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Opportunity, value of children and fertility

Results from a cross-cultural comparative survey in eighteen areas in Asia, Africa, Europe and America

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CHEMNITZ UNIVERSITY OF TECHNOLOGY

The research program

Value of Children in Six Cultures

Fertility behavior and intergenerational relationships
in cross-cultural comparison

(at present: South Korea, **PRChina**, Taiwan, **Indonesia**, **India**, **South Africa**, Nigeria, **Ghana**, **Israel**, **Palestine**, **Turkey**, **Czech Republic**, **Poland**, **Estonia**, **Russia**, **France**, **Germany**, **United States**, **Jamaica**)

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in cooperation with local research teams

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The research question:

Why do some people
have many children,
others few
or none at all?

Three complementary approaches are integrated

(1) The “demand”-based **economic theory of fertility** (ETF)

(2) A revised version of the “supply”-based **“value-of-children”-approach** (VOC) as a special case of the general social theory of social production functions

(3) The **framing theory of variable rationality**

Economic theory of fertility (ETF)

The direct-costs-hypothesis

The time-cost hypothesis

The opportunity-cost hypothesis

The investment-quality-hypothesis

(in the presentation the four hypothesis were illustrated by pictures which had to be removed here)

The interesting question … is
why do people in developed countries
have any children at all
when the prevailing constraints are inconsistent with this choice?

Friedman, Hechter & Kanazawa (1994: 380)

Value-of-children-approach (VOC)

is complementary to ETF, as it emphasizes the “supply”-side

The respective value of the child is seen as the crucial intermediate variable between social context and fertility decisions.

Theory of the social production function

Human actors seek to maximize at least two things (A. Smith):

Physical well-beeing

… is the extent to which an actor is able to secure and improve his/her (physical) survival. It consists of *comfort* and *stimulation*.

- **Social esteem**

… is the extent to which an actor receives positive social reinforcement by his/her social context. It consists of *status*, *affect* and *social approval*.

The explanatory program for VOC is then to develop a special theory…

of how and under which conditions children become intermediate goods in their (potential) parents' social production function.

In other words…

What are children **really** good for?

… in various contexts!

Children and comfort

Children can...

... contribute to the welfare production within the parental household (subsistence economy)

... provide additional income (child labor)

... provide services to the parents

... contribute to insurance against life's risks

Children's general utility for optimizing comfort of their parents is their potential for *work & income utility* and *insurance utility*.

Children and stimulation & affection

Children can...

... create immediate, typically not substitutable challenges and responsibilities.

Stimulation is especially salient in early parent-child-interaction, when babies and toddlers need continuous nutrition, care and observation. In the case of children, *stimulation & affection* are always confounded in the social production function *(short-term utility)*.

... create “native”, close, intimate, emotional, live-long, bonded, and committed social relationships which provide self-validation and personal identity formation and give meaning and relevance to personality *(long-term utility)*.

Children in the social production function

	physical well-being	*social esteem*
short-term	**stimulation & affection**	**status-attainment**
intermediate	**work utility**	**social approval**
long-term	**insurance utility**	**dialogical benefits**

No. of children and comfort

Each additional child...

... linearly increases the work utility

... distributes the existing workload on more shoulders

... distributes the burden of the supply for the parents on more shoulders and thus reduces the duty for each child

... makes old age support more *certain*

Comfort utility...

... is restricted by initial investment costs

... depends on available opportunity structures for (early) unqualified labor

No. of children and stimulation & affection

One or two children can provide as much stimulation & affection as four or more children.

The saturation point for the stimulation & affection-utility is reached quite early.

As the absolute costs (in time, money, efforts) increase with the number of children, the ratio is favorable for few descendants, but unfavorable for childlessness and high parity.

Both, ETF and VOC…

rely on an implicit model of rational choice in fertility decision making, in which subjectively expected costs of children are calculated against potential benefits.

Implications:

If ETF or VOC are true,

then fertility decisions should be directly related to the individual costs-and-benefits-structure, as being provided by the individual resources, the opportunity structure and the individual alternatives.

If opportunities and individual alternatives are controlled for, then no differences in fertility should occur, i.e. “cultural” differences between the respective societies in a cross-cultural comparison should vanish.

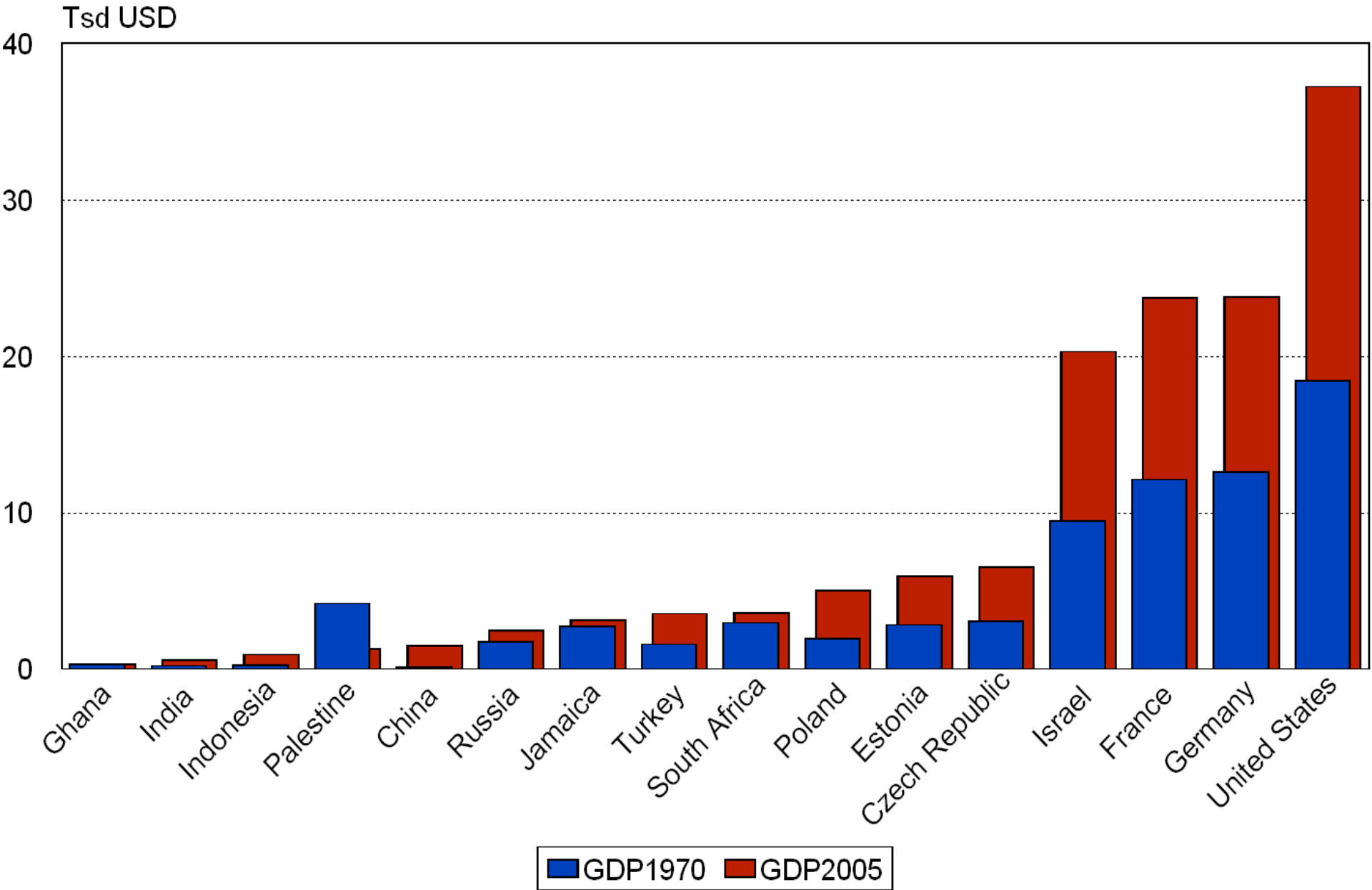
The framing of fertility decisions

The "variable rationality"-assumption suggests two modes of decision making:

- A "spontaneous" mode is based on routinized choices in "well-known" situations.
- A "rational" mode is based on calculations about the probability and utility of action outcomes.

The more "rational" the decisions, the stronger the relationship between opportunities, VOC, and fertility.

GDP 1970 – 2005 in USD of 2000



Fertility and Child-costs (Becker-Hypothesis)

The higher the individual qualification and welfare, the higher the direct costs and the opportunity costs of children,

and hence, the higher the demand for “high-quality”-children,

and hence, the lower the likelihood of births.

Value of children and Affluence (Kagitcibasi-Hypothesis)

The higher the GDP per capita of an area, the more salient becomes the stimulation & affection utility of children and the less salient becomes the comfort utility of children,

and hence, the lower the likelihood of births of higher parity.

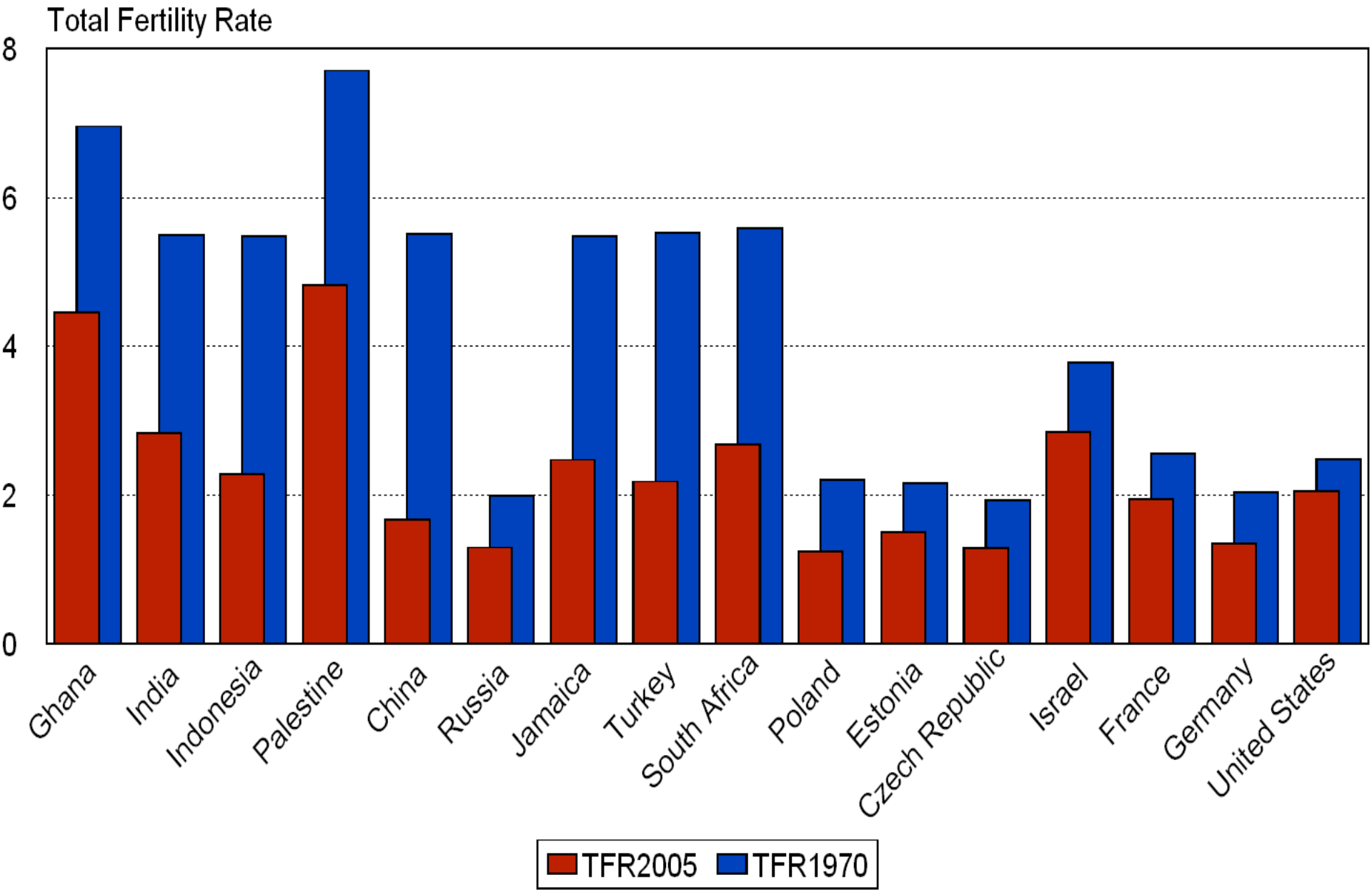
Fertility and Affluence (Leibenstein-Hypothesis)

The higher the GDP per capita of an area, the lower the opportunity for unskilled (child-)labor and the higher the alternatives for insurance against life's risks,

and hence, the lower the comfort utility of children,

and hence, the lower the likelihood of births of higher parity.

Total Fertility Rate 1970 - 2005



Social change and the framing of children's utility

Before, at the beginning, and after completion of the fertility transition, "spontaneous" fertility decisions prevail.

- At the beginning, the comfort utility is taken for granted – no "rational" choice needed.

At the end, stimulation and affection is taken for granted – again, no "rational" choice is needed.

During the fertility transition, "rational" fertility decisions increase, i.e. the relationship between (the parity sensitive) Comfort-VOC and Fertility becomes stronger.

Design of the analysis

- based on information about **18 areas** (Level 2)
- based on the data from mothers
  (**8.468 respondents**) (Level 1)

Correction for response styles

- accounts for culture specific response styles
- „strong opinion“ vs. „modesty“

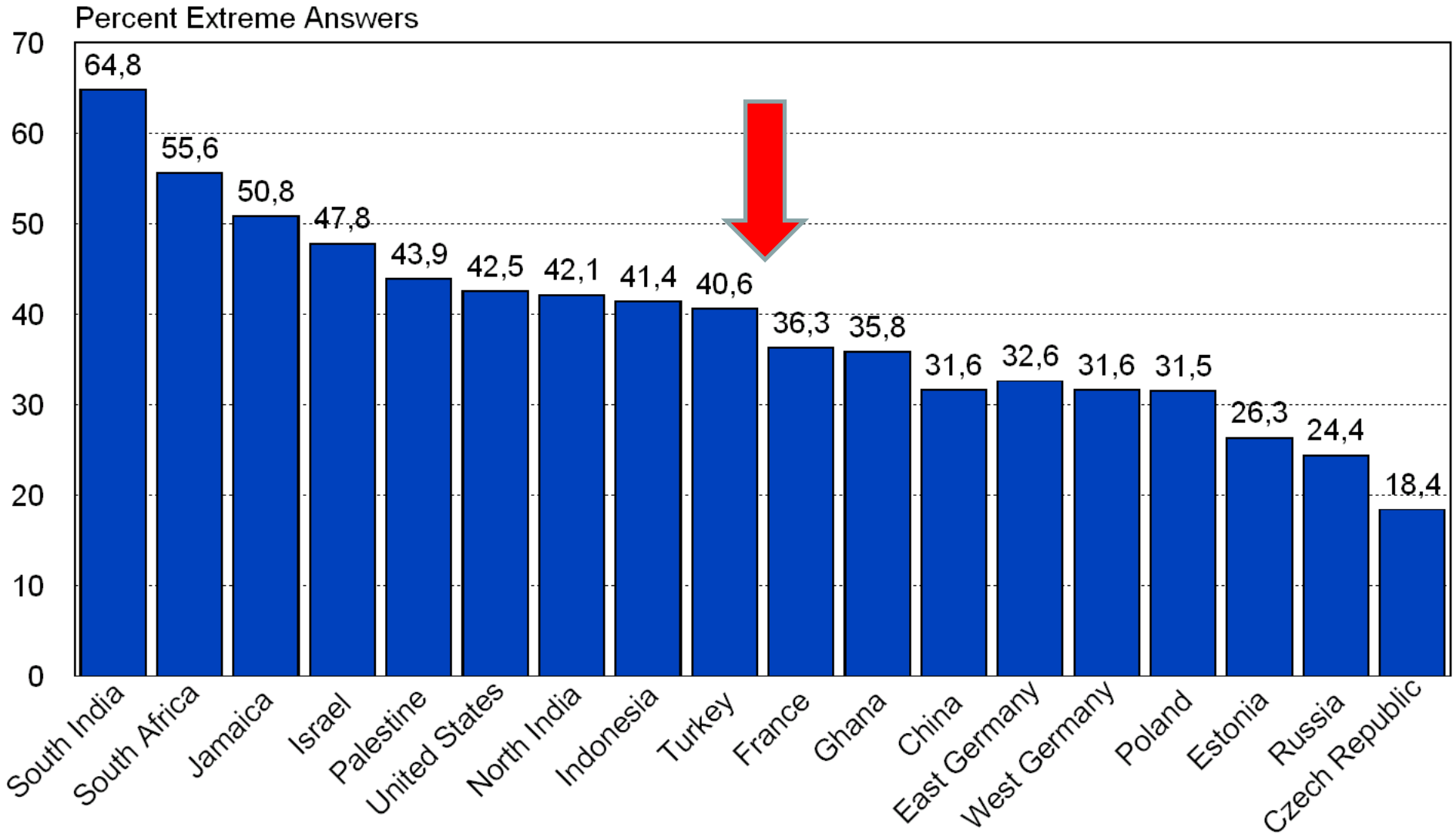
- correction is based on **126 attitude items of various contents**
- based on responses to either **1 or 5** category

- responses were weighed on the **individual level**

COMPUTE CorrVar = ((RawVar - 3) * (1 - PropExtrVal)) + 3.

Response style differences

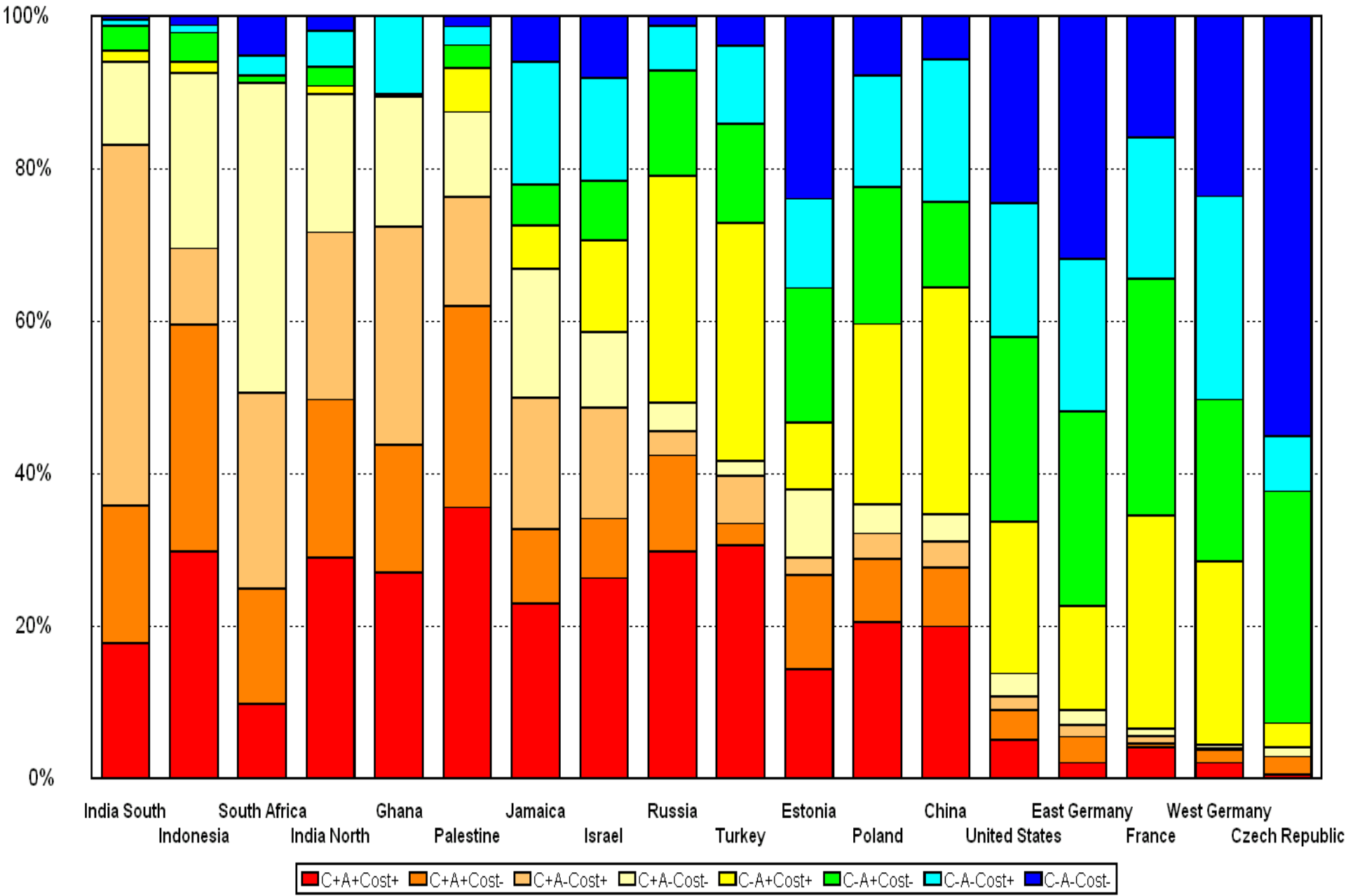
Eta = .60



Latent Class Analysis

Conditional class-specific item probabilities	Comfort+ Affection+ Costs+	Comfort+ Affection+ Costs-	Comfort+ Affection- Costs+	Comfort+ Affection- Costs-	Comfort- Affection+ Costs+	Comfort- Affection+ Costs-	Comfort- Affection- Costs+	Comfort- Affection- Costs-
help in old age	**.83**	**.81**	**.93**	**.75**	.18	.18	.18	.12
carry on family name	**.78**	**.80**	**.73**	**.70**	.13	.13	.06	.03
help family economically	**.88**	**.78**	**.98**	**.81**	.11	.11	.20	.07
help around the house	**.85**	**.89**	**.64**	**.89**	.22	.18	.19	.10
pleasure watch children	**.79**	**.87**	.00	.07	**.89**	**.86**	.11	.09
children are fun	**.81**	**.91**	.03	.12	**.88**	**.76**	.11	.07
joy to have a small baby	**.69**	**.61**	.03	.23	**.77**	**.76**	.29	.34
love between p & child	**.60**	**.51**	.05	.27	**.70**	**.73**	.47	.47
lot of work	**.82**	.03	**.99**	.28	**.75**	.05	**.81**	.07
hard to control	**.88**	.12	**.91**	.39	**.71**	.08	**.71**	.06
financial burden	**.77**	.21	**.87**	.19	**.77**	.15	**.73**	.16
hard to take care	**.81**	.23	**.95**	.25	**.71**	.10	**.68**	.11
Overall prevalence	18 %	12 %	11 %	10 %	14 %	13 %	11 %	12 %

VOC Latent Class Membership by Area



Design of the *multinomial analysis* of VOC-classes

Dependent

- **VOC – class membership**

Independents (1st level)

- **Laborforce participation at time of marriage**
- **Rural Background**
- **Education**
- **No. of children**
- **Welfare level of the household**
- **Extended Household**

Independents (2nd level)

- **GDP 2005**
- **GDP growth 1970 - 2005**
- **TFR 2005**
- **TFR decline 1970 - 2005**

Two-level multinomial regression of class membership

(Odds ratios, reference: indifference)

	Comfort+ Affection+ Costs+	Comfort+ Affection+ Costs-	Comfort+ Affection- Costs+	Comfort+ Affection- Costs-	Comfort- Affection+ Costs+	Comfort- Affection+ Costs-	Comfort- Affection- Costs+
TFR 2005	2.04	1.40	**3.36**	**3.45***	1.59	.61	**3.63***
TFR decline	1.21	.48	2.51	1.50	.84	.80	1.13
GDP 2005	.93	.90*	.93	.93	.99	.97	1.00
GDP growth	1.05	1.04	.92	.95	1.20	1.08	1.07
Workforce at marriage	**.74****	**.76***	**.77***	**.88**	1.01	.86	1.07
Rural Background	**1.30*****	**1.23*****	**1.10***	**1.21*****	1.05	1.02	1.04
Education	**.54****	**.57*****	**.65*****	**.60*****	.82*	.89	.82*
No. of children	.99	.96	1.03	1.00	.98	1.03	.95
Economic status	**.94***	**.96**	**.91****	**.97**	.99	1.02	.96
Extended household	.92	.80	.89	.92	.82	.81	.68*
Education * TFR2005	1.10	1.20	1.09	.98	.94	1.09	.83

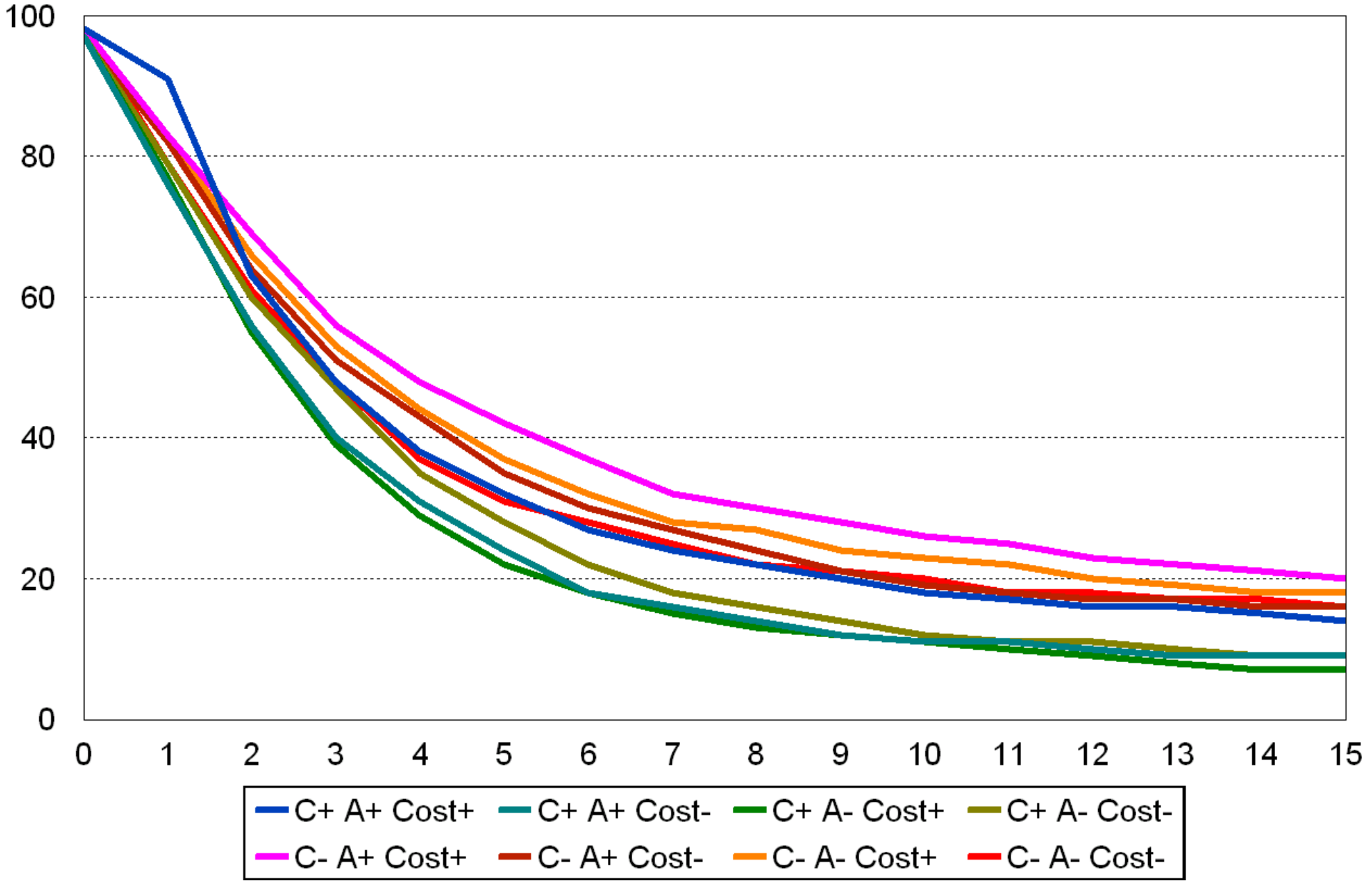
** p < .05; ** p < .01; *** p < .001*

Fertility is measured by methods of event history analysis.

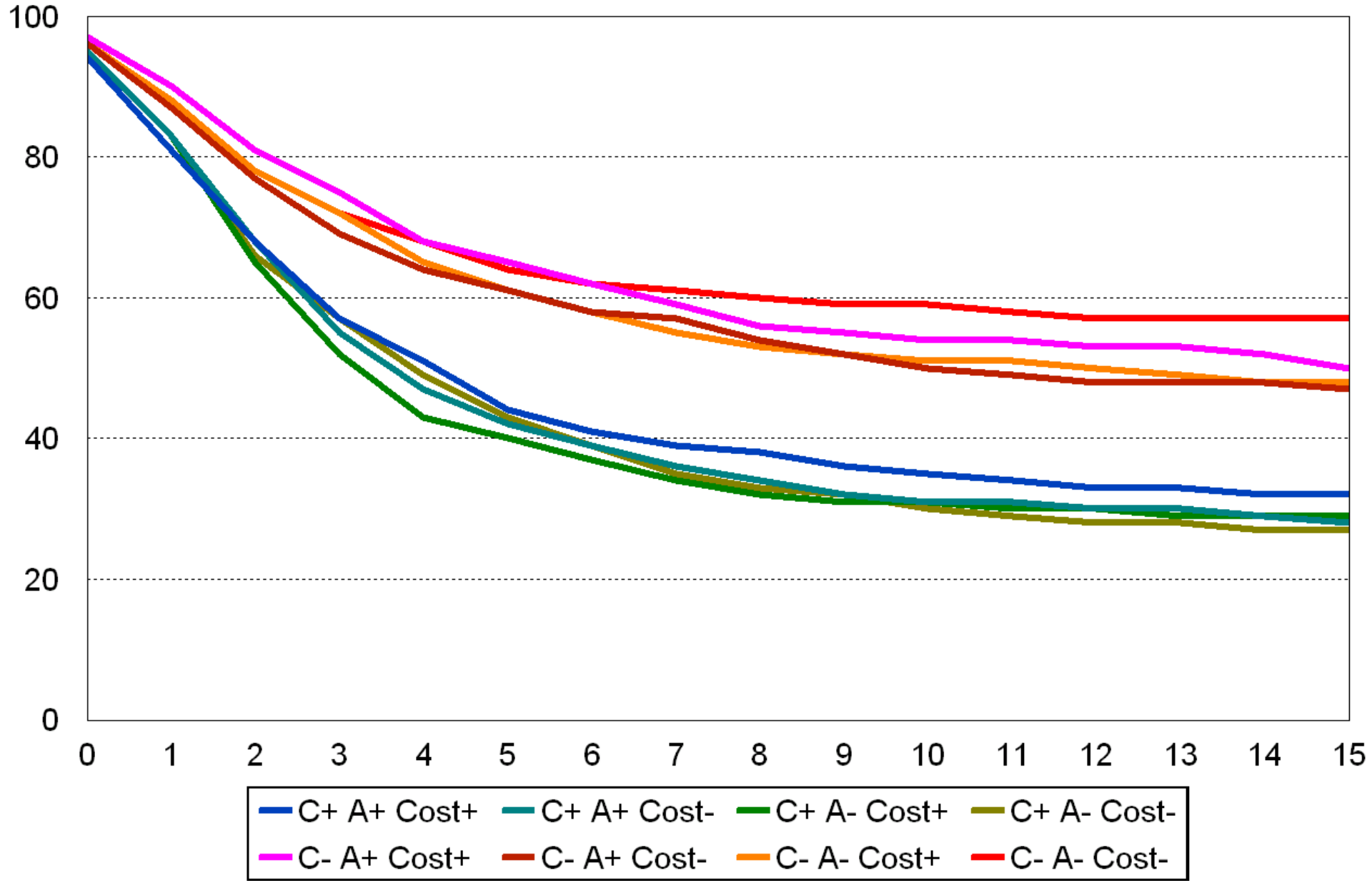
As for each child born the time record is available, the time dependent risk of subsequent birth rates is estimated by the **waiting time between the last birth and the subsequent birth**.

This implies a **strong path dependency**, because for the subsequent births, only those mothers are included who had realized the event before. Thus, mothers become increasingly homogeneous with regard to their social characteristics.

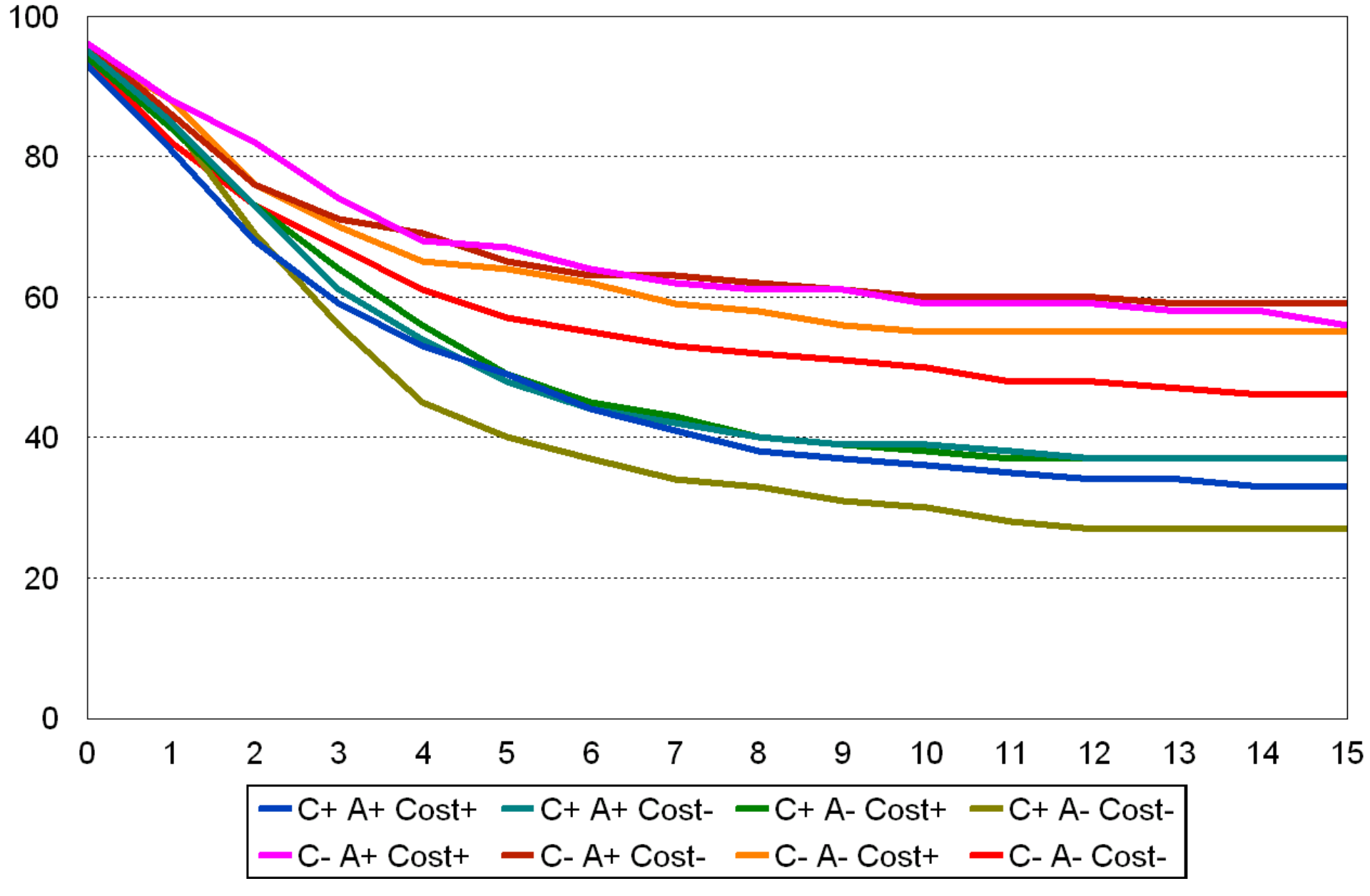
VOC-class membership and 2nd Child



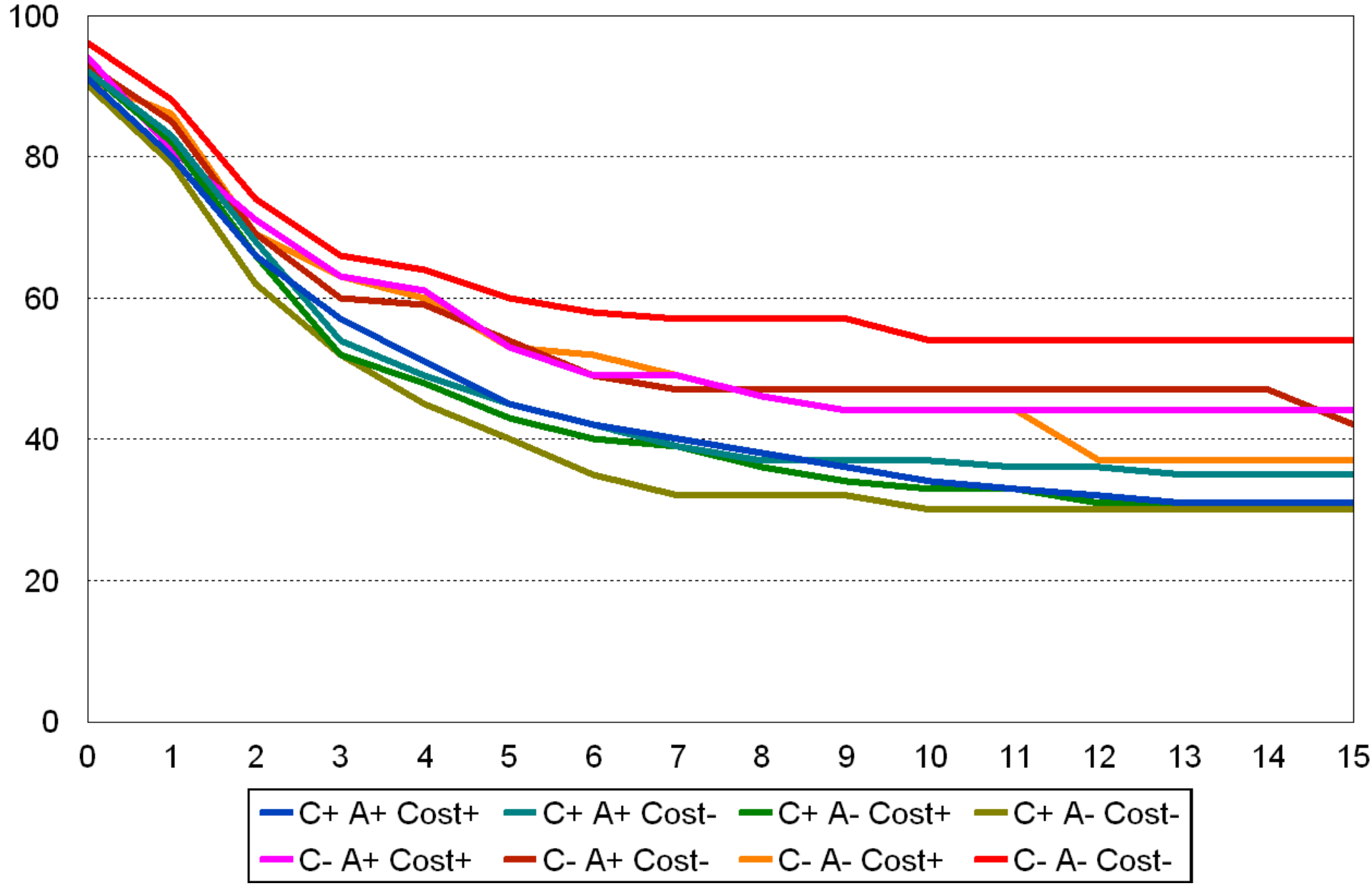
VOC-class membership and 3rd Child



VOC-class membership and 4th Child



VOC-class membership and 5th Child



Design of the *multivariate Cox-regression analysis*

Dependent

- **Rate of subsequent births (2nd, 3rd, 4th)**

Intermediate

- **Comfort**
- **Stimulation & affection**
- **Child costs**

Independents (1st level)

- **Rural background**
- **Education**
- **Labor force participation at time of marriage**
- **Welfare level of the household**
- **Extended household**

Independents (2nd level)

- **GDP 2005**
- **GDP growth 1970 - 2005**
- **TFR 2005**
- **TFR decline 1970 – 2005**

Cross-level interaction effects

Value of children, individual resources and opportunities, socio-economic change and fertility (Cox-regression)

Exp(b)	*2nd birth*
Comfort	**.19*****
Affection	**-.10*****
Child costs	**-.10*****
Rural background	
Education	
Labor force experience	
Welfare level	
Extended household	
TFR 2005	
TFR decline 1970 – 2005	
GDP 2005	
GDP growth 1970 - 2005	
Comfort x TFR decline	
Comfort x GDP growth	

controlled for age of the respondent

Value of children, individual resources and opportunities, socio-economic change and fertility (Cox-regression)

Exp(b)	*2nd birth*	
Comfort	**.19*** **	**.08*** **
Affection	**-.10*** **	**-.07***
Child costs	**-.10*** **	**-.10*** **
Rural background		**.04*** **
Education		**-.13*** **
Labor force experience		**-.16*** **
Welfare level		**.03*** **
Extended household		.93*
TFR 2005		
TFR decline 1970 – 2005		
GDP 2005		
GDP growth 1970 - 2005		
Comfort x TFR decline		
Comfort x GDP growth		

controlled for age of the respondent

Value of children, individual resources and opportunities, socio-economic change and fertility (Cox-regression)

Exp(b)	*2nd birth*		
Comfort	**.19*****	**.08*****	-.02
Affection	**-.10*****	**-.07***	.11
Child costs	**-.10*****	**-.10*****	-.05
Rural background		**.04*****	.02*
Education		**-.13*****	**-.13*****
Labor force experience		**-.16*****	-.06
Welfare level		**.03*****	.02
Extended household		.93*	.05
TFR 2005			**.34*****
TFR decline 1970 – 2005			.93
GDP 2005			1.00
GDP growth 1970 - 2005			-.03
Comfort x TFR decline			**.45****
Comfort x GDP growth			**.05***

controlled for age of the respondent

Value of children, individual resources and opportunities, socio-economic change and fertility (Cox-regression)

Exp(b)	*3rd birth*			4th *birth*		
Comfort	**.51*****	**.39*****	.05	**.49*****	**.41*****	.03
Affection	**-.20*****	**-.15*****	.05	**-.29*****	**-.26*****	-.08
Child costs	-.03	-.04	-.03	-.05	-.05	-.06
Rural background		.01	.03		.02	.03
Education		**-.15*****	**-.15*****		**-.10*****	**-.13*****
Labor force experience		**-.28*****	**-.18*****		**-.15****	**-.08***
Welfare level		.01	.00		.01	.00
Extended household		-.16**	.03		-.17*	.03
TFR 2005			**.49*****			**.36*****
TFR decline 1970 - 2005			.43			.56
GDP 2005			.02			.02*
GDP growth 1970 - 2005			-.14***			-.20***
Comfort x TFR decline			**.65*****			**.49****
Comfort x GDP growth			**-.09**			**-.12***

controlled for age of the respondent

Conclusions

The Economic Theory of Fertility (ETF) is true,

insofar as the variation in the opportunity structure and the individual resources operate in the predicted direction.

The Value-of-Children-Approach (VOC) is true,

insofar as comfort-expectations increase, and stimulation&affection-expectations decrease fertility.

The framing hypothesis is true,

insofar as under conditions of demographic and social change, Comfort-VOC become more salient.

Conclusions continued...

The theory of the social production function makes it easy to classify societies according to their opportunity structures, to explain the resulting cross-sectional differences in fertility and related change over time.

It has forcefully replicated findings from the original VOC-studies in two ways: It has broadened the range of countries and thus extended the validity of the underlying theoretical arguments, and it has proven the empirical relationship between major predictors of VOC on an internationally comparative level, which had, up to now, only been explored on a national level.

It has contributed the “missing link” in the explanation, namely how “societal structures” along with individual resources transform into intermediate goods in the social production function in the special case of intergenerational relationships.

Credits

The paper was prepared under the sun of Southern Turkey

if you want to see the full paper, please write an e-mail to

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References

Nauck, Bernhard (2005): Changing Value of Children: An Action Theory of Fertility Behavior and Intergenerational Relationships in Cross-Cultural Comparison, in: Wolfgang Friedlmeier, Pradeep Chakkarath & Beate Schwarz (Eds.), Culture and Human Development. The Importance of Cross-Cultural Research to the Social Sciences (pp. 183 – 202). Hove/New York: Psychology Press.

Nauck, Bernhard (2006): Value of Children and Fertility Strategies in Cross-cultural Comparison. Ideal Family Size and Targeted Fertility in Eleven Societies, in: Cristina Gomes (Ed.), Social Development and Family Changes (pp. 300 - 344). Newcastle: Cambridge Scholars Press.

Nauck, Bernhard & Klaus, Daniela (2007): The Varying Value of Children. Empirical Results from Eleven Societies in Asia, Africa and Europe, in: Current Sociology, 55, pp. 487 - 503.

Nauck, Bernhard (2007): Value of Children and the Framing of Fertility: Results from a Cross-Cultural Comparative Survey in 10 Societies, in: European Sociological Review, 23, pp. 615 – 629.