Women's Empowerment and Family Formation across the Life Course in Madhya Pradesh, India: The Influence of Time-varying and Fixed Empowerment Resources

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Abstract

Family Formation and Women's Empowerment over the Life Course in Madhya Pradesh, India: A Structural Equations Model

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Women's empowerment influences numerous fertility behaviors: abortion, contraceptive use, family size, spacing between births, and the sex composition of completed families. In turn, reproductive behaviors and family formation influence empowerment over the life course. Furthermore, women's empowerment is dependent upon position within the household, which also changes over the life course. In South Asia, the disempowerment of young, recently-married women is contrasted with the relative empowerment of mothers-in-laws. Yet, most quantitative studies describe women's empowerment as a fixed attribute using cross-sectional data, ignoring variations across the life course.

This analysis uses retrospective survey data from a representative sample of 2,444 married women (age 15-39 with at least one child) in Madhya Pradesh, India, a rural state with poor demographic outcomes and conservative gender norms. The dataset captures the reproductive events, household circumstances, and empowerment (mobility, spending decision-making, violence) for each of 11,617 inter-pregnancy intervals in respondents' lives from marriage until the time of survey in 2002.

This paper examines how static or dynamic women's empowerment is over the reproductive life course. Data are analyzed using a structural equations model to model the endogeneity between stages of family formation and women's empowerment. It compares the influence of initial empowerment resources (marriage circumstances, education) and socio-demographic determinants (religion, caste, urban residence) fixed by the time of marriage with time-varying, life course determinants (pressures for childbearing, family size, sex composition of children) of women's empowerment at the outset of marriage, at the time their family formation is complete, and each intervening interval.

The author finds that initial empowerment resources enhance early empowerment, and that women's empowerment at the conclusion of childbearing is determined by their family formation and empowerment in earlier intervals, but not initial empowerment resources. Family formation does not supplant initial resources as determinants of empowerment as the life course progresses. Rather the influence of each recedes in later intervals. Earlier empowerment exerts a strong and durable "legacy effect", enhancing women's empowerment in later intervals. These findings highlight the importance of investing early in initial resources, like education and the circumstances of marriage, and tackling elements of the gender system that sustain a preference for sons and stress proving one's fertility as criteria for gains in empowerment.

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Background

Women's Empowerment and Fertility

Women's status, empowerment, and gender equality have long captured the imagination of demographers interested in explaining whether and why fertility does or does not decline. For example, Mason argues that early attention to women's status began in the 1960's and 1970's with a few selected authors[2] and made its way into mainstream theories of demographers such as Caldwell and Cain by the 1980s (Cain 1982; Caldwell 1982; Mason 1986). At the aggregate level, women's status, empowerment or agency may partially explain a stall in the fertility transition, higher than expected fertility rates, lower contraceptive prevalence rates and increased unmet need for family planning (Germain 1975; Bongaarts and Bruce 1995; Kritz, Makinwa-Adebusoye et al. 2000; Presser and Sen 2000a; Larsen and Hollos 2003).

More recent research demonstrates that women's empowerment, variously defined, influences a range of demographic processes and reproductive outcomes at individual level (Dyson and Moore 1983; Mason 1986; Jejeebhoy 1991; Jejeebhoy 1995; Morgan and Niraula 1995; Presser and Sen 2000a; Jejeebhoy and Sathar 2001; MacQuarrie, Edmeades et al. 2007; Pande and Astone 2007; Edmeades, MacQuarrie et al. 2008; MacQuarrie 2008). This is complemented by evidence that mothers' empowerment is positively associated with infant and child survival, though the relationship with mortality outcomes is less well-established as

[2] See, for example, Blake, J. (1965). "Demographic Science and the Redirection of Population Policy." Journal of Chronic Diseases **18**: 1181-1200.; Ridley, J. C. (1968). "Demographic Change and the Roles and Status of Women." Annals of the American Academy of Political and Social Science **375**: 15-25.; or Germain, A. (1975). "Status and Roles of Women as Factors in Fertility Behavior: A Policy Analysis." Studies in Family Planning **6**: 192-2000.

compared to the relationship with fertility outcomes (Das Gupta 1987; Kishor 2000a; Ghuman 2003).

More empowered women are generally more likely to use contraception, have smaller completed families and longer spacing between children (Jejeebhoy 1995; Malhotra, Vanneman et al. 1995; Schuler, Hasemi et al. 1997; Kishor 2000b; Mason and Smith 2000; Edmeades, Pande et al. 2008), although some studies have shown weak effects (Morgan, Stash et al. 2002; Mumtaz and Salway 2005). Women's empowerment also affects women's ability to implement intentions to attempt abortion (MacQuarrie, Edmeades et al. 2007) and weakens the strength of son preference and results in longer time to conception (Pande and Astone 2007; Edmeades, Pande et al. 2008; MacQuarrie 2008). Given the weight of evidence that women's empowerment affects fertility outcomes and reproductive behaviors, a next logical line of inquiry develops around which factors influence women's empowerment.

Defining Women's Empowerment

Recent literature points to an emerging consensus on the definition of women's empowerment and what distinguishes it from the related concepts of power, women's status, autonomy, or gender equality. The common elements in this consensus are that 1) empowerment is a *process* from a state of disempowerment to greater empowerment and 2) women's *agency* is a central marker of the process of empowerment (Kishor 2000a; Presser and Sen 2000a; Kabeer 2001; Malhotra, Schuler et al. 2002; Narayan 2005). For the purposes of this paper, the author borrows Kabeer's (2001) definition of women's empowerment as "the expansion in women's

ability to make strategic life choices in a context where this ability was previously denied to them."

Conceptualizing women's empowerment as a process requires that we differentiate what Kishor terms the indirect evidence of empowerment from the direct (Kishor 2000b). Indirect evidence of empowerment includes the sources of empowerment and the resources and settings that give rise to empowerment, as well as the achievements that result from it (Jejeebhoy 1995; Jejeebhoy 2000; Kishor 2000b; Presser and Sen 2000b).

Kabeer notes that empowerment is produced through a combination of resources and agency and identifies agency as the direct evidence of empowerment (Kabeer 2001; Malhotra, Schuler et al. 2002). In this description, women, themselves must be significant actors in the change process (Malhotra and Schuler 2005). Malhotra and colleagues draw on each of these authors, among others, to craft a framework in which empowerment resources contribute to agency (direct evidence of empowerment), which leads to empowerment achievements. Agency refers to the ability to formulate and articulate choices, and take decisions to act upon one's goals (Sen, Germain et al. 1994; Kabeer 2001; Malhotra, Nyblade et al. 2002). Kabeer elaborates that these choices are "choices made [by women] from the vantage of real alternatives without punishingly high costs" (Kabeer 2001). Agency is further defined as "the capacity, condition, or state of acting or of exerting power" (Merriam-Webster 2005) or as "action or intervention to produce a particular result" (Oxford UP 2008). The author uses the terms "agency" and "empowerment" interchangeably when referring to direct evidence of empowerment and distinguishes these from indirect evidence.

Empowerment resources are factors that enable women to exercise agency, and can include attributes of the community or household setting or personal ascribed or achieved characteristics like educational attainment or position within the household (Kabeer 2001; Malhotra and Schuler 2005). In this framework, empowerment achievements may emerge as new resources to be drawn on in a subsequent cycle of the empowerment process (Malhotra, Schuler et al. 2002). Thus, agency is the centerpiece of the process and provides a "handle" by which the magnitude of women's empowerment can measured at different points in time (Kabeer 2001; Malhotra and Schuler 2005; Narayan 2005).

There is also general agreement that women's empowerment comes to bear in multiple spheres of life ranging from the familial/household, economic, legal, socio-cultural, political or psychological spheres and at individual and collective levels (Kishor 2000a; Kabeer 2001; Malhotra and Schuler 2005). Strikingly, women may be relatively empowered in one sphere while simultaneously not so in others (Malhotra and Mather 1997; Oxaal and Baden 1997; Schuler, Hasemi et al. 1997; Beegle, Frankenberg et al. 1998; Jejeebhoy 2000; Kishor 2000a; Kabeer 2001; Malhotra and Schuler 2005). For example, women may achieve economic empowerment through working for pay outside of the house, control of earnings and access to credit, but this empowerment may not translate to a significant say in intra-household decision-making (Schuler, Hasemi et al. 1997; England 2000). In much literature, and implicit in many models, the household is asserted to be a critical sphere in which empowerment exerts influence on demographic processes and outcomes (Mason 1986; Batliwala 1994; Beegle, Frankenberg et al. 1998; Presser and Sen 2000a) and so it is agency in this sphere that is examined in this paper.

Women's Empowerment and the Life Course

One notable implication of conceptualizing women's empowerment as a process is that it is not a static attribute, but varies by location, time, and stage of life cycle (Dyson and Moore 1983; Mason 1986; Gage 2000; Malhotra, Schuler et al. 2002). For example, in South Asia, the relative disempowerment of young, recently-married women is often contrasted with the relative empowerment of mothers-in-laws in cross-sectional analyses (Mason 1986; Kabeer 2001). This view of empowerment is not only consistent with, but highly amenable to a life course approach to research (Elder 1977; Elder 1983; Elder [1974] 1999).

The idea that empowerment is related to life course related factors, such as age and parity, finds purchase in empirical evidence. Selected studies using cross-sectional data indicate that women's empowerment varies by age, employment status, marital status and duration (Standing 1991; Das Gupta 1996; Gage 2000; Hindin 2002b). Women's empowerment is likely to be sensitive to changes in family structure position or role within the household. Evidence in India and elsewhere suggests that unmarried adolescents actually experience a decrease in agency upon a marriage that moves them into a position as a junior female in an extended family household (Dyson and Moore 1983; Das Gupta 1995; Jejeebhoy 2000; Barua and Kurz 2001; Mathur, Greene et al. 2003).

This constrained empowerment may be restored or even surpassed with defining demographic events, for example, as newly-married women prove their fertility (Mensch, Bruce et al. 1998; Bloom, Wypij et al. 2001; Barua, Pande et al. 2004), or through the accumulation of reproductive experiences over time, such as the formation of a family of preferred size and a sex

composition that includes one or more sons. In many countries with documented son preference, women's empowerment increases with the birth of a male child or for women with more sons (Das Gupta 1995; Hindin 2000; Jejeebhoy 2000; Kishor 2000a; Malhotra and Schuler 2005; Mumtaz and Salway 2005).

Additionally, the concept of empowerment as a process would imply that, at any given point in the life course, women's empowerment is determined in part by earlier levels of empowerment. Taken together, existing evidence from cross-sectional accounts of empowerment would suggest that the application of a life course perspective ought to consider the potential influence on women's empowerment of factors such as household structure, marriage circumstances, and demographic events and cumulative family formation experiences.

That empowerment is a process makes its measurement particularly difficult using cross-sectional data (Malhotra, Schuler et al. 2002; Williams 2005). This is especially the case as researchers have frequently conflated direct evidence of empowerment (agency) with its resources or achievements (Kabeer 2001; Malhotra, Schuler et al. 2002). Most quantitative studies continue to describe empowerment as a fixed attribute at one point in time (Malhotra, Schuler et al. 2002), a challenge to accurately discerning causal order. Few studies, in fact, explicitly examine whether and in what pattern women's empowerment varies across the life course. Most empirical research investigating women's empowerment generally, and with regards to demographic processes specifically, have been cross-sectional in nature and restricted their analyses to comparisons across groups. While cross-sectional comparisons generally support the notion of life course variations in empowerment, for example, by demonstrating that older women, or women with more children or sons enjoy higher levels of empowerment in the

household or community (Das Gupta 1995; Malhotra, Vanneman et al. 1995; Kishor 2000a), they cannot shed light on when and how empowerment changes.

Panel or retrospective data with robust measures of direct evidence of women's empowerment are particularly well suited to investigating empowerment and how it shifts over the life course (Malhotra, Schuler et al. 2002; Williams 2005). This paper aims to fill this gap by examining levels of women's empowerment (as measured by agency within the household), and its determinants, across the life course in Madhya Pradesh, India using a structural equations model with retrospective data.

Methodology

Study Setting

The setting for this study is Madhya Pradesh, one of India's poorest states with a population of 60 million people at the time of the survey, three quarters of whom resided in rural areas. Madhya Pradesh is characterized by high fertility rates, limited infrastructure, and a history of underdevelopment (Office of the Registrar General 2001; IIPS and ORC Macro 2001). The state reports a total fertility rate of 3.3, which exceeds both the national rate of 2.9 and the total desired fertility rate for the state of 2.4. The contraceptive prevalence rate (4.7 percent of married women) is also lower than the national average and, like the rest of the country, dominated by female sterilization (IIPS and ORC Macro 2001).

The state's conservative social norms and poor demographic outcomes make it a relevant setting in which to explore the interplay between women's empowerment and family formation. As is the case in much of this region in India, women are frequently excluded from household decision making, including that related to their access to health services (International Institute for Population Sciences (IIPS) and Macro 2001). Fewer than half of women surveyed in the state for the latest National Family and Health Survey reported that they usually participated in household decisions and only 36% in decisions regarding their own health (International Institute for Population Sciences (IIPS) 2008).

Early marriage (the median age at first marriage is approximately 16 years) is common and frequently followed by early childbearing in Madhya Pradesh. The median age at first birth among women aged 25-49 was 18.7 years in 1999 (International Institute for Population

Sciences (IIPS) and Macro 2001). Given the low levels of temporary method use, women are typically sterilized at an early age, with the median age at sterilization in Madhya Pradesh being between 26 and 27 years of age (International Institute for Population Sciences (IIPS) and Macro 2001). This suggests a relatively predictable pattern of family formation.

Data

The analysis presented here uses retrospective survey data from a 2002 probability sample of 2,448 married women (aged 15-39 with at least one child) in Madhya Pradesh, India. Including women in this age range allowed for the collection of information on their full reproductive lives[3], while reducing the recall bias inherent in asking older respondents about events that occurred well in the past. Other studies that have similarly collected retrospective data on attributes and events early in women's reproductive lives have found that an even older age range was not subject to substantial recall problems (Tanturri and Mencarini 2008).

Respondents were selected through stratified cluster sampling, with one district randomly selected from six geographic regions. Ten primary sampling units (PSU) were selected in each district through probability proportional to size sampling, with purposeful oversampling of urban areas to ensure sufficient cases for the analysis of rural-urban differences. The sample was restricted to one eligible woman per household within each PSU, with a random selection of the respondent from households with more than one eligible woman. The response rate was 97%. Data are weighted to compensate for this sampling design.

[3] The majority of women in this context have concluded childbearing by age 39, with age specific fertility rates declining rapidly after age 35, and almost 60 percent of women aged 35-39 being sterilized (International Institute for Population Sciences 2001).

The survey was specifically designed to measure contraceptive, pregnancy, and abortion experiences, women's empowerment, intra-household relationships, and personal and household attributes over the entire reproductive life course. It adopted an innovative mixed methods approach in a quantitative instrument in order to improve recall and reporting of key reproductive events and to yield detailed contextual data on circumstances surrounding those events (Malhotra, Nyblade et al. 2002; Edmeades, Nyblade et al. 2009). The same series of more than 200 questions is repeated for each inter-pregnancy interval that a woman has experienced. The resulting dataset captures each event—and corresponding level of empowerment—in the reproductive lives of respondents from the time of marriage until the time of survey, encompassing 9,127 pregnancies with a known outcome and 11,617 inter-pregnancy intervals[4]. These data facilitate the creation of interval-specific measures of agency with which to assess changes in empowerment over time.

Conceptual Model

The analysis is guided by a conceptual framework that illustrates how empowerment may evolve over the life course (Fig 1). This framework is consistent with the literature describing women's empowerment as an iterative *process* in which empowerment resources contribute to direct evidence of empowerment (agency) which, in turn, leads to empowerment achievements (Kishor 2000a; Presser and Sen 2000b; Kabeer 2001; Malhotra, Schuler et al. 2002; Malhotra and Schuler 2005). These achievements may become new resources to draw upon in a subsequent cycle of empowerment. On the left hand side of the framework are women's

[4] An interval is the period of time between pregnancies, that is, the period of time from the point of marriage or from the conclusion of the last pregnancy to the onset of the next pregnancy.

characteristics at the initial interval upon marriage and prior to the first pregnancy: empowerment resources (marriage circumstances, educational resources) and selected socio-demographic control variables (caste, religion, household economic conditions, and urban residence); that contribute to early empowerment. These resources are largely fixed by the time of marriage and do not vary over the rest of the life course[5].

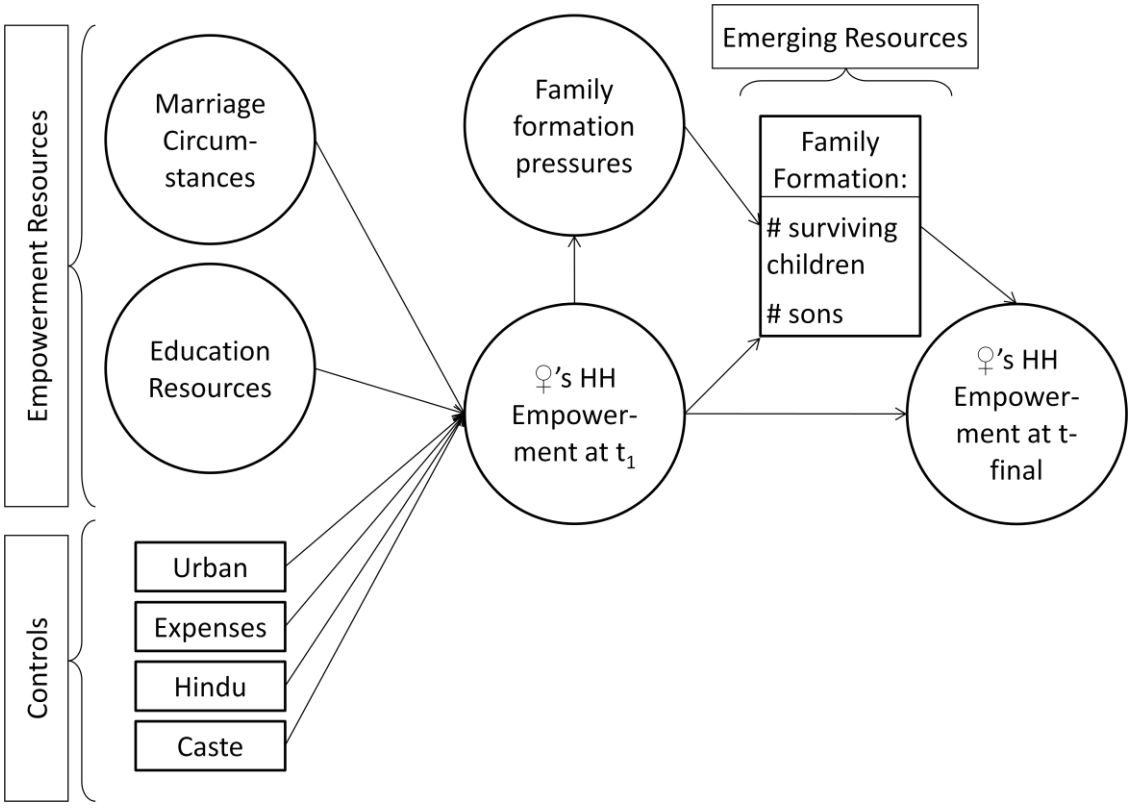

Figure 1. Conceptual Model for Women's Empowerment over the Life Course

New empowerment resources emerge over the life course in the form of aspects of family formation. Because life course theory suggests that individuals' outcomes are influenced by their accumulated experiences and resources, women's later empowerment is, in this model,

[5] Household economic conditions are an exception as they are time-varying.

influenced both by their earlier empowerment and by the intermediary reproductive events, manifest in the size and sex composition of the families they form.

However, family formation is unlikely to be an exogenously introduced resource. In contrast, much empirical evidence suggests that family formation may be endogenous to either women's agency or to its initial resources. This conceptual model portrays women's early empowerment affecting family formation, the strength of which depends, in part, on the presence of a co-residing mother-in-law, with more empowered women being more capable of resisting pressures to bear children.

Women's empowerment in the earliest intervals and family formation pressures each lead to the size and composition of the families women form. More empowered women and women with fewer pressures are more likely to achieve a smaller family and desired family composition while less empowered women will have a more normative family formation. Therefore, in this model, family formation acts both as an empowerment achievement when related to women's earlier empowerment, and as new resources to contribute to women's later empowerment.

Other demographic events could substitute or complement family formation at this location in the model. Examples include number of pregnancies as opposed to number of children born, pace of fertility (e.g. average spacing between pregnancies, time to birth of a first child, number of pregnancies to the first son), number or proportion of mistimed pregnancies, number or proportion of pregnancies terminated in abortion, or number or proportion of intervals in which contraceptive use/non-use did not match childbearing desires. A model considering women's empowerment in a sphere other than household agency, such as women's economic or

political empowerment, may substitute an entirely different set of empowerment achievements/emerging resources or even initial resources.

Analytical Approach

This paper is motivated by the desire to uncover the dynamic nature of women's empowerment and its determinants over the life course. The analyses are guided by the following hypotheses:

Hypopaper 1: Women's empowerment is not static, but is dynamic across the life course.

Hypopaper 2: Women's empowerment is influenced both by their initial empowerment resources and background characteristics (fixed-time variables) and by time-varying demographic factors (family formation) that only develop as the life course progresses. Therefore, the author expects to find a general upward trend in empowerment from early to later intervals. While there is nothing to preclude some women from experiencing declines in empowerment in certain cases, particularly those who do not experience desirable reproductive events (e.g. are believed to be infertile or do not bear a son), these cases would likely be exceptions to the prevailing trend.

Hypopaper 3: Initial empowerment resources and fixed characteristics exert significant influence on women's empowerment in the earliest stage of women's life courses. As women progress through their life courses, this influence weakens and women's empowerment is determined to a

greater extent by their changing circumstances (family formation pressures and outcomes, and earlier empowerment).

In this paper, I first describe how static or dynamic women's empowerment is over the life course by examining frequency distributions and cross-tabulations at different points of the life course. Next, I examine the factors influencing women's empowerment over the life course at two specific points in time: the onset of marriage (t_1) and the last interval when women have achieved completed families (t_{final}) through a structural equations model (Model 1). An elaborated model (Model 2) extends the analysis to additional time points. It examines women's empowerment at each interval in response to prior stages family formation, also using a structural model. The availability of measures at each inter-pregnancy interval allows the researcher to establish the proper time-ordered sequence of these constructs.

The structural model seeks the best fit given the variance-covariance structure of the variables in the model and is a system of equations of the general form (Bollen 1989):

$$\eta = \beta\eta + \Gamma\xi + \zeta$$

where η are endogenous factors and ξ are exogenous factors, β are causal parameters between endogenous factors, γ are causal parameters between exogenous and endogenous factors, and ζ is the error variance around η. The model, as described here and as analyzed later, is recursive and so is identified. A key advantage to using a structural model for these analyses is its ability to not only control for endogeneity between women's empowerment and family formation but to model that endogeneity.

For the purposes of the first structural analysis (Model 1), the sample is restricted to 921 women who have completed their childbearing and are either themselves sterilized or their

husbands are sterilized. Nine observations were then dropped for missing data on variables used in the analysis, leaving a sample of n=912.

The second, elaborated structural analysis (Model 2) uses the full sample (n=2,444) to examine interval by interval shifts in women's empowerment as steps in family formation unfold. In this analysis, women contribute varying numbers of intervals to the analysis. To make the most of the data from women with reproductive histories of varying lengths, the model is divided into small sets of intervals.

Each pair of overlapping intervals is analyzed in a grouped structural equation model (e.g. intervals 1-2-3 and intervals 2-3-4. See Fig.2). In a grouped model, the goal is to achieve the best fit for both groups' covariance structures simultaneously (Bollen 1989; Kline 2005). Cross-group equality constraints are also tested, that is, the path coefficients among the overlapping portions of the model (intervals 2-3 in the above example) should be equal in both groups (Bollen 1989; Kline 2005). The sets of intervals are then recombined to form the complete model, resembling a complex chain model (Fig. 2).

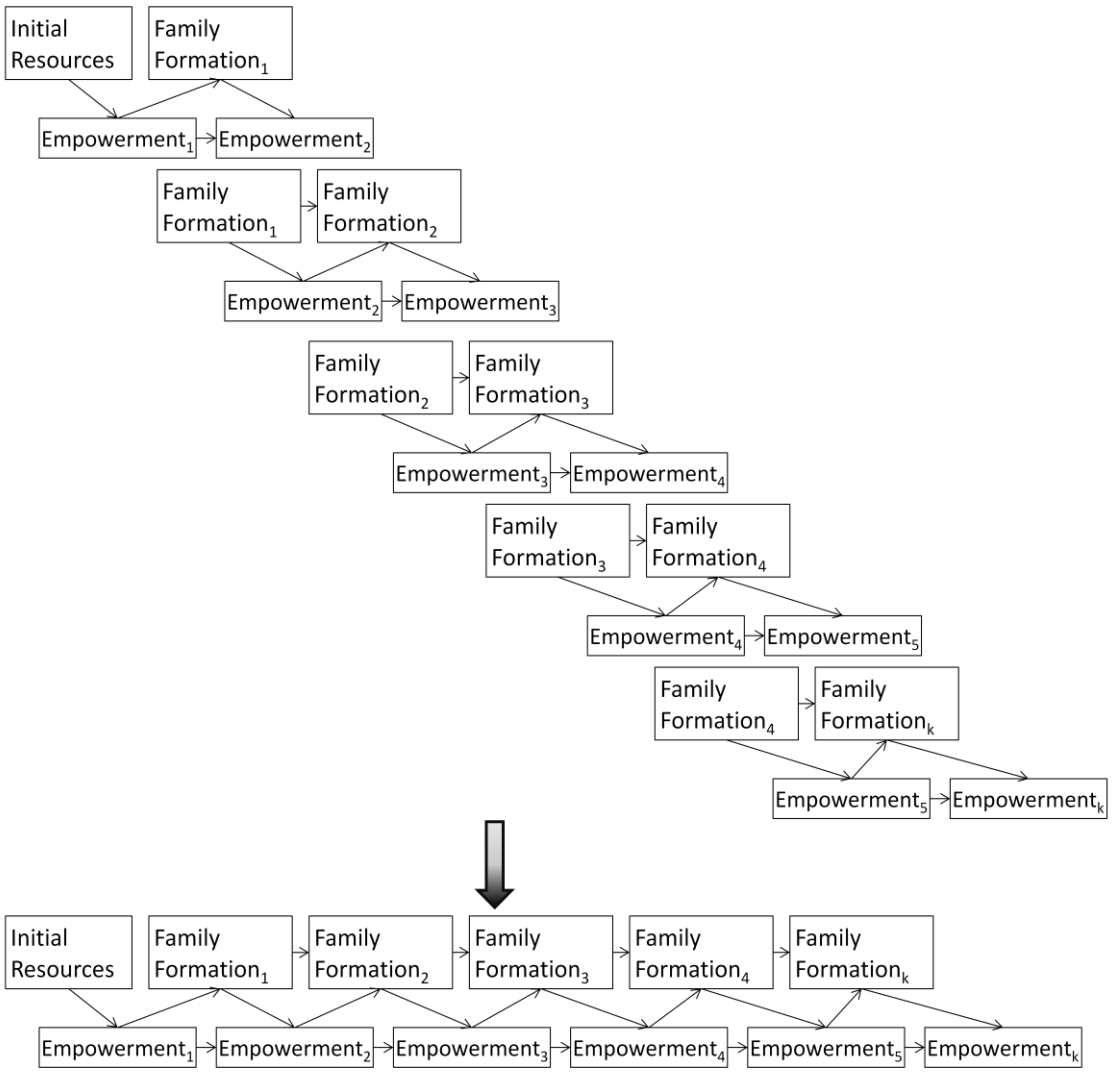

Figure 2. Grouped Structural Model of Women's Empowerment across Multiple Intervals

By the eighth interval, less than 10% of the original sample of 2,444 women remains in the analysis and so results for later intervals are not reported. The different number of intervals women contribute to the analysis, in part, is a reflection of a heterogeneous dataset that includes women at all points in their reproductive life course. Many women who contribute fewer intervals have simply not completed childbearing (their reproductive life stories are right-

censored). However, women who contribute few or many intervals are likely to systematically differ from one another on other characteristics as well. Women who contribute disproportionately more intervals are likely to be those who lack control over their reproductive lives and score lower on household agency. The mean family size among those who have completed childbearing is 3.4 children, with a standard deviation of 1.3, suggesting that the results for intervals greater than interval 5 or 6[6] should not be viewed as wholly representative due to selection issues.

An especial focus of this paper is to compare the influence of initial characteristics and resources (determinants of early empowerment) with that of evolving circumstances on women's empowerment at the time of they have completed their families. Therefore, I test two versions of both structural models. The first version has no direct effect of these initial factors; they only affect later empowerment indirectly through their influence on early empowerment and other intervening variables. The second version specifies a direct effect on women's empowerment at the conclusion of their reproductive careers (Model 1) or at later intervals (Model 2).

Data were manipulated (including variable recodes) in Stata SE 10 and the analysis executed in EQS 6.1 for Windows.

[6] Depending on the experience of abortion and miscarriage. Approximately 15-20% of women in this sample has experienced one of these forms of pregnancy loss.

Measures

Final Dependent Measure

Women's empowerment: Because the household is asserted to be a critical sphere in which empowerment exerts influence on demographic processes and outcomes (Mason 1986; Batliwala 1994; Beegle, Frankenberg et al. 1998; Presser and Sen 2000b), I examine intra-household aspects of women's empowerment. I use multiple measures in one latent factor because a single indicator is likely to be insufficient to capture empowerment's multi-dimensional nature (Kishor 2000b; Malhotra, Schuler et al. 2002; Williams 2005). This latent factor includes two measures of agency: physical mobility and spending decision-making, and two measures reflecting another critical dimension of household empowerment: freedom from the experience of domestic violence and threat of abandonment by her spouse.

All of the measures of empowerment are interval-specific, measured in identical fashion at two points in Model 1 (start of the interval immediately upon marriage and at the interval following her or her husband's sterilization) and at each interval in Model 2. Physical mobility is an ordinal indicator in response to a question on the degree of restrictions the respondent faced on moving about in and outside of the community with values ranging from "many restrictions" (1) to "unrestricted mobility" (4). Spending decision-making is measured similarly, with responses ranging from "only with permission" (1) to "usually with permission" (2), "sometimes with permission" (3), and "as she pleased" (4) to the question, "Were you able to spend money as you pleased or did you have to seek permission?" The domestic violence indicator is a three-response variable ranging from "often" to "never" in response to a question on the frequency

with which the respondent's husband was physically violent with her in that interval. Finally, I use a dichotomous variable for whether the respondent's husband threatened to abandon her or kick her out of the home.

Each of these items has a positive valance in relation to the construct of empowerment, with higher values indicating greater agency. Measures were taken at the start of the interval, prior to the birth of any additional children or sons resulting from pregnancies occurring at the end of the interval. The first time point, therefore, refers to agency immediately upon marriage and prior to the first pregnancy.

Other Endogenous Measures

Family formation is captured through two separate, concrete indicators from the interval in which women completed their families. These are (1) a continuous variable for the total number of surviving children and (2) a continuous variable of the number of surviving sons. These variables are constructed in an equivalent manner in Model 2 and represent the state of family formation as of the end of the interval, concluded by the latest pregnancy outcome.

Perceived family formation pressure is measured by four likert-type variables capturing the respondents' perception of the pressure for another child or son. The four are: (1) pressure from husband for a(nother) child, (2) pressure from husband for a(nother) son, (3) pressure from in-laws for a(nother) child, and (4) pressure from in-laws for a(nother) son. The ordinal structure ranged from 0-no pressure to 1-some pressure and to 2-a lot of pressure for each of these. A dichotomous variable indicating whether or not the respondent's mother-in-law co-resided during the interval was also included in the factor.

Exogenous Measures

Two latent factors capture two different aspects of ***women's empowerment resources*** at the outset of her marriage. ***Marriage circumstances*** is composed of a continuous variable for women's age at marriage, a continuous variable of the spousal age difference, and a continuous variable for women's consummate age of marriage. Spousal age difference is not the absolute value of the difference, rather negative values are possible and indicate the few cases where women are older than their husbands. Consummate age of marriage proved to be highly skewed and so the variable used here is the square root of the consummate age of marriage.

A later age at marriage is suggestive of greater self-efficacy and other capacities that come with maturity (particularly when marriage occurs as an adult rather than during the young adolescent years) and minimizes the odds of a large spousal age differential. A large age difference between spouses often corresponds to a large power difference between spouses. This factor captures the concept of maturity and age equity at the time of marriage, and is believed to be positively associated with empowerment (Hindin 2002a; Mathur, Greene et al. 2003; Das Gupta, Mukherjee et al. 2008).

Educational resources comprise continuous variables for the respondent's and her husband's completed years of schooling and ordinal variables for respondent's and her husband's degree of literacy. Reading ability is measured as "easily", "with difficulty," and "cannot read." These literacy indicators load negatively with respect to the factor. Education is a frequently used factor in studies of empowerment (Jejeebhoy 1995; Malhotra and Mather 1997; Hindin 2000; Bloom, Wypij et al. 2001; Pande 2005). In some cases, it has been used a proxy for

empowerment when direct measures have been absent (Kishor 2000b; Malhotra, Schuler et al. 2002; Narayan 2005; Williams 2005). Education offers direct resources, in the form of knowledge and capacities, that women may draw upon. Furthermore, more educated husbands are more likely to hold gender equitable attitudes and thus these indicators reflect a setting more conductive to women's empowerment.

Control variables include separate dichotomous indicators for urban residence (vs rural), Hindu religion (vs Muslim, Jain, Buddhist, Christian, Sikh, Jewish, other), and general caste (vs "other backward caste," scheduled caste, scheduled tribe). For each control variable, the parameter between the indicator and the factor is set to λ=1.0 and the error is assumed to be 0, indicating that the indicator is a perfect measure of its corresponding factor.

The fourth control variable is an interval-specific measure of general household economic conditions, assessed on a four-point ordinal scale from "easy" to "difficult" in response to a question on the ease or difficulty of meeting monthly household expenses. A similar measure of general household economic conditions has been collected in other retrospective data for at the start of one's reproductive years, when a comprehensive time-varying measure of socio-economic status would be both onerous to collect and subject to recall error (Tanturri and Mencarini 2008).

Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was employed to specify the measurement of the latent factors in the conceptual framework depicted earlier in Figure 1, allowing the researcher to

determine how well the observed indicators for a factor capture the underlying latent construct. The CFA results depicting each factor and its item loadings are shown in Appendix 1.

Model fit statistics fell well within the acceptable range and the standardized residual matrix (S-Σ) showed little difference between the model observed and the model implied. The average standardized residual was .0303 and all standard residuals, that is, deviations of correlations/deviations of covariances (r_{ij}-σ_{ij}/S_iS_j), were less than .144.

All the indicators loaded on their respective factors significantly and in the expected direction. Furthermore, the empowerment items loaded on the empowerment factor in a very similar pattern at each interval tested in the measurement model, suggesting stability in this latent construct. Correlations among factors were at no time sufficiently high to suggest that two factors were in fact one factor. For example, marriage circumstances and educational resources are two separate empowerment resource factors correlated at .683 (the highest correlation among factors).

Results

Table 1 demonstrates the summary statistics for key background, dependent, and independent variables. Measures of urban/rural residence and socio-economic status show the sample to be similar to the state population, as do other demographic variables. Data from the time of interview indicate that, overall, levels of women's empowerment are generally low. Specifically, only two percent of women could buy contraceptives without permission of someone else in the household. A third could travel to a health center in their community without permission or an escort. Women are equally disadvantaged with regard to empowerment resources. More than 90% were married before the age of 18.

Variations in Women's Empowerment over the Life Course

The following figures show each of the empowerment indicators at the first interval and last interval among women who have completed childbearing. They show a general pattern of movement out of more restricted categories into a less restricted category by the time family formation is complete (n=921). Approximately half of women shifted categories in agency over the reproductive life course (47% for mobility and 53% for decision-making). The mean degree of the shift was .75, meaning that for women who did shift, they moved approximately 1.5 categories. No one moved to a more restrictive category in agency.

Table 1. Sample Profile (n=2444)

	Mean	Standard Deviation	Range
Age	28.49	5.5	15-39
Age at consummation of marriage	16.85	2.9	6-34
Spousal age difference	5.08	2.9	-8-28
Number of children (n=912)	3.43	1.3	1-10
	Percent		
Residence			
Rural	77%		
Urban	23%		
Caste			
General Caste	28%		
Scheduled Caste/Tribe	32%		
"Other Backward Caste"	40%		
Religion			
Hindu	94%		
Muslim	4%		
Other	2%		
Education			
None	56%		
Less than SLC	30%		
SLC or Higher	14%		
Socioeconomic Status			
Low	43%		
Medium	36%		
High	21%		
Mobility			
Low	15%		
Medium	54%		
High	31%		
Spending Decision-making			
Low	55%		
Medium	23%		
High	22%		
Domestic Violence			
Beaten in last year	46%		

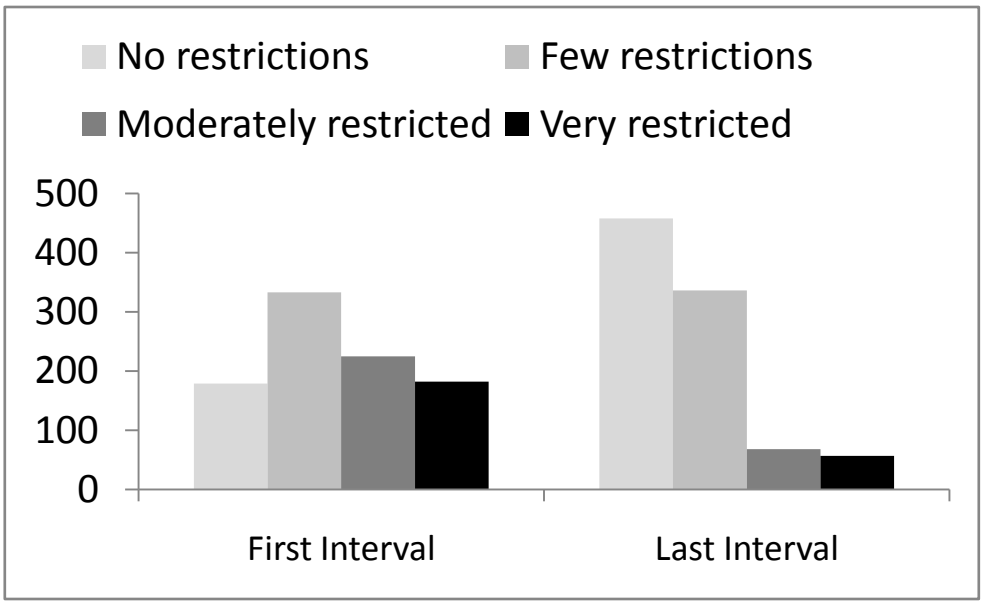

Figure 3. Physical Mobility at First and Last Interval (n=921)

Figure 4. Spending Decision-making at First and Last Interval (n=921)

A different picture emerges in shifts in domestic violence and threat of abandonment over the life course. Levels of women experiencing domestic violence or threats of abandonment are nearly identical at both the first and last observed intervals among women who had completed childbearing. It would be incorrect, however, to conclude from this that these variables are static over the life course. Ten percent of women change categories in the experience of domestic violence and about 30% in the experience of threats of abandonment. However, the change in these variables is bi-directional, with almost equal numbers of women experiencing more violence or threats as those experiencing less. The mean degree of change is a mere -0.014 and -0.020, respectively.

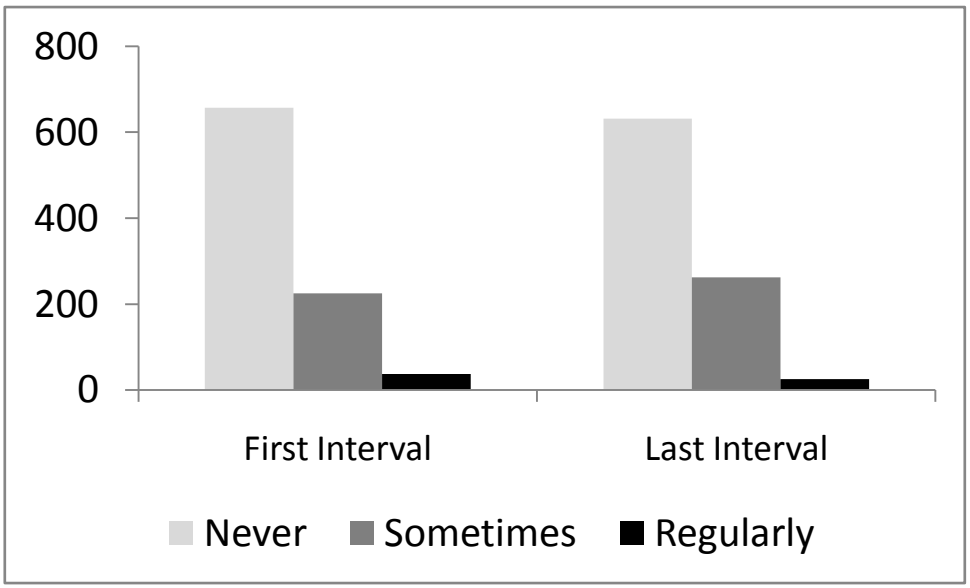

Figure 5. Experience of Domestic Violence at First and Last Interval (n=921)

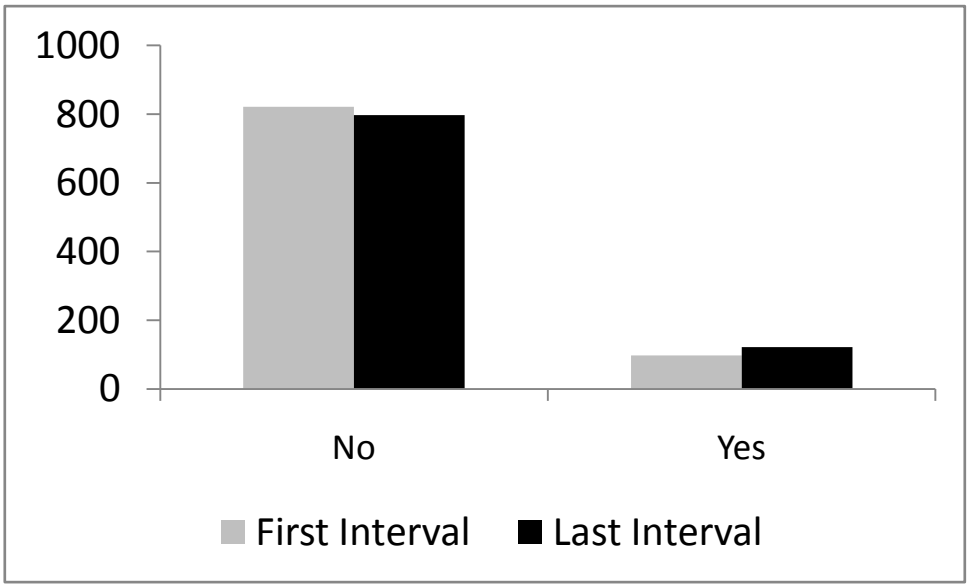

Figure 6. Threats of Abandonment at First and Last Interval (n=921)

Determinants of Women's Empowerment at the Start and Conclusion of the Reproductive Life Course

Following some minor changes suggested by the measurement model, the equations for the first structural model (Model 1) are as follows:

Empowerment_1 (F7) = γF1+γF2+γF3+γF4+γF5+γF6+ d7

Perceived pressure (F9) = γF1+γF5+βF7+ d9

Family size (F10) = γF3+γF4+γF5+βF7+ βF9 +d10

$\text{Empowerment}_{\text{final}}$ (F12) = βF7+βF10+d12

where F1=marriage circumstances, F2=educational resources, and F3-F6 are control variables. The model fit was improved when either family size or number of sons was included in the model, but not both simultaneously. Results were similar regardless of which variable was used. Family size is reported here.

Fit measures indicate this model fits the data well. The difference between the model observed and model implied, as described by the standardized residual matrix, is not large, with an average standardized residual of 0.0424. The χ^2 is 713.41 with 216 degrees of freedom used. The relevant fit measures are above 0.9 or less than 0.5, as appropriate. An earlier model with no controls influencing family size was a poorer fit. Including being Hindu, being of general caste, and living in urban areas significantly decreased the χ^2 by 40.85, a significant improvement in the model. The unstandardized equations for this model are listed in their full form in Table 2. Standardized equations can be found in Appendix 2.

Figure 7 shows the statistically significant relationships ($p \leq .05$) in the structural model analyzing the first and last intervals for women who have completed childbearing (Model 1). The model demonstrates that both early empowerment resources lead to women's initial empowerment, controlling for the other factors in the model. A one unit improvement in marriage circumstances is associated with a 0.437 increase in women's empowerment upon marriage and a one unit increase in educational resources is associated with a 0.031 increase in women's empowerment. The standardized solution for this model (Appendix 2) shows the contribution of each resource to initial empowerment to be near identical.

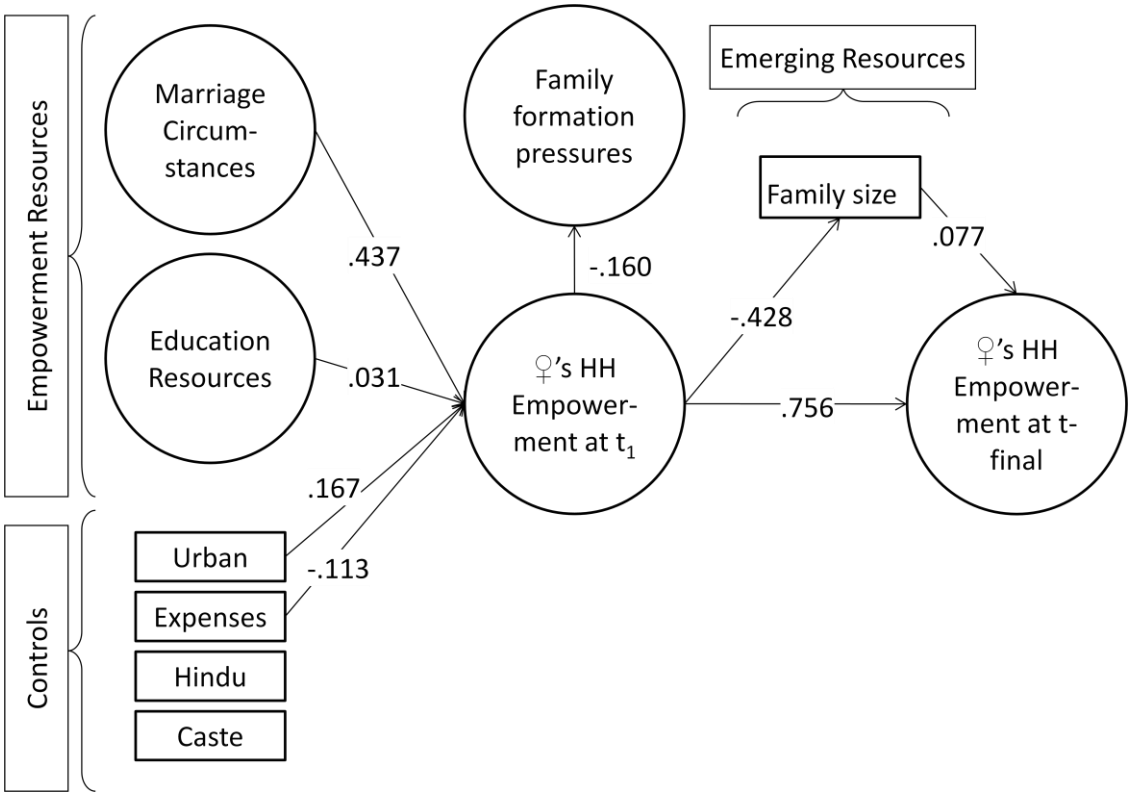

Figure 7. Significant Relationships among Resources, Empowerment, and Family Size (Model 1)

Women's empowerment upon marriage, in turn, influences childbearing pressures and family size negatively and final women's empowerment positively. A one unit increase in empowerment leads to a completed family size that is smaller by nearly one-half of a child. Additionally, control variables for urban residence, difficulty meeting household expenses, and being Hindu are significantly associated with a smaller family size.

Final women's empowerment is affected by both earlier empowerment and completed family size. Initial empowerment has both a direct effect and an indirect effect, through family size, on final empowerment. A completed family size that is larger by one child leads to a three-quarter increase in women's final empowerment, controlling for other factors in the model. The

results of the standardized equations are striking in revealing the dominance of women's initial empowerment on their final empowerment, with a coefficient that is more than four and half times the magnitude of that for family size.

An intriguing implication of the finding that the path coefficient between early empowerment and family size, on one hand, and family size and later empowerment do not go in the same direction. It is not surprising that more empowered women have smaller families, or that those with larger completed family develop greater empowerment. However, women who exercise their agency in order to achieve a smaller family experience lower later agency as compared to equally empowerment women who had more children. The net indirect effect of early empowerment on later empowerment via family size is nonetheless positive. Furthermore, this foregone gain to later empowerment is more than compensated for by the large, direct effect of earlier empowerment on later empowerment.

Women's empowerment in the first interval is significantly associated with childbearing pressures, with less empowered women perceiving greater pressures from husband and in-laws. Interestingly, however, the results indicated that childbearing pressures neither were a result of initial empowerment resources nor contributed to family formation in terms of either number of surviving children (or final sex composition, when number of sons was substituted in the model). It was unexpected that perceived pressure for a child/son would exert no detectable influence on childbearing. Inclusion of this factor improved the fit of the model to the data and so it was retained in spite of being a non-significant explanatory factor for either family size or later empowerment.

Do Initial Empowerment Resources Effect Later Empowerment?

The presence of a direct effect of initial empowerment resources and controls on women's later empowerment was tested with an equivalent system of equations, with the exception of the following modification to the final empowerment equation:

$$\text{Empowerment}_{\text{final}}\ (F12) = -\gamma F1-\gamma F2+\gamma F3+\gamma F4+\gamma F5-\gamma F6+\beta F7+\beta F10+d12,$$

Table 2 compares the equations and model fit statistics for Model 1 with and without a direct effect of empowerment resources and controls on women's final empowerment. The difference in χ^2 is not a significant improvement in the model—in fact model fit statistics deteriorate. Furthermore, the results of the equations clearly indicated that parameter estimates for the path coefficients for BOTH empowerment resources and ALL controls were NOT significant. Therefore, the author concludes that initial empowerment resources do not have a direct effect on women's final empowerment; rather their influence is mediated by the intervening factors of early empowerment and family size.

Table 2. Model 1 Unstandardized Equations with and without a Direct Effect (n=2444)

	Model 1a (No Direct Effect)	**Model 1b (Direct Effect)**
$Empowerment_1$	.437F1* + .031F2* - .007F3 - .049F4 + .167F5* -.113 F6*	.508F1*+.035F2*-.053F3-.048F4+.174F5-134F6
Pressures	.064F1 - .065F5*-.160F7*	-.046F1-.068F5*-.162F7*
Family size	- .683F3* -.179F4* -.438F5*-.429F7*	-.172F4-.430F5-.430F6-663F7*
$Empowerment_{final}$	.756F7*+.077F10	-.087F1+.006F2-.053F3-.006F4+.070F5+.031F6+.836F7*+.091F10*
χ^2	713.41 (216 df)	703.48 (209 df)
NFI	.919	.814
NNFI	.924	.792
CFI	.942	.833
RMSEA	.050	.088
**p≤.05*		

F1=marriage circumstances; F2=educational resources; F3=caste; F4=religion; F5=difficulty with monthly expenses; F6=urban; F7=early empowerment

Women's Empowerment as the Reproductive Life Course Unfolds

The first structural analysis, above, showed that empowerment resources influence women's early empowerment, but not their final empowerment, and that among women who have completed childbearing women's empowerment is responsive to aspects of their final family formation. At what point in the reproductive life course do early empowerment resources cease to exert direct influence on women's empowerment? How does women's empowerment respond to changes in family size and composition as the family formation process unfolds? The elaborated structural model examining each inter-pregnancy interval among all women—not just those who have completed childbearing—is intended to shed some light on these questions.

Model 2 simultaneously includes family size and number of sons to capture family formation at each interval. Earlier empowerment, family formation pressures, and resources and controls are all included in the equation for family size, whereas the number of sons is treated as an exogenous variable, which is allowed to covary with number of surviving children. In the first pregnancy interval alone, the number of surviving children variable can be re-interpreted as whether the first pregnancy resulted in a live birth since there were no twin births recorded in that interval.

The results of the composite grouped structural model (Table 3) reveal a similar pattern to the determinants of women's earliest empowerment for all women as in Model 1. Women's empowerment in the first interval increases by 0.374 with a one unit improvement in marriage circumstances and by 0.038 with a one unit increase in educational resources. It is also significantly associated (positively) with urban residence and negatively with difficulty meeting household expenses in the interval, the same controls that were significant in Model 1.

Women's empowerment in the second interval is independently sensitive to both the birth of a child and the birth of a son in the first interval, suggesting that each is an important emerging resource. Having a child increases empowerment by .054 while having a son increases women's empowerment by .032 units. The boost to empowerment that a woman derives at this point from the birth of child is greater than that of the birth of a son. In this interval, a one unit increase in women's empowerment lessens the childbearing pressures a woman perceives by .152 units. A similar effect but of a slightly smaller magnitude is found in the second interval. Family size (whether the pregnancy resulted in a live birth) in the first interval is influenced both

directly by women's empowerment in the interval and indirectly through perceived childbearing pressures.

Following the second interval, the number of children is no longer significantly associated with increased women's empowerment. More sons in the second interval, however, leads to greater women's empowerment in the third interval. Following the fourth interval, neither the number of surviving children nor sons increases women's empowerment. This may be a true relationship for all women or an artifact of selection, with least empowered women contributing more data to these intervals.

The one factor that is consistently associated with greater women's empowerment across all intervals is women's empowerment in an earlier interval. The unstandardized and standardized solutions each suggest that earlier women's empowerment is the strongest factor in the model in any given interval.

Several controls and initial resources are significantly associated with childbearing pressures, women's empowerment, or family size in the first three intervals. Mostly commonly, these are educational resources, urban residence, and difficulty meeting household expenses in the interval. However, the size of the coefficients decrease over successive intervals and none are significant following the third interval. When a direct effect of initial resources on later empowerment was tested, both resources influenced empowerment in the second interval, and marriage circumstances did in the third. Both resources ceased to exercise any influence on empowerment following the third inter-pregnancy interval.

Table 3. Model 2 Unstandardized Equations

	Interval 1 (n=2444)	**Interval 2 (n=2444)**	**Interval 3 (n=2137)**	**Interval 4 (n=1668)**
Empowerment (F7)	.374F1*+.038F2*-.031F3 +.004F4+.220F5*-.099F6	1.001F7*+.054F9*+ .032F10*	.968F7*-.006F9+.013F10*	.912F7*+.006F9+.005F10
Pressures (F8)	-.056F1-.009F2*+.014F3 +.026F4-.055F5*-.033F6* -.111F7*	-.006F1-.013F2*+.026F3* +.063F4*-.09F5*-.032F6*-152F7*	-.007F1-.004F2+.025F3 +.007F4+.067F5*-.016F6-.112F7*	-.004F1-.001F2+.012F3 -.002F4-.008F5+.003F6-.056F7
Family size (F9)	.037F1-.005F2+.001F3-.035F4-.025F5-.013F6* +.020F7+.031F8	.004F1-.016F2*+.010F3 +.014F4-.001F5-.005F6 +.098F7*-.048F8	.01F1-.01F2-.012F3-.059F4+.010F5-.008F6 +.005F7+137F8	.007F1-.007F2+.024F3-.050F4-.041F5-.009F6 +.088F7-.136F8
	Interval 5 (n=1107)	**Interval 6 (n=668)**	**Interval 7 (n=388)**	**Interval 8 (n=209)**
Empowerment (F7)	.856F7*+.003F9+.0F10	.980F7*-.001F9+.01F10	.837F7*+.002F9-.003F10	.871F7*+.003F9+.043F10
Pressures (F8)	.002F1-0F2+.01F3+.004F4-.006F5+.003F6-.006F7	.089F1-.254F2+.282F3 +.34F4+.419F5-.196F6-.040F7*	.0F1+.010F2+.001F3-.005F4 -.001F5+.009F6-.015F7	--
Family size (F9)	.002F2-.001F2-.007F3 +.025F4-.012F5-.001F6 +.061F7+.32F8	-.798F1+2.233F2-2.121F3-2.824F4-3.809F5+1.724F6 +.140F7-.054F8	.011F1-.008F2-.009F3 -.034F4+.098F5+.031F6. +.017F7+.153F8	--
χ^2	4996-2485 (694 DF)			
NFI	.949-.925			
NNFI	.945-.916			
CFI	.957-.935			
RMSEA	.047-.057			
**p≤.05*				
F1=marriage circumstances; F2=educational resources; F3=caste; F4=religion; F5=difficulty with monthly expenses; F6=urban;				

Conclusions and Discussion

The analysis presented here demonstrates support for the first hypopaper: Women's empowerment does increase over the life course, when measured by physical mobility and spending decision-making. While domestic violence and threat of abandonment are dynamic, these variables do not show monotonic progression from lesser to greater empowerment. Instead, it is possible that these experiences are more sensitive to contemporaneous household conditions and less so to the accumulation of life course events and experiences.

Women's early empowerment is influenced by their initial empowerment resources (and selected socio-demographic controls). Women's initial empowerment resources do not significantly affect their later empowerment, but seemingly influence later empowerment only through earlier empowerment. The influence of initial resources dissipates in the early stages of family formation, also as hypothesized.

Among women who have completed childbearing, final empowerment is influenced by family formation (namely family size). Later empowerment is likewise influenced by family size and sex composition among all women, providing evidence that family formation emerges as an empowerment resource. In contrast to expectations, family size and composition do not supplant earlier empowerment resources of marriage circumstances and education as the life course progresses. Rather, their influence also fades at nearly the same pace as early empowerment resources. By the fourth pregnancy interval, neither set of resources exert influence on women's empowerment.

The most significant determinant of women's empowerment in later pregnancy intervals and at the conclusion of the family formation process is women's earlier empowerment. This

finding is consistent with life course theory, which suggests that early and accumulated life experiences exercise substantial influence outcomes later in the life course. Indeed, earlier women's empowerment and through it, initial resources, demonstrate a durable legacy effect on women's empowerment well into the life course.

The lack of a statistically significant relationship between initial empowerment resources and later empowerment does not imply that marriage circumstances and educational resources are unimportant. To the contrary, the strength of the legacy effect reaffirms the value of sizable and early investments in the very resources from which women derive agency for much of their lives. The connection between women's empowerment and education is already reasonably well-established (Govindasamy and Malhotra 1996; Kishor 1995; Mensch et al 1998, Sengupta and Johnson 2003; Yount 2005), but recent research suggests that primary education may not be sufficient to achieve gender equality and improve women's empowerment (Pande 2005). It would be wise to continue efforts to extend primary education for all—especially among those who have traditionally lacked access to education—while also promoting secondary education to achieve maximum impact.

Marriage circumstances are also changing, with possible implications for women's empowerment. The proportion of women aged 20-24 who were married by age 18 declined from 64.7% in 1992 to 53% in 1998 in Madhya Pradesh, a pattern echoed in other parts of India. A promising sign is the intense programmatic and policy effort underway in India to reduce the occurrence of underage marriage (Mathur, Greene et al. 2003; Das Gupta, Mukherjee et al. 2008). There is evidence that the age at marriage is increasing in India, particularly among younger cohorts, in part in response to such efforts (Pande, Kurz et al. 2006; Jain and Kurz 2007;

Das Gupta, Mukherjee et al. 2008). It remains to be seen to what extent later marriage will cause spousal age differences to shrink or be associated with an increase in "love marriages" or spousal choice, and with what implications for agency within marriage.

While the value of investing in these early resources is apparent, it will also be critical to address social norms that support the persistence of gender inequities and son preference, particularly those that underpin proving one's fertility and bearing one or more sons as sources of empowerment. The significance of family sex composition suggests that barriers to women's empowerment will persist so long as such change is lacking.

This study employed a multi-variate model using retrospective, time-ordered data in order to shed new light on the factors that influence women's empowerment over the life course. Nonetheless, this study has several limitations that deserve mention. First, as with any study relying on retrospective data, there is the possibility of recall errors, particularly with characteristics of the earliest pregnancy intervals among the oldest age group in the dataset. However, there is reason to believe that recall is not unduly problematic. The survey structure and sampling design was formulated to maximize recall of past reproductive events like abortion. This aim was successful, as evidenced by calculated abortion rates and ratios that are consistently five times greater than those calculated from the equivalent sample in the closest National Family and Health Survey (Edmeades, Nyblade et al. 2009). While the researcher cannot be completely assured that improved reporting of abortions translates to improved recall of other attributes in early intervals, there is no evidence to suggest that women would systematically under or overestimate their physical mobility, for example, as a result of difficulty

with recall. It is reasonable to conclude that remaining recall errors would result in greater variation, or "noise", around the true sample values rather than a bias in either direction.

Second, the CFA measurement model produced results supporting the inclusion of mobility, decision-making and the domestic violence and abandonment items in a single empowerment factor, and there is a conceptual basis in the literature for their relevance to the study of empowerment. Yet there are also strong conceptual grounds for keeping the items in two separate factors: an "agency" factor and a "domestic violence" factor. In particular, it should be noted that the experience of domestic violence or threats of abandonment are in no way agentic. These are incidents that occur to women. An agentic aspect would be if women, in response to such experiences, took action to remove themselves from or eliminate the violence they experienced and such action could be indicative of an empowerment achievement. If agency is the direct evidence of empowerment, domestic violence is NOT direct, but indirect evidence of empowerment. The experience of violence, alone, is reflective of a setting in which empowerment is constrained, and so these items merit inclusion in the models, but perhaps preferably as its own factor.

Third, this analysis made use of selected demographic events characterizing family formation: one variable each capturing family size and sex composition. While alternate and additional measures are available, for example, measures describing the pace of childbearing (time to first birth and spacing between pregnancies) or the stopping point in women's family formation, the trade-off is an exceptionally complex model and potential identification or model specification problems.

This study contributes to a broader literature that seeks to explain the relationship of women's empowerment to family formation and differences in empowerment over the life course. Its use of a structural model with longitudinal data more explicitly models the endogenous relationships among resources, family formation, and empowerment. It applies a life course perspective more adeptly than can be achieved with cross-sectional data and its measurement of women's empowerment is more in keeping with its conceptualization as a dynamic process rather than a fixed attribute. It also yields new insights about the causal relationships between empowerment, demographic factors, and other determinants. Finally, it suggests several directions for future research.

The initial empowerment resources in this analysis were not time-varying resources, but ones fixed by the time of marriage. The only time-varying achievement/resource included in the model was family formation. It would be worth investigating what other empowerment resources may emerge and be drawn upon in the portion of the life course that follows marriage. For example, we know from these data that women gain agency following the birth of sons, but these data do not tell us if women's empowerment responds as those sons grow up and marry, if they marry and bring their wives into the extended household, or not at all. Cross-sectional comparisons of daughters in law and mothers in law would suggest that empowerment would respond to such an event, but longitudinal analysis is lacking.

More interesting from a policy and program perspective may be to investigate those emerging resources that are easily intervenable. Among these may be the development of education-type or economic resources in the form of non-formal education, life skills, livelihoods or microenterprise training, or access to micro-credit interventions or other capacities such as

couple communication and negotiation skills. Identifying those emerging resources to which empowerment responds in the middle of the life course would assist us in recognizing potential entry points for intervention among women who are already married. An analogous rationale could be made for seeking to identify empowerment resources that contribute to the exercise of household or interpersonal agency among adolescent, young, unmarried women prior to marriage (Gage 2000).

Another worthwhile extension of this analysis would be to consider a broader set of demographic events that may impact women's empowerment, such as the occurrence of unintended pregnancies, use of contraception, or abortion experiences. Similarly, a subsequent analysis could to explore how women's empowerment in the household sphere interacts with other dimensions of women's empowerment, for example, reproductive agency (ability to use contraception as she likes, avoid unintended pregnancy, or seek abortion, or to refuse or initiate intercourse); women's economic agency (e.g. participation in the labor force, retention and control over earnings, etc); and community visibility and voice. We know little about the life course trajectories of these dimensions of empowerment or how they relate to one another, beyond knowing that women may command discordant degrees of empowerment in different spheres.

Finally, many of the recent advances in conceptualizing and measuring women's empowerment and most of the empirical evidence on empowerment comes from work in South Asia. India, Nepal, Bangladesh, and Pakistan all figure prominently in the literature on empowerment. Fewer studies have been published using data from Africa or Latin America (Kritz, Makinwa-Adebusoye et al. 2000; Larsen and Hollos 2003). Meanwhile, we know that

levels of women's empowerment—and relevant measures by which to assess it—vary regionally. We need to identify what aspects of women's empowerment are common across widely diverse settings and to develop culturally specific measures to capture direct evidence of empowerment in under-studied settings.

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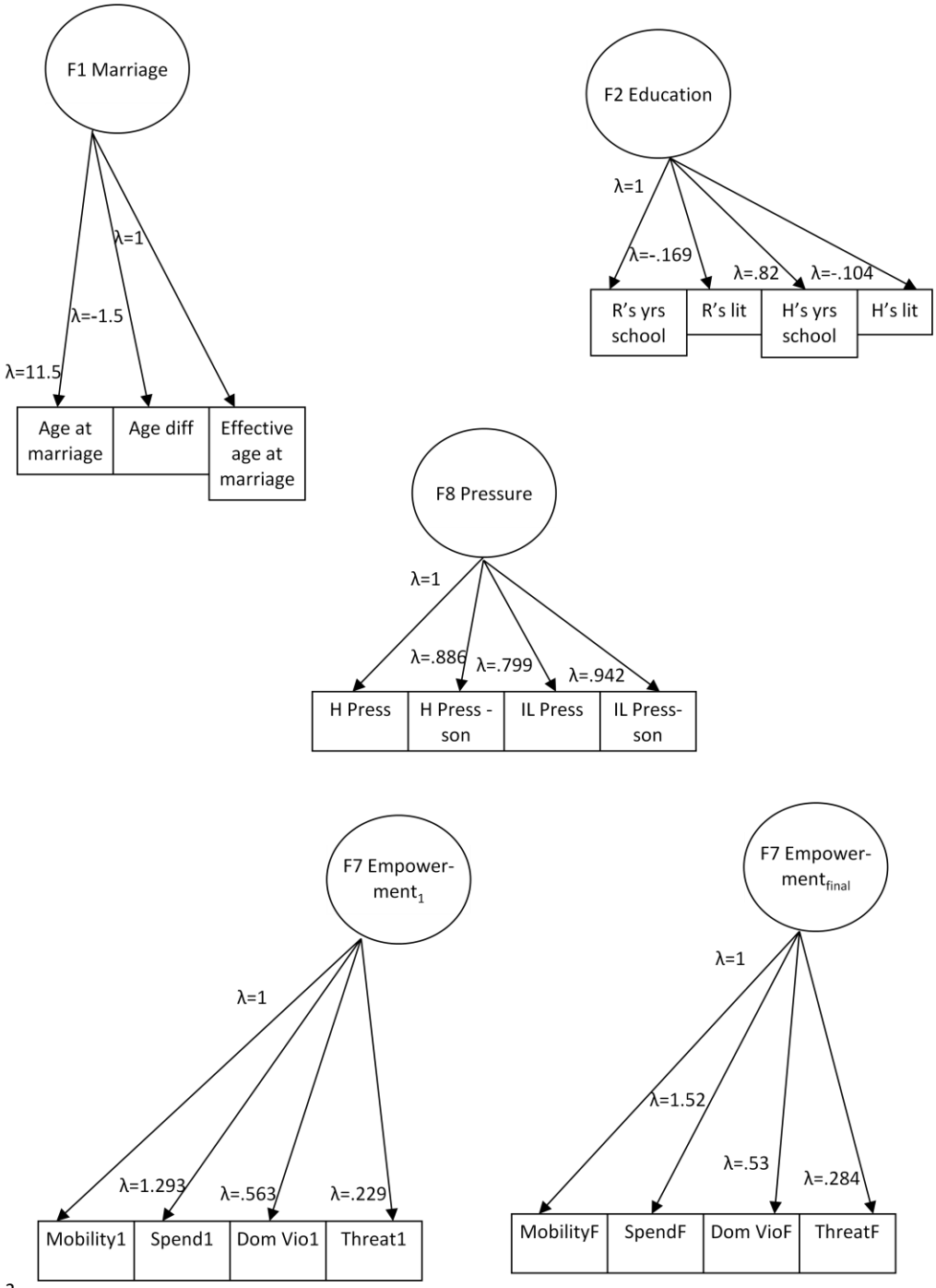
Appendix 1: Results of the CFA Measurement Model



χ^2=588.84 for 213 degrees of freedom
NFI=.936
CFI=.958
RMSEA=.046

Appendix 2. Standardized Equations for Model 1

Table 4. Model 1 Standardized Equations

	Model 1a (No Direct Effect)	**Model 1b (Direct Effect)**
$Empowerment_1$	.208F1+.209F2-.003F3-.062F4 +.136F5-.204F6+.831d7	.263F1+.265F2+.027F3-.068F4+.157F5-.272F6+.870d
Pressures	.055F1-.096F5-.291F7+.930d9	-.040F1-.103F5-.270F7+.949d
Family size	- .150F3-.109F4-.171F5-.207F7 +.930d9	-.212F3-.210F4-.196F5+.957d
$Empowerment_{final}$	1.035F7+.217F10	-.058F1-.060F2-.034F3+.011F4+.085F5+1.076F7 +.269F10
χ^2	713.41 (216 df)	1823.29 (226 df)
NFI	.919	.814
NNFI	.924	.792
CFI	.942	.833
RMSEA	.050	.088