Fertility Intentions
in a Cross-Cultural View:
The Value of Children Reconsidered

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Summary:

This paper seeks to explain the differences in fertility intentions between Turkey and Japan, based on a theoretical modification of the social-psychological concept of the 'Value of Children'. We assume that the 'Value of Children' consists of their support for their parents in order to achieve general human goals. We investigate the causal structure between individual socio-economic characteristics and the 'Value of Children' and fertility intentions.

We use data from the original "Value of Children Studies", including women in their reproductive age, with children born in wedlock. Based on confirmatory factor analyses and structural equation models, we find that in both countries fertility intentions are related to the instrumentality of children to their parents as well as to socio-economic characteristics and institutionally defined opportunities. The 'Value of Children' is in part determined by socio-economic independent variables; however, we also observe direct effects that can not be reduced to the instrumentality of children. Therefore, the endogenization of the effects of the 'Value of Children' on fertility intentions is limited.

1   Introduction

Fertility research has been widely dominated by analyses on the question of why individuals restrict their childbearing behavior. Micro-economic explanations have concentrated on the fertility in developed Western societies that have experienced a great fertility decline during the past decades. Nevertheless, even in industrialized countries, the fertility rates are on a level above zero, so the question arises as to why people have children at all.

According to Friedman, Hechter & Kanazawa (1994: 380), "…the interesting question for instrumental models of fertility is *why do people in developed countries have any children at all when the prevailing constraints are inconsistent with this choice?*" (Original in italics).
The authors criticize micro-economic analysts who argue that fertility reduction is the result of opportunity costs and the loss of the instrumental meaning of children, and introduce the concept of *uncertainty reduction* in order to define a 'Value of Children' for their parents that is noninstrumental. The authors believe that parents give birth to children in order to stabilize their relationship, and thereby reduce the risk of uncertainty about the future maintenance of that relationship.

In our view, the model proposed by Friedman, Hechter & Kanazawa is problematic due to the following reasons[3]:
First of all, we doubt the validity of the authors' distinction between instrumental and non-instrumental motives for having children. If we define instrumentality as 'reaching an end by using certain means' (including the birth of children), the reduction of uncertainty by having children also means referring to the instrumental aspects of childbearing. In this case, the aim of having children is not economically, but psychologically, motivated.[4] In the end, the wellbeing of individuals is improved and therefore the children are, in this case also, instrumental to their parents. The authors' misconception is the result of the equation of "instrumentality" with "economic benefits", ignoring the fact that there may be factors other than economic benefits (and costs) which have to be taken into account.

Second, Friedman, Hechter & Kanazawa (1994:381) reduce the applicability of their approach to developed societies, since in less developed societies "it is difficult, […], to disentangle

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[3] The theory by Friedman, Hechter & Kanazawa (1994) has been criticized in detail by Lehrer, Grossbard-Shechtman & Leasure (1996). These arguments will not be repeated here but your attention will be directed to some general theoretical points.
[4] Moreover, children can also produce economic certainty, e.g. by providing additional income (by means of work or child benefits).

the uncertainty reduction motivation from the economic motivation."

We agree that the motivation for childbearing is a multidimensional one. Children can be valuable to their parents for more than one reason (among which may be the reduction of uncertainty) and, furthermore, those reasons can be interrelated. Evaluating children is not a zero-sum game in which parents weigh the advantages of one dimension against the disadvantages of another dimension. In fact, identifying the multidimensional character of children allows for a comparison of fertility determinants in developed *and* under-developed countries. We therefore criticize the authors' attempt to reduce the analysis to only one motive, excluding non-industrialized countries from their argumentation. The search for an argumentation that is applicable to developed and non-developed countries alike should take priority.

This paper aims to give insight into ways of closing the gap between explaining fertility in developed *and* less-developed societies by identifying the general motives of parents intending (or not intending) to have children.[5] Therefore, we analyze the fertility intentions in two countries (Japan and Turkey) which are quite different from each other regarding not only their fertility levels but also their institutional background, and the state of their socio-economic development (see section 2).
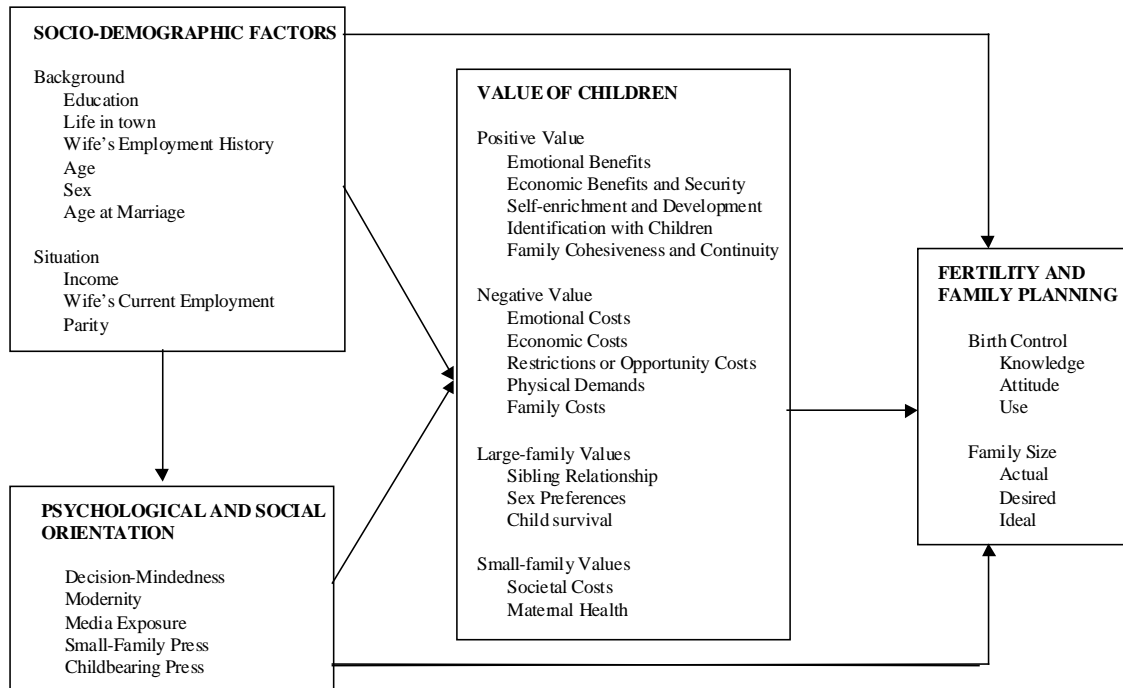
Our theoretical argumentation is based on the hypothesis that children have some value for their parents in all societies. Discussions on the 'Value of Children' can be traced back to Hoffman & Hoffman (1973) who introduced this term into the vocabulary of social and psychological research on fertility. In order to explain cross-cultural differences in fertility behavior and fertility intentions, they developed a model which focused on the psychological circumstances surrounding fertility decisions. Hoffman & Hoffman aimed at an approach that takes into account objective as well as subjective aspects of the fertility decision. They see the 'Value of Children' as a central intervening variable that determines the outcome of fertility decisions, and is in itself dependent upon socio-demographic and socio-economic determinants. In order to identify the content of the 'Value of Children', Hoffman & Hoffman (1973:46ff.) used empirical results and divided them into nine categories: (i) adult status and social identity, (ii) expansion of self, (iii) morality, (iv) primary group ties, (v) stimulation, novelty, fun, (vi) achievement, creativity, (vii) power, influence (viii) social comparison, competition, and (ix) economic utility. They integrated these categories into a joint model and added further relevant factors: *alternative sources* of the 'Value of Children', the *costs* of children, *barriers* against and *incentives* for having children.

Based on this theoretical approach, the East-West Population Institute in Hawaii undertook in the 1970s a cross-cultural empirical study that covered countries from the Far East (Taiwan, Japan,

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[5] Due to limitations of space, we focus here on *fertility intention*. The argumentation for *fertility behavior* is – with minor exceptions – almost identical, as we have shown elsewhere (Kohlmann 2000).

South Korea, the Philippines, Thailand, Indonesia, and Singapore) as well as Europe (Turkey, West Germany) and the U.S. (Hawaii). The basic empirical model is depicted in Diagram 1.

Diagram 1: Empirical Model of the 'Value of Children Studies'

SOCIO-DEMOGRAPHIC FACTORS	VALUE OF CHILDREN	FERTILITY AND FAMILY PLANNING

Background
   Education
   Life in town
   Wife's Employment History
   Age
   Sex
   Age at Marriage
 	
Situation
   Income
   Wife's Current Employment
   Parity
	Positive Value
	   Emotional Benefits
	   Economic Benefits and Security
	   Self-enrichment and Development
	   Identification with Children
	   Family Cohesiveness and Continuity
	
	Negative Value
	   Emotional Costs
	   Economic Costs
	   Restrictions or Opportunity Costs
	   Physical Demands
	   Family Costs
	
	Large-family Values
	   Sibling Relationship
	   Sex Preferences
	   Child survival
	
	Small-family Values
	   Societal Costs
	   Maternal Health
		Birth Control
		   Knowledge
		   Attitude
		   Use
		
		Family Size
		   Actual
		   Desired
		   Ideal

PSYCHOLOGICAL AND SOCIAL ORIENTATION
 	
   Decision-Mindedness
   Modernity
   Media Exposure
   Small-Family Press
   Childbearing Press		

Source: Arnold et al. 1975:8

Up to now, these data have not been analyzed systematically.[6] Occasional analyses based on these data (Kagitcibasi & Esmer 1980; Nauck 1989) show that in the case of Turkey the 'Value of Children' can be reduced to three basic dimensions:

- The *economic* value of children (monetary contribution to the family income by means of child labor or old-age security provided by children)
- The *psychological* value of children (stronger emotional ties to social groups and the partner, expressive stimulation by contact to children)
- The *social* value of children (gain in social status, competence in parental roles, fulfillment of normative expectations, e.g. continuation of the family name).

Nevertheless, these aspects relate only to benefits or advantages of having children. In our argumentation, we take the benefits *and* costs of having children into consideration in order to get a complete picture of the motivational structures of having children.

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[6] The datasets of the "Value of Children studies" were analyzed mainly by using bivariate methods. Only in the Turkish case were more elaborated statistical techniques used.

2   Two Countries under Consideration: Japan and Turkey

The aim of this paper is to develop an explanatory framework for the analysis of fertility intentions that is applicable to countries independent of their modernization level and their cultural background. For this purpose, we have to undertake a cross-cultural comparison and choose countries that differ in their socio-economic development from each other. We selected Japan and Turkey because they not only vary with regard to these aspects but also because they show specific fertility levels.[7]

For a description of the fertility behavior and the socio-structural background in these countries we refer to the middle of the 1970s since the data we are analyzing was collected during that period (see section 4).
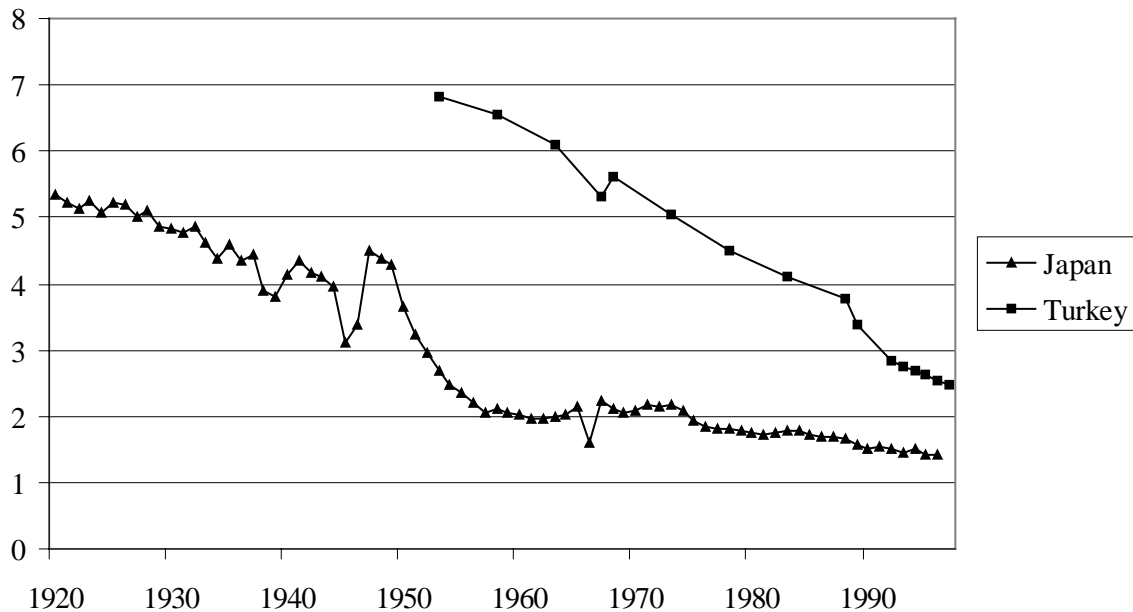
Both Japan and Turkey experienced a massive decrease in fertility rates during the 20th century (see Diagram 2). In Japan, the total-period fertility dropped from 5.4 in 1920 to 3.1 in 1945. After a short but large increase to 4.5 in 1947, the TFR was reduced by more than 50% within ten years to 2.04 in 1957. In the 1960s, the fertility level was almost constant at 2.0[8]. Since the beginning of the 1970s, the decrease of the total period fertility slowed down to 2.1 in 1970, 1.7 in 1980, 1.5 in 1990 and 1.4 in 1997. Since then, Japan has had one of the lowest fertility rates among the industrialized countries in Asia. The fertility level has been below reproduction level since the middle of the 1970s. While in Japan we could observe an up-and-down-movement of fertility, in Turkey there was an almost monotonous linear decline. In 1953, the TFR was 6.8 and ten years later it was 6.1; in 1973 it was 5.0, in 1983 it fell to 4.1, and in 1997 it dropped to 2.5. In our observation window in the middle of the 1970s, both countries had experienced a decline in fertility but had reached different levels within different time periods. While Turkey still had a reproduction level above the replacement level, Japan since then had a continuously negative natural growth rate.[9]

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[7] Apart from this, a further (empirical) argument for the choice of these two countries is the availability of comparable data on subjective aspects of fertility behavior for these countries.

[8] In 1966, a short-lived reduction to 1.6 took place. Coleman (1991) and Hashimoto (1974) hold the phenomenon of *Hinoeuma* responsible for this dicrease. According to a religiously motivated popular belief, this year was unfavorable for births since women born in this year would be very aggressive and would not find a partner. Statistics for 1966 show a strong increase in abortions (Hashimoto 1974:227). Births in that period were brought forward (1965: 2.1) or postponed (1967: 2.2)

[9] The reduction of the fertility level in both countries has been achieved without the invention of modern (effective) contraceptives. In the middle of the 1970s only 38% and 61% of married couples in Turkey and Japan respectively used contraceptives at all (Ross et al. 1993:42ff). In both countries, traditional methods and combining several methods as well as abortion were the predominant means of preventing births.

Diagram 2: Total Fertility Rates (TFR) in Japan and Turkey, 1920-1997

Source: Chesnais 1992: 546pp; Demographic Yearbook 2000: Table 4

In both countries, a basic social security system had been introduced shortly after the Second World War (Gould 1993; State Institute of Statistics 2000a). Nevertheless, the welfare levels differed substantially in the 1970s. In Japan, social security covered the whole population while in Turkey undersupply in social security provision was predominant. The insurance system included only persons who were employed on the basis of a contract. Those who were working as unpaid family workers and the self-employed were excluded from any kind of social security benefit. Since state welfare benefits did not exist, these persons did not have any basic provisions, and instead had to rely on their families. In 1975, 71.6% of the total labor force (26.4% of the self-employed and 45.2% of unpaid family workers) were excluded from social security provision (Statistisches Bundesamt 1980: 15; figures calculated by the author). Since women especially were family workers in rural areas (70% of the female rural labor force) this was clearly a gender phenomenon (Kazgan 1979, in Kuyas 1982: 190).

In both Japan and Turkey, old-age security was problematic in the 1970s. In both countries, a high percentage of persons in retirement age were still gainfully employed - 36.0% of the men over 70 years in 1975 in Japan (Hamm 1992:51) and 77.6% of the men over 65 years in 1970 in Turkey (Özbay 1985:55). The figures provide insight into the low ability of both states to provide sufficient support for their elderly.

Turkey in the 1970s was still an agrarian country (with 64.1% of the labor force being employed in the agricultural sector; Statisches Bundesamt 1980:15, figures calculated by the author) whereas in

Japan only a minor percentage of 15.6% of the total labor force were unpaid family workers (Statistics Bureau & Statistics Center 2000). 40.2% of the total labor force in Japan were working as employees or civil servants. Turkey's state regulations also permitted for child labor (only the working hours were restricted to eight hours for persons under 16 years) which is documented in official statistics that report data on labor force participation for persons over 12 years (Kaplan 1985; Özbay 1985). Child labor in Japan was not permitted and did not exist according to official statistics. In 1975, more than 92% of one particular cohort attended school longer than the compulsory 9 years from age 6 to 15 (Teichler 1995:21) which was a result of the educational reform that began in the early 1960s. In Turkey by contrast, compulsory schooling was shorter (age 7 to 12) and led to a high level of illiteracy, especially in rural areas and among women (in 1975, 39.7% of all persons aged 15 onwards, 56.8% of women of that age and 74.2% of women in rural areas in that age; Kagitcibasi 1983:62). Nevertheless, in both countries higher education was an expensive investment since high school fees had to be paid. As a result of educational reform in Japan, the labor force participation rate of women increased from 8.8% in 1960 to 48% in 1982 (Herold 1987 in Weber-Deutschmann 1995:124-143). Nevertheless, this was mostly part-time employment, with contracts at times lasting less than a year. As a result, women rarely belonged to the core staff of companies, and therefore had lower incomes, very limited protection, low pension entitlements, and little opportunity for career advancement (Hamm, 1992). In Turkey, 37.8% of the female population of working age were employed by the end of the 1970s. As a result of generally low education levels (and especially for women), women in Turkey mostly worked only if it was absolutely necessary (Kuyas 1982), and as a result, career opportunities were extremely restricted.

In Japan as well as in Turkey the nuclear family was dominant. Nevertheless, in Turkey there was also a pronounced kin-related network for childcare. While in Japan the compatibility of family and employment was problematic at least (Hamm 1992; Neuss-Kaneko 1990; Weber 1988), in Turkey we can hypothesize that, given those network structures, the compatibility of family and employment was feasible (Duben 1982; Kiray 1985; Özbay 1985; Weber 1988).

3   The 'Value of Children'

Friedman, Hechter & Kanazawa (1994) rightly criticize the inductive method underlying the model by Hoffman & Hoffman (1973). Indeed, a mere list of the possible aspects to the 'Value of Children' is problematic since this might be a simple product of the choice of countries but not show the dimensions of the "general" 'Value of Children'. Also the critique by Schoen et al. (1997:336) is justified which states that "…proponents of the Value of Children approach have never seriously attempted to integrate their ideas with more general theories of fertility."

Therefore, we try to link the idea of the 'Value of Children' for their parents to a broader theoretical framework, in order to explain fertility intentions in Turkey and Japan.

For the theoretical basis, we refer to the multilevel method introduced by James S. Coleman (1990), by differentiating between fertility development in the whole population on the macro level, and individual fertility decisions on the micro level. Furthermore, we believe that individuals try to maximize their subjective expected utility. One way to maximize this utility is to have children. We therefore have to ask ourselves what the utility of children, or 'Value of Children', for their parents consist of, i.e. we have to explain parental fertility preferences.

In order to do this, we follow the arguments of Lindenberg (1984, 1991) who introduced the concept of *social production functions* into literature on sociology. This concept is based on the ideas of Adam Smith (2000) and Parsons & Shils (1951). Lindenberg assumes that all human beings have two general basic needs, a need for *physical wellbeing* and a need for *social approval.* These needs are (i) supposed to be universal and (ii) cannot be produced directly but by means of instrumental goals. Physical wellbeing relates to the ability of individuals to provide for their physical survival. This is mainly achieved by economic security that allows for the fulfillment of physiological needs. Social approval relates to the extent to which individuals experience positive sanctions by others relevant to them. Lindenberg (1984, 1991) distinguishes between three kinds of instrumental goals which help the individual to gain social approval: status, positive affect, and behavioral confirmation. Status relates to the position achieved in society and is defined by the possession of scarce goods. Positive affect relates to emotional ties, i.e. between spouses, parents and children and parents and relatives. Behavioral confirmation relates to social relationships as well, but is not restricted to the family or close relatives. Rather, it is "relevant others" (like friends) who give behavioral confirmation when individuals are doing "the right thing".

Given the assumption that we deal with rational actors and that these actors want to fulfill the basic needs mentioned above, we expect that individuals choose actions that maximize their physical wellbeing and their social approval. So, parents intend to have (additional) children if this increases their physical wellbeing and their social approval. Now a new question arises: To which extent do (additional) children fulfill these needs?

We already indicated that basic needs cannot be fulfilled directly but have to be produced by the production factors mentioned above. These are not universal, but vary according to individual resources and contextual and institutional conditions. We hypothesize that the birth of a child is one opportunity in order to generate, maintain and enforce the production factors and therefore to fulfill basic needs in the end.

To what extent are children able to support the achievement of production factors?

(i)   *Economic security:*

The economic instrumentality of children is dependent upon the need of the parents (defined by the biographic situation of the parents, the amount of the household budget and entitlement to social security provision by the state) and the opportunities of parents to gain material security via children. This security is defined as legal permissibility of child labor and the economic efficiency of children. We expect that the greater the need for additional economic security provided by children, the higher the probability that children are "used" as an income source and therefore economically intended. Gaining income from children is possible only if institutional regulations allow for child labor. If short-term economic security (obtained by means of child labor) is aimed for, then investment in the quantity of children is the most effective strategy. If long-term economic security (obtained by means of old age security) is aimed for, then investment in the quantity as well as the quality is possible. The actual choice of strategy then depends on the opportunities available.

(ii)   *Social status:*

Whether children have a status that increases meaning for their parents or not depends on the parents investment in their own social and occupational status, or in that of their children. The production of so called 'high quality children' (e.g. with a high education, Becker & Lewis 1973) does not only lead to long-term economic gains, but in the long run it is also an opportunity to improve one's own social status. However, the success of this strategy is very unreliable because of individual conditions (the cognitive ability of the children) and contextual conditions (the inflation of educational certificates) that are not foreseeable at the time of the decision. These possible consequences are acceptable if the price of producing 'high quality children' is low (with no or low educational costs). Therefore, we expect that parents invest in the status of their children if an investment in their own status or that of the partner is inefficient and investment in the status of children seems to be the better option.[10]

(iii)   *Behavioral confirmation:*

The normative 'Value of Children' depends on the relevant norms of the parent's personal network. These can relate to the type and size of the family (including the number of children), contraceptive behavior, labor force participation, and leisure time etc. Children can

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[10] The success of an investment in the "quality of children", and therefore in long-term economic and status-related benefits, can be enhanced when parents choose socialization practices that aim for a very strong and long-term emotional commitment between parent and child, and which foster a firm respect towards parental authority (Nauck 1989; Nauck & Kohlmann 1999).

be a strategy for avoiding negative sanctions and causing positive sanctions. The structure (multiplexity), the size (extent) and especially the (pro- or antinatalist[11]) orientation of the network should determine considerably whether the birth of children is sanctioned positively or negatively (or not at all). We expect that the smaller and more multiplex the social network, the larger the extent of social control, and therefore the higher the conformity in attitudes and behavior will be.

(iv)   *Positive affect:*

Concerning the emotional instrumentality of children to their parents, we believe that they can produce positive affects directly (by means of interactions between parents and children and interactions between siblings) as well as indirectly via the creation and enforcement of emotional relations between the spouses and between the family and relatives. Children compete with other targets of emotional care (spouse, relatives) but are not equivalent to them. In contrast to Friedman, Hechter & Kanazawa, we expect that the uncertainty reduction effect by children works only if a lack of attention by the partner is not deliberately chosen, i.e. if there are no basic problems in the relationship. Therefore, the effectiveness of children as producers of positive affect depends on the quality of the marriage, and whether alternative sources for emotional care besides the partner (close relatives and friends) exist or not.

It is obvious that children can also hinder the realization and reduce the level of all of the four production factors mentioned above:

Economic security may be reduced if the price for having children is high (directly and indirectly) and if there are no opportunities for gaining economic benefits from having children. *Social status* can suffer when children do not live up to the expectations of the parents (e.g. if they fail in school despite costly investment) or if the investment in the parents' education and career appears to be more promising than investment in the education and career of the children. If the latter is the case and children restrict parents from pursuing their education and career aspirations then children hinder the achievement of social status of their parents. There may be a lack of *behavioral confirmation* if the parents are part of small and close antinatalist networks that would impose negative sanctions upon those members who have children. *Positive affect* may suffer because of children since parents (mostly the mother) have to invest time and attention into them, resulting in less time available for other activities and other close persons including the partner.

Summing up our discussion so far, we can distinguish between three aspects of children: economic benefit and costs (economic security), psychological benefits and costs (positive affect)

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[11] The term *antinatalist network* refers to membership in social groups that reward childlessness (or a low number of children) and sanction negatively having (a high number of) children. A *pronatalist network*, on the contrary, rewards those having (a high number of) children and sanctions negatively childlessness (or a low

and social benefits and costs (social status and behavioral confirmation). They are dependent on the individual characteristics of the parents, the socio-economic characteristics of the context and institutional state regulations and therefore they lead to different fertility outcomes. At this point, we can link our reflections with the 'Value of Children' approach developed by Hoffman & Hoffman (1973) i.e. its theoretical and empirical development (Kagitcibasi 1982; Kagitcibasi & Esmer 1980; Nauck 1989; Nauck & Kohlmann 1999). These three aspects taken together describe the dimensions of the 'Value of Children' for their parents. We will then consider the economic 'Value of Children' (i.e. benefits and costs), defined as their ability to provide economic security for the family. The psychological value consists of the ability of children to provide positive affect and the social value consists of their capacity to provide social status and behavioral confirmation. The higher the economic 'Value of Children', the higher the physical wellbeing of the parents and the family. The higher the psychological and the social 'Value of Children', the higher the social approval of the parents and the family.

From the descriptions above, a general theoretical framework emerges: The dependent variable (the fertility intention) is supposed to be influenced by the 'Value of Children', i.e. the instrumentality of children. This value is the result of the interplay of individual, institutional, and contextual factors.

In order to answer the question, "*Under which conditions are children desired?*", we have to specify in detail which dimensions to the 'Value of Children' are important for the parents in Turkey and in Japan, and why they are important.

First, we make some comments on the characteristics of the 'Value of Children' in both countries under consideration.

In general we can distinguish between the parental expectations of the economic, psychological and social costs and benefits of having children. This means that in Turkey and Japan we expect the same basic structure of the instrumental aspects of children.[12] Moreover, the benefit-related aspects should be interrelated with each other and the cost-related aspects are connected with each other, too. The benefits and costs of children are perceived in a multidimensional way, which may be due to the reduction of cognitive dissonance (Festinger 1957). We therefore expect that the higher the expected economic benefit is, the higher the expected psychological and social benefit of

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number of children).

[12] This does not contradict the hypothesis that in different countries specific aspects to having children are relevant since here we only refer to a basic distinction between the value dimensions. Whether these are

children will be also. The same applies to the cost aspects, and it also applies to the opposite case. However, the costs and the benefits of having children do not necessarily interact with each other since children can be perceived as very expensive and as very beneficial at the same time.

We hypothesize that the fertility intention is directly dependent on the 'Value of Children' as perceived by the parents only and that there are no direct links between the independent socio-economic and socio-structural variables on the one hand, and the fertility intention on the other. We want to test empirically the extent to which the effects of subjective factors (the 'Value of Children') can indeed be endogenized.

The Relation between the Value of Children and Fertility Intention[13]

Second, we specify the relationship between the 'Value of Children' and the intention of giving birth. Here we have to take into consideration the country-specific conditions of Japan and Turkey.

As we have seen in section 2, the social security system differed in the two countries. While in Turkey, the family was very important in terms of economic support for the parents during their working ages as well as later on in their old ages due to the lack of state-based security, in Japan only old age security provision was threatened. For Turkey, we expect children to be of economic benefit to their parents since the children can support their parents economically in the short and in the long run (due to the fact that child labor is permitted). In Japan, children might have an economic meaning only in the long run since child labor is not permitted and not necessary. Financial support at old age is more efficient if parents invest in the 'quality' of their children, therefore we expect Japanese parents to prefer to invest in highly educated children in order to gain support at old age. This means that the higher the expected economic benefit of children for their parents in Turkey, the higher is the number of additionally wanted children. Due to the inverse relationship between the quality and the quantity of children (Becker & Lewis 1973), the expected economic benefit should have a negative effect in Japan, i.e. the higher the perceived economic benefit of children to Japanese parents, the lower should the number of additionally wanted children be.

In both countries, we believe that the economic costs of children reduce the intention to increase the number of children, since the monetary costs of children lower the economic security of the family.

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important for individuals will be specified in the following sections.

[13] Please note that in the literature the relationship between the value of children and fertility intentions has not been clarified theoretically up to now. There are some empirical results for the number of additionally wanted children (Arnold et al. 1975:126f.) but these only in part relate to the value aspects mentioned in the following section. Additionally, no theoretical explanations for those results are given. Due to this lack, our assumptions on this relationship are mainly based on conclusions derived from the general assumptions on subjectively expected utilities and their maximization by actors.

We expect that the psychological benefit of children (i.e. positive affect from contact with children) dampens fertility intention. Although receiving emotional care from children increases positive affect and therefore social approval, the psychological gains from children cannot be accumulated infinitely. Marginal utility effects take place very early; one or two children already might fulfill the aim of emotional closeness sufficiently (Nauck 1990). In this case, additional children do not add any further significant benefits and we therefore believe that there is a negative effect of the psychological benefit of children on the dependent variable.[14] [15]

As with the economic costs, the higher the expected psychological costs of children, the higher the probability for antinatalist fertility intentions, since higher emotional burdens reduce the positive affects and also social approval.

With regard to the effects of the social 'Value of Children', we cannot make clear assumptions. This is because behavioral confirmation through children is dependent upon membership in pro- or antinatalist networks. Antinatalist networks should lead to higher social costs, while pronatalist networks should lead to higher social benefits from children. The gain in social status by having children should – due to higher expenditure for 'high quality children' – lead to the birth of children, but only to a very limited number. Therefore, the higher the expectations concerning social status mobility through investment in children, the lower the fertility intention.

Determinants of the 'Value of Children'

Third, we suggest that the biographical and socio-economic traits of individuals as well as effects of contextual and institutional conditions have direct effects on the dimensions of the 'Value of Children'.

As we already mentioned, the economic benefits gained from children in Turkey should be different to those in Japan. First of all, the social security system in Turkey was much less developed than in Japan. Therefore, in Japan long-term economic benefits (and in Turkey short-term and long-term benefits) should prevail. Moreover, legal regulations in Turkey permitted for child labor, while in Japan it was not possible that children provided a significant increase of the household income

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[14] One can speculate that until a certain number of children has been reached, the psychological benefits are big enough to be attractive to parents, but afterwards there is no further accumulation of emotional gains. A theoretical derivation of this threshold is not yet available; an empirical analysis would have to investigate the development of psychological benefits for the development of the family. Longitudinal data on these matters do not exist up to now, so we can not make any exact statements on the timing of the conversion. Therefore, we assume that there is on average a reduction effect.

[15] Economic gains are also subject to marginal utility effects since with an increase in the number of children the additionally achieved income enlarges but the share of increase diminishes. This marginal utility effect should take place at much higher parity than in the case of the psychological gains. Therefore, we do not take it into consideration here.

while they were in their young ages. Owing to these *institutional regulations* we expect children to be of economic value to their parents in both countries but this should differ in the time frame (short-term vis-a-vis long-term efficiency).

We also expect legal regulations on child labor to impact the significance of *contextual effects*. We believe that living in a rural or urban area does have an influence on two dimensions to the 'Value of Children'. The short-term economic benefit that children are more effective in rural areas than in urbanized regions should be the result of the more professional and more segmented labor market in the latter case. Since the long-term economic benefit of children is not affected by the urbanity of the region, we expect that in urban areas in Turkey there are parental expectations of economic benefits gained from children than in Japan where no effect of the level of urbanity should appear (Teran 1997). Parents in both countries are believed to perceive economic costs to a greater extent in urban than in rural areas, due to the higher living costs in cities. Individuals living in urban areas should therefore expect higher economic costs of children than individuals living in rural areas (Mueller 1972). Moreover, in urbanized areas, the meaning and the characteristics of social networks should differ from rural areas, and therefore we expect the social 'Value of Children' (with respect to behavioral confirmation) to be affected. According to Fischer (1982) and Höllinger (1989), social networks in rural areas predominantly consist of contacts especially to family members and relatives, and these networks are small in number, multiplex and dense; while in cities, social networks consist of weak ties and go far beyond the circle of relatives. Bearing this in mind, and taking into account that individuals in urban areas have better opportunities in cities than in small towns or villages to be choosy in selecting their network partners, we predict individuals living in the countryside to behave more according to the pro- or antinatalist expectations of their contact partners than individuals living in urban areas. Nevertheless, we cannot make any clear assumptions about the effects of the social 'Value of Children', since this depends on the nature of personal networks. Evidently, we expect pronatalist networks to lead to an increase in fertility intention and antinatalist networks should reduce fertility intention.

Individual resources have an effect on all aspects of the 'Value of Children'. We believe that the household budget (family income) has an impact on economic, psychological and social benefits and the costs of children. As we already mentioned, the contribution children can make to the economic security of the family (and therefore also to the physical wellbeing of its members) depends on the need of the family for economic contributions (Espenshade 1977; Grootaert & Kanbur 1995). Therefore, the higher the family income, the lower the expected economic benefits of the children. This holds true only in the cases in which short-term economic benefit can be drawn from children; i.e. child labor must be permitted. In the cases in which only a long-term economic benefit can be

gained from children, we expect the current family income not to have any effect on their economic benefits, since under these circumstances the future economic conditions are important, but not the current economic status. Therefore, only in Turkey there should be a negative effect of the level of family income on the expected economic benefit of children, i.e. the higher the family income, the lower the economic expectations of the parents. The effects of the economic budget of the family on the expected economic costs of children are ambiguous: On the one hand, according to literature we can assum that there is a positive income effect on fertility since the enhancement of the budget lowers the relative costs for children (Ermisch 1989; Mincer 1963). On the other hand, an enlarged budget is made available for investment into the 'quality' of children but not in their quantity, therefore the perceived economic costs is expected to increase. According to those considerations, we are not able to predict the effect clearly. With regard to the psychological 'Value of Children', an increase in the family income should result in higher expectations of psychological benefits and psychological costs. Both effects are based on the assumption that a higher income is the result of a higher "occupational strain" on the spouses. On the one hand this leads to stress put on the marital relationship and an increased need for the emotional care children can provide. On the other hand, under these conditions children put an extra strain on the spouses who have less time for their partner. We predict that the latter case holds true for situations in which both spouses are employed, while the first case should be the result of only one spouse being gainfully employed.

The family income might also have an impact on the social 'Value of Children'. Again, we cannot predict exactly the effect of the household budget on the social value since we do not know enough about the network of wealthy individuals. Anyhow, families with a higher income tend to invest more in the 'quality' of their children than those with a lower income; so there we expect a positive impact on the social 'Value of Children' relating to their ability to maintain the social status of the family.

The participation of women in the labor force should impact the 'Value of Children' as well. Being employed reduces the time available for activities with children and raises opportunity costs, i.e. the indirect economic costs. There is a positive effect of working women on the perceived economic cost of children. We predict this effect only for Japan. In both countries, women experience opportunity costs when giving birth to children (in Japan on a monetary basis while in Turkey due to the lack of labor support for the family) but in Turkey these costs can be compensated by family support, allowing for compatibility of labor and family to a certain extent (see section 2). As a result of time costs of labor force participation, in Japan again the expected psychological costs are expected to increase while in Turkey relatives can provide childcare. Moreover, the social costs of children should increase in Japan because of mothers being employed due to the high level of education in Japan. As we have described in section 2, the level of education of women in Turkey was very low in the 1970s, so opportunities for efficient investments in the career of the mother were

only rarely available.

According to micro-economic theory, the education of women has multiple effects on fertility. Micro-economic theorists widely agree that there is a negative relationship between the education of parents and fertility. However, it is not clear what causes this relationship to be negative. The arguments mentioned relate to the fact that highly educated women have a better contraceptive knowledge, perceive interrupted employment to lead to a loss of human capital in real terms and that these women have a stronger preference for higher educated children (Michael 1974). Moreover, it has been shown that part of the influence of education on fertility can be traced back to the longer duration of training and the postponement of marriage and childbearing (Blossfeld & Huinink 1991; Blossfeld & Jaenichen 1992). Therefore, we predict a positive impact of the education of women on the perceived economic costs (loss of income as a result of opportunity costs) and a positive impact on the social costs (loss of career opportunities of the mother as a result of opportunity costs). While the former is expected to be true only for Japan, the latter should not play a role in any of the two countries since career opportunities for women (and especially mothers) in Japan and Turkey are very low. Furthermore, according to the suggestions of micro-economic theorists, we expect the higher education of women to increase the social benefits (investment in the quantity rather than in the 'quality' of children) and the psychological benefits of children ('higher quality children'). We predict postponement of family formation as a result of prolonged education (institutional effect, see above) only in Japan due to the generally high educational level (see section 2). Since this postponement relates to fertility behavior, the effect on fertility intention should be inverse, i.e. since highly educated women in Japan marry and have children at a later point in time than those with a lower education, they have higher fertility intentions.

Another individual factor that might impact the 'Value of Children' is marital quality. It has been argued that children are marital-specific capital which reduces the propensity for divorce (Becker 1991). Moreover, Friedman, Hechter & Kanazawa (1994) state that marriage can be made more secure by having children. Nevertheless, even if there are barriers to a divorce (e.g. children), even if the marital quality is low and external alternatives to marriage exist, the 'insurance' effect of marital-specific capital is no longer effective (Becker, Landes & Michael 1977). Therefore, as we have already suggested, we conclude that children can stabilize the marital relationship, but only if the need for emotional attention is not arising from basic problems within the marital relationship. So, the higher the marital quality, the higher the perceived psychological benefits from having children.

We believe that the age of parents is important in several ways. As the mother grows older, the number of children already born should increase and the number of intended (further) children should decrease. There is thus a direct negative effect of the age of women on their fertility intention. In addition, the instrumentality of children also depends on the age of the individual mother (and of

the child). With regard to the economic benefit, it is important which time frame matters. The higher the age of the mother, the more relevant the economic security in old age, and the less important the immediate economic support.[16] Hence, the older the parents are, the higher the expected long-term economic benefit, and the smaller the short-term economic benefit. An increase in the age of the mother also indicates that the children already born are older. This means that parents are faced with increased living costs and expenditure for education. Thus, the older the mother is the higher the perceived economic costs of raising children are. A higher age of the mother (and therefore also of the children) means that the children become more independent from their parents by having more independent personal networks. We expect the positive affect therefore to be reduced and a negative effect on the psychological benefits of children should exist. On the one hand this is caused by the reduced need for parental childcare and by an increasing focus on social contacts outside the family. On the other hand, the increasing independence of the children leads to generation gaps and increased psychological costs for the parents. Hence, the higher the age of the mother, the lower the psychological benefits and the higher the psychological costs of children.

In addition, interdependent relationships exist between the independent variables, i.e. social context variables, the socio-economic characteristics and the biographical situation of the individuals. Older aged women, living in urban contexts and a high educational attainment of women should increase the family income in both societies.

Table 1 depicts our hypotheses concerning the relationship between the three dimensions to the 'Value of Children' and the fertility intention on the one hand and the relationship between the independent variables and the dimensions to the 'Value of Children' on the other hand.[17]

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[16] This does not mean that economic support through childlabor is not important any longer for older parents. It is only the relative importance that changes. Since the parents will not be able to earn a living on their own in the near future, they will depend increasingly on the (economic) support of their children.

[17] In the following table, only the relationships mentioned above are depicted. We do not intend to make assumptions on all possible relationships. Since we assume that there is a complex and causal structure, several variables are both independent and dependent variables.

Table 1: Expected Effects on Fertility Intention [18]

Independent Variables	Dependent Variables							
	Fertility Intention	Economic Benefits	Psychological Benefits[19]	Social Benefits	Economic Costs	Psychological Costs	Social Costs	Family income
Economic Benefits	T:+ J: -		T:+ J: +	T:+ J:+				
Psychological Benefits	-							
Social Benefits	+/-							
Economic Costs	-					+	+	
Psychological Costs	-						+	
Social Costs	+/-							
Age	-	T:+/- J:+	-		+	+		+

Independent Variables	Dependent Variables							
	Fertility Intention	Economic Benefits	Psychological Benefits	Social Benefits	Economic Costs	Psychological Costs	Social Costs	Family Income
Permissibility Of Child Labor	0	T:+ J:0						
No/Low Old Age Security	0	T:+ J:+						
Urban Area	0	T:- J:0		+/-	+		+/-	+
Family Income		T:- J:0	+	+/-	+/-	+	+/-	
Labor Force Participation	T:0 J:-				T:0 J:+			
Education	T:0 J:+		+	+	T:0 J:+		0	+
Marital Quality			+					

+: positive effect; - : negative effect; +/-: positive or negative effect; 0: no effect
T: Turkey; J: Japan

4　Dataset and Methods

In order to test the hypotheses made above, we need data that cover the objective situation of individuals and their subjective expectations placed on children. Furthermore, the information must be comparable for Japan and Turkey. Up to now, such data has been gathered only in the original "Value of Children studies" in the 1970s (see section 1). We therefore use the data collected by the East-West-Population Institute in Hawaii (see section 1; Arnold et al. 1975; East-West-Population Institute 1978a, 1978b). Apparently, these data are in dire need of thorough analysis since studies based on them have been rather descriptive in the past. Because the two countries were participating in different waves of the surveys (Japan 1973, Turkey 1975), the number of cases differ substantially.

We restrict our analysis to married women between 15 and 45 years old. Furthermore, we limit our study to women who experience their first marriage, since one can assume that step-family fertility patterns are different from that of parents who do not have any children from previous marriages (Becker, Landes & Michael 1977; Thomson 1997; Thomson et al. 2000). We take into account only women that gave birth in wedlock, because births out of wedlock might have occurred under conditions we cannot control. On the basis of these considerations, the Turkish sample comprises 1,122 women and the Japanese sample 197 women.

The dependent variable is the fertility intention, i.e. the number of children additionally wanted, determined by the question "How many more children would you prefer to have?" Descriptive statistics for this variable are given in Table 2.

Table 2: Distribution of the Dependent Variable "Fertility Intention"

Number Of Additionally Wanted Children	Turkey		Japan	
	Number of Respondents	Percentage	Number of Respondents	Percentage
0	855	78.2	97	53.0
1	170	15.5	56	30.6
2	48	4.4	25	13.7
3	11	1.0	4	2.2
4	5	0.5	1	0.5
5	3	0.3		
6	1	0.3		
9	1	0.3		
N	1,094[20]		183	

For the measurement of the dimensions to the benefits of children, we use information based on the following question:

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[20] The number of cases differs from the sample size due to missing cases on the dependent variable.

"Often people feel two ways at the same time. They may have decided they do not want a/nother child, but still there are some reasons why they would like to have a/nother child. Here is a list of reasons for wanting a/nother child. For each one, please tell me whether for you, the reason is very important, somewhat important, or not important at all." (East-West Population Institute 1978a:26ff; 1978b:49).

After this, specific items on the economic, social and psychological benefits of children on a three-point scale are given, indicating not important (1), somewhat important (2), and very important (3).

The economic benefit[21] is measured by two items relating to the short-term economic benefit of children ("so that there will be one more person to help your family economically") and their long-term benefit ("to be sure that in your old age you will have someone to help you"). The psychological benefit comprises the emotional commitment to the spouse ("to bring your husband and yourself closer together"), the gain in positive affects through the interaction with children ("because it is fun to have young children around the house") and an additional gain by interacting with children ("to provide a companion for your children/child"). The social benefits of children are not measurable adequately by using the sex preferences of the mother ("because you want to have another/a boy"; "because you want to have another /a girl") and respect for continuance of the family tradition ("to help carry on your family name"). We do not know wether network partners impose sanctions due to the sex of the parentss' child/ren and in case they do, which sanctions are connected to which sex. Therefore, we cannot make any predictions on the effects of these variables on fertility intention.

For the measurement of costs of children, we use information based on the following question:

"Often people feel two ways at the same time. They may have decided they do not want a/nother child, but still there are some reasons why they would like to have a or a/nother child. Here is a list of reasons for **not** wanting a/nother child. For each one, please tell me whether for you, the reason is very important, somewhat important, or not important at all." (East-West Population Institute 1978a:28ff.; 1978b:50; written in bold and underlined).

The economic costs are measured by the agreement of the respondents to the item "because having a/nother child would be a financial burden for your family". We cannot measure the perception of opportunity costs. The psychological costs of children are measured by the reduction of time spent with the partner ("because you could not spend as much time with your husband"), the reduction of of positive affects due to the interaction with children ("because another child would be

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[21] These and the following quotes are taken from the survey carried out by the East-West Population Institute. See 1978a:26ff.

a lot of work and bother for you"), the loss of positive affects due to the interaction of children with each other ("because you would not be able to give enough care and attention to all of your children") and the loss of social relations as a result of the reduction of freedom ("because you would not be as free to do what you want to do"). The social costs of having children cannot be measured adequately, too. We have information on a macro-structural aspect only, i.e. the fear of the wife of overpopulation ("because you are concerned about the problem of overpopulation"). We neither have any information about the negative aspects of having (further) children (with regard to behavioral confirmation) nor about educational or career aspirations of parents (with regard to status).

Concerning institutional regulations on child labor and the social security system, there are no variations measurable within the two countries. Moreover, we do not have any information about the embeddedness of women in social networks, sanctions in case of divergence from social norms and the quality of the marital relationship. Likewise, information on career expectations and career opportunities of the women is not available. Therefore, we are only able to make conclusions on the basis of the general descriptions of the respective societies (see section2).

The contextual background is measured by the residential area, differentiating between urban and rural areas. We used a variable generated by the East-West Population Institute that distinguishes between the two areas.

The biographical situation is measured by the age of the respondent (in years). The Turkish population is a special case: Since the respondents did not remember their exact birth date (which is not uncommon for agricultural societies), categorized values were collected. The East-West Population Institute transformed them into means of the respective categories. Thus, we do not have exact information on the age of the respondent.

The family income is available in categories and comprises 18 income classes in Turkey and 7 in Japan. Since these are not directly comparable, we constructed a variable that distinguishes be-tween relatively high and relatively low family income on the basis of the country-specific median. While in Turkey, this division is possible exactly at the median, in Japan two-thirds of the interviewed persons belong to the lower income class and one-third belongs to the higher income group.

The human capital of the wife is measured by her labor force participation and her education. Since we do not have any information on the perceived indirect costs of children (see above), we use the gainful employment of wives as an opportunity cost risk. We have only information on whether the respondent has been gainful employed at the time of the interview or not. In order to measure the opportunity costs correctly, we consider also unpaid family workers as being employed since they do not contribute directly but indirectly to the family income. This is important only in Turkey, where 11.4% (N=128) of the women worked without getting paid. The education of the women was collec-

ted in years (in Japan ranging from eight to 16 years, in Turkey from zero years to maximal 14 years). Again, we had to adjust the scales by using the median as a cutting point of higher (in Japan, more than eleven years of schooling; in Turkey, more than three years of schooling) vis-a-vis lower education. Descriptive statistics for these variables are given in Table 3.

		Turkey		Japan	
		N	%	N	%
Number of additionally wanted children		.32[23] (.75)		.67 (.83)	
		Economic Benefits			
Economic help	Not important	612	54.5	160	82.1
	Somehow important	178	15.9	30	15.4
	Very important	332	29.6	5	2.6
Help in old age	Not important	494	44.0	130	66.7
	Somehow important	159	14.2	45	23.1
	Very important	469	41.8	20	10.3
		Psychological Benefits			
Companion for child/ren	Not important	489	43.6	40	20.4
	Somehow important	262	23.4	62	31.6
	Very important	371	33.1	94	48.0
Bring spouses closer to each other	Not important	502	44.7	112	57.1
	Somehow important	157	14.0	64	32.7
	Very important	463	41.3	20	10.2
Fun to have young children	Not important	476	42.4	20	10.2
	Somehow important	252	22.5	74	37.8
	Very important	394	35.1	102	52.0
		Social Benefits			
Want to have another daughter	Not important	671	59.8	94	48.2
	Somehow important	191	17.0	40	20.5
	Very important	260	23.2	61	31.3
Want to have another son	Not important	535	47.7	101	51.5
	Somehow important	198	17.6	35	17.9
	Very important	389	34.7	60	30.6
Carry on the family name	Not important	512	45.6	134	68.7
	Somehow important	193	17.2	35	17.9
	Very important	417	37.2	26	13.3

[22] It would be preferable if we could analyze models for each of the parities. Due to the low number of cases in the Japanese population, we cannot take into acccount the number of children already born. Since our focus is on a comparison of the two countries, we do not depict here the results for different Turkish parities which show some variations for the effects of the psychological value of children (see section 6). The number of children in our Turkish population varies from zero to twelve (mean: 2.8, stddev: 1.79), in the Japanese population from one to four children (mean: 1.85, stddev: 0.66).

[23] indicates Mean, StdDev in brackets

		Turkey		Japan	
		N	%	N	%
		Economic Costs			
Financial burden	Not important	265	23.6	89	45.6
	Somehow important	204	18.2	69	35.4
	Very important	653	58.2	37	19.0
		Psychological Costs			
Less time with husband	Not important	497	44.3	144	73.8
	Somehow important	289	25.8	43	22.1
	Very important	336	29.9	8	4.1
Reduction of freedom	Not important	285	25.4	92	47.2
	Somehow important	296	26.4	69	35.4
	Very important	541	48.2	34	17.4
A lot of work and bother	Not important	207	18.4	106	54.4
	Somehow important	231	20.6	60	30.8
	Very important	684	61.0	29	14.9
Not enough care for all children	Not important	223	19.9	97	49.7
	Somehow important	237	21.1	69	35.4
	Very important	662	59.0	29	14.9
		Social Costs			
Concerned about overpopulation	Not important	616	54.9	175	89.7
	Somehow important	207	18.4	17	8.7
	Very important	299	26.6	3	1.5
		Biographic Variables			
Age of wife in years		29.45[4] (6.02)		29.93 (3.26)	
		Socio-Economic Variables			
Education of wife	High	542	49.2	118	59.9
	Low	559	50.8	79	40.1
Family income	High	500	48.8	67	34.0
	Low	525	51.2	130	66.0
Labor force participation of wife	Yes	399	37.2	98	49.7
	No	675	62.8	99	50.3
		Contextual Variables			
Urbanity	Urban	707	73.2	125	66.8
	Rural	259	26.8	62	33.2
N		1122		197	

According to our hypotheses in section 2, we first try to identify the structure of the dimensions to the 'Value of Children'. Since we have theoretically based assumptions on the number of factors, i.e. three kinds of benefits and costs, we assign a certain factor structure to the subjective variables mentioned above by using confirmatory factor analysis (Jöreskog & Sörbom 1993).

Then we hypothesized certain causal relations among the independent variables, the dimensions to the 'Value of Children' and the dependent variable fertility intention. Again, we intend to confirm our hypotheses and therefore use confirmatory techniques. Since our assumptions rely on simultaneous causal relations between the variables, we use structural equation modeling (LISREL, Jöreskog & Sörbom 1993; Tabachnick & Fidell 1996).[24]

5 Empirical Results

The confirmatory factor analysis was done first only for the benefits gained by children and afterwards for the costs of children. This led to a reduction of the variables depicting the specific factors. Due to low factor loadings, we drop the variables "to provide a companion for child/children", "I want to have another daughter", "I want to have another son" and "not enough care for all children" from the analysis. The resulting factor structure of benefits and costs is depicted in Table 4.

We hypothesized a six-factor model, differentiating in each between three kinds of benefit and cost of children. The variables "economic help" and "help in old age" serve as indicators of the economic benefit of children. "Bringing spouses closer to each other" and "fun to have young children" represent the psychological benefits of children, and the "continuation of the family name" indicates the social benefit of children. In the latter case, we set the error variance to 0 and assume that the social benefits are depicted only by this variable. The same holds true for economic costs, measured by the financial burden caused by children. The variables "reduced time with the husband", "reduction of freedom" and "additional work and bother" operate as psychological costs while " concern about overpopulation" is a single variable and represents social costs.

According to the results, we find that in both countries the same factor structure of the 'Value of Children' can be identified. No statistical relationships could be observed between the cost factors and the benefit factors, neither on the economic nor the social or the psychological level. Based on these results, we subsequently operationalized the dimensions of the 'Value of Children', using the

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[24] Since the use of structural equation models implies an at least interval-scaled dependent variable which is not correct for our dependent variable, we additionally carried out poisson regressions (Fahrmeir et al. 1999; Greene 1993). Results based on these analyses reveal very similar effects of the independent variables and the value of children on the dependent variables. Due to the inadequate modeling of the causal structure in these models (simultaneous estimations of all relationships are not possible), not all results were exactly the same.

variables mentioned above.

Table 4: Factor Loadings of Costs and Benefits of Children (Confirmatory Factor Analysis)
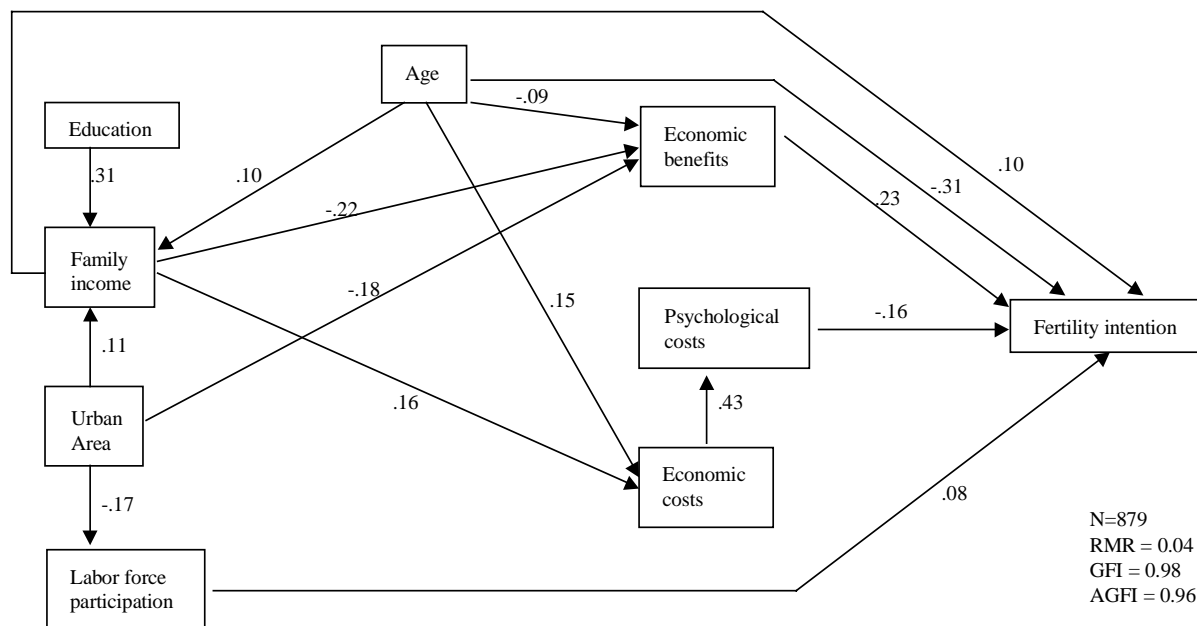
	Turkey	Japan
BENEFITS		
Economic Benefits		
Economic help	.70	.52
Help in old age	.82	.74
Psychological Benefits		
Bring spouses closer to each other	.76	.50
Fun to have young children	.72	.46
Social Benefits		
Carry on the family name	1.00	1.00
COSTS		
Economic Costs		
Financial burden	1.00	1.00
Psychological Costs		
Less time with husband	.60	.47
Reduction of freedom[25]	.72	.60
A lot of work and bother	.53	.72
Social Costs		
Concerned about overpopulation	1.00	1.00
RMR	0.036	0.051
GFI	0.98	0.97
AGFI	0.95	0.93
N	1122	194

The results of our structural equation analysis are given in Diagrams 3 and 4. Using LISREL, relationships are examined between contextual (urban area), socio-economic (education, family income, labor force participation) and socio-demographic (age) variables and the dimensions to the 'Value of Children' (see above) and the fertility intention as the dependent variable. All variables

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[25] "Reduction of freedom" is an ambiguous variable since it can relate to opportunity costs in the economic sense but can also relate to psychological aspects. Testing this empirically, we found that it does not load on the same factor as the variable we used for the economic costs. Therefore, in both countries this variable depicts rather psychological disadvantages of children than economic ones.

except the dimensions to the 'Value of Children' (latent variables) are manifest variables. An absence of a line which connects variables implies that there is a lack of a direct effect. We make the hypothesis that the independent variable influences fertility intention only via the 'Value of Children'. In order to test this, we allow for direct effects of the independent variables on the dependent variable apart from indirect effects (via the 'Value of Children'). Maximum likelihood estimation is used to estimate both models. All coefficients are significant on the 5% level.[26] In both models, the fertility intention of the respondents is influenced by the dimensions to the 'Value of Children' and by the independent variables. Therefore, we can conclude that the 'Value of Children' captures some important features of the determinants of the fertility intention but that, nevertheless, not all effects of the independent variables work via these mediating variables. The endogenization of effects of the 'Value of Children' is thus limited in our models.

Diagram 3: Structural Equation Model on the Fertility Intention in Turkey (Structural Model, Regression Coefficients)

In *Turkey*, we observe that the fertility intention increases, the more children are perceived as economically beneficial, if the family income is high and if the woman is working. This in part confirms our hypotheses: If Turkish parents see children as producers of economic security because they gain monetary support by their children, the parents intend to have a higher parity than those parents who do not perceive their children as producing economic benefit. The direct positive income

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[26] Due to the low number of cases (N=185), the Japanese model was calculated twice, once without weighting and once weighted (setting the number of cases to the number of cases in the Turkish population, i.e. N=879). Coefficients with * indicate that the respective effect was significant only in the weighted version.
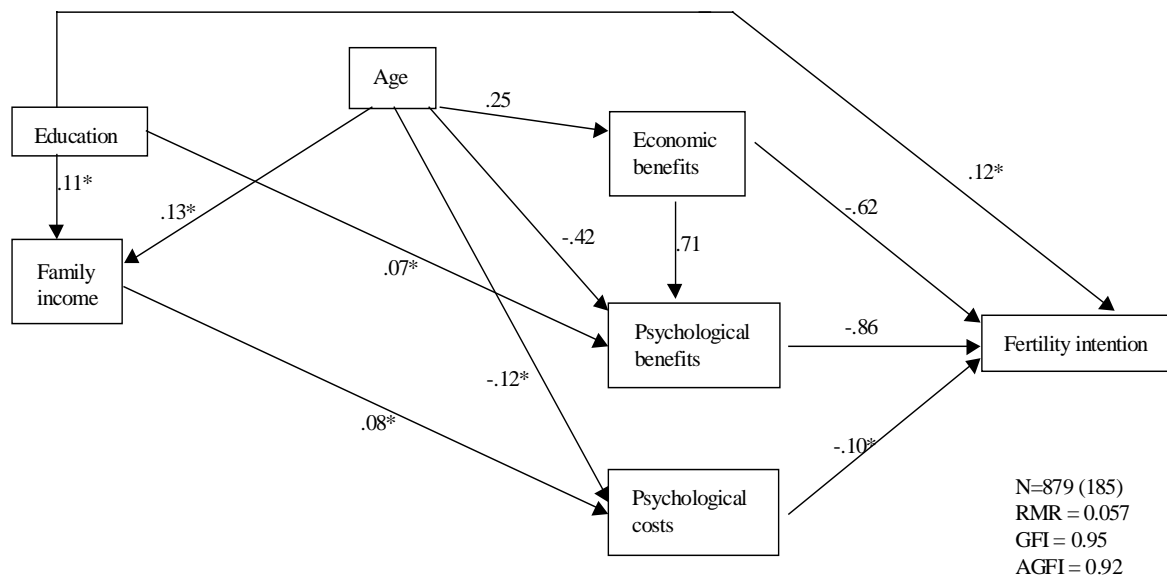
effect is made relative by a negative indirect effect (mediated by economic benefits and economic costs): If parents have a higher income, they do not need any (or at least less) further economic support granted by their children and therefore they have lower economic expectations and thus weaker fertility intentions. A higher monetary budget of the family in principle increases the intention to have more children (direct effect). This may be due to the theories espoused by micro-economic analysts about income having an effect on the number of children (Easterlin 1980; Mincer 1963). The positive impact of labor force participation is surprising: We did not expect that there might be effects of the anticipation of opportunity costs in Turkey since the income of women (due to their low education) is rather low and there are usually extended kin networks that allow for compatibility between family and labor. We can only guess that the special condition of Turkish working women leads to the desire to change the situation by having more children (the Turkish women are working because of the absolute need to make a living). This is supported by the fact that especially in rural areas, the employment of Turkish women is more pronounced than in urban areas. Anyhow, further analyses show that there is no effect of labor force participation on the perceived economic benefits of children.

The fertility intention decreases in Turkey the older the woman is and the more children are perceived as psychologically costly. The former is quite clear because age is usually interrelated with a higher chance of completed fertility. Moreover, perceived psychological burdens reduce the fertility intention, as we expected. It is quite interesting that the psychological costs are not dependent on any of the independent variables used in our analysis. As we might see *prima facie* from the model for the Japanese population (Diagram 4), this is quite a special feature of the Turkish population. One could conclude that it might be a cultural peculiarity but, nevertheless, we were not able to control for some important variables that might influence the perceived psychological costs of children (e.g. marital quality, see section 3). However, we can confirm the assumption that the dimensions to the 'Value of Children' are linked to each other: The higher the perceived economic costs, the higher the perceived psychological costs. This means that a rationalization process may occur that leads to a general and rather antinatalist attitude and in the end lead to lower fertility intentions. A high age and a higher family income increase the perceived economic burden of children. As we could not measure the quality investment directly, this might give us an indication that families with a higher budget tend to invest more in the 'quality' of children. So, women of higher age (who are expected to have older children) and who have a large family budget tend to invest in the education of their children and therefore have higher economic costs. At first sight, this might be counterintuitive since the probability for investments in the 'quality' of children should be low in Turkey (due to the high rate of illiterate persons). Nevertheless, it is clear from these results that higher (and more costly) education is more expensive. This is supported by the fact that the higher education system in our

observation period in

Turkey was organized on a private level, i.e. the costs of studying at a higher education institute were extremely high. We already mentioned that the perceived economic benefits of children are reduced, the higher the income of the parents is. Moreover, we see that the context and the biographic situation of the respondents are also important: In urban areas, children are perceived to a lower extent as economically efficient. Also, older women perceive additional children as less economically beneficial. While the former is a result of more favorable opportunities for child labor in rural areas than in urban areas, the age effect indicates a greater need for economic support in older women.

Diagram 4: Structural Equation Model on the Fertility Intention in Japan (Structural Model, Regression Coefficients)

In *Japan*, the fertility intention decreases as the perceived psychological costs and the perceived economic and psychological benefits of children increase. As we expected, psychological benefits are not accumulative, and therefore a reduced fertility intention occurs. Economic benefits do not lead to an increase in the fertility intention as in the Turkish case, since the economic gain parents can get from their children relates to old age security which is achieved most effectively by investments in the child 'quality' (and therefore in a lower number of children). Since child labor is not permitted, but old age care is needed, the family income does not have an impact on the perceived economic benefits. As we have mentioned already in section 2, the pension level in Japan in the 1970s was mainly determined by the duration of employment as member of the core staff of a company. Therefore, current income does not play an important role for the economic need of the parents. The same is true for the missing effect of the urbanity of the region in which the respondent lives: While in Turkey child labor is more effective in rural areas and therefore higher (short-term)

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economic expectations exist, in Japan the long-term economic benefit does not depend on the context. There, old age security from children is needed in the countryside as well as in cities, due to low pensions. A further indication that proves the validity of our hypothesis on the importance of long-term economic expectations parents have is that these expectations increase, the older the respondent is, and therefore the more foreseeable the future need for economic support is. Moreover, the psychological benefits and psychological costs are decreased by a higher age of the mother. Literature on families in Japan shows that the attachment between mothers and young children is very strong while this is reduced when children are older. Additionally, the education of children puts stress on mothers. Iwao (1993) points to the fact that second-chance education is not available in Japan and that therefore mothers especially have to care for the success or failure of their children in schools. Consequently, older mothers (with older children) expect less psychological benefits from their children. Nevertheless, it is not clear why the psychological costs of children are also reduced by a higher age of the mother. Only in the Japanese case does the educational level have effects on the perceived psychological benefits as well as on the fertility intention. Since we are dealing with cross-sectional data, it might be problematic to interpret the former effect as evidence of a postponement effect. Nevertheless, the high educational level in the Japanese sample and the existence of this effect despite controlling for indirect effects supports this hypothesis. The small positive effect of the education of the wife on the psychological benefit indicates that there are differences in fertility preferences, as was proposed by micro-economic theory. As already mentioned, the psychological costs of children are decreasing as the mother gets older. Moreover, the family income also has a small increasing effect on that aspect of the 'Value of Children' which indicates that there is a higher burden of having children on mothers in families with a large economic budget and that therefore there is less time for childcare. Anyhow, this interpretation is quite problematic since the employment of the mother does not play any role in this process while we expected higher psychological costs to be the result of mothers being employed and therefore having a higher family income. What is surprising about the Japanese sample is that economic costs are not relevant at all for the fertility intention, despite the fact that there are high costs of education. There are also no opportunity costs (indirect costs).

6   Conclusion

Our theoretical argumentation was based on the theory espoused by Lindenberg on social production functions defining preferences for children. As we have shown in our discussion in section 3, this can be a rewarding approach since it allows to explain fertility intentions (and

presumably also fertility behavior), at least in theory, by very simple general assumptions that can be adjusted to specific countries with their specific conditions. We tried to apply this approach to the analysis of fertility intentions in two countries, Japan and Turkey.

Despite the fact that to a large extent we were not able to control for all relevant variables (e.g. aspects concerning marital quality, social norms in personal networks, career opportunities etc.), some basic hypotheses could be confirmed. We found that in both countries, the 'Value of Children' or their instrumentality for the parents indeed consists of the same structure. In Turkey and Japan we can identify three dimensions to each benefit and cost, i.e. economic, psychological and social expectations of the parents. The difference between the two countries is the importance of these dimensions. It is obvious that in both societies children do not exclusively represent costs or benefits, but that the motivation structure is mixed. Mothers are able to identify at the same time advantages and disadvantages and even to distinguish between several aspects of those. One of the interesting results of the analysis is that the simple "less developed countries – high economic 'Value of Children' versus developed countries – high psychological 'Value of Children'" dichotomy does not entirely apply to our case. As we could see from the structural equation models, even in a lowly developed country like Turkey in the 1970s, psychological aspects do matter. In a highly developed country like Japan, economic aspects (benefits) are important. The hypothesis on increasing rationality in the course of modernization (as some modernization theories propose) does not stand. We observed that even in Turkey, a differentiation process takes place: Persons who have a specific need for an extra income provided by children (families with low income) and who have the opportunity to gain economic support from children effectively (rural areas) are esteeming this support rather highly. Therefore one cannot speak of "irrational" behavior but of (subjective) utility maximizing behavior in view of specific restrictions and opportunities. Apparently, in Turkey it is also more effective to invest in a higher number of children rather than in a high 'quality' of children. While "high quality children" are a long-term investment that does not have to pay off under all conditions (due to an inflation of educational certificates, varying abilities of children etc.), a high number of children in any case produces short-term and some long-term benefits. The social conditions in Japan, by contrast, do not allow for an efficient investment in a high number of children.

Nevertheless, the datasets used imposed limits to the testing of the theoretical assumptions made. It can be assumed that social aspects – be it the following of social norms or the achievement of societal status – play an important role in determining the fertility intentions of parents. Schoen et al. (1997) refer to the *social capital* characteristic of children and point to the ability of children to produce new social contacts or to strengthen social contacts as an incentive for parents to have children. Children enlarging or intensifying social networks of parents can have multiple

consequences for the physical wellbeing and the social approval of parents. They can increase the economic budget (e.g. if there are additional contributions from relatives for the children), they can intensify the emotional relationship to the spouse and relatives (as we discussed in section 3) and they can also allow for a greater variety of choices of network persons (thereby escaping from negative sanctions). Therefore, the social capital characteristic of children is comprehensive. Further research should take this into account by investigating the structure of social networks of parents and the effects of fertility on networks and vice versa.

Due to limitations to the number of cases, we were not able to control for specific parities. Nevertheless, the number of children already born is important in our hypotheses since we believe that parents cannot accumulate the psychological benefits of children. One child already might be enough to achieve the emotional benefits of having children. There may be a threshold above which the additional psychological benefits of having more children are limited due to marginal utility. This is supported by additional analyses on the Turkish sample in which the psychological benefit has an increasing effect on the fertility intention if the mother has one child. If the mother has two children, no effect of the psychological benefit on the dependent variable can be observed. Therefore, further research should not only compare specific parities but should also follow up the development of the perceived psychological benefits in the course of several births.

Finally, despite the fact that the endogenization of the dimensions to the 'Value of Children' was limited to a certain degree, it is obvious that we were able to capture some important effects of subjective expectations and their determinants on the fertility intention. What is evident is that the same indicators can have different meanings across specific countries, e.g. while the household budget in Turkey leads to the fact that couples value economic benefits of children highly, in Japan, the effects of the economic situation work via psychological costs. This means that one has to take into account that socio-economic characteristics of individuals do not per se have a certain effect on fertility outcomes but that it is important to consider the societal background and furthermore it is necessary to specify the reasons for these effects. We believe we did this by indicating the gains and losses that are connected to those characteristics in order to depict the instrumentality of children and thereby their support for the parents' physical wellbeing and social approval.

References

Arnold, F., Bulatao, R., Burikpakdi, C., Chung, B.J., Fawcett, J.T., Iritano, T., Lee, S. J. & Wu, T. S. (1975). The Value of Children. A Cross-National Study. Vol. 1. Honolulu: East-West Center.

Becker, G. (1991). A Treatise on the Family. Enlarged Edition. Cambridge: Harvard University Press.

Becker, G., Landes, E. M. & Michael, R.T. (1977). An Economic Analysis of Marital Instability. In: Journal of Political Economy, 85:1141-1187.

Becker, G. & Lewis, H. G. (1973). On the Interaction Between the Quantity and Quality of Children. Journal of Political Economy, 81:279-288.

Blossfeld, H.-P. & Huinink, J. (1991). Human Capital Investments or Norms of Role Transition? How Women's Schooling and Career Affect the Process of Family Formation. American Journal of Sociology, 97,1,143-168.

Blossfeld, H.-P. & Jaenichen, U. (1992). Educational Expansion and Changes in Women's Entry into Marriage and Motherhood in the Federal Republic of Germany. Journal of Marriage and the Family, 54, 302-315.

Chesnais, J.-C. (1992). The Demographic Transition. Stages, Patterns and Economic Implications. Oxford: Clarendon Press.

Coleman, J. (1990). Foundations of Social Theory. Cambridge: Harvard University Press.

Coleman, S. (1991). Family Planning in Japanese Society. Traditional Birth Control in a Modern Urban Culture. Princeton: Princeton University Press.

Demographic Yearbook (2000). Historical Supplement 1948/97. Prepared by the United Nations, Statistical Division. United Nations: New York, NY [et al.], CD-ROM.

Duben, A. (1982). The Significance of Family and Kinship in Urban Turkey. In: Kagitcibasi, C. (ed.). Sex Roles, Family & Community in Turkey. Indiana University Turkish Studies 3. Bloomington: Indiana University, 73-99.

Easterlin, R. A. (1980). Birth and Fortune: The Impact of Numbers on Personal Welfare. New York Basic Books, Inc.

East-West-Population Institute (1978a). Value of Children Project. Technical Note No. 2, VOC Comparative Codebook B. Honolulu: East-West-Center of Population.

East-West-Population Institute (1978b). Value of Children Project. Technical Note No. 5, The Questionnaire. Honolulu: East-West-Center of Population.

Ermisch, J. F. (1989). Purchased Child Care, Optimal Family Size and Mother's Employment. Journal of Population Economics, 2:79-102.

Espenshade, T. J. (1977). The Value and Cost of Children. Population Bulletin, 32, 3-47.

Fahrmeir, L., Künstler, R., Pigeot, I. & Tutz, G. (1999). Statistik – Wege der Datenanalyse. 2nd edition. Berlin: Springer-Verlag.

Festinger, L. (1957): A Theory of Cognitive Dissonance. Stanford: Stanford University Press.

Fischer, C.S. (1982). To Dwell among Friends. Personal Networks in Town and City. Chicago: Chicago University Press.

Friedman, D., Hechter, M. & Kanazawa, S. (1994). A Theory of the Value of Children. In: Demography, 31, 375-401.

Gould, A. (1993). Capitalist Welfare Systems: A Comparison of Japan, Britain and Sweden. London/New York: Longman.

Greene, W. H. (1993). Econometric Analysis. 2nd edition. Macmillan: New York.

Grootaert, C. & Kanbur, Ravi (1995). Child Labor: An Economic Perspective. International Labor Review, 134, 2, 187-203.

Hamm, B. (1992). Soziale Ungleichheit in Japan. Eine theoretische Analyse und ein empirischer internationaler Vergleich. Wirtschafts- und Sozialwissenschaftliche Forschungsbeiträge. Bd. 16. Regensburg: transfer verlag (tv).

Hashimoto, M. (1974). Economics of Postwar Fertility in Japan. In: Schultz, T. W. (ed.): Economics of the Family. Chicago: University of Chicago Press, 225-254.

Hoffman, L. W. & Hoffman, M. L. (1973). The Value of Children to Parents. In: Fawcett, J. T. (ed.). Psychological Perspectives on Population. New York: Basic Books, Inc. 19-76.

Iwao, S. (1993). The Japanese Woman. New York: The Free Press.

Jöreskog, Karl G. & Sörbom, D. (1993). LISREL 8: Structural Equation Modeling with SIMPLIS Command Language. Hillsdall: Lawrence Erlbaum Associates, Inc.

Kagitcibasi, C. (1982). Sex Roles, Values of Children and Fertility. In: Kagitcibasi, C. (ed.): Sex Roles, Family and Community in Turkey. Bloomington: Indiana University Press, 151-180.

Kagitcibasi, C. (1983). Women and Development in Turkey. In: International Journal of Turkish Studies, 2:59-

70.

Kagitcibasi, C. & Esmer, Y. (1980). Development, Value of Children and Fertility: A Multiple Indicator Approach. Istanbul, mimeo.

Kaplan, I. (1985). Provisions Related to the Protection of the Family in Labor, Social Security and Health Laws. In: Erder, N. (ed.): Family in Turkish Society. Sociological and Legal Studies. Ankara: Turkish Social Science Association, 443-452.

Kiray, M. B. (1985). Metropolitan City and the Changing Family. In: Erder, N. (ed.): Family in Turkish Society. Sociological and Legal Studies. Ankara: Turkish Social Science Association, 79-89.

Kohlmann, A. (2000). Value of Children Revisited: Ökonomische, soziale und psychologische Einflussfaktoren auf Fertilitätsentscheidungen in der BRD, Japan und der Türkei. Dissertation, Chemnitz, March 2000.

Kuyas, N. (1982). The Effects of Female Labor on Power Relations in the Urban Turkish Family. In: Kagitcibasi, C. (ed.): Sex Roles, Family & Community in Turkey. Indiana University Turkish Studies 3. Bloomington: Indiana University, 181-205.

Lehrer, E., Grossbard-Schechtman, S. & Leasure, J.W. (1996). Comments on 'A Theory on the value of children'. Demography, 33, 133-136.

Lindenberg, S. (1984). Normen und die Allokation sozialer Wertschätzung. In: Todt, H. (ed.). Normengeleitetes Verhalten in den Sozialwissenschaften. Berlin: Duncker & Humblot, 169-191.

Lindenberg, S. (1991). Social Approval, Fertility and Female Labour Market. In: Siegers, J. J., de Jong-Gierveld, J. & van Imhoff, E. (eds.): Female Labour Market Behavior and Fertility. Berlin: Springer Verlag, 32-58.

Mincer, J. (1963). Market Prices, Opportunity Costs, and Income Effects. In: Christ, C. F. (ed.). Measurement in Economics. Stanford: University Press, 67-82.

Mueller, E. (1972). Economic cost and Value of Children: Conceptualization and Measurement. In: Fawcett, J. T. (ed.). The Satisfactions and Costs of Children: Theories, Concepts, Methods. East-West Center of Population, Hawaii, 174-205.

Nauck, B. (1989). Intergenerational Relationships in Families from Turkey and Germany. An Extension of the 'Value of Children' Approach to Educational Attitudes and Socialization Practices. European Sociological Review, 5:251-274.

Nauck, B. (1990): Eltern-Kind-Beziehungen bei Deutschen, Türken und Migranten. Zeitschrift für Bevölkerungswissenschaft, 16:87-120.

Nauck, B. & Kohlmann, A. (1999). Values of Children. Ein Forschungsprogramm zur Erklärung von generativem Verhalten und intergenerativen Beziehungen. In: Busch, F. W., Nauck, B. & Nave-Herz, R. (eds.): Aktuelle Forschungsfelder der Familienwissenschaft. Würzburg: ERGON, 53-73.

Neuss-Kaneko, M. (1990). Familie und Gesellschaft in Japan. Munich: C.H. Beck.

Özbay, F. (1985). Transformation of the Socio-Economic Structure and Changing Family Functions in Rural Turkey. In: Erder, Necat (eds.): Family in Turkish Society. Sociological and Legal Studies. Ankara: Turkish Social Science Association, 43-77.

Parsons, T. & Shils, E. A. (1951). Toward a General Theory of Action. Cambridge: Harvard University Press.

Ross, J., Mauldin, W. P., Miller, V. C. (1993). Family Planning and Population. A Compendium of International Statistics. New York: The Population Council.

Schoen, R., Kim, Y.J., Nathanson, C., Fields, J. & Astone, N. M. (1997). Why Do Americans Want Children? Population and Development Review, 23, 2, 333-358.

Smith, A. (2000). The Theory of Moral Sentiments. New York: Prometheus Books. First published 1854, London: Richard Griffin & Co.

State Institute of Statistics (SIS), Republic of Turkey, Prime Ministry (2000a). Online in Internet: URL: http://www.die.gov.tr/TURKISH/SOZLUK/dataa.html (9 December 2001), entry: Social Security and Social Aid.

Statistics Bureau & Statistics Center (2000). Online in Internet: URL: http://www.stat.go.jp/english/zuhyou/b0303000.xls (9 December 2001).

Statistisches Bundesamt (1980). Statistik des Auslandes. Länderkurzbericht Türkei. Stuttgart: W. Kohlhammer.

Tabachnick, B. G. & Fidell, L. S. (1996). Using Multivariate Statistics. 3rd edition. New York: Harper Collins.

Teichler, U. (1995). Bildung und wirtschaftliche Entwicklung in Japan. In: Georg, W., Sattel, U. (eds.). Von Japan lernen? Aspekte von Bildung und Beschäftigung in Japan. 2nd edition. Deutscher Studien Verlag: Weinheim, 17-41.

Teran, M. M. Y. (1997). Living Arrangements, School Attainment and Child Labor in Rural Mexico, 1995. Paper prepared for the XXIIIrd General Population Conference (11-17 October 1997). International Union for the Scientific Study of Population. Beijing, China.

Thomson, E. (1997). Her, His and Their Children: Influences on Couple Childbearing Decisions. National Survey of Families and Households Working Paper No. 76, Center for Demography and Ecology,

University of Wisconsin-Madison, Madison.

Thomson E., Hoem J.M., Vikat A., Prskawetz A., Buber I., Toulemon L., Henz U., Godecker A.L. & Kantorova V. (2000). Union Commitment, Parental Status and Sibling Relationships as Sources of Step-Family Fertility in Austria, Finland, France and West Germany. Paper contributed to the FFS Flagship Conference, Brussels, 29-31 May 2000. Online in Internet: URL: http://www.unece.org/ead/pau/flag/papers/thomson.pdf. (4 January 2002). Revised version forthcoming in a volume of the conference proceedings in 2002.

Weber, C. (1988). Was bringt das japanische Gleichstellungsgesetz den erwerbstätigen Frauen? In: Linhart-Fischer, R. & Wöss, F. (eds.). Japans Frauen heute. Vienna: Literas, 91-117.

Weber-Deutschmann, C. (1995). Frauen in Japan: Geschlechtsspezifische Arbeits- und Ausbildungsmuster. In: Georg, W., Sattel, U. (eds.). Von Japan lernen? Aspekte von Bildung und Beschäftigung in Japan. 2nd edition. Deutscher Studien Verlag: Weinheim, 121-147.