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Life course and Marriage Timing in Indonesia

Introduction

The age at marriage has been rising steadily in Asia. For example, in Southeast Asia, the singulate mean age at marriage for women in Indonesia increased from 19 in 1961 to 21 in 1991 (U.N. Demographic Yearbook 1995). In South Asia, the singulate mean age at marriage for women in India increased from 16 in 1961 to 19 in 1991 (Das and Dey 1996). In the Middle East too, the average age at marriage has been increasing. In Jordan, the singulate mean age at marriage for women increased by a year in the single decade of the 90s (DHS 1990, 1997). Such rapid changes contradict the impression that age at marriage is a slow moving variable.

Shifts in marriage timing that increase the length of the celibate period has the potential to bring about wide ranging changes in society. It spawns new adolescent and youth cultures (Xenos and Gultiano 1992), changes fertility patterns (Dixon 1971, Rindfuss and Morgan 1983), can modify the relationship between spouses, and between spouses and affinal kin, and change the age and life course sequencing at sexual initiation as well.

There has been surprisingly little recent research on this trend of increasing age at marriage in Asia despite the fact that it indicates a rapid change in the value systems of Asian societies. Current research on age at marriage focuses more on the West, since delayed marriages and non-marriages are a part of a larger set of changes taking place in the Western family. These changes have been called "the second demographic transition" (Lesthaeghe 1995; Van de Kaa 1987) and include an increase in cohabitation, childlessness, and non-marital childbearing. Since these correlates of changes in marriage timing have significant policy relevance for the West, the body of literature on this topic is fairly large.

With regard to Asia, only Japan has received attention in the area of delayed marriage (see Raymo 2003), since here too the social changes accompanying delayed marriage mirror those in the West and have policy relevance for Japanese society. The lack of research on this topic for other Asian countries has meant that the social changes occurring in several Asian countries has not been adequately documented. This paper is a step towards filling this research gap. We will be examining the changes in marriage timing specifically for Indonesia and will consider the role played by increasing labor force participation and education in Indonesia. Additionally, we will examine the changes in the odds of marriage in a cross-sectional and a dynamic perspective, that is, we will look at how odds of marriage are different for multiple cohorts in a cross-section, and how they change for a generation (Alwin and McCammon 2003) of people over time.

Increased education and labor force participation are widely seen as consequences of the process of industrialization and modernization. Since Indonesia has witnessed rapid economic growth for several decades, this is often assumed to be the reason for the changes occurring in the area of marriage and the family (Xenos and Gultiano 1992). The reasoning often is that as non-Western societies industrialize, they resemble Western societies more closely. However, past research on divorce for Malaysia (Jones 1981) and on marriage timing in Central Java, a province in Indonesia (Malhotra 1997) shows that we need to be cautious with such reasoning. Jones' research shows that divorce rates in Malaysia actually declined with the onset of industrialization, while Malhotra's research shows that traditional gender norms in Indonesia were often reinforced with the process of modernization.

The literature on marriage timing for the United States and countries in Western Europe often investigates marriage timing as an issue about the life course. The relationship between life course events like education, workforce participation, and marriage is one of compatibility. Research on the United States, Spain, and Italy (Xie et al. 2003; Copolla 2004) indicates that education and marriage are incompatible life events, while workforce participation and marriage are compatible. The former delays marriage, while the latter increases the probability of its occurrence. Further, people who are still in school, regardless of their age, are considered "minors" who are not yet ready to take on adult responsibilities of having a family. People in the workforce on the other hand are regarded as adults who are capable of marrying and raising a family (Copolla 2004).

In this paper we will examine how the two theories – modernization and the life-course – help us understand the relationship between education, workforce participation, and marriage timing in Indonesia.

We will examine these changes for both men and women. Often in the demographic literature the focus with regard to age at marriage is on women. However, since marriage timing has changed for both men and women (Xenos and Gultiano 1992), a one-sided focus on only women may lead us to neglect important differences between the sexes. Moreover, research on the United States indicates that a lot of the shifts in marriage timing may be driven by men's circumstances compared to women's, making it necessary that we examine this question for both sexes.

Research question and hypotheses

Most South East Asian countries including Indonesia underwent structural adjustment programs in the early 1970s to encourage economic growth. The integration into the global economy increased the presence of the Western and Japanese private sector in the country which in turn reinforced middle class western values and lifestyles. These cultural changes were associated with social structural changes like increased levels of educational attainment and labor force participation especially for women but also for men (Malhotra 1997). Changes in the economic sphere of society have the potential to change the dynamics in other social domains. Marxian sociologists would call this the influence of the economic structure on the infrastructure of society. While we are not prioritizing among the different social domains as the Marxian sociologists do, we realize that major changes in one area of society can lead to changes elsewhere in society. In this specific case, we are interested in understanding how economic changes affect more traditional social systems like marriage and family formation. This is our research question.

While such changes were also the subject of Malhotra's research, our research differs from hers in several ways. While Malhotra's research focused only on the province of Central Java, we are looking at Indonesia as a whole. Our data is also more recent compared to Malhotra's (which was collected in 1982) and exists for two time points in the 1990s. Our methods of analysis are also different from hers. Since we have longitudinal data over two time points, we are able to look at determinants of marriage within a single cross-section and also look at the determinants of change over time prospectively. In contrast Malhotra's dataset though it was collected at a single point in time had life history data which allowed her to examine the research question retrospectively. One area of continuity between her analysis and ours is that we too want to keep the focus equally on men and women. Like her we believe that the fertility literature's exclusive focus on women with regard to marriage in developing countries is limiting since an understanding of how the process of family formation is affected requires an analysis of men's marriage patterns as well.

Our research differs from Malhotra's in other critical ways. The purpose of her analysis was to examine if the process of industrial change and its concomitant social changes had resulted in egalitarian family formation processes for women as well as men in rural as well as urban areas. Specifically she asks if industrialization has led to increased spousal choice and less economic dependence on men for the women in Central Java. In contrast, we want to examine if the occurrence of the marriage event itself has been affected by the large scale economic changes. Our purpose in focusing on men and women equally is to get a comparative picture of the two significant players in the marriage process rather than to see if the changes benefit both equally. Our lack of focus on the latter is guided primarily by the fact that some benefits of delayed marriages like more stable marriages benefit both sexes.

Our analysis focuses primarily on whether increased levels of educational attainment and increased levels of labor force participation have resulted in changes in the timing of marriage for young Indonesians. Prior research shows that both education and labor force participation are powerful agents of change. They are simultaneously the causes and the consequence of the process of industrialization and modernization. Both have been documented as being positively associated with processes as diverse as social mobility, women's empowerment, and increased political participation. In Malhotra's models too they are the key variables for explaining the timing of marriage. The causal pathways by which the two variables are likely to be associated with marriage timing are described below.

Education: In our analysis we measure education in two ways. First, we include a variable that measures whether the person is currently enrolled in school or not. Second, we include a variable that measures the highest level of education attained by a person. Two hypotheses guide our choice of variables:

Hypothesis 1: Being enrolled in school will decrease the odds of marriage for both men and women.

Hypothesis 2: Higher levels of educational attainment will be associated with lowered odds of marriage for both men and women.

There are several ways by which both variables could affect marriage timing. School enrollment could influence marriage timing directly. Since attaining even basic education (at least high school) takes time and takes an individual well past the traditional age of marriage, a delay in marriage could occur simply by being in school. People in school or those who are still students may still be considered "children" even if they are in their late teens or early twenties. People at this stage in their life may be regarded as being unprepared for taking on the challenges of raising a family. Studies on Sri Lanka (Malhotra and Tsui 1996) and on Italy and Spain (Copolla 2003) shows that this reasoning is widespread and is found in very different types of societies. By this logic, a person could delay their marriage by simply being in school longer.

Similarly educational attainment may influence the odds of men's and women's marriage. Some education is considered useful or even necessary for women since education equips them with basic knowledge and skills to negotiate the world. This way education becomes a legitimate alternative to early marriage for women (Malhotra 1994).

When education is prolonged women become more autonomous and empowered. They are more able to take decisions regarding their lives including when (and even to whom) they will get married (Murthi et al. 1995). Discussing the case of Malaysia, Gavin Jones (1981) writes that women in Malaysia were traditionally not felt to know enough about the matter to make a wise choice. However, this attitude changed with the expansion of women's education, and Malaysian women are now allowed the freedom of choosing their own spouse (Jones 1981).

The marriage market too may force women to seek higher levels of education. As more men receive higher levels of education, they are likely to want educated wives. This in effect forces parents to educate their daughters more. This is also an economically rational decision for upwardly mobile families since better educated women attract men who have more education and consequently better income prospects. Sathar et al. (1988) also point out that in the event a suitable match cannot be found immediately parents may continue educating their daughters till such a time they are able to find a match.

For men, higher levels of education affect their marital prospects directly. Higher levels of education will ensure that they get well paying jobs in an economy that is booming. A man who has a good education and is earning well becomes more marketable in the marriage market.

Societal level changes in marriage timing may be brought about by an increase in educated men and women in each province. In this case, it would not matter if an individual man or woman does not have a lot of education. If there are a large number of educated persons in the province, all of whom are postponing their marriage, then everyone in that province will delay their marriage as well. This leads to our third hypothesis related to education:

Hypothesis 3: As the proportion of educated men in the province increases, the odds of marriage for both men and women will increase.

Labor force participation: Our argument of the relationship between labor force participation and marriage timing is captured by the following hypotheses:

Hypothesis 4: As men's labor force participation increases, their odds of marriage will increase.

With regard to men the reasoning behind our hypothesis is straightforward. It is guided by the logic of the marriage market. Men who are working are attractive marriage partners since they have financial resources to raise and provide for a family. As Copolla (2004) and Xie et al. (2003) point out, economic circumstances are

vital to family formation. Since men have traditionally had the role of the breadwinner in society, better paying jobs that result from an economic boom can only serve to make them more attractive marriage partners.

Apart from the fact that raising a family is expensive, Indonesia also has a system where dowry is generally given by the groom to the bride (RAND IFLS newsletter). This would also make men who work and earn attractive marriage partners.

Additionally, for men, labor force participation may also indicate economic independence from their parents and a marker of their entering adulthood. This too should increase their odds of marriage. A logical extension of our hypothesis for men would be that for men with higher levels of income, the odds of marriage are higher. This can be expected given that men who make more money would be even more attractive marriage partners compared to low earning men. We therefore frame our sixth hypothesis as follows:

Hypothesis 5: High earning men will have higher odds of getting married compared to men with lower incomes.

The relationship between work force participation and marriage timing is harder to predict for women. This is because there are several plausible associations between these two variables in the case of women. On one hand there may be an incompatibility between work and family roles. Lehrer and Nerlove (1986) have highlighted the incompatibility between women's labor force participation and fertility along the dimensions of time use. Their argument can be extended to marriage timing. While marriage signifies the entry into family roles, labor force participation and also education are economic activities that are generally conducted outside the home, thereby reducing the time available for carrying out family roles. In this case marriage would decline. This is similar to Becker's thesis on why marriage rates have declined in the West and is consistent with Cherlin's (1992) findings on women and the family in the United States. Cherlin argues that a major reason why women are postponing marriage in the U.S is because they are no longer reliant on their husbands for financial security and stability.

It is equally possible however that labor force participation will increase the odds of marriage by improving their marriage markets (Oppenheimer 1994) and because entry into the workforce signifies a woman's entry into an adult economic role (Copolla 2004). The latter argument however is a little less likely since women don't traditionally have the role of the economic provider in a family.

A third possibility is that women's labor force participation has no effect on marriage timing. This can happen in cases where women's labor force participation prior to marriage is a stop-gap arrangement till such a time that her parents are able to find a suitable match for her (Sathar et al 1988). In such cases work force participation is not an avenue for empowerment or autonomy and will probably be discontinued after marriage. Malhotra and Tsui (1996) found that employment for Sri Lankan women who did not value jobs or who did not look upon it as a source of income did not affect their marriage timing. Malhotra's findings for Central Java show that marriage timing was not affected at all by women's pre-marital work force participation. If this is true for Indonesia as a whole, then labor force participation may not affect marriage timing.

We favor the reasoning that labor force participation will not be significantly associated with women's odds of marriage as this lack of association seems to be true for Asian countries. The negative and positive relationships between work force participation and marriage timing seem to be true for Western countries.

Control variables: We control for socioeconomic status (an index of household assets ownership), urban residence, family structure (co-residence with parents and sibling composition), age of the respondent, religion, and province of residence in our model.

Data and methods

Our analysis mainly utilizes the Indonesia Family Life Survey (IFLS) data collected by RAND in collaboration with various organizations in Indonesia. IFLS is a longitudinal dataset that was done in 3 waves. The first wave of the IFLS (IFLS1) was done in 1993, the second (IFLS2) in 1997, and the third (IFLS3) in 2000. The IFLS sample covers thirteen out of twenty seven Indonesian provinces. In the first wave the survey sampled 30,000 people from 7,224 households in the first wave. This sample is representative of 83% of the

total Indonesian population and constitutes about 93% of the sampling frame. The provinces included in this study are: North Sumatra, West Sumatra, South Sumatra, Lampung, DKI Jakarta, West Java, Central Java, Yogjakarta, East Java, Bali, West Nusa Tenggara, South Kalimantan, and South Sulawesi. Since the survey is longitudinal the second and third waves tracked the respondents from the first wave to get information on how their lives had changed in the intervening years. When the analysis for this paper was done, only the first two waves of the data were publicly available and of the two only the first wave was available in its entirety.

In IFLS2, 94% of the IFLS1 households and 93% of the individual respondents (known as target respondents) were re-interviewed. In the second wave of the IFLS, 7600 households were covered. This increase occurred because respondents who had split from their original household were followed.

This dataset is relevant to this analysis since it has marital status, education, and work force participation information for 30,000 people. It also has basic background information on each respondent such as their age, province of residence, region of residence, and religion.

This analysis depends mostly on the sample from the first wave of the IFLS data. However, the marital status information contained in the second wave of the IFLS data is also relevant to this analysis since it provides us with information on how the marital status of the IFLS1 respondents changed over time. The unit of analysis for both samples is the individual. We restricted this sample to respondents who were between the ages of 12-30 at the time of the first survey.

We are using a logit model for most of our analysis and we will use this model on two samples. The first sample comprises everyone in IFLS1 alone. Using a logit model we will compare the people who are married in IFLS1 with those who have never been married to understand the differences in the characteristics of these two groups. Our second sample is restricted to those who are single in IFLS1 and we track this group of respondents to IFLS2 to see if they married in the intervening four years. Using a logit model we then compare the characteristics of those who married to those who did not. In the analysis on the first sample, we will mainly examine the association between education and marriage. It is not possible to include work in this model since we don't have data on pre-marital work. In the analysis on the second sample we will look at both work and education. Further, we do both sets of analyses separately on men and women.

In analyzing the association between marriage and education, we are also including a multi-level analysis using hierarchical linear modeling. For this section we will use the 1991 Indonesian Census data in addition to the IFLS data. The unit of analysis for the census data is the province and data exists for all twenty seven Indonesian provinces. We are however using the information for those 13 provinces that are a part of the IFLS sample. The census data has counts data on the number of people in the province who are working, the number of people at each level of education, the number of married, never married, divorced, and separated people, and on the number of people in each province who are in the work force.

Results:

Education: Our results from the cross-sectional model – the model run on the cross-sectional sample of IFLS1- show that levels of education are associated with lowered odds of women's and men's marriage. However, this model can't accommodate controls for work force participation or school enrollment at the time of marriage since the sample is of those who are either married or not in IFLS1. The results only tell us the distinguishing characteristics of the people who were married in IFLS1 compared to those who were not married at the same time. The determinants of marriage are captured by the dynamic model. This model is a logit analysis on a sample of people who were single at IFLS1 and who were tracked into IFLS2 to see if they had been married by then or not. The factors that determined marriage from non marriage were analyzed in this model. The results from this model show that it is not level of education that matters, but actual school enrollment. Therefore, level of education is associated with delayed marriage only so far as it keeps people in school. This also explains why level of education is significant in the cross-sectional model which doesn't have controls for school enrollment.

Provincial level models (models not presented here) were analyzed that examined whether the proportion of educated men and women in the province would influence the odds of men's and women's

marriage. In the case of men, current school enrollment was still the only variable that was associated with their odds of marriage. For women however, both current school enrollment and the proportion of educated women in the province was associated with a slightly lowered odds of marriage.

Work-force participation: Our logit analyses on work-force participation were done only on the dynamic sample. The results from this model show that work-force participation is strongly associated with increasing marriage odds for both men and women. We also tested our hypothesis that increased income would increase the odds of marriage for men. The results indicate that there is no association between income and odds of marriage for men. For women there is a marginal positive effect, but since the effect is weak and the standard error too large, we are unable to make any conclusive remarks on this.

Provincial level models on the influence of the proportion of workers in the province on marriage odds were not significant.

----Tables 1 and 2 about here---

Conclusion:

Our results indicate that contrary to conventional wisdom, education and workforce participation don't lead to delays in marriage by through economic independence and empowerment. Instead being enrolled in school depresses marriage odds because people are still considered too young to marry. Workforce participation in contrast increases marriage odds by signaling entry into adulthood. Paradoxically, since our results on income were not significant, it doesn't appear that having sufficient economic resources to support a family matters much in entering into a marital union. Our results on both education and workforce participation reinforce life course arguments of marriage being an event in an individual's life course. People remain unmarried while they are considered minors or socially not ready for it. When people become socially ready for marriage they get married.

Previous research on Indonesia has shown modernization to be an insufficient research framework for analyzing marriage timing, but no one, to the best of our knowledge, has proposed an alternative framework to study it. Based on the results of our analyses, we propose the life course framework as an alternative framework within which to understand the processes of marriage and non-marriage.

References

Anderson, Kathryn H., M. Anne Hill, and J.S Butler. 1987. Age at marriage in Malaysia: A Hazard Model of Marriage Timing. *Journal of Development Economics*. 26: Pp. 223-234.

Alwin, Duane F. and Ryan J. McCammon. 2003. "Generations, Cohorts, and Social Change", pp. 23-50 in Jeylan T. Mortimer and Michael J. Shanahan (ed.) *Handbook of the Life Course*. Kluwer Academic/Plenum Publishers: New York.

Balk, Deborah. 1994. Individual and Community Aspects of Women's Status and Fertility in Rural Bangladesh. *Population Studies*. 51(2): Pp. 21-45.

Bongaarts, J. 1978. "A framework for Analyzing the Proximate Determinants of Fertility," *Population and Development Review*, 4:105-132.

Caldwell, J.C, P.H Reddy, and Pat Caldwell. 1983. Causes of Marriage Change in South India. *Population Studies*. 37(3): Pp. 343-361.

Caldwell, John, and P.H Reddy, and Pat Caldwell. 1982. The Causes of Demographic Change in Rural South India: A Micro Approach. *Population and Development Review*. 8(4). Pp. 689-727

Caldwell, John C. 1980. "Mass Education as a Determinant of the Timing of Fertility Decline." *Population and Development Review*. 6(2): 225-255

Chant, S. and S. Radcliffe. 1992. "Migration and Development: The Importance of Gender." In S. Chant (ed.), *Gender and Migration in Developing Countries*. London: Belhaven Press: 1-29.

Cherlin, Andrew. 1992. *Marriage, Divorce, and Remarriage*. Harvard University Press: Cambridge, MA.

Chu, C.Y Cyrus, and Ronald Lee (ed.). 2000. *Population and Economic Change in East Asia*. Population and Development Review: A Supplement to Vol. 26. Population Council: New York.

CIA. 2001. *The World Fact Book*. CIA: Washington DC.

Copolla, Lucia. 2004. "Education and Union Formation as Simultaneous Processes in Italy and Spain." *European Journal of Population*. 20: 219-250.

Das, N.P.; Dey, Devamoni. 1998 Female Age at Marriage in India: Trends and Determinants. *Demography India*. 27(1): Pp. 91-115.

Davis, Kingsley and Judith Blake. 1956. "Social Structure and Fertility: An Analytical Framework." *Economic Development and Cultural Change*. 4: Pp. 211-235.

Dixon, Ruth. 1971. Explaining Cross Cultural Variations in Age at Marriage and Proportions Never Marrying. *Population Studies*. 25(2): Pp. 215-233.

Easterlin, Richard. 1978. "The Economics and Sociology of Fertility: A Synthesis" in Tilly (ed) *Historical Studies of Changing Fertility*.

Edin, Kathryn. 2000. Few Good Men. *The American Pro*spect. 11(4).

Forsythe, Nancy, Roberto Patricio Korzeniewicz, and Valerie Durrant. 2000. "Gender Inequalities and Economic Growth: A Longitudinal Evaluation." *Economic Development and Cultural Change*. 48(3): 573-617.

Goode, William J. 1963. *World Revolution and Family Patterns*. The Free Press: New York.

Guinnane, Timothy. 1991. Rethinking the Western European Marriage Pattern: the Decision to Marry in Ireland at the Turn of the 20th Century. *Journal of Family History*. 16 (1): 47-64.

Hajnal, John. 1953. Age at Marriage and Proportions Marrying. *Population Studies*. 7(2): Pp. 111-136.

Hajnal, John. 1954a. Differential Changes in Marriage Patterns. *American Sociological Review*. 19(2): Pp. 148-154.

Hajnal, John. 1954b. Analysis of Changes in Marriage Patterns by Economic Groups. *American Sociological Review*. 19(3): Pp. 295-302.

Hajnal, John. 1982. Two Kinds of Preindustrial Household Formation Systems. *Population and Development Review*. 8(3): Pp. 449-494.

Hirschman, Charles. 1994. Why Fertility Changes. *Annual Review of Sociology*. 20: Pp. 203-233.

Hugo, Graeme. 2000. Migration and Women's Empowerment. In Harriet Presser, Gita Sen (ed.) *Women's Empowerment and Demographic Processes: Moving Beyond Cairo*. Oxford University Press: New York.

Jones, Gavin. 1997. Modernization and Divorce: Contrasting Trends in Islamic South East Asia and the West. *Population and Development Review*. 23(1): Pp. 95-114.

Jones, Gavin. 1981. Malay Marriage and Change in Peninsular Malaysia: Three Decades of Change. *Population and Development Review*. 7(2): Pp. 255-278.

Kabeer, Naila. 1994. *Reversed Realities: Gender Hierarchies in Development Thought*. London: Verso.

Kishor, Sunita. 2000. Empowerment of Women in Egypt and Links to the Survival and Health of Their Infants. In Harriet Presser, Gita Sen (ed.) *Women's Empowerment and Demographic Processes: Moving Beyond Cairo*. Oxford University Press: New York.

Koentjaraningrat. 1975. *An Introduction to The People's and Cultures of Indonesia and Malaysia*. Menlo Park: California.

Landale, Nancy S. 1994. Migration and the Latino Family: The Union Formation Behavior of Puerto Rican Women. *Demography*. 31(1): Pp. 133-157.

Lehrer, Evelyn, and Marc Nerlove. 1986. Female Labor Force Behavior and Fertility in the United States. *Annual Review of Sociology*. 12: Pp. 181-204

Lesthaeghe R. 1995. The Second Demographic Transition in Western Countries: An Interpretation. In Karen O Mason and An Magritt Jensen (ed.) *Gender and Family Change in Industrialized Countries*. Oxford, England, Clarendon Press. Pp.17-62.

Malhotra, Anju. 1997. Gender and the Timing of Marriage: Rural Urban Differences in Java. *Journal of Marriage and the Family*. 59(2): Pp. 434-450.

Malhotra, Anju, and Amy Ong Tsui. 1996. Marriage Timing in Sri Lanka: The Role of Modern Norms and Ideas. *Journal of Marriage and the Family*. 58(2): Pp. 476-490

Malhotra, Anju. 1991. Gender and Changing Generational Relations: Spouse Choice in Indonesia. *Demography*. 28(4). Pp. 549-570.

Mason, Karen Oppenheim. 1986. "The Status of Women: Conceptual and Methodological Issues in Demographic Studies." *Sociological Forum*. 1(2): 284-300.

Murthi, Mamta, Anne-Catherine Guio, and Jean Dreze. 1995. "Mortality, Fertility, and Gender Bias in India: A District-Level Analysis." *Population and Development Review*. 21(4): 711-744.

Oppenheimer, Valerie. 1994. Women's Rising Employment and the Future of the Family in Industrial Societies. *Population and Development Review*. 20(2): Pp. 293-342.

Oppenheimer, Valerie. 1988. A Theory of Marriage Timing. *American Journal of Sociology*. 94(3): Pp. 563-591.

Oppenheimer, Valerie. 1977. The Sociology of Women's Economic Role in the Family. *American Sociological Review*. 42(3): Pp. 387-406.

ORC Macro International. 1997. *Jordan: Demographic and Health Survey*. ORC Macro International: Calverton, MD.

ORC Macro International. 1990. *Jordan: Demographic and Health Survey*. ORC Macro International: Calverton, MD.

Ortiz, Vilma. 1996. Migration and Marriage Timing among Puerto Rican Women. *International Migration Review*. 30(2): Pp. 460-484.

Peacock, J.L. 1973. *Indonesia: An Anthropological Perspective*. Pacific Palisades: Good Year.

Raymo, James M. 2003. "Japanese Women's Educational Attainment and Transition to First Marriage." *Demography*. 40(1):83-103.

Rathgeber, Eva M. 1990. "WID, WAD, GAD: Trends in Research and Practice." *The Journal of Developing Areas*. 24(4): 489-502.

Rindfuss, Ronald R, and S. Phillip Morgan. 1983. Marriage, Sex, and the First Birth Interval: The Quiet Revolution in Asia. *Population and Development Review*. 9(2): Pp. 259-278.

Sathar, Zeba, Nigel Crook, Christine Callum, and Shahnaz Kazi. 1988. Women's Status and Fertility in Pakistan. *Population and Development Review*. 14(3): Pp. 415-432.

Smith, Peter C. 1980. Asian Marriage Patterns in Transition. *Journal of Family History*. 5: 58-96.

Trussell, J, and D.E. Bloom. 1983. Estimating the Covariates of Age at Marriage and First Birth. *Population Studies*. 37(3): Pp. 403-416.

Tyree, A. and K. Donato. 1986. "A Demographic Overview of the International Migration of Women." In *International Migration: The Female Experience*. NJ: Rowman and Allan.

Westoff, Charles, Ann K. Blanc, and Laura Nyblade. 1994. *Marriage and Entry Into Parenthood – DHS: Comparative Studies 10*. Macro International: Calverton, MD.

United Nations. 1995. *United Nations Demographic Yearbook*. UN: New York.

Van de Kaa, Dirk J. 1987. Europe's Second Demographic Transition. *Population Bulletin*. 42(1): Pp.1-59.

Weeks, John R. 2002. *Population: An Introduction to Concepts and Issues (8th Ed.)*. Wadsworth: Belmont, CA.

Xenos, Peter and Socorro A. Gultiano. 1992. *Trends in Female and Male Age at Marriage and Celibacy in Asia.* Papers on the Program on Population. East-West Center: Hawaii.

Xie, Yu, James M. Raymo, Kimberly Goyette, and Arland Thornton. 2003. "Economic Potential and Entry into Marriage and Cohabitation." *Demography*. 40(2):351-367.

Table 1

Maximum Likelihood Estimates of the Odds of Women and Men being Married in 1993 on Selected Independent Variables

Parameter	Estimate for Women		Estimate for Men	
Intercept	0.8755	***	-1.699	***
Junior high general	-0.3551	***	-0.2913	*
Junior high vocational	-0.8836	***	-0.272	
Senior high general	-1.8028	***	-0.8449	***
Senior high vocational	-1.6525	***	-1.1126	***
Diploma	-2.2532	***	-2.0428	***
University	-2.8132	***	-1.9704	***
Age 12-15	-5.1405	***	-5.1281	***
Age 16-17	-2.3198	***	-2.8082	***
Age 18-19	-1.0367	***	-1.3083	***
Age 22-23	0.7598	***	0.901	***
Age 24-25	1.4275	***	2.2233	***
Age 26-27	2.2287	***	2.7574	***
Age 28-30	2.4884	***	3.8969	***
Urban residence	-0.7919	***	-0.5183	***
Hindu	-0.1511		0.6577	
Buddhist	0.0254		-1.2573	
Christian	-0.5187	**	-0.8608	***
N. Sumatra	-0.3413	†	0.4603	*
W.Sumatra	-0.2932		-0.5535	**
S. Sumatra	0.0846		0.5702	**
Lampung	0.519	*	0.3633	
W. Java	0.679	***	0.8688	***
C. Java	0.5156	***	0.2516	
Yogjakarta	-0.1022		-0.0837	
E. Java	0.7158	***	0.6304	***
Bali	0.1415		0.4755	
West Nusa Tengarra	0.0695		0.7384	***
S. Kalimantan	0.8134	***	0.8835	***
Sulawesi	-0.3322		0.8369	***
Chi-sq.	4281.6254	***	3307.1309	***
N	5412		5817	

***p<0.001 **p<0.01 *p<0.05 †p<0.1

Source: Indonesia Family Life Survey, 1993

Table 2
Maximum Likelihood Logit Estimates of the Odds of Women's and Men's Marriage between 1993 and 1997 on Selected Independent Variables

Parameter	Estimate for women		Estimate for men	
Intercept	0.1254		-0.8586	***
Working Y/N	0.2154	*	0.5653	***
Currently enrolled Y/N	-1.2848	***	-1.0405	***
Junior High General	0.1272		-0.3269	**
Junior High Vocational	0.2549		-0.2792	
Senior High General	0.1348		-0.2238	
Senior High Vocational	0.3392	*	-0.0317	
Diploma	0.4146		0.2478	
University	0.2595		0.092	
Age 12-13	-1.1284	***	-2.440	***
Age 14-15	-0.5309	***	-1.3687	***
Age 16-17	0.0561		-0.876	***
Age 18-19	0.1572		-0.0389	
Age 22-23	0.1434		0.3684	**
Age 24-25	0.0873		0.4972	**
Age 26-27	0.011		0.8414	***
Age 28-30	-0.9688	***	0.8109	***
Socioeconomic Status	-0.00542		-0.0102	
Urban	-0.4331	***	-0.1029	
Number Younger Sisters	0.0547		0.0144	
Number Older Brothers	-0.2139	**	-0.1487	
Number Younger Brothers	-0.019		0.0334	
Number Old Sisters	-0.1692	*	-0.5178	***
Co-residence with Parents	0.0772		-0.2453	*
Hindu	0.3668		-0.0846	
Buddhist	0.1164		-1.4293	*
Christians	-0.549	***	-0.51	**
N. Sumatra	-0.3627	*	0.2122	
W. Sumatra	-0.3395	†	0.029	
S. Sumatra	-0.00309		0.7463	***
Lampung	0.0185		0.4169	*
W. Java	0.0655		0.6385	***
C. Java	-0.4337	**	-0.0137	
Bali	-0.8255	†	0.5095	
West Nusa Tengarra	-0.2698		0.5758	**
S. Kalimantan	0.1425		0.3014	
Sulawesi	-0.5271	**	-0.0185	
Chi-sq.	613.9731	***	969.0647	***
N	3295		3980	

***p<0.001 **p<0.01 *p<0.05 †p<0.1

Source: Indonesia Family Life Survey, 1993 and 1997