
Fertility in rural Senegal: a “mode of production-oriented” pattern?

Valérie Delaunay, LPED IRD/Aix Marseille Université

Ambre Buiatti, LPED IRD/Aix Marseille Université

Laetitia Douillot, Georges Washington Université/URMITE, IRD

Djibril Dione, URMITE, IRD



Observatoire de



LPED
Laboratoire
Population
Environnement
Développement
www.lped.org

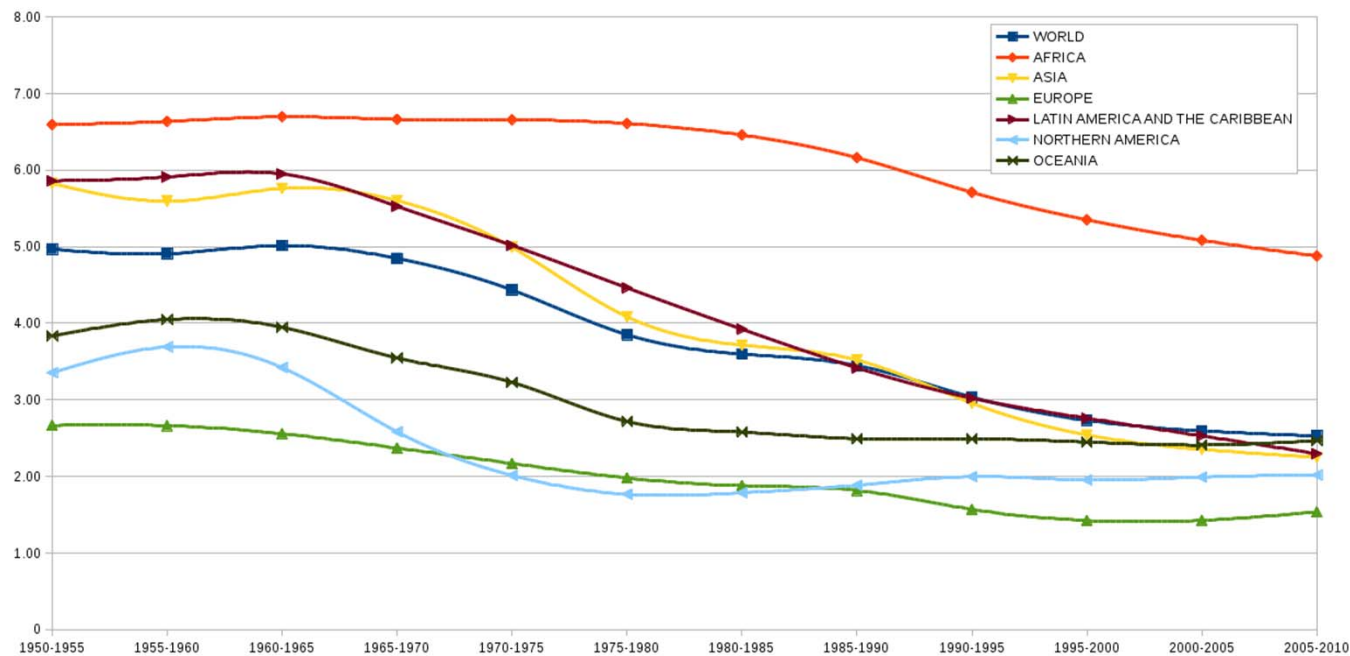
IRD
Institut de recherche
pour le développement

Background

- Fertility transition in Africa : slower than everywhere

Trends in Total Fertility, 1950-2010.

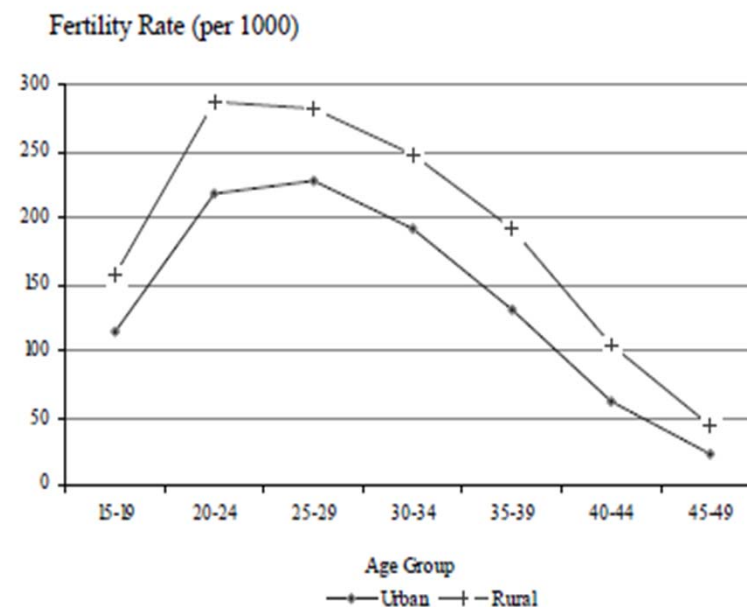
Source: UN World Population Prospects, 2012.



Background

- Fertility transition associated to economic development and modernization (modern education, socioeconomic status,,,...)
- Most of change in urban context

Fig. 2. Age-Specific Fertility Rates, Urban and Rural Areas



What do we know?

- Economic & sociocultural factors of fertility behaviours (direct and indirects)
 - Socioeconomic changes (*Boserup, 1985*); Economic crises (*Boserup, 1985*); Economic role of children (*Becker, 1991*); Gender relations (*Oppong & Bleek, 1982*); Social and family organization, mode of production, resource access (*Gregory et Piché, 1985; Lesthaeghe, 1989; Mc Nicholl, 1982*)
- Institutional approach (*Poirier et Piché, 1995*)
 - Family structure, kinship systems, social groups, labor market, inheritance rules and land structure to be investigate in a historic view



Operationalisation

- Few historical data + holistic information on economical, social and environmental organisation of households
- Wealth index (DHS) : proxy for Hd socioeconomic level
 - → negative relation between wealth and fertility
- Education
 - → negative relation between wealth and fertility



DSS data : an opportunity

- DSS data (older) : historic data + capitalization of pluridisciplinary research
- Niakhar 1964-2004
 - Impacts of agricultural crisis on fertility through marriage and migrations

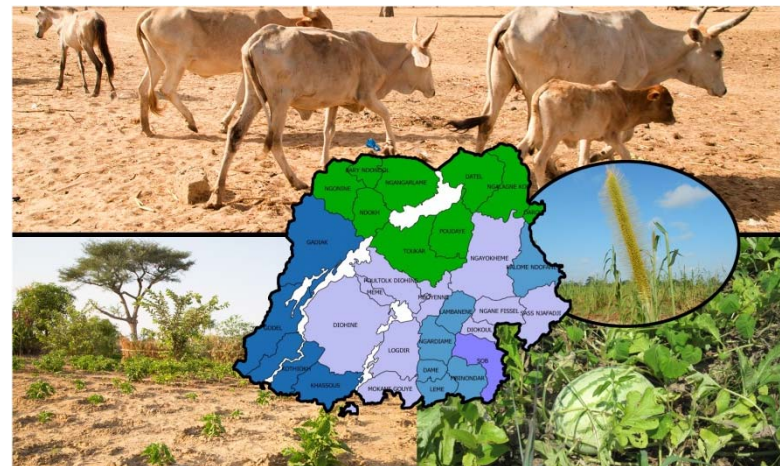
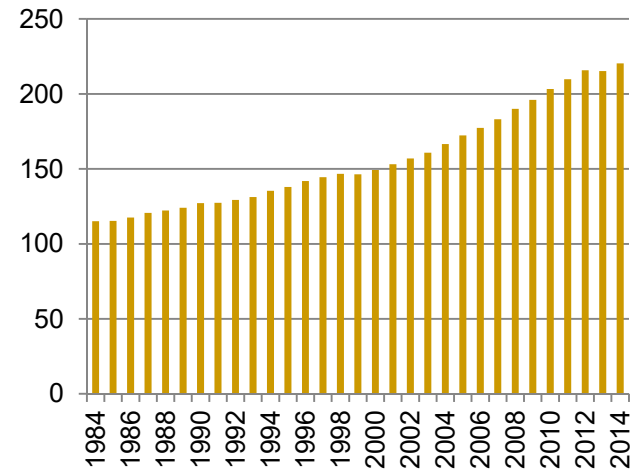
Delaunay et al, 2006. La transition de la fécondité en milieu rural d'Afrique sahélienne : les apports d'une démarche longitudinale et institutionnelle
Cahiers québécois de démographie
Vol. 35, no 1, printemps 2006, p. 27-50



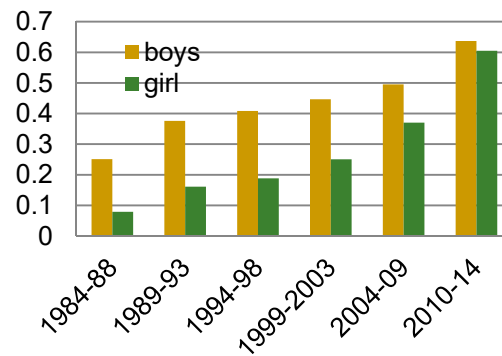
Local context

- High demographic growth
- Land pressure
- Peanuts crisis
 - Diversification of agricultural practices (meat production, water melon, vegetables)
 - Diversification of activities through temporary migrations
- Urbanization of 2 villages
 - Electricity
 - Small business
- Schooling

density

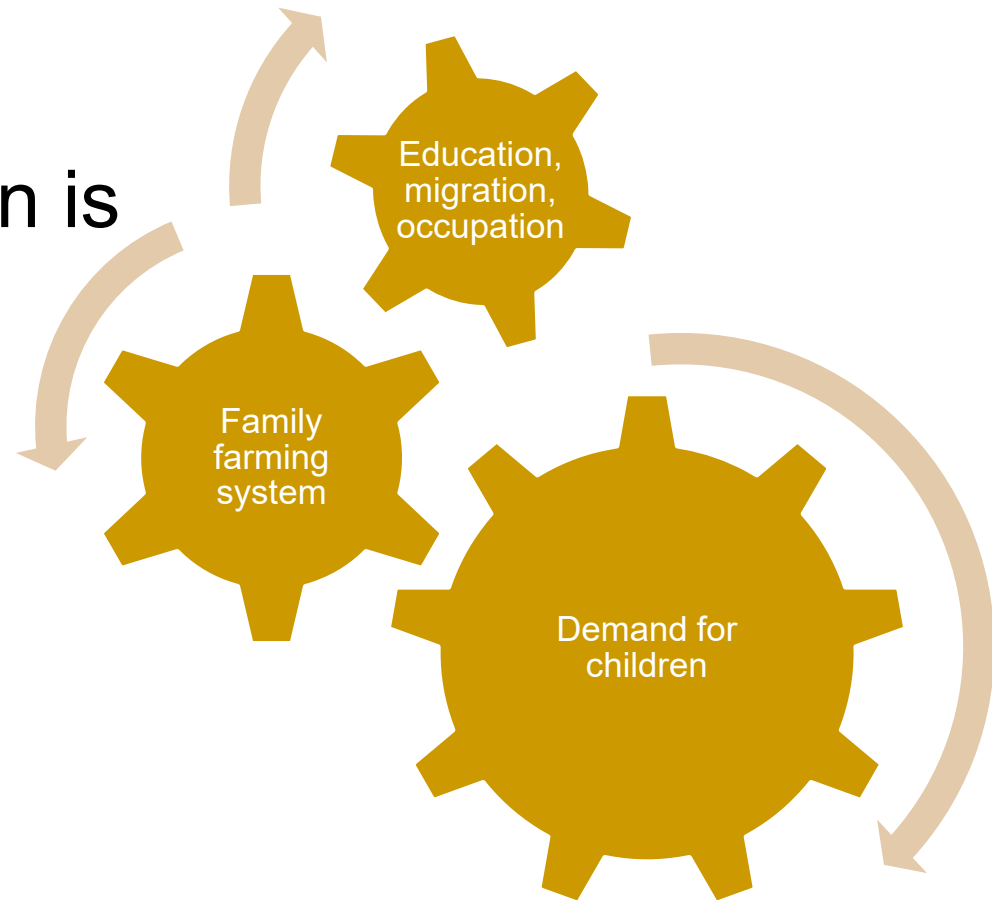


% 15-19 who attend school

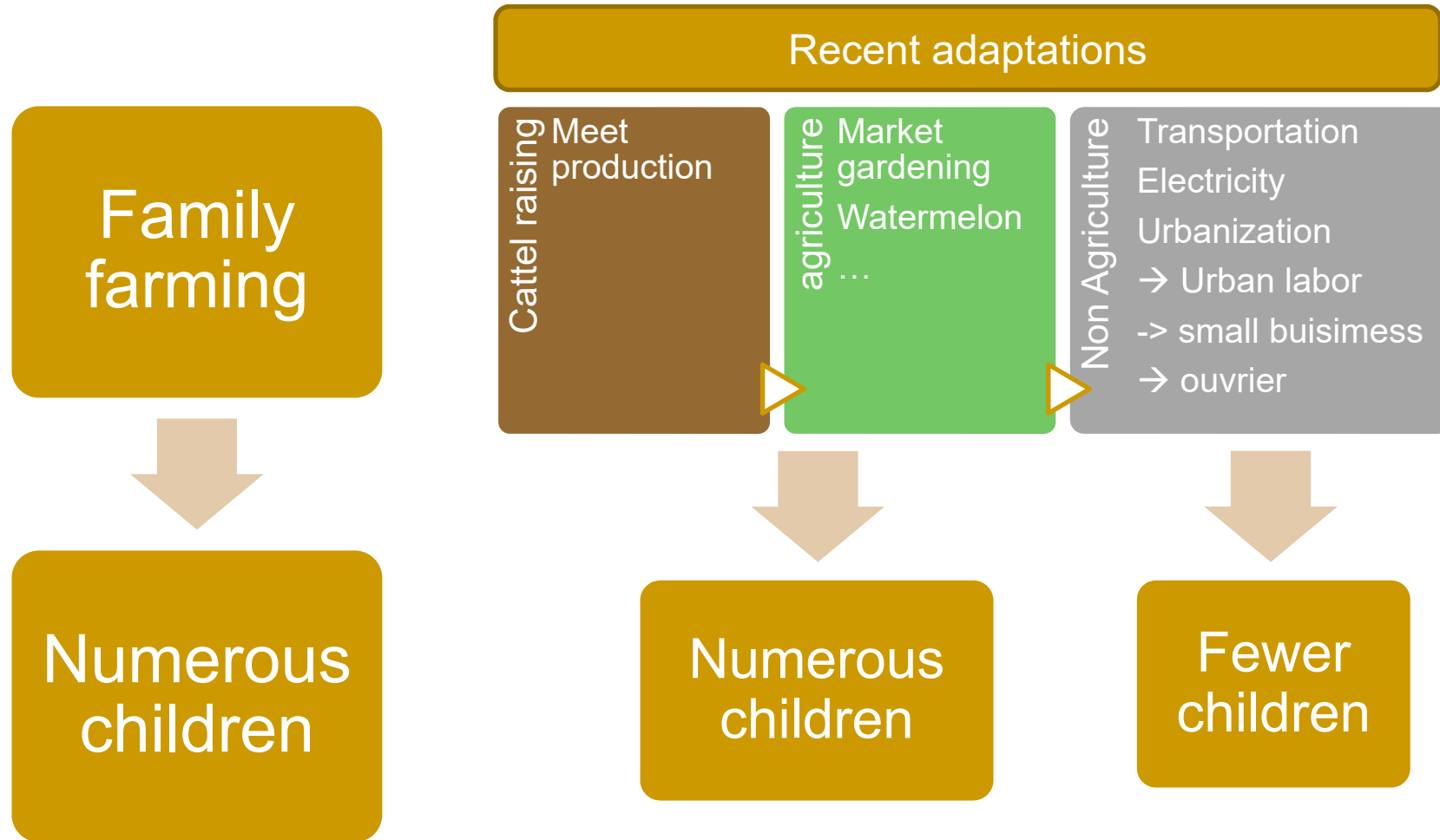


Hypothesis

- The household's mode of production is one of the driving forces of fertility change



Hypothesis



Methodology

- How to measure household mode of production?
- No specific survey on activities
- But data on goods and amenities owned by households
 - Goods from modernization and urbanization
 - Goods from farming system



Economic indicators (2003)

Modern wealth index	Farming wealth index
Proportion of rooms with straw roof	Cart
Proportion of rooms with iron roof	Horse
Proportion of rooms with banco floor	Seed drill
Proportion of rooms with cement floor	hoe
Proportion of rooms with cement wall	husker
Proportion of rooms with cement wall	Poultry
Television	Small livestock (goat, sheep)
Mobile phone	Livestock
Gaz	Meat production
Solar energy	
Private tap water	
Private toilets	



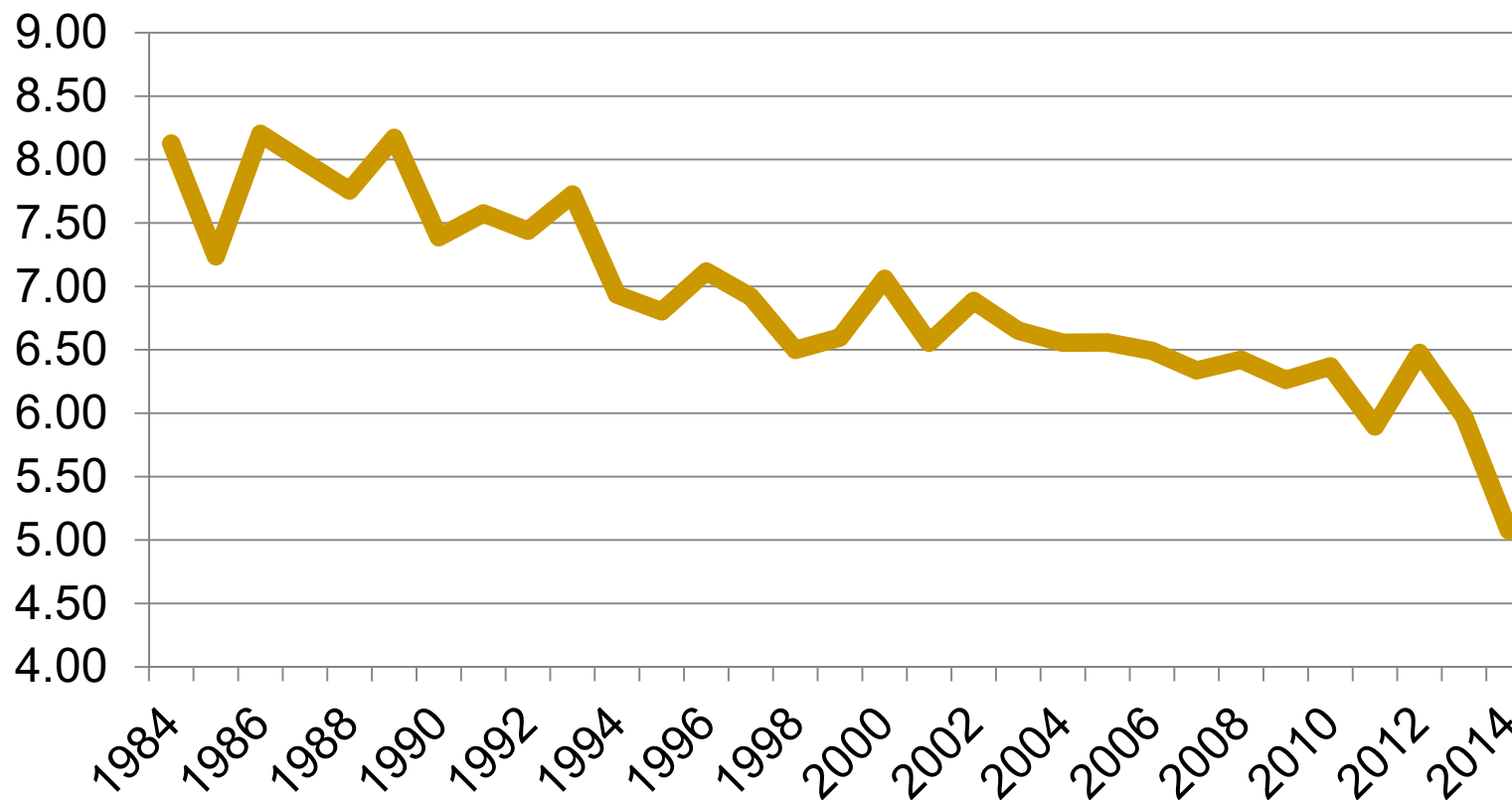
Household wealth index

- Principal component analysis
- Hierarchical clustering

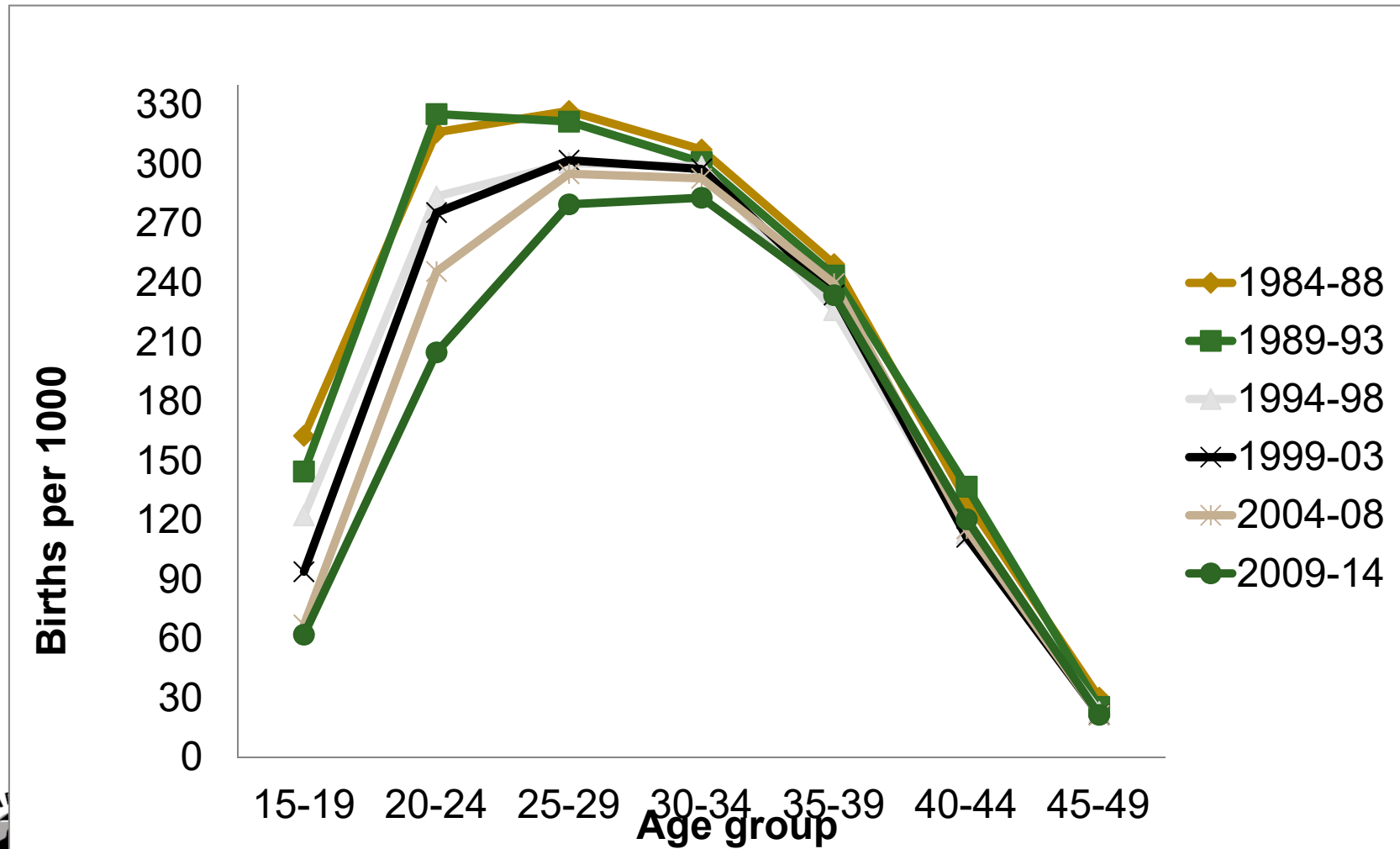
	modern wealth	farming wealth
very poor	67.95	8.18
poor	17.55	30.13
rich	14.49	61.69

Fertility level

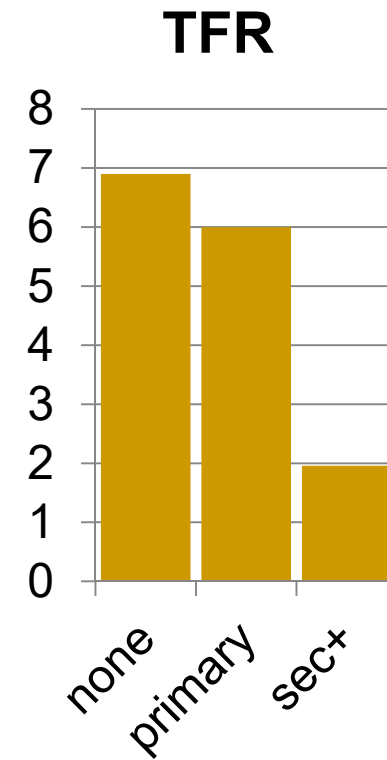
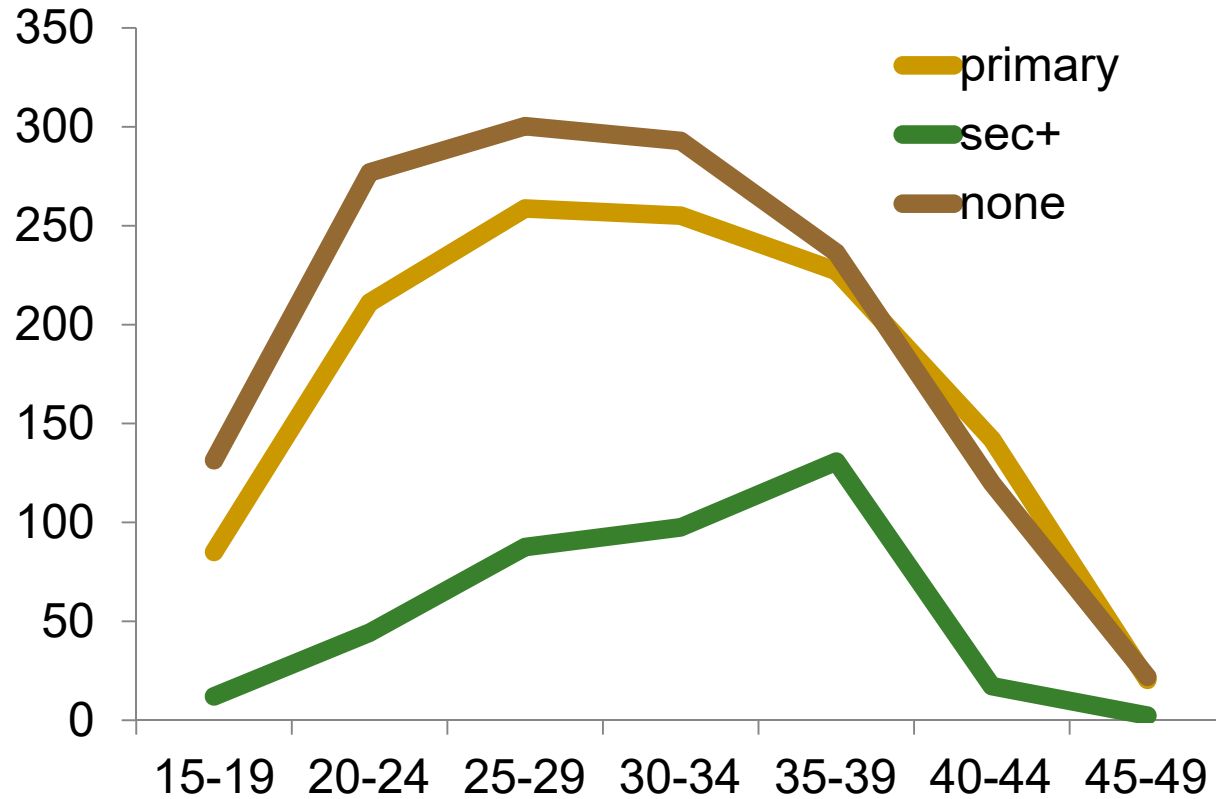
TFR



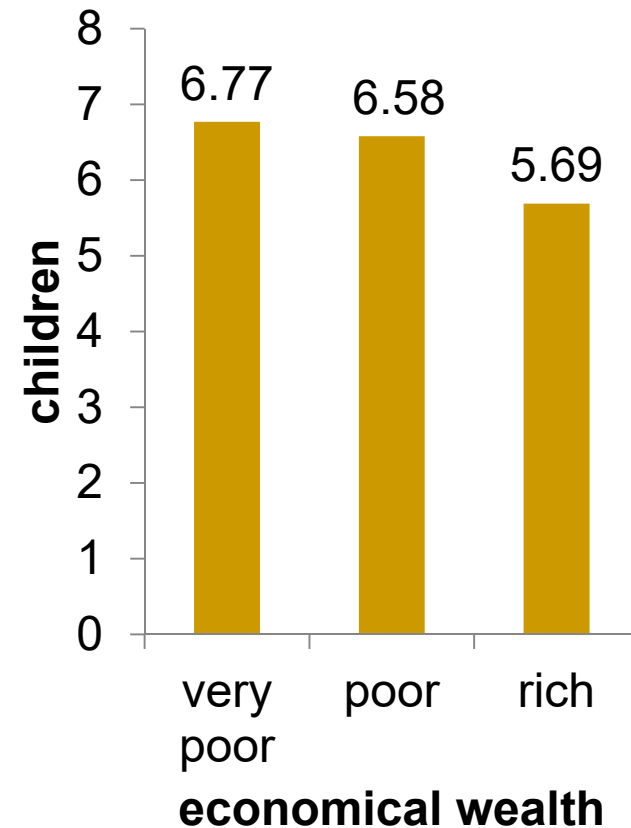
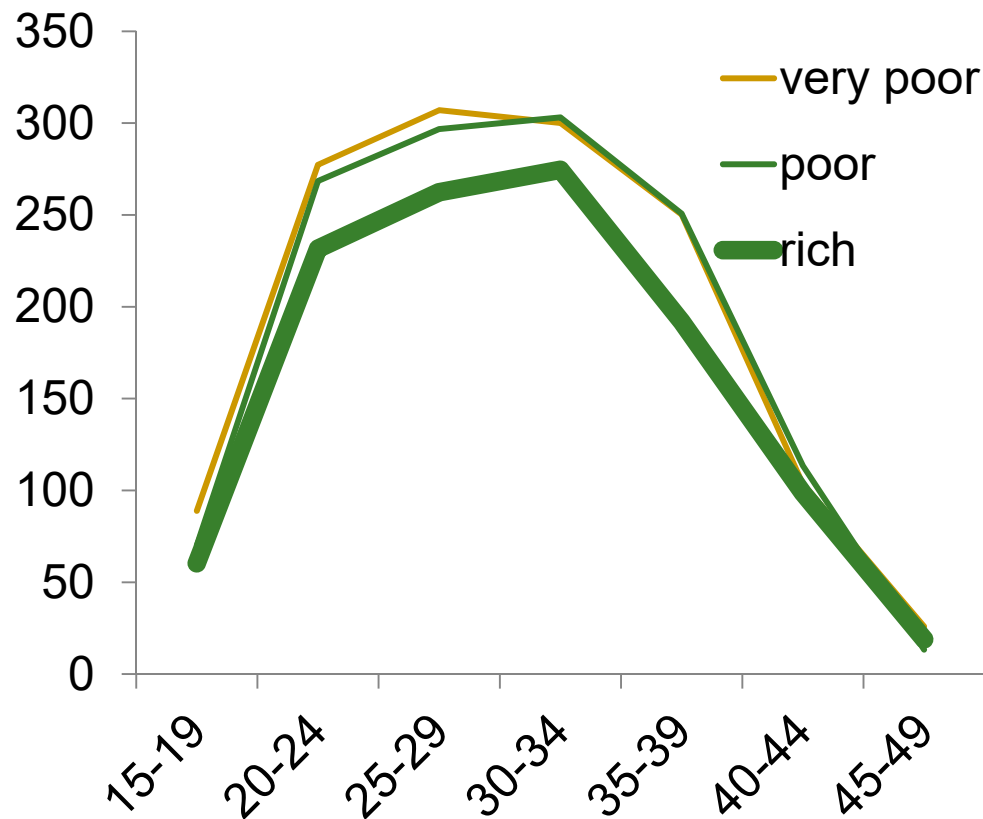
Age fertility rates by period



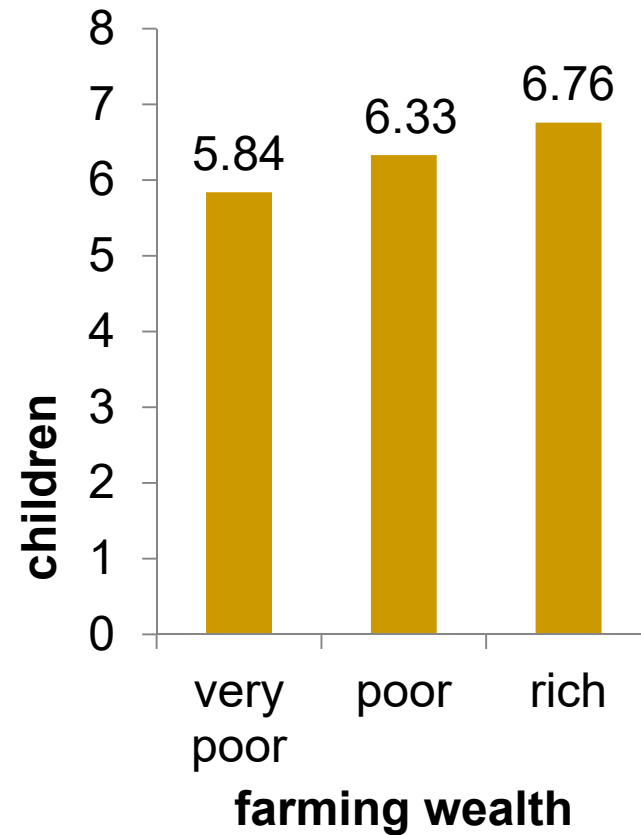
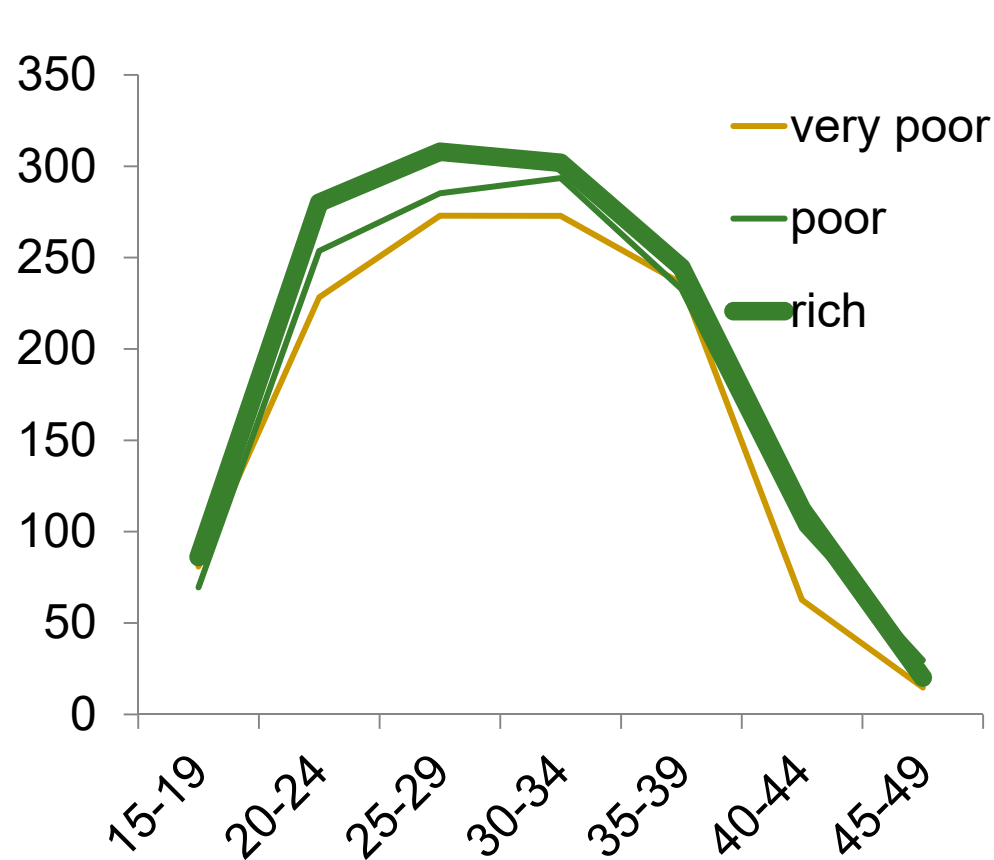
Education – 2009-14



Fertility levels & modern wealth – 2001-2005



Fertility levels & farming wealth – 2001-2005



Multivariate analysis

Variables #		Period 2001-2005
education (none)	Primary	0.86***
	Secondary+	0.54***
Modern wealth index (continuous)		0.76***
Farming wealth index (continuous)		1.23***

- Significant negative effect of education and modern wealth on the risk of having a child,
- Significant positive effect of farming wealth on the risk of having a child



Conclusion

- Big interest in following changes in household socio-economic organization indicators
- Modern/farming wealth : interesting results to be confirmed with the 2014 survey.
- Individual data on activities should be added in routine data collection → improve analytical power to analyse all behavioural changes (reproductive as well as health behaviours)

