The Dynamics and Determinants of a Stalled Fertility Transition: Moslems in Israel from 1980 to 2000

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16 March 2004

Paper prepared for presentation at the 2004 PAA Conference in Boston

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Acknowledgements: The authors thank Michael Shalev for many helpful suggestions on an earlier draft. Guy Stecklov benefited from financial assistance from the Israel Foundation Trustees and the Shaine Center of the Hebrew University.

Introduction.

The notion that vital rates fall rapidly towards replacement once the fertility transition has begun is at the core of the demographic transition paradigm and has received strong empirical support (Coale and Treadway 1986; Bongaarts and Watkins 1996). This notion is a necessary condition in the context of theories of fertility decline that are culturally focused (Cleland & Wilson, 1987; Blake, 1968; Lesthaeghe, 1983), although it is also implicit in more structural explanations for fertility decline that rely on the rise in socioeconomic status, education and modernization as causal forces (Notestein 1953, Becker 1960, Caldwell 1980). Despite controversy regarding the ultimate fertility targets as fertility levels in much of Western Europe fall well below replacement levels (Kohler et al. 2002, Morgan 2003), almost no attention has been paid to fertility stagnation: cases where fertility transitions appear to have begun and stalled at levels of fertility that are well above replacement. Our analysis describes and explains the apparent stalling of fertility decline among Moslems in Israel during the last two decades of the 20th Century, as well as explores the implications of this phenomenon for demographic transition theory.

The stagnation of fertility makes it inherently less interesting to "explain" changing average levels of reproductive behavior as is most common in the demographic literature. Instead, we focus our attention on describing and explaining the changing level of reproductive homogeneity both within and between communities over time. If fertility stagnation is associated with an increase in reproductive heterogeneity, then the population is experiencing increasingly divergent behavior. Alternatively, it is possible that during stagnation fertility behavior is converging towards a reproductive norm. We believe that the question of reproductive convergence, which has recently reemerged as an important complement to traditional demographic transition theory (see Wilson 2001; Mamolo and Billari 2003), is important to study in all cases but is particularly relevant in the case of fertility stagnation. Our study seeks to characterize and explain the patterns of reproductive homogeneity and to examine how fertility behavior varies both within and between communities.

We begin by better conceptualizing the stalled fertility transition. We adopt a simple definition that focuses on fertility stagnation as the cessation of a downward trend in the TFR. Such a notion requires that a shift from pre-transition levels of fertility has already begun and it is implicit that some ultimate near-replacement or below-replacement level hasn't been attained. According to this definition, stagnation does not preclude the potential for changes in cohort fertility patterns occurring in tandem with stalled TFR levels. If a new long-term equilibrium is achieved with higher than replacement fertility levels, some basic assumptions of fertility transition theory need to be reevaluated. In this case, the assumption of zero growth to zero growth, or homeostasis, is clearly flawed.

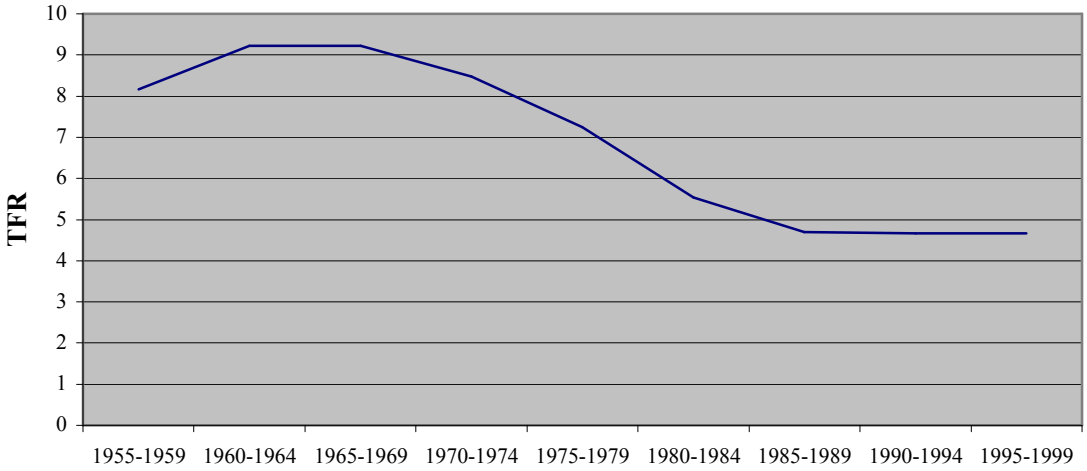
This concept of stagnation might include various cases, although to date, most cases of stagnation have proved to be temporary phenomena. Stalled fertility transitions have been witnessed in Malaysia (Hirschman, 1986), Iran (Aghajanian, 1991), Bangladesh (Basu, 2002) and in the Palestinian territories (Khawaja, 2000), where after an initial, and often rapid decline, fertility decline appeared to slow down (and in the case of the Palestinians even rise). The situation of Moslems in Israel is particularly interesting since TFR levels of Moslems have stalled at about 4.5 for a period of 20 years. This followed a period of rapid fertility decline – from about 9 children per woman in the early 1960s to about half that in the mid 1980s. The data convincingly argue that the current stagnation in Israeli Moslem fertility can be seen only as a stall in the fertility transition, as described by Hirschman (1986) in the case of Malays in Malaysia. The extent of the stall – 20 years in this case – raises questions as to the likelihood of future declines. More importantly, the reasons for the discontinuation of the fertility decline since the mid-1980s and its stagnation at such high levels have never been seriously analyzed (Friedlander, 2002). They deserve to be understood – not only because of their relevance for understanding fertility dynamics in Israel – but for the profound implications of fertility stagnation for fertility transition theory.

The Context of Moslem Fertility Behaviour

Moslems in Israel have undergone extraordinary changes in reproductive behavior over the last 50 years. Period data show an increase in the total fertility rate (TFR) to a

maximum of 9.23 in 1960-64 (Schellekens and Eisenbach 2002), followed by a dramatic decrease to a low of 4.67 throughout the 1990s (Central Bureau of Statistics [Israel], 2003). Eisenbach (1986) identified the mid-1960s as the start of the fertility decline amongst Israeli Moslem, however fertility decline appears to have stalled from the 1980s. In recent years there appears to have been a small rise in period TFR with the 2000 TFR being 4.74, however the overall trend in the period TFR is one of a rapid decline coming to an end or stalling temporarily.

Moslem TFR, 1955-1999



When the TFR is decomposed to its constituent age specific fertility rates (ASFR), differing trends for older and younger women may be seen. The ASFR of the 15-24 age group has been rising throughout the 1990s, with the ASFR of the 25-29 age group rising since 1995. This increase is of particular interest since it raises the question of whether these women will experience increased fertility in the future, or whether their completed fertility will remain constant with changes in the age distribution of fertility. This trend is counter to that expected by the rising educational levels amongst young Moslem women. The fertility rates of the older age groups have continued to decline, thus the small increase in the TFR is due to the increased fertility of younger women. The use of contraceptives or reduction in fertility by older women in other Arab societies has been noted in other studies (Fargues, 1989; Farid, 1984; Faour, 1989; Khawaja, 2000).

The great diversity of the Moslem population in Israel contributes to the difficulty in predicting future demographic trends. The Bedouin or nomadic tribes, for example,

form one distinctive sub-group that are undergoing a lengthy process of sedentarization (Meir and Ben-David, 1995). The Bedouin form a separate cultural grouping to other Israeli Moslems, despite sharing a common language and religion, and exhibit consistently higher fertility. This is especially true in southern Israel where the Bedouin are more isolated and where they form the vast majority of the Moslem minority

Theoretical Background and Hypotheses

While the notion of fertility stagnation is itself implicitly embedded in the concept of fertility transition, little space is actually allocated for stalled fertility transitions in the demographic transition framework. The two principal explanations for fertility transitions -- both ideational and structural or demand arguments -- generally consider fertility and mortality to shift from one homeostasis, with high levels of mortality and fertility, to another homeostasis with low levels of mortality and fertility (Wilson & Airey, 1999) While there is considerable scope for variation in the paths of vital rates, the end result is invariably the same.

The first goal of our paper is to describe and detail the changing dynamics of Israeli Moslem fertility in order to better understand reproductive patterns in the context of aggregate fertility stagnation. Fertility stagnation challenges the conventional explanations of the fertility transition. If stagnation implies a new permanent or semi-permanent level of reproduction at non-replacement levels of fertility, this suggests the existence of variable fertility targets across countries reinforcing the notion that replacement is not a universal, post-transition norm. But if stagnation simply signals a temporary stall in the spread of new reproductive patterns, then some mechanisms must be at work to halt the spread of new reproductive patterns as expected according to ideational theories. In the case of the latter explanation, society is likely to experience greater variation in reproductive behavior than in the former case. This is because the achievement of a new equilibrium should imply more consistency and homogeneity in reproductive regimes. Structural theories seem to fare slightly better. For one thing, economists have developed useful models of "traps" whereby societies may become stuck in non-replacement fertility equilibriums (Lee 198x; Galor and Weil 1999). Thus, structural theory would suggest that stagnation is an artifact of stalled socioeconomic

conditions. In this sense it offers a testable hypothesis that continued change in the opportunity costs of childbearing, for example, or in the socioeconomic status of women and their families, should be associated with continued reproductive decline. Our purpose is not to help sort out which of these models is the true explanation of the fertility transition, but rather to see whether the study of the stalled fertility decline can provide more insight into the underlying process.

Another aim of our paper is to evaluate whether there is increasing homogeneity in childbearing over time among Moslems in Israel. Uncovering stagnation in the TFR, an aggregate measure, provides no indication of whether reproductive behavior is becoming increasingly divergent or convergent within the Moslem population. By determining whether reproductive behavior is converging towards a new (non-replacement level) equilibrium, we hope to add to recent research on demographic convergence (Wilson 2001; Coleman 19xx; Mamolo and Billari 2003). Most of that research is primarily across countries whereas ours is specifically about within-country reproductive diversity, but we believe the two may be highly complementary.

We subsequently move beyond the descriptive stage to consider possible determinants of reproductive diversity among Moslems in Israel. Several explanations have been offered, often in combination, for recent trends. Our approach focuses on the role of communities in the process of convergent (or divergent) behavior. The idea that individuals respond to their social context is embedded in classical sociological thinking (DiPrete & Forristal, 1994). Various studies on fertility and reproductive behavior have demonstrated the importance of community (Entwisle et al, 1996; Entwisle et al 1984; Lobao & Brown, 1998; Degraff et al, 1997). We seek to determine the extent to which the change in behavior is distributed between and within communities and to examine whether communities are becoming similar or different to one another over time.

As Israeli Moslem society undergoes changes, it is possible that the effect of the community will also change and the supports for high fertility will either be strengthened or undermined. Female education, in particular, is one of the most consistent predictors of fertility across societies and is a well-established predictor of fertility at both the individual level and the contextual level in both Israel and other societies (Sabatello et al 1996; Cochrane, 1979; Castro Martin, 1995).

Generally, increasing levels of female education are associated with lower levels of fertility, with a few exceptions. For example, in both Egypt and Jordan, women with post-secondary education have lower levels of contraceptive use than women with only primary education (Karim, 1997). At the contextual level, the negative association remains. On the whole, rising female education levels are correlated with lower fertility levels. However, we see amongst Israeli Moslems, stagnation in fertility decline in the face of increasing education levels. Israel is not unique in this respect; the same phenomenon has been noted both in Jordan and Palestine (Karim, 1997, Khawaja, 2000).

The widespread adoption of education suggests that the relative effect of education will decrease as education becomes less and less the prerogative of one social group. This implies that education will become less useful as a predictor of variation in reproductive behavior of Moslems in Israel. We expect that changes in the degree of heterogeneity in reproductive behavior are strongly associated with the spread of female education, but that this effect is mainly due to community level educational changes rather than individual level changes.

Another direction for exploring the stagnation of Moslem fertility is associated with their minority status. It is possible that the position of Israeli Moslems as a minority group leads to increased fertility, as with other minority Moslem groups in other countries (Knodel, et al 1999; Attane & Courbage, 2000; Basu, 1997; Courbage, 1992) [1]. Various studies on Catholics in non-Catholic countries show that their fertility is also elevated compared to other religions when the Catholics form a minority (Mosher & Hendershot, 1984). Previous efforts to determine the role of minority-status on fertility levels have focused specifically on the national level dynamics (Uhlenberg and Goldscheider, 1969). We argue that minority status dynamics may also operate at the community level, contributing an additional layer of explanation to recent demographic trends. While much of Israel society is residentially segregated between Arabs and Jews, with the majority of Moslems living in majority Moslem localities, there are some mixed localities between both Jews and Arabs and also Arab localities with mixed religions (Moslems with Druze/Christians)[2]. Given the importance of

religion/ethnicity in the local context, our second hypothesis is that minorities will have higher fertility when in direct competition with members of the majority group within a community.

A final hypothesis focuses attention on the ethnic diversity of Moslems in Israel. Currently, the Bedouin have higher fertility levels than other Israeli Moslem groups. Over time, as the Bedouin have become more integrated into Moslem society due to the spread of compulsory schooling, improved transportation links from the periphery to the center and modern communication links such as satellite television, then the fertility differentials with other Israeli Moslems should have decreased. The fertility of this group has a large affect on the overall fertility levels of the Moslems in Israel due to their much higher fertility and increasing weight in the Moslem population. Our hypothesis is that much of the heterogeneity in behavior is due to the differences between Bedouin and non-Bedouins and we seek to investigate how this may have influenced the idea of stagnation.

Data and Methodology

Data Source

The data in this study are based on the extended questionnaire of the 1983 and 1995 censuses which was given to a 20% sample, and includes only married Moslem women aged 15 to 44. Residents of East Jerusalem are excluded from the study since their behavior is significantly different to those of Israeli Moslems, and historically their fertility is more closely related to the Palestinian population of the West Bank[3]. Additionally, those not living in recognized localities were excluded. Unfortunately, this includes many of the Bedouin women living in the Southern district[4].

Since preliminary findings found that age interacted with many of the explanatory variables, the samples were divided into 2 separate age groups (younger women aged 15-29 and older women aged 30-44) . Each age group is likely to be influenced by different variables according to the stage of family building that they are at. The recognition that the fertility of women at different stages in their life will be shaped by different variables has been established in other contextual studies of fertility (Hirschman & Guest, 1990; Lobao & Brown, 1998).

Dependent variable

The aim of this study is to determine the factors influencing the fertility of Moslem women, with fertility being the dependent variable. We decided to use children ever born from the census data, which details all the children a woman has given birth to in her lifetime as an indicator of fertility.

Independent variables

As with all analyses of this type, where there are a number of possible variables to approximate a certain effect, the problem is how to choose which variables to include from the almost endless list of possible explanatory variables[5]. The independent variables are divided into two types – individual level and community level.

a) Individual level variables

Education is measured by the number of years of schooling reported. Education has been found to be a significant variable in predicting fertility amongst Moslems in Israel (Sabatello et al 1996). However, the relationship is not a linear one, rather it has a U-shaped function (Goldscheider, 1999; Goldscheider, 1996:217). Therefore education is included in the regression equations both as a linear and a quadratic term.

A woman's participation in the labor force is an important variable to classify but the causal relationship is hard to predict. On the one hand, it may indicate a larger degree of female autonomy. However, in traditional Arab society, women only worked outside the household in cases of poverty when the extra income was absolutely essential. Thus on the one hand it may be a proxy for female autonomy but for others, it may only indicate a lower socio-economic position.

Income is another question asked on the census sample. Although it would appear to be a very useful variable, its reliability is somewhat in question. Reported income is notoriously subject to suspicion and distortion. Income is also a variable that differs between 1983 and 1995. In 1983, the question referred to total household income and in 1995 to the individual income. Additionally, the currency changed between those years.

However, even with its limitations, income is an important explanatory variable and was included in the analysis..

Control variables that were introduced are age, age at first marriage and age difference with husband (also included both as a quadratic and as a linear term).

b) Community level variables

Female education, measured as the percentage of women with post-primary education, is included at the community level as well as the individual level, and is important for two reasons. The first is an indicator of the overall socio-economic status of the community. The second reason is as a reflection of the status of women in the community.

The percentage of women participating in labor force is entered into the model, as an average value at the community level. This reflects both the labor market opportunities available for women and the acceptability, within the community, of women working outside the household.

The geographic location is important for various reasons. Peripheral regions may have higher fertility than those in the center. In the periphery, traditional values will remain stronger with fewer economic opportunities than in the center. Bedouin Moslems are a group that it is possible to partially identify through their geographic location. The majority of Moslem residents of the Southern district are Bedouin. However, there are Bedouin living in other districts that it will not be possible to identify[6]. In order to determine the effect of minority status, the religion of the locality, which may differ according to the religious composition of its residents, is included[7].

Methodology

Multilevel or hierarchical linear models are particularly well-suited for our study because of their ability to provide separate estimates of the variances at different levels of analysis. Furthermore, multilevel models allow us to test for the determinants that best explain the changing variances at each level. Finally, our focus on individuals and communities suggests attention to the possibility of biased standard error estimates due to auto-correlated factors and multilevel models provide corrected standard error estimates.

The multilevel model allows us to introduce these variables at both the individual and the contextual levels, with women clustered into localities. Since the equation is complicated, and in order to allow convergence of the model, and for the model to return estimates for nearly all the variables, some contextual variables that were seen to have a minimal influence on fertility during an OLS regression were excluded[8]. Indeed there were some instances where the model would not converge at all in the first instance, and only by simplifying the model was convergence facilitated.[9]

Our model takes the following form:

$$y_{ij} = b_{00} + b_{10} x_{ij} + \mu_{0j} + \mu_{1j} x_{ij} + r_{ij}$$

where y_{ij} is the number of children ever born to the ith individual in the jth locality, x_{ij} includes a vector of explanatory variables, μ_{0j} is the intercept for the individual's locality, r_{ij} is a random error associated with the ith individual in the jth locality, and $\mu_{1j} x_{ij}$ captures the interaction between community variability and the explanatory levels. All the random terms, μ_{0j}, μ_{1j} and r_{ij} are assumed to have a zero mean, conditional on the values of the explanatory variables.

For a list of variables and their characteristics, see appendix. The variables included as random (age, years of education and labor force participation) were centered around their global averages, which greatly improved the model with little effect on the substantive conclusions. The variance components variance-covariance matrix was used which assumes that there is no covariance between the slope and the intercept. This model was preferable to the option of using an unstructured variance-covariance matrix due to problems of convergence. However, the results of the unstructured variance-covariance matrix model showed that in some models it is erroneous to assume the lack of covariance between the slope and the intercept. Nonetheless this did not greatly affect the results.

Because our analysis is interested in explaining heterogeneity in reproductive behavior, we focus much of our attention on the estimated variances in children ever born between (τ^2) and within localities (σ^2). When no explanatory variables are included in the model, we obtain a simple estimate for the partitioning of fertility variance within and between localities. The ratio of the between variance to the total variance gives the traditional intra-class correlation. Once explanatory variables are introduced, we can

observe changes in the variances to determine both the factors that affect heterogeneity as well as the level at which they appear to operate.

One concern is how to evaluate changes in the absolute level of variances over time. The variance is a statistic, which responds differently to proportional changes as opposed to additive changes. If we consider the difference between 1 and 2 children to be similar to the difference between 7 and 8 children, then it doesn't matter at all that CEB levels decline slightly and the variances can be compared across time. On the other hand, if we consider the difference between 1 and 2 children to be larger than that between 7 and 8 because the former is twice as many children, then it doesn't make sense to use the variance as such and the coefficient of variation, which simply involves division of the standard deviation by the mean, is preferred. The exact same reasoning explains why the variance is not a preferred inequality statistic. In our case, we examine both the variance and the coefficient of variation results, although most of our analyses focus on disaggregating the variance within a model so that this point will not be a major limitation.

Results and Discussion

Table 5: Summary Table of Estimated Variance Parameters from Tables 1-4

	1983		**1995**	
	Null	**Individual Controls**	**Null**	**Individual Controls**
Women 15-29				
Between Variance, τ^2	0.0017	0.0066	0.0591***	0.0192***
Within Variance, σ^2	2.9681***	1.1667***	1.8694***	1.0196***
Women 30-44				
Between Variance, τ^2	0.5378***	0.3598***	0.4888***	0.1396***
Within Variance, σ^2	6.5886***	4.5993***	4.6680***	3.1268***

*** Significant at the 0.99 level.

The multilevel models appear on four separate tables. We turn immediately to the results regarding the variance estimates, shown at the bottom of each table, and presented together in a summary table (Table 5). Perhaps the most noticeable result is that for younger and older women in both 1983 and 1995 the large majority of the heterogeneity is within localities as opposed to between localities. In no case does the intra-class

coefficient exceed 10% throughout any of models in Tables 1-4. Guest and Hirschmann (1990) in their multilevel analysis of fertility behavior also found that the fertility variance within localities is much greater than the variance between. However, as we delve deeper into these results important differences between communities will emerge.

At first glance, it appears as though there has been a large decline in total heterogeneity. Focusing on the null model results in Table 5, we see that the total heterogeneity involving the sum of the within and between estimates has in fact declined over the 12 year period. This decline is particularly pronounced for the intra-locality variation where we see that for both older and younger women there has been a large decline in total within variance. However, the decline in CEB does suggest that we interpret this statistic with caution. It turns out that our analysis of the total variation in CEB, both within and between localities, generates different answers regarding convergence over time depending on how we treat the variance estimation. As the table of means and standard deviation shows (see Appendix), the standard deviations in CEB decline over time for both younger and older women. However, if we calculate the coefficient of variation we see that these in fact rise over time for both age groups. This suggests caution in our interpretation of the statistics as well as the need for more detailed analysis to gauge aggregate trends in heterogeneity over time.

Most of the heterogeneity appears within communities and we focus now on this dimension of the results. Despite the ambiguity regarding the trend in aggregate heterogeneity over time, we find clear results in terms of how individual characteristics explain the heterogeneity in CEB within localities. In all four tables we find that the introduction of individual-effects into the basic model lead to a highly significant model improvement and that most individual level variables, excluding district of residence, are themselves individually significant. We find that there is a large rise over time in the proportion of the within community variance that is explained by individual characteristics for younger women. Whereas the within community variance parameter falls by almost 60.0% when we move from the null model (column A) to the individual-effects model (column B) in Table 1 (see also Table 5). In contrast, we find that this same calculation for younger women in 1995 (Table 3) shows that individual characteristics explain only 47.4% of the within locality heterogeneity. The experience of older women

is different. Here we find that the proportion of the within locality variance that is explained by individual characteristics rises slightly, from 30.3% to 34.0%, between 1983 and 1995.

The evidence suggests that the proportion of reproductive heterogeneity of younger women that is explained by individual characteristics has fallen considerably over time while the proportion for older women has slightly risen. For younger women, combined with our knowledge of their stable fertility levels over time, the results indicate that individual characteristics are becoming less important in determining individual fertility behavior. One interpretation is that individual characteristics become less important as norms become established and pervasive within communities. This interpretation is further strengthened by noting that there is also a quite apparent increase in the magnitude of the between community variation. While the between community variance remains small in 1995, it certainly has grown in comparison to the 1983 estimate of 0.

The overall picture suggests that childbearing decisions are very similar across communities, but that women within the same community are becoming more similar over time. During a period of such swift fertility change as that experienced by Moslem women, it is clear that reproductive patterns will be in a state of flux. In other words, women will be displaying diversity in their reproductive behavior, with the results that the norms will eventually change and be re-established at a different level. Older women are less relevant in this context, partly because their reproductive histories also fall in periods before the fertility stagnation has really occurred as well as that most of the childbearing, although certainly not all, occurs at earlier ages.

The results to this stage are primarily useful in describing the dynamics of fertility behavior during stagnation. Next we turn to explaining some of the potential causal mechanisms that lead to the stagnation. As expected, female education is indeed an important determinant of fertility at both the individual and the community levels. However, there are significant deviations from the results predicted in the hypothesis. The effect of education increased between 1983 and 1995, with the coefficient increasing from about –0.05 to –0.07 and –0.06 to –0.11 for younger and older women respectively. This would seem to be contrary to the effect of increasing homogeneity in fertility

behavior. We find that both the linear coefficients are more strongly negative in 1995 (tables 3 and 4), which would indicate a changing relationship between education and fertility. Also, the significant quadratic term in 1995 suggests important non-linearities in the relationship. It would appear that the effect of education is being amplified at higher levels of education.

At the community level, education is also a central predictor of individual fertility in 1995. As individual levels of schooling increase, this is expected to influence the values prevalent in the community – a kind of 'spill-over' effect as described by Cochrane (1979). The effect of community level schooling seems to have increased between 1983 and 1995. In 1983 no results were significant at 5% probability (tables 1 and 2). On the other hand, in 1995, the coefficients for older women were highly significant, shown in table 4. Thus, for married women past the age of 30 in 1995 the percent of women in post-primary education significantly influenced fertility above and beyond the effect of a woman's own education level. This factor may also explain the increasing homogeneity witnessed within localities in 1995.

Another important difference between 1983 and 1995 is the effect of education as a random effects variable (Column E). This variable was not significant in 1983 but for both age groups in 1995 the estimate was small but significant (0.0013 for younger women and 0.0032 for older women). This result means that not only is the effect of education at the community level becoming more important over time but also that this effect is varying by locality. The lowest amount of clustering in 1995 was witnessed in Column E (tables 1 and 2). In other words, although the effect of the random variable appears to be small (according to the size of the coefficient) it has a large effect on the homogeneity of fertility behavior in localities.

Education is clearly one of the main explanatory factors in the change in homogeneity in fertility behavior. Whereas previously schooling at the individual level was the determining educational factor, the educational levels of the community have gradually come to determine fertility levels – in addition to the individual levels. However, at the same time the relationship between individual educational levels and fertility is changing between localities. Obviously, the changing educational composition of the population can explain some of the changes, such as the change from a linear to a

quadratic relationship at the individual level, but does not explain all of the changes. This changing relationship, once controlled for, leads to a large reduction in the heterogeneity of fertility behavior. The growing importance of community educational levels and the differing relationship at the individual level all contribute to the increased homogeneity seen in fertility behavior in communities.

It is possible that there is a critical value of mass schooling that is needed in order to significantly change the attitudes and values of a locality towards childbearing, especially in the case of Arab Moslems where pro-natalism is deeply rooted.. Between 1983 and 1995, advances were made in levels of female schooling and it appears that a critical level of female schooling was reached that profoundly changed the value structure of the locality regarding childbearing. Therefore education did not only affect the fertility of the individual women who benefited directly from it, but the spread of ideas gained during schooling, the increase in female autonomy and the lower fertility of educated women influenced the whole locality. This resounds with ideational/diffusion transition theories, whereby the norms of fertility control adopted by innovators spread throughout a community.

The data would appear at first glance to support the hypothesis regarding the importance of minority status explanations (shown in Column C of tables 1, 3 and 4). We find that Moslems living in Moslem areas have the lowest fertility whereas those living in mixed areas have the highest, with differentials of up to 1.6 children between Moslem and Jewish localities. Yet, this explanation seems to be rejected once we introduce a series of controls for individual characteristics (Column D). The one exception to this was the effect of mixed Jewish-Arab localities where differentials of up to 0.8 children remain in some cases (compared with Moslem localities). This is not necessarily indicative of the effect of minority status. Mixed Arab-Jewish are particularly low status localities[10], and it is possible that the contextual variables are not capturing this. The original populations of most of these towns fled in the 1948 War and were replaced by a weaker population of internal refugees and Bedouin. Both the Arab and Jewish populations of these towns have been furthered weakened over time, with the strongest of the already weak population leaving as soon as they have the opportunity to do so. Unfortunately, the results to this

point are inconclusive but the tentative results point to the need to conduct further and more focused work on the subject.

The Bedouin in the Southern district represent a separate cultural grouping to other Moslem Israelis. Although linguistically and religiously similar, Bedouin culture has, until recently, been essentially nomadic. Sedentarization has been occurring over the last few decades but the distinctive Bedouin culture has nonetheless remained. It should be noted that this study only took into account sedentary Bedouin living in recognized localities[11]. Despite this, throughout the study, the Bedouin displayed elevated fertility, even after controlling for socio-economic variables (both at the community level and the individual level). This can be seen in Columns D, and E. Moreover, the differentials between Bedouins and other Moslems seem to be increasing over time, as the differences between table 1 and table 3, and table 2 and table 4 show. The differential (compared with the Northern district) has risen from 0.23 amongst younger women in 1983 to 0.33 in 1995. Amongst older women the increase was more moderate, from 0.38 in 1983 to 0.43 in 1995.

The elevated fertility of Bedouins and increasing differentials vis-à-vis Israeli Moslems have profound implications for the theoretical issues raised in this paper. It would appear that the Moslem population in Israel is heterogeneous in its fertility behavior, with two separate groups exhibiting different fertility behavior. In order to test this, the models were run with the Southern district excluded, in case their behavior was so anomalous that excluding them would significantly change the results. This was not the case, suggesting that the Bedouin have the same relationship with the explanatory variables as other Israeli Moslems, despite that their fertility is increasingly higher.

These latter results appear inconsistent with our earlier finding of increasing fertility homogeneity amongst Israeli Moslems. Indeed, based upon these results, one would expect increasing heterogeneity, if all other factors remain constant. However, it is fertility homogeneity within the localities that is increasing. Given the geographic isolation of the Bedouin, their increasing fertility differentials are a contributory factor in the increase seen in homogeneity within localities. However, although adding the district of residence, along with other individual level characteristics, does lead to a decrease in homogeneity, there is still a fair amount of clustering.

Due to the spread of communication networks, especially satellite television and mobile phones, and mass female education, the isolation of localities and their socio-cultural distance from the majority Israeli Moslem society should decrease. Potter (2002) found that the spread of television, and the images of the family propagated thereof, was an important factor in the Brazilian fertility decline. However, we see no signs of this happening thus far. It could be that in societies where women have low status, little education, and are highly segregated, they will receive little benefit from the new ideas spread by modern developments (Freedman, 1997). Given the gender relations within Bedouin society, we cannot assume that women are influenced to the same degree as men by the closing gaps with mainstream Moslem society. Indeed, it is possible that feeling their traditional way of life threatened; men place more restrictions on women in order to offset the influence of modernization.

Based on structural theories, we would expect fertility differentials to disappear once socio-economic variables are controlled for. Thus it would appear that cultural factors are also responsible for the elevated fertility in the South. One factor may be the cultural acceptability of polygamy and marital instability. Marital instability in a particular area may cause women to bear more children than in other areas, including women in stable marriages, since there will be higher natality values prevalent in that area (Chikah Ezra, 1997). This is backed up somewhat by a look at divorce rates in the different areas. The Southern district has the highest Moslem divorce rate of all the districts[12]. Additional data point to the prevalence of polygamy amongst Bedouin in the South, which is rare amongst Moslems in other districts. Taken together, the relative ease of both divorce and polygamy are likely cultural supports to high fertility, even in the face of socio-economic change.

One of the shortcomings of using census data is the lack of any identification of the level of religiosity or political activism. However, the changing religious behavior and the rise in Islamic fundamentalism are too important to be ignored in any discussion of the change in fertility behavior of Israeli Moslems. Despite not having solid data on the rise of Islamic fundamentalism, we expect that it will lead to an increase in fertility. Although Islam is not pro-natalistic, per se, its emphasis on traditional values reasserts a woman's role as a wife and mother and demeans her status outside of the home, thus

further legitimizing patriarchy in an already patriarchal society[13]. Additionally, it is likely that the spread of Islamic revivalism is locally focused and not uniformly spread throughout the country. The local focus is likely part of the explanation for the increase in within community reproductive homogeneity. It might also explain the differing influence of education. As mentioned earlier, Islamic fundamentalism discourages women seeking a career outside of the household. However, female education may still be valued due to the benefits it brings to the family and the household. Women in communities with greater Islamic revival may view education as a means of improving their position in the marriage market rather than in the labor market. Although they may seek further and higher education, it does not necessarily represent an espousal of Western values or conversely a rejection of traditional ones. Since they are in an improved position in the marriage market, they are able to attract a husband of higher socio-economic standing, and perhaps therefore able to support a larger family. We have already seen that higher economic standing alone is often related to higher fertility. Although this explanation is plausible, it is currently speculative due to the absence of data that could verify such a theory.

Another possible explanation is the pro-natalist structure of child allowances in Israel, which favor large families. Child allowances in Israel are universal and in recent years are on a rising scale, which increases disproportionately with the number of children. As the marginal cost of each additional child decreases, the increase with number of children represents a significant increase in the proportion of the costs of children covered by the National Insurance. By the fourth child, the costs of a child for a family living at or below the poverty line are less than the child benefit received for that child (Meishar & Manski, 2000). Since, the average income of Bedouin is the lowest amongst Israeli Moslems, it is more likely that amongst larger families the child benefits not only cover the costs of the higher parity children but even represent a net profit. Meishar & Manski (2000) hypothesize that among poorer and more religious sectors of Arab society in general and amongst the Bedouin in particular, which tend to larger families in any case, the child allowances will have a positive effect on fertility. This also bolsters the practice of polygamy, whose effect on fertility was discussed previously, since women are valued for their childbearing, and thus income generating, potential[14].

Conclusion

Although this paper has contributed to our understanding of the dynamics of Israeli Moslem fertility, there are still many questions to be answered regarding the reasons for the lack of fertility decline. Ideational theory seems to be prevalent in explaining the differences between communities. This is both in terms of culture (as in the case of the Bedouin) and also the influence of mass formal schooling – an important tool of ideational change. The structural transition theory fairs poorly in this case since it fails to explain both the differences between localities and also the reasons for the stalled fertility decline in the face of improving socio-economic conditions. On the other hand, ideational theory does not provide a full explanation either. It is lacking in that it also does not explain why the fertility transition has stalled. It is possible that we are perhaps seeing a new type of fertility transition. The underlying assumption regarding demographic transitions has always been one of movement from a homeostatic state of high mortality and high fertility to a new homeostasis of low fertility and low mortality.

Is this homeostatic assumption misplaced? Although most populations do seem to move towards replacement fertility, and indeed this would seem to be the only long-term sustainable state for a population, it is possible that a sub-population may set a higher level for itself, if in its interest to do so. As we have discussed, the Israeli Moslem population has a historically pro-natalist culture, political, and increasingly religious, legitimization of high fertility rates, pro-natalist economic incentives and a minority status that decreases the returns to investment in children. Taken altogether it is possible that new norms are indeed being set – but at three, four or five children per woman. The two child family has not been adopted since there is no incentive to do so. If this is the case, then we are not witnessing stagnation, nor a stalled fertility transition but the final stage of the fertility transition set at a higher level than that seen under the usual assumptions.

Results:

I = Individual level variables
C = Contextual level variables

Table 1: 1983 Younger Women

Model	A	B	C	D	F
Random variables	Intercept	Intercept	Intercept	Intercept	Intercept & years of education
Fixed variables	Null model	I	C	I and C	I and C
Fixed Effects					
Intercept	2.2955*** (0.0376)	7.0526*** (0.2254)	2.6425*** (0.1069)	7.1292*** (0.2295)	7.1457*** (0.2297)
Age		0.3936*** (0.0078)		0.3934*** (0.0078)	0.3936*** (0.0078)
Age at first marriage		-0.2563*** (0.0102)		-0.2539*** (0.0103)	-0.2544*** (0.0103)
Age difference with husband		0.0526*** (0.0113)		-0.0546*** (0.0113)	-0.0541*** (0.0113)
Age difference with husband squared		-0.0021*** (0.0007)		-0.0021*** (0.0007)	-0.0021*** (0.0007)
District of residence					
Northern (r)					
Haifa		0.0316 (0.0673)		0.0795 (0.0743)	0.0778 (0.0741)
Central		-0.0028 (0.0758)		0.0690 (0.0849)	0.0710 (0.0844)
Tel Aviv		-0.2988* (0.1779)		-0.1026 (0.2452)	-0.1036 (0.2437)
Jerusalem		-0.4517 (0.3327)		-0.4237 (0.3342)	-0.4207 (0.3344)
Southern		0.1796 (0.3080)		0.2320 (0.3187)	0.2285 (0.3187)
Participation in labor force		-0.3956*** (0.1025)		-0.3846*** (0.1029)	-0.3789*** (0.1031)
Years of schooling		-0.0517*** (0.0107)		-0.0503*** (0.0108)	-0.0473*** (0.0117)
Years of schooling squared		-0.0013 (0.0023)		-0.0014 (0.0023)	-0.0016 (0.0023)
Number of household items owned		-0.0113 (0.0232)		-0.0060 (0.0234)	-0.0058 (0.0234)
Household income (per thousand shekels)		0.0002 (0.0002)		0.0002 (0.0002)	0.0002 (0.0002)
Religion of locality					
Moslem(r)					
Jewish			0.7453*** (0.2767)	0.1769 (0.2348)	0.1875 (0.2344)
Mixed			0.4152* (0.2385)	0.2074 (0.1731)	0.2120 (0.1722)
Arab			0.3583*** (0.1055)	0.0949 (0.0853)	0.1005 (0.0850)
Percent female labor force participation rate in locality			-0.0070 (0.0066)	-0.0050 (0.0045)	-0.0049 (0.0045)
Percent of women with post-primary education			-0.0160*** (0.0057)	-0.0056 (0.0042)	-0.0060 (0.0042)
Random Effects					
Intercept τ_{00} (variance between localities)	0.0017 (0.0177)	0.0066 (0.0101)	- -	0.0074 (0.0098)	0.0069 (0.0094)
Residual σ^2_{00} (unexplained variance in localities)	2.9861*** (0.0919)	1.1667*** (0.0361)	2.9675*** (0.0899)	1.1654*** (0.0359)	1.1604*** (0.0360)

Years of education					0.0007 (0.0008)
Intra-class correlation	0.001	0.005	-	0.006	0.007
-2 Res Log Likelihood	8603.9	6642.6	8588.6	6643.3	6642.0
N	4,614				

Table 2: 1983 Older Women

Model	A	B	C	D	F
Random variables	Intercept	Intercept	Intercept	Intercept	Intercept & years of education
Fixed variables	Null model	I	C	I and C	I and C
Fixed Effects					
Intercept	5.7374*** (0.1228)	8.8986*** (0.3629)	6.8296*** (0.2900)	9.5290*** (0.4154)	9.5087*** (0.4164)
Age		0.2158*** (0.0161)		0.2174*** (0.0161)	0.2162*** (0.0160)
Age at first marriage		-0.1401*** (0.0134)		-0.1388*** (0.0134)	-0.1384*** (0.0133)
Age difference with husband		-0.0565*** (0.0214)		-0.0597*** (0.0214)	-0.0614*** (0.0214)
Age difference with husband squared		-0.0048*** (0.0013)		-0.0048*** (0.0013)	-0.0049*** (0.0013)
District of residence					
Northern (r)					
Haifa		-0.3931 (0.2554)		-0.0933 (0.2531)	-0.1027 (0.2559)
Central		-0.1140 (0.3075)		0.2344 (0.3037)	0.2403 (0.3069)
Tel Aviv		-0.9924* (0.6799)		0.2789 (0.8624)	0.2485 (0.8723)
Jerusalem		-1.5486 (1.0212)		-1.2489 (0.9726)	-1.3072 (0.9762)
Southern		-0.1064 (0.9457)		0.3771 (1.0187)	0.3382 (1.0265)
Participation in labor force		-1.6141*** (0.3114)		-1.5601*** (0.3120)	-1.6033*** (0.3141)
Years of schooling		-0.0621** (0.0272)		-0.0592** (0.0272)	-0.0559* (0.02944)
Years of schooling squared		0.0006 (0.0053)		0.0009 (0.0053)	0.0012 (0.0054)
Number of household items owned		-0.2220*** (0.0587)		-0.2013*** (0.0590)	-0.1972*** (0.0591)
Household income (per thousand shekels)		0.0140*** (0.0004)		0.0140*** (0.0004)	0.0140*** (0.0004)
Religion of locality					
Moslem(r)					
Jewish			0.9563 (0.7136)	0.5375 (0.7955)	0.5308 (0.8052)
Mixed			0.8094 (0.6631)	0.5352 (0.5932)	0.5804 (0.6007)
Arab			0.6936** (0.3019)	0.4315 (0.2871)	0.4278 (0.2908)
Percent female labor force participation rate in locality			-0.0248 (0.0161)	-0.0084 (0.0140)	-0.0084 (0.0140)
Percent of women with post-primary education			-0.0410** (0.0157)	-0.0385** (0.0145)	-0.0387** (0.0147)
Random Effects					
Intercept τ_{00} (variance between localities)	0.5378*** (0.0188)	0.3598*** (0.1230)	0.2923** (0.1481)	0.2512** (0.1092)	0.2611*** (0.1119)
Residual σ^2_{00} (unexplained variance in localities)	6.5886*** (0.2727)	4.5993*** (0.1903)	6.5848*** (0.2728)	4.6069*** (0.1908)	4.5600*** (0.1922)
Years of education					0.0051 (0.0051)
Intra-class correlation	0.075	0.073	0.043	0.052	0.055
-2 Res Log Likelihood	5922.5	5532.1	5892.7	5513.1	5511.4
N	3,994				

Table 3: 1995 Younger Women

Model	A	B	C	D	F
Random variables	Intercept	Intercept	Intercept	Intercept	Intercept & years of education
Fixed variables	Null model	I	C	I and C	I and C
Fixed Effects					
Intercept	2.3329*** (0.0380)	5.7493*** (0.1483)	3.0154*** (0.0988)	5.9804*** (0.1703)	5.9905*** (0.1689)
Age		0.2907*** (0.0057)		0.2911*** (0.0057)	0.2919*** (0.0057)
Age at first marriage		-0.1794*** (0.0063)		-0.1790*** (0.0063)	-0.1797*** (0.0063)
Age difference with husband		0.0322*** (0.0112)		0.0331*** (0.0112)	0.0320*** (0.0112)
Age difference with husband squared		-0.0013** (0.0007)		-0.0013** (0.0007)	-0.0013* (0.0007)
District of residence					
Northern (r)					
Haifa		-0.0408 (0.0657)		0.0113 (0.0661)	-0.0111 (0.0644)
Central		0.0001 (0.0731)		0.0529 (0.0775)	0.0328 (0.0738)
Tel Aviv		-0.0209 (0.1874)		0.1209 (0.2217)	0.0727 (0.2122)
Jerusalem		-0.2366 (0.2389)		-0.1806 (0.2328)	-0.1307 (0.2271)
Southern		0.3788*** (0.0657)		0.3274*** (0.1028)	0.2629*** (0.1032)
Participation in labor force		-0.4793*** (0.0479)		-0.4707*** (0.0481)	-0.4638*** (0.0481)
Years of schooling		-0.0679*** (0.0724)		-0.0648*** (0.0074)	-0.0660*** (0.0089)
Years of schooling squared		-0.0030** (0.0011)		-0.0029*** (0.0011)	-0.0042*** (0.0012)
Number of household items owned		0.0017 (0.0111)		0.0030 (0.0112)	0.0030 (0.0114)
Individual income (per thousand shekels)		0.0210*** (0.0071)		0.0220*** (0.0071)	0.0220*** (0.0072)
Religion of locality					
Moslem(r)					
Jewish			0.4715** (0.212)	0.0518 (0.2064)	0.0629 (0.2012)
Mixed			0.5797*** (0.1804)	0.2086 (0.1537)	0.2059 (0.148)
Arab			0.0941 (0.0877)	0.0412 (0.0794)	0.0325 (0.0758)
Percent female labor force participation rate in locality			-0.0076 (0.0057)	-0.0036 (0.0047)	-0.0041 (0.0046)
Percent of women with post-primary education			-0.0179*** (0.0037)	-0.0063* (0.0034)	-0.0054 (0.0034)
Random Effects					
Intercept τ_{00} (variance between localities)	0.0591 *** (0.0108)	0.0192*** (0.0078)	0.0158** (0.0079)	0.0155** (0.0072)	.0.0121** (0.0062)
Residual σ^2_{00} (unexplained variance in localities)	1.8694*** (0.0402)	1.0196*** (0.0220)	1.867*** (0.0401)	1.019*** (0.0220)	1.0180*** (0.0007)
Years of education					0.0013** (0.0007)
Intra-class correlation	0.031	0.018	0.008	0.015	0.013
-2 Res Log Likelihood	15287.1	12696.5	15244.0	12691.5	12683.6
N	8,022				

Table 4: 1995 Older Women

Model	A	B	C	D	F
Random variables	Intercept	Intercept	Intercept	Intercept	Intercept & years of education
Fixed variables	Null model	I	C	I and C	I and C
Fixed Effects					
Intercept	4.9019*** (0.0905)	6.8000*** (0.1583)	6.6461*** (0.2287)	7.5861*** (0.2220)	7.5644*** (0.2146)
Age		0.1699*** (0.0064)		0.1715*** (0.0064)	0.1706*** (0.0064)
Age at first marriage		-0.1105*** (0.0054)		-0.1100*** (0.0054)	-0.1095*** (0.0054)
Age difference with husband		0.0166 (0.0118)		0.0194* (0.0118)	0.0201* (0.0118)
Age difference with husband squared		-0.0019*** (0.0004)		-0.0020*** (0.0004)	-0.0020*** (0.0005)
District of residence					
Northern (r)					
Haifa		-0.1242 (0.1435)		0.0120 (0.1217)	-0.0264 (0.1145)
Central		-0.0966 (0.1662)		0.0234 (0.1448)	0.0058 (0.1342)
Tel Aviv		-0.5434 (0.4201)		0.1584 (0.4020)	0.1481 (0.3767)
Jerusalem		-1.1132** (0.4743)		-0.9565** (0.3975)	-0.9727*** (0.3743)
Southern		0.6312*** (0.2224)		0.4273** (0.2047)	0.3522 (0.2171)
Participation in labor force		-1.4028*** (0.0088)		-1.401*** (0.0876)	-1.4101*** (0.0873)
Years of schooling		-0.1172*** (0.0088)		-0.1131*** (0.0089)	-0.1162*** (0.0117)
Years of schooling squared		-0.0029** (0.0013)		-0.0029** (0.0013)	-0.0040*** (0.0014)
Number of household items owned		-0.0577*** (0.0161)		-0.0577*** (0.0161)	-0.0582*** (0.0161)
Individual income (per thousand shekels)		0.0439*** (0.0220)		0.440*** (0.0220)	0.4410*** (0.0023)
Religion of locality					
Moslem(r)					
Jewish			1.6208*** (0.4610)	0.4730 (0.3651)	0.5425 (0.3482)
Mixed			1.4794*** (0.4154)	0.7805* (0.2898)	0.8334*** (0.2730)
Arab			0.2482 (0.2098)	0.0110 (0.14964)	0.0241 (0.1390)
Percent female labor force participation rate in locality			-0.0138 (0.0127)	-0.0087 (0.0089)	-0.0120 (0.0085)
Percent of women with post-primary education			-0.0501*** (0.0087)	-0.0201*** (0.0063)	-0.0197*** (0.0061)
Random Effects					
Intercept τ_{00} (variance between localities)	0.4888*** (0.0998)	0.1396*** (0.0360)	0.196*** (0.0518)	0.0714*** (0.0249)	0.0542*** (0.0213)
Residual σ^2_{00} (unexplained variance in localities)	4.668*** (0.0931)	3.1268*** (0.0624)	4.6698*** (0.0931)	3.1292*** (0.0220)	3.0903*** (0.0620)
Years of education					0.0032*** (0.0011)
Intra-class correlation	0.095	0.043	0.040	0.022	0.018
-2 Res Log Likelihood	22490.6	20478.5	22438.7	20453.3	20426.2

N	9,321

Appendix

	Children ever born			
	Mean		Standard deviation	
	1983	1995	1983	1995
Background variables				
Age				
15-29	2.40	1.65	1.84	1.56
30-44	6.33	4.09	2.90	2.66
Age at first marriage				
Up to 17	6.55	5.76	3.72	3.66
17-19	5.26	4.37	3.63	3.19
20-24	4.43	3.57	3.35	2.76
25+	4.17	3.23	3.12	2.91
Age difference with husband				
Older/same age	5.08	3.90	3.69	3.21
1-5 years younger	4.90	3.71	3.54	3.11
5+ years younger	5.4	3.64	3.50	3.24
District of residence				
Jerusalem	4.42	2.61	3.41	2.54
Northern	5.26	3.79	3.66	3.22
Haifa	5.01	3.47	3.67	3.17
Central	4.95	3.33	3.43	3.06
Tel Aviv	4.44	2.71	3.47	2.69
Southern	5.12	3.18	3.53	3.57
Socio-economic variables				
Participation in labor force				
Participates	3.96	2.45	3.40	2.44
Doesn't participate	5.26	3.78	3.62	3.28
Years of study				
Less than 8	6.50	5.28	3.59	3.88
8-11	3.25	3.16	2.52	2.55
12	2.05	2.09	1.83	1.88
13+	2.05	2.02	1.61	1.83
Household durable goods				
Less than 3	5.19	3.85	3.72	3.45
3	4.94	4.31	3.36	3.29
4+	4.94	4.12	3.37	2.96
Individual Income (1995 prices)				
Less than 250	-	2.39	-	3.41
250-500	-	3.13	-	2.44
500-1400	-	4.33	-	2.64
1400+	-	4.85	-	3.60
Household income (1983 prices)				
Less than 13000	5.20	-	3.68	

13000-22000	4.02	-	3.17	
22000-35000	5.40	-	3.42	
35000+	6.18	-	3.92	
Contextual variables				
Religion of locality				
Jewish	4.29	2.79	3.32	3.06
Mixed Jewish/Arab	4.49	3.33	3.52	2.70
Mixed Arab	5.36	3.65	3.69	3.10
Moslem	5.15	3.62	3.62	3.25
Female labor force participation				
Less than 15%	5.22	4.28	3.63	3.42
15-20%	5.12	4.26	3.60	3.26
20-30%	4.55	3.85	3.42	2.98
30%+	4.79	3.87	3.56	3.08
Women with post primary education				
Less than 25%	5.24	4.39	3.66	3.53
25-35%	4.98	4.12	3.51	3.21
35-45%	4.72	3.93	3.52	3.03
45%+	4.26	3.73	3.35	2.99

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[1] Basu (1997) notes further that although Moslem fertility in India is indeed higher than that of Hindus, many of these religious differentials narrow considerably when account is taken of the lower levels of development in the Moslem community in India.
[2] The Druze are a Arabic-speaking minority religious/ethnic group closely related to Islam. Although in the past their fertility was similar to Moslem fertility, they have not experienced stagnation in fertility levels and their fertility has continued to drop.
[3] Sabatello et al (1996) included Jerusalem as a separate category when considering the locality size, reflecting that although urbanized, Moslem Jerusalemites do not follow the same fertility patterns expected from other Israeli Moslems.
[4] In 1983, this meant excluding 56% of the cases and in 1995, 40%
[5] Due to the large size of the sample, multi-collinearity presents less of a problem than in smaller samples and allows more leniency in using variables whose effect we expect to also influence other included variables.
[6] Although a contextual variable, district of residence was included in the analysis as an individual level variable. This was due to the fact the district of residence also reflects an individual's cultural alliance, namely whether a person is Bedouin or not.
[7] Localities are divided into Arab localities that are nearly all Moslem, Arab localities that are mixed Christian/Druze and Moslem and localities that are mixed Arab and Jewish.
[8] The variables excluded after the OLS regression were median years of schooling in locality (men and women), percent in lowest income decile, size of locality and percent voting for Arab parties.
[9] The analysis was carried out using SAS software. As both Singer (1998) and Mosher & McNally (1991) freely admit, SAS is not ideally suited to multilevel modeling in the social sciences. In order to verify that the reason for the lack of convergence and poor model fits was not due to the use of inappropriate software, the models were also run using MlWin software. The results were almost the same – except that with some cases where SAS did return an estimate despite a poor model fit, MlWin did not converge and therefore did not return an estimate.
The problem of model complexity causing likelihood maximization problems is discussed in DiPrete & Forristal (1994).
[10] The list includes such towns as Ramle, Lod and Akko
[11] Apart from nomadic Bedouin, many sedentary Bedouin live in unrecognised localities. Since there is no contextual data on such localities, they were excluded from the study.
[12] with the exception of Tel Aviv which only had 34 Moslems divorcing in 2000
[13] Inhorn (1996:83) describes the "glorification of motherhood" in Islam, which is being increasingly felt in contemporary Egypt with the revival of Islamism, even among women who do not identify with the Islamic movement.
[14] Since the age differences between brides and grooms amongst Bedouin are not sufficient to support wide-spread polygamy, it is suspected that Bedouin women from the Palestinian Authority, Jordan and Egypt are illegally resident in Israel and that the children of polygamous relationships are registered under the name of the legally married wife.