



Do Individuals with Higher Education Prefer Smaller Families? Education, Fertility Preference and the Value of Children in Greater Jakarta

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Abstract

An emerging scholarship indicates that the negative educational gradient in fertility preference has reversed in some low-fertility societies in the West. This paper explores the association between education and fertility preference in Greater Jakarta. We use longitudinal data from 962 young adults surveyed in 2010 and 2014. We look at two complementary measures of fertility preference: desired number of children, and a series of attitudinal questions around the value of children, supplemented by insights from in-depth interviews. We find a slight negative educational gradient in the desired number of children, but the means are not significantly different across education categories (average of 2.43). While desired family size may not vary much by educational groupings, education continues to shape other underlying facets of fertility motivations and regulation. Multivariate analysis suggests a positive and significant association between education and the likelihood of *wanting more than two children* in 2010. Tertiary-educated young adults, however, have the lowest likelihood of having achieved their desired family size by 2014. Tertiary-educated respondents demonstrate higher levels of agency in governing their fertility choices. Qualitative insights suggest little socio-economic difference in how young adults articulate the psychological benefits associated with children, but less well-off respondents express higher anxiety about the costs of raising children. As the first birth occurs at a relatively early stage in their childbearing years for most women, especially those with a lower education level, there is considerable scope for lived experience to influence values, preferences and outcomes.

Keywords Education · Fertility preference · Value of children · Desired number of children · Indonesia

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1 Introduction

In developing countries with relatively high levels of fertility, data on reproductive intentions, fertility preference, and value of children are usually collected to understand factors that motivate families to regulate fertility, to predict future fertility levels, to estimate unmet needs in family planning and to assist in the design of policy and interventions targeted at fertility and reproductive health outcomes (Bongaarts 1992; Darroch et al. 1981; Hoffman and Manis 1979). Beyond its importance in the policy settings, examining how the value of children and fertility preferences vary across different population sub-groups and how this evolves over time serves to further our understanding of the relationship between childbearing norms, inequality, development, and social change.

Conventional wisdom in fertility transition theory suggests a negative relationship between education level and fertility preference measures. On average, in high fertility contexts, an individual with a relatively higher level of education would prefer to have a smaller family than those from the lower end of the education spectrum (Cochrane 1979; Martin 1995). Do such relationships between education and fertility preference continue to hold in contemporary settings? An emerging scholarship suggests that this is no longer always the case. Recent studies have indicated that the educational gradient in both fertility preferences and outcomes has reversed in a number of post-transitional societies in the West, that is, in regions where fertility rates have fallen near or below the replacement level (Berrington and Pattaro 2014; Esping-Andersen and Billari 2015; Heiland et al. 2005; Testa 2014).

A longitudinal study of West Germans has found that, relative to those with lower levels of education, individuals with higher education are significantly more likely to prefer three or more children, and less likely to prefer to be childless or to have one child (Heiland et al. 2005). Testa (2014) has found a positive association between women's education level and lifetime fertility intentions across 27 European countries at both the individual and country levels. Using data from a large cohort of the British National Child Development Study, the life course approach of Berrington and Pattaro (2014) for studying fertility preferences and outcomes initially found no clear educational gradient in expressed ideal number of children at age 23. But, consistent with the West German study, their multivariate analysis suggests that tertiary-educated men and women are less likely to intend to have one child; tertiary-educated women are more likely to intend to have three children and tertiary-educated men are more likely to intend to have four children relative to those with lower qualifications (Berrington and Pattaro 2014).

To date, not much is known about whether there are any indications of such a positive association between education and fertility preference measures in middle-income countries, especially in sub-regions experiencing the later stages of fertility transition. This paper addresses this research gap by examining the association between education and two measures of fertility preference: desired number of children and the value of children in Greater Jakarta, Indonesia. In the context of an urban region where fertility is approaching replacement level, we argue that it is important to examine how education regulates other aspects of fertility preference, intentions, and motivations beyond its effects on more conventional indicators of ideal/desired number of children.

Using mixed methods, we draw on a longitudinal survey data from 2 waves of the Greater Jakarta Transition to Adulthood Survey fielded in 2010 and 2014 ($n=962$), and qualitative insights from in-depth interviews. We found no significant association between education and the desired number of children among our respondents in 2010. In other words, we did not find the expected negative gradient between education and fertility preference. While the two-child norm had been pervasive across the education spectrum in our sample, our multivariate analysis results suggested a positive and significant association between education and the likelihood of wanting more than two children in 2010. However, owing to their later entry into marriage and childbearing, tertiary-educated respondents were less likely to have had achieved their ideal family size by the second wave of the study in 2014. Through both survey and qualitative insights, we further found that responses to certain value of children constructs did vary by education levels.

We begin by providing a brief background on fertility transition in Indonesia, and a review of the literature on fertility preference and the value of children in Indonesia.

1.1 Background

Indonesia, currently the world's fourth most populous and the largest Muslim-majority country, has undergone rapid fertility decline. In 1960, the total fertility rate (TFR) for Indonesia was around 5.7 births per woman (McDonald 2014). The 2012 Indonesian Demographic Health Surveys (IDHS) published a TFR figure of 2.6. This was corrected by Hull and Hartanto (2018) to account for missing single women in the enumeration. The 2017 IDHS published the TFR of about 2.43, but following adjustments developed earlier, Hull and Hartanto argue that it should be around 2.35.

Fertility decline in Indonesia has occurred alongside improvements across many economic and human development indicators. For example, adult literacy rate increased from 67% in 1980 to 95% in 2016 (The World Bank 2018c), life expectancy at birth rose from 48.7 years in 1960 to 69.4 years in 2017, and GDP per capita (in constant 2010 US\$) rose from \$650 in 1960 to \$4130 in 2017 (The World Bank 2018b). Along with these forces of development, Indonesia's rapid fertility decline has also been attributed to a strong family planning program.

The Indonesian family planning program—*Keluarga Berencana*—began in 1967, featuring a prominent slogan of “Two Children is Enough” (Permana and Westoff 1999). The program was hailed as a success, particularly in its accommodation with Muslim leaders during its early years (Jones 2006). Despite its success, it is difficult to disentangle the independent effects of the family planning program relative to the broader socio-economic changes that contributed to the fertility transition in the country. For example, concurrent with the thrust of the national family planning program was a period characterized by a “revolution in women's roles” (Hull 2003). This was demonstrated by a remarkable expansion in access to formal education for both men and women. In 1971, only 0.2% of women and 0.7% of men aged 25 and over had at least post-secondary qualifications. These numbers increased to 1.4% and 3.4% respectively by 1990 (The World Bank 2018a). In 2015, 8.1% of women and 8.9% of men aged 25 years and over had at least a Bachelor's degree or equivalent (The World Bank 2018e).

Despite such remarkable progress in access to education for both men and women, education inequalities—particularly at the higher levels—continue to drive patterns of socio-economic stratification among individuals and families in Indonesia. Data from the 2015 Intercensal Population Census suggests that among adults aged 25 and over, 46% had primary school qualification or less, 19% had completed junior high school, 26% had completed senior secondary schooling, and only about 10% had completed tertiary education.¹ The effects of education in driving fertility differentials across population groups over time have weakened, but the gap remains significant. For example, the TFR for women with primary school education was 3.4, and 2.4 for women with tertiary education in 1987 (ICF 2015). In 2012, the education differential decreased to TFR of 2.9 and 2.4 for the respective groups of women (ICF 2015). Further understanding of Indonesia's fertility transition entails a closer look at the underlying patterns of education/class differentials in attitudes towards fertility preferences and the value of children. For example, despite being largely treated as a stylized fact, the negative association between fertility and education – being a proxy of socio-economic class- had not been consistently observed in Indonesia. Using data from Indonesia's 1971 Census, a 1973 sample survey of fertility and mortality, and an intensive community study in Java, Hull and Hull (1977) observed a positive relation between economic class and fertility. They attributed this to differences in patterns of marital disruption, postpartum abstinence, and fecundity among people of different classes.

2 Literature Review

2.1 Fertility Preference

Recent trends of fertility preference indicators are supportive of convergence towards a widely-held two-child norm in Indonesia. However, two other notable patterns are observable. First, there are indications of a flattening in the education-fertility preference gradient at the higher end of education levels among women. Second, the latest available estimates suggest that observed fertility outcomes tend to sit lower than stated fertility ideals or preferences. A bivariate analysis of education and mean ideal number of children from the 2012 IDHS demonstrate these patterns (Fig. 1). In 1987, there was a clear negative relationship between the mean ideal number of children and women's education attainment. The mean ideal number of children ranged from 3.2 to 2.8, gradually declining with the incremental rise in the women's education categories. For most of the IDHS estimates since 1994, there is no difference in the mean ideal number of children reported by women with secondary education, and those with post-secondary education. The latest available data from IDHS in 2012 suggest that the mean ideal number for women with post-secondary education was slightly higher at 2.6 than for women with secondary education (2.5 children). The 2012 IDHS also estimates that the mean ideal number of children among ever married women aged 15 to 49 in the country was 2.7 (ICF 2015). In Jakarta, the figure was slightly

¹ Authors' own calculation from Intercensal Population Census dataset-weighted frequency.

lower at 2.5 for ever married women, and 2.4 for all women. Both figures sit slightly above Jakarta's estimated total fertility rate of 2.3.²

Indonesia's experience is not unique. First, previous research in comparable countries has found that the association between education and fertility preference has weakened, but it remains a negative one (Bongaarts 2003; Knodel et al. 1996). Data from two cross-sectional surveys in Thailand in 1988 and 1993 suggest a weak inverse relationship between education and ideal family size (Knodel et al. 1996). Second, the tendency for observed fertility to fall below desired fertility levels is also found in Indonesia's neighboring countries at later stages of fertility decline, as demonstrated by the case of Thailand (Bongaarts 2001). Sharing a similar tendency with other low-fertility countries in the West, the case of Thailand demonstrates how estimates of desired fertility levels now sit above observed fertility (Bongaarts 2001).

In discussing how fertility preference is stratified by education, it is useful to consider the long-researched literature on the value of children and fertility transition in Indonesia.

2.2 Value of Children

International scholarship on the value of children in the parent-child relationship and how it varies across social-cultural and economic contexts dates back to the pioneering work of psychologists Lois Hoffman and Martin Hoffman (1973). They argued that people's perception of the costs and benefits associated with having children was key to understanding the factors that motivate fertility preferences and regulations in families, and how these could impact upon policy efforts to encourage small family norms (Hoffman and Hoffman 1973).

Hoffman and Hoffman operationalized parent's perspectives of the value—or advantages—of having children into broad categories including that children served to help people attain adult status. In addition, they provided primary group ties, stimulation, fun, and sense of achievement, and economic utility.³ The early work that stemmed from Hoffman and Hoffman's study suggested significant variations in the ways children were valued within each of these broad categories across community and country settings. For example, within the US context in the 1970s, it was found that groups with less access to community resources—for example those with lower education—tended to place higher importance on the economic-utility values of having children than other groups (Hoffman et al.

² In interpreting these figures from IDHS, it should be noted that the crude analysis here does not control for age. Women with low education will be older than those with high education in any one survey. So, the observed trend could be due to age rather than to education. Comparison of a cross-sectional TFR with a cohort measure (ideal family size) is also doubtful. There is a problem of age weighting—for the ideal number of children, the response of an older woman counts the same as the response of the younger woman but, current fertility (TFR) is largely the outcome of the behavior of younger women.

³ The nine broad categories on the advantages of children proposed by Hoffman and Hoffman were: "adult status and social identity; expansion of the self, ties to a larger entity, immortality; morality: religion, altruism, good of the group, norms regarding sexuality, action on impulse, virtue; primary group ties, affection; stimulation, novelty, fun; achievement competence, creativity; power, influence, effectiveness; social comparison, competition; economic utility" (Trommsdorff and Nauck 2005, pp. 9–10).

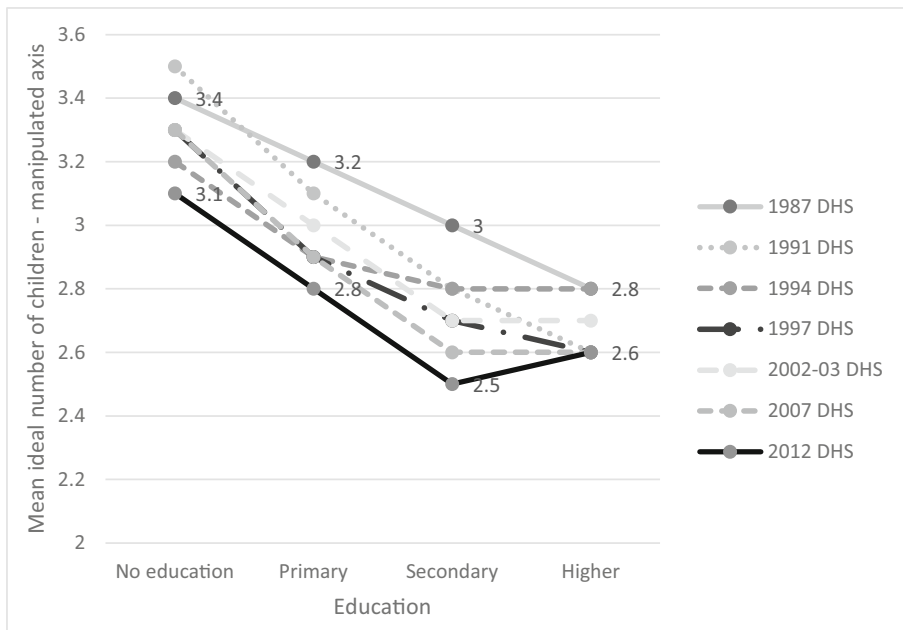


Fig. 1 The fertility preference and education gradient: Mean ideal number of children by highest completed education, Indonesia Demographic and Health Survey Series, 1982–2012. (Source: ICF 2015. The DHS Program STATcompiler. Funded by USAID. <http://www.statcompiler.com>. October 232,018)

1978). The US value of children study was subsequently extended into multi-country interdisciplinary projects on value of children including one conducted in Indonesia (see Nauck and Klaus 2007).

Meyer (1981) and Darroch et al. (1981) studied the value of children among Sundanese and Javanese parents residing in the Indonesian island of Java. Paul Meyer (1981) constructed ten general measures on the values and costs of children for the Indonesian study: material benefits from children; domestic services from children; children as sources of security for elderly parents; enhanced status in the community through one's children; continuity of family and personal immortality through children; strengthening marital ties through children; pleasurable interaction through children; financial costs of raising children; opportunity costs, or restriction of parents, of childrearing; and emotional burdens from children. His study indicated that the economic-benefit rational for children was most important for poor, and rural families in his sample. All groups mentioned the financial costs of raising children, and this particular measure was significantly related to ideal family size.

Meyer's extensive study was built upon earlier village-based/community studies on fertility and value of children in Java, one of which was the seminal work of Terence Hull (1975) titled "Each Child Brings its Own Fortune"—a Javanese proverb. Hull's study sought to understand the motivations behind large families in rural Java, and focused on the role of children in strengthening the organization of families from different economic backgrounds in his village of study, Maguwoharjo:

The poor and the well-to-do in Maguwoharjo live in what are essentially different worlds. The geographic proximity which throws them into daily contact masks the substantial gulfs which set them apart in nutrition, material possessions, education, work, language, and philosophy. Predictably, they have ideas about the role of children in their lives which stress different aspects of a child's potential; for some the possibility that a child might work in a family business and carry on the family organization is important, while for others there is more concern with the pride of being socially recognized as an adult" (1975: 373).

This suggests that despite the prevailing norm of large families across the different layers of the rural community at the time, there were significant differences in the way that parents articulated motivations around the value of children depending on where they sat in the village socio-economic hierarchy.

Darroch et al. (1981) found that the desired family size among Javanese and Sundanese parents ranged between 3 and 5 children. Relative to those with more education, responses from non-literate women in their sample were more evenly distributed from 3 to 6 or more children. Higher levels of education were associated with a higher likelihood of preferring 3 to 4 children. They also identified that obedience, good character, and willingness to care for parents in old age were among desired qualities in children, while financial costs associated with the health and education of children were seen as substantial. In the light of their findings, the prospect of a two-child norm among Sundanese and Javanese people was "judged to be poor in the foreseeable future" (p. 2). This proved not to be the case, when 10 years after the publication of this paper, data from the 1991 IDHS indicated that over 62% of currently married women expressed their ideal family size to be 2 children or less (Permana and Westoff 1999).

Using data on ideal family size in the late 1970s and 1980s, Adioetomo (1993) argued that rather than attributing the shifts in ideal family size to modernization, the socially constructed two-child norm in Java was largely a result of the successful family planning program. It remains difficult to disentangle the effects of development, modernization, and the family planning program on ideal family size (Angeles et al. 2005; Miller and Babiartz 2016; Molyneaux and Gertler 2000). A more recent study on the value of children in Indonesia suggests that among both younger and older generations of rural mothers, old-age security continued to be expressed as an important aspect of the value of children. In contrast, urban mothers tended to cite emotional reasons—such as the feeling of love between parent and child, and pleasure watching children growing up—over old-age security (Albert et al. 2005). There is a social reality behind these sentiments in that older people in rural areas are much more dependent upon financial transfers from their children than is the case for those in cities who are often in receipt of a pension of some kind. For those living in Indonesia's largest city, it can be expected that financial support from children in older age will be a less significant motivation for having children. As Indonesia is rapidly urbanizing, the focus on Jakarta is a window to the future of fertility preferences in Indonesia.

3 Current Study

Drawing upon a sample of young adults residing in Greater Jakarta in 2010 and 2014, our research questions are as follows:

1. Do respondents with higher education prefer to have fewer children than those with lower education?
2. What is the association between education, fertility intentions, and fertility outcomes in the short-run?
3. Do responses to value of children constructs differ by education categories?
4. What can we learn about education, value of children, desired family size and outcomes from young adults' qualitative insights?

Greater Jakarta—the capital region of Indonesia—serves as an important backdrop for a case study on contemporary fertility preference, value of children, and education for a number of reasons. The sprawling mega city, home to about 27.9 million people in 2010, has the highest proportion of tertiary-educated young adults in the country (Jones et al. 2016).⁴ On the one hand, we can expect that the inverse relationship between education and fertility preference will continue to hold among young adults in Greater Jakarta. On the other hand, given the pervasiveness of the two-child norm and the socially stratified nature of the city, it is reasonable to assume that the education gradient in fertility preference may have either disappeared or been reversed in our specific age cohorts of interest.

The drivers of such change—similar to those cited in the case of post-transitional societies in the West—may have begun to take hold in this mega-urban region. First, there are indications of growing egalitarian attitudes to gender roles among educated young people in Jakarta. For example, norms of dual-earner families with women as secondary earners are more popular than the male sole breadwinner model (Utomo 2016). Second, the popular use of domestic workers in upper middle-class households can be seen as a factor that makes childbearing and employment relatively compatible for educated women. Using education as a proxy for financial resources, it is likely that at higher parity, both the direct and the relative opportunity costs of having additional children can be substantial for young adults at the lower end of the economic strata.⁵ Low labor force participation rates among lower-educated women in Jakarta have already been observed in this study with the main cause being that they have no one to look after their children (McDonald 2014). In this paper, we hypothesize that while there may not be significant differences in expressed desired family size by education groupings, the education differential may appear in other attitudinal constructs around

⁴ Data from the Intercensal Population Census 2015 suggests that among adults aged 25 and over residing in the core provincial boundary of DKI Jakarta, 21% had primary school qualification or less, 17% had completed junior high school, 42% had completed senior secondary schooling, and only about 19% had completed tertiary education. This is significantly different than the national distribution cited earlier in the Background section of this paper, whereby the share of tertiary educated adults in Jakarta is almost twice as large as the national share.

⁵ Here, it is not so much the absolute opportunity cost that is the issue—opportunity costs will be lower for those with a low earning capacity than for those with a high earning capacity. The issue is the need for money to sustain a reasonable standard of living. This might be considered to be relative opportunity cost—the proportional impact of loss of the wife's earnings on high-income and low-income couples.

value of children. We further hypothesize that disjunction between values, preferences and outcomes is a result of the experience of the indirect and direct costs of having children in Greater Jakarta. As, for most women, the first birth occurs at a relatively early stage in their childbearing years, there is considerable scope for lived experience to influence values, preferences and outcomes.

4 Data and Methods

4.1 Sample

We employ mixed methods in our analysis. Our survey sample consists of 962 men and women aged 20–34 in 2010, drawn from a longitudinal sample of respondents in two waves of the Greater Jakarta Transition to Adulthood Surveys fielded in 2010 and 2014. The surveys were part of a study of how Indonesians effect their progression to becoming independent, secure adults and in what ways this progress differs for men and women and by socio-economic strata.

The first wave of the survey obtained a representative sample of 3006 young adults aged between 20 and 34 in 2010. The sampling process involved a two-stage cluster sample using the Probability Proportional to Size (PPS) method. In the first stage, 60 *Kelurahan* (Districts) were selected using PPS. In the second stage, five neighbourhoods (*Rukun Tetangga/RT*) were chosen within each selected *Kelurahan* by systematic random sampling. Trained interviews conducted a census in each of the 300 selected RT. The census collected information on the age, sex, marital status and relationship to the head of household. From the census, a listing of all eligible respondents (aged 20–34) living in the *Rukun Tetangga* was compiled. Eleven eligible persons were then selected by simple random sampling from the eligible RT population. Thus, 3300 names were selected for interview with the aim of obtaining a sample of 3000 allowing for refusals and non-contact. Just over half of these respondents ($n = 1508$) were re-interviewed 3 years later in 2013–2014. The rate of attrition was higher for men than for women and for those of higher economic status, making the longitudinal sample in this paper non-representative. For the second wave a specific questionnaire design was employed. Since we already know each respondent's specific condition from the first wave, we tailored each respondent's questionnaire individually depending on their circumstances.

Apart from the surveys, the Greater Jakarta Transition to Adulthood project also includes 80 in-depth interview respondents who were interviewed in the first wave. These respondents were randomly selected from a quota sample of the survey respondents (126 target respondents based on sex, age-groups, and three education categories). Fifty of these respondents were successfully re-interviewed in the second wave. Themes addressed in the interview included education, employment, marriage, sexuality, fertility, religion, politics, digital technologies, financial situation, and migration. Interview results were coded according to these major themes. In this paper, we analyze insights pertaining to fertility and family formation from respondents across different sex, marital status and education categories from interviews conducted in 2010.

4.2 Measurement

4.2.1 Dependent Variables

The first dependent variable for the first research question is the desired number of children stated in 2010.⁶ The mean for desired number of children in 2010 was 2.43 (sd = 0.87). The second one is a binary variable, with 0 denoting wanting to have two children or fewer (64%), and 1 denoting wanting more than two children (36%).

The dependent variables for the second research question are the number of children ever born in 2014, and a binary variable of whether the respondent had not achieved the desired number of children nominated in 2010 in the second round of the survey in 2014.

The dependent variable for the third research question shifts away from the quantity aspects of fertility preference and aims to look into the underlying motivation for childbearing. To do so, we draw on measures constructed in the earlier discussed studies of Hoffman and Hoffman (1973) and Meyer (1981). However, given that the focus of the survey was to consider the broader experience of transition to adulthood, we had limited space to incorporate questions relating to the value of children in the questionnaire. In this paper, we explore answers to attitudinal questions collected in the first wave of the survey: (1) life without children is incomplete (*Incomplete*); (2) seeing the growth and development of children is a gift of life (*Gift*); (3) children are a burden, so we should not have more than 2 children (*Burden*); (4) there is social pressure to have children (*Social Pressure*); and 5) having children is a religious obligation (*Religious Obligation*).

A Spearman's test of correlation was run to test the association between each of these attitudinal items and desired number of children in 2010, but only two items had a significant association at the 1% level. There is a positive association between those agreeing with the statement "seeing the growth and development of children is a gift of life" and their expressed desired number of children ($r_s = 0.1093, p = .0007$). Agreeing that "children are burden, so we should not have more than 2 children" is negatively associated with desired number of children ($(r_s = -0.2327, p = .0000)$).

We use both the original 5-point Likert scale responses to these questions as the dependent variable in our bivariate analysis, and a recoded 0–1 variable in the multivariate analysis, with 1 denoting agree/strongly agree. We choose all five questions as separate dependent variables rather than attempting to construct a value of children index.⁷

4.2.2 Independent and Control Variables

For simplicity, we categorize highest completed education in 2010 into three groups: less than senior high school (29% of respondents), senior high school (54%), and

⁶ The relevant question in the questionnaire was worded as follows: Including any living children you may have at the moment, how many children would you like to have in total? (*Ind: Termasuk anak hidup yang sudah anda miliki sekarang, berapa jumlah anak yang anda inginkan?*). There was no question on "ideal number of children" in the questionnaire.

⁷ At the outset, these five questions are not likely to be unidimensional. Together, they have low internal consistency (Cronbach Alpha = 0.1961).

tertiary-educated (17%). When necessary, we break down the categories further into six levels: less than primary school (1.4%), primary school (10.8%), junior high school (17.3%), senior high school (SHS) (53.9%), diploma I/II (7.5%), and bachelor+ degrees (9.3%).

As control variables for research questions 1 and 2, we use age (mean = 28.1, sd = 4.4 in 2010), sex (63% female), a dummy variable whether the respondent is engaged in paid employment (yes: 57% in 2010), and marital status (never married 43%, currently married 57%, widowed 0.31% in 2010).

For research question 2, we use education in 2014 as independent variable (26% less than senior high school, 49% senior high school, and 25% tertiary-educated). We use sex, age (mean = 32.1, sd = 4.4), marital status (never married 28%, currently married 70%, divorced/widowed 2%), and paid employment status (yes = 65%) in 2010 as control variables. Recall that the dependent variable here is whether the respondent had fewer children in 2014 than the number they had intended in 2010. Given that some respondents were still in school when surveyed in 2010, education in 2014 is more likely to capture completed education level and to be more relevant when looking at fertility outcomes.

4.3 Strategy of Analysis

We use ANOVA to look at the association between education and desired family size in 2010. We run logistic regressions for all respondents, and for men and women separately to look into how education affects the likelihood of a respondent nominating that his/her desired number of children is above two in 2010.⁸ The control variables are age, marital status, and paid employment status.

We use a chi-square test to examine whether there is a statistically significant association between education categories and the value of children constructs. To follow, we run logistic regressions to test such associations while controlling for age, marital status, and paid employment status for each sex.

Next, we use ANOVA to see whether a positive or negative educational gradient appears in this measure of short-run fertility outcomes, and whether this differs with what we found with respect to education and fertility preference and value of children measures. We run logistic regressions to examine the association between education and the likelihood of the respondents having fewer children in 2014 than the desired number of children in 2010.⁹

Finally, we consult our qualitative data from the in-depth interview sample to elaborate upon the meanings and limitations of the survey results on the association between education, desired number of children and value of children. The qualitative

⁸ Our decision to model fertility preferences as a binary outcome is not without reason. In our dataset, about 58% of our respondents reported 2 as their desired number of children in 2010 (1.6% reported 0, and 3.5% reported 1 as their desired number of children). In the literature review, we had extensively outlined how the 2-child family had long been campaigned as the “ideal” family through the national family planning programme. To follow, our analytical interest in this paper is to identify individual correlates of wanting more than what had been institutionally promoted (and subsequently became the popular norm) as the “ideal” number of children.

⁹ We address a similar research question on education and realized intentions employing panel data estimation methods in a separate paper, using three waves of data from the Greater Jakarta Transition to Adulthood fielded in 2010, 2014 and 2018.

data were coded according to all major themes in transition to adulthood. The qualitative data enable a contextual analysis of the place of fertility decision-making among the many life decisions that young people make at this stage of their lives.

5 Results

5.1 Education and Desired Number of Children

The mean desired number of children in 2010 was 2.43. A slight negative educational gradient does appear but the means are not significantly different. The mean desired number of children is 2.46 for those with lower than senior high school education, 2.42 for senior high school graduates, and 2.43 for tertiary-educated respondents. Figure 2 outlines the mean desired number of children by sex for three categories of education in 2010.

Controlling for sex, age, marital status, and employment, we find a positive and statistically significant association between education and the likelihood of wanting more than two children in 2010 (Table 1). In the male-only sample, tertiary-educated men are twice as likely to want more than two children as men with less than senior high school qualification. This relationship between fertility preference and education remains positive in the women-only sample, but is no longer significant. Being in paid employment is associated with significantly lower likelihood of wanting more than two children in the women-only sample. An interesting result in Table 1 is the difference in results in marital status for the men and the women sample. The odds for married men to want more than two children is two times the odds for never married men. The opposite holds for women. Relative to never married women, married women are more

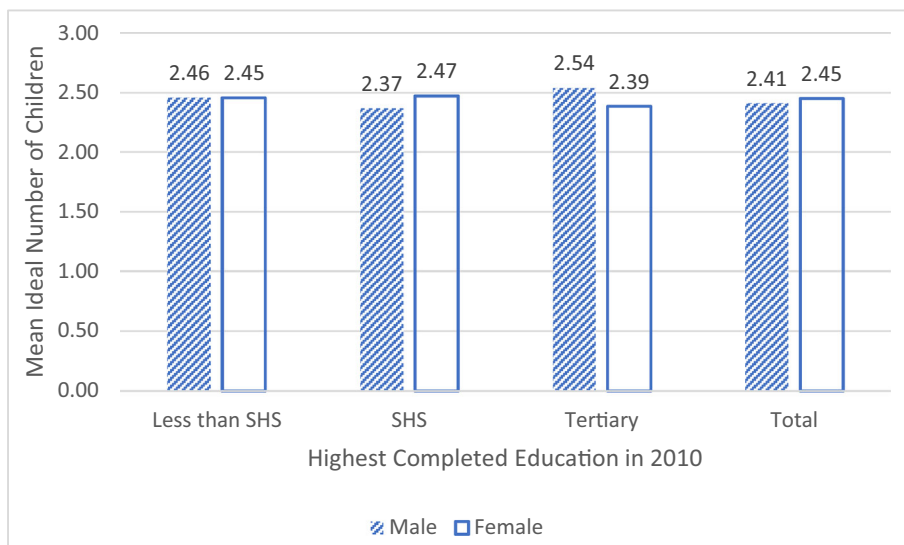


Fig. 2 Mean desired number of children by sex and highest completed education, 2010, Note: The difference between males and females within each category is not significant. (Source: Greater Jakarta Transition to Adulthood, wave 1, 2010)

likely to have experienced childbirth and thus know the potential burdens of more than two children; such results are indicative of broader gender equity issues in marriage.

5.2 Fertility Intentions and Realized Outcomes in the Short-Run

In Table 2, we contrast the clear negative association between education level 2014 and fertility outcomes in 2014, with the non-significant association between the education level in 2014 and expressed fertility preference in 2010. Our multivariate analysis also suggests that among those currently married in 2014, tertiary-educated young adults have the lowest likelihood of having achieved their desired family size in the 4 years after they were first asked about it (Fig. 3).

On the one hand, this may seem consistent with the idea that education potentially mediates the association between fertility preference and realized outcome through its effects on delaying entry into marriage and childbearing. However, only 4 years had lapsed since between the survey waves and many young adults in our sample had not yet completed, let alone begun, their childbearing period. At this stage in their life course, we see that the fertility outcomes of young adults in Jakarta are significantly stratified by their education background. Accounting for marital duration, future analysis with a longer observation period would provide a better picture on the dynamics between education, fertility intentions and outcomes.

Table 1 Odds ratio predicting likelihood of nominating more than two children as desired family size in 2010

		All		Male		Female	
		OR		OR		OR	
Sex							
	Male (ref)	1					
	Female	0.916					
Age		1.046	**	1.011		1.069	
Marital status							
	Never married (ref)	1		1		1	
	Married	1.09		2.479	***	0.547	**
	Widowed	4.817				3.352	
Education							
	Less than SHS (ref)	1		1		1	
	SHS	1.402	**	1.278		1.366	
	Tertiary	1.512	*	2.147	*	1.252	
Paid employment							
	No (ref)	1		1		1	
	Yes	0.746	**	0.808		0.565	***
Constant		0.147		0.255		0.138	
N		962		364		598	

Source: Greater Jakarta Transition to Adulthood, wave 1, 2010

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 2 Mean desired number of children in wave 1 and children ever born in wave 2 by highest level of completed education in wave 2

	Male		Female		Total	
	Ideal 2010	CEB2014***	Ideal 2010	CEB2014***	Ideal 2010	CEB2014***
<SHS	2.38	1.07	2.45	1.92	2.43	1.73
SHS	2.39	0.88	2.44	1.58	2.42	1.25
Tertiary	2.48	0.46	2.47	0.87	2.47	0.71
Total	2.41	0.80	2.45	1.51	2.43	1.24

Source: Greater Jakarta Transition to Adulthood, wave 1 and wave 2, 20110 and 2014

*** $p < 0.01$

5.3 Value of Children

In contrast to the absence of a significant negative gradient between education and desired number of children, there are significant differences in the way respondents across education categories respond to the value of children constructs (Table 3).

The proportions of respondents placing a high value on children in each education group are statistically different in four of the five items. Tertiary-educated respondents have the smallest proportion agreeing to the statement that having children is a religious

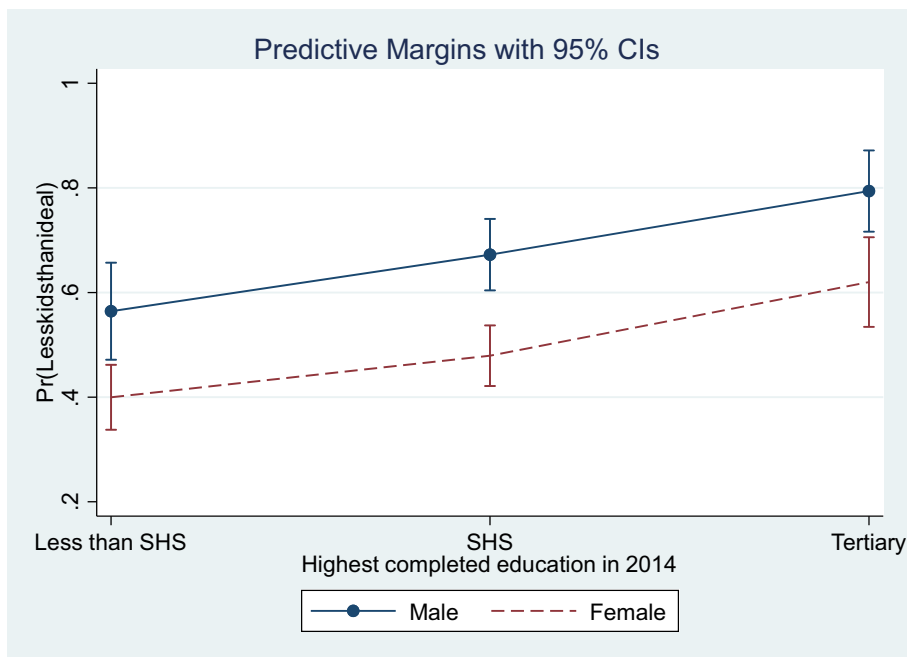


Fig. 3 Predicted probabilities of having fewer children by 2014 than the ideal number stated in 2010, by sex and education. Note: currently married individuals in 2014. Other control variables: age in 2014 and whether had paid employment in 2010

Table 3 Percentage distribution of response to value of children questions by highest completed education in 2010

	Highest education in 2010		
	Less than SHS	SHS	Tertiary
Life without children is incomplete**			
1. Strongly Agree	23.3	33.0	36.7
2. Agree	68.9	61.0	54.7
3. Uncertain	0.7	1.4	2.5
4. Disagree	6.4	3.9	5.0
5. Strongly Disagree	0.7	0.8	1.2
Seeing the growth and development of children is a gift of life***			
1. Strongly Agree	23.3	37.6	50.9
2. Agree	75.3	61.2	48.5
3. Uncertain	1.4	1.2	0.6
Children are a burden, so we should not have more than two children***			
1. Strongly Agree	1.8	1.0	2.5
2. Agree	19.4	12.6	6.2
3. Uncertain	11.7	10.2	8.1
4. Disagree	61.1	66.8	66.5
5. Strongly Disagree	6.0	9.5	16.8
There is social pressure to have children			
1. Strongly Agree	0.4	1.2	1.9
2. Agree	17.7	14.7	13.7
3. Uncertain	11.7	9.7	13.0
4. Disagree	68.2	70.5	65.8
5. Strongly Disagree	2.1	4.1	5.6
Having children is a religious obligation***			
1. Strongly Agree	8.1	11.6	11.8
2. Agree	70.7	55.0	42.2
3. Uncertain	6.7	11.0	11.2
4. Disagree	14.5	22.0	31.7
5. Strongly Disagree	0.0	0.4	3.1

The respective statements in Bahasa Indonesia were: *Hidup tanpa anak terasa tidak lengkap; melihat pertumbuhan dan perkembangan anak adalah suatu anugerah kehidupan yang menakjubkan; anak adalah beban, jadi sebaiknya tidak mempunyai anak lebih dari dua; ada tekanan sosial untuk mempunyai anak; mempunyai anak merupakan kewajiban dalam agama.*

Source: Greater Jakarta Transition to Adulthood, wave 1, 2010

*** $p < 0.01$, ** $p < 0.05$. * $p < 0.1$

obligation, but they have the highest proportion strongly agreeing that life without children is incomplete. About 83% of tertiary-educated respondents either disagree or strongly disagree with the statement that having children is a burden so one should have

no more than two children. The corresponding proportion for those at the lowest education category is around 67%.¹⁰

A pattern that we note when examining variables drawn from questions arranged on the Likert scale is the stronger tendency for respondents with higher education to nominate extreme responses at either end: “strongly disagree” or “strongly agree.” In contrast, respondents with relatively lower levels of education were less likely to express such strong positioning in questions around social attitudes with their answers clustered around “agree,” “unsure,” or “disagree.” We observed this tendency not only in questions related to the value of children, but also in other attitudinal questions in our survey.

Results from a series of logistic regressions highlight that education has a significant association with three of the five VOC constructs (Table 4). This particularly stands out among the women in the sample where education appears to have strong negative effects on Burden, Social Pressure, and Religious Obligation. For example, tertiary-educated women are 72% less likely to strongly agree/agree with the statement that having children is a religious obligation, than women with less than senior high school qualifications. Tertiary-educated men and women in the sample are less likely to agree with the statement that having children is a burden as a rationale for the two-child family norm.

5.4 Qualitative Insights

With a small sample size, the qualitative insights from our in-depth interviews are by no means representative. However they are useful in interpreting our survey results, particularly in identifying nuances in the attitudinal questions around the value of children.

In line with survey results, most of the in-depth interview respondents nominated two to three children as their desired family size. Motivations for having children echoed the findings of past studies on value of children in 1970s Java (Meyer 1981). For example, having children was articulated as an important rite of passage, a gift from God, a source of care and companionship in old age, a way of strengthening family ties, an enjoyable experience, and as essential in ensuring the continuation of family lines. However, none of the respondents expressed that their motivation for having children was to attain an additional source of labor in the family or to help around the house. Some of these sentiments were expressed as:

Yes, when we are older, we don't know, right? For sure, we would need children. (There is no point) to have lots of money but not have any children...that's how I imagine it. (Maemunah, female, 29, high school graduate, married with two children)

¹⁰ A further detailed tabulation by education and sex suggests that within each education category, the distribution in the responses to these *value of children* statements are not statistically different between male and female respondents in most cases. A few exceptions are (1) responses to the statement that “life without children is incomplete,” which show significant differences between tertiary-educated male and female respondents; and (2) responses to the statement “seeing the growth and development of children is a gift of life,” where responses between male and female respondents with senior high school qualifications are significantly different.

Table 4 Logistic regressions of various constructs around value of children in 2010: Odds Ratios

Variables	Incomplete		Gift		Burden		Social pressure		Religious obligation	
	Male	Female	Male (a)	Female	Male	Female	Male	Female	Male	Female
Age in 2010	0.980	0.952	0.994	1.414**	0.993	0.937**	0.947	0.970	1.034	0.978
Marital status in 2010										
Never married (ref)										
Currently married	2.386*	1.551	1.075	0.342	0.504	1.235	0.892	0.787	0.701	1.112
Widowed						2.345				0.784
Education in 2010										
Less than SHS (ref)										
Senior High School	1.407	1.726	0.711	6.053	0.645	0.417***	1.589	0.579**	0.579*	0.503***
Tertiary	0.705	2.104		2.131	0.209**	0.363***	2.228	0.471**	0.363**	0.309***
Paid employment in 2010										
No (ref)										
Yes	0.628	0.447**	1.576	0.148	0.485**	1.272	0.960	1.099	0.807	0.884
Constant	16.59*	52.97***	55.21	0.0401	0.680	1.475	0.566	0.782	1.960	7.045***
Observations	364	595	312	595	364	598	364	595	364	598

(a) 98% of the male respondents and 100% of tertiary educated men either agree or strongly agree with this statement

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The presence of children can work to strengthen family ties. (Rahmad, male, 27, junior high school graduate, married with children [unspecified number])

When talking about the benefits of having children, well, we got married so naturally we want to have children, so that when we get home from work, there is someone to entertain us. Well, if you want to use the word asset or whatever, you can say that, so that the familial lineage is not broken. (Kusdiyanto, male, 32, high school graduate, married with one child)

A child is entrusted to us (by God), so we have to look after it, to care for it, so what do you call it, all these extras that you cannot spend—it's like being given a fortune, you just have to accept it. (Mansuri, male, 32, high school graduate, never married with no children)

If we do not have a child, our happiness decreases. If we have a child, we become happy. Without a child, there is something missing. (Maemunah, female, 29, primary school graduate, married with two children)

The interviews highlighted a universal importance of having children. To have a child (children) was articulated as the central objective of getting married, and most people interviewed were not thinking of postponing having children after marriage.

I didn't want to have a child for the first year (after getting married). But it turned out to be quiet without a baby. At home, I felt lonely, but with a child around it feels like I have company. (Maemunah female, 29, primary school graduate, married with two children).

Perhaps, I would like to have a child straight away (after getting married), well, just whenever I get given (the child). It is not good to postpone it. It is like saying "no" to a gift from God. Especially people said that if we postpone (having children), it is going to be hard (to get pregnant). Esni, female, 33, high school graduate, never married with no children)

(Ideal age of having first child is) 24-25, but after 25 is no longer ideal. In my opinion, when we (want) to have a child we don't know when we will get one (get pregnant) soon or not, so I am scared that I will worry about children as I get older). (Vivi, female, 25, university graduate, never married with no children)

It is very important (to have children within a marriage)...there will be a time when we become old, and we need someone to look after us. So I think it is very important to have children. I just don't have any yet. (Ulfa, female, 26, university graduate, divorced with no children) .

Among less well-off respondents strong male breadwinner ideals were associated with the need to meet the ever-increasing costs of raising children, particularly for their schooling. There were clear visions for their children to experience upward mobility. Female respondents without tertiary qualifications expressed that having a young child would discourage their participation in paid employment due to lack of alternative childcare.

Well, once we get married, we are obliged to please our families, our wife and kids. Like my friend, a Betawi guy with plenty of inheritance. He has two children, and rental properties, so he has additional income. He does not have

to think hard like me. I am still confused thinking about how to pay for kids' school fees. (Amin, male, 33, high school graduate, never married with no children)

I want to continue to higher education, like going to university, but well, I have no money, so that's about it (high school). Furthermore, I now have children, so I am even less motivated to continue my education. I used to work, but after my second child, I stopped. Maybe after the child is about one-year-old, I will return to work. (Putri, female, married, high school graduate, married with 2 children)

6 Discussion

Our findings suggest a noted absence of a significant negative education gradient in desired number of children among young adults in Greater Jakarta. We fail to reject the hypothesis that respondents with higher education prefer to have smaller families than those with lower levels of education. Data on desired number of children indicate that the two-child norm is widely embraced among almost all young adults across the education spectrum in Greater Jakarta. This finding is in line with other recent empirical results from Southeast Asia indicating that education differentials in fertility preference are converging in lower fertility settings (Bongaarts 2003; Knodel et al. 1996).

In line with the results of a number of studies on contemporary fertility preference in the West (Hazan and Zoabi 2015; Heiland et al. 2005; Testa 2014), we find that respondents with secondary and tertiary qualifications are more likely to report that they would like to have more than two children than respondents without secondary qualifications. Such findings provide early indications of the rise of class-driven differentials in fertility preference. In particular, the positive relationship between education and the likelihood of wanting more than two children has been found to be significant for men. This is supportive of recent studies highlighting the entanglement of rising economic anxiety, male breadwinner norms, and fertility ideals among the current cohort of young adults in the region (Raymo et al. 2015). Another alternative explanation relates to the intersections between gender, education level and timing of first birth. As the first birth occurs at a relatively early stage of childbearing years for most women, especially those with low education, there is considerable scope for lived experience to influence values, preferences and outcomes.

However, when it comes to realized fertility intentions in the second wave of our survey, a significantly negative education gradient remains. Our preliminary findings using bivariate analysis suggest that those with higher levels of education are least likely to have achieved the desired family size they reported 4 years earlier. On the one hand, this is a marked contrast with the situation in the past. In their study of fertility in Java in the 1970s, Hull and Hull observe that "...the majority of poor women are left with fewer children than they consider ideal; whereas nearly half the women in upper income groups end up with more" (Hull and Hull 1977, p. 56). An important caveat, however, is that our two waves of longitudinal data of young adults include many respondents who have not finished, or even begun, their childbearing. As such, our data on realized fertility intentions should be read as "partially realized" fertility. In addition, we have not fully addressed the dynamic nature of fertility preference and intentions.

Looking at how fertility ideals and intentions change over the life course will be an area of fruitful research in fertility studies in Indonesia.

Despite the absence of a negative education gradient in desired number of children, we find a significant difference in the response to attitudinal questions on value of children across education categories. This is attributed to educated respondents being more likely to indicate higher levels of individual agency behind their fertility preference. That is, they are less likely to concur to religious norms that having children is obligatory. Educated respondents are also less likely to agree that the idea of children as *burden* motivates the two-child family norm. Accounting for sex, age and employment status, there is no significant association between education and personal enjoyment/satisfaction aspect of having children.

Our qualitative insights point to some commonalities and variation in the way our respondents articulate their attitudes towards having children. Having two to three children seems to be the universal ideal for all interviewed respondents. Respondents also commonly express the idea that children provide psychological security—providing care and companionship—in old age. All respondents express strong sentiments around the psychological benefit and enjoyment derived from having children. This suggests that care should be taken in drawing conclusions about the effect of socio-economic differentials on the emotional value attached to having children using a measure derived from items based on a Likert scale. In line with the survey results, respondents with higher education express less anxiety about how much it would cost to raise and send their children to school relative to less well-off respondents. This resonates with recent studies indicating that the high costs of raising children and increasing economic and employment insecurity are driving the socio-economic cleavage in marriage and fertility patterns in neighboring East Asia (Park et al. 2013; Raymo et al. 2015; Retherford et al. 2004).

Taken together, our findings suggest that as fertility approaches replacement level, it is important to consider how education shapes other aspects of fertility preference outside of the conventional numeric indicator of desired number of children in Greater Jakarta. On the one hand, the negative gradient between desired number of children and education may have weakened or disappeared altogether. On the other hand, education differentials remain significant in other facets of fertility rationales and motivations. This suggests that although most young adults would like to have two children, education will continue to shape class-based differences in the underlying processes of fertility transition and family change.

A limitation of our study rests with attrition issues in our longitudinal dataset (see Lillard and Constantijn 1998). This is compounded by the focus of our study on transition to adulthood among 20–34-year-olds, where transitions such as leaving school, starting work, migration, and family formation are likely to take place, hence providing a challenge for our team to trace respondents in subsequent waves. For example, we may have underestimated achieved ideal family size in 2014 since entry into marriage and/or childbearing occurring between the waves may be associated with a change in residence. In our study, we found that the likelihood of losing a sample person was particularly high for men. The megacity context was also a factor in attrition. With rising sea levels and forced displacement in Greater Jakarta, we found two whole neighbourhoods that were included in our sampling for Wave 1 had completely disappeared by Wave 2.

Given the opportunity to follow the respondents as they move along their reproductive ages, future longitudinal analysis can examine whether there are significant educational differences in the conditions of family formation and childbearing that may discourage highly educated women from realising their fertility ideals in Greater Jakarta. Further empirical insights from Indonesia—a middle-income country where marriage and having children remain the universal ideal—would make a significant contribution to the state of knowledge on the relationship between fertility, development and social change in Asia. If the nation has an interest in modifying individual fertility in any way, these findings indicate that the crucial issue is less of attitude change than of the creation of conditions to facilitate family formation and child care. At a time when emphasis is placed on education of both men and women, it is important to ensure that women, as a result of childbearing, are not disadvantaged in workplaces and workforces that are family-unfriendly.

Appendix

Table 5 Odds ratio: the likelihood of having fewer number of children in 2014 than the ideal number stated in 2010

Variables	All		Male		Female	
Sex						
	Male (ref)					
	Female	0.460	***			
Age in 2014		0.828	***	0.793	***	0.839
Education						
	Less than high school (ref)					
	Senior high school	1.274		0.933		1.373
	Tertiary	2.130	***	1.610		2.173
Have paid employment in 2010						
	No					
	Yes	1.385	*	0.594		1.517
Constant		742	***	9363	***	203.9
Observations		676		192		484

Source: Greater Jakarta Transition to Adulthood, 2010 and 2014

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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