Determinants and Consequences of Early Marriage for Women in Indonesia

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ABSTRACT

Early marriage affects millions of women globally and causes multiple social, economic and health impacts for women. The prevalence of early marriage is persistently high, especially in developing countries and Indonesia is no exception to this. At 2012, Indonesia was one of the top 10 countries in terms of the highest absolute number of early marriages with more than 1.3 million girls reported to have been married before reaching their 18th birthday. Attempts to reduce the prevalence of early marriage are progressing rather slowly. Various social, economic and demographic factors are considered to be the causes of early marriage. Weak law enforcement, traditional/religious values and poverty contribute to the perpetuation of early marriage. However, the detrimental impacts of early marriage on Indonesian women are only vaguely known as empirical studies of early marriage in Indonesia are very limited in number and scope. The purpose of the present study is to identify the determinants and consequences of early marriage through a quantitative analysis of data collected by interviewing ever married women at the latest Indonesia Demographic and Health Survey in 2017 (IDHS 2017). The determinants of early marriage are analysed through multivariate logistic regression while the consequences of early marriage are analysed through bivariate logistic regression. Results of the analyses show that women's educational attainment and place of residence (rural-urban) are significant determinants of early marriage in Indonesia, where women with below secondary education and rural residence are much more likely to be married before the age of 18 years. Non-exposure to media (newspaper, radio and internet) has a weak association with early marriage. Household wealth index, a proxy for poverty has not been found to influence early marriage in Indonesia, suggesting the prevalence of traditional/religious values across all socio-economic groups supporting early marriage. In terms of the consequences, the analysis revealed that early marriage reduces the chances for women to achieve secondary or higher education, have paid employment, participate in household decision making and to utilise prenatal health care particularly by professional health personnel. Early marriage also increases the likelihood of women to initiate sexual relation and childbirth at earlier ages, have more than two children and experience mortalities of children under the age of five years. All these consequences potentially put women in a more disempowered position in the household. The results of this study call for preventive measures to stop the perpetuation of early marriage in Indonesia, by making it easier for them to complete at least secondary education and by improving economic (employment) opportunities for rural women, by implementing mandatory as well as subsidised education up to secondary level and by putting a greater focus on rural development. The evident detrimental consequences of early marriage also suggest the need for effective and massive dissemination of information about the

adverse effects of early marriage through various media channels in order to counter the prevailing traditional/religious values supporting early marriage.

DECLARATION

I certify that this thesis does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any educational institution; and that to the best of my knowledge and belief it does not contain any material which was formerly published or written by any other person except where due reference is made in the text.

Signed: Teguh Wahyudi

Date: 3 July 2020

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CHAPTER 1
INTRODUCTION

1.1 Background

The United Nations Population Fund (UNFPA) defines early marriage or child marriage as either legal or customary marriages when both or one of the spouses are below 18 years of age (2012, pp.10-11.) The UNFPA goes on to argue that the practice of early marriage constitutes a violation of human rights as it is not in line with independent consent of the spouses implied in Article 16 (2) of the Universal Declaration of Human Rights (United Nations 1948), Article 16 of the Convention on the Elimination of all Forms of Discrimination Against Women (OHCHR 1979) and the Convention on the Rights of the Child Article 24 (3) 'abolishing traditional practices prejudicial to the health of children' (UNICEF 1989), and that it tends to impose adulthood into children's lives. In this regard, according to UNFPA (2012, p.11), early marriage takes away the young spouses' childhood and forcefully puts them into a new life full of adult responsibilities for which they are obviously not ready. Moreover, it puts the boys and girls at risk of unanticipated socioeconomic and health risks (Inter-Parliamentary Union & World Health Organization 2016, p.6).

The UNICEF further noted that the prevalence of early marriage is highest in South Asia, with 56% of 20-49 year-old ever married women married before they turn 18, followed by West and Central Africa (46%), Eastern and Southern Africa (38%), Latin America and the Caribbean (30%), Middle East and Northern Africa (24%), East Asia and the Pacific (21%) and Central and Eastern Europe (14%). In terms of individual countries, the highest prevalence of child marriages has been in Niger where 77% of 20-49-year-old ever married women are married before 18 years of age. This is closely followed by Bangladesh (74%) and Chad (69%) as the top three countries with the highest prevalence of early or child marriage (UNICEF 2014, p.2). Worldwide, 29% of 20-49-year-old ever married women are married before their 18th birthday.

Several studies have highlighted the adverse impact of early marriages. Generally, such adverse impacts comprise impacts on the health and socioeconomic status of the young brides (Raj, Jackson & Dunham 2017, pp. 8-11). The health consequences that are often associated with early marriage include higher child mortality rates (Groot et al. 2018, p.6), poor maternal healthcare (Delprato & Akyeampong, p.565), and higher HIV prevalence (Otoo-Oyortey & Pobi 2003, p. 48; Walker 2012, p.234). While, the socioeconomic consequences include poverty (Dahl 2010, p.690), low educational attainment (Delprato et al. 2015, pp.53-

54) and women's disempowerment in terms of the lack of decision making power within households and low self-esteem (Otoo-Oyortey & Pobi, 2003, pp. 44-45; Groot et al. 2018, p.7). These consequences are inter-related.

Although boys are also affected by early marriage practices, statistics show that early marriage is more prevalent among females than among males. The United Nations Children's Fund (UNICEF) estimated that approximately 720 million women (82%) and 156 million (18%) men worldwide are married off before they reach the age of 18, indicating that more women are affected by early marriage than men (UNICEF 2014, p.2). In terms of prevalence, Gaston, Misunas and Cappa (2019, p.223) estimated that 21.2% of females aged 20-24 were married before the age of 18 globally, much higher compared to the percentage of the male counterpart which was only 4.5%. The same page in the report also highlighted that in most countries the gap in the prevalence of early marriage between females and males is very large and it is in favour of males. For example in Niger, where the prevalence pf early marriage is the highest in the world, 77% of the women are married off early compared to only 5% of men, and in the Republic of Moldova, where early marriage is generally less prevalent, 15% women are married off early compared to only 2% of men. Further, what exacerbates this problem in most countries is that younger females get married to much older males (UNICEF 2014, p.2).

Viewed across multiple domains, the impact of early marriage is more detrimental for women. For example, in education, there is a spousal education gap in the early marriage households, which shows up in the statistic that girls who married under the age of 18 tend to achieve lower education levels than their male spouses (UNICEF 2005, p.9). In the domain of health, the majority of outcomes of early marriage such as pregnancy complications, poor maternal health care and child mortality are strongly related to the women's reproductive health issues and show no significant consequences on men's reproductive health (Raj, Jackson & Dunham 2017, p.9). Too many associated consequences of early marriage put women in a disadvantageous position. UNICEF (2014, p.2) clearly stated that 'early marriage is a manifestation of gender inequality, reflecting social norms that perpetuate discrimination against girls, indicating it is a strong gendered issue. Therefore, it is justifiable to put women as the focus in a study regarding early marriage.

There are several factors that cause and perpetuate early marriage. According to UNFPA (2012, p.12), poverty is one major cause of early marriage, as many poor parents see their children, especially daughters, as an economic burden and marry them off as early as possible, in the belief that it is the most appropriate solution to reduce the family's economic pressure as well as to ensure the daughter's future. Additionally, in some communities where

the groom's family must pay a marriage dowry to the bride's family, young girls are seen as commodities by their parents. However, early marriage is not always solely driven by the parents, as in the more recent historical context where teenage pregnancy and adolescent dating behaviour have become more prevalent, and many early marriage cases were initiated by the brides as the primary decision-maker (Raj, Jackson & Dunham 2017, p.7).

From the perspective of social systems, UNFPA (2012, p.12) argued that patriarchal culture in which people value boys more than girls can be another determining factor for the perpetuation of early marriage. In this unequal gender perspective, parents and communities tend to invest more in boys' development and marry off the girls early due to an unwillingness or inability to pay for their education and daily sustenance. In addition, traditional norms have driven some people's behaviour in determining age at marriage, whereby some ethnic communities still believe that early marriage is the most appropriate time for marriage for the brides (Buttenheim & Nobles 2009, pp. 281, 290-291).

However, despite the adverse effects mentioned above, early marriages continue to take place. The Inter-Parliamentary Union and World Health Organization (2016, pp. 8,10) have noted that weak legal systems and unfavourable marriage laws in many countries could lead to structural difficulties in protecting children from early marriage. As the legal system in some Asian countries is still influenced by patriarchal custom and religious norms, the enforcement of marriage laws is inconsistent and sometimes contradictory to international treaties. For example, although the minimum legal age at marriage in most countries is 18 years or more (United Nations Data 2013), national marriage laws in many countries allow girls to marry before 18 with parental approval or court authorization. Various international organisations such as the African Child Policy Forum as a member of "Girls Not Brides: The Global Partnership to End Child Marriage" recommend a minimum legal marriageable age at 18 with no exception to any authorization for earlier marriage, in order to ensure the fulfilment of the bride's 'full and free' consent rights in marriage. Overall, early marriage is a result of the interrelation of multiple factors which has led to a lack of options in a family, especially for teenagers (UNFPA 2018).

1.2 Research Problem

Although South Asia and Sub-Saharan Africa are known as the regions with the highest rates of child brides, early marriage occurs in every region in the world. In Southeast Asia, Jones (2005, p. 109) indicated that despite a rising trend in not marrying in most Southeast Asian countries, marriage at younger ages persists in Indonesia as unmarried girls are still seen as

'incomplete'. UNICEF Indonesia (2016, p.1) shows that Indonesia is among the top 10 countries with the highest absolute number of child marriages, with 1,348,886 girls being married before the age of 18 in 2012. 292,663 or 22% of them were married before the age of 16. It may be noted that although the legal minimum age at marriage for girls in Indonesia is 16 (United Nations Data 2013), getting married before turning 18 is contrary to international recommendations against early marriage mentioned earlier, and what is even more concerning is that more than a fifth of early marriages have taken place before the age of 16 years, as noted above. According to Rumble et al. (2018, p.2), although the trend in the median age at first marriage has been increasing steadily, the prevalence of under 18 brides is still quite high. Indonesia's 2017 National Social and Economic Survey (SUSENAS) reported that 14.2% of ever-married women aged 10 or over were married by the age of 16 and 20.96% were married between the ages of 17 to18 years (Statistics Indonesia 2017, p.135). According to the Indonesia Demographic and Health Survey 2017 (IDHS 2017), among married women aged 20-49 years, 26.9% were married by age 18 years or lower, with 6.5% being married by 15 years of age or lower (NPFPB 2018, p.56). Compared to this, the data collected for the IDHS 2007, showed that 31.6% of married women aged 20-49 years were then married by age 18 years or lower (Statistics Indonesia 2008, p.106). Thus, the percentage of girls married under 18 years of age has shown nearly a 15% decline in the 10 years 2007-2017, but the proportion of early marriage has remained above 25%. Similarly, UNICEF Indonesia (2016, p.2) reported that Indonesia has made progress in reducing child marriage prevalence, but only by a small amount, as the percentage of married women aged 20-24 years who were married under 18 years old decreased only slightly from 27.4% to 22.8% between 2008 and 2015, and overall, in the most recent period, one out of four girls aged 20-24 years were reported to be married before reaching the age of 18.

The reason for the slow progress in reducing the prevalence of early marriage in Indonesia as a whole could be that the percentage of child brides had actually increased in some provinces. According to the UNICEF Indonesia report cited above, the provinces which showed an increase in the prevalence of early marriage during 2008-2015 are West Kalimantan (from 28.2% to 32.2%), East Kalimantan (from 29% to 31.1%), West Papua (from 22.2% to 28.1%), South Sulawesi (from 25% to 31.5%), Maluku (from 23.6% to 24.6%), and Bali (from 15.9% to 16.4%), while the prevalence of early marriage remained nearly stagnant between 2008 and 2015 in two provinces, namely South Kalimantan (from 33.9% to 33.7%) and East Nusa Tenggara (from 19.8% to 19.2%) (UNICEF Indonesia 2016, pp. 4-5). Moreover, in the period between 2008 and 2015 (UNICEF Indonesia, 2016, p.4), the prevalence of early marriage fluctuated in some provinces during 2008-2015, such as Central Kalimantan (37.5% in 2008, 34.6% in 2010, 38.2% in 2012, and 33.6% in 2015), Gorontalo (32.1% in 2008, 27.9% in 2010,

35.3% in 2012 and 26.2 in 2015) and West Nusa Tenggara (27.5% in 2008, 22.8% in 2011, 28.3% in 2013 and 23.2% in 2015).

UNICEF Indonesia (2016, p.4) emphasized the importance of policy makers role in making significant progress in the 2030 Agenda for Sustainable Development to end early marriage. It can be argued that the respective increase, stagnation, and fluctuation of early marriage prevalence in different provinces are connected to that emphasis. For instance, the argument gains strength in the case of South Sulawesi that policy-makers did not assertively enforce the marriage law. In this case, government officials play a crucial role in dispensing the underage marriages by helping parents to manipulate the brides' birthdate or postponing the (Hariyadi 2019). Moreover, there are additional indications of corrupt behaviour in many early marriage cases which involve government officials who received bribes to help forge documents or get approval from the court, which occurred in Bali and West Java (Hariyadi 2019; Horii 2018). Unfortunately, the oversight of such violations is often neglected and goes unpunished by higher decision-makers (Hariyadi 2019).

The permissive attitude towards early marriage obviously leads to the persistence of early marriage in Indonesia, and that attitude is arguably encouraged by a weak legal system on marriage. This point is made by UNICEF Indonesia (2016, p.1), which contends that the early marriage problem has a relation with the legal failure of the national marriage law to meet the minimum 18 years of marriageable age required by international treaties to provide maximum protection for adolescents from early marriage practice, especially girls who are more vulnerable than boys. For 45 years from 1974, marriage in Indonesia has been regulated under Article 7 (1) of *Undang-Undang Nomor 1 Tahun 1974* (Law 1 of 1974) on marriage, which set the minimum legal marriageable age at 16 years for females and 19 years for males, and requires the spouses to have parental permission if they are under 21 years, according to Article 6 (2) (State Secretary of Indonesia 1974, p.3). Under this law, the minimum legal marriageable age does not really matter if there is parental or authority consent. Parents can even submit a dispensation request to the religious court or district court to marry off their under 18 daughters without age limit regulations (UNICEF Indonesia 2016, p.1). According to Eng (2019), 90% of those requests were granted by the court. Although the minimum legal age at marriage has been revised upwards to 19 years for both males and females through *Undang-Undang Nomor 16 Tahun 2019* (Law 16 of 2019) (Ministry of State Secretary 2019, p.2), the 45 years during which early marriage has been practised in Indonesia since 1974 will indeed be difficult to be abolished soon.

Moreover, Rumble et al. (2018, p.2) added that as customary law (*adat*) plays a crucial role in Indonesia's multi-ethnic legal system, as parents can follow their *adat*, which has no common standard on ideal marriageable age. A study conducted by Grijns & Horii (2018, pp. 463-464) indicated that the dominant Islamic conservative moral belief in Indonesia views marriage as a religiously appropriate way to prevent immoral behaviours like pre-marital sex among adolescents., Such belief often leads the parents to find some means to compromise national statutory laws regarding legal marriageable age, which in turn helps perpetuate early marriage of girls in Indonesia. Some of these ways of circumventing the laws on minimum legal age at marriage often practised by parents include falsifying bride's age in legal documents with the help of local and religious leaders. This serves to delay the legal registration of marriage of young brides through a retroactive marriage acknowledgment mechanism from a religious court (*isbath nikah* or ratification of marriage) and holding unofficial religious marriage ceremonies, often called *nikah siri* or secret/unregistered marriage (Grijns & Horii 2018, pp.461-462). In another illustration of how traditional and religious customs often determine people's attitude towards marriage in Indonesia, Jones (2001, pp. 69-72) noted that early marriage practices have been more common among Muslim dominant ethnic groups like Sundanese people in West Java, Madurese people in East Java and Muslims in South Kalimantan. Overall, the implementation of the legal system in Indonesia still cannot consistently satisfy the principle of 'full and free' consent in marriage.

To substantiate an earlier-made point, poverty is a crucial driving force of early marriage in Indonesia. Bennet (2014, p.81) found in a qualitative study of the Sasak ethnic group of Lombok, West Nusa Tenggara that economic constraints force young girls to stop pursuing their education and employment opportunities and eventually they are left with no other acceptable role in society than to get married and become mothers. Similarly in Lombok Timur, which is the poorest area in Lombok, Jones (2001, p.72) found that many girls dropped out of school due to poverty and got married. It has been shown that poverty is very much interlinked with the lack of educational attainment and causes early marriage in Indonesia. According to IDHS 2017, the median age at first marriage of women aged 25-49 is lower in the lowest wealth quintile group cohort (19.5 years) than that in the highest wealth quintile group (23.1 years) (NPFPB 2018, p.57). Further, the lower the level of education, the lower is the median age at first marriage. Therefore, young girls from poor households, who in turn have limited educational attainment are more likely to be vulnerable to early marriage.

Early marriage appears to be more prevalent in rural areas compared to urban areas in Indonesia (NPFPB 2018, p.57). This may be explained by how women in rural areas have less access to higher education, employment, and sufficient media information than their urban

counterparts (Berliana et al. 2018, p.5). In fact, according to the latest Indonesian population census of 2010, more than 119 million people (approximately 50.2% of the total population of Indonesia) lived in rural areas, where more than 45 million were aged 10-19 years (Statistics Indonesia 2012, p.4). This indicates that a very large number of Indonesia's young are vulnerable to early marriage, which has potentially contributed to the early marriage prevalence in Indonesia.

Given that early marriage is still prevalent in Indonesia due to various factors which are often inter-related, this project will be dedicated to investigating the above-noted determinants of early marriage in Indonesia and their implications for relevant and better policies on marriage age. By understanding the socioeconomic and demographic predictors of early marriage, decision-makers would be able to design preventive strategies appropriate for places and contexts where early marriage is more prevalent. Moreover, as most of the empirical research regarding early marriage has been focused on South Asia and Sub-Saharan Africa, and the research in the Southeast Asian region, let alone Indonesia, is still very limited (Rumble et al. 2018, p.2), the present research helps fill the gap in knowledge about early marriage in Indonesia. This project will also explore the associated consequences for women of early marriage in Indonesia given that there is only a limited number of studies conducted in Indonesia that investigate the differential outcomes between women who marry early and women who marry later.

1.3 Research Questions

Having established that early marriage with all its consequences has been prevalent in Indonesia, the main research question is: Why is early marriage prevalent in Indonesia? This research question can be classified into sub-questions as follows:

- What are the determinants of early marriage In Indonesia?
- What are the associated consequences of early marriage on women in Indonesia?

1.4 Research Objectives

The above research questions are addressed through the following objectives:

1. To identify and analyse the determinants for women's marriage before the age of 18 years in Indonesia.
2. To identify the differences in socioeconomic and health outcomes between women who were married before 18 and women who were married later.

1.5 Hypothesis

Following the above research objectives, it is hypothesised in this study that:

1. Early marriage in Indonesia is determined by specific social, economic and demographic factors; and
2. Early marriage in Indonesia impacts on women's education, employability, decision making power and reproductive health.

1.6 Thesis Structure

This thesis research is divided into five chapters as follows:

- Chapter 1: Introduction, problem statement, research questions, research objectives.
- Chapter 2: Determinants and consequences of early marriage – A review of recent literature.
- Chapter 3: Methodology – Data sources, data quality, methods of analysis.
- Chapter 4: Findings and their discussion – Analysis of IDHS 2017.
- Chapter 5: Summary, recommendations and conclusion.

1.7 Chapter Summary

Under the implementation of *Undang-Undang Nomor 1 Tahun 1974* (Law 1 of 1974) on marriage which, for 45 years, practically allowed girls to be married off before they were 18 years old, early marriage has been prevalent in Indonesia. Poverty, educational inadequacy, rural residency and influence from traditional and religious customs are often regarded as the driving factors of early marriage. Moreover, even though the prevalence of early marriage in Indonesia has existed for a very long time, their determinants and consequences for women are as yet not clear because of the very limited number of relevant studies. Without empirical proof of the consequences of early marriage, policy-makers might still allow early marriage and not be aware of their consequences.

This research will address the above issues by identifying the determinants of early marriage in Indonesia and their consequences for those who were married early, and by answering the research question through analysis of the latest available data on early marriage and their correlates in Indonesia.

CHAPTER 2
DETERMINANTS AND CONSEQUENCES OF EARLY MARRIAGE – A REVIEW OF RECENT LITERATURE

2.1 Introduction

Turner (2018, p.114) has reinforced scholarly conviction that a well-structured literature review, focusing on several areas such as theories and findings from previous research, is important for constructing the foundation of further study. In the present project, the research focus is on the findings and theories of recent studies aimed at identifying the determinants and consequences of early marriage of women. Further, the purpose of a literature review is not only to summarize information from previous studies but to critically synthesize the same (Turner 2018, p.115). This enables the construction of an integrated socioeconomic and health conceptual framework to help in a systematic analysis of the determinants and consequences of early marriage.

The present literature review is organised according to three main variables of the research, namely, early marriage, determinants of early marriage for women, and consequences of early marriage for women. Each of these variables will be measured by appropriate indicators. The chapter ends with presentation of a conceptual framework based on the literature review.

2.2 Early Marriage

Early marriage is defined as a 'legal or customary union between two people, of whom one or both spouses are below the age of 18' (UNFPA 2012, p.11). UNICEF (2005, p.1) emphasised that the practice of early marriage does not meet the principle of 'free and full' consent in marriage that is advocated by the Universal Declaration of Human Rights because those subjected to early marriage lack the maturity to make decisions about their life partners. According to UNFPA (2012, pp. 11-12) the cause of early marriage involves various legal, social, economic and cultural aspects. Early marriage is also associated with several possible outcomes for the brides' social, economic, physical and psychological well-being (Raj, Jackson & Dunham 2018, pp. 8-11).

Even though early marriage can be experienced by both sexes, notwithstanding examples involving older males, an overwhelming majority of early marriages tend to be those of women. Therefore, most studies on early marriage are focused on ever married women who were married before the age of 18, in order to identify the prevalence of early marriage. This makes

women's age at first marriage the essential benchmark to measure early marriage in the present context.

2.3 Determinants of Early Marriage

There are multiple underlying factors of early marriage, such as poverty, gender bias in social norms, inconsistent law enforcement, and humanitarian issues (UNFPA 2012, pp.11-12). However, according to Rumble (2018, p.3), not all associated factors of early marriage are observable as there are almost no empirical investigations on attitudes and preferences towards marriage that can be applied in all contexts. Consequently, the causality of early marriage through observable factors can be determined by exploring socioeconomic and demographic characteristics of those who have been married under 18 years of age.

Rumble et al. (2018, p.4) suggested that previous studies have hypothesized at least four socioeconomic and demographic predictors of early marriage which are considered to represent the structural causes of early marriage. First of all, the incidence of early marriage can be associated with low educational attainment of the brides. UNICEF (2005, p.9) concluded that girls who were married by the age of 18 tended to have lower education levels than their male spouses, which explained the spousal educational gap in the early married households. Bajracharya and Amin (2012, p.80) explained that although there is still no empirical evidence which shows that inadequate school participation directly causes early marriage, there is a research consensus that higher education decreases the vulnerability of young girls from early marriage as it establishes their autonomy and empowerment, which enable them to make wise marriage timing decisions. Formal education up to at least a secondary level can also equip young girls with sufficient knowledge and social networking skills to enable them to make a choice for their own life other than being child brides (UNFPA 2012, p.51). On the other hand, a low educational level is related to unemployment which leaves girls with limited options and prompts them to marry early (Bennet 2014, p.81).

Acquiring information, such as that about reproductive health, which can become a protective factor for young girls vulnerable to early marriage, can be accessed not only through formal education but also through the media (Berliana et al. 2018, p.5, UNFPA 2012, p.52). Gage (2013, p.131) found that mass media communication, alongside interpersonal communication, is powerful enough to enhance people's knowledge about harmful practices like early marriage. On this basis, professionals and policymakers maintain that exposure to mass media builds awareness and sensitivity about potential risks from marrying early and eventually could prevent the occurrence of early marriage (Sabbe et al. 2013, pp.7,10).

A family's socio-economic status can also be associated with early marriage. Several studies have shown that early marriage is strongly connected with poverty. An ethnographic study by Stark (2018, pp. 572-573) concluded that the one decisive reason for early marriage decision was the fact that parents could not afford to pay their daughters' higher education costs. In that study, both the parents and their daughters see marriage as a viable alternative to ensure the daughters' future. Similarly, Bennet (2014, p. 75) has found that poverty at the household-level led to school dropouts in Lombok, Indonesia, followed by early marriage of all young mothers whom she interviewed . From a statistical examination conducted in Nepal, it also has been found that girls from low-income households had a higher possibility to be married earlier; and they also had a low school enrolment record (Bajracharya & Amin 2012, p.90). From all the findings cited above, it is probable that economic constraints lead to early marriage, early drop out from school and educational inadequacy. In other words, educational inadequacy is a likely inherent consequence of poverty and early marriage.

Early marriage is also associated with place of residence. Rural living is strongly associated with poverty and poor development which increases the likelihood of early marriage practices (Bennet 2014, p.70). This is consistent with the findings from UNICEF (2014, p.3) which show that in general girls who live in rural areas are more likely to be married before age 18. However, in some countries like Rwanda and Turkmenistan, the possibility to be a child bride was higher in urban areas, while in other countries such as Chad and Namibia, urban-rural residency did not come out as a strong predictor of early marriage, since the urban-rural child bride ratio in both countries was pretty much in balance (UNICEF 2005, p.5). Aside from poverty and low educational attainment, the strong devotion to traditional customs in rural societies might be another possible reason for the higher prevalence of early marriage in rural settings. Kamal et al. (2015, pp. 135-136) argued that compared to urban areas, families in rural areas compared to their urban counterparts are more religious and obedient to traditional norms that identify women's 'natural' roles as wives and mothers.

2.4 Consequences of Early Marriage for Women

Studies about the consequences of early marriage are mostly focused on its proximate outcomes such as health risks, and rarely examine the long term outcomes of early marriage such as social and economic costs (Svanemyr et al. 2015, p.2). Therefore, this section discusses to the extent made possible by the existing literature, the socioeconomic and health consequences of early marriage for women.

2.4.1 Educational Attainment

Aside from educational inadequacy being the cause of early marriage, it can be a consequence as well. This is because early marriage can mean a stop to school attendance for the women. The literature is clear that early marriage is a factor that causes school dropouts and reduces the possibility that the women could achieve higher education (Dahl 2010, p.690). A quantitative study conducted by Delprato et al. (2015, p.53) suggests that if the law on early marriage is enforced properly, then it is estimated that years of schooling could be increased by 39% in Sub-Saharan Africa and by 15% in South West Asia. Morever, lower secondary school dropouts could be reduced by 11% in South West Asia countries, respectively. In addition, studies by Marphatia, Ambale and Reid (2017, p.11) in India, Bangladesh, Nepal and Pakistan, highlighted that women could only accomplish primary school education at most when the median age at first marriage was below 18 years. Furthermore , the consequences of early marriage could even transcend generations, as shown by a study by Sekhri and Debnath (2014, pp.1678-1679). Their work statistically proves that beyond the mother's lack of educational achievement, her children's academic performance could also be affected negatively in a family where the mother was married off early. They found that for every one-year delay in the age at marriage of the mother, the likelihood of the children being able to perform cognitive tasks (arithmetic and reading tasks) would increase by 3.5 percentage points. Sekhri and Debnath (2014, p.1685) argued that the intergenerational shortcoming in the children's ability to perform cognitive tasks reproduces the mothers' own deprived schooling achievement.

2.4.2 Employment and Earnings

Similar to educational attainment, inadequate economic capability has been documented as both a cause and an effect of early marriage. Sekhri and Debnath (2014, p.1684) argued that the negative effects of early marriage on education generates a further detrimental impact on the girls' human capital which could theoretically hamper their employability and earning productivity. Most women who were married-off early and had low educational attainment were limited to only stay-at-home work status or participation in other informal and unpaid work (Parsons et al. 2015, p.15), affecting the women's earnings and officially-measured productivity. A quantitative study by Wodon, Savadogo and Kes (2017, p.4) has shown that the elimination of early marriage can significantly increase women's earning by a range of 1.44% to 15.6% in 15 countries studied in their article. Dahl (2010, p.711) illustrated that women who got married earlier would be more likely to quit school which eventually lead to future poverty by 31 percentage points. Wodon, Savadogo and Kes (2017, p.6) even emphasized that if economic impacts of early marriage for women calculated at the individual

level are aggregated to the national scale, the impacts can become quite significant to the countries' economic productivity measurements. Indeed, the leverage of early marriage on girls' education has made women more vulnerable to living in poverty and to disempowerment (Raj, Jackson & Dunham 2018, p.9). In this instance, the discussion on women's income poverty in conjunction with early marriage is mostly about women's lack of employability and earning ability, and educational achievement acts as a peripheral factor rather than a driver.

2.4.3 Women's Empowerment

In a general finding, Otoo-Oyortey and Pobi (2003, pp.44-45) found that girls who got married early tended to have less decision-making power within the household due to gender-based disparity, as well as age-based disparity with their partners. Being women and young is often associated with being less educated, less employable, socially more isolated and lower self-esteem, all of which can make them easily disempowered. In some cultures, young wives even did not have control over their own reproductive rights such as contraceptive use, the timing of their pregnancy, and maternal health care (Otoo-Oyortey & Pobi; Bennett 2014; Delprato & Akyeampong 2017).

There are not many evidence-based studies dedicated to connecting early marriage with women's empowerment. Nevertheless, the fact of the detrimental effects of early marriage on women's education and economic capability, which are demonstrated by many previous studies, indicates a negative association between early marriage and women's empowerment. At the same time , a study by Groot et al. (2018, pp.6-7) has demonstrated that in Ghana, the only aspect of women's empowerment that significantly relates to early marriage is the young brides' lack of belief in their own independence. Conversely, the other measurable aspects of women's empowerment such as financial control and social support were found to have no significant association with early marriage.

In order to better understand any connection between early marriage and women's empowerment, the indicators of women's empowerment itself need to be defined clearly. Phan (2016, p.360) argued that there are no consistent measurable indicators for women's empowerment, especially in developing countries. Phan proposed four indicators needed to conceptualise a more measurable concept of women's empowerment (Phan 2016, pp. 363-364). The four indicators are: women's participation in the labour force, women's decision-making in the household, women's contraceptive use, and women's education. These indicators can be measured through the datasets of the Demographic and Health Surveys

(DHS), since more than 300 DHS surveys in over 90 countries have been conducted since the program's inception.

2.4.4 Fertility and Pregnancy

According to UNICEF (2005, pp.7-8), when women got married before the age of 18, they were more likely to be exposed for a longer period to bearing more children. This has been relatively consistent in all regions across the globe. In Sub-Saharan Africa, 34% of women who were married early have 3 or more children, compared to only 7.2% of women who got married as adults (Yaya, Odusina & Bishwajit 2019, p.7). This evidence is also confirmed by Marphatia, Ambale, and Reid (2017, pp.6-7) who compiled several studies in South Asia that have shown a strong association between age at marriage of women and the number of children they bear. They argued that the higher fertility tendency in underage marriages is a result of a higher desire of young couples for children and inadequate utilization of contraceptives, which increase the rapidity of childbearing, as well as shorten birth intervals. Getting married at a younger age also extends the childbearing period which indicates the possibility of earlier sexual debut and pregnancy. In addition, young girls in many developing countries often get pressure from the family to give birth as soon as possible (Otoo-Oyortey & Pobi 2003, p.46).

Moreover, Marphatia, Ambale & Reid (2017, p.7) highlighted that the higher birth rate and 'faster' childbearing among young brides is also influenced by low contraceptive use among young married brides. They explained that there are at least two reasons why many adolescent girls did not use contraceptives adequately: poor knowledge of family planning and husband's demand regarding preference for sons. These two factors affect women's access to appropriate modern contraceptive methods, as well as their control over birth and pregnancy. In these crucial respects, women's empowerment plays yet another important role in determining women's decision on contraceptive use.

Sen (1999, p.217) argued that women should be spared from having a high birth rate in order to be able to fulfil their potential human capabilities. This is because high fertility has a strong link with women's illiteracy and unemployment and the burdens of childbearing and child nurturing could limit women's capability and opportunity (women's freedom) to play a vital role in the family and society, equal to men. Additionally, the more children that women have to conceive, the more risk of pregnancy complications they have to go through, which could threaten the mother's, as well as the children's life (UNICEF 2005, p.7).

2.4.5 Maternal Health Care

Many studies have acknowledged the empirical consequences of early marriage on women's health care utilisation. Aspects of maternal health care that have been associated negatively with early marriage are the utilisation of antenatal care, neonatal-tetanus vaccinations, the likelihood of delivery assistance by skilled birth attendants and attendance at postnatal checks (Delprato & Akyeampong 2017, pp.565-566; Godha et al. 2016, pp.506-509; Nasrullah, Zakar & Kramer 2013, p.520). The negative association of early marriage with these aspects of maternal healthcare is consistently observed in various developing countries in Sub-Saharan Africa and South Asia. For example, when the age at first marriage was delayed to 18 or more years, there was a 3.2% higher possibility of women receiving maternal neonatal tetanus vaccination Sub-Saharan Africa and 34% increase of antenatal visit in South-Western Asia (Delprato & Akyeampong 2017, p.565). Similarly in Indonesia, a study by Kurniati et al. (2018, pp.9-10) found that the rates of antenatal service utilisation and skilled delivery assistance were particularly lower for women who got married at age 19 or earlier compared to those who got married at ages between 20 and 29 years. They argued that older mothers have more knowledge and experience about maternal and reproductive health which they acquire through their experience and formal or informal education, which, in turn, encourages them to seek professional healthcare services during pregnancy and childbirth (Kurniati et al. 2018, p.13). However, Godha et al. (2016, p.508) accentuate the importance of the mediation by place of residence (urban or rural) in the association between age at marriage and maternal healthcare utilisation. While according to Delprato and Akyeampong (2017, pp. 563, 565) it also depends on intervention in the women's decision-making by others in the household such as husbands, parents or older people.

Further on the matter of healthcare, Sen (1999, p.212) understood that women should make their voices heard in the family in order to ensure the well-being, including good health care of each family member. He emphasized that aspirations of women should be supported by education and employment, given how marriage at younger ages weakens a woman's position in the family, leading eventually to their powerlessness to decide on maternal healthcare utilisation.

2.4.6 Child Mortality

Early marriage can lead to life-threatening pregnancy for both the mother and child as an extended and more detrimental impact of poor maternal health care (Nasrullah, Zakar & Kramer 2013, pp.517-518). Aside from the maternal health care factor, another reason why early marriage can lead to pregnancy-related death is the physiological factor that physical

immaturity of young girls can increase the risks of pregnancy complications such as eclampsia (Marphatia, Ambale & Reid 2017, pp.8-9). Furthermore, Marphatia, Ambale and Reid (2017, pp. 8-10) showed that the magnitude of maternal mortality driven by early marriage has been not as high as child mortality, as the first birth is far riskier for the child than the mother. The data demonstrated that the possibility of child death was 50% higher when the mothers gave birth at the age of 18 or below, while the maternal mortality risk was also significantly higher for young wives and mothers, especially for those who were under 16 years of age. In addition, Delprato and Akyeampong (2017, p.561) showed with a statistical analysis of data that delaying women's age at first marriage beyond 18 years of age contributed to a considerable reduction in infant mortality and an increase in children's basic vaccination utilisation.

2.4.7 Contraceptive Use

Walker (2012, p.232) noted that brides aged under-18 would be more likely to have lower prevalence of contraceptive use, which was noted in the previous section. A statistical examination by Kennedy et al. (2011, p.4) found in East Asia and the Pacific countries that contraceptive prevalence was the lowest among married adolescents compared to the married adults. In addition, they also showed the unmet need for contraception among married female adolescents was significantly higher than that among adults, indicating the inability of adolescent brides to delay their pregnancy or space their births even though they were willing to do so, due to the limited independent choice within the households (Kennedy et al. 2011, p.8). Also, according to Otoo-Oyortey and Pobi (2003, pp.47-48), young wives are often forced into unprotected sexual intercourse by their much older and sexually experienced partners, making them vulnerable to exposure to HIV/AIDS and other sexually transmitted infections. Otoo-Oyortey & Pobi (2003, p.48) further highlighted that one out of five girls who were infected by HIV/AIDS in the worst-HIV/AIDS-affected African countries were examples of that situation.

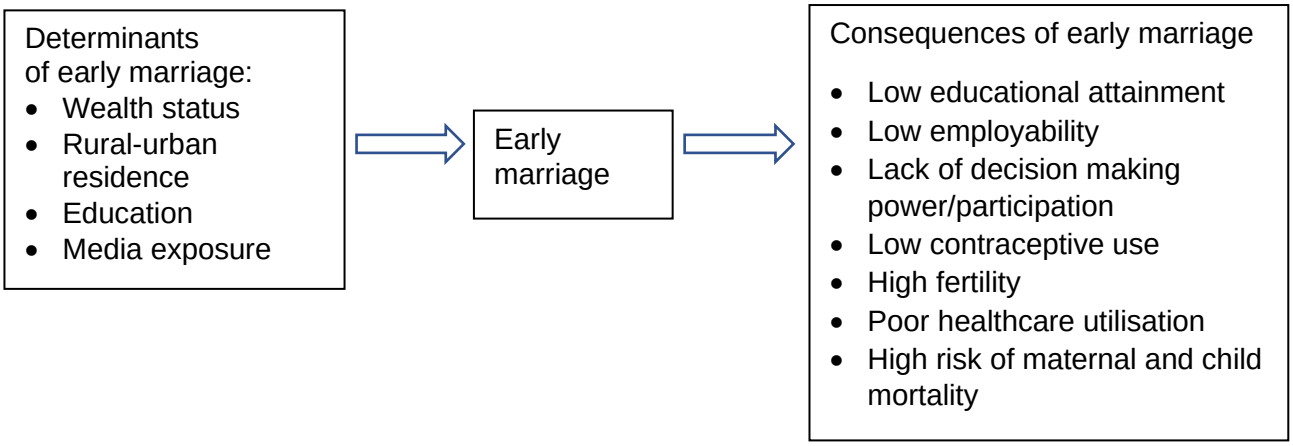
Raj, Jackson & Dunham (2018, p.9) highlighted the driving factors of reported low contraceptive use among married adolescent females. These factors consist of 'lesser mobility (lesser freedom and capacity to go and get contraceptive services independently), lesser access to reproductive health knowledge and services, and lesser contraceptive decision making'. Further, from the findings of a qualitative study in Ethiopia and India, McClendon et al. (2017, p.806) explained that a social norm promoting early childbearing often drives the husband and extended family to coerce the wife's pregnancy as soon as possible after marriage. This social pressure, complemented by limited knowledge of family planning, is

another barrier that has prevented young brides from having proper access to contraceptive use.

2.5 Conceptual Framework

The comprehensive relation between early marriage, its determinants and its associated consequences on women derived from the literature review can be conceptualised as follows:

Figure 2.1. Conceptual framework describing determinants and consequences of early marriage for women



Source: Drawn by the author based on a review of the literature

Data analysis in this project follows the above framework, which is divided into two parts. In the first part, the determinant factors suggested in the literature are positioned as the independent variables, when early marriage becomes the dependent variable. This analysis is intended to test the hypothesis whether particular socioeconomic and demographic aspects such as the low wealth status, rural residency, low educational attainment and lack of media exposure are demonstrably the strong predictors of early marriage. Secondly, early marriage is set as the independent variable and all of the associated consequences of early marriage discussed in the literature review are positioned as the dependent variables. The purpose of this analysis model is to explore whether the outcomes in several women's empowerment and reproductive health indicators are significantly different between women who were married before the age of 18 years and women who were married later. Women's empowerment aspect is represented by women's educational attainment, employability, and decision making power within the household and contraceptive use, while reproductive health aspect is represented by fertility, maternal health care, and child mortality. Once the outcome's differences are found to be significant, the findings can eventually justify the impact of early marriage.

CHAPTER 3
METHODOLOGY

3.1 Introduction

This study is based on an analysis of quantitative secondary data that have not been analysed with the focus of the present research. Vartanian (2011, p.9) defines secondary data set as a typically broad and comprehensive survey that employs a large number of samples and is usually representative for broader contexts (e.g. regions and countries). The collection of such data is usually conducted by large-scale stakeholders such as governments and institutions. According to Vartanian (2011, pp. 13-15), the utilisation of secondary data resources has several reasonable advantages. First of all, it saves cost and time for collecting and organising primary data. Secondly, the vast and comprehensive data enable researchers to perform analysis by advanced techniques. The large data coverage also enables researchers to examine diverse types of variables in order to answer various research questions. Moreover, the variables conceived in secondary data resources are relevant to the current policy implications as the data represent multiple socio-demographic variables.

3.2 Data Source

The secondary data used in this research are the raw data set from the latest Indonesia Demographic and Health Survey (IDHS 2017). IDHS 2017 is funded and conducted by the National Population and Family Planning Board, Statistics Indonesia, and Ministry of Health, Government of Indonesia in collaboration with United States Agency for International Development (USAID). USAID funded ICF International to provide technical assistance through the DHS Program (NPFPB 2018, p.1). IDHS 2017 (and preceding surveys) provide a versatile dataset containing various socio-demographic variables needed for this research.

National Population and Family Planning Board (2018, p.4) reports that the IDHS 2017 successfully interviewed 47,963 households. From the surveyed households, 49,627 women respondents aged 15-49 and 10,009 married men respondents aged 15-54 were interviewed individually. According to NPFPB (2018, p.2) the sample of households was selected for this survey by two-stage stratified sampling. In the first stage, 1,970 census blocks were chosen from the 34 provinces of Indonesia by the method of probability proportional to size (pps), where size is the number of households in each census block. These selected census blocks were expected to yield 49,250 households in total consisting of 25,300 urban households and 23,950 rural households. From these selected households, it was expected to interview a total

of 59,100 women aged 15-49 years and 24,625 never-married men aged 15-24 years. Eight households were selected in each selected census block to yield 14,193 married men age 15-54 to be interviewed with the married men's questionnaires.

In the second stage, 25 households were selected by systematic random sampling from every selected census block. According to NPFPB (2018, pp.2-3), in each of the 25 households of each selected census block, eight households were systematically chosen to obtain the 15-54 married men respondents. While for the women respondents, every 15-49 women living in the selected 25 households were all chosen to be interviewed.

3.3 Data Quality

Data for the IDHS 2017 were collected through a staged process. First of all, pre-tests were conducted for approximately two months in selected samples of census blocks in three provinces. The aim was to test the clarity and understandability of questionnaires by respondents for further improvement (NPFPB 2018, p.3). Next, before the actual field data collection, 1,160 fieldworkers, including interviewers, editors and supervisors were trained for approximately three weeks in nine training centers across Indonesia (NPFPB 2018, pp. 3-4). The training involved group discussion activities and field roleplaying to ensure the trainees' capacity in understanding the content of the questionnaires, understanding concepts and definitions conceived in the survey, conducting interviews and recording the interview responses. The actual field data collection took place from 24 July to 30 September 2017 which involved one supervisor, one field editor, four female interviewers and two male interviewers in each team (NPFPB 2018, p.4). Lastly, the collected data were processed in BPS (Statistics Indonesia) central office with a computer package program called Census and Survey Processing System (CSPro), which is specifically designed to process the IDHS data (NPFPB, p.4). The data processing stage involved 34 editors, 112 data entry operators, 33 compare officers, 19 secondary data editors and two data entry supervisors. In order to maintain its quality, the data were entered twice by two different operators and then other officers cross-checked the data entry for errors and inconsistencies.

3.4 Data Utilisation

IDHS 2017 used a total of four questionnaires, namely, Household Questionnaire, Women's Questionnaire, Married Men's Questionnaire, and Never-Married Men's Questionnaire (NPFPB 2018, p.2). Of these, the present study focuses on data for ever-married women collected via the Women's Questionnaire, and more specifically, those who were married before the age of 18, for the purpose to examine the determinants of early marriage.

Furthermore, the project will also utilize the data of women who were married after their 18th birthday in order to compare the associated consequences of early marriage in those who were married before and after their 18th birthday.

3.4.1 Variables

The IDHS 2017 does not provide information about all the variables deemed relevant for this study, therefore only those variables are used for which information is available from the survey. These variables are discussed below.

A. Age at first marriage

Women's age at first marriage is the essential indicator to distinguish early marriage (under 18 marriages) and non-early marriages (18 years or more).

B. Determinants of early marriage

As pointed out in the literature review, the determinants of early marriage for women in Indonesia are defined through four measurable variables, namely educational attainment, wealth status, place of residence (urban-rural) and media exposure.

C. Associated consequences of early marriage

Associated outcomes of early marriage for women in this research are defined through several indicators, including women's employment, women's household decision making, women's education, women's contraceptive use, fertility, maternal health care and child mortality. Each indicator comprises several sub-indicators as summarised in the table of variables below.

Table 3.1. List of variables and their indicators

Outcome/Causation	Variables/Indicators	Categories
Marriage	Early marriage	Age at first marriage under 18 years
	Not early marriage	Age at first marriage 18 years or above
Determinants of early marriage	Educational attainment	No education; below secondary; Completed secondary or higher
	Household Wealth status[1]	Low; Medium; High
	Place of residence	Rural; Urban
	Media exposure	Access to Newspaper/Radio/TV/ Internet
Consequences of early marriage for women	Women's employment (Phan 2016)	Not employed; employed fulltime; employed part-time
		Employed without paid; employed with paid
	Women's household decision making (Phan 2016)	Participate in decision-making on women's health care; participate in decision-making on major household purchases; participate in decision making on visiting families/relatives; participate in any two of the decision making; participate in all three of the above decision making; does not participate in all three decisions
	Women's education (Phan 2016)	Below secondary; completed secondary or higher
	Women's contraceptive use (Phan 2016)	Knows about any modern contraceptive method; know all modern contraceptive method; know any traditional contraceptive method
		Unmet need for family planning; met need for family planning
		Currently using any modern contraceptive method; currently using any traditional contraceptive method; not currently using any contraceptive method
	Fertility	0-2 children ever born; 3 or more children ever born
		Average birth intervals below 24 months; average birth intervals 24 months or above
		Had first birth before the age of 20 years; had first birth at the age of 20 years or more

[1] Household wealth status is measured by a composite index based on a household's housing characteristics including construction materials, availability of drinking water, sanitation facilities and ownership of various assets and consumer goods such as television, bicycle and car (NPFPB 2018, p.10). In the present study, household wealth status is categorised as Low, Medium and High.

		Had first sexual intercourse before the age of 20 years; had first sexual intercourse at the age of 20 years or more
	Maternal health care (Delprato & Akyeampong 2017)	Antenatal care providers (general practitioner, obstetrician, nurse, midwife, village midwife, traditional birth attendant); no antenatal care
		Received two or more tetanus injection during the pregnancy for the last live birth; received less than two tetanus injection during the pregnancy for the last live birth
		Received assistance during delivery (general practitioner, obstetrician, nurse, midwife, village midwife, traditional birth attendant); no assistance during delivery
		Had postnatal checks during the first two months after birth; no postnatal checks within two months after birth
	Infant and child mortality	Experienced under-5 mortality (neonatal, infant and child mortality); not experienced any under-5 mortality

Source: Prepared by the author based on literature review

D. Hypothesised relationship of predictor variable with the dependent variable

Marriage (early marriage or timely marriage) is the dependent variable when we consider the determinants of early marriage, but marriage (or early marriage) becomes the independent variable when we consider the consequences of early marriage. Based on the review of the literature, the relationship between the independent/predictor variables and the dependent variables are hypothesised as follows under the two opposite scenarios described above. It should be noted that the variables described in Table 3.1 and discussed below do not constitute an exhaustive list of all variables that may influence early marriage or that are the consequences of early marriage, but comprise only those variables for which data were collected at the 2017 IDHS.

In the first scenario, it is hypothesised that educational achievement and the likelihood of early marriage are inversely related, i.e. the lower the education level, the higher the possibility for women to be married off early. Household wealth status is positively related to the likelihood of early marriage, i.e. the lower the household wealth quintile, the greater the possibility of early marriage. Place of residence is also an important variable influencing early marriage in that women who live in rural areas are more likely to be exposed to early marriage than women

in urban areas. Lastly, early marriage is influenced by media exposure, which is hypothesised as having an inverse relationship with early marriage, i.e. the more the women are exposed to media information, more likely it is that early marriage does not occur.

In the second scenario, i.e. when considering the consequences of early marriage, it is hypothesised that women who are married under the age of 18 years have poorer employment status, lower participation in household decision-making, lower educational attainment, lower prevalence of contraceptive use, higher fertility rate, poorer utilisation of maternal health care and higher child mortality rate compared to women who are married at the age of 18 years or above.

3.4.2 Data Analysis

Data for this research are analysed in the form of bivariate and multivariate relationships for which SPSS software version 25.0 (IBM Corp. 2017) is used. In order to examine the determinants of early marriage in Indonesia, this research uses a multivariate logistic regression test which is used to calculate multiple predictors of one dependent variable (Stockemer 2019, p.163) with 95% confidence interval. The logistic regression test is conducted in a binary formulation in which ever married women data is categorised into marriage under 18 years of age (early marriage) and marriage 18 years of age or above (timely marriage). Next, in order to measure the consequences of early marriage, this project will run bivariate binary logistic regression tests to understand the influence's magnitude of predictor variable on dependent variable (Stockemer 2019, p. 148). The predictor variable is women's age at first marriage, and multiple indicators of early marriage consequences are set as the dependent variable. From this test, the odds ratio from both categories (early married women and non-early married women) can be compared to find out whether age at first marriage has significant influence on those multiple associated consequences or not. However, before performing the logistic regression test, this study runs bivariate Chi-square tests between age at first marriage and every associated variable. Chi-square test is used to determine statistical association between measured variables (Stockemer 2019, pp. 127-128).

3.4.3 Ethics

The IDHS 2017 data used for this research were downloaded by registering with the DHS website (https://dhsprogram.com). The procedures of data collection and questionnaires used in the survey were reviewed and approved by ICF Institutional Review Board (IRB), while the Indonesia–specific survey protocols were reviewed by the ICF IRB and by an IRB in Indonesia (The DHS Program n.d.). According to the ICF IRB, the survey complies with the U.S.

Department of Health and Human Services regulations for the protection of human subjects, while the Indonesia IRB ensures that the survey complies with laws and norms of the Indonesia. Moreover, the names and addresses of the respondents are not included while downloading the data. Therefore, no separate ethics approval is required for using the data for this paper.

Moreover, according to Tripathy (2013, p.1478), as long as the secondary data respondents are anonymous and the researcher does not have any access to the coded identifying information, the ethics board only need to confirm the anonymity. Tripathy (2013, pp. 1478-1479) added that the utilization of secondary data should possess a written permission from the data owner. Regarding this matter, this project has obtained the official authorization from the ICF International as one of the data owners to access and utilize the IDHS 2017 data set through DHS program website (https://dhsprogram.com/). The letter of authorization is included as an attachment in this project.

3.5 Constraints

The use of secondary data in any analysis can have several constraints (Vartanian 2011, pp.15-17). Consequently, the present research is also constrained by the researcher's lack of control over the questions asked of the respondents, the researcher's inability to extract additional information from the respondents outside of the surveyed questions. Additionally, as mentioned before, not all the variables assumed to influence early marriage or not all the consequences of early marriage can be examined from the IDHS 2017 data, because information about all these variables or all these consequences is not available in the dataset.

CHAPTER 4
DETERMINANTS AND CONSEQUENCES OF EARLY MARRIAGE FOR WOMEN IN INDONESIA – ANALYSIS OF IDHS 2017 DATA

4.1 Introduction

The project utilises weighted data derived through the 'All Women questionnaires' of the Indonesian Demographic and Health Survey 2017 (IDHS 2017). It is necessary to use weighted data because, according to NPFPB (2018, p. xxx), the population of Indonesia is not evenly distributed in that the numbers of people in several provinces are much smaller compared to those in other provinces. This makes the sample size at the IDHS 2017 in some provinces not large enough to generate valid and reliable estimates of various parameters at the regional/provincial level. Due to this reason, some provinces have been oversampled requiring some other provinces to be under-sampled. However, this change in the sampling proportion would not provide accurately representative data at the national level. Therefore, the sample must be weighted when analysing the data from IDHS 2017 in order to provide nationally representative estimates. Thus, all the analysed data reported in the IDHS 2017 report are derived from the weighted cases in order to present the most representative estimates for Indonesia. Therefore, following the principles of IDHS 2017 report, the analysis in the present chapter also weights the raw data.

This analysis in this chapter is organised in three main categories: univariate analysis based on frequency distributions, bivariate analysis based on relationships between the women's age at marriage and each of socio-demographic, family planning and health, and various other characteristics of the women taken one at a time, and multivariate analysis showing the determinants of early age at marriage. Meanwhile, the analysis of consequences of early marriage is using the bivariate model as well.

4.2 Univariate Analysis

At the IDHS 2017, a total of 49,627 women were interviewed throughout Indonesia. Out of these, 38,045 women or 76.7% of the respondents have had ever been in union with a partner, with various marital statuses: married, living with partner, widowed, divorced, and no longer living together/separated. A large majority of these women (71.5%) are currently married. The rest of the sampled women are never married.

The summary of women's current union status as at IDHS 2017 is presented in Table 4.1 below.

Table 4.1. Current marital status of women aged 15-49 years. Indonesia. IDHS 2017

Type of Union	Married under 18 years (early marriage)		Married at 18 years or above (timely marriage)		Total	
	Number	Percent	Number	Percent	Number	Percent
Never married	-	-	-	-	11,582	23.3
Married	9,894	92.1	25,585	93.7	35,479	71.5
Living with partner	54	0.5	147	0.5	201	0.4
Widowed	312	2.9	565	2.1	877	1.8
Divorced	451	4.2	923	3.4	1,374	2.8
No longer living together/separated	31	0.3	83	0.3	114	0.2
Total	10,742	100	27,303	100	49,627	100

Source: Computed by the author from IDHS 2017 data.

Of the 38,045 women who were married or in union, 28,2% were married before the age of 18 and 71,8% were married at the age of 18 or above (Table 4,2). Since only a very small proportion of the women (0.4%) are in union (i.e. living with partner), all the women who are ever married or in union will henceforth be referred to as married women. The distributions of early married women and timely married women according to marital status are almost similar to one another, except that the early married women have a slightly higher prevalence of divorce.

Table 4.2. Age at first marriage of ever married women aged 15-49 years. Indonesia. IDHS 2017.

Age at marriage	Number	Percent
Married before 18 years	10,742	28.2
Married at 18 years or above	27,303	71.8
Total	38,045	100.0

Source: Computed by the author from IDHS 2017 data.

These 38,045 ever married/in-union women as at the IDHS 2017 are used as the baseline data for the following analysis in this section.

4.3 Characteristics of the Respondents

Tables 4.3, 4.4 and 4.5 show the distribution of women by various demographic and socio-economic characteristics classified by their age at marriage/union (younger than 18 or 18 and above). The tables are classified by socio-demographic characteristics (Table 4.3), family planning and health characteristics (Table 4.4), and other relevant characteristics (Table 4.5).

Table 4.3. Socio-demographic characteristics of married/in union women aged 15-49 years. Indonesia. IDHS 2017.

Characteristics	Married under 18 years (Early marriage)	Married at 18 years or above (Timely marriage)	Total
	(%)	(%)	(%)
Age group in years	N = 10,742	N = 27,303	N = 38,045
15-19	5.5	0.6	2.0
20-24	10.2	8.8	9.2
25-29	10.9	16.9	15.2
30-34	15.0	19.4	18.1
35-39	18.7	20.8	20.2
40-44	19.1	17.8	18.2
45-49	20.5	15.8	17.1
Mean	35.65 years	35.42 years	35.49 years
Educational attainment	N = 10,742	N = 27,303	N = 38,045
No education	4.0	1.2	2.0
Below secondary	88.6	48.6	59.9
Secondary and higher	7.4	50.3	38.1
Wealth status	N = 10,742	N = 27,303	N = 38,045
Low	50.4	32.8	37.8
Middle	21.9	20.1	20.6
High	27.7	47.1	41.6
Place of Residence	N = 10,742	N = 27,303	N = 38,045
Urban	35.2	54.2	48.8
Rural	64.8	45.8	51.2
Employment status	N = 10,742	N = 27,303	N = 38,045
Not working	38.4	36.5	37.0
Working part-time	12.6	7.1	8.6
Working full-time	49.1	56.4	54.3
Paid/unpaid employment (women who worked in the last 12 months)	N = 6,610	N = 17,314	N = 23,924[a]
Not paid	26.9	18.0	20.4
Paid	73.1	82.0	79.6
Number of children ever born	N = 10,742	N = 27,303	N = 38,045
0	4.0	8.7	7.4
1-2	50.3	63.3	59.6
3 or more	45.7	28.0	33.0

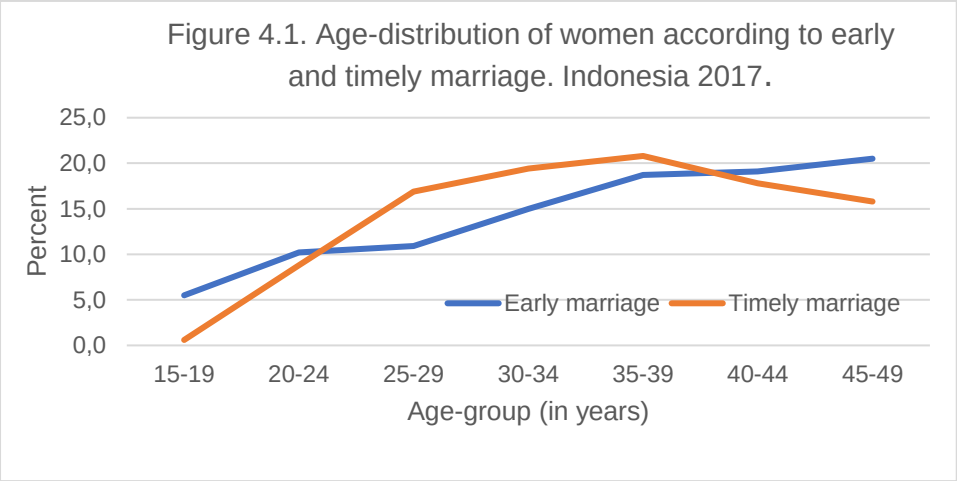
Characteristics	Married under 18 years (Early marriage)	Married at 18 years or above (Timely marriage)	Total
	(%)	(%)	(%)
Age at first birth	N = 10,314	N = 24,928	N = 35,242[b]
<15	14.9	0.2	4.5
15-19	72.0	11.6	29.3
20-24	11.4	56.8	43.5
25-29	1.3	24.2	17.5
30-34	0.2	5.7	4.1
35-39	0.1	1.2	0.9
40-44	0.0	0.2	0.2
45-49	0.0	0.0	0.0
Mean	17.55 years	23.32 years	21.63 years
Average birth interval	N = 8,255	N = 17,288	N = 25,543[c]
Less than 24 months	3.7	6.4	5.5
24 months or more	96.3	93.6	94.5
Age at first sex	N = 10,742	N = 27,303	N = 38,045
<15	23.3	0.2	6.7
15-19	76.1	28.0	41.6
20-24	0.6	49.0	35.4
25-29	0.0	18.0	12.9
30-34	0.0	3.5	2.5
35-39	0.0	0.9	0.7
40-44	0.0	0.2	0.2
45-49	0.0	0.0	0.0
Mean	15.51 years	22.11 years	20.24 years

Source: Computed by the author from IDHS 2017 data.
[a] Baseline: women who were working in the last 12 months
[b] Baseline: total children ever born > 0
[c] Baseline: total children ever born > 1

Table 4.3 shows the distribution of ever married women according to socio-demographic characteristics as at the IDHS 2017.

The age-distribution of the women with early marriage are only slightly different from that of women with timely marriage. The index of dissimilarity (Rowland 2003) between the two distributions calculated by the author is 12.4 on a scale of 0 to 100, where 0 indicates no dissimilarity and 100 indicates total dissimilarity. The mean ages of the women with early marriage and timely marriage are almost equal; however, on average, women with early marriage are slightly older, which indicates that the sample of early married women contains more women of older age cohorts who would have been married off early, long before the campaigns or regulations about early marriage were started. Figure 4.1 provides a visual presentation of the two age-distributions, which shows that the women with early marriage are

less represented in age-groups 20-24 through 35-39 compared to women with timely marriage. Women with timely marriage dominate the other age-groups.



Source: Drawn by the author from Table 4.3 (IDHS 2017 data)

The difference between the two groups of women is much more distinct with respect to educational attainment. While more than 50% of the timely married women have secondary or higher educational attainment, nearly 90% of the early married women have below secondary education.

The two groups of women differ also on wealth status, with 50% of the early married women belonging to poor (low wealth status) households, while 47% of the timely married women come from rich (high wealth status) households. Also, the early married women are predominantly rural (65% living in rural areas), but the majority of the timely married women (54%) live in urban areas.

While nearly equal proportions of the early and timely married women were not working at the time of the survey, larger proportions (56%) of the timely married women were working full time compared to the proportion of early married women (49%). Further, of the women who worked in the last 12 months before the survey, three-quarters or more worked in paid jobs, but here again proportionately more of the working women among the timely married women (82%) had paid jobs compared to those of the early married women (73%).

The early married women have higher fertility with 46% having had 3 or more children, compared to only 28% of the timely married women with 3 or more children. The early married women tended have children early, with a mean age at first birth of 17.5 years and the timely married women tended to have their first birth on average six years later than the early married

women. However, more than 90% of each group of women have had their children spaced two years or more. The early married women also had their first sexual relation on average six and a half years before their timely marrying counterparts.

Table 4.4 shows the distribution of ever married women according to family planning and maternal health characteristics as at the IDHS 2017. There is no difference in knowledge about contraceptive methods between the early married women and timely married women, and almost all the women in the two groups know about modern methods of contraception.

Table 4.4. Reproductive health characteristic of married/in union women aged 15-49 years. Indonesia. IDHS 2017.

Characteristics	Married under 18 years (Early marriage)	Married at 18 years or above (Timely marriage)	Total
	(%)	(%)	(%)
Knowledge about contraceptive methods	N = 10,742	N = 27,303	N = 38,045
Knows no method	0.6	0.4	0.4
Knows only folkloric method[1]	0.0	0.0	0.0
Knows only traditional method[2]	0.0	0.0	0.0
Knows modern method[3]	99.4	99.6	99.5
Current contraceptive use	N = 10,742	N = 27,303	N = 38,045
No method	38.4	40.7	40.0
Traditional method	3.3	7.1	6.0
Modern method	58.3	52.2	53.9
Need for contraceptive method	N = 10,742	N = 27,303	N = 38,045
No need	28.4	30.8	30.1
Met need	61.6	59.3	60.0
Unmet need	10.0	9.8	9.9
Prenatal healthcare in the last birth	N = 3,464	N = 11,546	N = 15,010[d]
No care	3.4	1.3	1.8
Yes, some care	96.6	98.7	98.2
By professional health workers[4]	95.8	98.4	97.8
By traditional birth attendant	5.5	2.5	3.2
By other	0.0	0.0	0.0
Assistance during delivery in the last 5 years[5]	N = 3,464	N = 11,546	N = 15,010[e]
No assistance	0.3	0.2	0.2
Yes, some assistance	99.7	99.8	99.8
Total	100.0	100.0	100.0
By professional health workers	86.2	94.2	92.3
By traditional birth attendant	32.8	18.7	22.0
By other	0.7	0.8	0.8

Characteristics	Married under 18 years (Early marriage)	Married at 18 years or above (Timely marriage)	Total
	(%)	(%)	(%)
Number of tetanus toxoid injection received	N = 3,464	N = 11,546	N = 15,010[d]
0 injection	29.8	29.9	29.8
1 injection	29.7	33.2	32.4
2 or more injections	40.5	36.9	37.8
Baby postnatal check within 2 months after birth	N = 3,464	N = 11,546	N = 15,010[d]
No	32.2	28.8	29.6
Yes	67.3	70.7%	69.9
Don't know	0.5	0.5	0.5
Ever experienced neonatal mortality (death within 28 days after birth)	N = 10,314	N = 24,928	N = 35,242
No	93.4	96.1	95.3
Yes	6.6	3.9	4.7
Ever experienced infant mortality (death between birth and first birthday)	N = 10,314	N = 24,928	N = 35,242
No	88.4	93.8	92.2
Yes	11.6	6.2	7.8
Ever experienced child mortality (death between first and fifth birthday)	N = 10,314	N = 24,928	N = 35,242
No	96.8	98.7	98.1
Yes	3.2	1.3	1.9

Source: Computed by the author from IDHS 2017 data.
[d] Baseline: last birth in three/five years prior to the surveyed;
[e] Baseline: all birth in three/five years prior to the survey
[1] Folkloric contraceptive method : any other traditional methods.
[2] Traditional contraceptive method: periodic abstinence (rhythm), withdrawal and abstinence.
[3] Modern contraceptive method: Pill, IUD, Injections, Diaphragm, Condom, Female Sterilization, Male Sterilization, Implants, Lactational Amenorrhea, Female Condom, Foam and Jelly, and Emergency Contraception.
[4] Professional health workers category: General Practitioner, Obstetrician, Nurse, Midwife and Village Midwife.
[5] Respondents could have use multiple providers depending on numbers of delivery they had in last five years.

However, the two groups of women do have some difference with respect to current use of contraception. Women in early marriage display a higher propensity to use contraception than women in timely marriage, but what is more important in this context is that a larger proportion of women marrying early have tended to use modern methods of contraception compared to women in timely marriage (at age 18 or above). The two groups of women have low and almost equal levels of unmet need for family planning.

More than 90% of women in the two groups have used antenatal care (prenatal care before last birth) prior to the birth of their last child, although a slightly higher percentage (3.4%) of the women in early marriage had no antenatal care compared to only 1.3% of the timely marrying women with no antenatal care. The proportion of women obtaining antenatal care

from professional health workers is slightly larger (98.4%) among women in timely marriage compared to that among women marrying early (95.8%).

It is very rare for a woman not to have any assistance during the birth of a child, as shown by the very small percentages with 'No assistance' (0.3% and 0.2% respectively), but the timely marrying women show a greater tendency to use professional assistance during delivery. The greater propensity to use professional health care for prenatal checks by the timely marrying women is reflected in their greater propensity to have professional assistance during delivery of their children.

Identical proportions of women in the two groups have had at least one tetanus toxoid (TT) injection, but a larger proportion of the early marrying women have had more than two TT injections. The timely marrying women show a slightly greater propensity to use postnatal checks for their babies within two months after birth.

Larger proportions of the early marrying women have experienced the death of their children in the first 28 days after birth (neonatal mortality), between birth and the baby's first birthday (infant mortality) and between birth and the baby's fifth birthday (child mortality) (Table 4.4).

Table 4.5 shows the distribution of the early and timely married women according to various other characteristics. With respect to media exposure, almost all the women in each group (96% or more) have television exposure, with the timely marrying women having a slight edge over the early marrying women in this regard. Other media formats, such as newspaper, radio or the internet are much less accessed by the women of both groups, but here again the timely marrying women have larger proportions accessing these media compared to the early marrying women.

Table 4.5. Other characteristic of married/in union women aged 15-49 years. Indonesia. IDHS 2017

Characteristics	Married under 18 years (Early marriage)	Married at 18 years or above (Timely marriage)	Total
	(%)	(%)	(%)
Exposure to media	N = 10,742	N = 27,303	N = 38,045
Access to newspaper			
Not at all	75.9	59.6	64.2
Yes	24.1	40.4	35.8
Access to radio			
Not at all	68.7	59.8	62.3
Yes	31.3	40.2	37.7
Access to television			
Not at all	4.3	3.4	3.7
Yes	95.7	96.6	96.3
Access to internet			
Not at all	79.4	55.1	61.9
Yes	20.6	44.9	38.1
Participation in deciding how to spend earnings (women who had paid jobs)	N = 4,167	N = 12,872	N = 17,039[f]
Not participated	3.1	3.2	3.1
Participated	96.9	96.8	96.9
Participation in healthcare decision	N = 9,948	N = 25,732	N = 35,680[g]
Not participated	14.3	10.5	11.6
Participated	85.7	89.5	88.4
Participation in household decision-making	N = 9,949	N = 25,732	N = 35,680
Not participated in all three decisions[6]	5.1	3.6	4.0
Participated in one decision	10.2	7.8	8.5
Participated in two decisions	19.0	19.2	19.2
Participated in all three decisions	65.7	69.3	68.3

Source: Computed by the author from IDHS 2017 data.
[f] Baseline: currently married/in union women who have paid jobs; g. Baseline: currently married/in union
[6] The three household's decisions are decision on women's health care, decision on major household's purchases and decision on visit to family/relatives.

Among the women who had paid jobs, most (97%) in each group participated in deciding how to spend their earnings. Similarly, more than 85% of the women in each group participated in the decision on their own healthcare.

Women were asked specific questions about decision-making in the household, namely decisions about their own health care, about major household purchases and about visiting family/relatives. Table 4.5 shows the percentage of women in each marriage group who participated in decisions about any one of the above, any two of the above or all three of the

above. More than 65% of the women in each marriage group participated in all of the three decisions, while 5% or less did not participate in any decision making.

Tables 4.1 through 4.5 show the distribution of the early and timely marrying women with respect to various socio-demographic, family planning and health, and various other characteristics for which data were collected at IDHS 2017.

The next step is to examine the statistical relationship between the age at which the women were married, i.e. early marriage or timely marriage (the dependent variable) and the socio-demographic, family planning and health, and various other characteristics (the predictor or independent variables), taken one at a time. This type of relationship is also known as bi-variate relationship between the dependent variable and one of the independent variables. The statistical tool used in this research for examining such bi-variate relationships is the Chi-square test which measures the degree of statistical association between two variables. Stockemer (2019, p.126) explained that the basic principle of Chi-square test is to prove the null hypothesis (H_0) and alternative hypothesis (H_a). The null hypothesis assumes that there is no significant association between two variables or the variables are independent of one another, while the alternative hypothesis assumes the logical inverse. To prove the H_0 and H_a, the Chi-square test generates the significance value (p-value). H_0 is accepted if the p-value is more than 0.05. But if the p-value is less than 0.05, then the H_0 can be rejected and H_a can be accepted which means that there is a statistically significant association between the dependent and the independent variables, taken one at a time.

The results of the Chi-square test of the relationship between age at first marriage and multiple associated variables is summarised in Table 4.6 below.

Table 4.6. Results of bivariate chi-square test between age at first marriage and multiple variables

Associated variables with the age at first marriage	Value of Chi-square (χ^2)	Pearson's significance coefficient (p-value)	Cramer's V (measure of the strength of association between two variables)
1.Current age	1,322.061	0.000	0.19
2. Educational attainment	6,096.679	0.000	0.40
3.Wealth status	1,344.319	0.000	0.19
4. Place of residence	1,109.942	0.000	0.17
5.Access to newspaper	884.405	0.000	0.15
6.Access to radio	263.549	0.000	0.08
7.Access to television	19.316	0.000	0.02
8.Access to internet	1,924.744	0.000	0.22
9.Employment status	353.137	0.000	0.10
10.Paid/unpaid employment	237.833	0.000	0.10
11.Participation in deciding how to spend earnings	0.060	0.806	0.002
12.Participation in health care decision	101.925	0.000	0.05
13.Participation in household decision making	101.845	0.000	0.05
14.Number of children	1,185.679	0.000	0.18
15.Age at first childbirth	18,857.460	0.000	0.73
16.Average birth intervals	77.333	0.000	0.06
17.Age at first sexual intercourse	17,904.729	0.000	0.69
18.Knowledge about contraceptive methods	9.010	0.029	0.02
19.Current contraceptive use	244.181	0.000	0.08
20.Need for contraceptive method	21.202	0.000	0.02
21.Prenatal health care utilisation	62.517	0.000	0.07
22.Assistance during delivery	0.035	0.852	0.002
23.Tetanus toxoid injection	18.897	0.000	0.04
24.Baby postnatal checks	14.624	0.001	0.03
25.Neonatal mortality	113.261	0.000	0.06
26.Infant mortality	294.372	0.000	0.09
27.Child mortality	142.600	0.000	0.06

Source: Computed by the author from IDHS 2017 data.

Table 4.6 shows the values of the χ^2 statistic measuring the association between each of the 27 variables shown in the left hand column and the level of significance (p-values) for these statistics. Two of these 27 variables, namely, Participation in deciding how to spend women's earnings (Variable 11), and Assistance during delivery (Variable 22) exhibit p-values that are far in excess of 0.05, hence they are statistically not significant. This means that the majority of the variables above have statistical association with women's age at first marriage. However, since the value of the χ^2 statistic is sensitive to sample size (i.e. a high value due to a large sample size), the strength of association between two variables is further tested by the statistic Cramer's V, which has a range of 0 to 1, corresponding to no association (value 0) and perfect association (value 1). In practice, a Cramer's V of 0.10 provides a good minimum threshold for suggesting that there is a substantive relationship between the two variables

(Crewson 2016, p.79). However, in Table 4.6, a Cramer's V of 0.05 or more can be accepted as 0.10 due to rounding.

Thus, in Table 4.6, a total of seven variables (i.e. variables 7, 11, 18, 20, 22, 23 and 24) are found to have weak relationships with age at first marriage. Therefore, these variables are not included in the next step where the relationship between the various characteristics as predictor (or independent) variables, and age at first marriage (as the dependent variable), or between age at first marriage (as the predictor variable) and various characteristics (as consequences of early marriage), are examined through a multivariate analysis. The need for a multivariate analysis arises because the dependent variable may be simultaneously influenced by more than one predictor variable.

4.4 Determinants of Early Marriage

Based on the discussions in the literature review (Chapter 2) and methodology (Chapter 3, Table 3.1), four socio-economic and demographic variables are considered as determinants of early marriage, namely educational attainment, wealth status, place of residence and exposure to media. The influence of these determinants on early marriage are examined with the help of multiple logistic regression analysis (Table 4.7). Logistic regression is used because the dependent variable, age at first marriage, is defined here as a binary variable, where it takes the value 1 if age at first marriage is less than 18 years (early marriage), and the value 0 if age at first marriage is equal to or more than 18 years (timely marriage).

Table 4.7. Determinants of early marriage among all ever married women. Indonesia 2017

Determinants	Odds Ratios (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Education				
No education	17.966	15.147	21.309	0.000
Below secondary	10.564	9.718	11.483	0.000
Secondary and higher (ref)	1 (ref)			
Wealth status				
Low	0.998	0.937	1.064	0.960
Middle	1.005	0.936	1.078	0.900
High (ref)	1 (ref)			
Place of residence				
Urban (ref)	1 (ref)			
Rural	1.412	1.338	1.491	0.000
Access to newspaper				
Not at all	1.083	1.019	1.152	0.011
Yes (ref)	1 (ref)			
Access to radio				
Not at all	1.094	1.035	1.157	0.002
Yes (ref)	1 (ref)			
Access to internet				
Not at all	1.105	1.036	1.178	0.002
Yes (ref)	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

The odds of early marriage vary according to level of education. The lower the level of education, the higher the odds of getting married early. Compared to women with secondary education and above, women with no education are about 18 times as likely to get married early, and women with incomplete secondary education are 10.5 times as likely to get married early. Place of residence also has a significant influence on early marriage. Women living in rural areas are 1.4 times as likely or approximately 40% more likely to get married early as women living in urban areas. Media exposure appears to have only a small, but statistically significant influence on the odds of getting married early, with non-exposure to each of the media formats – newspaper, radio and internet – displaying about 10% higher odds of getting married early compared to exposure to such media. These results are in accordance with what has been hypothesised in the research.

However, the multiple logistic regression analysis for wealth status variable appears to have no significant association with age at first marriage variable as the p-values for wealth status categories are greater than 0.05. Therefore, unlike what has been hypothesised, the wealth status is not a significant determinant of early marriage.

Thus the present analysis reveals that only two variables, education and place of residence have any appreciable and statistically significant influence on the chances of women getting married early.

4.5 Consequences of Early Marriage

Based on the discussions in the Literature Review (Chapter 2) and Methodology (Chapter 3, Table 3.1), seven socio-economic and demographic characteristics of women are considered as consequences of early marriage. These seven characteristics are: women's education, women's employment, women's household decision-making, women's contraceptive use, fertility, maternal health care, and infant and child mortality. The consequences of early marriage on these characteristics are examined with the help of bivariate logistic regression analysis (Tables 4.9 through 4.22). Bivariate logistic regression is used because (i) there is one predictor variable (age at first marriage), defined here as a binary variable, where it takes the value 1 if age at first marriage is less than 18 years (early marriage), and the value 0 if age at first marriage is equal to or more than 18 years (timely marriage); and (ii) the dependent variables, taken one at a time have also been defined as binary variables. These definitions are given in Table 4.8 below.

Table 4.8. Values assigned to the predictor variable (early marriage) and dependent variables (consequences). Ever married women. Indonesia 2017

Variable	Category	Value
Predictor variable: Age at first marriage	Less than 18 years	0
	18 years or more	1
Consequences		
Educational attainment	Below Secondary	0
	Completed Secondary or more	1
Employment status	Not working	0
	Working (paid or unpaid)	1
Paid employment	Not paid	0
	Paid	1
Participation in decision making regarding health care, major household's purchases and visits to family or relatives	Not participated	0
	Participated in at least one decision	1
Knowledge of family planning methods	Does not know any method	0
	Knows at least one method	1
Current use of modern[2] contraception	Not using any method	0
	Using any method	1
Need for contraception	Not using or no need	0
	There is unmet need	1
Number of children ever born	2 or fewer	0
	3 or more	1
Age at first sexual intercourse	20 years or more	0
	Less than 20 years	1
Age at first birth	20 years or more	0
	Below 20 years	1
Birth interval	Less than 24 months	0
	24 months or more	1
Prenatal health care	No care	0
	Some care	1
Obtained prenatal healthcare - professional health workers	No	0
	Yes	1
Number of tetanus toxoid injection received during the last pregnancy	No TT	0
	At least one TT	1
Baby postnatal check within 2 months of birth	Not checked	0
	Checked	1
Experienced neonatal mortality (death within first 28 days after birth	Not experienced	0
	Experienced	1
Experienced infant mortality (death between birth and first birthday	Not experienced	0
	Experienced	1
Experienced child mortality (death between first and fifth birthday)	Not experienced	0
	Experienced	1

Source: Prepared by the author based on literature review

[1] This analysis focuses on the use of modern methods of contraception, because Indonesia's National Population and Family Planning Board (BKKBN) prioritises and promotes the use of modern contraception in line with Indonesia's strategic development plan (Ministry of National Development Planning 2019, pp. 94,103). Moreover, according the IDHS 2017 (Table 7.5) only 6.4% of currently married women use traditional methods of contraception.

4.5.1 Age at First Marriage and Women's Educational Attainment

Table 4.9. Age at first marriage and women's educational attainment, ever married women. Indonesia 2017.

Age at first marriage	Completed secondary or higher education			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	0.079	0.073	0.085	0.000
Married at 18 years or above (timely marriage)	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

Table 4.9 above confirms previous findings that early marriage severely curtails a woman's chances of being educated, as the early married women are found to be nearly 92% less likely [(1-0.079)x100] to complete secondary or higher education compared to the timely married women.

4.5.2 Age at First Marriage and Women's Employment

Table 4.10. Age at first marriage and women's employment status, ever married women. Indonesia 2017.

Age at first marriage	Working			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	0.924	0.883	0.968	0.001
Married at 18 years or above (timely marriage)	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

For the sake of binary logistic regression analysis in the present context, women's employment status, as at the IDHS 2017 is defined as "not working" and "working in paid or unpaid jobs". In the present case, early marriage does not appear to have a large impact on women's employment, as the early married women are approximately only 8% less likely to work (in paid or unpaid jobs) compared to the timely married women (Table 4.10).

Table 4.11. Age at first marriage and women's paid employment, ever married women. Indonesia 2017.

Age at first marriage	Paid jobs			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	0.593	0.555	0.634	0.000
Married at 18 years or above (timely marriage)	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

However, early marriage does appear to have a considerable impact on the chances of women getting paid jobs. Table 4.11 shows that, of those women who have jobs the early married women are about 40% less likely to have paid employment compared to the timely married women. The findings of Tables 4.10 and 4.11 imply that even though the likelihood of the early married women having employment might not be too different from that of the timely married women, the early married women are far less likely to have paid employment in comparison to the timely married women.

4.5.3 Age at First Marriage and Women's Participation in Household Decision Making

Table 4.12. Age at first marriage and women's participation in household decision-making, ever married women. Indonesia 2017.

Age at first marriage	Participated in any household decision making			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	0.697	0.624	0.779	0.000
Married at 18 years or above (timely marriage)	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

The consequence of early marriage also reduces the chances of women's participation in household decision making. This is shown in Table 4.12 where early married women are nearly 30% less likely to participate in household decision-making compared to their timely marrying counterparts.

4.5.4 Age at First Marriage and Contraceptive Use

As shown in Table 3.1 of Chapter 3 of this research project, contraception can be viewed via three categories, namely women's knowledge of any contraceptive method, women's contraceptive use, and women's need for contraception. However, based on bivariate Chi-square association tests between age at first marriage and a number of variables, summarised in Table 4.6 above, women's knowledge about contraceptive methods and women's need for contraception have weak associations with the age at first marriage (Cramer's V value < 0.05). Therefore, the only aspect of this variable examined in the present analysis is women's contraceptive use. Further, as stated in Footnote 2 of Table 4.8, it is the use of modern contraception that matters in the Indonesian context. Therefore, Table 4.13 shows the consequence of early marriage on the use of modern contraceptive methods.

Table 4.13. Age at first marriage and women's use of modern contraceptive methods, ever married women. Indonesia 2017.

Age at first marriage	Use modern contraceptive method			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	1.276	1.220	1.335	0.000
Married at 18 years or above (timely marriage)	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

Interestingly, early married women are more likely to use modern contraceptive methods as they have a 25% or higher chances of using modern contraceptive methods compared to their timely marrying counterparts. This result does not support the initial hypothesis that early marriage reduces the chances of modern contraceptive use.

4.5.5 Age at First Marriage and Indicators of Fertility

The next dependent variable in this scenario is women's fertility. which is measured by indicators such as the number of children ever born, age at first sexual intercourse, age at first child birth and average birth interval.

Table 4.14. Age at first marriage and number of children ever born to women, ever married women. Indonesia 2017.

Age at first marriage	More than two children ever born			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	2.167	2.069	2.270	0.000
Married at 18 years or above (timely marriage)	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

It is important to note that the Indonesian government has a target to achieve a total fertility rate (TFR) of 2.1 children per woman by 2024 (Ministry of National Development Planning 2019, p.102). In order to achieve this target, each Indonesian woman should aim to have, on average 2.1 children, or 10 women should have, on average 21 children among them. In the present study, the effect of early marriage on achieving this target is examined in reverse, that is by the likelihood of the early and timely married women to have more than two children. Table 4.14 shows that the early married women are more than twice as likely to have two or more children compared to the timely married women. In other words, compared to the timely married women, the early married women are more than twice as likely to miss the target of 2.1 children per woman set in Indonesia's national development plan.

The consequence of early marriage on the age at first sexual intercourse is analysed in Table 4.15. It should be noted that, in examining the consequence of early marriage on the age at first sexual intercourse and age at first childbirth, the binary classification of age at first sexual intercourse is defined as 0 if this age is 20 years or more, and 1 if this age is below 20 years. Similarly, the age at first child birth is defined as 0 if the age is 20 years or more and 1 if the age is below 20 years. The reason for this definition is to see the consequence of early marriage in particular on the first sex/birth below 20 years of age (see Table 4.8).

Table 4.15. Age at first marriage and age at first sexual intercourse, ever married women. Indonesia 2017.

Age at first marriage	Having first sexual intercourse below 20 years of age			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	405.991	318.694	517.201	0.000
Married at 18 years or above (timely marriage	1 (ref)			

Source: Computed by the author from IDHS2017 data.

The consequence of early marriage on the age at first sexual intercourse is to hasten sexual debut. As shown in Table 4.15, the early married women are approximately 406 times more likely to have sexual intercourse below 20 years of age compared to the timely married women. Of course, this result may be obvious, because unless there are exceptions, the earlier the marriage, the earlier will be the initiation of sexual relations.

Table 4.16. Age at first marriage and age at first child birth, ever married women. Indonesia 2017.

Age at first marriage	Had the first birth below 20 years of age			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	49.549	46.246	53.088	0.000
Married at 18 years or above (timely marriage)	1 (ref)			

Source: Computed by the author from IDHS 2017 data

As the initiation of sexual relations is hastened by early marriage, so also is the age at first child birth. This can be seen in Table 4.16 where the early married women are found to be nearly 50 times more likely to have their first birth at ages younger than 20 years compared to their timely marrying counterparts. In other words, early married women are much more likely to experience adolescent pregnancy than timely married women.

It is interesting to see in Table 4.17 that the early married women are almost 80% more likely to have an average birth interval of 24 months or longer compared to their timely marrying counterparts. This indicates that although the early married women have an earlier initiation into sexual relations and earlier birth of their first child compared to the timely marrying women,

the earlier marrying women appear to be better in properly spacing their births. This is good considering that a birth interval of less than 24 months is associated with a higher risk of birth-related mortality and morbidity (NPFPB 2018, p.65).

Table 4.17. Age at first marriage and average birth interval, ever married women. Indonesia 2017.

Age at first marriage	Average birth intervals 24 months or more			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	1.782	1.564	2.029	0.000
Married at 18 years or above (timely marriage	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

4.5.6 Age at First Marriage and Maternal Health Care

Next on the list of consequences of early marriage considered in the present study is maternal health care. According to the research variables listed in Table 3.1 (Chapter 3), maternal healthcare is measured through four aspects, namely prenatal health care, assistance during delivery, numbers of tetanus toxoid injections during pregnancy, and postnatal checks. After the Chi-square association tests and Cramer's V in Section 4.3, the following three variables are found to have weak relations with age at first marriage, and therefore not considered for further analyses by logistic regression: (i) Assistance during delivery; (ii) Number of tetanus toxoid injections received during pregnancy; and (iii) Postnatal check. Thus, only the variable about prenatal check is examined in the logistic regression. This variable has two further components: (i) some prenatal health care, (ii) prenatal healthcare by professional health workers.

Table 4.18. Age at first marriage and prenatal care utilisation, ever married women. Indonesia 2017.

Age at first marriage	Utilised some prenatal care			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	0.386	0.303	0.493	0.000
Married at 18 years or above (timely marriage	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

Age at marriage influences women's prenatal health care utilisation quite significantly. This is demonstrated by the findings of Table 4.18. which shows that early married women have approximately 61% less likelihood of utilising prenatal health care during pregnancy compared to the timely married women. However, not all women who utilise prenatal health care consult professionally qualified health workers. The early married women have even a lower chance of utilising professional prenatal health than they have of utilising any prenatal healthcare. Table 4.19 shows that among women who utilised some prenatal health care during their pregnancy, early married women are shown to be 63% less likely to utilise prenatal health care by professional health workers compared to their timely marrying counterparts. Once again, the age at first marriage quite significantly influences women's utilisation of prenatal health care by professionals.

Table 4.19. Age at first marriage and prenatal care by professional health workers, ever married women. Indonesia 2017.

Age at first marriage	Prenatal care by professional health workers			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	0.371	0.298	0.462	0.000
Married at 18 years or above (timely marriage	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

4.5.7 Age at First Marriage and Child Mortality

Finally in the present analysis, the consequences of early marriage are examined with respect to the women's experience of child mortality, in the first 28 days after birth (neonatal mortality, shown in Table 4.20), from birth and until the child's first birthday (infant mortality, shown in Table 4.21), and from birth until the child's fifth birthday (child mortality, shown in Table 4.22).

Table 4.20. Age at first marriage and experience of neonatal mortality, ever married women. Indonesia 2017.

Age at first marriage	Experienced neonatal mortality (death within first 28 days after birth)			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	1.718	1.554	1.900	0.000
Married at 18 years or above (timely marriage	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

The findings in the three tables mentioned above show that women who are married before the age of 18 years (early marriage) are much more likely than the timely married women to experience their children's death in all the three periods for which children's mortality is measured.

Table 4.21. Age at first marriage and experience of infant mortality, ever married women. Indonesia 2017.

Age at first marriage	Experienced infant mortality (death between birth and first birthday)			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	1.980	1.829	2.143	0.000
Married at 18 years or above (timely marriage	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

However, the early married women's higher likelihood of experiencing child mortality increases from 72% for neonatal mortality (Table 4.20), through 98% for infant mortality (Table 4.21), to 148% for child mortality (Table 4.22).

Table 4.22. Age at first marriage and experience of child mortality, ever married women. Indonesia 2017.

Age at first marriage	Experienced child mortality (death between first and fifth birthday)			
	Odds Ratio (OR)	95% Confidence Interval		p-values
		Lower	Upper	
Married before 18 years (early marriage)	2.478	2.123	2.891	0.000
Married at 18 years or above (timely marriage	1 (ref)			

Source: Computed by the author from IDHS 2017 data.

4.6 Discussion

According to IDHS 2017 data, the age-distribution of ever married women show that the early married women (married below 18 years of age) have higher proportions in the very young age-group (below 20 years) and older age-groups (40 years and above) compared to the timely married women (married at 18 years of age or more), although the average age of two groups of ever married women differ very little from one another (Figure 4.1 and Table 4.3). Moreover, the dissimilarity index between the two age-groups is 12.4 on a scale of 0 to 100, and therefore, very low. All of these imply that the promotion of ideal ages at marriage for women and men through a program called *Pendewasaan Usia Perkawinan* (maturation of age at marriage), with a minimum age at marriage of 21 years for women and 25 years for men (BKKBN 2008, p.19), has not progressed much. Moreover, the fact that the minimum legal age at marriage for women in Indonesia is still 16 years and has been for 45 years adds to the perpetuation of early marriage of women. It may be recalled that early marriage is defined by the United Nations (UNFPA, 2012, pp.10-11) as marriage under the age of 18 years.

Logistic regression analysis of IDHS 2017 shows that educational attainment and place of residence are to be statistically significant determinants of early marriage of women (Table 4.7). Women with no education and those with below secondary education are respectively 18 and 11 times more likely to be married before the age of 18 years. This result confirms the findings from previous studies that education up to secondary level is a strong protective factor for girls from getting married early. Statistics Indonesia (n.d.) reported that, as of 2019, Indonesian women's average length of schooling is 7.89 years, which is far below the 12 year-duration of average secondary education in Indonesia. The findings of the present study are based on data collected in 2017 (IDHS 2017), when the average length of schooling for women would have been even shorter. This indicates that there may be many women who are still specifically vulnerable to early marriage in Indonesia.

The effect of urban-rural residence on early marriage, is shown by the finding that women living in rural areas have a 41% higher probability of being married early compared to urban women (Table 4.7). This confirms other findings of the persistence of developmental disparities between rural and urban areas in Indonesia. Girls in rural areas find it more difficult to access higher education and beneficial reproductive health information compared to their urban counterparts (Berliana et al. 2018, p.5). Statistics Indonesia (2017, pp.77-78) reported that 40.71% of urban women aged 15 years or older have completed their secondary education compared to only 18.72% of rural women. The employment opportunities for rural women are also very limited as, according to AIPEG, DFAT and Monash University (2017, p.64), female youth underemployment in rural areas is persistently high, while female youth underemployment in urban areas has decreased considerably. Therefore, rural women have a lower chance to be empowered through education and employment, and it is understandable that many of them and their families have chosen to get them married off early.

Media exposure is found to have a statistically significant association with age at first marriage, but it is a relatively weak association. According to logistic regression analysis (Table 4.7), women who have no access to media (newspaper, radio and internet) are approximately only 10% more likely to marry before reaching the age of 18 years compared to those who do have access to such media. Thus, media exposure is not necessarily a strong determinant of early marriage. This could be because media messages against early marriage do not get noticed, in the contexts of other, competing media messages that overshadow any communication aimed at reducing early marriage.

It is hypothesised earlier in the thesis that household wealth is inversely related to early marriage, but the present analysis shows no statistically significant association between the two (Table 4.7), and therefore household wealth status is not a significant determinant of early marriage. In other words, there is no guarantee that well-to-do families in Indonesia would not get their daughters married off early. A family's decision to get their daughters married is not always driven by economic motives. Well-to-do households can marry off their daughters early because of many complicated factors such as fears of premarital pregnancies (Hidayana et al. 2016, p.45), traditions or religious customs (Rumble et al. 2018, p.2; Grijns & Horii 2018, pp.463-464) and the family's unequal gender balance (UNFPA 2012, p.12). Therefore, the complex familial factors in making decision on marriage need to be investigated more in future research.

It may be noted in this connection that age at marriage can only be affected by circumstances which predate the marriage. The results presented in this thesis are based on analyses of factors that were present at the time of the survey which, strictly speaking, could not have "determined" early marriage. However, the values of the variables analysed in this study may correlate with the underlying determinants of age at marriage (i.e. factors that predate early marriage); and their correlation coefficients, combined with reasonable assumptions about such correlations may point to aspects of the underlying causation of early marriage. This is a limitation of using data collected in cross sectional surveys such as IDHS 2017. However, even with a cross-sectional survey, the analysis could become more meaningful if more extensive data were collected in the survey. For example, if it is found that living in richer households does not necessarily prevent early marriage (as has been found in this study), then it would have been helpful to know if the rich households adhered to conservative values regarding early marriage.

Considering the significance of educational attainment and rural residence as determinants of early marriage (Table 4.7), programs discouraging early marriage should put more emphasis on the lower educated and rural women as primary targets. The focus of such programs should be on how to keep young girls staying in schools longer, until at least they complete secondary or high school education – regardless of their socio-economic situation. For women coming from poor families, fully subsidised education should be provided, at least up to secondary level. However, according to Article 34(2) *Undang-Undang Nomor 20 Tahun 2003* (Law 20 of 2003) of the National Education System (State Secretary of Indonesia 2003), fully subsidised public schooling is available only up to primary level in Indonesia at present. According to UNFPA (2012, pp.51-52), giving equal access to education for all women can provide families with alternatives to not getting their daughters married early. This also implies, especially for girls living in rural areas, that the focus should be on improving rural development, prioritising access to secondary and higher education, as well as improved employment opportunities to give women more options other than being married early.

Several consequences of early marriage are identified in this study. Lower educational attainment is one of the most significant consequences of early marriage. It is found that, compared to timely married women, the early married women have a 92% less chance of completing their secondary or higher education (Table 4.9). Dropping out of school after getting married is the main reason why early married women are more likely to have lower education, because the timely married women (married at age 18 or later) are able to complete secondary or higher education before getting married. Commonly, it is difficult for female adolescents to continue their education once they are married as schooling is no longer

a priority for a married person. UNFPA (2012, p.11) noted that their new role as wives and mothers often forces them to give up schooling. Moreover, most schools in Indonesia do not allow a female student to continue being enrolled once they are married (*The Jakarta Post* 2018).

In terms of employment, the consequences of early marriage for women is not as significant as it is for educational attainment. The early married women are only 8% less likely to work compared to the timely married women (Table 4.10). Age at marriage does not seem to be a strong predictor of women's employment because, as Aisyah and Parker (2014, p.211) have founding some patriarchal cultures of Indonesia, women's common role is usually limited to the domestic arena. Moreover, a gendered role in marriage appears to be prescribed in Article 34, Verses 1 and 2 of the State Law 1 of 1974 on Marriage, which clearly states that the husband's responsibility is that of the breadwinner while the wife's responsibility is that of a household organiser (State Secretary of Indonesia 1974). This indicates that whether the women are married early or not, it does not significantly matter for their employment status as such gendered values persist in Indonesian society. However, early marriage is shown to generate a greater impact on women's opportunities to get paid jobs, as according to Table 4.11, early married women are approximately 40% less likely to have paid jobs compared to timely married women. It seems that although age at first marriage does not significantly affect women's chances of working, when the early married women have the opportunity to work, it would be more likely that they would mostly get unpaid jobs. This is probably due to the lower educational attainment of early married women, as it is argued that low educational attainment increases the possibility of women to work in unpaid and informal jobs (AIPEG, DFAT & Monash University 2017, p.10).

For the next identified consequence of early marriage, Table 4.12 shows that, compared to timely married women, early married women are about 30% less likely to participate in any household decision-making. According to Otoo-Oyortey and Pobi (2003, pp. 44-45) the lower participation of early married women in household decision-making is due to disparities between the husbands and the wives, including age difference in which the husbands are much older, as well as disparities in educational attainment. This makes young wives tend to be less empowered within the household. Moreover, the gendered role division within households in some Indonesian customs, as mentioned above, might perpetuate this condition.

The logistic regression analysis of the relation between age at first marriage and women's contraceptive use provides an interesting result. According to Table 4.13, the early married

women are more likely to use modern contraceptives by a factor of 1.28 (28% more likely to use modern contraceptives), compared to timely married women. Although the likelihood is not very high, it still does not correspond to the initial hypothesis mentioned in Chapter 3 that early married women would have a lower propensity to use modern contraceptives. The higher likelihood of early married women utilising modern contraceptive methods is influenced by their higher prevalence of modern contraceptive use. The timely married women, on the other hand, have a higher prevalence of traditional contraceptive use (Table 4.4). This implies that marrying early does not necessarily reduce Indonesian women's awareness of using modern contraceptives.

However, considering that early married women are about 2 times more likely to have more than two children (Table 4.14), the type of modern contraception that early married women use need to be categorised further, namely, whether they are using long-acting contraceptives or not. This is so, according to Winner et al. (2012, p.1999), because long-acting contraceptive methods such as intrauterine devices (IUD) and subdermal implants have very low failure rates, and therefore are very effective in preventing pregnancy. Thus, the correlation of early marriage and the use of long-acting contraceptive methods needs to be explored further in future research.

The significant likelihood of early married women giving birth to more children in this study is influenced by their earlier debut in sexual intercourse and child birth. It is shown in Table 4.15 that, compared to timely married women, the early married women are 406 times more likely to have their first sexual intercourse at ages below 20 years. Additionally, Table 4.16 shows that early married women are almost 50 times more likely to have their first birth at ages 20 years of age, which is considered as adolescent pregnancy. The earlier debut of sexual activity and child delivery indicates that when women enter married life, they do not delay their sexual activities, resulting in an earlier pregnancy. According to UNICEF (2005, pp.7-8), marriage at younger ages leads to undelayed sexual activity and undelayed pregnancy and eventually prolongs the reproductive period which results in higher fertility.

Nevertheless, according to Table 4.17, early married women are 78% more likely than the timely married women to have an ideal average birth interval of 24 months or more. This is interesting, given the fact that the early married women begin their sexual activity and childbearing earlier than their timely married counterparts. This is interesting also because, as Marphatia, Ambale and Reid (2017, p.7) have found, early marriage is associated with inadequate contraceptive use that leads to shorter birth intervals and rapid childbearing. In the present study, early married women have a higher prevalence of modern contraceptive

use than timely married women (Table 4.4) implying the early married women's greater likelihood of having birth intervals of 24 months or more, even though the efficacy of modern contraceptive use by the early married women has been questioned in this research because the early married women have a greater likelihood of having two or more children. In another context, Yeakey et al. (2009, pp.210, 212-213) have found that modern contraceptive use does not always produce consistent results in lengthening birth intervals. This is based on findings in Pakistan that the non-contraceptive users had longer birth intervals than contraceptive users; while, similarly, a study in Nigeria showed that there was no significant impact of contraception on the length of birth intervals. In other words, any debate about the effect of modern contraceptive use on birth intervals is inconclusive. Therefore, the impact of early marriage on birth intervals in this present study does not necessarily reflect the use of modern contraceptive use by the early married women. An investigation of the history of pregnancy and contraceptive use of early married women through a longitudinal study is recommended to better understand the relationship between early marriage, contraceptive use, number of children and birth intervals.

Early sexual debut and early childbearing do not only lead to higher fertility, as these factors can also lead to the greater likelihood of experiencing child mortality by the early married women, which could be due to their physiological immaturity, and this increases the risk of complications during pregnancy (Marphatia, Ambale and Reid 2017, pp.8-9). This is confirmed in the present study (Tables 4.20 through 4.22) which shows, compared to the timely married women, that the early married women are 72%, 98% and 148% more likely to experience neonatal, infant and under-five mortality, respectively.

This analysis also shows that early married women are 61% less likely than the timely married women to have utilised prenatal care services (Table 4.18), and 63% less likely to have utilised prenatal care services by professional health workers (Table 4.19). These lower utilisations of prenatal care services, especially the lower utilisation of professional antenatal care by the early married women, would have contributed to their greater likelihood of experiencing the mortalities of children under the age of five years. According to Tekelab et al. (2019, p.11), the utilisation of prenatal care alleviates the risks of neonatal mortality, as prenatal care provides mothers with information about potential complications surrounding their pregnancy, and provides the women with the needed immunisation in order to reduce the risks of experiencing child deaths. Kurniati et al. (2018, p.13) highlighted that early married women's poorer utilisation of antenatal health care is influenced by their educational inadequacy, which leads to inadequate information and knowledge about the importance antenatal health care. Moreover, they also explained that poor utilisation of prenatal care is

strongly associated with poorer access and availability, especially in rural areas. Thus, poor utilisation of prenatal care by the early married women can be linked to higher prevalence of early marriages in rural areas.

Considering the various consequences of early marriage for women, strong measures are needed to prevent the perpetuation of the practice of early marriage. Such measures would include increasing women's participation in schools, thereby improving their employability and decision-making capabilities after (timely) marriage. There should also be rigorous enforcement of the revised marriage law to ensure that there is no room for the marriage of women younger at ages than 18 years. Any person who consciously forges legal documents to manipulate girls' ages in order to allow them to get married early also should be heavily penalised. At the same time, all possible information about the detrimental consequences of early marriage should be well disseminated through various mainstream, digital or social media. This promotive approach is much needed to counter the traditional/religious values that are still supporting early marriage practices.

4.7 Chapter Summary

The results of bivariate and logistics regression analyses performed on IDHS 2017 data show that the majority of demographic, health, social and economic variables are statistically associated with age at first marriage. The exceptions are women's decision-making about controlling their own earnings, and assistance during delivery. In the contexts of the determinants of early marriage, the logistic regression analyses provide no evidence against the hypotheses stated in Chapter 1, except for the variable of household wealth status. In summary, the statistically significant determinants of early marriage as found in this chapter are: educational attainment, place of residence and exposure to media (newspaper, radio and internet).

With respect to consequences of early marriage for women, the findings of the analysis are also mostly in line with the stated hypotheses, although there are small exceptions. The bivariate regression analysis between age at first marriage and various associated consequence variables show that women who were married before the age of 18 years are less likely to have higher educational attainment, paid employment, higher participation in all household's decision making, and better utilisation of professional prenatal care, compared to women who were married later. In addition, women who were married earlier are also more likely to have younger age at first sexual intercourse, younger age at first child birth, more children, and experience higher child mortality, compared to the women who were married

later. In particular, an extremely significant difference between early married women and timely married women is found with respect to educational attainment, age at first child birth, and age at first sexual intercourse, where the very high odds ratios point to excessive disadvantage of the early married women in these aspects of life. However, contrary to what has been hypothesised, women getting married early (i.e. before the age of 18 years) are found to be more likely to use modern contraceptives and to have longer birth intervals, compared to women who were married later.

Finally, it is acknowledged that the age at first marriage may not be the only cause of the consequences examined in the present analysis, and that the interpretations of consequences of early marriage explained above may not be all encompassing, especially for the variables which showed statistically insignificant odds ratios. However, the analysis about consequences of early marriage on women in this study can give clearer and more empirical identification of what potential risks women might face when they get married early.

CHAPTER 5
SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 Summary

Early marriage or marriage before 18 years of age is a persistent global problem and its prevalence is high, especially in developing countries. It affects women more than men, causing them multiple social, economic and health problems.

Early marriage of women continues to exist in Indonesia at a high level, and even though there has been some reduction in its prevalence, progress in this direction has been rather slow. Various demographic, socio-economic, legal and cultural factors influence the perpetuation of early marriage in Indonesia. However, although early marriage has many detrimental effects for women, there are very limited detailed studies about the determinants and consequences of early marriage for women in Indonesia. The present study aims to fill this gap in knowledge with the following objectives:

(i) To identify and analyse the determinants for women's marriage before the age of 18 years in Indonesia, and

(ii) To identify the differences in socioeconomic and health outcomes between women who were married before 18 and women who were married later.

It is hypothesised that in Indonesia early marriage is determined by specific social, economic and demographic factors; and that early marriage impacts on women's education, employability, decision making power and reproductive health.

This study employs a quantitative method to examine the determinants and consequences of early marriage through an original analysis of data obtained from the latest Indonesia Demographic and Health Survey conducted in 2017 (IDHS 2017). The specific data for the present study pertain to ever-married women aged 15-49 years.

The conceptual framework for this study comprises two scenarios. The first scenario investigates the determinants of early marriage by treating age at first marriage as the dependent variable, and social, economic and demographic factors as independent or predictor variables. The second scenario examines the consequences of early marriage by treating age at first marriage as an independent variable, and multiple consequences as dependent variables. Based on a critical review of the literature in Chapter 2, this study has

hypothesised that the significant determinants of early marriage include educational attainment, household wealth status, rural-urban residence and exposure to media (newspaper, radio, television and internet). The hypothesised relevant variables for consequences of early marriage include women's education, employment status, participation in household decision making, contraceptive use, fertility, maternal health care utilisation and child mortality.

Age at first marriage is categorised into binary groups, namely early marriage (married before the age of 18) and timely marriage (married at 18 years of age or higher). These binary data are utilised as a baseline for analysis by using SPSS program version 25.0. In other to analyse the determinants of early marriage, this study performs multiple logistic regression test (one dependent variable and several independent variables) in order to obtain the odds ratio that can determine the likelihood or unlikelihood of women getting married early, based on educational attainment, wealth status, place of residence and exposure to media characteristics. While in order to analyse the consequences of early marriage, this study employs bivariate logistic regression tests (one independent variable, i.e. age at first marriage and the dependent variables, namely women's education, employment status, participation in household decision making, contraceptive use, fertility, maternal health care utilisation and child mortality taken one at a time). to examine the differences between early marriage and timely marriage of women based on odds ratio, for various consequences variables. All the logistic regression tests are conducted with 95% confidence intervals.

5.2 Summary of Findings

Educational attainment and place of residence are found to be statistically significant determinants of early marriage (Section 4.4, Chapter 4). This result has put further emphasis on the importance of having education up to secondary level for women. The short average years of schooling of women in Indonesia puts many women at risk of getting married early. Place of residence is also a statistically significant determinant of early marriage (Table 4.7). These two findings are related because rural women have limited access to education and only up to secondary level (Berliana et al. 2018, p.5), and they have limited employment opportunity (AIPEG, DFAT & Monash University 2017, p.64). These disadvantages provide rural women with limited options to carry on with their lives other than to get married early. Moreover, exposure to media (except television) has a relatively weak inverse association with early marriage. This could mean that if there is any message about the disadvantages of early marriage it is not strong enough to prevent women from getting married early.

It is hypothesised that household wealth is a determinant of early marriage, but the findings of this study (Table 4.7) show that there is no statistically significant association between the two, suggesting that economic motive does not always become a reason for Indonesian families to get their daughters married off early. There might be other more complicated behavioural, cultural or religious reasons for Indonesian families to marry off their daughters early, which need to be investigated further.

Regarding the consequences of early marriage, the findings of the analysis reported in Chapter 4 (Section 4.5) show no evidence against most of the hypotheses formulated about early marriage and its consequences. Early marriage is detrimental to women's ability to complete secondary or higher education. Early marriage also reduces the chance for women to participate in household decision-making. There is only a small difference in the chances of getting employed between the early married and timely married women, because it appears that whether married early or not, the gendered role of women in the household is predominantly that of domestic work (Aisyah & Parker 2014, p.211), although the early married women are at a slight disadvantage in terms of getting employment. However, compared to the timely married women, early married women certainly have a much lower chance of getting paid jobs when they do get employment (Section 4.5).

In terms of contraceptive use, the findings of this study do not support the hypothesis that early marriage is associated with lower contraceptive use. Instead, the early married women are much more likely than the timely married women to use modern contraceptive methods (Table 4.13). This indicates that marrying early does not seem to reduce women's awareness in using modern contraception. However, as the result in Table 4.14 demonstrates, early married women are about twice as likely as timely married women to give birth to more than two children. This is an anomaly because a larger prevalence of modern contraceptives among the early married women should have led them to have lower fertility. To unravel this apparent puzzle, it is necessary to investigate further what type of modern contraceptives the early married women use and when they started using them, because as Winner et.al. (2012, p.1999) have shown, only long acting modern contraceptives are effective in preventing pregnancies.

Early marriage significantly increases the likelihood of women having their first sexual intercourse and childbirth at ages below 20 years by nearly 406 times and 5 times, respectively (Tables 4.15 and 4.16). The earlier debut of sexual intercourse and childbirth expose the early married women to the risks of having more children compared to their timely marrying counterparts, unless the early married women use contraceptives effectively. However, it is

also found that the early married women are much more likely than the timely married women to have an average birth interval of 24 months or more (Table 4.17). Thus, despite having earlier debut in childbirth, the early married women appear to have been able to manage their birth spacing better than the timely married women. The puzzle of apparently longer exposure to child birth and greater likelihood of having two or more children, yet a greater likelihood of using modern contraceptives and having longer average birth intervals among the early married women, suggests that further research is needed to investigate historical data of pregnancy and contraceptive use of early married women compared to their timely marrying counterparts, in order to better understand the relationship between early marriage, contraceptive use, number of children and birth intervals.

With respect to maternal health care, the only aspect that has been found to have a strong enough statistically significant association with age at marriage is prenatal care. Other aspects of maternal healthcare, such as delivery assistance, tetanus toxoid injections and postnatal checks have very weak associations with age at first marriage (Table 4.6). Compared to the timely married women, early married women are much less likely to use prenatal care (Table 4.18) and prenatal care by professional health workers (Table 4.19). This result could be influenced by the lack of education and access to prenatal care services for early married women. This study also examined the consequences of early marriage for child mortality experienced by the early and timely married women. Compared to timely marriage, early marriage is found to increase the likelihood of women experiencing neonatal, infant and child mortality by 72%, 98% and 148%, respectively (Tables 4.20 through 4.22). The higher chance in child mortality eventually highlights the detrimental impacts of early marriage for maternal health due to the physical unpreparedness and inadequate anticipation for possible pregnancy complications.

5.3 The Way Forward: Future Research and Policy Implications

5.3.1 Recommendations for Future Studies.

The present study has examined the determinants and consequences of early marriage through a quantitative analysis of data collected by the Indonesia Demographic and Health Survey 2017. The scope of analysis is constrained by the available detail of the data. However, early marriage can be influenced by a variety of socio-economic and cultural factors which are unobservable through a quantitative method (Rumble 2018, p.3). Therefore, the findings of this study have opened ways for follow up studies to investigate the socio-economic and cultural factors, especially those that motivate Indonesian families in making decisions to get their daughters married under the age of 18 years. This would provide more detailed and

contextualised information about the driving factors of early marriage. Even within the scope of quantitative analysis, further studies could examine the details of contraceptive use by the early and timely married women according to details of methods used, i.e. whether traditional or modern, and if modern, whether long or short acting and duration of use.

Moreover, there are some other relevant variables related to early marriage that plausibly could have been included in the IDHS survey. For example, considering the strong influence of traditional or cultural values influencing early marriage, respondents' ethnicity and religion would be relevant factors to examine the propensity of early marriage as mentioned in Section 1.2 namely that early marriage practices are more prevalent in some ethnicities and Muslim communities like Sundanese in West Java, Madurese in East Java, and Banjarese in South Kalimantan. The data on pre-marital sex and pregnancy could also have been included in IDHS in order to explore their associations with a family's motive in marrying off their daughters early. In addition, the data about HIV/AIDS or other sexually transmitted diseases (STDs) is relevant to be examined, considering the associated impact of early marriage in regard to women being infected with HIV/AIDS or other STDs due to forced and unsafe sexual intercourse between partners (Section 2.4.7). Therefore, IDHS should consider the inclusion of these factors in its future surveys.

Further, although the scope and duration of the present thesis did not allow it, but in order to better understand the consequences of early marriage based on multiple factors, it is recommended that further research be conducted by using an appropriate multivariate model. For example, this means considering the health outcomes of early marriage by using longitudinal data on types of contraception, pregnancy histories, and maternal health complications.

5.3.2 Recommendations for Policy

From the analysis of available data, education (particularly education to secondary level) and urban-rural residence stand out as strong determinants of early marriage. Therefore, it is recommended that the provision of free or subsidised education should be extended at least to secondary level so that women of all socio-economic classes get uniform access to secondary education. Such a policy should be made mandatory. Moreover, development in rural areas needs to be improved to give wider opportunity for young rural women to be empowered outside the chances constrained by early married life. Rural development should include improvement in the provision of compulsory education to secondary level, at least for girls. The minimum legal age at marriage should be raised to 18 years and should be

implemented strictly to prevent loopholes allowing early marriage practices to continue. Finally, the various detrimental consequences of early marriage should be disseminated effectively with massive campaigns through various media in order to counter the cultural values that are still supporting early marriage.

5.4 Concluding Remarks

This research concludes with an important message. Early marriage generates detrimental consequences on women's educational attainment, employment status, participation in household decision making, fertility, safe age for sexual debut and childbirth, utilisation of prenatal health care. and experience of child mortality. In order to prevent such adverse consequences, even partially, it is imperative to improve women's education, and improve their employment opportunities, and household decision-making powers. In this direction, better exposure to the right media and rural development would be highly beneficial.

REFERENCES

AIPEG, DFAT & Monash University 2017, *Women's economic participation in Indonesia*, Australia Indonesia Partnership for Economic Governance, Department of Foreign Affairs and Trade, Monash University, Jakarta.

Aisyah, S & Parker, L 2014, 'Problematic conjugations: Women's agency, marriage and domestic violence in Indonesia', *Asian Studies Review*, vol. 38, no.2, pp.205–223.

Bajracharya, A & Amin, S 2012, 'Poverty, marriage timing, and transitions to adulthood in Nepal', *Studies in Family Planning*, vol. 43, no. 2, pp.79–92.

Bennett, LR 2014, 'Early marriage, adolescent motherhood, and reproductive rights for young Sasak mothers in Lombok', *Wacana, Journal of the Humanities of Indonesia*, vol. 15, no. 1, pp.66-86.

Berliana, S.M., Kristinadewi, P.A.N., Rachmawati, P.D., Fauziningtyan, R., Efendi, F. & Bushy, A 2018, 'Determinants of early marriage among female adolescent in Indonesia', *International Journal of Adolescent Medicine and Health*, pp. 1-6.

BKKBN 2008, *Pendewasaan usia perkawinan dan hak-hak reproduksi bagi remaja Indonesia [Age at marriage maturity and reproductive rights of adolescents in Indonesia]*, Badan Kependudukan dan Keluarga Berencana Nasional (National Population and Family Planning Board), Jakarta.

Buttenheim, AM & Nobles, J 2009, 'Ethnic diversity, traditional norms, and marriage behaviour in Indonesia', *Population Studies*, vol. 63, no.3, pp.277–294.

Crewson, P 2016, *Applied statistics*, Acastat, viewed 24 May 2020, <https://www.acastat.com/Pub/Docs/AppliedStatistics.pdf>.

Dahl, G 2010, 'Early teen marriage and future poverty', *Demography*, vol. 47, no. 3, pp.689–718.

Delprato, M., Akyeampong, K., Sabates, R. & Hernandez-Fernandez, J 2015, 'On the impact of early marriage on schooling outcomes in Sub-Saharan Africa and South West Asia', *International Journal of Educational Development*, vol. 44, pp.42–55.

Delprato, M & Akyeampong, K 2017, ‘The effect of early marriage timing on women's and children's health in Sub-Saharan Africa and Southwest Asia’, *Annals of Global Health*, vol. 83, no.3-4, pp.557–567.

Eng, Pvd 2019, ‘Underage marriage in Indonesia may worsen’, *The Jakarta Post*, viewed 2 September 2019, <https://www.thejakartapost.com/academia/2019/03/29/underage-marriage-in-indonesia-may-worsen.html>.

Gage, AJ 2013, ‘Child marriage prevention in Amhara region, Ethiopia: association of communication exposure and social influence with parents/guardians' knowledge and attitudes’, *Social Science & Medicine*, vol.97, pp.124-133.

Gastón, CM, Misunas, C & Cappa, C 2019, ‘Child marriage among boys: a global overview of available data’, *Vulnerable Children and Youth Studies*, vol. 14, no.3, pp.219–228.

Godha, D, Gage, A, Hotchkiss, D & Cappa, C 2016, ‘Predicting maternal health care use by age at marriage in multiple countries’, *Journal of Adolescent Health*, vol. 58, no.5, pp. 504-511.

Grijns, M & Horii, H 2018, ‘Child marriage in a village in West Java (Indonesia): Compromises between legal obligation and religious concerns’, *Asian Journal of Law and Society*, vol. 5, no.2, pp.453-466.

Groot, Rd, Kuunyem, MY & Palermo, T 2018, ‘Child marriage and associated outcomes in northern Ghana: A cross-sectional study’, *BMC Public Health*, vol. 18, no.1, pp. 1-12.

Hariyadi, D 2019, ‘Child marriage problems in South Sulawesi’, *Jaring.id*, viewed 26 February 2020, <https://jaring.id/perkawinan-anak/child-marriage-problems-in-south-sulswesi/>.

Hidayana, IM, Noor, IR, Benedicta, GD, Prahara, H, Zahro, FA, Kartikawati, R, Hana, F, Pebriansyah & Kok, MC 2016, *Factors influencing child marriage, teenage pregnancy and female genital mutilation/circumcision in Lombok Barat and Sukabumi Districts, Indonesia*, Yes I Do Alliance, Ministry of Foreign Affairs of Netherland, Amsterdam.

Horii, H 2018, ‘Child marriage, not all alike’, *Inside Indonesia*, viewed 26 February 2020, <https://www.insideindonesia.org/child-marriage-not-all-alike>.

IBM Corp. 2017, *IBM SPSS Statistics for Windows Version 25.0*, IBM Corp., Armonk, NY.

Inter-Parliamentary Union & Word Health Organization 2016, *Child, early and forced marriage legislation in 37 Asia-Pacific countries*, IPU, WHO, France.

Jones, GW 2001, 'Which Indonesian women marry youngest, and why?', *Journal of Southeast Asian Studies*, vol. 32, no.1, pp.67–78.

Jones, GW 2005, 'The "flight from marriage" in South-East and East Asia', *Journal of Comparative Family Studies*, vol. 36, no.1, pp. 93-119.

Kamal, SMM, Hassan, CH, Alam, GM and Ying, Y 2015, 'Child marriage in Bangladesh: trends and determinants', *Journal of Biosocial Science*, vol. 47, no.1, pp.120-139.

Kennedy, E, Gray, N, Azzopardi, P & Creati, M 2011, 'Adolescent fertility and family planning in East Asia and the Pacific: A review of DHS reports', *Reproductive Health*, vol. 8, no.11, pp.1-12.

Kurniati, A, Chen, C, Efendi, F & Berliana, SM 2018, 'Factors influencing Indonesian women's use of maternal health care services', *Health Care for Women International*, vol. 39, no.1, pp. 3-18.

Marphatia, AA, Ambale, GS & Reid, AM 2017, 'Women's marriage age matters for public health: a review of the broader health and social implications in South Asia', *Frontiers in Public Health*, vol. 5, no.269, pp.1-23.

Ministry of National Development Planning 2019, *Rencana pembangunan jangka menengah nasional 2020-2024 [National medium-term development plan 2020-2024]*, MNDP, Jakarta.

Ministry of State Secretary 2019, *Undang-Undang Nomor 16 Tahun 2019 tentang Perubahan atas Undang-Undang Nomor 1 Tahun 1974 tentang Perkawinan [Law 16 of 2019 regarding Revision of Law 1 of 1974 on marriage]*, MSS, Jakarta.

McClendon, KA, Mcdougal, L, Ayyaluru, S, Belayneh, Y, Sinha, A, Silverman, JG & Raj, A 2018, 'Intersections of girl child marriage and family planning beliefs and use: Qualitative findings from Ethiopia and India', *Culture, Health & Sexuality*, vol. 20, vol.7, pp. 799-814.

Nasrullah, M, Zakar, R & Krämer, A 2013, 'Effect of child marriage on use of maternal health care services in Pakistan', *Obstetrics & Gynecology*, vol. 122, no.3, pp.517–524.

National Population and Family Planning Board, Statistics Indonesia, Ministry of Health, & USAID 2018, *Indonesia Demographic and Health Survey 2017*, NPFPB, Jakarta.

OHCHR 1979, *Convention on the elimination of all forms of discrimination against women*, Office of the High Commissioner for Human Rights, viewed 24 February 2020, <https://www.ohchr.org/en/professionalinterest/pages/cedaw.aspx>.

Otoo-Oyortey, N. & Pobi, S 2003, 'Early marriage and poverty: exploring links and key policy issues', *Gender & Development*, vol. 11, no. 2, pp.42–51.

Parsons, J, Edmeades, J, Kes, A, Petroni, S, Sexton, M and Wodon, Q 2015, 'Economic impacts of child marriage: a review of the literature', *The Review of Faith & International Affairs*, vol.13, no.3, pp.12-22.

Phan, L 2016, 'Measuring women's empowerment at household level using DHS data of four Southeast Asian countries', *Social Indicators Research*, vol. 126, no.1, pp. 359-378.

Raj, A, Jackson, E & Dunham, S 2017, 'Girl child marriage: A persistent global women's health and human rights violation', in S. Chondury, J.T. Erasquin & M. Withers (eds), *Global Perspectives on Women's Sexual and Reproductive Health Across the Lifecourse*. Springer International Publishing, Cham Switzerland, pp. 3–21.

Rowland, DT 2003, *Concepts and methods of demography*, Oxford University Press, Oxford.

Rumble, L, Peterman, A, Irdiana, N, Triyana, M & Minnick, E 2018, 'An empirical exploration of female child marriage determinants in Indonesia', *BMC Public Health*, vol. 18, no. 1, pp.1–13.

Sabbe, A, Oulami, H, Zekraoui, W, Hikmat, H, Temmerman, M & Leye, E 2013, 'Determinants of child and forced marriage in Morocco: stakeholder perspectives on health, policies and human rights', *BMC international health and human rights*, vol.13, no.43, pp.1-12.

Sekhri, S. & Debnath, S., 2014, 'Intergenerational consequences of early age marriages of girls: effect on children's human capital', *The Journal of Development Studies*, vol. 50, no. 12, pp.1–17.

Sen, A 1999, *Development as freedom*, Anchor Books, New York.

Stark, L 2018, 'Poverty, consent, and choice in early marriage: ethnographic perspectives from urban Tanzania', *Marriage & Family Review*, vol. 54, no. 6, pp.565–581.

State Secretary of Indonesia 1974, *Undang-Undang Nomor 1 Tahun 1974 tentang Perkawinan [Law Number 1 of 1974 on Marriage]*, SSI, Jakarta, viewed 28 August 2019, <http://repo.unand.ac.id/2798/1/1974_UU-1-TAHUN 1974_PERKAWINAN.pdf>.

State Secretary of Indonesia 2003, *Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional [Law Number 20 of 2003 on National Education System]*, SSI, Jakarta, viewed 11 June 2020, <http://luk.staff.ugm.ac.id/atur/UU20-2003Sisdiknas.pdf>.

Statistics Indonesia n.d., *Rata-rata lama sekolah (RLS) menurut provinsi dan jenis kelamin, 2010-2019 [Average length of school by province and sex, 2010-2019]*, SI, viewed 11 June 2020, <https://www.bps.go.id/dynamictable/2018/08/15%2014:14:39.940779/1566/-ipg-rata-rata-lama-sekolah-rls-menurut-provinsi-dan-jenis-kelamin-2010-2017.html>.

Statistics Indonesia 2012, *Result of population census 2010*, cat. no. 2102001, SI, Jakarta.

Statistics Indonesia, National Population and Family Planning Board, Ministry of Health, & USAID 2008, *Indonesia Demographic and Health Survey 2007*, SI, Jakarta.

Statistics Indonesia, National Population and Family Planning Board, Ministry of Health, & USAID 2013, *Indonesia Demographic and Health Survey 2012*, SI, Jakarta.

Statistics Indonesia 2017, *Welfare Statistics 2017*, cat. no. 4101002, SI, Jakarta.

Stockemer, D 2019, *Quantitative method for social sciences*, Springer International Publishing, Cham, Switzerland.

Svanemyr, J, Chandra-Mouli, V, Raj, A, Travers, E & Sundaram, L 2015, 'Research priorities on ending child marriage and supporting married girls', *Reproductive Health*, vol.12, no.80, pp.1-4.

Tekelab, T, Chojenta, C, Smith, R & Loxton, D 2019, 'The impact of antenatal care on neonatal mortality in sub-Saharan Africa: A systematic review and meta-analysis', *Plos One*, vol.14, no.9, pp. 1-16.

The DHS Program n.d., *Protecting the privacy of DHS survey respondents*, The Demographic and Health Survey Program, viewed 31 March 2020, <https://dhsprogram.com/What-We-Do/Protecting-the-Privacy-of-DHS-Survey-Respondents.cfm>.

The Jakarta Post 2018, 'Ban child marriage', *The Jakarta Post*, viewed 17 June 2020, <https://www.thejakartapost.com/academia/2018/11/24/ban-child-marriage.html>.

Tripathy, JP 2013. 'Secondary data analysis: Ethical issues and challenges', *Iranian Journal of Public Health*, vol. 42, no. 12, pp.1478–1479.

Turner, JR 2018, 'Literature review', *Performance Improvement Quarterly*, vol. 31, no.2, pp. 113-117.

UNICEF 2005, *Early marriage: A harmful traditional practice*, United Nations Children Fund, New York.

UNICEF 2014, *Ending child marriage: Progress and prospects,* United Nations Children's Fund, New York.

UNICEF Indonesia 2016, *Child marriage in Indonesia: Progress on pause,* United Nations Children's Fund Indonesia, Jakarta.

UNFPA 2012, *Marrying too young, end child marriage*, United Nations Population Fund, New York.

UNFPA 2018, *Child marriage - frequently asked questions*, United Nations Population Fund, viewed 7 January 2020, <https://www.unfpa.org/child-marriage-frequently-asked-questions>.

United Nations 1948, *Universal Declaration of Human Rights*, UN, viewed 24 February 2020, <https://www.un.org/en/universal-declaration-human-rights/>.

United Nations Children's Fund 1989, *Convention on the Rights of the Child*, UNICEF, viewed 24 February 2020, <https://www.unicef.org/child-rights-convention/convention-text>.

United Nations Data 2013, *Legal age for marriage*, UND, viewed 24 February 2020, <https://data.un.org/DocumentData.aspx?id=336>.

Vartanian, TP 2011, *Secondary data analysis*, Oxford University Press, Oxford.

Walker, J 2012, 'Early marriage in Africa - Trends, harmful effects and interventions', *African Journal of Reproductive Health,* vol. 16, no. 2, pp. 231-40.

Winner, B, Peipert, JF, Zhao, Q, Buckel, C, Madden, T, Allsworth, JE & Secura, GM 2012, 'Effectiveness of long-acting reversible contraception', *New England Journal of Medicine*, vol. 366, no.21, pp.1998-2007.

Wodon, Q, Savadogo, A, & Kes, A 2017, *Economic impacts of child marriage: Work, earnings, and household welfare*, The World Bank and International Center for Research on Women, Washington DC.

Yaya, S, Odusina, EK & Bishwajit, G 2019. 'Prevalence of child marriage and its impact on fertility outcomes in 34 sub-Saharan African countries', *BMC International Health and Human Rights*, vol. 19, no.1, pp.1-11.

Yeakey, M, Muntifering, C, Ramachandran, D, Myint, Y, Creanga, A & Tsui, A 2009, 'How contraceptive use affects birth Intervals: Results of a literature review', *Studies in Family Planning,* vol.40, no.3, pp. 205-214.

APPENDIX

Letter of Authorization from ICF International for IDHS 2017 Data Utilisation

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