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Educational Assortative Mating and Within-Household Income Inequality in Indonesia

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Abstract

This dissertation investigates how educational assortative mating shapes both between- and within-household inequality in Indonesia. Using data from the Indonesia Family Life Survey and a counterfactual simulation approach, the study evaluates how observed partnering patterns compare to alternative matching scenarios. Results show that educational positive assortative mating is related to higher household resources at the top but simultaneously enlarges gender gaps, as men continue to dominate earnings even when equally educated. At the bottom, positive assortative mating reduces income gaps but within conditions of shared disadvantage. Emphasising intra-household dynamics, the study contributes new insights into gender, education, and inequality in developing contexts.

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1. Introduction

Assortative mating is a fundamental mechanism by which social mobility and inequality are shaped within a generation. Defined as the systematic, non-random sorting of partners along traits such as education, assortative mating reflects both individual preferences and structural opportunities inside marriage markets (Becker 1973; Kalmijn 1998). The dimensions along which spouses match can have deep consequences both in terms of intra-generational inequality and intergenerational outcomes, through the transfer of resources and cultural capital to children (Mare 2001; Torche 2010). Education is a particularly central dimension of sorting since it proxies lifetime earnings, occupational trajectories, and social status (Blossfeld and Timm 2003). The mechanism operates as follows: when individuals match across social boundaries, this social mobility compresses disparities between households; when they match within social strata, resources concentrate and between-household inequality grows (Breen and Salazar 2011; Schwartz 2013).

Much of the literature on assortative mating has focused on inequality between households, but assortative mating clearly has implications for the unequal distribution of resources within couples as well. Focusing only on aggregate outcomes assumes household income is pooled and partners share equally in resources. However, research on bargaining and intra-household allocation shows this is rarely the case (Bennett 2013; Doss 2013). Ignoring the within-household dimension risks misrepresenting both the extent and the nature of inequality.

Despite its importance, within-household inequality remains an underexplored dimension of assortative mating, especially in developing countries. Existing studies have mapped educational sorting and its contribution to household-level inequality in high-income countries (Breen and Salazar 2011; Greenwood et al. 2015; Boertien and Permanyer 2019; Eika et al. 2019) and increasingly in developing contexts such as Latin American countries, Sub-Saharan Africa, and South-east Asia (Torche 2010; Pesando 2021; Paweenawat and Liao 2023; Kujundzic 2025). Yet systematic analyses of within-household inequality remain scarce, even though such inequalities directly shape individual well-being and power relations (Doss 2013; Cools and Kotsadam 2017). This gap is particularly striking in low- and middle-income contexts, where structural barriers to women's earnings magnify the divergence between total household resources and women's control over them.

Theoretically, all else equal, positive assortative mating entails a trade-off (Lersch and Schunck 2023). It increases between-household inequality by matching individuals with similar earning potential together; but this mechanism may decrease inequality within households. A further implication of this mechanism concerns the relationship between household income maximisation and equality within couples. In principle, positive assortative mating among highly educated partners could generate both high total household earnings and relatively equal positions within the couple. This would correspond to a win-win situation for women in these "power couples" (Costa and Kahn 2000). However, in contexts where men systematically outearn women, existing disparities interact with assortative mating patterns and such complementarities rarely materialise (Lise and Seitz 2011; Boertien et al. 2019).

In Indonesia and comparable middle-income settings, rapid educational expansion has coincided with enduring gender inequalities in the labour market, making these dynamics especially consequential. Although female enrolment has reached parity across all levels, including for tertiary education, women's labour force participation remains stubbornly low at around 51 percent, one of the lowest in East Asia (Cameron 2023; World Bank 2023). Even among employed women, gender wage gaps remain wide: estimates suggest an unadjusted pay gap of roughly one-third, only partly explained by observable characteristics (Cameron and Contreras-Suárez 2017). This produces a paradox where women's educational gains do not consistently translate into commensurate economic returns. Thus, the Indonesian context, where men's earnings surpass women's at every education level, provides a compelling case for studying how partner selection interacts with gendered inequality.

To my knowledge, no study has yet systematically analysed the link between assortative mating and within-household income inequality in Indonesia. This dissertation addresses this gap by examining how educational assortative mating shapes within-household outcomes by female educational achievement. It asks two guiding research questions:

Q1. To what extent does educational assortative mating relate to women's relative position within households (measured by spousal income gaps and women's income shares) as well as to total household labour income?

Q2: How do these patterns vary across women's educational attainment?

Methodologically, the study employs nationally representative data from the Indonesian Family Life Survey and a counterfactual simulation approach. Holding men's and women's marginal education distributions constant, I compare the observed income distribution within households to simulated scenarios in which partners are matched according to alternative rules (random allocation, perfect homogamy, or systematic hypogamy). This framework, inspired by recent work on assortative mating and within-household outcomes in developed countries (Chudnovskaya and Kashyap 2020; Lersch and Schunck 2023), allows for disentangling the contribution of assortative mating from the broader structure of education and labour markets. Moving the analytical lens inside households, it clarifies how assortative mating interacts with persistent gendered wage gaps to shape inequality in Indonesia.

The remainder of the dissertation is structured as follows. Section 2 situates the study within the broader literature on assortative mating, inequality, and intra-household resource distribution, and provides historical and institutional background on educational expansion, labour-market asymmetries, and family norms in Indonesia. Section 3 details the data and methodology with a focus on counterfactual simulations. Section 4 presents the results and robustness checks. Section 5 interprets the findings in light of debates on gender, social mobility, and inequality and discusses limitations. Finally, the dissertation will conclude in Section 6.

2. Literature review

2.1 Theoretical Foundations of Assortative Mating and Its Relationship with Inequality

The economic analysis of marriage markets originates with Becker's (1973) seminal work, which identifies two processes driving partner selection: competition and matching. Competition emerges when individuals prefer partners with greater resources, while matching reflects preferences for similar cultural traits and values (Kalmijn 1998). In Becker's framework, a household seeking to maximise its productivity will engage in positive assortative mating when traits are complements, as is often the case for education, intelligence, or family background. Education occupies a central role in this model, both as a signal of skills and as one of the strongest predictors of lifetime earnings. By extension, sorting on education can reinforce economic advantages across generations, contributing to higher between-household inequality when individuals with similar (and often high) earnings potential marry each other (Becker 1974; Blossfeld and Timm 2003).

Building on these theoretical foundations, a large body of empirical literature has examined how educational assortative mating contributes to inequality. Economic research consistently shows that educational assortative mating contributes significantly to household income inequality across contexts. For instance, Greenwood and colleagues (2014) demonstrate that if couples in the U.S. in 2005 had been matched randomly by education rather than assortatively, the Gini coefficient would have fallen from 0.43 to 0.34. At the same time, research across various advanced economies, including Europe and the U.S., finds that while educational sorting accounts for a meaningful share of cross-sectional household income inequality, changes in assortative mating over time have had minimal impact on trends in inequality. This is largely due to offsetting patterns: falling sorting among the highly educated is nearly offset by rising sorting among the least educated, which is a trend that risks entrenching socioeconomic disadvantage among those with the lowest educational attainment (Greenwood et al. 2015; Eika et al. 2019).

Evidence on the effect of educational assortative mating on household inequality from developing countries largely aligns with patterns in developed countries. Research in Latin America and Sub-Saharan Africa also indicates that sorting accounts for a significant proportion of inequality while failing to explain changes over time (Torche 2010; Pesando 2021). Emerging economies are particularly informative because they usually represent contexts with fast-changing marriage practices and gendered labour-market inequalities. Boertien et al. (2019) find that the inequality effects of educational homogamy are systematically larger in countries with low female labour force participation, showing how the consequences of assortative mating can be shaped by broader institutional and cultural constraints. This makes emerging economies a crucial testing ground for theories of assortative mating and inequality.

Assortative mating, however, is not unidimensional in its distributional consequences: a theoretical insight is that there is an inherent trade-off between inequality between households and inequality within households (Jasso 2018; Lersch and Schunck 2023). Pairing between individuals with similar socioeconomic backgrounds tends to reduce economic disparities

within households while widening those between households. The opposite holds when mating spans social boundaries: for instance, marriages between highly educated and less-educated individuals may narrow income gaps across households but increase imbalances in resources within the couple. The within-household aspect is relevant because it may especially disadvantage women through reduced bargaining power and lower well-being (Bennett 2013). This highlights that normative evaluations of assortative mating cannot be based solely on its implications for between-household distributions; they must also account for its role in shaping intra-household dynamics and gendered economic outcomes.

2.2 Educational Assortative Mating and Within-Household Inequality

Within-household inequality arises when partners in the same household have systematically unequal access to income or assets. This is shown to be associated with the well-being, bargaining power, and autonomy of individuals independently from their absolute level of resources (Jenkins 1994; Robeyns 2003; Cools and Kotsadam 2017). While most of the literature on educational assortative mating focuses on its implications for between-household income disparities, the same sorting patterns can also shape the distribution of resources within households. This intra-household dimension has received comparatively less attention in the literature, but it is indispensable for understanding how marriage markets interact with gender inequality.

The practice of assessing resources at the household level relies on the assumption of complete resource pooling, but this premise becomes problematic when resource access is unequal (Himmelweit et al. 2013). Bennett (2013) draws on evidence from across sub-Saharan Africa, Asia, and Latin America and shows that disparities in earned income shares, asset ownership, and structural factors such as labour market opportunities and social norms systematically weaken women's position in the household.

Positive assortative mating can, in theory, narrow within-household disparities by pairing partners with similar socioeconomic profiles. Yet this equalising effect is limited when the gender-specific distributions of resources diverge, as is often the case (Kalmijn 1998; Lersch and Schunck 2023). In this context, even strict homogamy will leave gaps intact, highlighting the importance of considering who matches with whom while taking into account the structure of gendered earnings.

Educational hypogamy (marriages in which women have higher educational attainment than their husbands) has thus emerged as a key empirical phenomenon that departs from strict homogamy. Esteve et al. (2016) document the rise of hypogamy across a range of societies, from Sweden to Indonesia, reflecting the reversal of historical gender gaps in education. Studies find mixed evidence on whether this improves women's economic position. Evidence from the U.S. and European countries shows that hypogamous unions are more likely to be female-breadwinner households (Schwartz and Han 2014; Esteve et al. 2016; Klesment and Van Bavel 2017), and women's higher income and education have been linked to greater bargaining power and better child outcomes (Duflo 2012). At the same time, other analyses

suggest this pattern does not necessarily challenge traditional male economic dominance in practice. Qian (2017) finds that, in the U.S., women who marry "down" educationally often compensate by choosing partners with higher incomes. In addition, Chudnovskaya and Kashyap (2020) show that highly educated Swedish women in hypogamous matches tend to have lower earnings than their homogamous counterparts, hinting at negative selection into these unions and possible constraints in the marriage market.

2.3 The Indonesian Case: Education, Marriage, and Inequality

Indonesia provides a critical case for examining these dynamics because it combines the rapid educational expansion alongside entrenched gender inequality and the persistence of traditional marriage norms. This intersection of structural transformation and cultural continuity makes it an especially interesting setting for studying assortative mating and intra-household dynamics.

Cultural and ethnic institutions still influence matching patterns. Ethnic endogamy remains prevalent despite rising interethnic marriages in urban areas, especially in contexts where shared language, religion, or kinship structures reinforce cultural affinity (Utomo and McDonald 2016; Utomo 2021). An analysis of the 2010 Census covering over 47 million married couples reveals that approximately 90% of Indonesian couples practice ethnic endogamy, marrying within their ethnic category (Utomo and McDonald 2016). Traditional adat (customary law) systems continue to influence partner selection, net of educational attainment and socio-economic development (Buttenheim and Nobles 2009). Ethnic-based practices like matrilocality and patrilocality are also shown to be highly correlated to marital outcomes (Bargain et al. 2020). Furthermore, Ashraf et al. 2020 show that in ethnic groups practising bride price, higher education among women increases the price received at marriage, which creates incentives for women and their families to invest in female education as a means of improving marriage prospects. Nevertheless, educational assortative mating patterns do not differ significantly between bride price and non-bride price communities (Ashraf et al. 2020). This suggests that cultural institutions can profoundly influence marriage-related economic dynamics, but their direct effect on educational sorting patterns may be weaker than anticipated.

Since the 1970s, the INPRES school construction programme dramatically expanded access to education, with lasting gains in schooling and labour-market returns (Duflo 2001). Increased education and broader demographic shifts, including urbanisation and later and less universal marriage, have reshaped union formation norms and decreased age gaps between spouses, although changes have been highly uneven and patterns are stratified by socioeconomic status, ethnicity, and religion (Utomo 2014; Jones 2017). Using matched husband-wife data from Indonesian National Socioeconomic Surveys (SUSENAS) spanning three decades, Utomo (2014) reports that both age and education gaps in couples have narrowed over time. Specifically, the average age gap between husbands and wives declined from around 6.4 years in 1982 to 4.7 years by 2010.

Despite achieving gender parity in educational enrolment across all levels, Indonesia maintains one of the lowest female labour force participation rates in East Asia, at just around 51% (Afkar et al. 2020; Cameron 2023). This figure has remained remarkably stagnant over two decades of economic growth since the 1990s. Part of the explanation is that many Indonesian women exit the labour market after marriage and childbearing and return only as small-scale entrepreneurs or self-employed workers with lower earnings potential (Cameron et al. 2023). This is compounded by an unadjusted gender wage gap of 34% in the formal sector, with only one-fourth of the total gap explained by observable characteristics such as education, experience, industry of employment, working hours, and geographical factors. The rest of the gap can thus be interpreted as discrimination against women in the labour market (Cameron and Contreras Suarez 2017). This structural disconnect between education and earnings makes Indonesia a revealing setting to assess whether assortative mating equalises or exacerbates inequalities within households.

Patterns of assortative mating in Indonesia confirm that education is central to partner selection and functions as a proxy for earning potential and social status. Using Indonesian Family Life Survey (IFLS) data, Kujundzic (2025) finds substantial positive assortative mating across all educational levels. This finding is consistent with earlier census-based studies revealing that homogamy remained the dominant form of pairing during the 2000s, especially among the most educated (Utomo 2014; Samudra and Wisana 2015). However, Indonesian trends of educational matching over time present interesting nuances. Like in other Asian countries, educational homogamy has decreased by 14 percentage points between 1993 and 2014 (Smits and Park 2009; Kujundzic 2025). This decline is consistent with the openness hypothesis, which states that development leads to lower educational homogamy over time due to decreased influence of traditional marriage norms and increased contacts between individuals from different backgrounds (Smits et al. 1998; Blossfeld 2009). However, this aggregate shift masks divergent trends across the education spectrum: matching among the least educated increased, while homogamy among the highly educated fell sharply (Smits and Park 2009; Kujundzic 2025). Also the composition of unequal matches has shifted dramatically: female hypergamy (women marrying up educationally) declined from 39% in 1982 to 27% by 2010, while female hypogamy (women marrying down) increased from 10% to 22% over the same period (Utomo 2014). This bifurcation suggests changing constraints and preferences within the marriage market, although the underlying mechanisms (including shifting cultural norms, frictions in the marriage market, or anticipated patterns of intra-household resource allocation) remain insufficiently examined in the Indonesian literature.

2.4 The present study

This dissertation makes several contributions to the literature on assortative mating and inequality. First, it extends Kujundzic's (2025) analysis of educational assortative mating and between-household income inequality to the within-household level. Following the counterfactual analysis approach of Lersch and Schunck (2023), I examine how different partner-matching regimes can shape the distribution of income between spouses, and if these patterns differ across women's educational attainment. This is to my knowledge the first study

to examine the relationship between educational assortative mating and within-household income inequality in Indonesia. Second, the study extends the methodological approach of counterfactual matching simulations to a new setting. By comparing observed unions with alternative scenarios (random allocation, homogamy, and hypogamy), the analysis explores the extent to which different matching regimes are associated with changes in women's income shares, spousal earnings gaps, and total household income. Note that this approach isolates associations by holding the marginal distributions of men's and women's education constant. Because the analysis is based on a single cross-sectional wave of data, it cannot examine the contribution of assortative mating to historical trends in inequality, nor can it establish causal effects. Third, the dissertation explicitly incorporates heterogeneity across women's educational attainment. This focus makes it possible to assess whether assortative mating's relationship with inequality varies at the extremes and whether it yields different trade-offs across the distribution of women's education. Finally, the Indonesian case contributes to a broader comparative literature on developing and middle-income countries. Indonesia's unique combination of rapid educational expansion, cultural diversity, and persistent gender wage gaps provides a revealing context for examining how marriage market sorting intersects with gendered economic inequality.

3. Data and Methodology

3.1 Data and Sample Restrictions

This study uses the fifth wave of the Indonesian Family Life Survey (IFLS), conducted from October 2014 through August 2015. The IFLS spans across 13 provinces and is nationally representative of roughly 83 per cent of the Indonesian population due to the country's geographical extension. Its design deliberately captures the country's cultural and socioeconomic diversity (Strauss and Witoelar 2021). The IFLS documents marriage histories, which allows the study to focus exclusively on couples in their first marriage, thus mitigating any biases linked to remarriage or marital dissolution. The unit of analysis is the household, defined as a monogamous married couple cohabiting at the time of the interview. Families comprising multiple married couples, single-parent families, or those with incomplete data regarding spouses' age, education, or income are omitted (Kujundzic 2025).

The analytical sample is restricted to individuals aged 28 to 38. This age bracket ensures focus on relatively recent unions (Utomo 2021), while excluding younger cohorts whose income is still characterised by early career volatility (Chudnovskaya and Kashyap 2020). At the same time, it captures a stage when returns to education are more fully realised, female employment reaches around 63 per cent, and household income is still preceding the high-income years of the forties (Table A.1). Individuals in this age group also belong to birth cohorts directly exposed to Indonesia's major educational reforms, including the Inpres Primary School Programme (1974–1984) and the extension of compulsory schooling to six years from 1984, making educational matching particularly relevant for them. In robustness tests of the counterfactual analysis, I condition the spousal age gap at 5 years over the wife's age, reflecting prevailing norms in the Indonesian marriage market (Utomo 2014). After applying all

restrictions, the final analytical sample consists of 2,425 couples. Findings are not meant to be generalised to the whole married population in Indonesia.

Given Indonesia's relatively low female labour force participation, I also undertake a separate analysis of dual-earner households (1,496 couples) to ensure that results are not solely driven by non-participation and to explore whether the relationship between assortative mating and within-household inequality differs when both partners work.

3.2 Measurement

Income is measured as annual individual labour income, defined to include both wage earnings and business profits. This choice captures spouses' economic contributions separately, rather than conflating them into household income, which is essential for analysing intra-household inequality. Extreme incomes were screened using a Median Absolute Deviation (MAD) rule (median ±20×MAD) to remove clear miscoding. In a second step, I winsorised individual labour incomes at the 1st and 99th percentiles to limit the influence of outliers on within-household inequality measures. This adjustment affected 83 female observations and 77 male observations.

Educational attainment is grouped into five categories: less than primary, primary, junior secondary, senior secondary, and higher education. This approach is consistent with Indonesia's schooling system. On this basis, three types of educational pairing are distinguished: homogamy, where partners share the same level of education; hypergamy, where the husband is more educated; and hypogamy, where the wife is more educated.

Within-couple inequality is measured using two indicators following Lersch and Schunck (2023): the income gap (wife's minus husband's income) and the wife's income share in total family labour income. In addition, total family labour income, defined as the sum of the spouses' labour earnings, is examined to assess whether equalisation within households is achieved at the cost of foregone earnings or whether it complements household income maximisation. I examine these outcomes across women's education levels. For my second part of the analysis, I also rank households by women's and men's labour income and calculate the mean values of these indicators at selected points of the distribution (P10, P20, P50, P75, P90).

The outcomes of interest are three within-household socioeconomic indicators: the absolute income gap between spouses, the wife's share of family labour income, and total household labour income. To capture heterogeneity in how assortative mating matters, I decompose results across women's education. This stratification is motivated both by previous research (Samudra and Wisana 2015; Kujundzic 2025) and by my own descriptive replication reported in Section 4 (Table 2), both of which show that educational assortative mating differs across the educational ladder and is particularly strong at the top and bottom.

3.3 Measuring Assortative Mating

Following Kujundzic (2025)'s methodology, the degree of educational assortative mating in my sample is assessed using contingency tables, which provide a structured way to summarise the distribution of couples across combinations of husbands' and wives' educational levels. Each cell of an $I \times J$ table records the relative frequency of households where the husband has education level $i \in \{1, \dots, I\}$ and the wife has level $j \in \{1, \dots, J\}$. The row and column totals reflect the marginal distributions of male and female education, respectively, and the table as a whole sums to unity, representing the full set of observed couples.

To capture the intensity of sorting, I compute the interest factor (also known as the likelihood ratio). This statistic compares the observed probability of a given household type to the probability expected under random matching, i.e. assuming independence between male and female education:

$$I_{ij} = \frac{f_{t_{ij}}}{f_{t_{i+}} f_{t_{+j}}}$$

where $f_{t_{ij}}$ is the share of couples with education profile (i, j), and $f_{t_{i+}}$ and $f_{t_{+j}}$ denote the marginal shares of men and women in those categories. Values greater than one on the main diagonal $(i = j)$ indicate that homogamy is more common than would occur by chance.

An overall measure of educational assortative mating is then obtained as a weighted average of the diagonal I_{ij} values, with weights given by the marginal distribution of women's education (though alternative weighting choices, such as men's distribution or a convex combination, would yield analogous results, see Kujundzic, 2025).

3.4 Counterfactual analysis

The empirical strategy builds on recent simulation-based approaches to the study of assortative mating and within-household inequality (see, for example, Chudnovskaya and Kashyap 2020; Lersch and Schunck 2023). The core idea is to compare the observed distribution of within-household income outcomes to counterfactual distributions generated by reshuffling partners under different matching rules. In each case, the marginal distributions of women's and men's characteristics are held constant while the way in which they are combined into couples is altered through random permutations without replacement. This mirrors restrictions in the partner market (each individual can form at most one union in a given scenario) and ensures that all scenarios are directly comparable to the empirical data (only the sorting mechanism is changed, not the overall composition of the population).

Three counterfactual scenarios serve as informative benchmarks. First, in the pure random matching scenario, women are paired with men entirely at random. This represents the absence of any assortative mating and therefore provides a baseline against which the strength of the observed sorting can be compared. Second, partners are randomly matched within each education category, thereby simulating a world of perfect educational homogamy. As a robustness check, I replicate these two scenarios conditioning on age and ethnicity. In the

conditional scenarios, partners are drawn randomly within ethnic groups and within plausible age gaps (men up to five years older than women). This conditioning reflects the prevailing norms on ethnic endogamy in Indonesia and realistic age differences at marriage (Utomo 2014; Utomo and McDonald 2016). Finally, I design an extreme hypogamy counterfactual, inspired by the "reverse-rank" boundary case in Lersch and Schunck (2023). Here, women are systematically paired with less educated men, proceeding down the education ladder until matches are exhausted (e.g. tertiary-educated women matched to the lowest available men, then one level higher if necessary). Age windows are enforced to mirror realistic marriage markets and avoid confounding from implausible age gaps, with men restricted to be at most five years older than their partner. This scenario does not occur empirically but provides a maximum-contrast case to highlight the implications of female educational hypogamy. Each counterfactual scenario is simulated 100 times, and results are averaged across replications.

Table 1. Descriptive Statistics of Couples (Age 28–38), IFLS 2014

	Women (All couples) Mean	Men (All couples) Mean	Women (Dual earners) Mean	Men (Dual earners) Mean
Age	31.8	34.0	31.9	34.1
Less than primary (%)	6.8	8.2	6.6	8.4
Primary (%)	19.0	22.1	17.2	21.3
Junior Secondary (%)	22.2	19.6	20.7	18.6
Senior Secondary (%)	32.5	34.9	29.9	33.5
Higher Education (%)	19.5	15.3	25.7	18.3
Working (%)	62	99	100	100
Annual labour income (mln IDR)	7.8 (14.6)	25.3 (30.0)	12.4 (16.8)	25.2 (28.7)
Wife's income share	0.21 (0.28)	—	0.31 (0.28)	—
Household size	4.17	4.17	4.13	4.13
Children	1.35	1.35	1.33	1.33
N	2,425	2,425	1,496	1,496

Notes: Data from IFLS 2014. Figures are means with standard deviations in parentheses, except for education and employment, which are percentages. Annual labour income in million Indonesian Rupiah (IDR). Sample restricted to couples aged 28–38. Dual earners defined as couples where both spouses are employed.

3.5 Descriptive statistics

Table 1 reports summary statistics for couples aged 28–38 observed in IFLS 2014. Means and percentages are reported separately for women and men, distinguishing between the full sample of couples and the subset of dual-earner couples. The dual-earner restriction is analytically important as it allows me to compare observed outcomes with counterfactual allocations in settings where women are not out of the labour force. The average age in the sample is 31.8 for women and 34.0 for men, with little difference between all couples and dual earners. Educational attainment is broadly balanced across genders, though women are somewhat more likely than men to hold higher education. Labour force participation follows the expected pattern: almost all men are employed, while 62% of women in the full sample report current employment. Employment among women rises to 100% by design in the dual-earner sample.

Earnings are strongly gendered. Women's mean annual labour income is 7.8 million IDR in the full sample and 12.4 million IDR for dual earners, compared to around 25.3 million IDR for men. This results in an average wife's income share of only 21% across all couples, rising to 31% among dual earners. Household size and fertility patterns are comparable across samples, with households averaging about 4.2 members and 1.3 children. The analytical sample comprises 2,037 endogamous couples, which is relevant for my counterfactual analysis conditioning on ethnicity and confirms endogamy is highly prevalent in Indonesia. Overall, these descriptive statistics highlight both the marked gender gap in income and the strong variation in female labour force participation across couples. This motivates the distinction between the whole sample and dual earners that I carry out in the main analysis.

4. Results

4.1 Observed and counterfactual patterns of educational assortative mating

Table 2 reports the contingency table of educational pairings, expressed as interest factors (how often a given combination of wife's and husband's education occurs relative to random matching). The diagonal entries are consistently greater than one, indicating that couples with the same education level occur more frequently than expected by chance. This tendency is particularly pronounced at the bottom and top of the education distribution, where homogamy is strongest, while cross-educational pairings are generally underrepresented. These patterns mirror those reported in earlier studies of the Indonesian marriage market (Utomo 2014; Samudra and Wisana 2015; Kujundzic 2025).

While the contingency table provides a detailed view of specific educational pairings, the broader distribution of homogamy, hypergamy, and hypogamy offers a more intuitive summary to make a direct comparison with counterfactual matching scenarios (Table 3). In 2014, nearly half of all couples in the age-restricted sample (48.6%) were educationally homogamous, while 21.7% were hypergamous and 29.7% were hypogamous. Under pure random matching, homogamy would fall to 24.1%, with a higher prevalence of hypergamous and hypogamous unions (35.3% and 40.6% respectively). The large gap between the observed

homogamy rate and the random baseline further suggests a strong tendency toward educationally similar partnerships in Indonesia. The equal-level educational matching scenarios yield, by construction, 100% homogamy. In a similar way, the reverse-level counterfactual yields 100% hypogamy. To assess whether other forms of partner similarity could account for the high observed rate of homogamy, I re-estimated the random-matching counterfactual conditioning on spousal age gap and ethnicity. The predicted share of homogamy is 24.9%, very close to the pure random baseline. This indicates that age proximity and ethnic endogamy alone are not sufficient to explain the high level of educational homogamy in Indonesia.

Table 2. Contingency Table of Educational Assortative Mating in age-restricted sample (N = 2,425, age 28–38), IFLS 2014

Husband's education level	Wife's Education				
	LP	P	JS	SS	HED
LP	5.18	2.03	0.88	0.29	0.12
P	1.75	2.19	1.31	0.48	0.15
JS	0.59	1.22	1.61	0.98	0.25
SS	0.32	0.35	0.86	1.60	0.96
HED	0.09	0.04	0.16	0.70	3.68

Note: Data from IFLS 2014. LP = less than primary; P = primary; JS = junior secondary; SS = senior secondary; HED = higher education. Values are interest factors (likelihood ratios). Each cell shows how often a given combination of wife's and husband's education occurs compared to what one would expect if couples were formed randomly. Values greater than 1 indicate that a pairing is more common than random chance would suggest, while values below 1 indicate that it is less common. High values on the diagonal (where husband and wife have the same education) indicate stronger educational homogamy.

The contingency table and the aggregate shares establish that assortative mating in Indonesia is both statistically strong and substantively meaningful. In the next step, I examine what these sorting patterns imply for within-household inequality under observed and counterfactual scenarios.

Table 3. Observed and counterfactual distributions of educational matching types in Indonesia

Scenario	Homogamy b/[95% CI]	Hypergamy b/[95% CI]	Hypogamy b/[95% CI]
Observed (2014)	0.486 [0.466, 0.505]	0.217 [0.200, 0.234]	0.297 [0.279, 0.316]
Pure Random	0.241 [0.226, 0.256]	0.353 [0.341, 0.362]	0.406 [0.393, 0.418]
Conditional Random	0.249 [0.233, 0.264]	0.351 [0.339, 0.368]	0.400 [0.387, 0.413]
Homogamy	1.000	0.000	0.000
Conditional homogamy	1.000	0.000	0.000
Hypogamy	0.000	0.000	1.000

Note: Data from IFLS 2014. Confidence intervals (CI) based on bootstrapping (1000 replications). CI are omitted for scenarios that are deterministic by construction (perfect homogamy and hypogamy).

4.2 Observed and Counterfactual Patterns of Within-Household Income Inequality by Educational Attainment

I now turn to my main research question and investigate how within-household inequalities and income vary under different matching scenarios. Results are shown by women's education for the observed distribution and for three counterfactual allocations: purely random matching, matching on equal education level (perfect homogamy), and an extreme hypogamy regime (Figure 1). A comprehensive table with estimates and bootstrapped confidence intervals for all scenarios in reported in the appendix (Table A1).

Across the observed distribution, women earn less than men at all education levels, with the deficit averaging -9.02 million IDR for the least educated women and -24.65 million IDR for tertiary graduates. At the same time, women's share of household labour income increases with education, from just 16.5% among the least educated to 31.1% among the most educated. This dual pattern is consistent with the idea that higher education increases women's labour force participation and earning capacity, while observed matching patterns pair highly educated women with men who, on average, earn substantially more than they do. A similar tendency has been documented for Sweden by Chudnovskaya and Kashyap (2020). As expected, family income levels rise sharply with education, especially for tertiary women (around 61 million IDR compared to 33 million IDR for women with senior secondary school attainment). The results for the least educated align with Kujundzic's (2025) hypothesis of educational matching segregation, in which both partners earn relatively little. The patterns are similar for dual earners, but with relatively lower income gaps and higher women's shares.

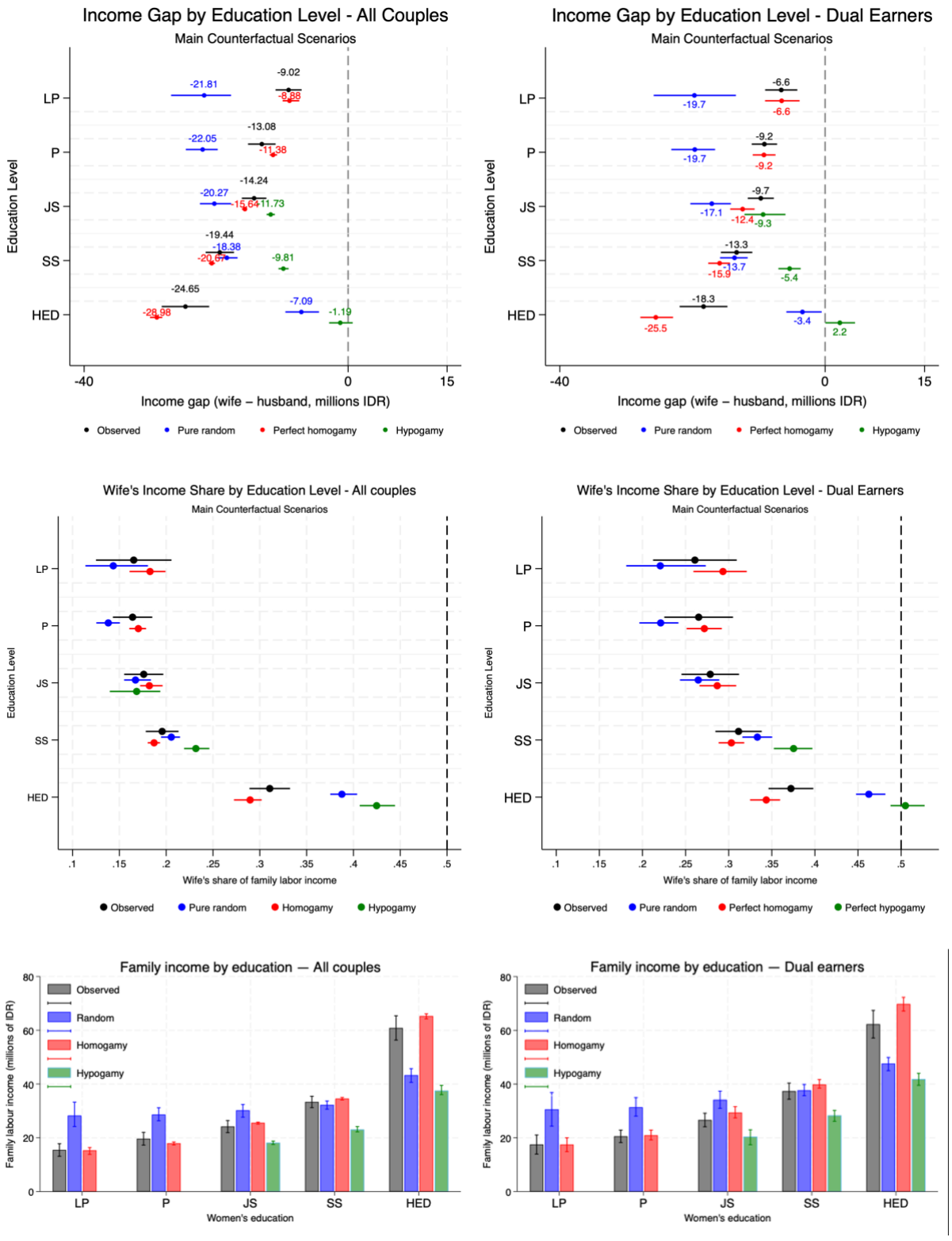

Figure 1. Absolute and relative within-household gender gap in income and total household income across women's educational attainment levels. *Note:* Data from IFLS 2014. Lines indicate 95% bootstrapped confidence intervals (100 replications). The term 'homogamy' (or 'perfect homogamy') refers to the counterfactual scenario of matching on equal education levels. The term 'hypogamy' (or 'perfect hypogamy') refers to the extreme counterfactual with reverse-level matching.

The random matching scenario shows that assortative mating matters most among tertiary educated women. For all couples, random matching would reduce the income gap for highly educated women from an observed -24.65 million IDR to -7.09 million IDR, a reduction of 17.56 million IDR, with non-overlapping confidence intervals suggesting a statistically meaningful difference. Concurrently, their income share would increase from 31.1% to 38.8%, representing a significant 7.7 percentage point improvement. Yet this improvement in relative position comes at the cost of household resources, which fall by almost a third compared with the observed outcome. This illustrates that reducing within-household inequality through random matching diminishes overall household income, suggesting that income maximisation in unions is associated with greater gender gaps. The share gain is larger for dual earners (+9.1 pp compared to +7.7 pp), while the gap reduction and family income drop is smaller, as expected given higher baseline earnings for women. Conversely, women with less than primary or only primary education would face even larger income gaps (around –22 million IDR compared with -9 to -13 million IDR observed). Differences in women's income shares are not statistically significant in this group, as confidence intervals overlap, reflecting the very low baseline of women's earnings. Interpreted together, these patterns suggest sorting operates differently across education levels: higher-educated women are observed to partner with men who earn more than would be expected under random allocation, while for the least educated the opposite is true.

Random matching conditional on education, which enforces homogamy matching randomly on other characteristics, shifts the results of random allocation in the opposite direction. Whereas unrestricted random matching tends to equalise outcomes within highly educated couples by pairing women with lower-earning men, homogamy pairs them back with equally educated men who typically outearn them. This widens the gap to -29 million IDR, even more than under observed matching, and lowers shares below 30%. This pattern is due to high levels of structural gender inequality at higher education levels. Compared with equal-level homogamy, observed tertiary women appear to be matched with men who, on average, earn somewhat less than equally educated men. For women across the first three levels of education, equal-level matching reduces within-household inequality compared to pure random matching, while it produces estimates that are not statistically different to the observed ones, for both absolute and relative measures. Thus, observed outcomes already parallel the ones estimated under equal-level sorting patterns.

The reverse-level scenario producing extreme hypogamy for top-educated women is the only regime that nearly erases the income gap and lifts women's shares above 40% (and over 50% among dual earners). For dual earners, it would even reverse the gender gap, as tertiary women would earn 2.2 million IDR more than their husbands, but with a steep reduction in household income. Similarly but more evidently than under random matching, hypogamy has the potential to empower women within the household in terms of absolute and relative inequality between partners, but only at the expense of overall household income maximisation. Conversely, mid-educated women face a double penalty under hypogamy: weaker household resources and only small gains in relative position (just for the all-couples sample). Unlike tertiary and secondary

educated women, they cannot translate hypogamous matches into significant empowerment because their own earnings potential is too low.

Interestingly, estimates for women with secondary education barely change under any scenario relative to observed, apart from under the reverse-level scenario. This suggests that for middle levels of education, assortative mating does not significantly alter within-household inequality or household resources, which points to a relative neutrality of marital sorting in this segment.

When comparing observed and counterfactual outcomes the direction of effects and the levels at which differences reach statistical significance coincide. The main distinction lies in magnitude. Among dual earners observed gaps are smaller and women's shares higher to begin with, so counterfactual reallocations yield comparatively larger relative gains (or losses) and smaller reductions (or increases) in gaps. Overall, the results are robust to including or excluding women that do not work.

4.3 Robustness checks

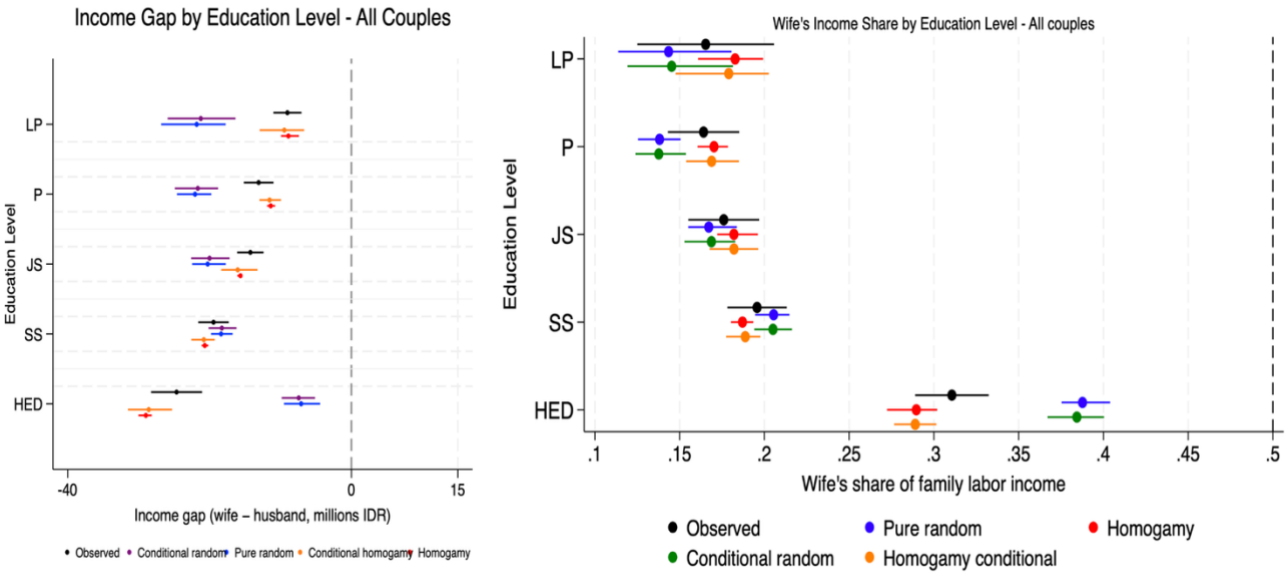

Figure 2. Absolute and relative within-household gender gap in income across women's educational attainment levels with conditional and unconditional matching simulated distributions. *Notes*: Data from IFLS 2014. Lines indicate 95% bootstrapped confidence intervals (100 replications).

For robustness, I re-estimated the random and equal-level counterfactual scenarios by introducing additional constraints on the partner market. Specifically, I conditioned matches to occur within ethnic groups and restricted men to be at most five years older than their wives, reflecting the average age gap in Indonesia (Utomo 2014). This avoids implausible pairings (e.g., 38-year-old women matched with 28-year-old men) that would otherwise inflate counterfactual variance. Results under these constraints are reported in Figure 2 and are very similar to the unconstrained simulations, which indicates that neither inter-ethnic unions nor

large age gaps are driving the findings; rather, the main patterns persist once counterfactuals are limited to realistic matches. Confidence intervals in the equal-education counterfactual are relatively narrow because the simulation matches partners within education cells. When additional restrictions (e.g. age ≤ 5 years, same ethnicity) are imposed, the set of admissible pairings shrinks further, reducing the scope for reshuffling. As a result the confidence intervals become even tighter, which reflects the increasingly deterministic nature of the counterfactual matching; estimates remain comparable but should be interpreted with caution.

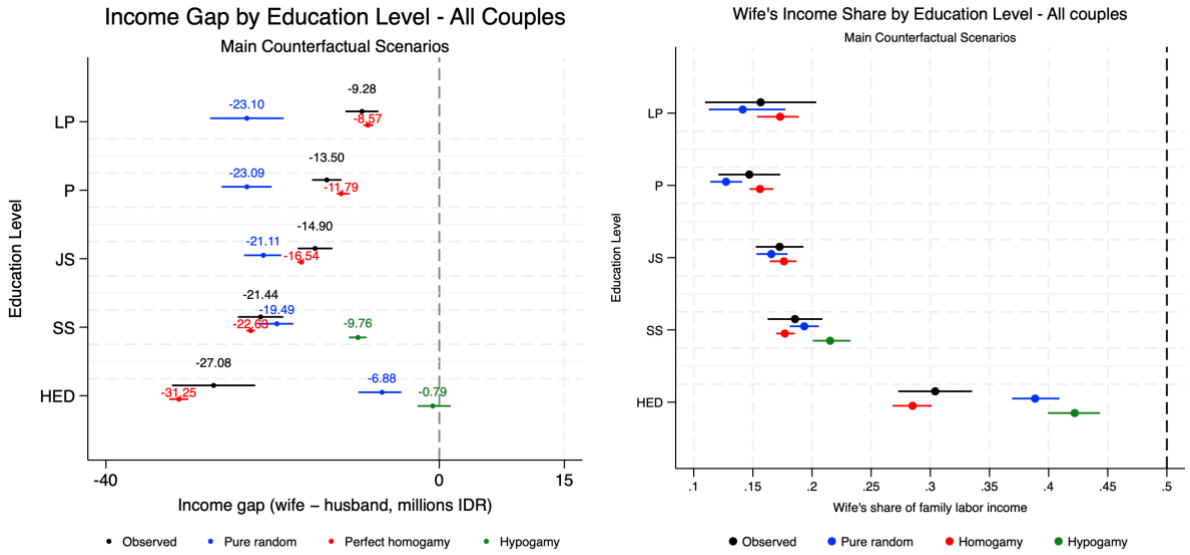

Figure 3. Absolute and relative within-household gender gap in income across women's educational attainment levels for childbearing couples. *Notes*: Data from IFLS 2014. Lines indicate 95% bootstrapped confidence intervals (100 replications).

Since women's earnings and labour force participation decrease after the birth of the first child (Cameron et al. 2023), I restrict the sample to couples with children to check how this affects the results. The childbearing sample comprises 1,910 couples and yields results that closely mirror the main findings (Figure 3). The direction of effects across counterfactual scenarios is unchanged, and significance levels align with those in the full sample. However, magnitudes differ in ways consistent with a motherhood penalty: observed income gaps are somewhat larger and women's income shares lower, especially at higher education levels. As a consequence, the penalty of homogamy is amplified when comparing equal-level and random matching simulations. Thus, the presence of children accentuates women's disadvantage within couples, but does not alter the substantive conclusions about how assortative mating shapes inequality.

As a validity check for the age restriction of my sample to individuals aged 28-38, I replicate the descriptive indicators of educational assortative mating reported in Kujundzic (2025), who uses an IFLS sample of 8,442 married couples with individuals aged 15–55. The same U-shaped pattern of strong homogamy at the lowest and highest education levels emerges in my restricted sample (Table 2). Moreover, following her exact methodology, I find Gini

coefficients for between-household income inequality of 0.531 observed versus 0.505 under random matching in my sample, which closely mirror her estimates of 0.558 and 0.534, respectively. These similarities suggest that limiting the analysis to couples aged 28-38 reduces absolute inequality levels slightly due to the absence of early-career volatility and late-career high earners, but leaves the overall structure of educational sorting unchanged.

As an additional exploratory analysis, I repeated the simulations stratifying by income quintiles rather than education. In this approach, women's and men's pre-match income percentiles are fixed, and outcomes are then evaluated by percentile groups under observed and counterfactual matching. These results, reported in the Appendix, generally show weaker and less systematic effects across most of the distribution. However, they do reveal significant effects at the very top percentiles, where educational assortative mating amplifies household income concentration. This reinforces the interpretation that educational assortative mating's consequences in Indonesia are most visible when decomposed by education levels, but that income-based sorting may play an additional role at the upper tail of the distribution.

5. Discussion

Educational assortative mating has been increasingly studied as a driver of inequality between households, but its equally important role in generating inequalities within households has received less attention. By shifting the analytical focus inward, this study highlights how partner selection shapes not only the overall pooling of resources between spouses but also their relative standing inside the household. Situating itself in the literature on educational assortative mating in developing countries, this study focuses on the Indonesian case, which provides a particularly revealing context combining rapid educational expansion with persistent gender inequality in the labour market.

The results confirm that Indonesian women face substantial within-household inequality at all educational levels. In every observed and simulated scenario, men's earnings exceed women's by a large margin, and women's share of household income rarely exceeds one-third. The only scenario in which the gender gap is erased is under the extreme counterfactual of hypogamy at the top of the education distribution, where highly educated women are paired with men who have less than primary or primary schooling. Even then, women's shares of household labour income reach parity only in the dual-earner sample, and at the cost of household income falling by roughly one-third compared to observed outcomes. This hypothetical case functions as a benchmark to illustrate the structural depth of gender inequality in Indonesia: achieving parity within households under current labour-market conditions would require extreme and unrealistic departures from observed matching patterns.

The findings further show that outcomes at the highest and lowest levels of education are directly shaped by educational positive assortative mating at the extremes. At the bottom of the distribution, where homogamy dominates, observed unions produce smaller income gaps than random allocation but closely mirror the outcomes of equal-level random matching: within-household inequality looks limited, but this is only because both partners earn very little. At

the top, the pattern is reversed. Highly educated women are matched with men who earn substantially more than would be expected under random allocation, though somewhat less than under strict homogamy. This reflects the high education premium enjoyed by men in Indonesia, which means that even within unions of equally educated partners, men retain a substantial earnings advantage. As a result, observed sorting at higher education levels protects household resources but amplifies gender inequality within unions. This comparison between observed and counterfactual allocations shows that the distribution of homogamy, hypergamy, and hypogamy across the education ladder is one of the mechanisms that shapes whether women gain or lose in relative and absolute terms inside the household. It is noteworthy to mention that comparisons with counterfactual scenarios cannot establish causality because unobserved third factors may be related to both assortative mating and the outcomes of interest.

The study has the following three implications. First, in contexts with strong gender disparities at baseline, positive assortative mating entails a trade-off for highly educated couples, rather than complementarity, between household income maximisation and women's relative position within unions. At the top of the education distribution, educational homogamy maximises overall household income, as Becker (1973) would predict, while at the same time amplifying women's disadvantage. At the bottom, positive assortative mating reduces within-household inequality by pairing equally disadvantaged partners, but this comes at the expense of very low household resources. These findings parallel Lersch and Schunck's (2023) evidence from the U.S. that positive assortative mating can reduce within-household wealth inequality for disadvantaged groups but simultaneously entrench male advantage at the top.

Second, for women with intermediate levels of education, partner sorting appears less relevant for within-household inequality. Across observed and counterfactual scenarios, differences in both the income gap and women's share are small and generally not statistically significant. In contrast with the top and bottom of the distribution, assortative mating interacts less with gender disparities in shaping household outcomes for this group.

Third, these findings challenge the idea that assortative mating necessarily implies a trade-off between within- and between-household inequality, as hypothesised by Jasso (2018) and Lersch and Schunck (2023), revealing a bleaker picture for the Indonesian context. Where gender disparities are large at baseline, assortative mating does increase between-household inequality (as shown by Kujundzic 2025), but it has limited potential to reduce disparities within households. My results show that positive assortative mating does not meaningfully benefit women with low or intermediate education: at the bottom, it reinforces disadvantage by concentrating two low earners in the same household, and at the middle, women's earnings remain too low relative to men's for sorting to make a difference. At the top, assortative mating maximises total household resources but widens income gaps between partners, as men continue to outearn women despite similar educational attainment. Overall, educational assortative mating in Indonesia tends to reproduce existing inequalities: women at the bottom remain doubly disadvantaged, and women at the top remain behind their partners even when their own education is higher.

This study has several limitations that should be acknowledged. First, the age restriction (28-38) provides analytical advantages by focusing on stable unions and minimising career volatility, but it reduces the generalisability of findings to younger or older cohorts. It is possible that patterns of assortative mating and their implications for inequality differ outside this window. Second, the study measures intra-household inequality using the income gap and the wife's share of labour income at the time the survey took place. Data on income before the birth of the first child was not available; therefore, income inequality might be overestimated given the inclusion of couples with children, as women's earnings and labour force participation decrease after childbirth. Third, the simulation approach reshuffles partners while holding marginal distributions fixed, which isolates the effect of sorting but abstracts from dynamic processes such as joint labour supply decisions, fertility choices, or migration. Moreover, while the conditioning on ethnicity and age gaps improves realism, the counterfactuals still allow matches that may not fully reflect social norms or marriage market frictions in Indonesia. As such, counterfactuals and the extreme hypogamy scenario in particular are informative as boundary cases but do not correspond to empirically observed behaviour. Finally, the analysis is cross-sectional and limited to 2014. This choice ensures a consistent snapshot of unions in a period when returns to education are stabilised and household formation largely complete, but precludes assessing whether the effects of assortative mating have shifted over time. Integrating a temporal dimension, for instance by comparing different cohorts as Chudnovskaya and Kashyap (2020) do for Sweden, could reveal whether the gender gaps documented here are narrowing or persisting.

6. Conclusion

This study has examined how educational assortative mating in Indonesia relates to inequalities not only between households, as highlighted by earlier research, but also within them. By directing attention to intra-household dynamics, the analysis underscores how partner selection is linked to both the total income that couples can command and the relative position of men and women inside unions. The findings reveal that women's contribution to household income is higher for higher educational attainment, but men continue to dominate in absolute terms. As a result, the households that maximise total resources under positive assortative matching are also those in which gender gaps are widest. Results also complicate optimistic interpretations on the rise of educational hypogamy as part of the broader "gender revolution" (Goldscheider et al. 2015), suggesting that benefits in women's earnings shares achieved by marrying down in education are significantly dampened by lower overall household income.

Marital sorting is not an easily malleable policy lever, and its effects differ across the education distribution. Policies must therefore act a posteriori, addressing the inequalities that sorting produces rather than trying to alter sorting itself. Interventions need to go beyond promoting educational access or simply raising women's labour-force participation, since even among dual earners, substantial gender gaps remain. Without tackling the returns to women's education through wage equity, career re-entry support post-childbirth, and childcare provision, positive assortative mating on educational attainment will not translate into equal economic power within households. Finally, household-level transfers and subsidies designed

in ways that strengthen women's economic autonomy may have a more direct impact on intra-household inequality than measures that increase joint household resources.

For future research, there is scope to examine how assortative mating interacts with other dimensions of stratification, such as wealth, and whether these intersections exacerbate or mitigate gendered inequalities within households. Furthermore, an interesting open question is how intra-household inequality evolves over time and over the couple's life courses in light of changes in labour market attachment or fertility patterns. Future studies could show how labour force adjustments after partnership formation affect inequality outcomes (see, for example, Gonalons-Pons and Schwartz 2017). Intergenerational analyses could also explore how imbalances between parents shape child outcomes and the reproduction of inequality over time. The IFLS has a multigenerational design which makes it possible to jointly analyse parental and individual characteristics and whether inequalities in marriage markets are reproduced across generations.

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Appendix

Table A1. Absolute and relative within-household gender gap in income and total household income across women's educational attainment levels for all couples and dual earners. *Notes*: Data from IFLS 2014. Observed and counterfactual estimates with bootstrapped 95% confidence intervals in brackets.

BY EDUCATION — GAP (millions)

Level	Observed	Random	Homogamy (equal-level)	Conditional Random	Conditional Homogamy	Hypogamy
LP	-9.02 [-11.00, -7.05]	-21.81 [-26.82, -17.74]	-8.88 [-9.92, -7.41]	-21.23 [-25.91, -16.35]	-9.46 [-12.94, -6.66]	—
P	-13.08 [-15.17, -10.99]	-22.05 [-24.59, -19.76]	-11.38 [-11.88, -10.76]	-21.66 [-24.89, -18.79]	-11.54 [-12.97, -9.93]	—
JS	-14.24 [-16.11, -12.38]	-20.27 [-22.46, -17.72]	-15.64 [-16.09, -15.37]	-20.00 [-22.60, -17.18]	-16.03 [-18.36, -13.24]	-11.73 [-12.35, -11.10]
SS	-19.44 [-21.59, -17.29]	-18.38 [-19.79, -16.75]	-20.67 [-21.11, -20.18]	-18.27 [-20.14, -16.20]	-20.81 [-22.57, -19.27]	-9.81 [-10.55, -9.02]
HED	-24.65 [-28.25, -21.05]	-7.09 [-9.51, -4.41]	-28.98 [-30.02, -28.16]	-7.43 [-9.82, -5.13]	-28.58 [-31.51, -25.29]	-1.19 [-2.88, 0.70]

BY EDUCATION — SHARE (wife's share of family labor income)

Level	Observed	Random	Homogamy (equal-level)	Conditional Random	Conditional Homogamy	Hypogamy

LP	0.165 [0.125, 0.206]	0.143 [0.114, 0.181]	0.183 [0.161, 0.199]	0.145 [0.119, 0.181]	0.179 [0.148, 0.203]	—
P	0.164 [0.143, 0.185]	0.138 [0.125, 0.151]	0.170 [0.161, 0.179]	0.138 [0.124, 0.154]	0.169 [0.154, 0.185]	—
JS	0.176 [0.155, 0.197]	0.167 [0.155, 0.184]	0.182 [0.172, 0.196]	0.169 [0.153, 0.183]	0.182 [0.168, 0.196]	0.168 [0.140, 0.194]
SS	0.196 [0.178, 0.213]	0.205 [0.195, 0.215]	0.187 [0.180, 0.193]	0.205 [0.194, 0.216]	0.189 [0.177, 0.198]	0.232 [0.219, 0.246]
HED	0.311 [0.289, 0.332]	0.388 [0.375, 0.404]	0.290 [0.272, 0.302]	0.384 [0.367, 0.400]	0.289 [0.277, 0.302]	0.425 [0.407, 0.444]

BY EDUCATION — FAMILY INCOME (millions)

Level	Observed	Random	Homogamy (equal-level)	Conditional Random	Conditional Homogamy	Hypogamy
LP	15.48 [13.14, 17.82]	28.27 [24.20, 33.28]	15.34 [13.86, 16.38]	27.68 [22.79, 32.35]	15.91 [13.12, 19.39]	—
P	19.67 [17.30, 22.05]	28.64 [26.35, 31.19]	17.97 [17.36, 18.48]	28.25 [25.39, 31.49]	18.14 [16.53, 19.56]	—
JS	24.19 [21.95, 26.44]	30.22 [27.67, 32.40]	25.57 [25.12, 25.84]	29.95 [27.13, 32.55]	25.98 [23.19, 28.31]	18.16 [17.54, 18.79]

SS	33.35 [31.23, 35.46]	32.28 [30.66, 33.69]	34.58 [34.08, 35.02]	32.18 [30.11, 34.05]	34.71 [33.18, 36.47]	23.06 [22.23, 24.20]
HED	60.86 [56.34, 65.38]	43.30 [40.63, 45.72]	65.28 [64.24, 66.11]	43.72 [41.42, 46.11]	64.79 [61.50, 67.72]	37.55 [36.06, 39.52]

BY EDUCATION — GAP (millions) — DUAL EARNERS

Level	Observed	Random	Homogamy (equal-level)	Conditional Random	Conditional Homogamy	Hypogamy
LP	-6.62 [-9.04, -4.19]	-19.71 [-25.84, -13.45]	-6.56 [-9.06, -3.85]	-18.83 [-25.43, -13.05]	-7.30 [-12.63, -4.17]	—
P	-9.16 [-11.07, -7.24]	-19.65 [-23.19, -16.59]	-9.23 [-10.92, -7.48]	-19.20 [-23.02, -15.78]	-9.28 [-11.80, -7.02]	—
JS	-9.70 [-11.66, -7.74]	-17.09 [-20.32, -14.20]	-12.44 [-14.31, -10.63]	-16.62 [-20.70, -13.50]	-12.80 [-15.65, -9.74]	-9.35 [-12.17, -5.98]
SS	-13.35 [-15.71, -10.98]	-13.66 [-15.85, -11.68]	-15.91 [-17.62, -14.35]	-13.42 [-16.65, -10.55]	-15.95 [-18.25, -13.82]	-5.36 [-7.04, -3.69]
HED	-18.33 [-21.94, -14.73]	-3.42 [-5.84, -0.52]	-25.53 [-27.86, -22.93]	-3.86 [-6.44, -1.13]	-25.07 [-27.88, -20.73]	2.22 [0.04, 4.51]

BY EDUCATION — SHARE (wife's share) — DUAL EARNERS

Level	Observed	Random	Homogamy (equal-level)	Conditional Random	Conditional Homogamy	Hypogamy
LP	0.261 [0.212, 0.309]	0.221 [0.181, 0.273]	0.293 [0.259, 0.321]	0.225 [0.187, 0.267]	0.288 [0.244, 0.333]	—
P	0.265 [0.225, 0.305]	0.221 [0.196, 0.242]	0.272 [0.251, 0.292]	0.221 [0.196, 0.247]	0.270 [0.249, 0.296]	—
JS	0.279 [0.245, 0.312]	0.265 [0.244, 0.289]	0.287 [0.266, 0.309]	0.267 [0.243, 0.287]	0.288 [0.267, 0.310]	0.265 [0.215, 0.308]
SS	0.311 [0.285, 0.338]	0.333 [0.316, 0.350]	0.303 [0.288, 0.318]	0.332 [0.314, 0.355]	0.304 [0.287, 0.318]	0.375 [0.352, 0.397]
HED	0.372 [0.346, 0.398]	0.463 [0.448, 0.482]	0.344 [0.325, 0.360]	0.457 [0.437, 0.476]	0.343 [0.327, 0.359]	0.505 [0.488, 0.527]

BY EDUCATION — FAMILY INCOME (millions) — DUAL EARNERS

Level	Observed	Random	Homogamy (equal-level)	Conditional Random	Conditional Homogamy	Hypogamy
LP	17.51 [13.97, 21.05]	30.60 [24.35, 36.87]	17.46 [14.88, 19.99]	29.75 [24.04, 36.47]	18.20 [15.03, 23.61]	—
P	20.55 [18.25, 22.85]	31.35 [28.07, 34.95]	20.92 [19.24, 22.87]	30.87 [27.52, 34.77]	20.97 [18.77, 23.61]	—

JS	26.63 [24.12, 29.14]	34.14 [30.98, 37.36]	29.38 [27.42, 31.60]	33.63 [30.48, 37.85]	29.83 [26.88, 32.77]	20.44 [17.43, 22.99]
SS	37.36 [34.36, 40.36]	37.65 [35.66, 39.84]	39.86 [38.48, 41.66]	37.42 [34.50, 40.66]	39.94 [37.78, 42.28]	28.33 [26.15, 30.21]
HED	62.23 [57.11, 67.36]	47.60 [44.98, 49.90]	69.76 [67.14, 72.24]	47.99 [45.18, 50.59]	69.24 [64.87, 72.11]	41.85 [39.54, 43.98]

Table A2. Absolute and relative within-household gender income gap and total income across women's and men's income distributions for all couples and dual earners. Data from IFLS 2014.

W1. Family Income by Women's Percentile (All Couples)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	25.08	25.34 [21.70, 28.39]	23.41 [20.80, 27.02]	25.27 [22.26, 28.63]	23.54 [20.57, 28.47]	16.59 [13.25, 21.43]
P20	22.39	25.27 [21.88, 28.70]	23.11 [20.30, 27.07]	25.48 [22.51, 29.10]	24.25 [20.93, 27.99]	16.44 [12.82, 20.56]
P50	23.25	25.02 [21.19, 28.82]	23.13 [19.14, 26.89]	25.40 [21.19, 29.93]	23.26 [20.62, 27.59]	17.72 [13.78, 22.81]
P75	31.15	34.76 [30.41, 38.03]	37.10 [32.89, 40.00]	34.37 [31.59, 39.01]	38.83 [33.68, 43.58]	33.49 [29.21, 38.92]
P90	90.58	70.66 [67.11, 74.07]	78.03 [73.72, 82.32]	70.79 [67.32, 75.02]	81.11 [76.36, 86.57]	72.55 [68.77, 76.32]

Note: Million IDR; bootstrapped 95% CI in brackets.

W2. Gender Income Gap by Women's Percentile (All Couples)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	-25.08	-25.34 [-28.39, -21.70]	-23.41 [-27.02, -20.80]	-25.27 [-28.63, -22.26]	-23.54 [-28.47, -20.57]	-16.59 [-21.43, -13.25]

P20	-22.39	-25.27 [-28.70, -21.88]	-23.11 [-27.07, -20.30]	-25.48 [-29.10, -22.51]	-24.25 [-27.99, -20.93]	-16.44 [-20.56, -12.82]
P50	-23.24	-25.02 [-28.81, -21.18]	-23.13 [-26.89, -19.14]	-25.39 [-29.92, -21.19]	-23.26 [-27.58, -20.62]	-16.59 [-21.43, -12.93]
P75	-12.14	-15.74 [-19.01, -11.40]	-19.53 [-22.42, -15.32]	-15.36 [-20.00, -12.58]	-19.81 [-24.56, -14.66]	-1.99 [-7.10, 2.68]
P90	-0.24	19.68 [16.27, 23.23]	8.44 [4.15, 12.75]	19.55 [15.32, 23.02]	9.22 [3.77, 13.97]	35.01 [31.12, 39.59]

Note: Million IDR (+ = wife earns more); bootstrapped 95% CI in brackets.

W3. Women's Income Share by Women's Percentile (All Couples)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	0.021	0.018 [0.008, 0.029]	0.021 [0.009, 0.031]	0.019 [0.008, 0.033]	0.021 [0.008, 0.037]	0.024 [0.005, 0.045]
P20	0.014	0.018 [0.008, 0.029]	0.020 [0.009, 0.035]	0.019 [0.008, 0.031]	0.019 [0.008, 0.033]	0.023 [0.000, 0.045]
P50	0.027	0.020 [0.010, 0.031]	0.020 [0.007, 0.036]	0.021 [0.004, 0.037]	0.022 [0.010, 0.035]	0.111 [0.069, 0.156]
P75	0.428	0.423 [0.394, 0.454]	0.386 [0.360, 0.416]	0.420 [0.384, 0.452]	0.395 [0.366, 0.434]	0.587 [0.533, 0.640]

P90	0.569	0.701 [0.680, 0.728]	0.632 [0.610, 0.657]	0.697 [0.664, 0.721]	0.632 [0.599, 0.655]	0.783 [0.761, 0.816]

Note: Proportion of family income; bootstrapped 95% CI in brackets.

W4A. Gender Income Gap by Women's Percentile (Dual Earners)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	-20.07	-25.90 [-30.68, -21.59]	-22.85 [-26.93, -18.90]	-25.23 [-29.66, -20.23]	-23.21 [-28.84, -19.06]	-16.54 [-21.83, -12.08]
P20	-20.64	-25.21 [-29.55, -20.26]	-22.43 [-27.07, -18.77]	-25.06 [-29.98, -21.33]	-22.82 [-25.74, -19.59]	-16.92 [-22.88, -12.48]
P50	-17.77	-21.73 [-26.60, -17.80]	-22.30 [-28.37, -17.68]	-21.45 [-26.07, -16.53]	-24.11 [-31.09, -19.36]	-11.50 [-19.48, -6.33]
P75	-5.64	-7.75 [-12.82, -3.18]	-11.70 [-15.94, -7.02]	-6.81 [-12.29, -2.53]	-12.12 [-17.83, -8.02]	6.93 [-0.42, 11.83]
P90	0.04	28.43 [23.02, 33.21]	14.14 [8.23, 19.70]	28.34 [23.91, 32.48]	15.69 [7.97, 22.51]	39.88 [33.47, 45.25]

Note: Million IDR (+ = wife earns more); bootstrapped 95% CI in brackets.

W4B. Women's Income Share by Women's Percentile (Dual Earners)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	0.007	0.013 [0.003, 0.023]	0.015 [0.004, 0.029]	0.012 [0.000, 0.023]	0.015 [0.003, 0.030]	0.018 [0.000, 0.038]
P20	0.024	0.014 [0.004, 0.027]	0.017 [0.004, 0.033]	0.014 [0.003, 0.027]	0.016 [0.004, 0.033]	0.052 [0.024, 0.084]
P50	0.292	0.268 [0.230, 0.303]	0.263 [0.229, 0.304]	0.269 [0.243, 0.313]	0.252 [0.224, 0.283]	0.408 [0.348, 0.465]
P75	0.513	0.536 [0.502, 0.570]	0.498 [0.463, 0.533]	0.540 [0.496, 0.578]	0.500 [0.469, 0.535]	0.667 [0.618, 0.713]
P90	0.573	0.730 [0.703, 0.758]	0.650 [0.623, 0.681]	0.727 [0.702, 0.754]	0.650 [0.614, 0.682]	0.789 [0.762, 0.823]

Note: Proportion of family income; bootstrapped 95% CI in brackets.

W4C. Family Income by Women's Percentile (Dual Earners)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	20.07	25.90 [21.59, 30.68]	22.85 [18.90, 26.93]	25.23 [20.23, 29.66]	23.21 [19.06, 28.84]	16.54 [12.08, 21.83]
P20	20.64	25.22 [20.26, 29.56]	22.44 [18.78, 27.09]	25.07 [21.35, 29.99]	22.83 [19.59, 25.75]	17.28 [12.81, 23.18]

P50	25.46	29.54 [25.58, 34.33]	29.92 [25.27, 35.99]	29.25 [24.33, 33.83]	31.93 [27.22, 38.89]	23.87 [18.82, 31.53]
P75	41.83	44.03 [39.54, 48.90]	46.31 [42.09, 50.95]	43.17 [39.00, 48.64]	48.45 [44.34, 54.24]	43.74 [39.08, 50.63]
P90	108.47	80.07 [75.24, 85.19]	88.11 [82.63, 94.27]	80.18 [76.07, 84.87]	92.78 [86.00, 100.28]	79.84 [75.09, 85.58]

Note: Million IDR; bootstrapped 95% CI in brackets.

M1. Gender Income Gap by Men's Percentile (All Couples)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	4.77	7.13 [5.67, 9.82]	4.93 [3.77, 6.45]	6.93 [5.37, 8.63]	5.08 [3.70, 6.34]	9.79 [7.36, 12.93]
P20	0.59	3.97 [1.91, 5.22]	2.12 [0.72, 3.36]	4.23 [2.65, 5.77]	2.42 [0.87, 4.29]	7.69 [4.73, 9.91]
P50	-10.13	-7.83 [-9.16, -6.05]	-9.34 [-10.74, -8.06]	-7.65 [-9.70, -5.72]	-9.55 [-11.10, -8.00]	0.07 [-2.63, 3.35]
P75	-22.01	-25.22 [-27.08, -23.52]	-25.86 [-27.40, -24.18]	-25.28 [-27.36, -23.47]	-25.88 [-27.79, -23.94]	-12.61 [-15.19, -9.15]
P90	-80.48	-89.25 [-90.95, -87.41]	-86.32 [-88.59, -84.12]	-88.11 [-95.22, -81.43]	-90.09 [-99.36, -82.92]	-61.86 [-68.53, -51.84]

Note: Million IDR (+ = wife earns more); bootstrapped 95% CI in brackets.

M2. Women's Income Share by Men's Percentile (All Couples)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	0.477	0.534 [0.496, 0.579]	0.487 [0.447, 0.533]	0.534 [0.488, 0.580]	0.491 [0.423, 0.542]	0.623 [0.564, 0.707]
P20	0.26	0.315 [0.259, 0.354]	0.272 [0.231, 0.315]	0.319 [0.281, 0.364]	0.277 [0.241, 0.314]	0.406 [0.351, 0.475]
P50	0.162	0.188 [0.164, 0.218]	0.164 [0.133, 0.187]	0.192 [0.160, 0.221]	0.163 [0.138, 0.191]	0.281 [0.228, 0.331]
P75	0.174	0.127 [0.103, 0.149]	0.131 [0.109, 0.154]	0.128 [0.099, 0.148]	0.132 [0.108, 0.153]	0.189 [0.151, 0.233]
P90	0.126	0.068 [0.056, 0.081]	0.095 [0.081, 0.110]	0.067 [0.054, 0.081]	0.095 [0.076, 0.111]	0.144 [0.108, 0.185]

Note: Proportion of family income; bootstrapped 95% CI in brackets.

M3. Family Income by Men's Percentile (All Couples)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	6.24	8.59 [7.14, 11.28]	6.38 [5.23, 7.96]	8.39 [6.91, 10.11]	6.58 [5.41, 7.80]	10.56 [8.11, 13.70]

P20	8.03	11.41 [9.36, 12.66]	9.59 [8.22, 10.88]	11.71 [9.96, 13.24]	10.29 [8.69, 11.88]	12.52 [9.62, 14.79]
P50	20.82	23.12 [21.78, 24.90]	21.93 [20.42, 23.29]	23.21 [21.62, 25.13]	22.43 [21.14, 23.68]	21.25 [18.55, 23.84]
P75	44.17	40.96 [39.10, 42.66]	42.21 [40.70, 44.04]	41.05 [38.65, 42.95]	42.63 [40.08, 45.10]	32.09 [29.65, 35.59]
P90	113.92	105.15 [103.46, 106.99]	109.88 [107.61, 112.46]	103.71 [97.07, 110.59]	114.43 [106.37, 123.69]	89.44 [78.52, 94.97]

Note: Million IDR; bootstrapped 95% CI in brackets.

M4. Gender Income Gap by Men's Percentile (Dual Earners)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	6.19	11.46 [8.61, 14.78]	8.19 [6.11, 10.29]	11.25 [8.80, 14.55]	8.32 [6.59, 10.41]	14.60 [10.78, 19.01]
P20	2.89	8.41 [5.95, 10.26]	5.42 [3.22, 7.49]	8.45 [6.24, 10.90]	5.84 [3.20, 8.85]	12.41 [8.65, 15.51]
P50	-6.49	-3.22 [-5.86, -0.42]	-6.00 [-8.21, -3.71]	-3.13 [-5.82, -0.31]	-5.92 [-8.55, -2.89]	5.13 [0.76, 9.68]
P75	-16.43	-21.05 [-24.12, -18.23]	-21.80 [-23.95, -18.85]	-20.78 [-23.51, -17.43]	-21.97 [-24.50, -19.05]	-8.16 [-12.10, -3.65]

P90	-66.3	-84.63 [-91.03, -78.49]	-90.29 [-96.40, -81.67]	-83.10 [-96.45, -74.40]	-92.31 [-100.91, -84.72]	-56.08 [-66.67, -43.12]

Note: Million IDR (+ = wife earns more); bootstrapped 95% CI in brackets.

M5. Women's Income Share by Men's Percentile (Dual Earners Only)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	0.6	0.702 [0.648, 0.758]	0.648 [0.593, 0.709]	0.702 [0.642, 0.754]	0.637 [0.572, 0.712]	0.785 [0.709, 0.856]
P20	0.394	0.499 [0.435, 0.544]	0.433 [0.390, 0.488]	0.491 [0.443, 0.540]	0.434 [0.388, 0.494]	0.594 [0.508, 0.659]
P50	0.272	0.301 [0.263, 0.336]	0.265 [0.231, 0.303]	0.305 [0.260, 0.344]	0.268 [0.232, 0.309]	0.415 [0.352, 0.480]
P75	0.267	0.201 [0.170, 0.231]	0.207 [0.183, 0.240]	0.203 [0.170, 0.234]	0.212 [0.183, 0.243]	0.284 [0.236, 0.339]
P90	0.2	0.108 [0.085, 0.128]	0.128 [0.106, 0.151]	0.109 [0.088, 0.132]	0.128 [0.106, 0.151]	0.198 [0.155, 0.248]

Note: Proportion of family income; bootstrapped 95% CI in brackets.

M6. Family Income by Men's Percentile (Dual Earners)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Hypogamy
P10	8.21	13.36 [10.51, 16.55]	10.29 [8.42, 12.80]	13.24 [10.74, 16.67]	10.63 [8.92, 12.56]	15.82 [11.87, 20.31]
P20	10.95	16.39 [13.60, 18.27]	14.36 [11.91, 16.60]	16.68 [14.36, 19.07]	15.07 [12.89, 17.94]	17.98 [13.92, 21.62]
P50	24.44	27.76 [25.33, 30.41]	26.78 [24.67, 28.84]	27.94 [25.53, 30.62]	28.21 [25.17, 31.17]	26.83 [23.16, 31.03]
P75	51.56	46.16 [43.57, 48.83]	48.19 [45.67, 50.74]	45.82 [42.30, 48.01]	50.04 [47.10, 53.59]	37.96 [34.75, 42.67]
P90	119.63	109.98 [103.69, 117.30]	124.34 [115.61, 130.25]	108.28 [98.00, 120.18]	126.83 [119.82, 133.76]	94.14 [84.83, 101.25]

Note: Million IDR; bootstrapped 95% CI in brackets.

W1+. Family Income by Women's Percentile (All Couples, incl. Equal Education)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Equal Education	Hypogamy
P10	25.08	25.34 [21.70, 28.39]	23.41 [20.80, 27.02]	25.27 [22.26, 28.63]	23.54 [20.57, 28.47]	22.85 [19.34, 26.21]	16.59 [13.25, 21.43]

P20	22.39	25.27 [21.88, 28.70]	23.11 [20.30, 27.07]	25.48 [22.51, 29.10]	24.25 [20.93, 27.99]	22.81 [19.51, 26.49]	16.44 [12.82, 20.56]
P50	23.25	25.02 [21.19, 28.82]	23.13 [19.14, 26.89]	25.40 [21.19, 29.93]	23.26 [20.62, 27.59]	22.61 [19.45, 25.85]	17.72 [13.78, 22.81]
P75	31.15	34.76 [30.41, 38.03]	37.10 [32.89, 40.00]	34.37 [31.59, 39.01]	38.83 [33.68, 43.58]	36.67 [33.53, 40.15]	33.49 [29.21, 38.92]
P90	90.58	70.66 [67.11, 74.07]	78.03 [73.72, 82.32]	70.79 [67.32, 75.02]	81.11 [76.36, 86.57]	78.76 [74.24, 81.45]	72.55 [68.77, 76.32]

Note: Million IDR; bootstrapped 95% CI in brackets.

W1B+. Family Income by Women's Percentile (Dual Earners, incl. Equal Education)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Equal Education	Hypogamy
P10	20.07	25.90 [21.59, 30.68]	22.85 [18.90, 26.93]	25.23 [20.23, 29.66]	23.21 [19.06, 28.84]	22.19 [17.68, 25.80]	16.54 [12.08, 21.83]
P20	20.64	25.22 [20.26, 29.56]	22.44 [18.78, 27.09]	25.07 [21.35, 29.99]	22.83 [19.59, 25.75]	22.13 [18.66, 26.42]	17.28 [12.81, 23.18]

P50	25.46	29.54 [25.58, 34.33]	29.92 [25.27, 35.99]	29.25 [24.33, 33.83]	31.93 [27.22, 38.89]	30.16 [25.73, 35.00]	23.87 [18.82, 31.53]
P75	41.83	44.03 [39.54, 48.90]	46.31 [42.09, 50.95]	43.17 [39.00, 48.64]	48.45 [44.34, 54.24]	46.94 [42.51, 51.77]	43.74 [39.08, 50.63]
P90	108.47	80.07 [75.24, 85.19]	88.11 [82.63, 94.27]	80.18 [76.07, 84.87]	92.78 [86.00, 100.28]	90.77 [85.04, 96.03]	79.84 [75.09, 85.58]

Note: Million IDR; bootstrapped 95% CI in brackets.

1C. Family Income by Men's Percentile (All Couples, incl. Equal Education)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Equal Education	Hypogamy
P10	6.24	8.59 [7.14, 11.28]	6.38 [5.23, 7.96]	8.39 [6.91, 10.11]	6.58 [5.41, 7.80]	6.84 [5.31, 8.46]	10.56 [8.11, 13.70]
P20	8.03	11.41 [9.36, 12.66]	9.59 [8.22, 10.88]	11.71 [9.96, 13.24]	10.29 [8.69, 11.88]	10.05 [8.63, 11.63]	12.52 [9.62, 14.79]
P50	20.82	23.12 [21.78, 24.90]	21.93 [20.42, 23.29]	23.21 [21.62, 25.13]	22.43 [21.14, 23.68]	22.05 [20.84, 23.33]	21.25 [18.55, 23.84]

P75	44.17	40.96 [39.10, 42.66]	42.21 [40.70, 44.04]	41.05 [38.65, 42.95]	42.63 [40.08, 45.10]	41.63 [39.60, 43.66]	32.09 [29.65, 35.59]
P90	113.92	105.15 [103.46, 106.99]	109.88 [107.61, 112.46]	103.71 [97.07, 110.59]	114.43 [106.37, 123.69]	109.24 [107.05, 110.89]	89.44 [78.52, 94.97]

Note: Million IDR; bootstrapped 95% CI in brackets.

1D. Family Income by Men's Percentile (Dual Earners, incl. Equal Education)

Percentile	Observed	Pure Random	Homogamy	Conditional Random	Cond. Homogamy	Equal Education	Hypogamy
P10	8.21	13.36 [10.51, 16.55]	10.29 [8.42, 12.80]	13.24 [10.74, 16.67]	10.63 [8.92, 12.56]	10.86 [8.56, 13.25]	15.82 [11.87, 20.31]
P20	10.95	16.39 [13.60, 18.27]	14.36 [11.91, 16.60]	16.68 [14.36, 19.07]	15.07 [12.89, 17.94]	14.90 [12.65, 17.13]	17.98 [13.92, 21.62]
P50	24.44	27.76 [25.33, 30.41]	26.78 [24.67, 28.84]	27.94 [25.53, 30.62]	28.21 [25.17, 31.17]	26.87 [24.65, 29.00]	26.83 [23.16, 31.03]
P75	51.56	46.16 [43.57, 48.83]	48.19 [45.67, 50.74]	45.82 [42.30, 48.01]	50.04 [47.10, 53.59]	48.39 [45.66, 51.72]	37.96 [34.75, 42.67]

P90	119.63	109.98 [103.69, 117.30]	124.34 [115.61, 130.25]	108.28 [98.00, 120.18]	126.83 [119.82, 133.76]	121.14 [113.93, 129.01]	94.14 [84.83, 101.25]

Note: Million IDR; bootstrapped 95% CI in brackets.