

Comparability issues of the IPUMS-International microdata for Greece, 1971-2001

Catherine E. Michalopoulou

Panteion University of Social and Political Sciences, Athens.

1. Introduction

In 1994, Leslie Kish published his definitive article on the comparability of national sample surveys, titled “Multipopulation Survey Designs: Five Types with Seven Shared Aspects”. Having defined five major types of designs, he noted that “despite the great differences in purposes, methods, and uses of the five designs, we shall note great similarities between them in all these seven major aspects of design:

- (1) definition of concepts, variables, and populations
- (2) survey design and methods of measurements
- (3) substantive analysis
- (4) weighting procedures
- (5) statistical analysis
- (6) sample design and selection
- (7) sizes (and fractions) of samples, also of the population.

[...] We emphasize a basic difference and contrast between aspects 1 to 3 on one hand, and 6 and 7 on the other. Comparative designs of all five types of designs should try for the utmost uniformity and similarity for aspects 1-3 to support comparisons, but they should allow for great flexibility and divergence in aspects 6 and 7 for the sake of feasibility and efficiency. [...] Aspects 4 and 5 have some properties in common with the survey aspects 1-3 that need similarities, but also some properties that are functions of the sample design, like aspects 6 and 7” (Kish, 1994, p. 167). According to Kish, similarity and standardization of the survey aspects (definitions, methods and measurements) are essential to avoid biases in comparisons, though admittedly difficult. In contrast, flexibility in sampling designs and sizes, to reduce variances, is permissible as long as it assumes probability selection methods (Kish, 1994, pp. 167, 171-173). Vijay Verma and others working on comparability issues have agreed with Leslie Kish and by now the guidelines for comparable sample survey research are made explicit (Carey, S. 2000, Chapter 14, pp. 250-253 and ESS).

The paper discusses comparability issues of the IPUMS-International Greek data set. Although, the IPUMS-International data base is comprised of probability samples selected from the relevant censuses and not the kind of sample surveys the foregoing discussion is concentrating on, because of the fact that they are samples, certain aspects of their methodology concerning sampling, definitions and measurements should be investigated in order to ensure comparability. And this work is rendered feasible because of the detailed documentation of the IPUMS-International microdata base.

2. Sampling from censuses

The IPUMS-International microdata base has documented in great detail each country’s data set. Sample characteristics are presented as follows: Census characteristics, microdata sample characteristics, units identified in microdata and unit definitions (census). Based on this detailed documentation the following methodological aspects are presented concerning the Greek data set.

Population and universe: In the description of the Greek census characteristics, there is a difference between the definition of the population and universe for censuses 1971 and 1981, resulting from the availability of microdata for 25% and 10% of the population, respectively. This difference implies that the samples in these cases were selected from processed samples of the underlying population as is indicated

in the description of the sample design, but there is no mention of how this was dealt with when selecting the samples.

Coverage: In the description of the Greek census characteristics coverage of a 100% is reported for 1971, 1981, 1991 and 2001. (Note that participation in the census is mandatory.) But, three days after the Censuses 1971 and 1981 were realized, NSSG conducted post-enumeration sample surveys of dwellings in order to estimate the census noncoverage (missing elements) and duplicate listings. The results of the surveys showed an error of 0.5% of missing elements (undercount) of the total enumerated population for Census 1971, and 0.3% and 0.4% of duplicate listings of the total enumerated population for Censuses 1971 and 1981, respectively (NSSG, 1980, p.*39 and NSSG, 1984, p. xiii). Also, the results of the relevant post-enumeration survey carried out for the Census 1991 showed an error of 0.6% undercount of the total enumerated population (NSSG, 1996, pp. 59-61). So, it seems that these estimates were not taken into consideration when selecting the relevant samples.

Census day: In the description of the Greek census characteristics the following dates are reported: 14 March 1971, 5 April 1981, 17 March 1991 and 18 March 2001. So, with the exception of the census 1981, the dates of the other three censuses permit comparability. But, it should be mentioned that the Population and Housing Census of 1981 was designed to take place on the 15th of March but it was postponed for the 5th of April because of the successive, destructive earthquakes of the 24th of February (and 4/3/1981) that occurred in the Corinth-Athens area and resulted in serious damages and fatalities (NSSG 1984, Introduction, fn 2, p. ix). Taking this into account, as far as timing is concerned comparability seems permissible. (Note that the dates in the respective enumerator's instructions are referring to the 15th March as the census day.)

Sample design: In all cases, samples are probability ones, selected systematically. But as we mentioned before, in 1971 and 1981, samples are drawn from samples and this should be taken into account for the estimates.

Sample size: In all cases, a 10% sample is selected. But it is not clear whether there is a general rule on how the sample sizes are defined across countries so as to ensure adequacy. And this is more apparent in cases when samples are selected from samples.

Sample weights: All samples are reported to be self-weighting, but this does not apply for 1971 and 1981 samples. It should be mentioned that NSSG published the results of the Census 1971 and 1981 as an elaboration of a 5% and 10% sample, respectively, along with the nomograms presenting the coefficient of variation curves (NSSG, 1973, pp. xiv-xv and NSSG, 1984, pp. 165-167). So, since the data set is comprised of samples, sampling errors and weights should be provided by the agencies.

Unit definitions: All units are similarly defined permitting thus comparison. But users should take into account that the household was used as sampling unit and not individuals.

Finally, we should mention that census 1971 was conducted when Greece was under dictatorship and a lot of people were imprisoned or exiled, and its effect on the census data to our knowledge has never been recorded. The nature of the information collected, apart from the question on denomination, is not influenced by this fact.

3. Comparing questionnaires-Form P-1

In trying to compare definitions and measurements, we decided to use the census form of 1991, because it proved to have more relevance to the rest and so facilitated tabulation. The ordering of the questions

differs, but given their nature, does not influence the answers. The ordering of the 2001 form is very different from the rest since it was designed as PAPI.

Table 1 Identification of the dwelling in the censuses 1971, 1981, 1991 and 2001

Identification	1971	1981	1991	2001*
Nomos _____ Geographical code [_ _ _ _ _]	yes	yes	yes	yes
Province _____ Sector [_ _ _]	yes	yes	yes	Municipal or Communal Department
Municipality or Commune _____ Section [_ _]	yes	yes	yes	yes
Locality (town or village) _____ Block number [_ _ _]	yes	yes	yes	yes
Street and number _____ S/N of the dwelling (within the section) [_ _]	yes	yes	yes	yes
If there is no street, indicate the location and number or the owner and the building's number _____ S/N of the household (within the section) [_ _]	yes no	 yes	 yes	 yes No of building in block yes
Within the locality [1] [_] Outside the locality [2] [_]	yes	yes	yes	

*Note that in the Census 2001 form the total number of enumerated persons in the dwelling was recorded after these questions.

Table 2 Housing data in the censuses 1971, 1981, 1991 and 2001

	1971	1981	1991	2001
--	------	------	------	------

1. Type of dwelling (If the answer to this question is 1 or 2 then, and only then, are the next questions to be asked.) Regular dwelling [1] Regular dwelling within collective residence [2] Other building intended for housing (hut, shed, etc.) [3] Other building not intended for housing (inhabited shop, etc.) [4]	(if the answer is [1]) yes (not regular) [5] [2] [3] mobile home [4]	yes (as in 1971) [4] [2] [3]	yes yes yes [5] mobile home [4]
2. Characteristics of regular dwelling 2a Occupied Main residence [1] Second or vacation residence [2] Main residence but household temporarily absent [3] Vacant For rent [4] For sale [5] Second or vacation residence [6] Other reason (state) _____ [7]	yes yes vacation residence [3] [1] [2] [4] yes Due to migration or immigration [3] no	yes yes no [3] [3] [4]	yes (different*) yes yes yes yes yes yes 1986-90 1991-95 1996+
2b. Year built: Before 1919 [1] 1919-1945 [2] 1946-1960 [3] 1961-1970 [4] 1971-1980 [5] 1981-1985 [6] 1986+ [7]			
3 3a Number of regular rooms (except kitchen) [_ _] Of these, how many are used exclusively for professional purposes? (offices, hairdressing salons, etc.) [_ _] 3b. Total area of dwelling (in square meters) [_ _ _]	yes yes no	yes yes no	yes yes yes
Amenities of regular dwelling			
4. Kitchen Yes [1]	yes	yes	yes Yes [1] No [2]

Does it meet the requirements for a regular room (i.e. are the dimensions at least 4 square meters? Are the walls at least 2 meters high? Is there is room for a bed?) Yes [3] No [4] No [2]	yes If no, are there any cooking facilities? Yes [1] No [2]	Yes [1] No [2] [3]		Yes [1] No [2]
5. Electricity and telephone 5a. Is there electricity? Yes [1] No [2] 5b. Is there a telephone? Yes [3] No [4]	yes no	yes no	yes	yes no
6. Bathing facilities. There is a bath or shower inside the dwelling [1] There is a bath or shower outside the dwelling [2] There is no bath or shower [3]	Is there a bath or shower? Yes [1] No [2]	Is there a bath or shower? Yes [1] No [2]	yes	yes private [2] communal [3] [4]
7. Water supply In the dwelling [1] Outside the dwelling but in the building [2] Outside the building [3]	In the dwelling: public network [1] private network [2] Outside the dwelling, but in the building: public network [3] private network [4] phrased diff. [5]	yes yes yes	yes	(different*)
8. Type of heating Central heating [1] Other (indicate)___[2] No heating available [3]	no	Is there central heating? Yes [1] No [2]	yes	yes but asked as question 12
9. Solar boiler Yes [1] No [2]	no	no	yes	no
10. Toilet Flush toilet: Inside the dwelling [1] Outside the dwelling [2] Non-flushing toilet: Inside the dwelling [3] Outside the dwelling [4] No toilet available [5]	(no distinction between flush and non-flushing toilet) yes Out side the dwelling, but in the building: private [2] shared [3] [4]	yes	yes	yes
11. Sewage disposal system Sewage network [1] Other system (sink etc.) [2] No sewage available [3]	yes	yes	yes	yes

12. Ownership The owner of the dwelling is: Individual person [1] Legal Entity or Private Law (Company, Union, etc.) [2] The State or Legal Entity of Public Law (Municipality, Social Insurance Organization, etc.) [3]	yes	yes	yes	yes
---	-----	-----	-----	-----

*Note that in the Census 2001 form, question 2a is followed by question 3 on the type of building (the dwelling is situated in: single-family house [1]; two-family house [2]; block of flats [3]; building whose main use is not housing [4]). Then 2b and 3b are questions 4a and 4b, respectively, and 3a is question 5. The water supply question is asked before the bathing facilities one and is formulated as follows: In the dwelling, from network [1], without network [2]; outside the dwelling, from network [3], without network [4]; outside the building from network [3], without network [4]. Also, the order of the toilet and sewage disposal system questions is reversed.

Table 3 Data pertaining to the householder in the censuses 1971, 1981, 1991 and 2001

	1971	1981	1991	2001
1. How many households share this dwelling? [_ _] If vacant check	yes (0)	yes (0)	yes (00)	yes (0)
2. S/N of the household within the dwelling[1, 2, 3, 4]	yes	no	yes	yes
3. Householder Household 1 (Surname) (Name) _____ Household 2 (Surname) (Name) _____ Household 3 (Surname) (Name) _____ Household 4 (Surname) (Name) _____	yes	yes	yes	yes
4. Number of rooms available for the household, including the kitchen (if it meets the requirements of a regular room) Household 1 [_ _] Household 2 [_ _] Household 3 [_ _] Household 4 [_ _]	No of rooms available for the household	yes	yes	yes
5. The householder or member of the household occupies the dwelling as: Household 1	yes	yes	yes	yes

a. Owner [1] b. Renter [2] c. Other [3] Household 2 a. Owner [1] b. Renter [2] c. Other [3] Household 3 a. Owner [1] b. Renter [2] c. Other [3] Household 4 a. Owner [1] b. Renter [2] c. Other [3]				
Surname and name of the householder Surname) (Name) _____ S/N of household [_ _]	yes	yes	yes	no

Table 4 Household data in the censuses 1971, 1981, 1991 and 2001

	1971*	1981	1991	2001**
Currently present household members and visitors Individual's line number [01, 02, 03, 04, 05, 06]	yes [+07]	yes [+07]	yes	no
Temporarily absent household members (Treat as "temporarily absent" those members of the household who are absent for a short period of time, e.g. for professional reasons, hospitalization, or vacations. Also, treat absent sailors and fishermen as "temporarily absent", regardless of the duration of their absence.) Individual's line number [21,22]	yes	yes	yes	no S/N of dwellin g S/N of househ old
1. Write in block letters the Surname, Name and the Name of the father (or husband for married women or widows) of all persons who spent the night of ____ in the household. -Individual 01 refers to the householder (whether present or temporarily absent) Surname_____ Name_____ Name of father (or husband)_____	yes 13-14 March 1971	yes 4-5 April 1981	yes 16-17 March 1991	yes 17-18 March 2001
2. Sex Male [1] Female [2]	yes	yes	yes	yes
3. Year of birth [1 _ _ _] -Fill in the last three digits -For individuals born in ____ also specify the month of birth, (e.g. for January write 01, for February 02 and so on [_ _].) (Does not apply for Individual 01)	yes 1969, 1970, 1971	yes 1979, 1980, 1981	yes 1989, 1990, 1991	Date of birth (month, year}
4. Householder (Individual 01) Is the householder present or temporarily absent? What is the degree of kinship or the	yes	yes	yes	yes

relationship to the householder of other members of the household (Individual 02 and so on). -The spouse of the householder's offspring should be classified as "married child". Individual 01 -Householder: Present [1] Temporarily absent [2] If temporarily absent, is this person now: In this municipality or Commune [3] In another municipality or Commune or Abroad (if the latter specify the name of the country) [4] (Indicate) Municipality or Commune _____ Province or Foreign country _____ Reason of absence _____ Individuals with line numbers 02-06 and 21-22-Kinship or relation to the householder: Spouse [1] Unmarried child [2] Married child [3] Grandchild [4] Parent of householder or parent of householder's spouse [5] Other relative [6] Domestic servant etc. [7] Boarder or other type of person unrelated to householder [8]		101 [0] yes yes yes yes 102-7 201-2 [2] [3] [4] [5] [6] [7] [8] [9]	yes no [2] other municipality [3] abroad [4] yes yes yes [1] partner [2] child [3] [4] Father of mother [5] Father-in-law mother -in-law [6] Grandfather grandmother [7] Brother or sister [8] Brother-in-law Sister-in-law [9] Nephew w niece
--	--	--	--

				[10] Other relative [11] Other (unrelat ed person) [12]
5. Member of the household or house guest? A “house guest” is defined as an individual who is normally a member of some other household but who spent the night of ____ to this household. (It does not apply to Individual 01-householder) Individuals 02-06: Member of the household [1] House guest [2] Individuals 21-22, Is this temporarily absent household member now: In this Municipality or Commune [1] Elsewhere (specify) [2] Municipality or Commune _____ Province or Foreign country _____ [] Reason of absence _____	yes 13-14 March 1971	yes 4-5 April 1981 101 102-7 yes yes 201-2 yes	yes 16-17 March 1991	no
6. Legal Marital Status -Check 2 (married) in the case of a separation without divorce -Give only one answer for each person Single [1] Married [2] Widowed [3] Divorced [4]	yes	yes	yes	yes yes yes yes yes separat ed [5]
7. Citizenship: -Do not fill in the spaces provided for subsequent coding - Give only one answer for each person Greece (only) [] 01 Greece and another country (specify) _____ [] Foreign country (specify) _____ [] Without nationality [] 98	yes other country yes yes	yes other country no [2]	yes	yes [1] [2] [3] [4] unspeci fied [5]

8. If a Greek citizen, in which Municipality or Commune is he or she registered? -This question applies only to Greek citizens (answer 01 in question 7) and those having Greek and other citizenship. -All Greek citizens are registered in a Municipality or Commune. Registration is ascertained by the respective entry in the official lists. -Do not fill in the space available for the codes at the end of the question. This Municipality or Commune [1] Other Municipality or Commune (indicate) [2] Municipality or Commune _____ Province _____ [_ _ _ _ _]	yes	yes	yes	yes
9. Place of usual residence (Municipality or Commune and Locality or Other foreign country) -For soldiers (conscripts or reserves), students and pupils that do not reside with their families, the place where they serve or study will be considered as the place of their usual residence. -Do not fill in the space available for the codes at the end of the question. At the place of enumeration [1] Other (indicate) [2] Municipality or Commune _____ Locality _____ Province or Foreign country _____ [_ _ _ _ _]	yes lives with family [2] alone [3] yes yes yes	no	yes	yes yes street number postal code yes all munici pal or commu nal depart.
10. Which Municipality, Commune or Foreign country did he/she reside in December _____? -No answer for children born after the 1 st January _____ -Do not fill in the space available for the codes at the end of the question. This Municipality or Commune [1] Other Municipality or Commune or Foreign country (indicate) [2] Municipality or Commune _____ Province or Foreign country _____ [_ _ _ _ _]	yes 1965 1966	yes 1975 1976	yes 1985 1986	yes 1995 31/12/ 1995
11. Which Municipality, Commune or Foreign country did he/she reside in a year ago?	no	no	yes	3/2000

-No answer for children born after the _____ -Do not fill in the space available for the codes at the end of the question. This Municipality or Commune [1] Other Municipality or Commune or Foreign country (indicate) [2] Municipality or Commune _____ Province or Foreign country _____ [_ _ _ _ _]			17/3/1990	12 months or less
THE FOLLOWING QUESTIONS SHOULD ONLY BE COMPLETED FOR PERSONS BORN IN ____ OR BEFORE	1960	1970	1980	1990 except education
12. Level of education -Only one answer that corresponds to the highest level of studies completed by the respondent. -Answer 1 refers to those that have attained a Ph.D. or a Master's degree. Postgraduate (Ph.D. or Master's) degree [1] Higher education (University) degree [2] Technical education college degree [3] Higher education school degree [4] Attends University, Technical college, Higher education school [5] Secondary education certificate (secondary school or 6-grade gymnasium or comprehensive school) [6] Technical school certificate [7] Technical college certificate [8] Lower secondary school certificate [9] Has left lower secondary school [10] Primary school certificate [11] Has left primary school, but knows how to read and write [12] Has left primary school and does not know how to read and write [13] Did not attend primary school and does not know how to read and write [14]	(yes*) no [1] no [1] [2] [3] no no [4] no [5]	yes no [1] no [2] [3] [4] no no [5] [7] no no	yes No answer born later 1/1/1995 PhD 1 MSc 2 [3] [4] post secondary degree 5 [6] [7] [8] [9] no [10] attends primary [11] [12] [13]	
13. For those having attained a postgraduate degree (Ph.D. or Master's) and a Higher education degree (answers 1, 2, 3 and 4 of question 12) write: a) the Educational Institution and the city or foreign country b) the School (if any), c) the Department (if any) and d) the year the degree were awarded (last two digits),	only answer 1	Only answer 1,2	yes	yes

e. g. EDUCATIONAL INSTITUTION: University of Thessalonica SCHOOL: Philosophy DEPARTMENT: Philology YEAR: [67] Educational Institution, city or foreign country_____ School (if any)_____ Department (if any)_____ Year [_ _]				Institut.
	yes	name		yes
	field of study	name		city
		yes		country
14. Does he/she usually work or is he/she seeking work? -The question refers to their main occupation during the last twelvemonth prior to the census taking. -The members of the household working in the family business or agricultural land without pay should answer that they work if their occupation is systematic during the season of intensive work in the family business or agricultural land. Working [1] Job seeking [2] Other occupation (does not usually work or seeking work) [3] (Indicate other occupation)_____ []	Does he/she usually work? Yes [1] No [2] If yes, how many months during last 12 months (March 1970-February 1971) if not usually working , What is the reason? Pupil [1] Student [2] Household activities [3] Sickness or disability [4] Conscript [5] Other reason [6]	What is his/her main activity yes yes Household activities [3] Pupil or students [4] Conscript [5] Other [6]	yes	yes main activity [1] [2] looking for first work [3] [9] pupil or student [4] pensioner [5] PERSONAL of Independent means [6] keeping house [7] conscript [8]
15. What was his/her occupation during the previous	yes	no	yes	yes

week _____? -Working should answer every person that was working during the previous week even for one hour only, for money or without pay in the family business. The same answer applies also to persons having a place of work (dependent or own-independent) or are assisting in the family business without pay but did not work at all during the previous week because of sickness, leave, weather conditions, seasonal work (e. g. farmer) or any other reason so long as is temporary. -Job seeker should answer every person that was seeking work during the previous week (e. g. because they were dismissed or finished their work or the business closed or were still seeking work for the first time) and was ready to accept offered work. -Household activities, pupil etc.: Every person that was not working or seeking work the previous week (answers 1 and 2) should give one of the 3-7 answers. Every person that is occupied mainly in household activities or is a pupil or student or conscript or pensioner (answers 3-6) and worked during the previous week even for one hour should give one of the answers 3, 4, 5 or 6 as well as 1, i.e. “working” (in such cases two answers are admissible). Working [1] Job seeker [2] Household activities [3] Pupil or student [4] Conscript [5] Pensioner [6] Other case [7] (indicate)_____	7-13 March How many hours did he/she work? No of hours If 0 or less than 10 hours, as he/she seeking work? Yes [1] No [2] New worker [3]		10-16 March	11-17 March asked as main activity [1] [2] looking first work [3] [7] [4] [8] [5] [9] person of independent means [6]
16. For those that answered 1 or 2 in question 15 (i.e. were working or seeking work the previous week) must describe: a. The type of work they were doing the previous week (or the last time they worked- question a1.) and their activities, obligations or duties in this work (question a2.). b. The type of establishment, enterprise, service etc. they worked the previous week (or the last time they worked). c. Their occupational status in this work (or the one that they worked the last time). -Answers in questions a1 and b must be explicit: e. g. for an	Work during last 12 months (March 1970- February 1971) and during last	yes answer 1,2 of quest. 14	yes	yes asked as current occup. or occup. last time you worked

employee that worked the previous week or the last time in a shoe store as salesman in question a1. it must be written: Employee shoe salesman and in question b. Establishment-shoe store. In question a2, this person's duties, obligations or activities in this work must be described in detail. -If the previous week they were seeking work for the first time: write "YOUNG" in questions a1, a2 and b, and no answer in question c. -Do not fill in the three spaces available for the codes. a1. Type of work _____ a2. Which were their activities, duties or obligations in this work _____ [_ _ _] b. The type of establishment, enterprise etc. _____ [_ _ _] c. Occupational status: Employer [1] Self-employed [2] Employee or wage-earner [3] Assistant in the family business or agricultural land [4]	week (two question s) yes no yes yes yes yes [4] [3]	yes no yes yes yes [4] [3]		
17. If working (answer 1 in question 15), how many hours did he/she work during the previous week _____ ? -Note the actual number of hours that he/she worked during the previous week and not the usual working hours. -If he/she did not work at all write the word "ZERO". -If he/she did not work at all or worked less than 15 hours the previous week it is necessary to record an answer in the cases 1-4. [_ _] hours If ZERO or less than 15 hours the reason were: Seasonal work [1] Weather conditions [2] Leave or sickness [3] Other reason [4] (indicate) _____	yes 7-13 March 10 hours yes 10 hours no [6] [1],[2] yes Vacatio n [3] Absent without leave [4] Machin e mendin g [5] Other	yes 30 March- 4 April	yes 10-16 March	answer 1,2 11-17 March yes

	reason			
18. If answer 2 in question 15 (job seeker), how many months was he/she seeking work? Up to one month [1] More than one month [2] (Number of months) [_ _]	no	yes yes more yes	yes	no
19. If working, does he/she use usually transport to go from the place of residence to the place of work and what is the mode of transport? -Only those that answered 1 in question 15. -If using a second mode of transport to work it should be recorded. YES [1] NO [2] If YES, what is the usual mode of transport? Bus or trolley [1] Tube [2] Motorcar [3] Taxi [4] Motorbike [5] Bicycle [6] Other [7] (indicate) _____	no	no	yes	no
20. If in the previous question (19) the answer is YES, what is the duration of travel from home to the place work? (Single travel-the time of the return travel will not be counted). Up to 15 minutes [1] 15-30 minutes [2] 30-60 minutes [3] More than 1 hour [4]	no	no	yes	no
21. Is the place of work in the Municipality or Commune of the usual residence? YES [1] NO [2]	no	no	yes	diff.**
22. What are the main sources of livelihood, irrespective of whether he/she is working or not, in order of importance? -Multiple answers are to be recorded as follows: In the blank spaces 1 should be recorded for the main source of livelihood, 2 for the second in importance source of livelihood and 3 for the third. Work [_ 1] Pension [_ 2] Capital income [_ 3] From the household or other persons [_ 4] Benefits or relief [_ 5]	yes yes [3] [2] [5] [4]	no	yes	no
23. Every woman should be asked how many children have she had until this day? -Still born children are not to be included. -The question is to be asked of every woman regardless of her marital status.	Only married, widowed, divorced of	no	yes	yes

Number of children [_ _] Of these: Today they live [_ _]	households with S/N ending in 0 How many live births in total			yes year of birth 1 st , 2 nd and last child
24. Women that married at least once should be asked what is the total duration of their marriage, in years? Years [_ _]	Present marriage what year? Is it a first? Yes [1] No [2]	no	yes	only women yes year of first marriage
25. Does he/she possess agricultural land? -YES applies to every person that has: a) the legal and financial responsibility for the exploitation of his or someone else's cultivated land (one acre or more and in the case of greenhouses half an acre or more), or b) owned animal stock, and specifically one or more cows or two or more other big animals (oxen, horses etc.) or five or more small animals (sheep, pigs etc.) or fifty and more poultry or twenty and more beehives or both of the above, agricultural land and animal stock. YES [1] NO [2]	yes	He/she the head of a farm or agricultural enterprise? yes yes	yes	no

*Note that in the Census 1971 form the legal marital status question was followed by asking the Denomination (Christian Orthodox [0], other (specify)) and then recording the age (year of birth). Also, in the Census 1971 there is question 22: "Does he/she know how to read and write? (Yes [1], No [2])".

**Note that in the Census 2001 the legal marital status is followed by a question on the "place of permanent residence for the individual's mother when that individual was born (At the place of enumeration [1], in another municipality or commune or foreign country-specify)". Also, the following questions are included: "How many people work in the establishment or business where you work? (Up to 9 people [1], 10 or more [2])"; "How many hours did you usually work during a typical week? (no of hours)"; "Where is your work place located? (No fixed place of work [1], Permanent: Within the person's usual residence [2], in the same municipality or commune where their usual residence is located [3], in another municipality or commune [4], in a foreign country [5], specify municipality or commune and *nomos* or foreign country)". Also, those giving answers 2-5 in the citizenship question were asked on immigration (year, month and reasons for settling in Greece, foreign country they lived before settling in Greece and whether they are of Greek origin).

Also, note that in the Census 1971 and 1991 forms information on the small family business (1' Artisanat á Domicile) was included. Also, in 1991 information on persons with special needs was collected.

Table 5 Municipality or Commune Registration Data in the censuses 1971, 1981, 1991 and 2001

	1971	1981	1991	2001
The following information should be completed for the persons that are now abroad (except sailors) and before their departure were members of the household and are to come back in Greece in two (2) years time at the most from the day of the census taking. It should be clarified that these persons as they are NOT MEMBERS of the household they SHOULD NOT have been included in the temporarily absent members of the household of the previous pages. But sailors are always considered as members of the household and the information concerning them should have been recorded in the temporarily absent members of the household entries INDIVIDUAL 21 and 22. S/N [1, 2, 3, 4] Surname and name of the person that is abroad _____ Kinship or relation to the householder _____ In which Municipality or Commune is he/she registered? Municipality or Commune _____ Province _____	yes	yes	yes	no

Comparing definitions and measurements is not obvious as Kish has noted. Although, all changes are recorded, one should always check the relevant questions with the enumerator instructions before using them. Occupation variables are the more difficult ones for comparisons because of differences in definitions and codes.

4. Conclusions

Comparative analysis even of census microdata samples is not straightforward as it seems. In this paper we tried to show the aspects of the sample design and measurement of the Greek IPUMS-International data set that should be taken into consideration before attempting any comparative analysis. Most importantly, although probability sampling ensures comparability, selecting samples from processed samples creates problems in the analysis and should be sorted out by NSSG appropriately. Also, a general rule is needed by IPUMS-International defining a formula for the adequacy of sample sizes. Statistical agencies should provide the appropriate sampling errors and weights. Investigating definitions and measurements, by recording their similarities or differences, showed that the occupation variables are the most difficult to use for comparisons not only because they are not defined quite similarly, but also because of the differences in the coding schemes. Ordering of the questions is different but given their nature is not influencing answers.

References

- Carey, S. ed. (2000), *Measuring Adult Literacy: The International Adult Literacy Survey (IALS) in the European Context*, Office for National Statistics, London.
- ESS, *European Social Survey*, europeansocialsurvey.org.
- Kish, L. (1994), "Multipopulation Survey Designs: Five Types with Seven Shared Aspects", *International Statistical Review*, 62 (2), pp. 167-186.
- NSSG (1973), *Results of the Population and Housing Census of 14th March 1971*, Athens (in Greek, French).
- NSSG (1980), *Results of the Population and Housing Census of 14th March 1971*, Vol. I, Athens (in Greek, French).
- NSSG (1984), *Results of the Population and Housing Census of 5th April 1981*, Athens (in Greek, French).
- NSSG (1996), *Results of the Population and Housing Census of 17th March 1991*, Athens (in Greek).
-