

IHSES DATA QUALITY ASSESSMENT

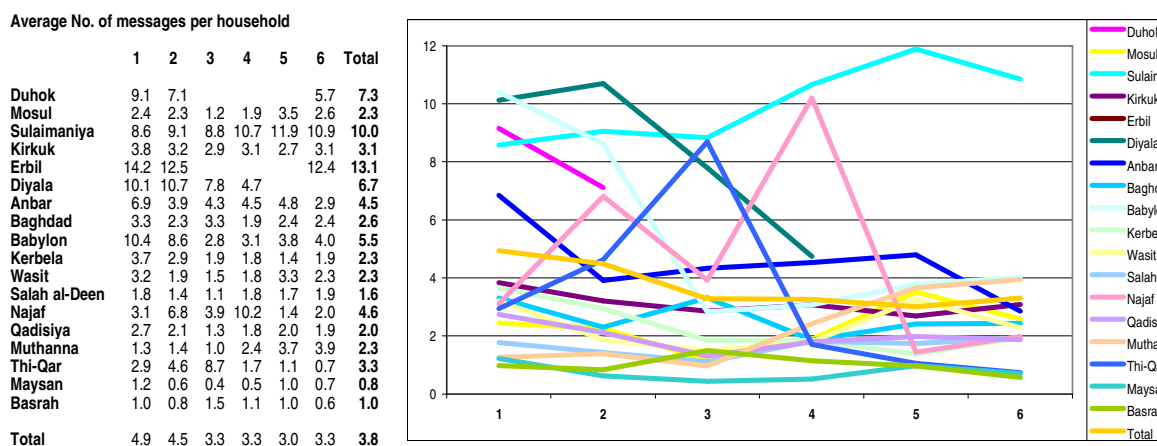
The quality of the data collected by a household survey can be assessed from a variety of standpoints. Here we concentrate on indicators of the quality of fieldwork that can be extracted from the survey datasets directly, on the formal consistency of the datasets and on the way of dealing with the inconsistencies remaining in the datasets in spite of the fieldwork quality controls implemented by the IHSES.

Indicators of the quality of fieldwork that can be extracted from the survey datasets

The quality of some aspects of the fieldwork may be appraised by monitoring the evolution of certain indicators that may reveal shortcomings of the interviewers and insufficient supervision. Here we studied the evolution of the following indicators in each governorate, for the first six waves of the IHSES:

- Number of inconsistencies detected by the data entry program that are still present in the survey datasets.
- Number of transactions recorded in the diaries.
- Number of transactions recoded in the non-diary sections of the questionnaire.
- Household size
- Number of illnesses

Only the first of these indicators appears as being susceptible to improvement, as shown in the figure below:



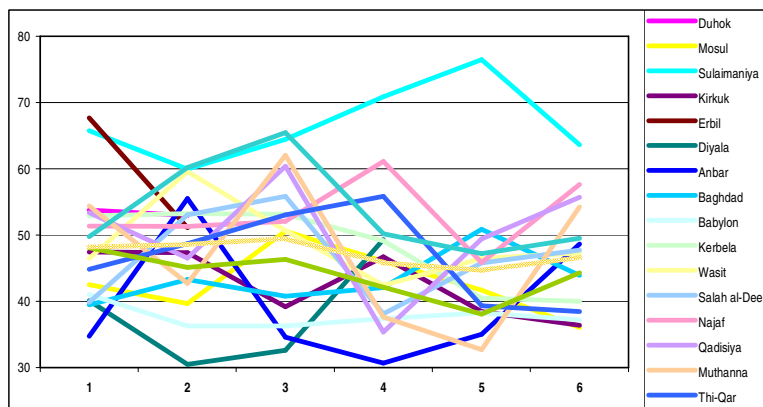
The average number of inconsistencies per household remaining in the datasets after fieldwork should be much smaller than the observed level of 3 to 4 percent – ideally not more than 1 percent (although zero would be suspiciously low.) The high levels observed in the first six waves are partly due to the fact that the validation rules for unit prices included in the first versions of the data entry program were too narrow (especially for the northern governorates,) but also a result of logistic problems (in some governorates the data entry operators had no printers to communicate the problems to the supervisors,) and to a general misunderstanding of the role of computer-based controls as a factor of fieldwork quality. All these issues were discussed during the Amman May 2007 workshop and will hopefully be solved in future waves. The simple solution is to convey to the

fieldwork supervisors the notion of checking the outputs of the data entry program, and ask their interviewers to solve the inconsistencies while the teams are still working in the cluster.

A progressive reduction of the average number of transactions recorded in each household is an early sign of bad supervision. This is fortunately not happening in the IHSES, as shown below:

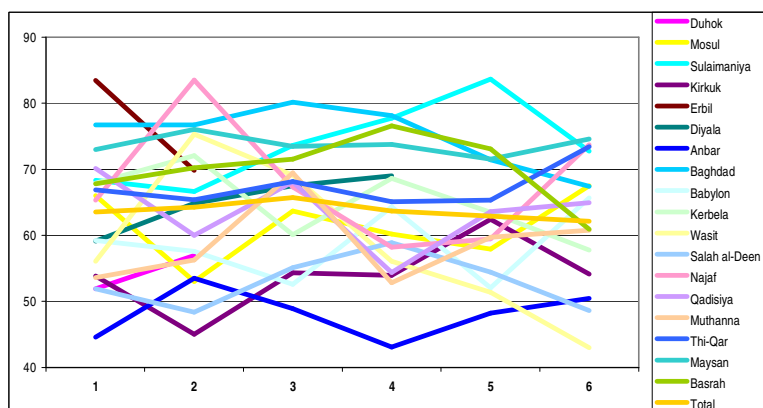
Average No. of non-diary lines per household

	1	2	3	4	5	6	Total
Duhok	53.8	52.9				44.0	50.2
Mosul	42.5	39.6	50.6	46.1	41.7	36.1	42.8
Sulaimaniya	65.7	60.0	64.4	70.9	76.5	63.6	66.9
Kirkuk	47.4	47.3	39.1	46.7	38.5	36.4	42.6
Erbil	67.7	51.1				49.6	56.1
Diyala	40.1	30.5	32.6	49.3			38.2
Anbar	34.7	55.5	34.6	30.7	35.0	48.6	39.8
Baghdad	39.5	43.3	40.8	42.1	50.9	43.9	43.4
Babylon	41.0	36.3	36.3	37.4	38.3	37.2	37.8
Kerbela	52.9	53.2	53.1	49.1	40.5	40.0	48.1
Wasit	46.5	59.6	50.7	42.4	46.4	47.3	48.8
Salah al-Deen	39.9	53.1	55.8	38.1	45.8	47.8	46.7
Najaf	51.3	51.3	52.1	61.1	45.9	57.6	53.2
Qadisiya	53.4	46.5	60.4	35.4	49.4	55.7	50.1
Muthanna	54.4	42.7	62.0	37.6	32.7	54.3	47.3
Thi-Qar	44.8	48.7	53.0	55.8	39.4	38.4	46.7
Maysan	49.7	60.2	65.5	50.2	47.2	49.5	53.7
Basrah	48.1	45.1	46.3	42.1	38.0	44.3	43.6
Total	48.2	48.6	49.5	45.8	44.7	46.7	47.3



Average No. of diary lines per household

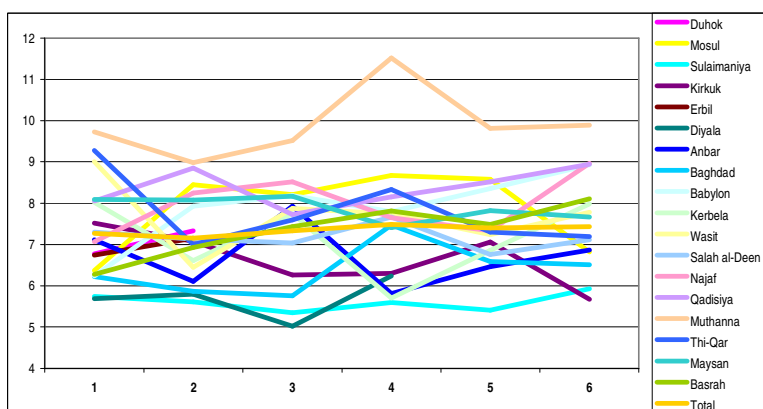
	1	2	3	4	5	6	Total
Duhok	51.9	57.0				53.1	54.0
Mosul	66.0	53.0	63.7	60.2	57.9	67.5	61.4
Sulaimaniya	68.3	66.6	73.6	77.7	83.6	72.7	73.8
Kirkuk	53.8	45.0	54.3	53.9	62.4	54.1	53.9
Erbil	83.4	69.8				62.5	71.9
Diyala	59.1	64.8	67.5	69.0			65.1
Anbar	44.6	53.5	48.9	43.1	48.2	50.4	48.1
Baghdad	76.7	76.7	80.1	78.1	71.4	67.4	75.1
Babylon	59.2	57.6	52.6	64.3	52.1	65.7	58.6
Kerbela	67.9	72.1	60.1	68.6	63.5	57.7	65.0
Wasit	56.0	75.3	69.1	56.1	51.4	43.0	58.5
Salah al-Deen	51.9	48.4	55.1	58.9	54.4	48.6	52.9
Najaf	65.3	83.5	67.3	58.2	59.4	73.7	67.6
Qadisiya	70.1	60.0	68.1	54.4	63.6	64.9	63.5
Muthanna	53.6	56.3	69.4	52.8	59.7	60.8	58.8
Thi-Qar	66.9	65.4	68.1	65.1	65.3	73.4	67.4
Maysan	73.0	76.0	73.4	73.7	71.5	74.6	73.7
Basrah	67.8	70.2	71.5	76.6	73.1	60.9	70.8
Total	63.5	64.2	65.7	63.7	62.9	62.1	63.7



Other indicators of substandard behavior are the average household size and the average number of people reporting an illness during the past 30 days. Bad interviewers find a perverse incentive in recording fewer of them to facilitate their work, but this problem is not yet affecting the IHSES either, as shown below (The number of people reporting illnesses in Qadiya has actually grown rather than decreased. There must be epidemiologic reasons for that.)

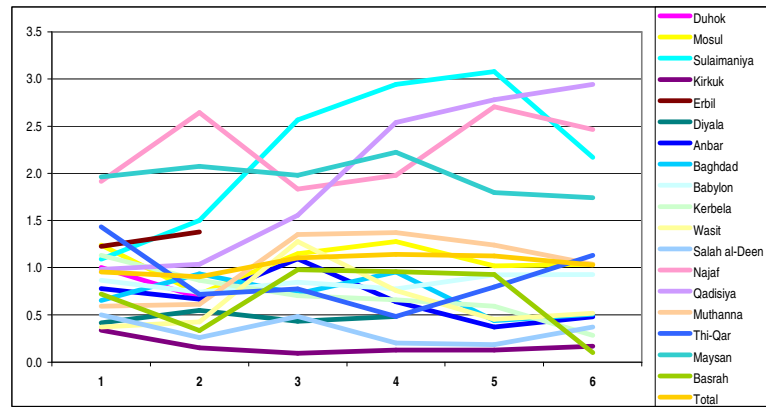
Average household size

	1	2	3	4	5	6	Total
Duhok	6.8	7.3				7.2	7.1
Mosul	6.4	8.4	8.2	8.7	8.6	6.8	7.8
Sulaimaniya	5.7	5.6	5.4	5.6	5.4	5.9	5.6
Kirkuk	7.5	7.1	6.3	6.3	7.1	5.7	6.6
Erbil	6.7	7.1				5.6	6.5
Diyala	5.7	5.8	5.0	6.2			5.7
Anbar	7.1	6.1	7.9	5.8	6.5	6.9	6.7
Baghdad	6.2	5.9	5.8	7.5	6.6	6.5	6.4
Babylon	6.2	7.9	8.2	7.8	8.4	8.9	7.9
Kerbela	8.0	6.6	7.7	5.7	6.9	8.0	7.2
Wasit	9.0	6.4	7.9	7.7	7.2	7.8	7.7
Salah al-Deen	7.3	7.1	7.0	7.7	6.8	7.1	7.2
Najaf	7.1	8.2	8.5	7.6	7.3	9.0	7.9
Qadisiya	8.1	8.9	7.7	8.1	8.5	8.9	8.4
Muthanna	9.7	9.0	9.5	11.5	9.8	9.9	9.9
Thi-Qar	9.3	7.0	7.6	8.3	7.3	7.2	7.8
Maysan	8.1	8.1	8.2	7.4	7.8	7.7	7.9
Basrah	6.3	6.9	7.4	7.8	7.5	8.1	7.3
Total	7.3	7.1	7.3	7.5	7.4	7.4	7.3



Average No. of Ill

	1	2	3	4	5	6	Total
Duhok	1.0	0.7				0.3	0.7
Mosul	1.2	0.7	1.1	1.3	1.0	1.0	1.1
Sulaimaniya	1.1	1.5	2.6	2.9	3.1	2.2	2.2
Kirkuk	0.3	0.2	0.1	0.1	0.1	0.2	0.2
Erbil	1.2	1.4				1.3	1.3
Diyala	0.4	0.5	0.4	0.5			0.5
Anbar	0.8	0.7	1.1	0.6	0.4	0.5	0.7
Baghdad	0.7	0.9	0.7	1.0	0.4	0.5	0.7
Babylon	0.9	0.7	0.8	0.8	0.9	0.9	0.8
Kerbela	1.1	0.9	0.7	0.7	0.6	0.3	0.7
Wasit	0.4	0.4	1.3	0.8	0.5	0.5	0.6
Salah al-Deen	0.5	0.3	0.5	0.2	0.2	0.4	0.3
Najaf	1.9	2.6	1.8	2.0	2.7	2.5	2.2
Qadisiya	1.0	1.0	1.6	2.5	2.8	2.9	2.0
Muthanna	0.6	0.6	1.4	1.4	1.2	1.0	1.0
Thi-Qar	1.4	0.7	0.8	0.5	0.8	1.1	0.9
Maysan	2.0	2.1	2.0	2.2	1.8	1.7	2.0
Basrah	0.7	0.3	1.0	1.0	0.9	0.1	0.7
Total	1.0	0.9	1.1	1.1	1.1	1.0	1.0



These results are encouraging, but experience shows that complacency can be dangerous. The IHSES managers should follow the evolution of these indicators closely, perhaps think of other markers to monitor, and swiftly react to anything untoward that can be seen.

Dealing with the remaining inconsistencies

In spite of all quality control efforts, including the implementation of progressively smarter versions of the data entry program, certain inconsistencies are bound to remain in the datasets at the end of fieldwork. This is not just a result of the imperfection of human nature. It is indeed the unavoidable result of the delicate balance that the designers of the data entry program – and survey managers in general – have to define between reporting too many inconsistencies and not reporting enough of them. (The designers of medical diagnostics and police screening systems face a similar dilemma – if they want to diagnose very few false positives they will have to let escape some false negatives.)

Whatever the reason, the presence of certain inconsistencies in the survey datasets is not acceptable and should be dealt with. We propose to do this as a part of the analytical phase of the survey rather than as a part of the data preparation phase. The reason is that data analysts are better equipped than fieldworkers to do this with uniform and well documented procedures.

Most of the (hopefully few) remaining inconsistencies will be outliers in the transactions reported in the diaries and non-diary expenditure sections of the questionnaire. Fortunately, these records offer sufficient redundancy to fix the inconsistencies reliably in most cases, as a result of the annotation of three complementary pieces of information for each transaction: its nature (what was purchased,) the quantity (how much of it was acquired,) and the amount spent (how much did it cost.) This strategy was used to deal with similar situations in Cambodia, Yemen and Brazil, and it can also be applied to the IHSES databases – although it must be emphasized that the problem is significantly smaller here than in the other surveys, where fieldwork quality controls were not implemented nearly as carefully as in the IHSES.