The Association between Early Marriage Decisions and Poverty Incidents in Indonesia

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ABSTRACT

Early marriage is one of the social problems prevalent in many emerging countries, including Indonesia. Early marriage is widely believed to impact future economic outcomes negatively and is also associated with higher poverty incidence. Previous research has shown that early marriage significantly affects an individual's future welfare and makes them vulnerable to poverty (Dahl, 2010). Research on this issue is still limited in Indonesia, and we aim to pursue the impact of early marriage decisions on poverty, using divorce, dropout, and gender as control variables. We use panel logistic regression on Indonesia Family Life Survey (IFLS) data set. We classify early married individuals as someone who marry under 18 years old, while the poverty variable is measured using the national poverty line. The logistic regression shows that early marriage is significantly associated with lower wages and poverty. The marginal effect of the logistic regression shows that an individual who marries early has a higher probability of getting into poverty, as much as 13-15%. We also found that women are more vulnerable to poverty than male with the exact status of marriage and education level. This result implies that the early marriage problem needs further attention from the policymaker. Regulation of the age of marriage should be reinforced and supported by more stringent measures from local governments.

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1. Introduction

Poverty is an apparent problem in many emerging economies, including Indonesia. The theory of vicious circle of poverty from Nurkse (1953) mentions that poverty is often transmitted inter-generation due to low productivity and poor decision-making. One of the major issues that was believed to contribute to inter-generational poverty is early marriage. The wrong timing of marriage may affect many aspects of an individual's social life. It has various implications for both men and women. Traditionally, women are considered to have more responsibilities in domestic work within the household. This perspective puts more household burdens on women, making them less suitable for employment than unmarried women or men. Hence, early marriage decisions may give more disadvantages to women than men. Research conducted by Jordan and Zitek (2012) demonstrates that employers with information about an individual's marital status may harbor biased perceptions and are more prone to discrimination. This condition is stronger for women due to their natural roles during pregnancy and motherhood. On the other hand, marriage is seen as a customary milestone in many regions in Indonesia, leading to many still considering it as an indicator of personal fulfillment and prosperity.

These contradictory views on marriage indicate that marriage is an important social issue within society. Marriage may affect an individual's welfare and society's well-being. The decision to marry should be considered an important issue due to the potential consequences of the marriage that may impact an individual's future welfare. These consequences can be both positive and negative. Poor timing in marriage has been shown empirically to have a detrimental effect on future economic outcomes (Otoo-Oyortey & Pobi, 2003). In the regions where early marriage problems are prevalent, we may see many families trapped in the vicious cycle of poverty (Rahayu & Wahyuni, 2020). The government should intervene in this issue to reduce national poverty incidents.

In the national context, early marriage decisions may affect national productivity. This may happen due to direct consequences of early marriage that may affect education outcomes, increase dropout rate, and subsequently affect the labor market outcome. Individuals who marry early are more prone to have lower education and have higher chances to drop out of school (Dahl, 2010). These factors contribute to lower productivity in the labor market since lower education is associated with lower outcomes and higher chances of poverty (Wibowo & Khoirudin, 2019). If early marriage problems are apparent in many regions, it will affect national productivity. Lower productivity will hamper a country's growth and subsequently will affect the welfare of the whole society.

In Indonesia, the definition of early marriage is based on Government Regulation No. 23/2003, which sets the minimum age for marriage consent at 18 years old. Therefore, if an individual marries before 18, it is considered an early marriage. Despite the prohibition of early marriage in this regulation, the number of child marriages is still high in many regions of Indonesia. Awareness of early marriage issues has grown as researchers and policymakers have suggested that teenagers may not be adequately prepared to handle marriage responsibilities, leading to various socio-economic consequences (Delprato et.al, 2015). Further, the Indonesian National Population and Family Planning Board (BKKBN) suggests that the minimum age of marriage should be 21 years old. It is considered the minimum age for an individual to bear more responsibility of marriage.

Previous research has shown negative outcomes associated with early marriage. Dahl (2010) found that women who marry in their teenage years are more likely to drop out of school and divorce. Bajracharya & Amin (2012) show that the wrong marriage timing is linked to women's lower access to education and, subsequently, lower-paying jobs.
Education is crucial in establishing girls' autonomy and independence in life. Therefore, early marriage hinders women's education and can negatively impact their autonomy and financial independence.

Further, Katz (1999) found that lower education is significantly associated with lower wages and higher unemployment rates, while Lleras-Muney (2005) demonstrated that lower education is linked to poorer health outcomes and a higher vulnerability to drug-related problems. These negative outcomes, related to early marriage and low education levels, will likely affect the individuals making the decision and their entire families. Women who engage in early marriages are more likely to experience divorce, and when combined with low education and larger family sizes, this can push the family into poverty.

On the other hand, poverty can also be a factor that encourages the decision of early marriage. In poor households, marriage is often seen as a solution to improve the family's finances. In certain societies, daughters are perceived as a burden to the family, and by marrying them off early, the family can shift the costs of raising and educating them to the in-law's family. Marriage is viewed as a survival strategy for the family in the face of economic uncertainty.

In the context of Indonesia, previous studies have shown that early marriage has increased a family's economic burden and inevitably creates a cycle of poverty. This happens because married teenagers can't bear the socio-economic responsibility of marriage and do not have decent jobs due to their low education (Djamila, 2014). As a result, parents have a double burden to support their family and their new family members. This fact strengthens our hypothesis that early marriage transmitted poverty incidents to future generations and thus created a vicious cycle of poverty.

Based on data from Indonesia's Statistical Bureau (BPS), the practice of early marriage is still common in Indonesia. BPS data shows during 2001 to 2009 for urban areas in Indonesia, there were 29% of young women who married at the age of 15-19 years. Whereas in rural areas there are 58% of young women who are married at the age of 15-19 years. The prevalent problem of early marriage in rural areas is mainly caused by the cultural traditions that allow women to marry as young as 14 or 15 years old. It's the existence of social and economic pressure that forces them to get married at a young age. Apart from the social pressure, teenagers’ sexual relations out of wedlock is also a main cause of early marriage. Further, Jordan (2004) shows that teenage pregnancy and subsequent early marriage are factors causing an individual’s social disfunction. This further causes them to be economically weak compared to society in general.

Early marriage problems are also often associated with higher divorce rates, affecting labor outcomes and increasing poverty. Since teenagers are more prone to emotional instability, higher divorce rates are often found within young households. Murray (2012) found that divorce affects workers' emotional stability, subsequently influencing their labor outcomes. Divorce will make them lose focus while doing their job, leading to slower and more mistakes at work. This will result in lower wages and fewer opportunities to get promoted or find a higher-paying job. In addition, divorce also puts more economic burden on the party who takes custody of the children, and hence will make them more vulnerable to poverty.

Looking into the gender perspective, women who marry early tend to have lower education and low-paying job (Damayanti, 2020). This is because these women have to bear more domestic burdens, where they are obliged to obey their husbands, manage their household, and raise their children from an early age. This responsibility consumes their time, energy, and thought, so they will need more time to pursue further education. In
contrast, men who marry early still have more opportunities in education and the labor market due to their natural role as a breadwinner. From this perspective, women are more vulnerable to poverty in the case of early marriage (Dahl, 2010; Damayanti, 2020).

This study aims to find the association between early marriage decisions and poverty outcomes within Indonesian households. Extensive research on this issue has been conducted in developed nations, but limited effort has been made using developing country data. Finding more evidence from the developing world, in particular, Indonesia, will help to shed light on the relationship between early marriage decisions and its consequences for the household’s welfare. To find the empirical evidence of the negative welfare consequences of early marriage decisions, we use logistic panel data approach of Indonesia Family Life Survey Data wave 1-5. We found that early marriage is significantly associated with higher probability of poverty and lower wages within Indonesian Households.

This empirical evidence strengthens the importance of regulating the minimum age to marry across Indonesia’s provinces. In addition, increasing supervision to ensure the enforcement of minimum age regulation is also needed to minimize the negative welfare impact of early marriage. This study provides policy makers the evidence of negative welfare consequences of early marriage and thus it should push them to intensify both regulation and supervision of minimum marriage age across regions in Indonesia. For economic research, this study contributes to the large literature on the household economy by providing evidence of the link between early marriage and poverty in the context of Indonesia.

2. Literature Review

This paper uses several theories to analyze the relations between early marriage and poverty, including the vicious circle of poverty, gender, and education. Research by Kuncoro (2006) identifies the economic causes of poverty; from the macro perspective, poverty is a result of unequal resource endowment, while from the micro perspective, the quality of human resources will affect their productivity and subsequently will affect their well-being. In addition to the micro and macro perspective of poverty, Kuncoro (2006) explains the vicious cycle of poverty that may trap people in an unending chain of poverty. As someone born in a poor family, the poor quality of children’s upbringing may lead them to make a wrong decision that subsequently affects their future well-being.

In relation to the vicious cycle theory with the early marriage decisions, parents who live in poverty may see their children as economic burdens and hence will encourage them to marry early to shift the burdens to the in-law family. However, wrong timing in the marriage will, in turn, give adverse outcomes, especially for women. By entering marriage, a woman will have the burden to take care of her family, leading her to give up her education and later lose the opportunity to get a good job and career.

The impact of early marriage decisions on future poverty may also be analyzed through the household economy theory proposed by Becker in 1991. In this theory, Becker (1985) explains households will choose the best combination of basic commodities such as children, health, leisure, and other consumption goods to maximize the household utility. Constraints on household production are imposed by the limited time and available income. In addition, household chores are done at the cost of losing the opportunity to get labor income. In that case, households often should choose to do specialization. Household members with lower wages and thus lower opportunity cost will have to give up their careers to devote themselves to do household chores. Becker (1985) argues that specialization can
improve household productivity. However, specialization can lead to a loss of skill and over time skills deterioration may impact the overall household economy. In the case of early married couples, women will usually have to give up their job since the social norms put more burden of doing household chores and children upbringing to women.

The discussion of early marriage in the household economy theory is relevant with the gender theory point of view. Otoo-oortey & Pobi (2010) stated that early marriage violates a woman right to have a good education and opportunities in life. Data from UNICEF (2005) shows that men who marry early have higher education than women. Rahayu & Wahyuni (2020) estimates the monetary outcomes of early marriage decisions by the woman. They found empirical evidence that early marriage will give a short-run effect of lower education and hence lower opportunity to get a good job. In addition, women were known to be more vulnerable to poverty. Badriah & Istiqomah (2022) found that unequal opportunities between males and females in education and employment give an adverse effect on national outcomes. In line with this study, (Yani et al., 2022) also shows that education is an important factor to prevent poverty.

In the education aspect, Dahl (2010) found empirical evidence that early marriage is related to lower education. Women who marry before 19 years old will have a 50% chance to drop out of school and a four-time lower probability to graduate from college. Dahl (2010) suggests that lower education will limit women’s access to good jobs and careers, hence they will be most likely to get blue-collar and low-pay jobs. This research gives the theoretical economic, gender, and education theory mentioned above, this research will elaborate on theory and empirical data to provide evidence of the relationship between early marriage and poverty. Gender, education and family backgrounds are control variables that may help to explain the poverty incidence within the IFLS data set.

3. Research Method

In this study, we use quantitative approaches to find empirical evidence of relationship between early marriage and individual welfare outcome measure in wages and poverty indicator. We use panel data OLS regression approach to estimate the relation between early marriage and poverty. Panel data estimates is used since we estimate the model using five waves of IFLS data range from the year 1993 to 2014. To estimate the relation between early marriage and poverty, we used following model:

\[
\log (\text{wage})_{it} = \text{em}_{it} + \text{Gender}_{it} + \text{do}_{it} + \epsilon_{it} \quad \cdots \cdots \cdots \cdots \quad (1)
\]

\[
\log (\text{wage})_{it} = \text{em}_{it} + \text{Gender}_{it} + \text{educ}_{it} + \epsilon_{it} \quad \cdots \cdots \cdots \cdots \quad (2)
\]

\[
\text{poor}_{it} = \text{em}_{it} + \text{Gender}_{it} + \text{do}_{it} + \epsilon_{it} \quad \cdots \cdots \cdots \cdots \quad (3)
\]

\[
\text{poor}_{it} = \text{em}_{it} + \text{gender}_{it} + \text{educ}_{it} + \epsilon_{it} \quad \cdots \cdots \cdots \cdots \quad (4)
\]

Where poor$_{it}$ is binary dependent variable which attributes value of 1 to individual i living below poverty line at year t; while 0 shows otherwise. em$_{it}$ is dummy independent variable which attributes value of 1 to individual i marry in early age at year t (below 18 years), while 0 shows otherwise. Educ$_{it}$ are total years of education of individual i at year t. Gender$_{it}$ is dummy independent variable of gender which attributes value of 1 to female, while 0 shows male gender. Do$_{it}$ is dummy independent variable which attributes value of 1 to individual i having dropout due to early marriage, while 0 shows otherwise and \( \epsilon_{it} \) is error term.

The dependent variable poor in equation (3) and (4) is household who live under poverty line based on Indonesian Statistical Bureau. An individual is considered living in
poverty if he or she earns less than Rp 27,905 for the survey year 1993, Rp 96,959 for the survey year 1998, Rp 91,632 for the survey year 2000, Rp 204,896 for the survey year 2008 and Rp 326,853 for the survey year 2014. The poverty variable is represented as a dummy which attributes 1 to individuals earn less than the poverty line for each survey year mentioned above and 0 otherwise.

The key independent variable is the decision to marry early. In this study, early marriage refers to individuals who marry under the age of 18 years old based on law no.1 year 1974 which applies in the survey year 1993, 1998, and 2000 and law no. 23 year 2002 which applies in the survey year 2008 and 2014. The early marriage variable is represented as a dummy which attributes 1 to individuals who marry early and 0 otherwise. Another control variable included in this model are years of education, divorce and drop out status of each individual which follows the study of Dahl (2010).

The dependent variable used in equation 3 and 4 above (poor) is in the form of binary variable (1 if individuals live below poverty line and 0 otherwise) needs to be estimated using the logit model. In addition, since I use all five waves of IFLS data, panel estimates should be used to measure the relation between early marriage decision and poverty. In the logit panel estimates, the $\beta$ parameter is measured by the maximum likelihood method and thus needs to be interpreted using the marginal effect. The marginal effect calculates the change in the probability of success in Y dependent variable (probability of Y having a value of 1) if there is a change in independent variables. In addition, the overall fitness of the model is measured by pseudo-R-Squared value.

In this paper, we use five waves of IFLS data. The Indonesian Family Life Survey (IFLS) is an ongoing longitudinal survey in Indonesia. The sample of IFLS data represented about 83% of the Indonesian population with the total number of individuals surveyed are around 30,000. The survey collects data on individual respondents, their families, their households, the communities in which they live, and the health and education facilities they use. The first wave of IFLS (IFLS1) was conducted in 1993/94 by RAND with Lembaga Demografi, University of Indonesia. The second wave of IFLS (IFLS 2 and IFLS 2+) is conducted in 1997 and 1998 in collaboration with UCLA and Lembaga Demografi, University of Indonesia. The third wave of IFLS (IFLS3) is conducted in 2000 in collaboration with the center for Population and Policy Studies (CPPS) of the University of Gadjah Mada. The fourth wave of the Indonesia Family Life Survey (IFLS4) is a continuation of IFLS, expanding the panel to 2007/2008. IFLS4 is a collaborative effort of RAND, the center for Population and Policy Studies (CPPS) of the University of Gadjah Mada and Survey METRE. The fifth wave of the Indonesian Family Life Survey (IFLS5) is a continuation of IFLS, expanding the panel to 2014/2015. IFLS 5 was a collaborative effort of RAND and Survey Meter.

Table 1 below shows the section and question number from IFLS questionnaire to get the measure of each variable. In addition to IFLS data, I use susenas data to provide the national figure of early marriage incidence across provinces in Indonesia as portrayed in graph 1 and figure 1 in the previous section.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Section</th>
<th>No. of Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty</td>
<td>Seksi TK</td>
<td>TK25A1 &amp; TK25B1</td>
</tr>
<tr>
<td>Early Marriage</td>
<td>Seksi COV &amp; KW</td>
<td>DOB_YR &amp; KW10YR</td>
</tr>
<tr>
<td>Drop Out Status</td>
<td>Seksi KW</td>
<td>KW 20 &amp; KW21</td>
</tr>
<tr>
<td>Divorce Status</td>
<td>Seksi COV</td>
<td>MARSTAT</td>
</tr>
<tr>
<td>Gender</td>
<td>Seksi COV</td>
<td>SEX</td>
</tr>
</tbody>
</table>

Source: IFLS Questionnaire
4. Result and Discussion

Table 2 below shows our regression estimates for equations (1) to (4). The subsequent table 3 and 4 shows the marginal effect estimation for logit regression in equations (3) and (4). Equation (1) and (2) shows a significant F test measure which gives an indication of overall fitness of the model. Equation (3) and (4) also have a significant chi-square estimate which show the overall goodness of fit for both models.

Table 2. Regression Result of IFLS 1-5

<table>
<thead>
<tr>
<th></th>
<th>(1) lwage</th>
<th>(2) lwage</th>
<th>(3) Poor</th>
<th>(4) Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Marriage</td>
<td>-1.239*** (-12.55)</td>
<td>-1.202** (-12.35)</td>
<td>0.241 (5.55)</td>
<td>0.274* (1.76)</td>
</tr>
<tr>
<td>Dropout</td>
<td>-1.705*** (-61.76)</td>
<td>2.770*** (13.23)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.533*** (27.08)</td>
<td>0.492*** (25.33)</td>
<td>0.556** (20.51)</td>
<td>0.567*** (20.84)</td>
</tr>
<tr>
<td>Year of Education</td>
<td>0.132*** (69.05)</td>
<td></td>
<td>-0.208*** (-21.50)</td>
<td></td>
</tr>
<tr>
<td>_cons</td>
<td>15.69*** (535.67)</td>
<td>13.86*** (831.02)</td>
<td>-5.810*** (-27.69)</td>
<td>-2.969*** (-137.89)</td>
</tr>
<tr>
<td>Prob_F</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>r2</td>
<td>0.152</td>
<td>0.178</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pseudo_r2</td>
<td></td>
<td></td>
<td>0.020</td>
<td>0.029</td>
</tr>
<tr>
<td>Prob_ch2</td>
<td></td>
<td></td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*t statistics in parentheses
*p < .1, **p < .05, ***p < .01
Source: The result of data processing

Table 3. Marginal Effect of Equation 3

| variable   | dy/dx | Std. Err. | z       | P>|z|   | [ 95 % C. I. ] | X     |
|------------|-------|-----------|---------|-------|----------------|-------|
| earlym-r*  | .0150029 | .00932 | 1.61    | 0.108 | -.003271 | .033277 | .00706 |
| educ       | -.009835 | .00039 | -25.44  | 0.000 | .010593 | -.009077 | 1.28926 |
| gender*    | .0272578 | .00131 | 20.76   | 0.000 | .024685 | .029831 | .495092 |

Y = Pr (poor) (predict) = -.04931094
Source: The result of data processing

Table 4. Marginal Effect of Equation 4

| variable   | dy/dx | Std. Err. | z       | P>|z|   | [ 95 % C. I. ] | X     |
|------------|-------|-----------|---------|-------|----------------|-------|
| earlym-r*  | .0131676 | .00939 | 1.40    | 0.161 | -.005242 | .031577 | .007063 |
| dropout*   | .0554661 | .00112 | 49.58   | 0.000 | .053273 | .057659 | .947287 |
| gender*    | .0273052 | .00132 | 20.74   | 0.000 | .024724 | .029886 | .495715 |

Y = Pr (poor) (predict) = .5175505
Source: The result of data processing

The estimation result of IFLS wave 1-5 regression shows that coefficients of early marriage are negative and significant in eq. 1 and 2, while they are positive and significant in eq.3 and 4. This implies that the decision to marry at an early age is associated with lower wages and a higher probability of an individual living in poverty. The coefficient of early marriage in eq. 1 and 2 show that decision to marry early is associated with around 71% lower wage compared to those who don’t marry at an early age. The marginal effect estimation of eq.3 and 4 shows that early marriage is associated with a 15% and 13% higher probability of an individual living in poverty.

 Females are more vulnerable to poverty compared to their male counterparts. Equation 3 and 4 shows that females have a 2.7% higher probability of being trapped in poverty. In addition, higher education is associated with 14.11% higher wages and a 0.9%
lower probability of poverty. While drop-out cases are associated with a 5.5% higher probability of poverty and 4 to 5 times lower wages compared to those who continue to pursue higher education. Other independent variables show that lower education and higher drop-out rate are associated with lower wages and a higher probability of poverty. This result strengthens our hypothesis that early marriage, drop-out, and lower education are among the determinant factor of poverty incidents within Indonesian households.

Our regression results provide empirical evidence of the adverse welfare effect of early marriage. Individuals who marry early are proven to be more vulnerable to poverty and have lower wages. They tend to have lower education and higher drop-out rate. This condition will complicate their access to a good job and further will affect their future well-being. This result emphasizes the importance of minimum age regulation reinforcement across regions in Indonesia. Individuals who marry early will have limited opportunities to pursue higher education which later affects their expected income. The early marriage rate across regions in Indonesia should be suppressed to prevent higher poverty incidents in Indonesian households.

From the gender perspective, our estimates show that women who marry early are at more risk of falling into poverty than their male counterparts. This result also supports our hypothesis that women are more vulnerable to poverty than men. A primary factor explaining this result is that women typically have more household and child-care responsibilities after marriage. The household burdens will complicate women’s access to the labor market, and they will have difficulties finding decent-paying jobs. These results show the importance of early marriage regulation reinforcement to prevent adverse welfare outcomes especially to women. Government needs to formulate the women empowerment programs to prevent higher rates of early marriage, and to minimize the adverse welfare outcome of the young households.

5. Conclusion

From our regression result using IFLS data we found that early marriage is associated with lower wages and a higher probability of poverty incidents. Some factors that may explain this situation, among others are, people who marry early will have limited opportunities to pursue higher education which later affecting their expected income. We found that early marriage is associated with 71% lower wages and 13-15% higher probability of poverty. This empirical result supports our hypothesis that early marriage will have an adverse welfare outcome. The other independent variables (drop-out and year of education) show significant association with lower wages and higher probability of poverty. We conclude that early marriage decisions, higher drop-out rates and lower education are among the determinant factors of poverty incidents within Indonesian households.

Further, women are proven to be more vulnerable to poverty than their male counterparts. Women who marry early will have more household and child-care burdens, further complicating their access to education and the labor market. We found that women are more vulnerable to poverty by a probability of 2.7% compared to their male counterparts. We conclude that early marriage decisions will bring more adverse economic outcomes to women. Based on these results we suggest that government needs to formulate and enact more women empowerment programs to prevent higher early marriage rates. Further, we also strongly recommend that government strengthen early marriage regulation reinforcement across regions in Indonesia. The local government may also contribute to law enforcement efforts by providing stronger surveillance to ensure the
minimum age to marry is obliged. This action will hopefully suppress the early marriage and poverty incidents within Indonesian households.

Some issues that haven’t been addressed in this research are that we are not treating the endogeneity issue within the model. We realize that some unobservable factors may cause some estimation bias within our regression estimates. For example, the model does not address unobservable characteristic factors such as teens’ vulnerability to drop-out of school and laziness that may persuade them to marry early instead of pursuing higher education. Thus, further research should elaborate these unobservable factors to produce a more robust result.

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