Use of census data for gender statistics and analysis

Workshop on Integrating a Gender Perspective into National Statistics,

Chiba, Japan 16-19 April 2013

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Objectives

The objective is to go beyond the standard tabulations that are normally produced in the analysis of census data, to see what additional knowledge can be gained from the census for the production of detailed gender monographs based on the information contained in the census. This involves:

- The production of non-standard tabulations;
- The construction of more elaborate indicators;
- The combination of census data with data from other sources, such as poverty surveys;
- The multivariate analysis of census data using techniques such as linear or logistic regression.

In other words, the objective is to make gender monographs based on census data less descriptive and more analytical.

The emphasis, therefore, will be more on methods of analysis, rather than on statistical concepts or data collection strategies.

Objectives

The way to illustrate the principles will be through **examples**, derived from the chapters of the manual that deal with Fertility (3), Sex Ratios (5), Marital Status (6), Households and Families (7), Education (9) and Disability (12), to show how it is necessary to go beyond the basic tabulations and indicators.

For the most part, the content of the census questionnaire will be taken as a given and no specific recommendations are developed to extend this content for the purpose of making it more suitable for gender analysis.

Nevertheless, the participants will also be familiarized with some innovative questions that countries have included in their census questionnaires and that add useful information on certain gender issues.

Why do we hear so little about censuses in gender statistics ?

Censuses have obvious limitations, especially with respect to the subjects that can be investigated:

- No Gender-Based Violence;
- No Female Genital Mutilation;
- No Male and Female Fertility Preferences;
- No Distribution of Resources within the Household;
- No Time Use Information, etc. etc. etc.

Why do we hear so little about censuses in gender statistics ?

However,

- A lot of census information is relevant to gender analysis, if properly analysed;
- Some censuses have special questions on gender topics;
- Censuses can be disaggregated to much more specific levels than is possible with surveys;
- Census data can (sometimes) be merged with surveys on specific topics, e.g. poverty surveys.

Sex and Gender

Sex is a biological characteristics that distinguishes between male and female.

Gender is a social construct that assigns differentiated roles and non-biological attributes to men and women.

Census and other statistical data can be disaggregated by sex, not by gender. It is only through further analysis and interpretation of sex differences that their gender content emerges.

Statistics on Women, Sex-Disaggregated Data and Gender Analysis

Statistics on women: Women-only statistics produced mainly to report on the situation of women. They are historically connected to the *Women in Development* (WID) approach. One limitation is that they do not allow for comparison between men and women and thus cannot provide data on gender gaps.

Sex-disaggregated data: Describe gender ratios of a certain phenomenon and are a crucial tool for quantifying differences and inequities between men and women. Historically connected to the *Gender and Development* (GAD) approach, sex-disaggregated data, although crucial, are not sufficient for the development of adequate gender analyses.

Gender analysis is an intellectual effort that involves the following fundamental aspects:

- **Sex-disaggregated data** for measuring gender differences and different cultural and socioeconomic realities faced by women and men;
- **Multivariate analysis** for capturing and interpreting relations that may not be visible if using sex-disaggregated data only;
- **Gender-specific indicators** that may be of greater relevance to one sex than the other;
- **In-depth examination and interpretation** in order to get a fuller, more valid picture of what is occurring in context and which are the social constraints that lead to inequality;
- **Identifying areas where new data need to be collected** in order to fully grasp elements of inequality;
- **Translating data into policy and planning** to provide the evidence-based for strategy formulation.

Common problems in gender (and other) analyses

1. The analysis stops at disaggregation by sex and no attempt is made to uncover the gender dimension (or it only shows data on women).
2. The indicator being used is not appropriate for the type of analysis proposed.
3. The indicators being used are too aggregated and hide a variety of situations that need to be properly understood for gender purposes.
4. Although disaggregations are made, there is really no strategy to decide what to disaggregate and why (policy relevance ?).
5. The data source itself (in this case, the census) may fail to make relevant distinctions.
6. The analysis may “jump to conclusions” and fail to consider the variety of factors that may explain a given result. In particular, correlation does not imply causation.
7. Remember: difference ≠ discrimination.

Strengths of census data for gender analysis

Meena and Chaudhury, 2010; Schkolnik, 2011:

1. Censuses provide a basic set of sex-disaggregated data at the smallest geographical level.
2. Censuses provide insights into the private and community spheres and (indirectly) into time-use of women and girls, men and boys.
3. Census data for advocacy: A local-level “early warning system” on gender inequalities.
4. Censuses provide essential background information allowing for further research on women and men, girls and boys.

Weaknesses of census data for gender analysis

Meena and Chaudhury, 2010; Schkolnik, 2011:

1. Census data may not have been produced in a gender-responsive way.
2. Census data are of very limited scope and depth.
3. Gender-related discrimination is not explicitly measured by censuses (e.g. fistula).
4. The level of analysis for census data is sex, not gender.
5. The census data may be outdated or of low quality (e.g. due to underreporting on women).
6. Data access and the capacity to analyse census data in the appropriate ways may be problematic.

Types of indicators that can be constructed with census data

Feasibility of measurement through the census of the 52 indicators approved by the UN Statistical Commission in February of 2012 as the Minimum Set of Gender Indicators:

Usually measurable (not necessarily the best quality of information):	16
Sometimes measurable, but usually not:	9
Almost never measurable:	27

Some interesting questions in specific censuses

1. Time spent caring for children: own or of other people (Australia);
2. Time spent for sick or disabled household members (Aruba, Australia, Iran, Ireland);
3. Unpaid domestic work carried out in the household (Australia);
4. Matrix of family relationships between household members (Ireland);
5. Children Ever Born, not only for women, but also for men (Bermuda, Croatia, Hungary);
6. Reasons to migrate (e.g. Cambodia, Nepal, Iran);
7. Previous marriages (Ireland, Nepal, Mauritius, Maldives);

Some interesting questions in specific censuses

8. Income data detailed by household members or by source (several);
9. Trans-gender identity (India, Thailand);
10. Question about homosexual unions (Germany, Brazil, Croatia, UK);
11. Any kind of activity which generated income (several);
12. Fertility preferences (Kazakhstan, Korea);
13. Ownership of land and/or property (Nepal);
14. Assistance received in the delivery (Cambodia) (also 16 causes of death);
15. Sex of person sending remittances (El Salvador).

Some interesting questions in specific censuses

19 countries ask for the date or the age of the woman at the time of her first marriage.

11 countries ask for the date (year) or the age of the mother at the time of birth of the first live-born child.

24 countries allow the identification of domestic servants in the household.

Some countries with Muslim majorities and countries in Subsaharan Africa ask men about polygamous unions.

Several African censuses address causes of disability (Zambia 2010 has spousal violence, but not childbirth).

30 countries are asking the questions allowing the estimation of maternal mortality from the census.

Contents: Part 1

Contents: Part 2

PART TWO – 10 Key Gender Issues Analysed with Census Data

3. Fertility

4. Mortality

5. Sex Ratio at Birth and During the Life Course

6. Marital Status, Polygamy, Widowhood, Child Marriage

7. Households and Families

8. Income, Poverty and Living Conditions

9. Education and Literacy

10. Work, Economic Activities and Social Protection

11. Migration

12. Disability

Conclusions and Appendices

Conclusions

References

APPENDICES

1. Gender-Relevant Issues in 2005-2014 Census Forms
2. Glossary of Important Gender Terms
3. Mapping of Resources on Gender Statistics
4. Brief Overview of the Evolution of Gender Statistics
5. From Understanding the Gender Data Gap to Improving the Production and Analysis of Gender Statistics

Structure of Each Chapter

1. What is it ?
2. Why is it important ?
3. Data issues
4. Tabulations
5. Indicators
6. Multivariate and further gender analyses
7. Interpretation, policy and advocacy

Tables, Indicators and Analysis

The basic premise of the manual is that the census offers many opportunities for in-depth studies, but that this requires going beyond the standard tabulations and constructing more complex indicators and analyses.

Some of these techniques go beyond what NSOs normally consider to be their mandate, namely the preparation of standard general-purpose tables and simple indicators. In order to implement some of the proposals contained in the manual (e.g. multivariate analyses), it may be necessary to build strong research ties with academic and research institutions outside the NSOs.

Tables, Indicators and Analysis

To make the best possible use of the advantages offered by census data

DISAGGREGATE, DISAGGREGATE, DISAGGREGATE

Or at least, STANDARDIZE.

But have a plan for why you are disaggregating.

Control as many intervening factors as you can, if necessary by using multivariate techniques.

Tables, Indicators and Analysis

Some examples of why you always need to think of possible disaggregations/standardizations:

- Aggregated disability figures by sex;
- Disability by age and sex in Qatar (2010);
- Literacy and female household heads in Egypt;
- Ownership of rural property by male/female heads of households in Nepal (2001);
- Male and female enrollment in Ouagadougou (1996);
- Poverty by headship in contexts of high emigration.

Effect of Age Standardization in Mexican census (2010)

Type of disability	Percentage Female	Prevalence		Standardized	
		Male	Female	Male	Female
Walking or moving	53.3	2.10	2.29	2.19	2.20
Seeing	52.2	1.14	1.19	1.18	1.15
Hearing	45.2	0.50	0.40	0.53	0.38
Speaking or communicating	43.0	0.42	0.30	0.42	0.30
Personal care	52.6	0.20	0.21	0.21	0.20
Paying attention or learning	45.9	0.21	0.17	0.21	0.17
Mental disabilities	43.8	0.47	0.35	0.47	0.34
Total	50.1	4.17	4.00	4.29	3.87

Tables, Indicators and Analysis

Things you need to think of when you introduce indicators

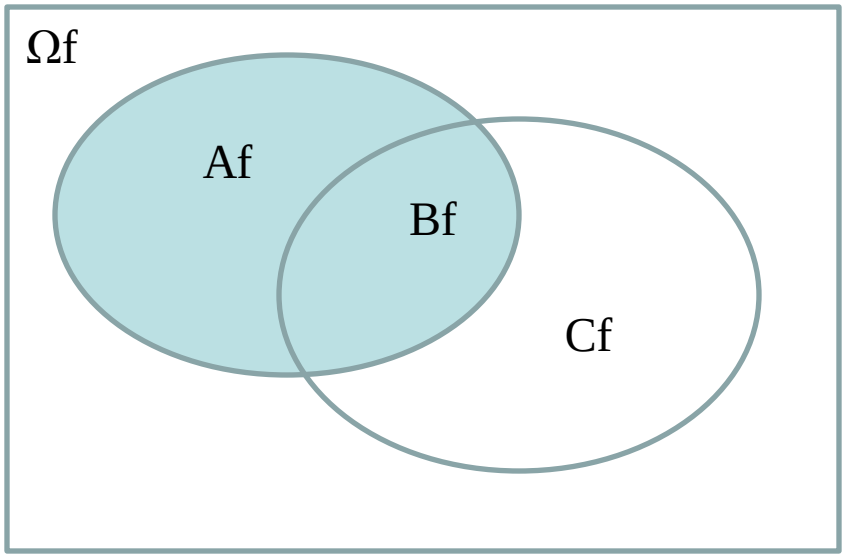
Are you interested in aggregate numbers of men and women that have certain characteristics, in relative prevalence or in incidence ?

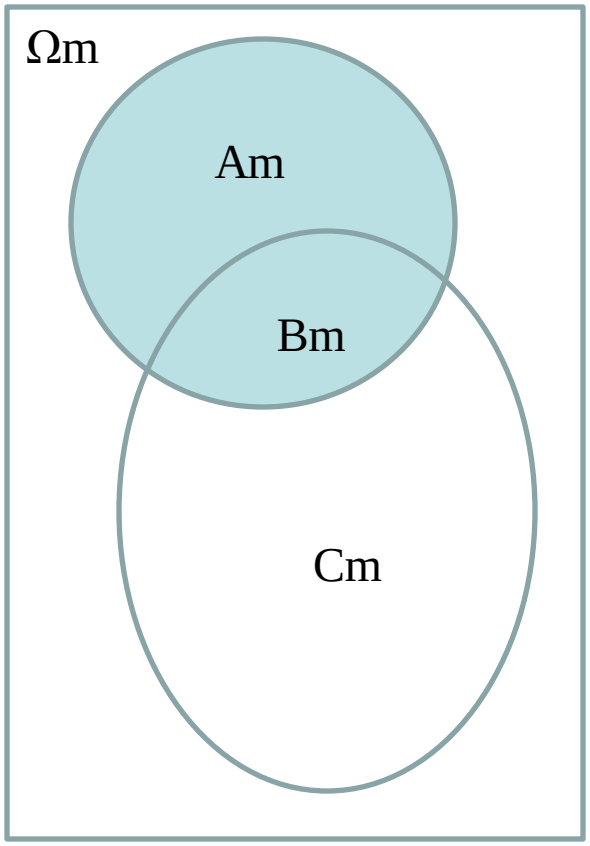
Have you considered age distribution effects ?

Have you taken into account possible differences in the denominators between men and women ?

If you want to demonstrate differential impact, are you really using the appropriate indicator for that purpose ?

Tables, Indicators and Analysis





For example:

Af/m = Not in School

Cf/m = Having a Disability

Bf/m = Having a Disability and not in School

Tables, Indicators and Analysis

Differential impact of disabilities on the School Attendance of Boys and Girls in the 2007 Census of the Occupied Palestinian Territories

	Visual	Auditive	Movement	Cognitive	Communication
6	0.96	1.36	0.95	1.20	1.36
7	1.10	1.22	1.07	1.14	1.22
8	1.25	1.60	1.23	1.26	1.23
9	1.23	1.10	1.02	1.31	1.18
10	0.98	1.35	1.54	1.36	1.42
11	1.54	1.89	1.82	1.74	1.73
12	1.53	2.27	2.00	1.89	2.10
13	1.70	2.39	2.42	2.30	2.23
14	1.27	2.56	2.46	2.41	2.39
15	1.35	1.98	2.69	2.36	2.32

Comparison of census indicators with similar indicators from other sources

To this integrate data bases from different sources, there are two main strategies: *construction of proxy variables* and *statistical matching*.

The construction of proxy variables consists in developing a regression or other multi-variate model based on the survey data and using explanatory variables that are common to the survey and the census, to predict the value of the variable to be included in the census data base. The census value of the variable is then constructed by using the same equation on the explanatory variables, as found in the census. Typically, this approach has been used for the construction of household income data for censuses, by regressing household characteristics such as ownership of consumer durables or the quality of construction of the home on income data from an LSMS or other kind of household survey that provides income data (Elbers, Lanjouw and Lanjouw, 2002). The primary objective, in this case, is to construct poverty estimates for smaller geographic areas than is feasible with the income survey itself. But the approach is not necessarily limited to this application. In the particular case mentioned above, one might predict desired family sizes based on, for example, the age and number of living children, level of education and urban/rural residence of the woman and then apply the same equation in the census, in order to relate the desired number of children to typical census variables.

Comparison of census indicators with similar indicators from other sources

In the statistical matching or “data borrowing” approach, one uses the variables that are common to the census and the survey to construct a measure of similarity or distance between individual cases of the census and survey files. Each individual case found in the census is then matched to its closest neighbour in the survey file. In some cases one may want to divide the data into different subsets, in order to avoid, for example, the matching of men to women or persons from very different parts of the country. The survey data of the closest neighbour are then simply imputed to the individual census records.

When a survey is done shortly after a census it may be possible to establish a match between census records and survey records on the basis of common geographical identifiers. Since surveys typically use a census-based master sample frame such a match is technically quite feasible, as long as the time interval between census and survey is not too long (say, less than 2-3 years). After appending the two data sets the desired survey variables can be estimated for households or persons that were not covered by the survey on the basis of the relationships found amongst those records where both census and survey data is available.

Comparison of census indicators with similar indicators from other sources

Both methods are not without their pitfalls and complications. Both the construction of proxies and the statistical matching approach assume that once the common variables have been controlled, the remaining variables from the survey are statistically independent from those in the census. The fact that this is often not the case may introduce systematic biases. A number of procedures have been proposed in the literature to deal with this problem (e.g. Rubin, 1986; Moriarty and Scheuren, 2001).

Tabulation of Census Data

Example 1: Fertility Analysis

The standard tables that NSOs prepare in their general-purpose census reports are geared towards the estimation of fertility levels and patterns (ASFRs/TFRs), for the general population or possibly some sub-groups.

In practice, this means:

1.A. Even though the majority of censuses (except 10) allow disaggregating births by sex, this is often not done.

1.B. In many cases only the total/average number of children by age category of the mother is tabulated, not a distribution by number of children ever born.

Tabulation of Census Data

Example 1: Fertility Analysis

1.A. Disaggregation by sex would allow the computation of Sex Ratios at Birth (SRBs). Alternatively, one may compute the sex ratio among children under age 1, but this already contains a mortality component. The SRB is an important gender indicator in many Asian countries.

1.B. The distribution by numbers of children ever born would allow the analysis of childlessness by age category and preferably by marital status category. This is a major gender issue in many parts of the world.

Basic Fertility Indicators

- Age Specific Fertility Rates (ASFR)
- Total Fertility Rate (Sum of ASFRs)
- (Crude Birth Rate)
- General Fertility Rate
- Parity Progression Ratios
- Adolescent Birth Rate
- Time Spent Caring for Dependent Children
- Percentage of Childless Women (Age 40-44 or 45-49)
- *Contraceptive prevalence among women aged 15-49 who are married or in a union*
- *Ante-natal care coverage*
- *Proportion of births attended by a skilled health professional*

Tabulation of Census Data

Example 1.B. Childlessness

Producing statistics on childlessness (preferably by marital status) serves two purposes:

a. To quantify this phenomenon, which in many countries represents a significant social stigma, more so for women than for men. In many developed countries, on the other hand, childlessness is clearly on the rise, e.g. 21.0% of women aged 40, in the 2010 census of Finland, as opposed to 9.9% (Cambodia, 2008) and 7.0% (Ethiopia, 2007).

b. To relate childlessness to certain negative social repercussions, such as divorce/separation. The problem, however, is that this relation can go both ways (Nepal, 2001: 43.5% of divorced women were childless).

Tabulation of Census Data

Example 1.B. Childlessness

A strategy that may avoid the problem of bi-directional causality is the following:

1. Compute the number of women of a certain age group (e.g. 35-39) that are childless and divorced/separated.
2. Compare this number with the number that would be observed if the probability of divorce/separation were entirely unrelated to childlessness. This involves applying the age specific prevalence of childlessness to women as they divorce/separate, assuming that fertility stops after separation/divorce and that the age-specific rates of separation/divorce can be computed cross-sectionally from the census data.

Tabulation of Census Data

Example 1.B. Childlessness (Oc. Palestinian Territ., 2007)

	Percentage Divorced or Separated	Percentage Childless		
		Married	Divorced or Separated	
			Observed	Expected
15-19	0.93	55.26	68.00	55.26
20-24	1.39	21.39	51.84	49.59
25-29	1.61	7.68	42.87	44.83
30-34	1.87	4.05	35.82	39.55
35-39	1.99	3.37	31.73	37.38
40-44	2.35	3.76	29.19	32.16
45-49	2.79	4.00	23.68	27.65
50-54	3.30	3.97	21.90	24.02
55-59	4.34	3.75	21.66	19.20
60-64	5.02	3.66	19.41	17.09
65+	6.33	2.67	15.70	

Percentage of divorced/separated women who are childless: 36.4%

Tabulation of Census Data

Example 1.A. Sex Ratio at Birth (2005-2010)

Sub-Saharan Africa	104
Middle East and North Africa	105
South Asia	107
Idem, excluding India	105
India	111.6 (2006-2008) (Haryana: 120.5)
East Asia and Pacific	113
Idem, excluding China	105
China	117.8 (over 125 in some Provinces)
Latin America and Caribbean	105
CEE/CIS	106
World	107

Tabulation of Census Data

Example 1.A. Sex Ratio at Birth

The declared number of births during the past 12 months, even when disaggregated by sex, may also contain differential under-enumeration errors. This is illustrated by the case of Malawi, where the 2008 census counted 268,876 female births, but only 247,753 male births, implying a sex ratio at birth as low as 92.1. The corresponding numbers of children under age 1 were 255,576 and 247,809, respectively. The latter implies a sex ratio of 97.0, which is actually more balanced. Because there is no plausible reason to assume that such deviant sex ratios could be caused by the differential abortion of male foetuses, the only acceptable explanation is differential under-enumeration of male infants and particularly male births.

The 2007 census of Ethiopia enumerated 897,827 boys and 877,627 girls under age 1, implying a sex ratio of 102.3

Tabulation of Census Data

Example 1.A. Sex Ratio at Birth by Birth Order

Viet Nam is an example of a country that disaggregated births by sex and made good use of it for the analysis of the sex ratio at birth. The 2009 census asked all women of reproductive age how many sons and daughters they had given birth to during their last delivery. Combined with the information on when this last birth took place, this allowed the computation of the number of girls and boys born during the last 12 months. This yielded a sex ratio at birth of 110.6, well above the expected range of 104-106. However, the analysis went further by combining this information with the data on “children ever born.” This provides a classification of the births by sex and birth order, which is an important covariate because the perceived need for sex selection tends to increase with birth order.

Couples without sons among their first two children tend to be highly motivated to have a third child and to want to make sure that it is a boy. In the case of Viet Nam, the sex ratio for first births found in the census was 110.2, second births 109.0, but among third births it increased to 115.5. Another interesting finding of the Vietnamese study is that sex selection is almost non-existent among the poor, while among the medium and higher strata, which have access to the necessary technology, sex ratios increase to 112 or 113 (UNFPA, 2010 c). This finding also underscores how income or a proxy for income, such as educational attainment, is important to consider when interpreting findings.

Tabulation of Census Data

Example 1.B. Sex Ratio at Birth in China

In 2000 the total number of excess boys and young men under 20 was almost 21 million. The lack of young women has negatively affected the formation of families. Poston and Glover (2005) estimate that more than 23 million young men born between 1980 and 2001 will not be able to find brides . If the overall growth of the young population were positive, this imbalance might be solved by men marrying younger women, but this is not sustainable in a context of diminishing numbers of young people. Judith Banister (2004): sex ratio at birth imbalance was almost eliminated during the Mao years. That means birth cohorts born up until 1982 were normal, and women would come of marriageable age 23 years later on average (men 2-3 years later) – in 2005 onwards. Das Gupta (2010): the abnormally high sex ratios since the 1980s will lead to a situation in which older men, who did not marry when they were younger, will have no children to support them, so that during the later years of their lives they will be vulnerable to poverty and social isolation. Poston and Glover (2005) foresee the formation of “bachelor ghettos” in Beijing, Shanghai, Guangzhou, Tianjin and other big cities in China, where commercial sex outlets will be prevalent. They also speculate about the possibility of criminality.

Tabulation of Census Data

Example 1.B. Sex Ratio at Birth by Birth Order

Analysis of sex ratios by birth order was also done by Lin and Zhao (2010) on the Chinese censuses of 1982, 1990, 2000 and 2005. They show that the SRBs for first-born children during that period was actually rather low, varying between a minimum of 100.1 in 2000 and a maximum of 103.6 in 1982. For higher order births, however, the SRB has increased both by birth order and over time. In 2005, it was 132.7 for second-order, 152.2 for third-order and 170.6 for fourth-order births, compared to 107.9, 112.9 and 115.1, respectively, in 1982.

An even more illuminating analysis can be done by computing the sex ratio of subsequent births by composition of the existing offspring. Couples that already have a boy would expected to have approximately normal sex ratios in their subsequent births, but couples that have, for example, two daughters would be likely candidates for trying to ensure the birth of a boy for their next child. Consequently, the expected sex ratio in this case would be high.

Tabulation of Census Data

Example 1.B. Sex Ratio at Birth of Last Births (Vanuatu)

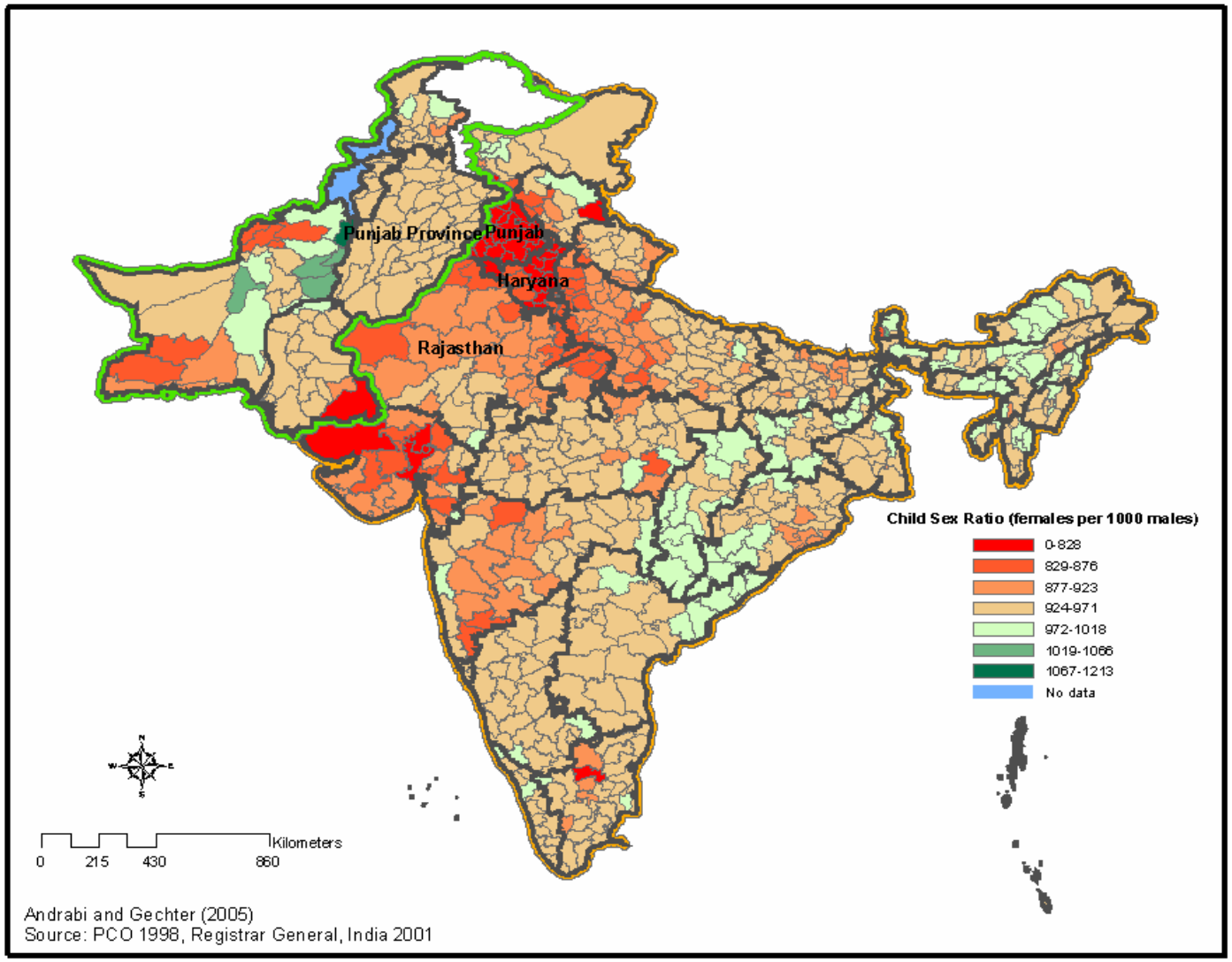
Overall sex ratio (women 15-50): 108.4

Last births (women 15-49): 113.6

		Number of girls ever born by the mother, before birth of last child				
		0	1	2	3	4
Number of boys ever born by the mother, before birth of last child	0	116.0	128.6	154.5	165.9	139.6
	1	96.2	117.0	134.6	127.6	111.6
	2	89.0	101.8	100.5	123.4	133.1
	3	99.3	106.8	102.3	99.5	159.7
	4	82.9	85.2	127.0	91.6	130.0

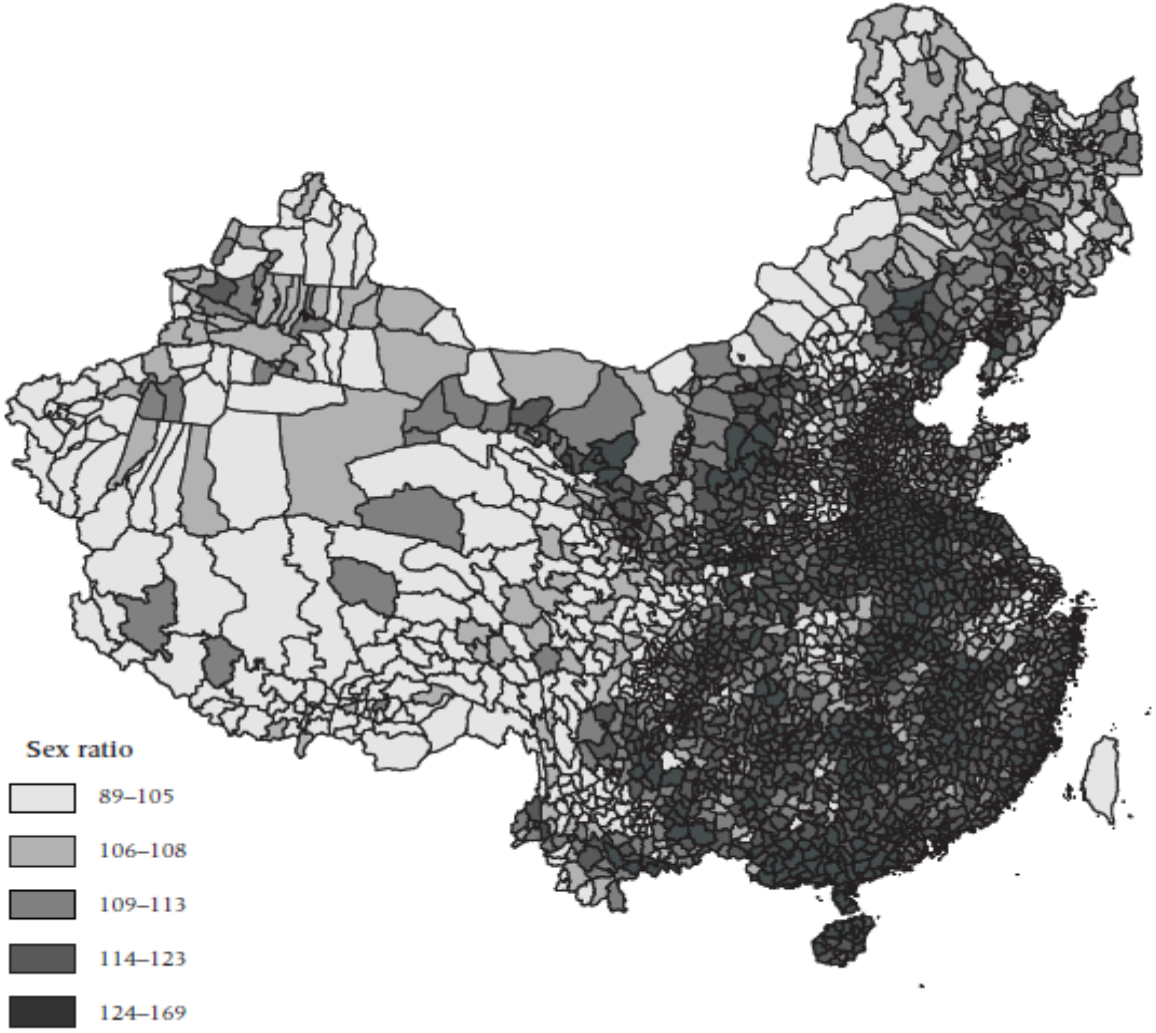
Tabulation of Census Data

Example 1.A. Sex Ratio 0-6 Yrs: Geographical Variation



Tabulation of Census Data

Example 1.A. Sex Ratio 0-9 Yrs: Geographical Variation



Types of indicators that can be constructed with census data

Singulate Mean Age at Marriage (SMAM) with the proportion of never-married women by age group, in the 2008 census of Malawi:

15-19	70.6 per cent
20-24	17.4
25-29	6.7
30-34	3.0
35-39	1.9
40-44	1.5
45-49	1.2

Step 1. Calculation of the person years lived in a single state:
15*100+5*70.6+5*17.4+5*6.7+5+5*3.0+5*1.9+5*1.5+5*1.2 = 2004.5 (A).

Step 2. Estimation of the proportion remaining single at age 50: 0.9 per cent.

Step 3. Estimation of the proportion ever marrying by age 50 c): 99.1 per cent (C).

Step 4. Calculation of the number of person-years lived by the proportion not marrying:
50*0.9=45 (D).

Step 5. Calculation of Singulate Mean Age at Marriage (SMAM):
SMAM = (A - D)/C = (2004.5 - 45)/99.1 = 19.77.

Types of indicators that can be constructed with census data

The difference between the ages of spouses is an important gender indicator. It can be computed in different ways:

1. Directly, in the 19 countries ask for the date or the age of the woman at the time of her first marriage;
2. Using the SMAM of men and women;
3. Using the difference between the ages of married men and married women.

National level interpretation on this issue can be found in the CEDAW Committee concluding comments for its countries, at

http://www2.ohchr.org/english/bodies/cedaw/cedaws.

The Minimum Gender Indicator Set approved by the UN Statistical Commission in February of 2012 contains one marriage indicator, which can be computed from census data if the relevant question (1) was asked, namely the percentage of women aged 20-24 years old who were married at or in a union before age 18.

Tabulation of Census Data

Few countries ask questions about the previous marital status of individuals. Some, like Mauritius and Nepal in their 2011 censuses, ask whether the person has been married more than once. One country that includes more detailed information is Ireland. The 2006 census of Ireland distinguishes seven marital status categories, namely a) Single (never married); b) Married (first marriage); c) Remarried following widowhood; d) Remarried following divorce/annulment; e) Separated (including deserted); f) Divorced; and g) Widowed. This allows some interesting analyses, such as quantifying the propensity of widowed or divorced men and women to remarry. According to the Irish data, 9.04% of women over the age of 15 had been widowed and of those only 2.89% had remarried. In the case of men over age 15, only 2.78% had been widowed, but of those a much higher percentage (11.29 %) had remarried. To some extent, these results are affected by the age structure, but even if this is taken into account, men are still more likely to remarry. Of the widows aged 40-49, for example, 12.4 per cent had remarried, but the equivalent figure for widowers was 21.2 per cent. Men were also more likely to remarry after a divorce, although here the difference was much smaller. Of those that had been married before, 39.67% had remarried, compared to 30.08% in the case of women.

Data on Domestic Servants

In some countries, such as Kuwait, co-resident domestic servants correspond to a considerable proportion of household members, as indicated by the study conducted by Shah et al. (2002). Using data from a nationally representative survey on households, they found 17.3 per cent of the 14,835 individuals residing in the investigated households were domestic servants who were unrelated to the Kuwaiti residents. The prevalence of co-resident domestic servants was particularly high in households with elderly persons; about 90 per cent of all households with an older adult had at least one co-resident domestic servant. These numbers, however, are exceptionally high and owe a lot to the availability of cheap domestic servants from abroad. By comparison, in the 2005 census of Colombia less than 1 per cent (i.e. only 0.40 per cent) of all household residents were found to be co-resident domestic servants. The percentage was somewhat higher in larger households, with a maximum of 0.55 per cent in households with 5 members and a minimum of 0.30 per cent in households with only 2 members.

Types of indicators that can be constructed with census data

Disability indicators

Any gender analysis of disability statistics from censuses has to come to terms with the following issues:

- Incidence statistics vary wildly from one country to the next, e.g. 15% in the 2000 census of Brazil (in line with the 1 in 7 stipulated in the *World Report on Disability*, 2011), but only 1.1% in the 2007 census of Ethiopia.
- Incidence varies between the sexes depending on the particular kind of disability concerned (higher for women in old age).
- Aggregate comparisons between men and women are largely meaningless if they are not age-standardized. Example: In Mexico (2010), 50.1% of people with disabilities are women, but the prevalence of disabilities is higher in men (4.17 vs. 4.00%). Once the prevalence is age-standardized, this changes to 4.29 vs. 3.87%.

Tabulation of Census Data

Example 2 Disability and Marriage

According to UNESCAP, “universally, the incidence of marriage for disabled women is lower than that for disabled men.” For instance, in Nepal, where marriage is a social norm for women, 80 per cent of women with disabilities reported to be unmarried (Paudel, 1995). Another analysis on the 2008 Tanzania Disability Survey showed that 54.8 per cent of persons with disabilities were in marital union, with more males being involved in a relationship (62.5 per cent) than females (47.4 per cent) (Tanzania National Bureau of Statistics, 2010). However, one should be cautious about these conclusions as there is a serious selection bias operating. Because women (disabled or not) live longer than men, more women than men are outside a relationship, as they have lost their partner at an earlier stage in life.

Tabulation of Census Data

Example 2 Disability and Marriage

El Salvador (2007) - Percentage of ever married 30-39 year olds by sex and type of disability

Type of Disability	Men	Women
Difficulty Walking or Moving	57.0	49.9
Difficulty in Use of Hands or Arms	53.4	48.0
Sight Impairment, Even Using Glasses	68.8	67.0
Hearing Impairment, Even Using Hearing Aids	39.3	42.5
Speech Impairment	21.4	28.2
Mental Retardation or Deficiency	6.9	16.0
Difficulty Bathing, Clothing, Eating	31.8	38.7
Other Type of Disability	51.9	51.7
No Disability of Any Type	79.1	77.1

Tabulation of Census Data

Ireland (2007) - Voluntary care given by sex and marital status of the caregiver and the number of hours of care given per week

Men	Total	1-14 hours	15-28 hours	29-42 hours	43+ hours
Single	20,190	12,251	2,218	1,762	3,959
Married	36,565	21,853	3,554	2,013	9,145
Separated	2.979	1,800	361	201	617
Widowed	969	496	107	73	293
Women					
Single	24,594	15,069	2,725	1,650	5,150
Married	64,054	35,806	6,877	3,181	18,190
Separated	6,723	3,783	758	403	1,779
Widowed	4,843	2,305	493	295	1,750

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Types of indicators that can be constructed with census data

Disability-free life expectancy

For addressing the interrelationships of ageing, gender and disability, the *disability-free life expectancy* measure may be useful. This concept provides an indicator of elderly persons' health condition in order to help plan adequate services and facilities. The method to calculate this disability-free life expectancy was first presented in a report of the US Department of Health Education and Welfare (Sullivan, 1971) and is often referred to as 'Sullivan Health Expectancy method'.

Aruba (2010-11)	With Disability	Without Disability	Percentage
Males Age 0	6.0	67.9	8.1 %
Females Age 0	8.9	70.8	11.2 %
Males Age 60	4.5	14.5	23.6 %
Females Age 60	7.3	16.4	30.8 %

Types of indicators that can be constructed with census data

Disability-free life expectancy

The numbers on the previous slide are all that is needed if the objective is to assess the need for care, by sex. However, if the objective is to assess differences in prevalence, they confound possible higher incidence in women with the fact that women live longer and thus have a higher probability of advancing to higher ages, where the prevalence of disability is particularly high. What if we use the same life table for males and females ?

Aruba (2010-11)	With Disability	Without Disability	Percentage
Males Age 0	7.1	69.7	9.2 %
Females Age 0	7.7	69.1	10.0 %
Males Age 60	5.5	15.9	25.8 %
Females Age 60	6.2	15.2	28.9 %

Estimates of poverty by type of household

- **The higher risk of poverty for female-headed households cannot be generalized.**
- Female-headed households and male headed households are heterogeneous categories:
  - Different demographic composition
  - Different economic composition
  - The head of household may not be identified by the same criteria

Headship problems

1. The definition of ‘head of household’ is vague and in no way uniform. Contrary to many other variables, the *Principles and Recommendations for Population and Housing Censuses*, Rev. 2 (United Nations, 2008 a), leave the definition and appointment of the head of household wide open. At least five different concepts of head of household can be found in censuses:

a) Main breadwinner;

b) Householder;

c) Main authority;

d) Reference person; and

e) Questionnaire respondent.

2. Gender inequality may take place at the intra-household level (e.g. unequal distribution of earnings and consumption among members of the household). Therefore, focusing on female-headed households may not capture these inequalities and be misleading.
3. Limited possibilities for analysis and cross-country comparisons. If the researcher is not sure of what the ‘household head’ variable of a given census is actually measuring, this may put into question how the results should be interpreted.

Headship problems

4. Focusing on female-headed households may lead to biased policy priorities. In the words of Sylvia Chant (2003: 30), “Placing excessive emphasis on the economic disadvantage of female heads misrepresents and devalues their enormous efforts to overcome gender obstacles.” The ‘feminization of poverty’ thesis “...precludes an analytical consideration of the social dimensions of gender and poverty...” and “tends to translate into single-issue, single-group policy interventions.” These narrow policy interventions may in turn fail to affect and reshape the embedded structures of gender inequality found in the home, the labour market and other institutions.
5. The reproduction or reinforcement of gender stereotypes. Stereotypes may not only be guiding questionnaire formulation and census execution, but also respondents’ answers, and the researcher’s analysis.

Participants of the Second Global Forum on Gender Statistics expressed concern that “using the conventional classification of household headship (i.e. whether household is female- or male-headed) implies a kind of hierarchy within the household that suggests subordination” (United Nations, 2009 b: 17).

Estimates of poverty by type of household

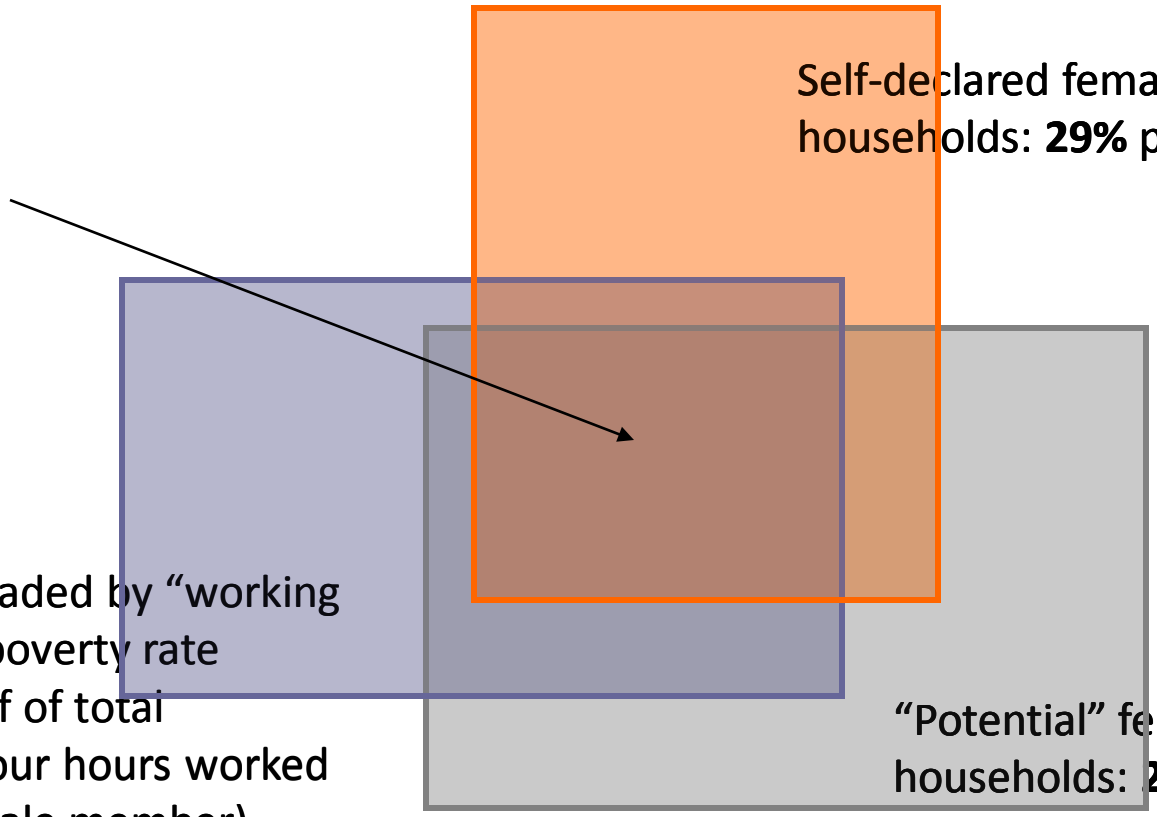
Mixing Different Levels of Analysis

Like many social relationships, gender issues can be analysed at different levels: individual, household, community, geographical, and cross-country. While each of these levels of analysis may have their own legitimacy, the interpretation of the results will differ. A relationship between households or geographical units does not always translate directly into a relationship between individuals. When the units are geographical, this problem is known as the *ecological fallacy*. A typical finding is that in US elections districts with a higher proportion of Afro-Americans in their population often vote more strongly for white supremacist candidates (e.g. George Wallace, in 1968). Obviously, this does not mean that Afro-Americans are likely to vote for white supremacist candidates, but rather that race relations are more conflictive in districts that have a high percentage of Afro-American voters, so that white voters in these districts are more inclined to vote for these kinds of candidates. Something similar may happen at the household level. The greater poverty or vulnerability of households with female heads or high proportions of female members may not be directly related to the characteristics of these women, but reflect that these are special kinds of households where some of the male members are either incapacitated or absent. This may still be a worthwhile phenomenon to investigate, as long as it is kept in mind that the results characterize households, rather than individuals.

Example 2: How is the head of the household defined?

Poverty rate for three sets of "female-headed" households, Panama, 1997 LSMS

Only 40-60% overlapping between categories



Self-declared female-headed households: **29%** poverty rate

Households headed by "working female": **23%** poverty rate (more than half of total household labour hours worked by a single female member)

"Potential" female-headed households: **21%** poverty rate (no working-age male present)

(Source: Fuwa, 2000)

Estimates of poverty by type of household

A clearer pattern of higher poverty rates associated with female-headed households becomes apparent when analysis is focused on more homogeneous categories of female- and male-headed households.
Examples: households of lone parents with children; one-person households.

Therefore, when using household-level poverty measures:

- Disaggregate the types of female- and male-headed households, as relevant for your country, as much as possible, by taking into account demographic and/or economic characteristics of the household members.
- Use clear criteria in identifying the head of household
  - Specification of criteria for identifying the head of household in the field in the interviewers manual and during training (make sure female heads of household are not underreported, especially when adult male members are part of the household).
  - Use for analysis heads of household identified, at the time of the analysis, based on economic characteristics.
  - Avoid using self-identified heads based on no common criteria.

Estimates of poverty by type of household

Lavinas and Nicoll (2007) examined which type of family structure represented the most vulnerable or ‘at-risk’ family arrangement. Using disaggregated employment data by sex among women, then classified as head of family or wives, the results suggest that even in the lowest income brackets, family arrangements involving lone mothers with children were not necessarily the most vulnerable. The sex of the family head (i.e. ‘responsible person’) was not a strong determinant of vulnerability; a family headed by a woman (often on her own) or by a man (the overwhelming majority with a spouse) were almost equally likely to be vulnerable, all other things being equal. Likewise, neither the sex of a family head, nor the family type (i.e. two-parent or single-parent), made almost no difference in vulnerability. This finding stands in contrast to results based on data from other countries, which has identified that single-parent families with children were much more exposed to the risk of vulnerability than two-parent families with children. Further, this study found that having children in the household increased the likelihood of a family being vulnerable.

Variety of household compositions

Cambodia (2008)

	Without Other Adults		With Other Adults	
	Male head	Female head	Male head	Female head
Head without spouse or children	30,274	68,377	52,970	174,078
Couple without children	121,031	10,135	256,785	19,225
Couple with 1-2 children under 15	485,038	38,463	568,448	45,617
Couple with 3+ children under 15	246,319	18,834	288,206	22,632
Lone parent with 1-2 children under 15	12,286	81,563	32,561	173,868
Lone parent with 3+ children under 15	2,835	25,275	9,601	49,643
Other structure or unknown	5,204	2,629		

Note that lone female heads of households with children and no other adults in both of the tables above account for only about 15 per cent of all female-headed households. About half or slightly over half of all female-headed households consist of women living alone, with a spouse or a spouse and children, or with other adults and no children under age 15.

Types of indicators that can be constructed with census data

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Limitations of conclusions that can be drawn from census tabulations

Study by McKinnon, Potter and Garrard-Burnett (2008) on differentials in fertility and family formation among adolescents in Rio de Janeiro (data from the 2000 census)

Adolescent fertility among young women without religious affiliation was more than twice that of Catholics;

Pentecostal Protestants also had higher adolescent fertility rates than Catholics.

However, Pentecostal Protestants also have higher rates of having lived with a spouse or partner, have proportionally more non-white members and reside in areas with lower overall mean household incomes.

Limitations of conclusions that can be drawn from census tabulations

Therefore, the researchers used a regression model in which the probability of giving birth was a function of ever having lived with a partner, migrant status, educational level, age, race, religious composition, mean income and other indicators to characterize the relative prosperity level of the place of residence. Once all of these explanatory factors were considered, Pentecostal Protestants actually had a 23 per cent *lower* adolescent fertility than Catholics with similar socioeconomic characteristics. Young women without religious affiliation continued to have a higher fertility than Catholics, even with these controls, but the difference fell considerably, from more than double to only 29 per cent.