three examples. In: Fotheringham, S. & Wegener, M., eds. *Spatial models and GIS: New potential and new models*: Taylor & Francis. 63-82.
- Langran, G. 1992. Time in geographic information systems. London: Taylor & Francis.
- Meaton, Julia & Alnsour, Jamal. 2006. Spatial and environmental challenges of urban housing development in Amman. A paper provided for Gulf First Urban Planning Conference and Exhibition held between 20/02/2006 and 22/02/2006, Kuwait.
- Pillay, A. and Naude, A.W. 2005. Financing low-income housing in South Africa: Borrower experiences and perceptions of banks, *Habitat International*. 30 (4): 872-885.
- Potter, B. R. and Lloyd-Evans, S. 1998. *The city in the developing world*. Addison Wesley Longman Limited, Edinburgh.
- Punch, Keith. 2005. *Introduction to social science: quantitative and qualitative approaches*. Sage, London.
- Rakodi, Carole. 2001. Forget planning, put politics first? Priorities for urban management in developing countries. *International Journal of Applied Earth Observation and Geoinformation*. 3 (3): 209-223.
- Rakodi, Carole. 2006. Relationships of power and place: The social construction of African cities. *Geoforum*. 37 (3): 312-317.
- Roston, L. & Durand-Lasserre, A. 2002. Holding their ground; secure land tenure for the urban poor in developing countries. London: Earthscan Ltd.
- Sengupta, Urmi. 2006. Government intervention and public-private partnerships in housing delivery in Kolkata. *Habitat International*. 30 (3): 448-461.
- Shakur, Tasleem. 1988. Implications for policy formulation towards sheltering the homeless: a case study of squatters in Dhaka, Bangladesh. *Habitat International*. 12 (2): 53-66.
- Sharma, Shalini. 2003. Persistence and stability in city growth. *Urban Economics*. 53: 300-320.
- Sims, David. 1990. Owner-builder housing in Jordan. *Habitat International*. 14 (1): 123-135.
- Singh, Abha Lakshmi. et al. (1996). Income, environment and health: A household level study of Aligarh City, India. *Habitat International*. 20 (1): 77-91.
- Sivam, Alpana. 2002. Constraints affecting the efficiency of the urban residential land market in developing countries: a case study of India. *Habitat International*. 26 (4): 523-537.
- Sliuzas, Richard. 2003. Opportunities for enhancing communication in settlement upgrading geographic information technology-based support tools. *Habitat International*. 27 (4): 613-628.
- Soliman, M. A. 1996. Legitimizing informal housing: accommodating low-income groups in Alexandria,

- Egypt. *Environment and Urbanization*. 8 (1): 183-184.
- Thalman, Philippe. 2003. 'House poor' or simply 'poor'? *Journal of Housing Economics*. 12 (4) 291-317.
- Timothy, H. 1995. Unplanned urban development: Spatial growth and typology of unplanned settlements, Dar es Salaam, Tanzania. Enschede: International Institute of Aerospace Survey and Earth Science, no.126.
- Tipple, G. 2000. *Extending themselves: User-initiated transformations of government-built housing in developing countries*. Liverpool University Press, Liverpool.
- Tipple, G. et al. 1998. Who is building what in urban Ghana? Housing supply in three towns. *Cities*. 15 (6): 399-416.
- Wu, F. and Webster, J. C. 2000. Simulating artificial cities in a GIS environment: urban growth under alternative regulations regimes. *Geographical information Science*. 14 (7): 625-648.
- Yapi-Diahou, A. 1995. The informal housing sector in the metropolis of Abidjan, Ivory Coast. *Environment and Urbanization*. 7 (2): 11-29.

)
(
()
()

.2011/6/21

2011/1/9