

Chapter Two

Place of Living and Residential Area

2. Place of Living and Residential Area

2.1 Housing Space

A widely used measure of living space is 'persons per room'. It is perhaps also the most commonly used measure of objective crowding, or 'social density'. Obviously there is a subjective aspect of crowding as well. The objective reality is mediated by feelings and subjective experience of the situation, which again impacts a person's well being. A felt lack of privacy and elevated stress may lead to other psychological costs and negatively influence the overall mental health of a person (Edwards et al. 1994). The Jordan MPHS did not contain subjective indicators of crowding. However, the survey enables us to report on more than one objective measure of density and relates these measures to a range of background factors. In addition to the 'persons per room' indicator, we shall use 'persons per sleeping room' and 'size of dwelling' in square meters (m^2). Furthermore, we will look at access to additional space such as gardening areas, balconies and roofs.

However, before we start reporting on living space, a brief note on the indicators used is necessary. Fieldworkers did not measure the size of a dwelling but simply recorded the information of the respondent(s). Not surprisingly, therefore, there is a strong tendency in the data that sizes are rounded to the nearest five and especially ten square meters, and many dwellings (14 percent) measure $100 m^2$. 'Space per person' is simply dwelling size divided by household size (and not taking into consideration the age of each household member). A 'room' is by the Jordan MPHS defined as an area not smaller than $4 m^2$, and excluding kitchens, toilets and bathrooms but including built-in verandas. 'Space per room' is the total dwelling size divided by the number of rooms in the dwelling, as just defined. This is not an accurate measure of the average size per room since the calculation also distributes the size of other living spaces such as kitchens, toilets, bathrooms, small hallways and storage areas on the rooms. However, as we shall see below it provides us with useful information. A 'sleeping room' is any room, as defined here, normally used to sleep in.

On the average, Jordanian households each have $115 m^2$ at their disposal. The median size of a dwelling is $100 m^2$, which is the same as found by the 1994 Census (DOS 1997, vol. 1:285). Moreover, a standard dwelling has four rooms, of which two are used for sleeping. The average size of apartments and dars does not differ. On the other hand, villas tend to be substantially larger than other dwellings, at the average al-

most 300 m². Owned houses tend to be larger than rented ones, at 126 *versus* 97 m². Dwellings in rural settings are marginally larger than urban dwellings, on the average 117 as compared with 114 m². There seems to be variation across governorates, with the largest dwellings being found in Karak and Amman, and the smallest dwellings being reported in Zarqa and Aqaba (Table 2.1) . With a few exceptions, notably Karak, Zarqa and Aqaba, the variation from the national mean is less than plus/minus 10 m², which is rather insignificant.

Distributing the living area over the number of people residing in a dwelling alter the picture significantly. The urban-rural divide is considerable, giving town and city people almost twice as much space as people residing in the countryside (20 *versus* 11 m²). The reason is the smaller family size found in urban areas (average of 5.8 members) as compared with rural areas (average of 6.3 members). The average dwelling space available per person in Amman is extremely high as compared with other governorates. Again this is related to the relatively small family size in Amman, at only 5.4 as compared with a national average of 5.7 and a high 6.6 in Mafraq governorate. While Karak houses are large, the average living space available to each person from Karak is average, or even at the lower side. Residents in apartments on the average have considerably more living space per person than people living in traditional dar housing, but much less space than villa dwellers, who have almost 50 m² per person at their disposal. There is no significant variation in space per person according to tenure.

Although not an accurate measure (it is overestimated), the survey indicates that room sizes on average are larger in villas and apartments than dars. Since apartments are predominant in urban areas this results in larger room sizes in urban localities as compared with rural localities, and above-average room sizes in the highly urban governorates of Amman and Aqaba. For the latter governorate, having on the average fewer rooms than all other governorates contributes to the result. We note that the average size of a room is relatively constant across the nature of the dwelling as measured by the number of rooms it contains, suggesting that people irrespective of dwelling type or place of residence prefer to add rooms rather than increase the room size when they expand their homes or move to a new one.

Table 2.1 Space of Dwellings (size, Space per person, Mean Space per room, Mean number of rooms, Mean number of sleeping rooms and Mean Number of Persons Per Room)

		Size of dwelling		Space per person		Mean space per room	Mean number of rooms	Mean number of rooms used for sleeping	Mean number of persons per room
		Mean	Median	Mean	Median				
Urban, rural locality	Urban	114	100	20	13	21	3.8	2.0	1.6
	Rural	117	110	11	8	14	3.9	2.0	1.8
Region	Amman	121	110	26	17	26	3.9	2.1	1.5
	Middle, excl. Amman	103	100	14	10	17	3.6	1.8	1.7
	North	116	110	11	8	14	3.8	2.0	1.8
	South	120	120	13	10	16	3.9	1.9	1.7
Governorate	Amman	121	110	26	17	26	3.9	2.1	1.5
	Balqa	105	100	14	10	17	3.7	1.8	1.8
	Zarqa	100	90	14	11	17	3.6	1.8	1.6
	Madaba	111	100	14	10	17	3.8	1.9	1.7
	Irbid	118	110	13	9	15	3.9	2.0	1.7
	Mafraq	113	100	10	7	13	3.8	2.0	1.9
	Jerash	113	110	9	7	12	3.6	2.0	1.9
	Ajlun	108	100	9	7	13	3.7	1.9	1.9
	Kerak	134	130	12	10	14	4.1	2.0	1.6
	Tafileh	118	120	10	8	12	3.8	1.8	1.7
	Maan	109	100	11	9	14	3.8	1.8	1.8
Aqaba	101	100	18	14	24	3.5	1.8	1.8	
Type of dwelling	Apartment	114	100	21	15	23	3.8	2.0	1.5
	Dar	113	100	12	8	16	3.8	2.0	1.8
	Villa	298	260	49	34	37	6.6	3.4	0.9
Tenure	Owned	126	120	18	12	19	4.1	2.2	1.6
	Rented	97	90	18	13	22	3.4	1.8	1.7
	Without payment	95	90	16	11	19	3.3	1.6	1.7
No. of rooms	1-2 rooms	54	50	12	9	21	-	1.2	2.5
	3 rooms	86	80	14	10	19	-	1.6	1.8
	4 rooms	117	120	17	12	18	-	2.0	1.5
	5+ rooms	172	160	26	17	22	-	2.7	1.2
	Mean	114	100	18	12	20	3.8	2.0	1.6
Wealth (asset index)	Lowest 20%	72	70	10	8	16	2.6	1.4	2.2
	Lower middle 30%	101	100	12	10	16	3.5	1.8	1.8
	Upper middle 30%	121	120	17	13	19	4.1	2.1	1.5
	Upper 20%	170	160	36	28	30	5.1	2.7	1.1
Household size	1-3	103	100	36	25	21	3.4	1.5	0.8
	4-7	116	100	15	12	21	3.9	2.0	1.6
	8+	124	120	8	6	17	4.2	2.4	2.5
Household type	1-2 generations, children <15	111	100	13	10	19	3.8	2.0	1.9
	1-2 generations, no children <15	120	110	30	20	21	3.9	1.9	1.0
	3 generations or complex	127	120	14	9	19	4.2	2.4	1.9
Age of household head	<40 years	98	90	16	12	19	3.4	1.6	1.7
	40+ years	124	120	19	12	20	4.1	2.2	1.6
Total		115	100	18	12	20	3.8	2.0	1.6

There is significant variation in the size of dwellings across economic status, as measured by income and wealth (Figure 2.1). In fact, the wealthiest 20 percent of households have dwellings more than twice the size of the poorest 20 percent of households. The poorest 20 percent, as measured by the asset index, has on the average about 42 m² less to live on than the average Jordanian family. In the same way, low-income households reside in smaller dwellings than high-income households, where the size difference of the homes of the lowest and highest income group is more than 50 m². Obviously, and as can be seen in Table 2.1, the space available to each person, and the average room size is much higher in well-to-do households. Table 2.2 similarly demonstrates the important bearing that people's economy has on their houses, but using grouped sizes instead of averages. Comparing the two extremes with regard to assets, 64 percent of the wealthiest one-fifth of households reside in dwellings not smaller than 150 m² and 57 percent have more than 24 m² per person. In contrast, just one percent of the

poorest one-fifth of households live in dwellings measuring at least 150 m² and eight percent have more than 24 m² of living space per person.

Figure 2.1 Average Size of Dwelling by Annual Per Capita Household Income and Wealth (asset index) (n=9,710).

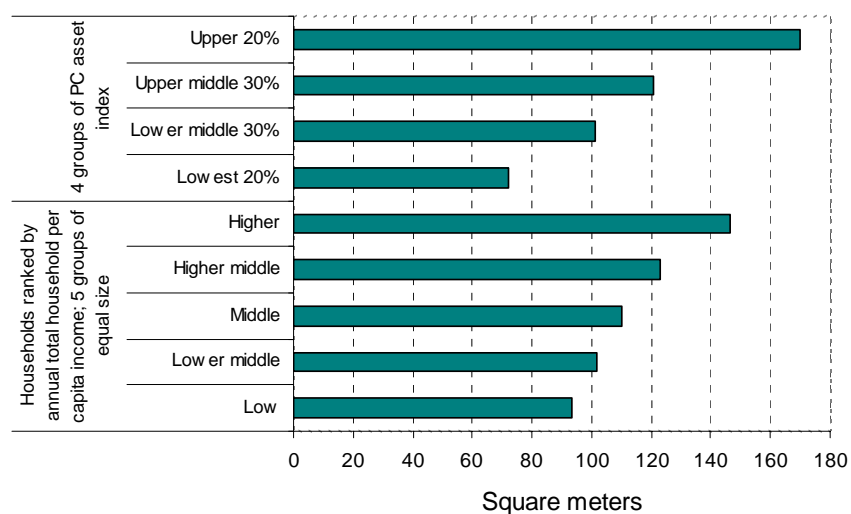


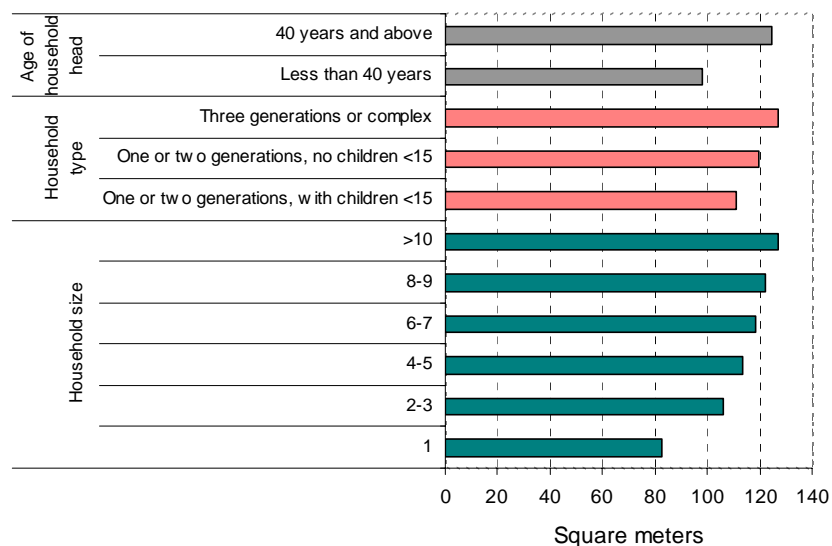
Table 2.2 Size of Dwelling and Space Per Person by Household Wealth (asset index) (n=9,694)

Size of Dwelling	Asset Index				Total
	Lowest 20%	Lower Middle 30%	Upper Middle 30%	Upper 20%	
Size of dwelling					
<75	54	20	7	1	19
75-99	23	27	19	4	19
100-119	14	22	23	10	18
120-149	7	20	26	22	20
>149	1	12	25	64	24
All	100	100	100	100	100
Space Per Person					
<6.7	40	27	11	1	20
6.7-9.4	20	23	17	3	17
9.5-14.5	19	28	29	14	24
14.6-24.0	13	15	25	25	20
>24.0	8	7	18	57	20
All	100	100	100	100	100

Large Families Live in Crowded Conditions

Dwelling size varies with household size and composition, and the age of the household head, hinting at changes over the life cycle, with shifting needs. As shown in Table 2.2 and Figure 2.2, the size of the housing unit logically increases systematically with the size of the household. However, as indicated by the graph the extra space added when the family increases is not a great deal. Actually, the additional space available to a 10-persons family in comparison with a 3-persons family is only 15 m², on the average. This suggests that overcrowding is significantly linked to household size. Household type or composition, the second indicator in the graph, also shows variation by size, since three-generation and what is called ‘complex’ families (households with members in addition to the core two-generation members other than the third generation) reside in more spacious homes than other family types. Also, this variable hints that people acquire larger dwellings over time, explained by the fact that one or two-generation families without young children have more space. The third variable in the graph, the age of the household head, testifies to the same trend. Older heads reside in larger housing units than younger heads.

Figure 2.2 Average size of dwelling by household size, household type and age of household head (n=9,710).

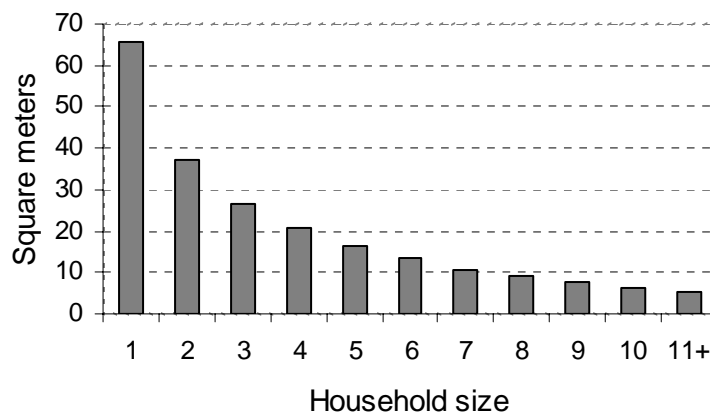


We just learned that the average size of a dwelling increased with the size of the household, but we commented that the increase was moderate. Looking at the space

available per person would give us a better picture of the situation. As can be seen from Figure 2.3, only households with one to four members have that much space, or more. Families with eight people or more have only half the average living space, per person. Table 2.1 groups household size and presents average floor area per person. It shows that families with one to three members on the average have four and one-half times as much space per person as families with eight members or more. The same table contains a second variable testifying to the same conditions, namely ‘persons per room’. While the smallest families of one to three members have on the average 1.5 persons per room, families with eight persons or more have 2.4 persons per room, on the average.

Thus, there is no doubt that the larger the household the more cramped its living conditions. The largest and most crowded households tend to have children, as indicated by the household type variable in Table 2.1. It is the one or two-generation families without dependent children that report the most spacious dwellings, as measured by square meters per person and persons per room.

Figure 2.3 Living space (m²) Available to Each Household Member, by Size of Household (n=9,710).



Crowding, defined here as having three or more persons per room, is particularly a problem for large households (Table 2.3, Figure 2.4). In families with eight or more persons one quarter of the households are living in crowded conditions. Households in the phase of the family life cycle of having small children are also more at risk for crowding. Furthermore, rural households have more crowding than average. The amount of crowding is also related to the kind of dwelling with families in *dar* housing being two times more often crowded than those living in apartments. There is geographic variation in crowding with Amman suffering the least from this condition (seven percent). Crowd-

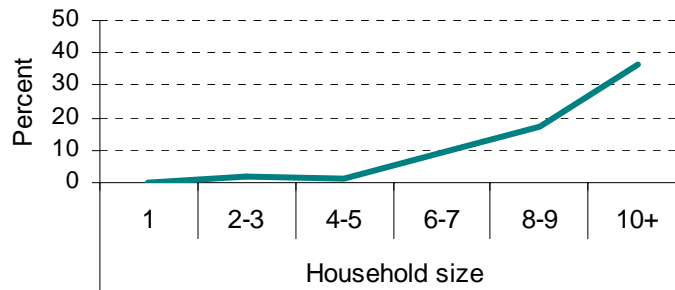
ing is a problem for a considerably larger percentage of families in the governorates of Ajlun, Jarash, Aqaba and Mafraq (13-15 percent).

Confirming the trends reported earlier, living space increases radically with improved economic standing. While about one in four families in the poorest segment live under cramped conditions, none of the families in the wealthiest segment are crowded. Crowding is moreover related to dwelling size. One-third of dwellings containing only one or two rooms are crowded while no dwellings with five rooms or more are crowded. Similarly, one quarter (26 percent) of dwellings smaller than 75 m² are crowded as compared with just one percent of dwellings larger than 149 m².

Table 2. 3 Percent Distribution of Households by Persons Per Room and Background Variables (n=9,711)

		Less than 2	2-2.99	3 and above	Total
Urban, rural locality	Urban	69	23	8	100
	Rural	61	27	12	100
Region	Amman	72	21	7	100
	Middle, excl. Amman	65	26	9	100
	North	62	27	11	100
	South	66	24	10	100
Governorate	Amman	72	21	7	100
	Balqa	63	26	11	100
	Zarqa	66	26	8	100
	Madaba	60	31	9	100
	Irbid	64	26	10	100
	Mafraq	57	29	13	100
	Jerash	56	30	14	100
	Ajlun	57	28	15	100
	Kerak	71	20	9	100
	Tafleeh	65	26	9	100
	Maan	59	31	10	100
Aqaba	62	25	14	100	
Type of dwelling	Apartment	72	22	6	100
	Dar	58	28	13	100
	Villa	100	0	0	100
Tenure	Owned	68	24	8	100
	Rented	65	25	9	100
	Without payment	64	25	11	100
No. of rooms	1-2 rooms	34	30	36	100
	3 rooms	53	36	11	100
	4 rooms	73	25	2	100
	5+ rooms	92	8	0	100
Wealth (asset index)	Lowest 20%	45	31	24	100
	Lower middle 30%	58	32	10	100
	Upper middle 30%	74	23	3	100
	Upper 20%	93	7	0	100
Household size	1-3	97	1	1	100
	4-7	74	21	5	100
	8+	24	52	25	100
Household type	1-2 generations, children <15	59	30	11	100
	1-2 generations, no children <15	90	9	1	100
	3 generations or complex	55	32	13	100
Age of household head	<40 years	67	24	9	100
	40+ years	67	24	9	100
Total		67	24	9	100

Figure 2. 4 Percentage of Households With 3 or More Persons Per Room by Household Size (n=9,711).



Additional Dwelling Space Quite Common

External space in connection to the home is important for the welfare of many households. Such areas are traditionally vital to many adults’ social life, and can be used as a children’s playground, to grow fruit and vegetables, to raise chicken, and as an area for various income-generating activities.

Many households report that their dwelling has some peripheral space outside of the main rooms, such as balconies or verandas (39 percent), roof areas (71 percent), garden plots (44 percent), courtyards (40 percent) and shop or work areas (one percent). Additional space is more available in rural areas than in urban areas, something that is explained by such space being more common for *dars* than apartments (table 2.4). The rural character of certain regions and governorates correspondingly accounts for the higher rate of additional space in some areas compared to other more urban areas. Consider for instance the difference with regard to the availability of gardens, compounds and verandas between Madaba and Zarqa. The already more spacious dwellings tend to have extra living areas more often than smaller dwellings. For example, as shown in table 2.4, living quarters with five rooms or more three times more frequently have a gardening area or a balcony than living quarters with one or two rooms. Crowded households (three persons or more per room), somewhat more rarely have additional space than other households. Nevertheless, many of them do have such outdoor space. To be sure, having access to some extra areas outside of the main dwelling unit can help reduce the discomfort of very dense indoor conditions.

Table 2.4 Distribution of Households by Availability of Additional Living Space and Background Variables (n=9,711)

		% with garden plot	% with compound/ courtyard	% with balcony/ veranda	% with roof area
Urban, rural locality	Urban	38	36	36	66
	Rural	65	56	52	86
Region	Amman	39	39	34	63
	Middle, excl. Amman	38	36	37	72
	North	53	42	43	78
	South	51	47	56	80
Governorate	Amman	39	39	34	63
	Balqa	49	50	47	76
	Zarqa	28	25	29	68
	Madaba	69	69	58	84
	Irbid	53	40	44	75
	Mafraq	58	49	45	83
	Jerash	50	41	36	87
	Ajlun	54	40	36	78
	Kerak	59	50	73	89
	Tafileh	60	46	61	91
	Maan	54	54	41	75
Aqaba	27	33	35	59	
Type of dwelling	Apartment	32	32	33	63
	Dar	60	51	47	82
	Villa	98	80	90	94
Tenure	Owned	54	46	45	82
	Rented	20	27	27	40
	Without payment	39	38	34	71
No. of rooms	1-2 rooms	23	33	21	51
	3 rooms	32	34	29	67
	4 rooms	46	40	39	75
	5+ rooms	63	50	59	79
Wealth (asset index)	Lowest 20%	32	39	28	61
	Lower middle 30%	42	39	34	74
	Upper middle 30%	45	39	39	73
	Upper 20%	55	45	59	71
Household size	1-3	38	33	39	66
	4-7	42	40	38	69
	8+	53	47	44	79
Household type	1-2 generations, children <15	43	41	37	70
	1-2 generations, no children <15	46	37	43	70
	3 generations or complex	44	38	42	74
Age of household head	<40 years	34	38	33	65
	40+ years	49	41	43	73
No. of household members per room	Less than 2	46	40	43	72
	2-2.99	40	40	32	70
	3 and above	33	40	29	63
Total		44	40	39	71

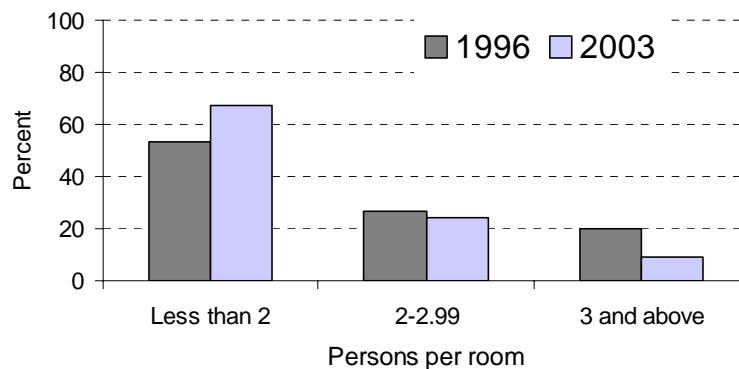
Reduced Crowding Since 1996

Above we stated that the median size of a dwelling in Jordan appears unchanged over the past ten years, at 100 m². Our data suggests that this may be the case. A national household survey carried out by DOS in 1996 found that the average number of rooms

in a Jordanian housing unit was 3.3, while the average number of rooms used for sleeping was 2.0.¹ While the number of persons per ‘sleeping room’ did not change from 1996 to 2003, the average size of a dwelling rose significantly to 3.8 rooms. As a result, the mean number of persons per room fell from 2.0 to 1.6.

An additional marker of improved living conditions is found in the fact that the percentage of crowded households has been more than halved from 20 to nine percent at the national level (Figure 2.5). While 25 percent of families with children under 15 were crowded in 1996, 11 percent were the same in 2003. For extended families crowding dropped from 26 to 13 percent. These figures suggest that a significant change for the better has taken place over a relatively short time. Moreover, reduced crowding seems to have benefited all socio-economic groups: Whereas 26 percent of households in the lowest income quartile (income-poorest 25 percent) had three persons or more per room in 1996, that figure was reduced to 14 percent seven years later.²

Figure 2.5 Percent of Households by Persons Per Room in 1996 (JLCS) and 2003 (Jordan MPHS).



¹ Jordan Living Conditions Survey (JLCS); calculations in this subsection are made specifically for this report. Figures can be slightly different from those reported by Hanssen-Bauer, Pedersen and Tiltnes (eds.) 1998, because we report on the entire population, while the 1998 report confined their findings to Jordanian nationals

² The income data are not directly comparable. In the 1996 JLCS, households were asked to place themselves into pre-defined brackets for total yearly income. In 2003, on the other hand, households reported their exact total yearly income. In the comparison here, income has not been modified into per capita income, which is what we use elsewhere in this chapter when presenting the results of the Jordan MPHS.

2.2 Tenure

This section will look at house ownership and alternative forms of tenure, notably dwellings that are rented and those that are occupied without paying cash rent. A dwelling that is ‘owned’ is defined as one that is owned completely, or one where the household is still paying down payments. The Jordan MPHS did not ask about housing debt. Consequently, when we refer to owned households below, these are either owned completely or in the process of being bought. Another recent DOS survey provides us with additional insight into the issue. According to the 2002-2003 Household Income and Expenditure Survey (HEIS), nine percent of those who state they own their homes are still paying down payments on housing loans.³ However, some of them may have loans pertaining to dwellings other than the ones they are living in, for example taking up loans on behalf of children or building a new dwelling while living in the “old”. Thus, exact information on tenure and housing loans is not available. Nevertheless, following the presentation of tenure as defined by the Jordan MPHS we shall take a closer look at data on loans as they appear in the 2002-2003 HEIS.

A second imprecision in DOS survey data on house ownership is that the formal legal status of the land on which a building structure is raised is not taken into consideration when collecting the information. For example, we know that Palestinian refugees residing in the country’s 13 refugee camps as a rule do not have titles to their land plots and thus legally cannot own their housing units. Yet most refugees in such circumstances consider themselves as house owners, and refugee camp dwellings, at least to some extent, are traded on the housing market.⁴ For all practical purposes, therefore, these dwellings are ‘owned’. Other people than Palestinian camp refugees may be in a similar situation, reporting home ownership in household surveys without having deeds to the land, but we lack information about the magnitude of this situation. With these introductory remarks we next turn to the results of the Jordan MPHS.

³ This is an unexpectedly low figure. The 1996 JLCS found that 21 percent of families owning their homes still paid down payments on loans (calculations for this report).

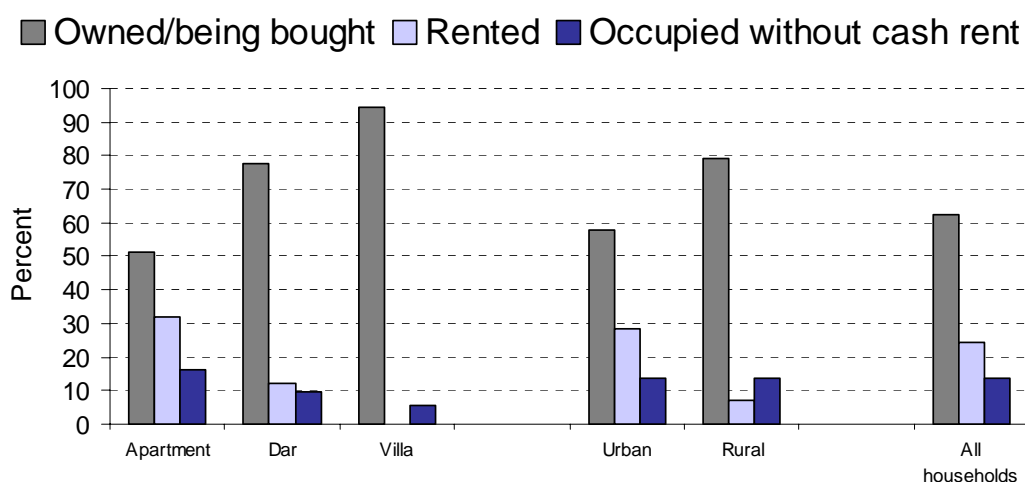
⁴ According to a 1999 household survey of Palestinian camp refugees in Jordan, 78 percent reported that they owned their houses, while 14 percent rented their houses from a private owner. The remaining said that they were squatters or rented or were granted their house from UNRWA. While the majority had built or inherited their house, 28 percent reportedly had bought it (survey carried out by Fafo in cooperation with Department of Palestinian Affairs and Yarmouk University; calculations made for this report).

Majority Own Their Houses; Variation by Dwelling Type and Size, Age of Household Head and Income

Overall, 62 percent of Jordanian households stated that they own or were buying their dwellings. This is exactly the same as seven years earlier (Drury and Abu-Sharar 1998). Twenty-four percent said that they rented their homes (which is four percentage points lower than in 1996), while 14 percent of households occupied their houses without paying cash rent. The vast majority of the households in the latter group were living in dwellings owned by relatives, while the remainder lived in housing owned by an employer (one percent of the total sample).

Dar housing is more often owned (or being bought) than apartments and it is considerably more common to own ones living quarters in the countryside than in urban settings (Figure 2.6). Owning a *dar* is 20 percentage points more common than owning an apartment in urban and rural areas alike (not shown). With increasing size of a housing unit the likelihood that it is owned increases systematically. Conversely, the propensity to rent or occupy a dwelling for free declines with increased dwelling size (Figure 2.6).

Figure 2.6 Tenure: Percentage of households by type of dwelling and urban-rural (n=9,710).

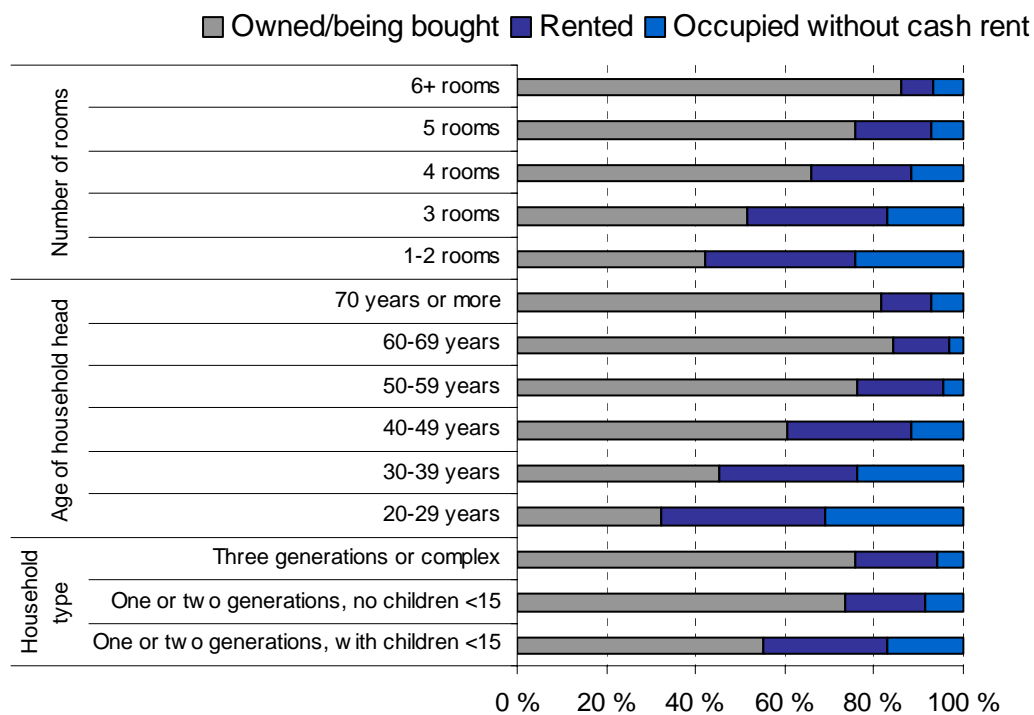


There is considerable variation in ownership status across governorates with 75, 76 and 77 percent of families owning or buying their dwellings in Karak, Balqa and Jarash, respectively, and contrasted with only 45 percent in Aqaba. Zarqa (57 percent)

and Amman (58 percent) also have a lower proportion of owners than the national average.

House ownership remains a key aspect of the Jordanian housing ideal. Saving for years to buy land and build is the ‘rule’. Yet, whether one buys a home or chooses to rent it is tied to a range of other factors, amongst them availability, needs and, most important, affordability. Wealth is accumulated over time. It does not come as surprise, therefore, that the youngest families are those that most seldom own their homes (Figure 2.7). Households with heads aged 50 years and older two and a half times more often own their living quarters than households with heads under the age of 30. Moreover, as the graph shows, families with dependent children under the age of 15 less often own their housing units. The youngest families more often are dependent on older relatives making dwellings available for them and occupy their homes without cash payment. Typically these are married sons living in a separate apartment in the house of their parents.

Figure 2.7 Percentage of households by type of household (n=9,672), age of household head (n=9,710) and size of dwelling as measured by number of rooms (n=9,710).



With regard to the relationship between tenure and economic standing, the main report based on the 1996 Jordan Living Conditions Survey stated that, “In view of the experience of other highly urbanised countries, it is particularly surprising that home ownership is so similar among richer and poorer income groups” (Drury and Abu-Sharar 1998: 103). “The proportion of renters is nearly identical in all income groups” (ibid: 104). We are unable to make a similar conclusion with respect to the 2003 data. As illustrated in Figure 2.8, the tendency to own increases and the tendency to rent decreases systematically with improved household income. Seventy percent in the highest income group own their housing units as compared with 54 percent in the lowest income group. Furthermore, a comparison of ownership in the income-poorest one-quarter of families in 1996 and 2003 shows that house ownership fell from 58 to 45 percent (Figure 2.9). The proportion of renters increased correspondingly. This might suggest that adequate housing was less affordable in 2003 than seven years earlier, and that many young couples need longer time than before to build up sufficient capital to invest in housing.

Figure 2.8 Tenure by Per Capita Household Income (n=9,710)

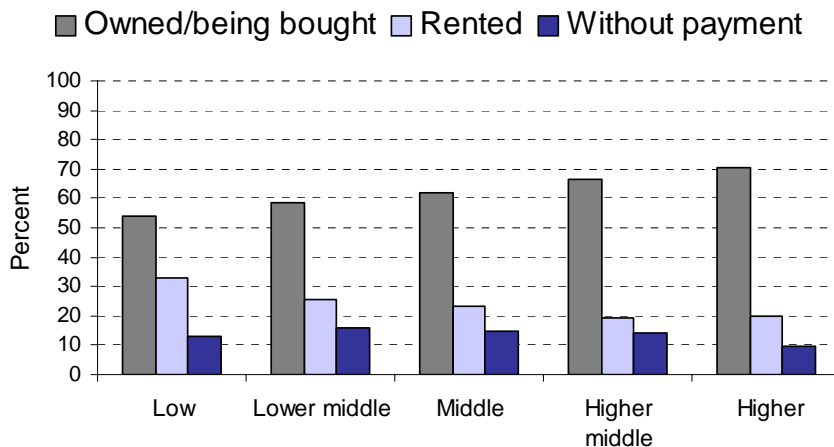
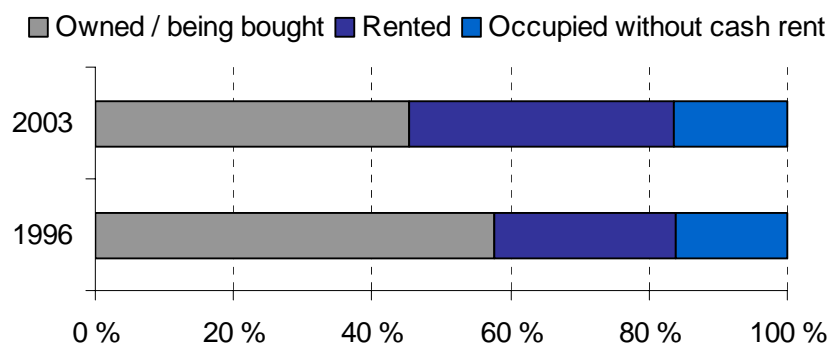


Figure 2.9 Percent of the 25 percent income-poorest households by tenure in 1996 (JLCS) and 2003 (Jordan MPHS).



Apartments Are More Expensive Than Dars

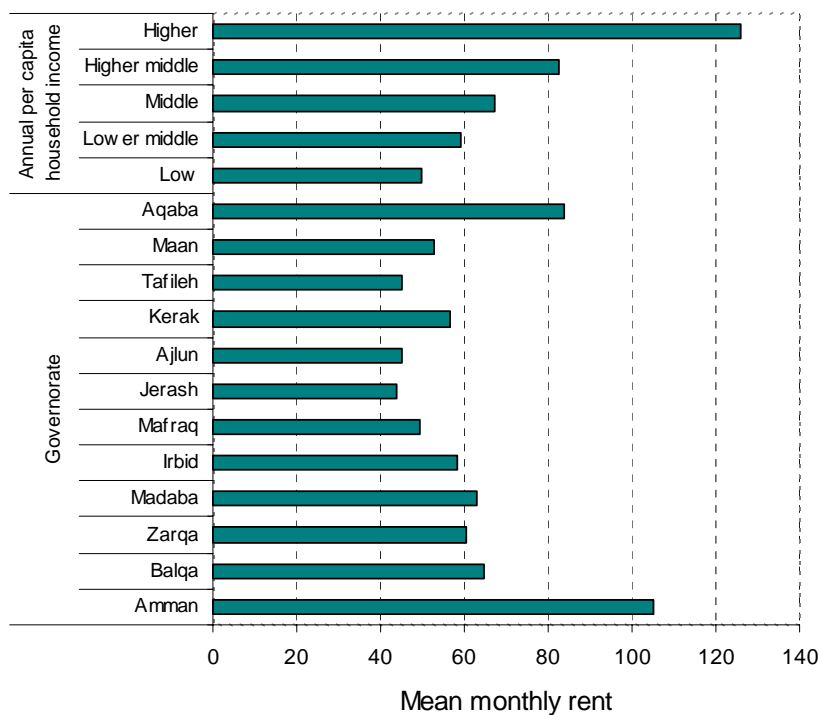
Jordan MPHS asked households renting living quarters to reveal the monthly rent. For households owning their dwellings or otherwise not paying cash rent, the survey asked the respondents to estimate the monthly market rent value of the dwelling. This resulted in many valuations being rounded to the nearest five or ten dinars, or for the more expensive category of housing units even the nearest fifty dinars. As shown in Table 2.5, the cost of renting an apartment is higher than renting a dar, but much cheaper than renting a villa. According to these estimates, the rent of villas is on average four times higher than that of apartments and five times higher than dars. The difference in rent per square meter between apartments and dars roughly reflects the overall difference in rent. On the other hand, the square meter rent of villas is only moderately higher than for apartments.

Table 2.5 Estimated Monthly Rent of Housing Unit in Jordan Dinars, by Type of Housing Unit (n=9,701)

Type of Housing Unit	Monthly Rent of HU		Monthly Cost Per m ²	
	Mean	Median	Mean	Median
Apartment	87	70	0.78	0.75
Dar	58	50	0.54	0.5
Villa	241	200	0.85	0.72
Total	77	60	0.69	0.63

At the national level, the Jordan MPHS found the average monthly cost (rent) of a housing unit to be 77 Jordanian Dinars (JD). However, there are substantial differences between the governorates with Aqaba and particularly Amman being the most expensive and Tafiela, Ajlun and Jarash being the less costly places to reside (Figure 2.10). With a mean rent of 105 JD, housing units in Amman governorate are over two times as expensive as housing units in the less costly governorates. Also shown by the graph, the rent paid (or the value of a dwelling) reflects people’s income. High-income families reside in dwellings two and a half times as costly as families in the lowest income group.

Figure 2.10: Percentage of Households by Mean Monthly Rent, Governorate and Annual Per Capita Household Income (n=9,705)



Irrespective of the type of dwellings, there was a tendency in the survey that owners and those residing in a place without paying cash rent, estimated the rental fee of their dwellings slightly lower than the market rent, as revealed by households actually paying cash rent.⁵ This can stem from an imperfect knowledge of the rental market on

⁵ We restricted the comparison to apartments and dars due to small number of villas in our data.

part of owners and those who do not pay cash rent, but can also indicate that rented dwellings tend to be of a higher standard than other dwellings.

Table 2.6 Average Monthly Cost Per Square Meter in Jordan Dinars, by Type of Housing Unit and Type of Tenure

Type of Tenure	Average Monthly Cost Per m2	
	Apartment	Dar
Owned	0.77	0.52
rented	0.82	0.62
Without Cash Rent	0.76	0.56
Total	0.78	0.54

Housing Loans Exceptional

As mentioned in the introduction to this section, the 2002-2003 Household Expenditure and Income Survey (HEIS) found that nine percent of those who stated they own their homes were still paying down payments on housing loans. These could be loans from a bank or other credit institution, but might also be a private loan from close family and savings clubs, so-called *jaymiyat*. However, we wrote, some of the indebted households probably had loans pertaining to dwellings other than the one they were living in, for example taking up loans on behalf of children or building a new dwelling while living in the “old”. Two percent of families paying cash rent for their dwellings and over seven percent of people residing in a dwelling for free also had housing loans (Table 2.7). It appears that some families take up loans and build while renting a housing unit or staying with relatives for free. However, they make up a rather low share of households as compared with house owners with commercial and private loans. Since house loans from banks and other credit institutions require collateral, most often in private property, this should no come as a surprise. At the national level seven and a half percent of all households reported paying down payments on housing loans in 2002-03. This is a rather low figure and testifies to the tradition of using savings when constructing a house or expanding an existing one.

Table 2.7 Percent of Households Receiving Loans for Housing Purposes During Last 12 months or Ever, and Still Paying Down During Last 12 months

	Received loan past 12 months and still paying down payments	Ever received loan and still paying down payments
Governorate		
Amman	1.84	3.94
Balqa	1.92	9.08
Zarqa	1.95	3.20
Madaba	2.23	15.77
Irbid	5.12	11.35
Mafraq	4.25	11.89
Jerash	4.13	5.03
Ajlun	1.51	7.48
Kerak	5.57	18.79
Tafileh	4.65	22.25
Maan	9.56	17.00
Aqaba	7.07	20.30
Urban-rural location		
Urban	2.55	5.94
Rural	4.92	14.07
Type of tenure		
Owned	3.07	9.13
Rented	2.58	2.04
Occupied without cash rent	3.74	7.67
Total	3.03	7.57

Source: Household Income and Expenditure Survey 2002/2003.
Calculations for this survey.

Having a housing loan is two and a half times more common among rural households than urban households, and the prevalence of such loans differ significantly across governorates, as revealed by Table 2.7. A high 22 percent of households reported housing loans in Tafiela, while only two and three percent said they had housing loans in Zarqa and Amman governorates respectively. We do not know why such geographic variations occur.

The Table (left column) shows variations similar to those noted above but limited to housing loans *taken up the past year only*. In the Kingdom as a whole, three percent had taken up new loans, and which they had not yet paid back (in full), during the past year. The modest difference between housing loans taken up some time in the past (including the past 12 months) and loans taken up the 12 months prior to the interview (and not re-paid) suggests that down payments are made rather fast, perhaps indicating that

people normally take up moderate loans and only borrow a small proportion of the actual housing cost.

2.3 Infrastructure Amenities and Sanitation

The Jordan MPHS collected data on the household's access to a number of infrastructure amenities related to sewage, refuse, electricity, heating, water, and kitchen, bath and toilet facilities. Below we turn first to water sources and networks, and sewerage systems.

Bottled Water is Becoming Increasingly Popular

It is generally assumed that having piped and regulated water supply ensures household water security, meaning the availability of sufficient amounts of water of safe quality at the household for drinking, personal hygiene, domestic hygiene, food preparation and sanitation. The Jordan MPHS shows that the vast majority of Jordanian households have access to such piped water, as connection to a public water network is almost universal (98 percent). Piped water is available to 99 percent of urban and 94 percent of rural households. This suggests improvement over time for rural parts of the Kingdom, as the network coverage is up from 87 percent in 1997 (DOS 1999: Table 1.3).

However, despite this wide coverage many households choose other sources than piped water as their source of *drinking* water. Approximately four out of five households (81 percent) reported the public water system as their primary source of drinking water, two percent said they used water from tanker trucks, some five percent relied on artesian wells or wells for collecting water and rainwater, while 11 percent of all households reported bottled mineral water as their main source of drinking water.⁶ A few households reported unsafe sources such as a spring, river, canal or dam. A tanker truck was the principle secondary source of drinking water, reported by nine percent of the households, or almost one-half of all households that said they used a secondary source (20 percent). Just about four percent said they used wells as a secondary source of drinking water, and the same percentage of people reported bottled water as their secondary source.

⁶ The DHS surveys report a similar reduction from 94 percent in 1997 to 86 percent in 2002

Although not directly comparable to findings from the 1996 JLCS, the 2003 results point at change over time.⁷ The percentage of households that said they relied on public water for drinking purposes dropped 14 percentage points from 95 percent in 1996 to 81 percent seven years later.⁸ Then again the use of wells increased from one to five percent, and the use of bottled water exploded from a reported less than one percent in 1996 to more than one in ten households in 2003.⁹

The increased reliance on wells for drinking water is a bit puzzling. However, the 1997 and 2002 Population and Family Health Surveys (PFHS) report a similar trend from about two percent wells/rainwater to 4.5 percent rainwater (DOS and Macro International 1998: 14, Table 2.7; DOS and ORC Macro 2003: 17, Table 2.6). While the PFHS fieldworks took place in the dry season (June to October and July to September) the JLCS and the Jordan MPHS fieldworks both partly went into the rainy season (January to April and September to December), which implies that the results are not distorted by the time of the interview (some households being inclined to report rainwater wells in winter only) but represent a real change.

Both the PFHS and the Jordan MPHS reveal that it is essentially in the North region that this development has occurred. According to the latter survey almost one fourth (24 percent) of households in the two governorates of Irbid and Ajlun rely on wells for collecting rainwater. Apparently, the authorities have advised the population here to construct water collection systems and benefit from the generous winter rainfalls (most years). Those who reported rainwater as their first source of drinking water more often mentioned a second source than other households, and their second source was almost exclusively the public water network. Overall, water from a tanker truck was found to be the most common secondary source (reported by 45 percent of those who acknowledge a supplementary source).

The trends presented above may suggest that people are discontented or distrustful of the quality of piped water, and that with bottled water being increasingly offered in

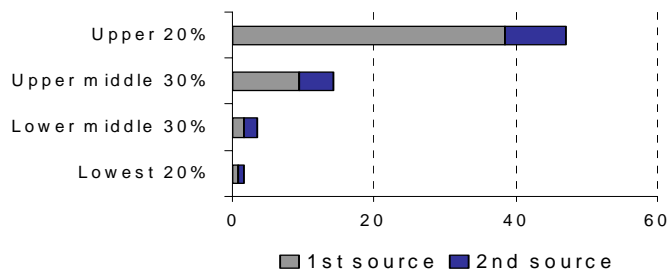
⁷ The main differences between the two surveys is that during the JLCS fieldworkers probed more to get at the secondary source (and with 68 percent reporting one as compared with 20 percent in 2003), and that “bottled mineral water” was added as a separate answer category in the 2003 Jordan MPHS.

⁸ The DHS surveys report a similar reduction from 94 percent in 1997 to 86 percent in 2002.

⁹ In the 1996 survey, not quite one percent of households reported “other source” as their primary source of drinking water, and at least some of them were probably using bottled mineral water. The 1997 DHS found that 0.3 percent used bottled water, a figure that had risen to 7.6 percent in 2002.

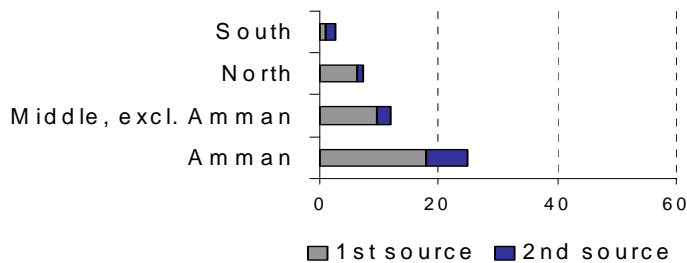
the market they have found a good alternative source. Yet, bottled water is an expensive source making the use of it unevenly distributed across socio-economic groups in the population. As can be seen in Figure 2.11, the use of bottled mineral water increases sharply with economic standing. Whereas merely one percent reported relying on bottled water amongst the one-fifth less well-off households, almost four in ten households used bottled water as their primary source of drinking water, and almost five in ten used it as either their principle or secondary source amongst the richest one-fifth of the population. In fact, 91 percent of households using bottled water as their main or secondary source belong to the wealthiest one-half and 63 percent belong to the wealthiest one-fifth of the population.

Figure 2.11 Percentage of households using bottled water as either main or secondary source of drinking water by wealth (households grouped by asset index) (n=9,694)



The urban population benefit from bottled mineral water to a much larger extent than the rural population, with 18 as contrasted with three percent reporting such water as their principal or secondary source of drinking water. There is a marked geographical variation as well, with more people in Amman and the Middle region relying on bottled water than people in other regions (Figure 2.12). In addition to Amman where 25 percent of families claimed that bottled mineral water was their main or secondary source of drinking water, the use of bottled water has become increasingly popular in the governorates of Zarqa (15 percent), Madaba (11 percent) and Irbid (10 percent). In the remaining governorates bottled water is quite rare.

Figure 2.12 Percentage of households using bottled water as either main or secondary source of drinking water by region (n=9,711)



Reflecting Growing Urbanisation, Connection to Sewerage Systems Has Become More Widespread

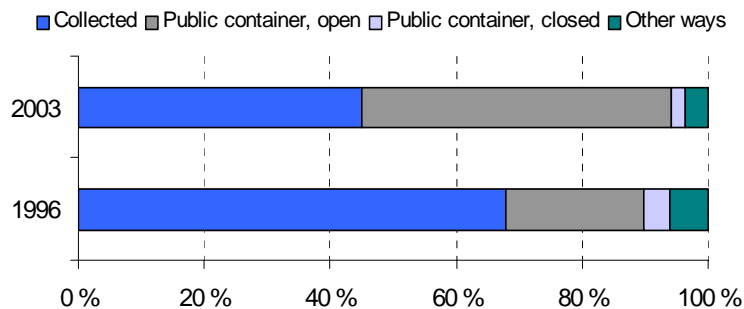
The Jordan MPHS found that six in ten households resided in dwellings connected to a sewerage system, while the remaining (with a few exceptions) had toilet facilities connected to a septic tank. This implies that Jordan witnessed a six percentage points increase in access to public sewerage over seven years from 54 percent in 1996, a development that must be ascribed to the urbanisation of Jordanian society. Around three out of four families (74 percent) in urban areas were connected to a sewerage system, while septic tanks seem to be the “rule” in rural settings (five percent connected to a sewerage network). Reflecting the urban-rural diversity, people in apartments more frequently reported connection to a sewerage system (78 percent) than people in dars (33 percent). There are regional differences also, with a much better coverage of sewerage systems in Amman (79 percent) and the Middle region (71 percent) than in the North (31 percent) and the South (32 percent).

About Half the Population Throw Garbage in Open Containers

Garbage workers collect domestic waste from the vast majority of the Jordanian households. According to the MPHS, only four percent of domestic waste is randomly thrown, burned, dug down or disposed of in some other unauthorized way, which is a reduction by two percentage points from 1996. Garbage from the remaining families is either gathered from the front door or put in a garbage container, which is later emptied by the garbage workers. As shown by Figure 2.13, Jordan has witnessed a shift away from direct, often daily collection of domestic waste at ones doorstep to the use of indi-

vidual and collective containers being emptied at regular intervals. While 26 percent reported using public garbage containers in 1996, 51 percent reported such use in 2003. However, only a tiny fraction (one in 25) of the containers were closed. The rest were open, leaving the garbage open to scavenging cats and insects of various sorts. Apart from affecting the immediate surroundings of the house negatively due to appalling appearance and bad smells, such open, public containers may have negative health effects.

Figure 2.13 Percentage Distribution of Households by the Ways they dispose the Garbage in 1996 (n=5,850) and 2003 (n=9,662)



Almost Universal Access to Electricity

The Jordan MPHS found that just about every Jordanian family (99.9 percent) had access to electricity through the public electricity network, which is a marked improvement from 1996, when 97 percent had such access. While rural communities were disadvantaged with respect to electricity when compared to urban communities (99 *versus* 88 percent) seven years earlier, there was no significant disparity in 2003.

The survey also suggests that domestic energy use has seen changes. For instance, while 96 percent said they used gas for cooking purposes in 1996, 99 percent reported the same in 2003 (and with insignificant differences between regions). The use of kerosene had dropped, explaining the differential.

Similarly, the use of kerosene for room heating had become less common, plummeting from 69 to 55 percent of families. The importance of diesel, on the other hand, had gone up from seven to ten percent, perhaps testifying to central heating becoming

increasingly popular. On the whole eight percent of households reported a central heating system. While central heating was more common in urban (ten percent) than rural settings (three percent), it is mainly a phenomenon found in the governorate of Amman (19 percent) and to a much smaller degree in the other Governorates (varying from zero to four percent of families). However, the largest increase in main fuel for heating was seen for gas, which increased from 20 to 31 percent. Gas is a cleaner energy source, has a less negative health effect, and is cheaper than diesel. Two percent of households reported no room heating, mainly in Aqaba (at 33 percent of families). Finally, two percent of the interviewed households said they relied on wood or coal for the heating of their living quarters.

2.4 Indoor and Outdoor Environment

A number of aspects concerning the quality of the indoor environment were explored in the Jordan MPHS. Households were asked if they experience certain kinds of environment problems such as coldness, humidity and noise, and the severity of such problems. While the indoor environment is primarily determined by factors such as the climate, residential density, the type of dwelling and construction materials used, and the existence of certain amenities such as room heating, the data we present below are based on the subjective evaluation of the environment by the household respondent, most often a housewife. The same respondents also answered questions about a series of possible outdoor environment problems, which may be experienced from within the dwelling itself or in the immediate outdoor area surrounding the dwelling. These problems include pollutants from cars and industry, and smells from animals, garbage and sewage. Finally, the survey inquired about the families' access to various community and community-level services.

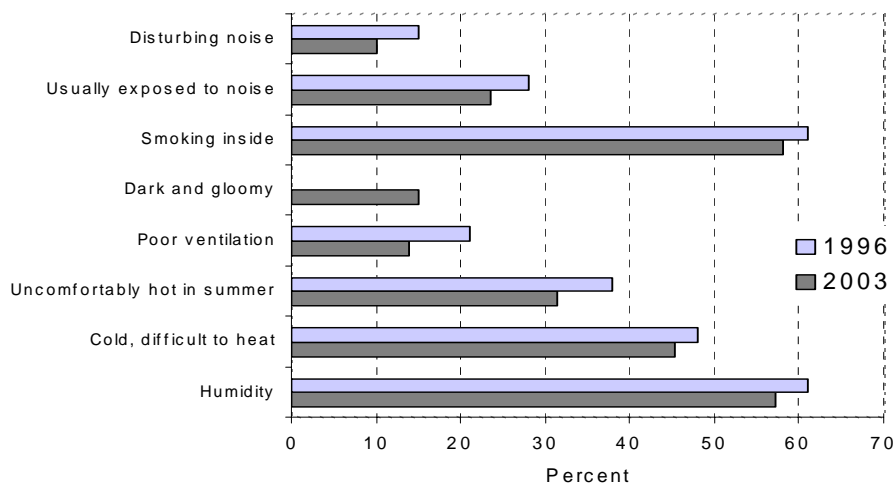
As stated above, most households have essential amenities (independent kitchen, bathroom and toilet, connection to electricity grid, piped water, etc.). Yet the indoor environment is not always comfortable. As seen in Figure 2.14, the most prevalent types of indoor environment problems in 2003 were humidity and dampness (mentioned by 57 percent of households), cold dwellings that are difficult to heat in winter (45 percent of households), and those that become uncomfortably hot in summer (31 percent). Fourteen percent complained about poor ventilation, and 15 percent thought their living quarters

were not exposed to sufficient daylight and could be characterised as “dark and gloomy”. Compared to the situation in 1996, this is an improvement.

In addition to indicators of environmental conditions inherent to the dwelling itself, Figure 2.14 also contains indicators of two man-made nuisances and disturbances. First, it shows that the residents of around six in ten households (58 percent) are exposed to tobacco smoke in their dwellings. Second, the graph shows that one quarter of households (24 percent) are exposed to noise and that eight percent report disturbing levels of noise. “Disturbing noise” is defined as noise that it is so loud it is difficult to have a conversation indoors, occurring daily or occasionally. The noise comes overwhelmingly from outside the building, from sources such as traffic, markets, construction sites, and industry. Only about one in ten households reported the source of noise to be within the building.

As with the first set of indicators, the indicators of man-made indoor environmental difficulties also indicate improvement over time, where the most positive trend is seen for “sound pollution”. The data allow an additional comment with regard to the issue of noise, however, and in doing so suggest that the changes may not be as positive as the graph indicates. In 1996, only seven percent of the sample reported that they were disturbed by noise on a daily basis. Seven years later, this number had *increased* to eight percent. As a consequence, while a declining number of families said they were troubled with noise, a relatively higher number of families thought they had *serious* trouble with noise in their dwellings.

Figure 2.14 Percentage of Households with Indoor Environment Problems, by Type of Problem in 1996 (JLCS, n=5,854) and 2003 (MPHS, n=9,711)



Overall, the data reveal only minor variation in subjective assessment of the indoor environment across various background factors. Dampness and winter-cold is more of a problem in rural settings (at 62 *versus* 56 and 49 *versus* 44 percent respectively). Then again, and quite naturally due to residential density differentials, noise is conceived as more of a problem in urban than rural areas (12 *versus* four percent were ‘very disturbed’). The same is the lack of daylight (17 as compared with nine percent said their dwelling was ‘dark and gloomy’).

The indoor environment is reported to be worse for households in rural than urban areas, and poorer in certain governorates than others. An indoor quality additive index was created, which included five of the environmental problems listed above (excluding noise and dust). Overall, households reported an average of 2.7 problems. Rural areas and low-income households have more problems. Poor housing conditions appear to cluster together as both crowding and lack of amenities are associated with poor indoor quality.