COSTING STUDY ON CHILD MARRIAGE IN PAKISTAN

Child brides - the cost we bear

A Report on KP and Punjab - 2020

Costing Study

on

Child Marriage in Pakistan:

A Report on

Punjab and Khyber Pakhtunkhwa

2020

Child brides – the cost we bear

Contributors

This Study was developed through a partnership between:

The National Commission on the Status of Women

and

UN Women Pakistan

Supported by:

UK Aid

2020

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List of Acronyms

AAD	Average Age at Death
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
COVID-19	Coronavirus Disease 2019
DYLL	Discounted Years of Life Lost
GBV	Gender-Based Violence
GDP	Gross Domestic Product
ILO	International Labour Organization
KP	Khyber Pakhtunkhwa
LFP	Labour Force Participation
MDG	Millennium Development Goal
MENA	Middle East and North Africa
MICS	Multiple Indicator Cluster Survey
NCSW	National Commission on the Status of Women
PDHS	Pakistan Demographic and Health Survey
PKR	Pakistani Rupees
PSLM	Pakistan Social and Living Standards Measurement
SAARC	South Asia Association for Regional Cooperation
SAIEVAC	South Asian Initiative to End Violence Against Children
SDG	Sustainable Development Goal
STI	Sexually Transmitted Infection
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNW	UN Women
VAWG	Women Violence against Women and Girls
WHO	World Health Organization

Message from National Commission on the Status of Women

National Commission on the Status of Women (NCSW) is very pleased to co-launch this comprehensive and analytical costing study on the critical issue of child marriage with our valued partner UN Women.

NCSW has been raising the issue of girl child marriage in the form of legislative amendments on the marriageable age of girls, effective enforcement of the existing law as well as various policy interventions at the national level. In line with the fundamental human rights enshrined in the Constitution of Pakistan as well as Pakistan's international commitments including CEDAW, CRC and Beijing Declaration, this Commission has approached the issue of girl child marriage from a rights-based context, highlighting that child marriage has severe and long term individual costs in terms of education, health, and economic well-being. There is no denying the fact that child marriage deprives women of their fundamental right to childhood, education, health and opportunity. Apart from the denial of basic human rights, it also leaves them the most vulnerable to physical, mental and physiological abuse. However, despite these being such severe personal costs, the issue of child marriage has been viewed generally as a social and individual issue without its circumspective evaluation of national impact.

It was this angle of economic reality associated with a social issue that prompted NCSW to seek collaboration of UN Women. NCSW is cognizant of the fact that this issue cannot be viewed in isolation solely as individual issue, since it has wider and far-reaching impacts on the national life and economic situation. In this context, the economic aspect has to be calculated in order to present a case based on economic sense to the Government who has to address it. Something which is generally viewed as a "women's issue" requires to have its cost calculated through economic modelling in order to spur better investment by policy-makers. This shift of resources and focus can, in turn, mean better progress towards achieving national goals including the Sustainable Development Goals.

We believe that this study will contribute significantly to bridge the gaps in the existing literature by collecting primary data to determine costs in view of the recent trends of the Pakistani economy. The samples of 10 districts from Punjab (six districts) and KP (four districts) are representative of the national population, gathering new information on the direct and indirect costs of child marriage. The study has also adopted a unique approach in terms of developing conjoint experiment in the survey questionnaire which gauges preferences of women towards child marriage.

I would like to add a note of acknowledgment for the former Chairperson and Members of the 6th NCSW who made an effort to launch this study along with our profound appreciation to UN Women for their commendable technical support and commitment.

Humera Azam Khan
Secretary

Message from UN Women

Any marriage before the age of 18 is child marriage. Child marriage takes away a girl right to safe and healthy childhood, quality and complete education that can enable her to access decent economic opportunities, and her social and political empowerment.

Pakistan has the 6th highest number of women married before the age of 18 in the world. Child marriage is prevalent in Pakistan due to several reasons including deeply entrenched traditions and customs, poverty, lack of awareness and/or access to education, and lack of security. Girls are married off young because their parents cannot afford to feed and educate them, and they pass on the 'responsibility' to another family. Dropping out of school is both a cause and a consequence of child marriage.

While child marriage seriously impacts the health, wellbeing and development of women and girls, it also increases economic vulnerability of women and is a leading cause of poverty. The health and human rights-based angles are frequently used to advocate for ending child marriage, but it is often neglected that early age marriage also negatively impacts the economic growth and development of a nation. According to a study by the World Bank in 2017, child marriage will cost developing countries trillions of dollars by 2030. Pakistan has the 6th highest number of child brides in the world; however, no such study has been done in the past that could bolster advocacy efforts for legislative and programmatic interventions to end child marriage.

To ascertain the cost of child marriage and its adverse impact on the economy, UN Women collaborated with the National Commission on the Status of Women (NCSW) to conduct this ground-breaking study. Through our strategic partnership, we are striving to enhance the legal framework for advancing gender equality and ending violence against women and girls, while ensuring that no one is left behind, and this study is one of the key achievements of this collaboration.

This Costing Study on Child Marriage provides valuable insights. It aims to offer a strong evidence base to inform decision-makers, legislators and other stakeholders on the norms and perceptions relating to child marriage in Punjab and Khyber Pakhtunkhwa (KP), as well as the costs associated with child marriage that substantiate its detrimental effects on national economy.

The insightful data collected from Punjab and KP and analysis undertaken for this pioneering report estimate that the cost of child marriage in these two provinces amounts to PKR 966 million from July 2019-July 2020. Taking into consideration the population of Punjab at around 110 million in 2019, and prevalence of child marriage at 27%, the cost of child marriage translates into a loss of around USD 4.75 million which is equivalent to 0.275% of total GDP value for the province. KP has different variables – the incidence of child marriage is 11 percent higher; the population and per capita GDP are less, therefore this study estimates a loss of USD 1.05 million in GDP, which represents a loss of 0.4% of the total GDP value at the provincial level.

These figures call out for consolidated action to end child marriage from an economic perspective, and UN Women Pakistan is committed to using these findings for advocacy and awareness-raising on this important issue. With only 10 years left to achieve the Sustainable Development Goals and the outbreak of the global COVID-19 pandemic hindering progress, it is now more important than ever for the global community to mobilise for accelerated action. I hope that this study will help us intensify our collective efforts to end child marriage and build a better future for the generations to come.

Sharmeela Rassool
Country Representative
UN Women Pakistan.

Acknowledgments

Executive Summary

The eradication of child marriage is an important and acknowledged challenge for global policy. A child marriage is defined as a marriage or union of a girl or boy under the age of 18 (UNICEF, 2017). Whereas child marriage is a human rights violation and affects both genders, it affects girls disproportionately (UNICEF 2014). It is quite often the consequence of an entrenched gender inequality especially in South Asian countries. The disproportionate impact of child marriage on girls against the backdrop of the global incidence of child marriage raises specific concerns regarding the implications of child marriage on girls. The impact of child marriage is usually associated with education attainment, participation in the labour force, health and nutrition, fertility and population growth, child mortality, women agency and gender-based violence. Given the high rate of child marriage in Pakistan, it is important to study the economic impact of child marriage in these dimensions.

The aim of this study is three-fold: firstly, to address the existing gap in the evidence on incidence, socio-economic impact and associated costs of child marriage in Pakistan; secondly, to inform policy debate and legal reform at the governmental level for eradication of child marriage through evidence-based research; and thirdly, to generate a wider socio-political and normative discourse around the issue of child marriage. This study contributes to the gaps in the existing literature on cost of child marriage in Pakistan using a sample that is representative of the national population. This study enables to better assess the costs of child marriage in the Pakistani context, by gathering new information on the direct and indirect cost of child marriage from 10 randomly districts from Punjab and KP.

The overarching evaluation question is the following: "What are the socio-economic costs of child marriage borne by women and what interventions can be designed to help protect girls from adverse effects of child marriage?"

The study derives its methodology from the United Nations Women's Violence against Women and Girls (VAWG) Costing Guidelines. It employs UN Women's "Impact Costing methodology" to calculate the full socioeconomic impact of child marriage around each outcome separately and estimate aggregate cost incurred to provincial governments in terms of percentage loss in GDP and in monetary terms. The conceptual framework identifies a number of socioeconomic outcomes that are affected by child marriage. These outcomes include: (i) Education, (ii) Health, (iii) Labour Force Productivity, (iv) Women fertility and population growth; (v) Child mortality (vi) Women Agency including decision-making, (vii) Incidence of domestic violence. These outcomes are affected through multiple pathways, each generates a separate type of cost. The costs can be divided into two categories: private and public. The private costs can be identified as: (i) direct tangible costs; (ii) indirect tangible costs; (iii) direct intangible costs; (iv) Indirect intangible costs. Together these multi-layered costs have a multiplier effect on GDP, human development and economic development leading to perpetuation of extreme poverty and inequality across generations at the provincial level.

For this study, data was collected from 6 randomly selected districts from Punjab and 4 districts from KP.

The impact of marital age on socio-economic differences from study conducted for Punjab and KP are as follows.

Cost of Child Marriage on Educational Attainment

Loss of Education Potential due to Child Marriage
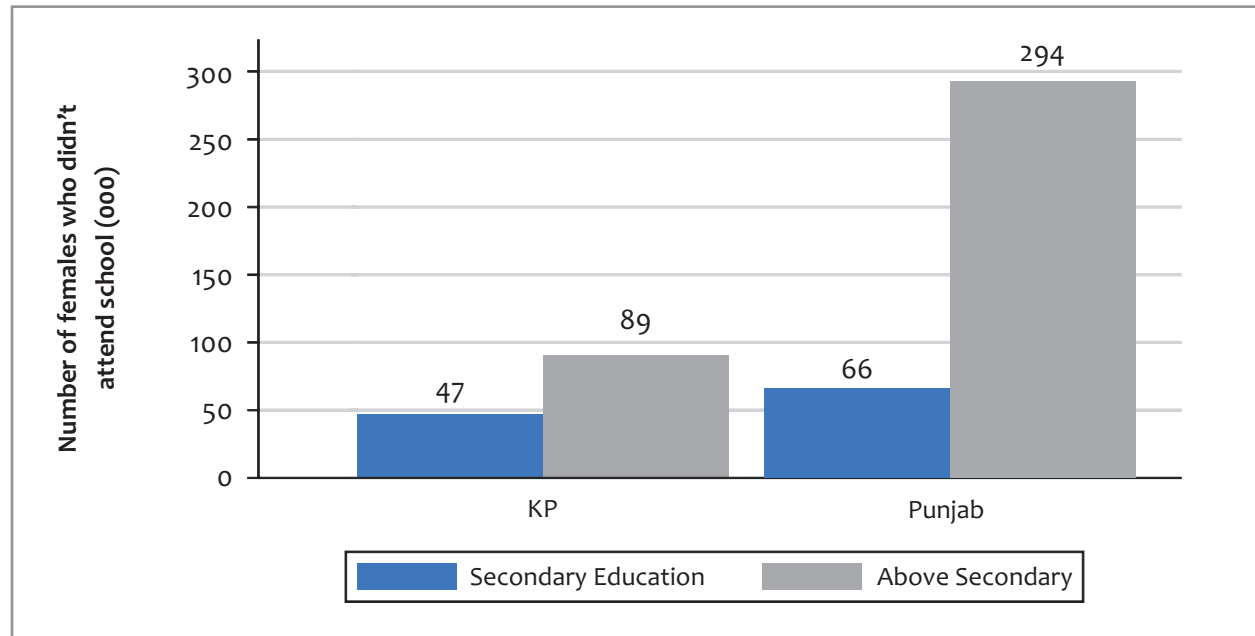
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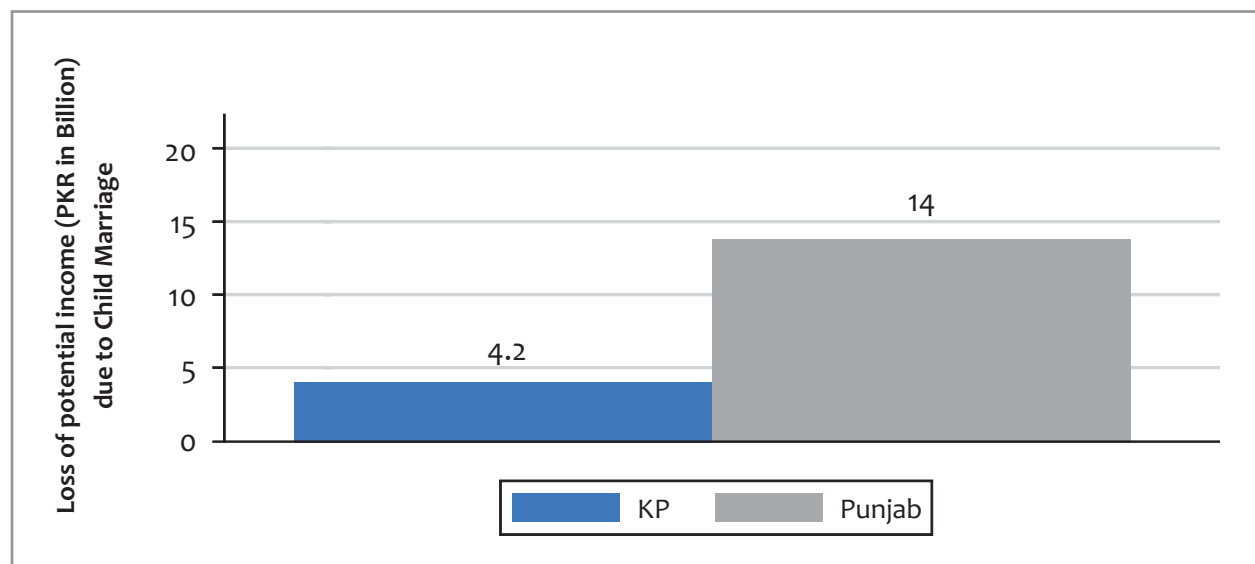
Cost of Child Marriage on Labour Force Participation (LFP)

Loss of Women LFP due to Child Marriage
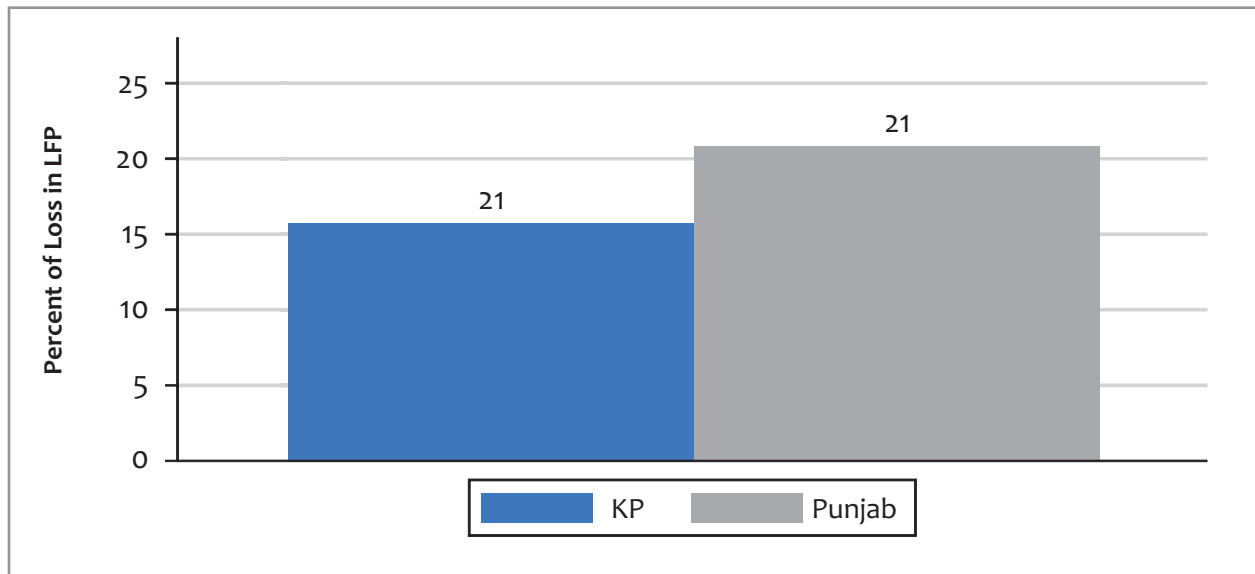
Potential Wage Loss due to Child Marriage
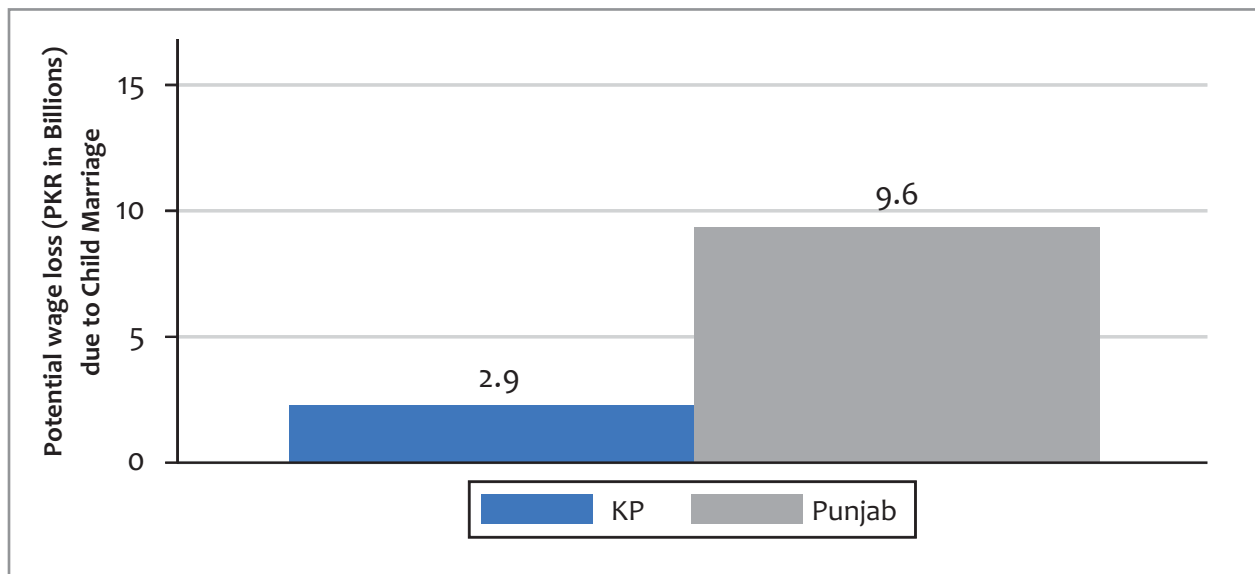
Cost of Child Marriage on Fertility and Population Growth

Additional Child Births due to Child Marriage
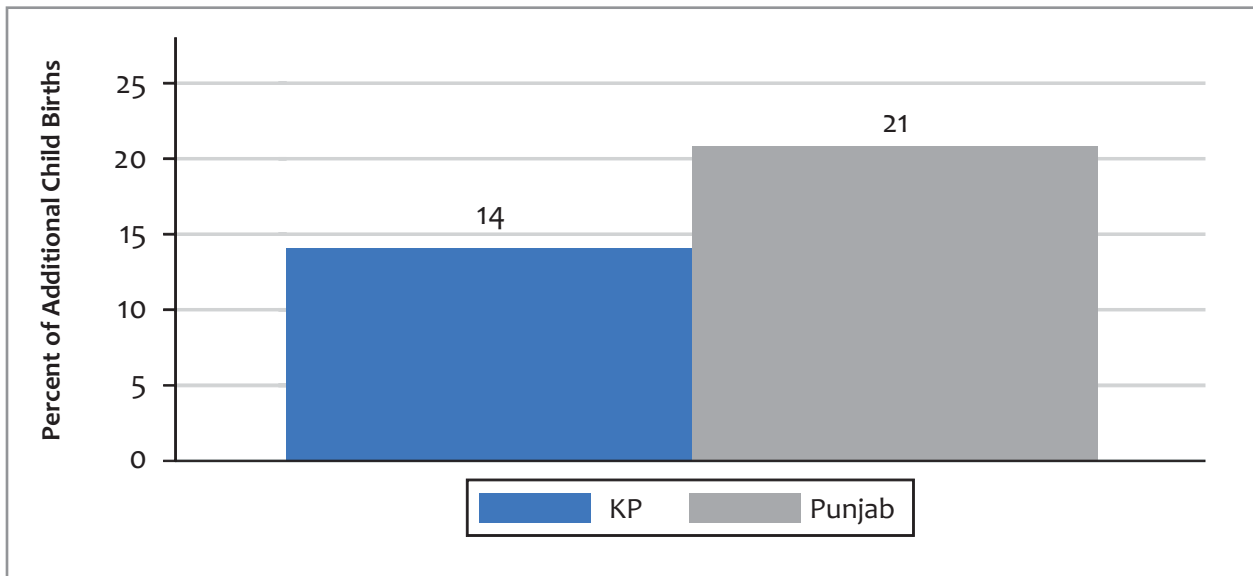
Cost of Child Marriage on Child Mortality

Cost of Child Mortality due to Child Marriage
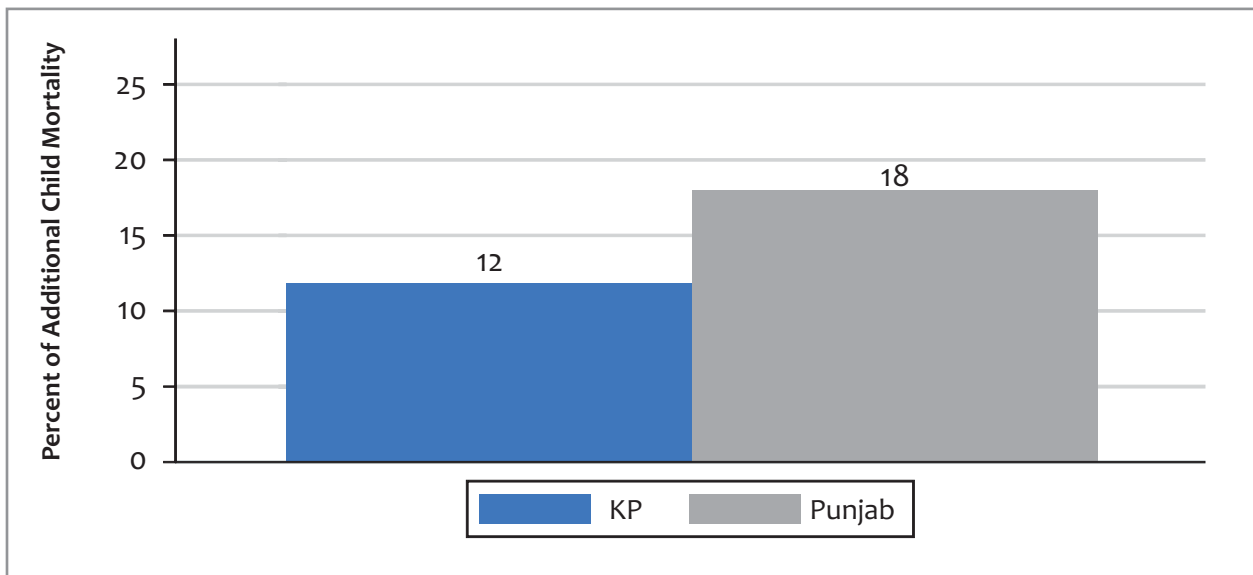
Loss of Future GDP: Indirect Cost of Child Mortality due to Child Marriage
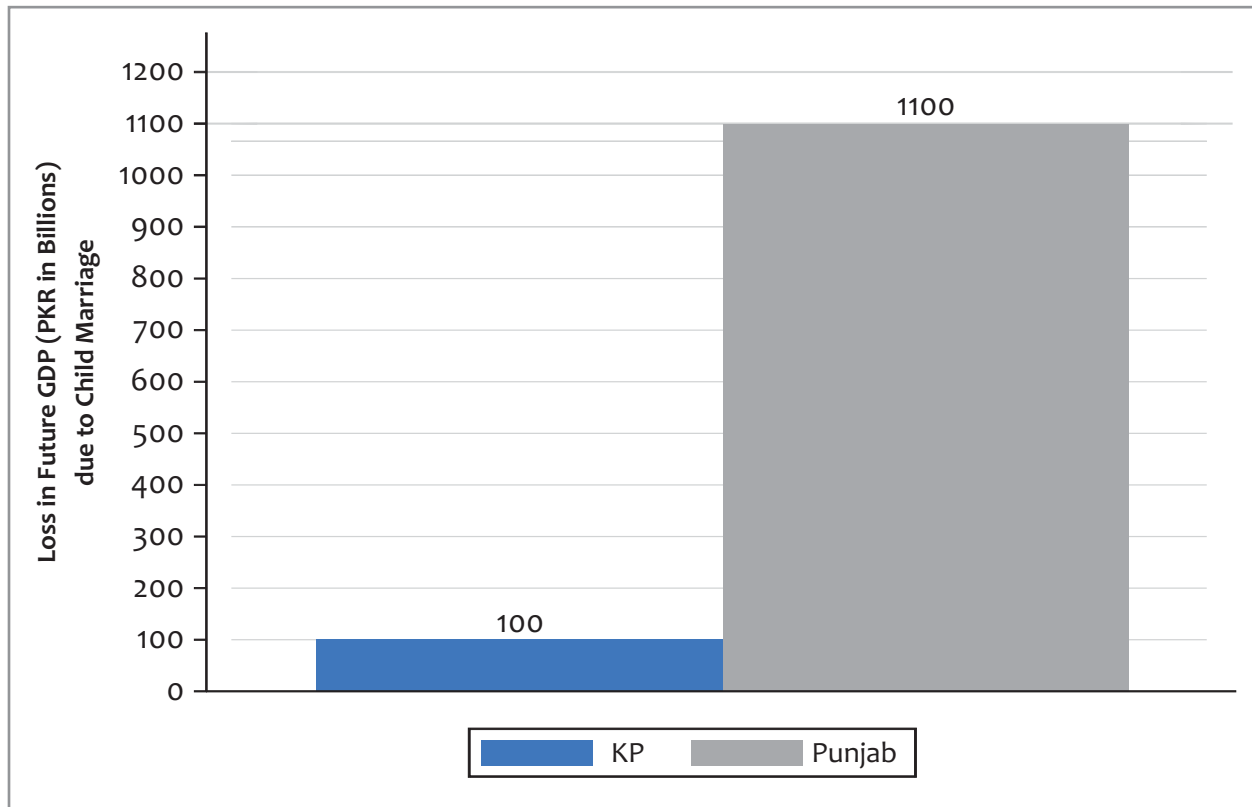
Cost of Child Marriage on Physical Health

- Whereas in terms of incidence of diseases such as diabetes, we did not find any differences in outcomes across young brides and non-young brides, there might be additional costs to child brides in terms of their health which can lead to higher child and mother mortality. While we are not able to estimate maternal mortality directly, we do factor these costs indirectly through their effect on child mortality.

Cost of Child Marriage on Decision-Making

- The cost of child marriage on decision-making is indirect intangible costs as there are no direct costs that can be estimated in terms of percentage loss or in monetary terms. However, these costs are manifested through other outcomes.

- One mechanism of low educational outcome among young brides is because they are unable to express their agency to go to school or leave their homes. Similarly, they are unable to assert continuing work after marriage. Low decision-making also leads to higher incidence of unwanted pregnancies among young brides leading to higher childbirths. Young brides also have low degree of agency to attain antenatal or prenatal care leading to higher mortality rates.

- The costs of loss of educational attainment, labour force participation, increased childbirths and child mortality are already discussed above, and they can be associated as the indirect costs of child marriage on decision-making.

Cost of Child Marriage on Domestic Violence

Cost of Domestic Violence due to Child Marriage
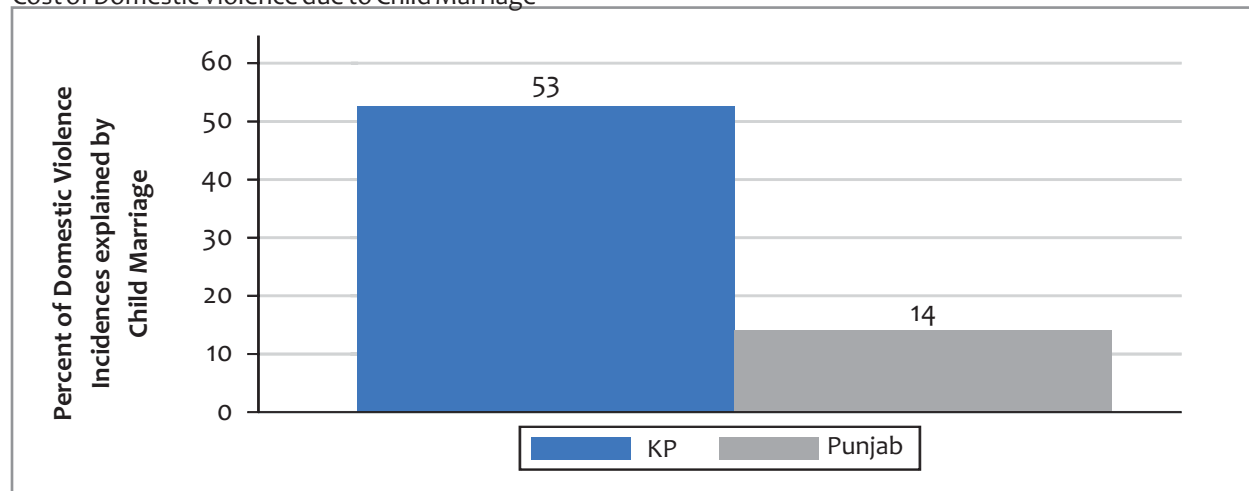
Wage Loss Due to Physical Abuse
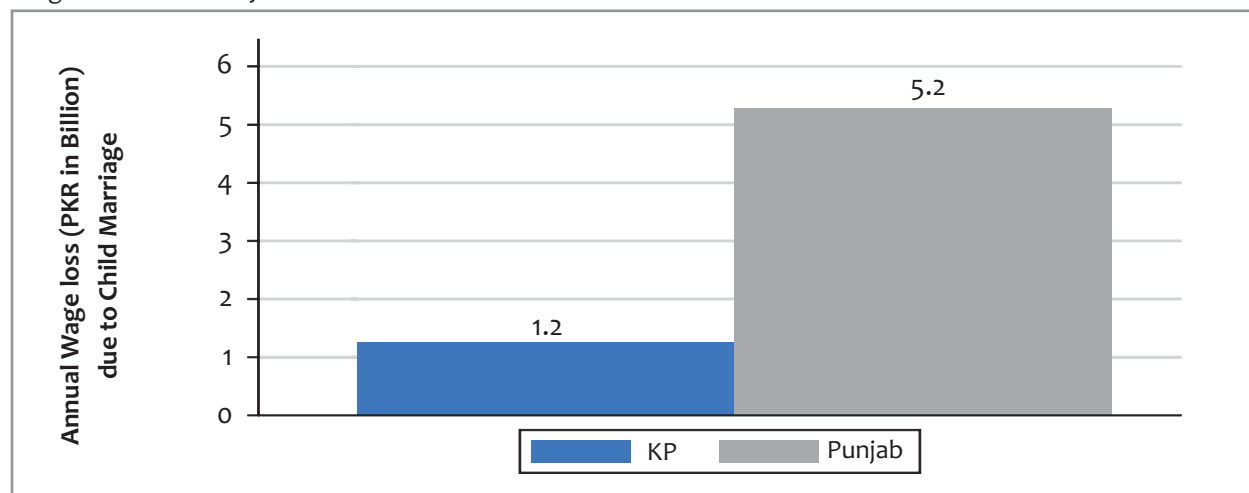
Aggregate loss in GDP due to Child Marriage
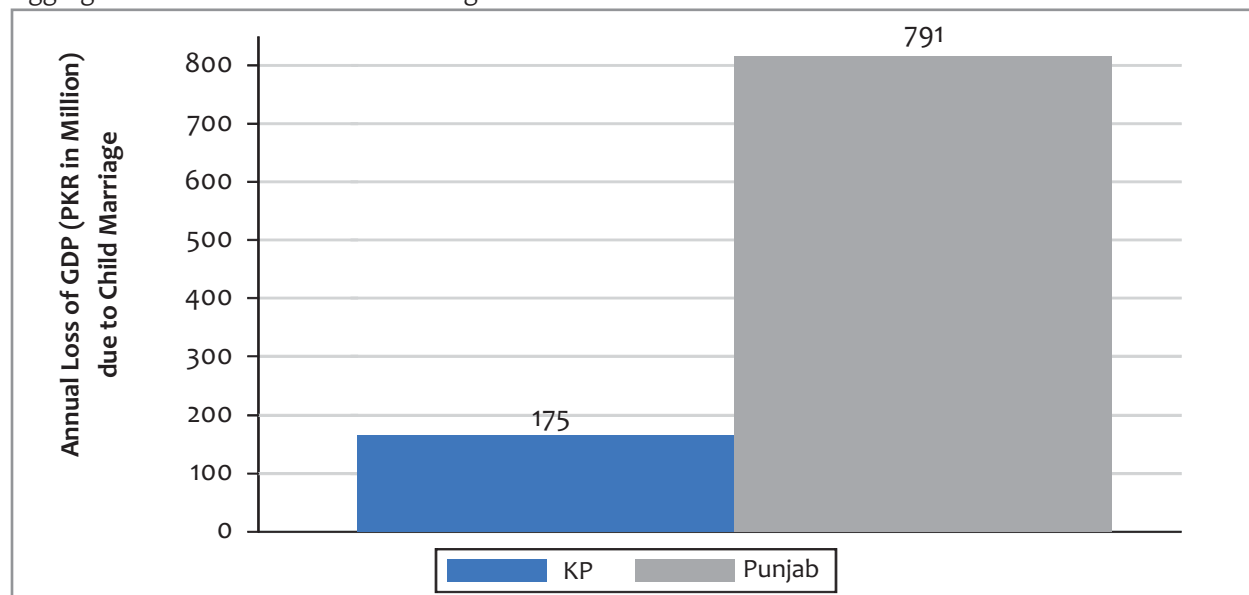
1.   Introduction

The eradication of child marriage is an important and acknowledged challenge for global policy. This is because a lack of attention to child marriage will undermine the achievement of Sustainable Development Goals (SDGs). Ensuring gender equality, the empowerment of women and protection of women's human rights is a commitment of the Government of Pakistan, which is enshrined in the 5th Sustainable Development Goal (SDG). Similarly, half of the SDGs will not be achieved fully without significant progress on child marriage, including those related to poverty (SDG Goal 1), nutrition, and food security (SDG Goal 2), health (SDG Goal 3), education (SDG Goal 4), economic growth (SDG Goal 8), reduction of inequality and other manifestations of gender inequality (SDG Goal 10). Likewise, there are a number of related targets in SDGs that are not directly hindered by the existence of child marriage but ending child marriage from the country is critical for achieving those targets.

In addition to fulfilment of SDGs, Pakistan has also committed to end child marriage on a number of other forums. For example, Pakistan agreed setting minimum age of marriage of 18 to the Convention on the Rights of the Child in 1990 and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1996, which obligates states to ensure free and full consent to marriage. Pakistan is also an active member of the South Asian Initiative to End Violence Against Children (SAIEVAC), which adopted a regional action plan to end child marriage from 2015-2018. Similarly, in 2014, the country also affirmed ending child marriage on South Asia Association for Regional Cooperation's (SAARC) platform "Kathmandu Call to Action to End Child Marriage". Pakistan also committed adopting Beijing's Declaration and Platform for Action. Despite these commitments, the high statistics for child marriage remain a grave concern for the country, indicating the lack of effort placed in promoting women's rights on this front.

Child marriage is defined as a marriage or union of a girl or boy under the age of 18. Whereas child marriage is a human rights violation which affects both genders, it affects girls disproportionately (UNICEF 2014). This is quite often the consequence of entrenched gender inequalities especially in South Asian countries. Various empirical studies have illustrated the global disproportion in prevalence of child marriage. Across the globe, "levels of child marriage are highest in sub-Saharan Africa, where nearly 4 in 10 young women were married before age 18, followed by South Asia, where 3 in 10 were married before age 18" (UNICEF 2014). Similarly, estimates from a World Bank study relating to a set of 25 countries that account for the bulk of child marriage in the world suggest that more than one in three girls marry before the age of 18, and almost one in five have their first child before the age of 18 (referred to as an early childbirth) (Wodon et al. 2017). At a regional level, for Middle East and North Africa (MENA) alone, 18 per cent of girls are married before the age of 18 whilst 3 percent of girls are married before the age of 15 (Jack et al. 2003). According to a State of World Population Report, 48 percent of women in South Asia, and 42 percent of women in Africa in the age group 15-24 years had married before reaching the age of 18 (UNFPA 2012). At this rate, more than 140 million girls were expected to become child brides between 2011 and 2020 (UNFPA 2012). If current levels of child marriage hold, 14.2 million girls annually or 39,000 daily will marry underage (UNFPA 2012).

The disproportionate impact of child marriage on girls against the backdrop of the global incidence of child marriage raises specific concerns regarding the implications of child marriage on girls. In the current literature, the impact of child marriage is associated with education attainment, participation in the labour force, health and nutrition, fertility and population growth, child mortality, women agency and gender-based violence. The pervasiveness of this human rights violation drains resources from many actors, including individuals, families, schools, businesses and the government. Recently, a significant body of recent research serves to make the case that addressing child marriage is a human rights imperative at its core (Wodon et al. 2017, Jack et al. 2003). At the

same time, it is also framed as an issue with significant social, economic and health costs. What does the cost of child marriage refer to? 'Cost' in this context needs to be understood in terms of the negative social and economic repercussions arising from child marriage.

The costs of child marriage are multitudinous and complex but can be measured using various methodologies to help illuminate their magnitude and impact. The dearth of literature on the cost of child marriage and its impact on girls in Pakistan necessitates evidence-based research. Past failures to end this practice have been a consequence of the lack of adequate data and thematic research on the cost of child marriage. This study contends that evidence-based research is critical in generating a policy debate against child marriage at a governmental level. The current study thus proposes to fill the gap in the understanding of both the negative repercussions of child marriage in Pakistan and how best to address and curb the practice. The pre-requisite to addressing the challenge posed by child marriage is to recognize the factors that enable it. Although the roots of the practice vary across countries and culture, there are certain common factors that perpetuate and sustain the practice, such as poverty, lack of education opportunities and limited access to health care facilities. Norms and stereotypes around gender roles and marriage age play an integral role in perpetuating the practice.

Therefore, the aim of this study is three-fold: firstly, to address the existing gap in the evidence on incidence, socio-economic impact and associated costs of child marriage in Pakistan; secondly, to inform policy debate and legal reform at the governmental level for eradication of child marriage through evidence-based research; and thirdly, to generate a wider socio-political and normative discourse around the issue of child marriage.

This study will contribute to the gaps in the existing literature on cost of child marriage in Pakistan using a sample that is representative of the national population. By sampling 10 districts from Punjab and KP and gathering new information on the direct and indirect costs of child marriage, this study will enable us to better assess the costs of child marriage in the Pakistani context.

The study is divided in two parts. The first part presents results for data collected from Punjab and KP. For Punjab, data was collected from 6 districts which were representative of the proportion of incidence of child marriage in Punjab. From each district, data was collected from 275 married women randomly selected from the sampling frame such that the total sample for Punjab was 1650. For KP, data was collected from 4 districts which were representative of the proportion of incidence of child marriage in KP. From each district, data was collected from 275 married women randomly selected from the sampling frame such that the total sample for KP was 1100. Thus, the total sample size for the first part of the study was 2,750 married women. The survey was conducted from 10th August 2020 till 8th September 2020.

2. Literature Review

There has been substantial research in recent years on factors that contribute to child marriage and its repercussions, particularly for girls affected by it (see e.g. Jain and Kurz (2007); McCleary-Sills et al. (2015); Malhotra et al. (2011a)). These studies suggest that social and cultural norms, including those related to religious belief and practice, affect the age at which a girl is expected to marry. That the poorest countries have the highest child marriage rates, and that child marriage within these countries is most common among the poor who have fewer resources and opportunities to invest in alternative options for girls, suggests that socio-economic status, education levels, and community context also influence the likelihood of a girl being married early.

Young girls are therefore often considered an economic burden by poor families, with parents and guardians assessing the benefits of marriage to be higher than the costs and consequently marrying off their daughters at an early age and particularly as children (Sekhri and Debnath, 2014). Dowry is another factor in child marriage as in some cases parents need to pay a higher dowry for an adult bride. An additional driver of early marriage is the normative pressure around the "protection" of a girl's sexuality in an environment where sexual harassment and abuse of young girls is rampant (Kamal and Hassan, 2015). Thus, the timing of marriage is the outcome of many factors besides education—family wealth, good reputation, good connections, and the availability of suitable grooms and funds for dowry.

Existing literature also has highlighted the impacts of child marriage along multiple dimensions. The sub-sections below summarize the key findings from this research.

Effects on Educational Attainment

Evidence from the literature suggests that earlier a girl marries, the more likely it is that she will have a low level of schooling. A study conducted in Bangladesh estimated that each year of early marriage below the age of 18 led to a decrease of 4–6 percentage points in the probability of secondary school completion for girls (Field and Ambrus, 2008).

In addition to direct effect on educational attainment, marrying early limits the social circle of young brides as well. For many girls, school is not only a source of formal and informal education, but also a space for them to develop social skills and networks and build support systems, which allows them to be mobile and engaged in community affairs and activities. As young brides drop out of school, they lose these support systems and are isolated in the marital home (UNICEF 2014b).

The lack of social support system also affects women agency as she is unable to express herself. Not only does lack of education attainment deprive individual girls of voice and agency and decrease their learning and earning potential in the long term, but lack of formal education also has intergenerational effects—impacting her children's education attainment, nutritional status, and physical health.

In the South Asian context, Jahangir et al. (2011) found that child marriage is associated with offspring attaining less schooling, and an inferior standard of living for the family overall. Field (2004), using a simulation exercise based on data from Bangladesh, found that preventing enough child marriage to increase the average age of marriage from 15 to the legal minimum of 18 would increase the rate of women schooling and literacy by over 20% and reduce completed fertility by 10%.

Effects on Labour Force Productivity

Child marriage may influence women labour force participation through multiple pathways in a number of ways. Literature suggests due to low educational attainment, the young brides have low skill set which reduces their expected returns from paid employment and increases the relative value of unpaid household work stemming from higher lifetime fertility (Klasen & Pieters 2012). Literature suggests that lack of engagement in the labour force may have long-term implications. The aggregate wage losses due to low skill attainment may significantly reduce economic growth in communities or societies (Chaaban & Cunningham 2011; Elborgh-Woytek et al. 2013; Smith & Haddad 2015).

Child marriage may also reduce labour force participation by significantly increasing the barriers to employment posed by fertility and women's reproductive roles, both of which are closely linked to age at first marriage. Young brides have a higher fertility rate, and this means burden of early childbearing which reduces the prospects of young brides to enter labour market (Parsons et al., 2015).

The decreased levels of labour force participation have significant effects beyond the individual. Lower participation in paid employment may increase household poverty, increase vulnerability to economic shocks, lower income diversity, and incentivize short-term allocation decisions at the expense of longer-term investments in human and physical capital (Koblinsky et al. 2012).

Effects on Fertility and Population Growth

Literature suggests that early age at first birth is usually an indicator of greater future fertility. Dixon-Mueller (1993) considers the relationship between women's relative position in the marriage on the one hand and fertility on the other, and found that women who marry before age 19 have from two to four times more children than those who marry after the age of 25. On average, men often report larger ideal family sizes and a lower demand for contraception than do their wives (Becker, 1999). Contrary to that, women who marry at a later stage of their lives exercise more autonomy, translated into greater relative bargaining power. For this reason, we see lower fertility rates (Balk 1994; Eswaran 2002) and an increase in the use of contraception (Ashraf et al., 2010) among women who marry later. Ashraf et al. (2010) estimate that women autonomy in decision-making is associated with a 57 percent fall in unwanted births.

In the South Asian context, Field (2004), using data from Bangladesh, found that as a result of high rates of marriage at very young ages, girls in rural Bangladesh experience more frequent reproductive health complications, have higher fertility and experience lower levels of gender equality in marriage. Nasrullah et al. (2014), using data from Pakistan, found that child marriage affects half of all ever-married women aged 20–24 years in Pakistan, and increases their risk for high fertility and poor fertility health indicators, including rapid repeat childbirth and pregnancy termination.

Effects on Reproductive Health and Nutrition

There exists considerable evidence that marriage at a very young age has grave psychological and health consequences for both the young women and their children as well as their communities (Malhotra et al., 2011a). Evidence shows that early marriage and early childbearing is fraught with substantial health risks for the girls. Kamal (2012) shows that such early pregnancies have been consistently linked to increased risk of maternal and infant morbidity and mortality. Mathur et al. (2003) reports that young mothers experience higher rates of

maternal mortality, and higher risks of obstructed labour and pregnancy induced hypertension because their bodies are unprepared for childbirth.

Young mothers are more likely to experience pregnancy related complications and are less able to deal with them, which often leads to maternal death (Ikamari and Towett, 2007). Raj et al. (2009) found that adolescent mothers are also more likely to experience fistula, pregnancy complications, and even death during childbirth than are older mothers. Geoghegan (2003) shows that girls aged 15 to 19 years are twice as likely as older women to die from childbirth and pregnancy, making pregnancy the leading cause of maternal death in poor countries for this age group. In the South Asian context, Godha et al. (2013) found that women married as children in India, Nepal and Bangladesh are also more likely to report early, frequent, and unplanned pregnancies and pregnancy termination, typically from lack of contraceptive use (Godha et al. 2013; Raj et al. 2009). Similarly, Mithal at al. (2018), using data from Rajhastan, India, found that child marriage is associated with higher maternal and child mortality and poorer maternal health outcomes. Early initiation of sexual intercourse has also been associated with increased risk of sexually transmitted infections (STIs) (Kaestle et al., 2005), pregnancy during adolescence and inadequate use of maternal health services (Godha et al., 2013).

Effects on Children's Health

Early motherhood is also associated with poor maternal health outcomes that subsequently feed through to child health since child brides are also less likely to receive proper medical care during pregnancy and delivery than those who give birth later. The lack of proper medical care during pregnancy and childbirth combined with the rigors of pregnancy at such a young age puts the adolescent mothers at higher risk for complications during gestation and delivery (Xu et al. 2003). It is reported that complications related to teenage pregnancy and childbirth are the second leading cause of death among adolescent girls ages 15–19 globally, with nearly 70,000 deaths every year (UNFPA 2013; World Health Organization 2014). Donaldson and Billy (1984) found that the offspring of younger women had consistently lower birth-weights. Malhotra et al. (2011a) found that a child born to a teen mother is twice as likely to die before the first birthday as compared with the child of a woman in her 20's. As with maternal death, early childbearing also increases the risk of neonatal death and stillbirth, premature birth, low birth weight and child (and infant) morbidity and mortality (Jain and Kurz, 2007). In the South Asian context, Raj et al. (2010), using data from India, found that the risk of malnutrition is higher in young children born to mothers married as minors than in those born to women married at a majority age. The physical consequences of early childbearing can therefore be life threatening for both mother and child.

Effects on Women's Participation in Decision-making

Existing studies show that in contexts such as South Asia and Sub-Saharan Africa, girls have little influence over their parents and guardians regarding arranged and early marriages. Till date, particularly in rural areas, if the marriage of a girl is delayed, people in society look down on her and her family (Kamal and Hassan, 2015). Once married, girls no longer have daily contact with their original household and, market obligations aside, suffer from limited social mobility and lack of access to modern media and the outside world.

Parents are usually willing to marry their daughters at a young age to take advantage of their inexperience and incapacity to confront others, especially older people, in order to shape them the way they want (Staff, 2011). Teenage girls "have difficulty in developing their own identity and less confidence in voicing their opinions" (Mikhail, 2002). These phenomena are compounded by large spousal age gaps (Jensen and Thornton, 2003) and the custom of vitriolically residence, both of which are common in early marriages. A large spousal age gap

characterizes relationships in which the younger partner has less power in decision-making, hence exacerbating the lack of agency and self-confidence from which young brides suffer (Carmichael, 2011).

Effect on Gender-Based Violence

Existing literature suggest that child marriage in itself can be considered a form of violence against girls (Amin (2014); Solotaroff & Pande (2014). This is because gender norms that devalue girls and women and drive the practice of child marriage may also promote the acceptability of violence. Hence young brides are more likely to suffer from domestic violence (Jensen and Thornton, 2003). Being reclusive and vulnerable, such women are inclined to depression, low self-esteem and physical and emotional distress (Brickell and Chant, 2010). They are kept ignorant, socially isolated, and away from family support, and have few future perspectives and little access to economic opportunities. Women's economic dependency is the cornerstone of the perpetuation of early marriage.

As they are often dependent on their husbands and in-laws, they are unable to speak out against these acts of violence. This increases the risk for child brides of experiencing physical, sexual, emotional, and other forms of violence in the home at the hands of their husbands' families and in-laws (UNICEF 2014b).

Moreover, the probability of child mortality is higher when maternal depression is accompanied by physical and emotional violence (Deyessa, 2010).

Concluding remarks

Child brides have a greater likelihood of school dropout, lower labour force participation and earnings, and little or no decision-making power within the marital home. Moreover, they are more likely to give birth as teenagers and consequently they and their children are likely to experience adverse health outcomes. Giving birth as a child places the young mothers at a significantly higher risk of maternal mortality and morbidity than mothers just a few years older. Early child births also tend to be associated with less healthy and less well-educated children. Finally, while the adverse consequences of child marriage are most likely to be felt at the individual level, these child marriage also have important implications for national and global levels in the forms of lost earnings and intergenerational transmission of poverty through reduced investments in the health and education of offspring. The effects of poor child nutrition can be seen throughout the life course, with negative impacts on educational attainment and health into adulthood. To summarize, the economic impacts and cost of child marriage are likely to be very high not only for the girls who marry early, but also for their children, and the community and society at large.

Moreover, the above literature signifies a growing recognition of the scale and impact of child marriage and the necessity for increasing investment to address it. However, knowledge gaps remain, particularly around effective policy options for addressing child marriage at scale.

We have some evidence about "what works" from relatively small-scale and time limited research studies and evaluated programs (Jain and Kurz 2007, Malhotra et. al 2011, Chandra-Mouli V et al. 2013 and Population Council 2014) that acknowledge the need to respond to different drivers in different settings. However, there is still much to learn in relation to robust policies that can be implemented as large-scale programs (Malhotra et al. 2011). These include the essential components for scaling up, the required intensity and duration of implementation, the cost of scaling up, and the mechanisms for delivering the programs. In terms of the effects of child marriage, questions

that require further probing and evidence include the sustainability of changes in child marriage norms and practices, and the wider benefits of these changes on girls' and women's lives. A lot of effort has gone in advocating for the formulation of laws specifying a minimum age for marriage. But little attention has gone into the application of these laws. Further research is needed to understand what works to effectively implement relevant laws. Research is also needed on the pros and cons of sanctions versus incentives in relation to enforcement of laws and policies (Odala 2013, Svanemyr 2013 and UNFPA 2013).

Given the lack of available data and short histories, existing literature on impact of child marriage has no option but to compare effects across countries and regions, notwithstanding the cultural and economic divergences that play a significant role in determining impact. In this study, it is our aim to fill this gap for Pakistan. The scope of this study is thus to examine the prevalence of child marriage and its effect on a wide range of outcomes that have been rigorously presented in the literature review and are common among young married women in Pakistan. Our study will also focus on the empirical examination of the intergenerational consequences of early marriages of girls. In addition, the study will endeavour to address policy gaps by providing evidence on areas where interventions can be designed and rigorously tested for scaling up. The next section underlines our proposed conceptual framework for bringing our understanding of these relationships in Pakistan up-to-date.

3.   Conceptual Framework

The overarching evaluation question is the following: **"What are the socio-economic costs of child marriage borne by women and what interventions can be designed to help protect girls from adverse effects of child marriage?"**

We derived our methodology from the **United Nations Women's Violence against Women and Girls (VAWG) Costing Guidelines.** We employed UN Women's **"Impact Costing Methodology"** to calculate the full socioeconomic impact of child marriage on various outcomes. We used this methodology because it offers a comprehensive and encompassing framework to address the current existing data gaps, involves a wide scope of assessment of the effects of child marriage, in terms of multi-layered costs, and is based on the experiences of young brides themselves.

In order to develop the conceptual framework for our study, we adapted the framework presented by Wooden et al to the localized context of Pakistan in view of the scope of the study outlined above. Our conceptual framework identifies several socio-economic outcomes that are affected by child marriage. These outcomes include: (i) Education, (iii) Labour Force Productivity, (iii) Fertility and Population Growth, (iv) Child mortality, (v) Physical Health and Well-Being (vi) Women Agency including decision-making, (vii) Incidence of domestic violence.

These outcomes are affected through multiple pathways, each generating a separate type of cost. The costs can be divided into two categories: private and public. The private costs can be identified as: (i) direct tangible costs; (ii) indirect tangible costs; (iii) direct intangible costs; (iv) indirect intangible costs. The UN Women report "The Costs of Violence"[1] define these costs as following:

- *Direct tangible costs* are a quantifiable cost which represent actual expenditures. Examples are taxi fare to a hospital and salaries for staff in a shelter. These costs can be estimated by measuring the goods and services consumed and multiplying by their unit cost.

- *Indirect tangible costs* have monetary value in the economy but are measured as a loss of potential. Examples are lower earnings and profits resulting from reduced productivity. These indirect costs are also measurable, although they involve estimating opportunity costs rather than actual expenditures. Lost personal income, for example, can be estimated by measuring lost time at work and multiplying by an appropriate wage rate.

- *Direct intangible costs* result directly from the act of early marriage but have no monetary value. Examples are pain and suffering, and the emotional loss of a loved one such as a child or a spouse through a violent death. These costs can only be studied qualitatively and cannot be quantified.

- *Indirect intangible costs* are a sub-outcome of child marriage and have no monetary value. Examples are the negative psychological effects on children who witness violence which cannot be estimated monetarily.

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[1] UN Women, 2013. The costs of violence: Understanding the costs of violence against women and girls and its response: Selected findings and lessons learned from Asia and the Pacific. Bangkok, Thailand: United Nations Entity for Gender Equality and the Empowerment of Women, Regional Office for Asia and the Pacific. Gender Scoping Study — Appendix, 1, 57.

We further hypothesize that these four core private costs are either borne directly by young brides and or borne by members of the household of the young brides leading to personal costs. Similarly, cost incurred to public institutions and businesses will be regarded as public costs.

Together these multi-layered costs will have a multiplier effect on GDP, human development and economic development leading to perpetuation of extreme poverty and inequality across generations.

This study analyses the interplay of women's agency and drivers of child marriage. This is because, while estimating costs, the study factored out those women who have exercised their own agency to marry early. Similarly, the study also analysed the concept of bride price, a custom practiced in some of the parts of the country where a male can pay a price to the parents to marry their daughter, as a potential driver of child marriage. The figure below summarizes the conceptual framework that was undertaken to assess the different types of costs associated with child marriage.

Figure 1: Conceptual Framework

Aggregate Measures of Impact and Associated Costs
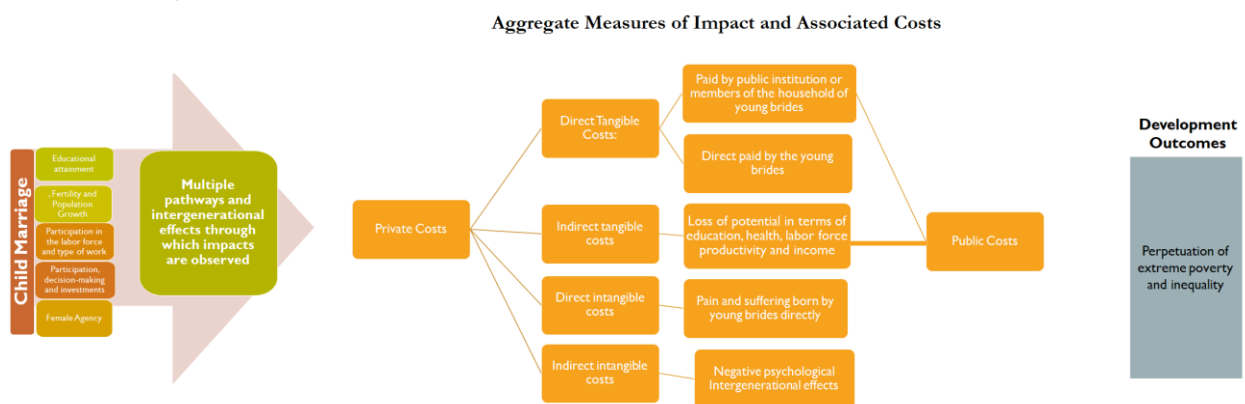
4. Impact of COVID-19 on Research Study and Implementation Methodology

The purpose of this section is to detail out how COVID-19 affected the implementation and research methodology for this study. Readers are requested to read this report in context of the limitations stipulated in this section.

As of March 2020, all field activities across Pakistan were closed due to the COVID-19 pandemic. In these unprecedented times, the implementation strategy for the study was reconsidered. This included changing sampling strategy for the respondent selection for the first phase of the study which includes data collection from Punjab and KP. For the first phase, the data collection modality was shifted from face-to-face surveys towards phone-based interviews. One caveat of the phone-based interviews was that the sampling frame for this study from where sample for respondents was drawn got restricted to only those women who had access to a mobile phone. Given this limitation, the sampling strategy for this study was modified in the following manner:

A third-party collaboration was sought by researchers, NCSW and UN Women team working on this study. This third party conducted a listing exercise which included a small demographic survey and sought the respondents' consent to participate in the study.

The sampling frame was redefined as a list of women who had provided consent to survey in our selected districts from which random sample was drawn. In this way, for Punjab and KP, a hybrid of convenience-based sampling and random sampling was employed to draw representative sample at the provincial level.

Similarly, COVID-19 also impacted the data collection toolkit. Given that the international best practices of collecting data through phone-surveys recommend a survey duration of 15 minutes only, the survey length was significantly condensed to meet these standards. Through consultative sessions with NCSW, UN Women team, batteries of questions were removed which were added as control variables including husband characteristics, time use and mobility. The questionnaire was also divided into two parts where a respondent was surveyed twice in a span of two weeks. Although the data collection team was able to reach same respondents, surveying them through two waves would have impacted their responses had they been interviewed in a single in-person survey.

Conducting surveys through phone also limited the study's ability to investigate sensitive issues. Given the sensitive nature of the issues, questions around domestic violence and gender-based violence require respondent to be alone while answering them. This could not be ensured over phone so the questions on domestic violence had to be rephrased completely and were probed indirectly. Thus, questions around injuries incurred, out of pocket expenses, help sought had to be taken out of the questionnaire as they required more probing. Similarly, questions on child mortality and childcare also had to be limited because of their sensitivity. The aforementioned changes made to the methodology limited the depth of analysis that could have been conducted for costing impact of child marriage on domestic violence and child mortality.

5.   Research and Implementation Methodology

In order to estimate the costs mentioned in the previous section, the study employed the following implementation methodology:

- Data was collected for various socio-economic indicators through a structured questionnaire.

- Once the survey was conducted, the collected data was analysed using mix methods (details below) and impact on key outcomes of interest was estimated.

- The cost for each outcome was calculated separately. The nature of each cost was determined on the basis of type of outcome, e.g. for education additional girls dropping out from school was considered as a cost and for Labour Force Participation loss of wages was considered as a cost.

6.   Data Collection Procedures and Toolkit

6.1   Sample Design

Our sampling frame for the "Costing Study on Child Marriage in Pakistan" survey was all households in the rural and urban areas of 114 districts in Punjab, Sindh, Khyber Pakhtunkhwa (KP), Balochistan and Islamabad. We drew convenience based random samples from selected districts as to have a representative sample of prevalence of child marriage in Pakistan.

For the first part of the study, data was collected from 6 districts of Punjab which were representative of the proportion of incidence of child marriage in Punjab. From each district, data was collected from 275 married women randomly selected from the sampling frame such that the total sample for Punjab was 1650. For KP, data was collected from 4 districts which were representative of the proportion of incidence of child marriage in KP. From each district, data was collected from 275 married women randomly selected from the sampling frame such that the total sample for KP was 1100. Thus, the total sample size for the first part of the study was 2,750 married women. The survey was conducted from 10th August 2020 till 8th September 2020.

Figure 2 shows distribution of incidence of child marriage across all of Pakistan from two different waves of the Pakistan Demographic Health Surveys i.e. survey wave of 2007-08 and 2017-2018[2]. The two cross-sections are almost ten years apart and heat map shows that most of the districts in which the survey was conducted have remained fairly similar in terms of incidence of child marriage. The similarity between the two cross-sections in terms of incidence is indicative of incidence of child marriage remaining stable over time. Using different waves of the surveys thus allowed selection of survey districts in a credible way such that district selection criteria is robust to choice of survey year[3].

Figure 2: Heat Map of Incidence of Child Marriage
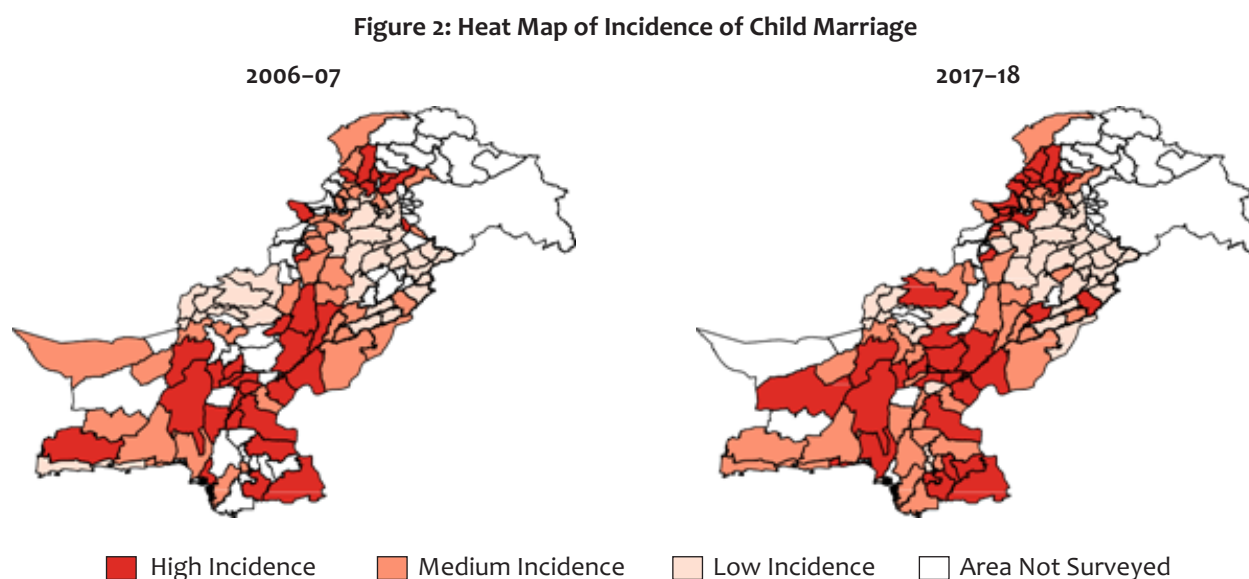
Source: Pakistan Demographics and Health Survey (PDHS) 2006–07 & 2017–18 and authors' calculations

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[2] Note: The survey conducted in 2017-18 is the latest survey available for Pakistan Demographics and Health Survey (PDHS)
[3] Sampling strategy notes from Pakistan Demographics and Health Survey (PDHS) were consulted to make these representative at the district level.

6.2   Sampling Units

Sampling units were selected using a hybrid multistage stratified random sampling technique. Random sampling technique was employed as it is international best practice to avoid selection bias which may affect estimation results. This approach enabled inferring characteristics for the entire population using sample statistics obtained from study's survey. Using this sampling technique, representative samples were drawn at the provincial level.

6.3   District Selection

A stratum was randomly selected in the first stage. The stratum was defined at the district level. The district selection for this study was based on the incidence of child marriage within each district such that the proportion of incidence of child marriage in the selected districts was be representative at the provincial level. For this purpose, within each province, based on the proportion of incidence of child marriage districts were divided into terciles[4]. The terciles were classified as "High Incidence", "Medium Incidence" and "Low Incidence" such that:

- High Incidence: districts which lie between 0 and 33rd percentile of incidence.

- Medium Incidence: districts which lie between 34th and 66th percentile of incidence.

- High Incidence: districts which lie between 67th and 99th percentile of incidence.

Using the above criteria, 2 districts were randomly selected from each category from Punjab and 1 district from each category for the rest of the provinces. For Punjab, number of districts were over-sampled number to account for high population numbers and in order to reduce standard errors. The number of districts selected from each province was based on the population statistics and was consistent with other nationwide studies such as the Pakistan Rural Household Panel Survey and IDEAS-Herald Voting Survey. Hence a total of 6 districts were randomly selected from Punjab and 4 districts from KP.

During district selection process, each province was further divided into three regions: North, Centre and South. This ensured that the selected districts were not clustered in one particular stratum as at least one district got selected from each regional stratum.

A detailed sensitivity analysis was conducted to ensure robustness of district selection criteria. The detailed methodology is outline in Appendix A including the final list of study districts as well.

6.4   Respondent Selection

The research team along with NCSW and UN Women collaborated with a third-party to develop a sampling frame for the study. This third-party conducted a listing exercise which included a small demographic survey and seeking the respondents' consent to participate in the study.

The sampling frame then comprised of those women who provided consent to survey in selected districts from which a random sample was drawn. In this way, a hybrid of convenience-based sampling and random sampling

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[4] A tercile divides the ordered data into three equal parts such that each part contains one-third of the total data points

was employed to incorporate changes in sampling methodology due to COVID-19. The technical details of sample size selection are given in Appendix B.

For the quantitative survey, the eligibility criteria for respondent selection was any married women between age 15 and above within a household. The main respondent was the spouse of the head of household using the criteria detailed below.

7.   Survey Methods

Data was collected through two surveys conducted within a span of two weeks. The same respondents were interviewed for both surveys.

1. The first survey called Flash Survey, was conducted from 13th August 2020 till 27th August 2020. The survey covered the following modules of the study:

    *   *Household Roster* contained basic identification information including age, marital status, ethnicity and details about number of siblings and their demographics

    *   *Educational Attainment* contained information on educational attainment and educational aspirations

    *   *Health and Fertility* contained information on respondent health, fertility, birth record including child mortality.

    *   *Labour Force Productivity* contained information on respondent labour force participation, income earnings and type of employment

    *   *Violence* module contained questions around incidence and frequency of domestic and gender-based violence.

    The purpose of Flash Survey was to collect data around main outcomes against which costs were estimated.

2. The second survey called **Diagnostic Survey** was conducted from 27th August 2020 till 8th September 2020. It covered the following modules of the study:

    *   *Knowledge about laws on child marriage* contained information on respondents' knowledge around legal information and implications of child marriage

    *   *Norms and Perceptions* contained information on self and societal attitudes towards child marriage

    *   *Conjoint experiment* provided information treatment to respondents to elicit their decision-making and preferences around time of marriage.

    *   *Decision-Making* module contained information on respondent's ability to make key household decisions

    *   *Drivers of child marriage* module contained questions on collecting data around what societal factors drive child marriage

The purpose of Diagnostic Survey was to collect data to understand underlying mechanisms which drive child marriage in the society and how these mechanisms shape perceptions of women.

7.1   Significance of the study

A unique contribution of this study is that other large household surveys including PDHS and MICS are dated and given the recent economic downturns and widespread pandemic, it is expected that using these surveys will underestimate the true cost of child marriage. This study contributes to the existing literature by collecting primary data to determine costs keeping in view the recent trends of Pakistani economy as well. Similarly, another unique contribution of this study is the development of conjoint experiment in the survey questionnaire which helped in determining preferences of women towards child marriage. Conjoint experiment is an information treatment that attempts to understand how people make complex choices. Conjoint analysis is one of the most effective models in extracting respondent's preferences during the decision to marry process. This method has recently been used by top political scientists including Garry Becker, Ward (2019), Auerbach and Thachil (2018), Newman and Malhotra (2018) to understand voter preferences during various elections around the world.

For this study, once the information was followed up by two questions about women preferences around age, time and who should decide their marriage. This data was then turned into a quantitative measurement using statistical analysis. It was then evaluated to understand the aspirations of respondents in terms of timing to marry including the preferences for child marriage. The conjoint experiment results were analysed for women who married below 18 and for women who married at 18 and above. The revealed preferences of the women young brides on various deciding factors around marriage helped to construct a more robust counterfactual for analysing costs of child marriage against every outcome. The conjoint experiment was currently not present in other surveys including PDHS and MICS. Similarly, the modules of norms, attitudes and perceptions towards child marriage, drivers of child marriage are also unique contribution of this study.

8.   Evaluation Methodology

Implementing UN Women's Impact Costing Methodology, robust regression analysis was employed. A strength of this particular quantitative analysis method in this context is that it does not presume the existence of a prior "Theory of Change". However, existing studies analysing the impact of child marriage, as referenced in the literature review, attempt to estimate the potential impact of child marriage on various outcomes controlling for other factors that can potentially affect the outcome variables. Therefore, such "association studies" do not necessarily capture the causal effect of child marriage but rather measure statistical association between child marriage and outcomes. Consequently, they run the risk of bias in measurement of their impacts. Using an instrumental variable approach in part for this study helped in randomizing child marriage but in order to better mitigate concerns related to potential bias in estimating the effects.

In order to control for demographic variation across study districts and provinces, demographic controls were added for individuals and socio-economic controls for the district. For individuals, age, wage and education levels were controlled while estimating various costs. Similarly, for districts, poverty rates, population density, number of schools, health units and crime levels were accounted while analysing the data. The regression equation that was used is outlined in Appendix B.

9.   Measuring Costs

Given that it is difficult to monetize the costs associated with the impact of child marriage on socio-economic outcomes, the following methodology was employed to construct measures of costing. Since each measure was different for every outcome, the direct and indirect costs for each outcome were estimated differently. For example, the measure of direct cost of child marriage on educational outcomes was loss in educational potential. For labour force participation, number of women that could have joined labour force participation had they not been married below 18 years was the cost of child marriage on labour force participation of women.

For this purpose, the study estimates the effect of child marriage on each outcome of interest by employing various regression techniques including logit regressions, multivariate regressions and cox-regressions.

The second step involved estimating the magnitude of impact of child marriage on various outcomes. For this purpose, the effect sizes were multiplied with the total number of brides calculated from the primary data collection survey. This provided an estimated magnitude of the outcome effected by child marriage.

The third step involved estimating the observed magnitude of the outcome had these child brides not married below 18. This was done by interacting counterfactual estimated effect of women who married at 18 or above by total number of child brides.

The cost was then the difference between estimated magnitude and observed magnitude for each outcome.

This exercise was conducted for each outcome separately as the nature of costs differs for each outcome. The hypothesized costs emanating from the conceptual framework and literature review against each outcome are given in Table 1.

Table 1: Outcome and Associated Costs

Outcome	Indicator	Associated Costs	
Educational Attainment	Girls dropping out of school	Direct tangible costs	Personal Costs
	Educational attainment for girls	Direct tangible costs	Personal and Public Costs
	Inter-generational effects	Indirect tangible costs	Public Costs
Health and Fertility	Risk of infant mortality	Indirect tangible costs	Personal Costs
	Female's Own health	Direct tangible costs	Personal Costs
Labour Force Productivity	Women's labour force participation	Direct tangible costs	Personal and Public Costs
	Impact on women's earnings	Indirect tangible costs	Personal Costs
	National impact on earnings	Indirect tangible costs	Public Costs
Decision-Making and Agency	Women's ability to spend money	Indirect tangible costs	Personal Costs
	Women's ability to decide fertility timing and number	Indirect tangible costs	Personal Costs
	Women's ability to make decisions about education and health investments of children	Indirect tangible costs	Personal and Public Costs
Experience of Violence	Incidence of violence	Indirect tangible costs	Personal Costs
	Psychological Pain and Suffering	Direct intangible costs	Personal and Public

10. Current Status of Child Marriage: An analysis of the Study Districts

Section 6 details out district selection criteria. Figure 3 shows that incidence of Child Marriage in KP is significantly higher than that of Punjab. For KP, the incidence of child marriage is 11 percentage points higher than that of Punjab.

Figure 3: Incidence of Child Marriage across Provinces
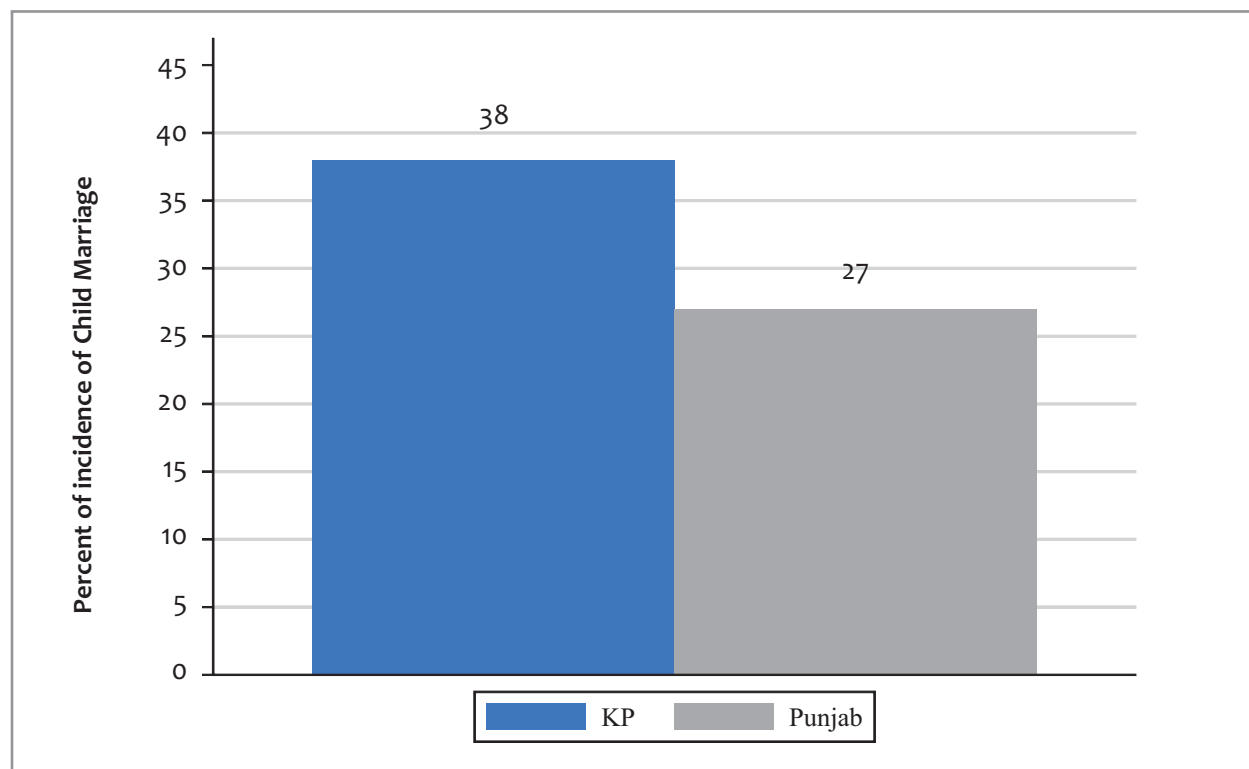
In terms of numbers, total number of child brides in Punjab during the period July 2019- July 2020 is 2.6 million. Whereas for KP, 1.1 million girls are married below 18. The numbers are derived by using population weights on the data collected for this study and are estimates for the period 2019-2020. These numbers were also used to estimate costs of child marriage in later sections.

10.1 Punjab

Figure 4 shows that there is significant variation of child marriage incidences across various districts. Toba Tek Singh and Chakwal were selected from strata of low incidence which had an average incidence of 16 percent. Vehari and Mandi Bahauddin were selected from medium incidence strata having an average incidence of 28 percent and Muzaffargarh and Khanewal were selected from high incidence strata having an average incidence of 39 percent. Figure 4 confirms that the district selection was robust as both districts from each stratum is representative of these average percentages.

Figure 4: Incidence of Child Marriage in Punjab
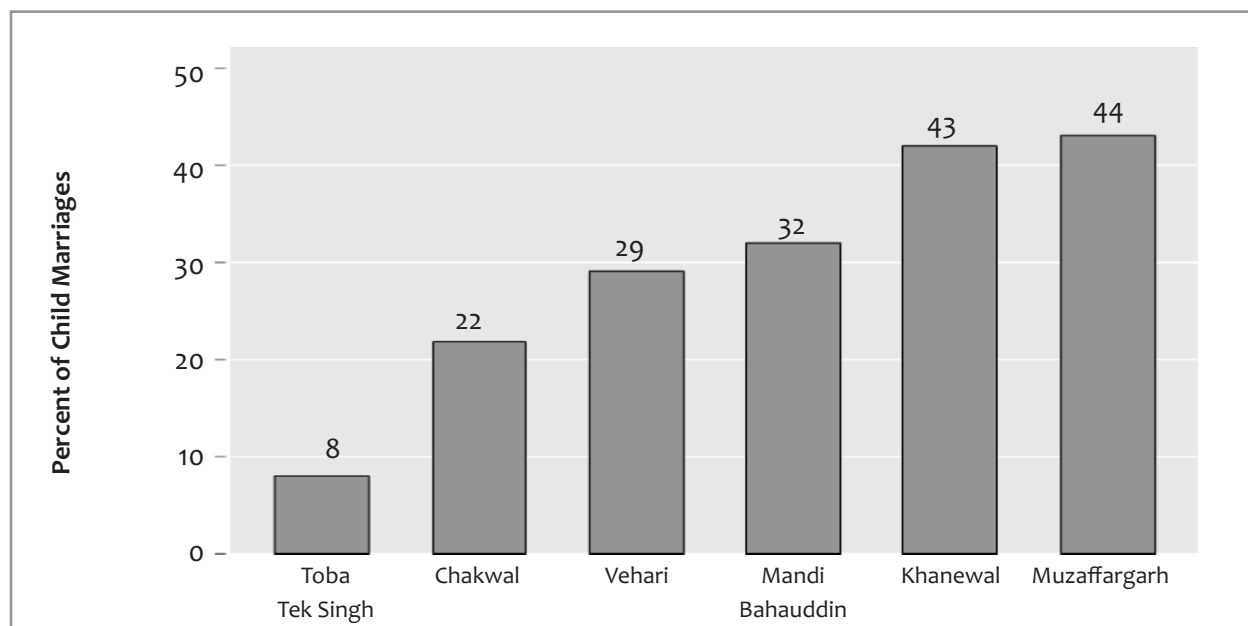
10.2   Khyber Pakhtunkhwa

Figure 5 shows that there is significant variation of child marriage incidences across various districts. Lakki Marwat was selected from strata of low incidence which had an average incidence of 30 percent. Chitral and Kohat were selected from medium incidence strata having an average incidence of 47 percent and the Buner was selected from high incidence strata having an average incidence of 65 percent. For KP, Figure 5 shows that although the percentage of incidence of child marriage is higher in Lakki Marwat than its strata, it lies within the upper bound of the mean value. Similarly, the value for Buner lies within the lower bound of the mean value of high incidence strata.

Figure 5: Incidence of Child Marriage in KP
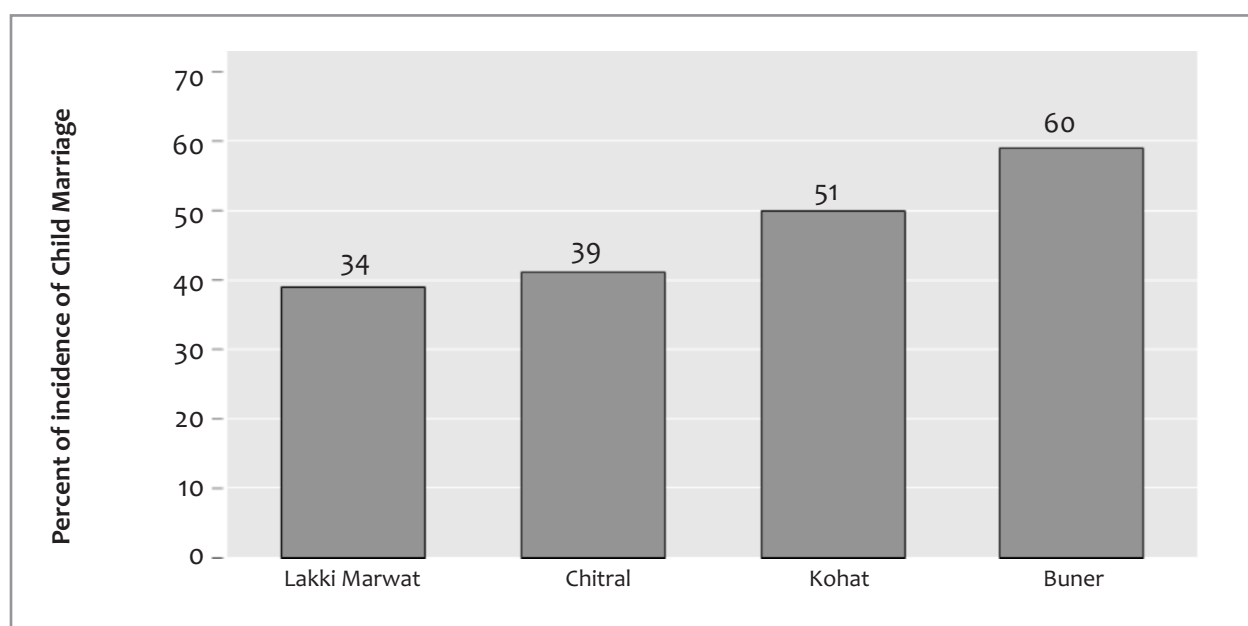
11.   Attitudes and Norms around Child Marriage

The purpose of this section is to understand the mechanisms through which child marriage impacts the life of young brides. These include factors that drive child marriage, attitudes towards child marriage of girls, and societal norms around marrying below 18 years. Although outcomes like these cannot be quantified or monetized, these factors help in understanding the impact of child marriage on the socioeconomic outcomes on which cost has been calculated in the next section.

11.1   Drivers of Child Marriage in the Society

Analysis from the Diagnostic Survey suggests that certain themes converge temporally to encourage child marriage in the context of Pakistan. The study constructs three themes which drive child marriage in Punjab and KP. Based on the evidence from the Diagnostic Survey, the study developed the following framework (Figure 6) to explain drivers of child marriage. Theme 1 (moral and religious values) and theme 2 (gendered social norms and relations) form an underlying context which encourages child marriage. Elements within theme 3 (household composition in terms of number of siblings and number of children) contribute to this underlying context, but predominantly act as a trigger, particularly when coupled with factors in theme 4 (desire for respect in the community).

The Child Marriage Costing Study Survey asked questions about drivers of child marriage on a 4-Point Likert scale. As shown in Figure 7, the religious and moral values seem to be the top-most factor which drives child marriage in the study areas of Punjab and KP. This is coupled with social and gender norms where girls are discriminated against as compared to boys and there is an innate pressure on parents to marry their girls earlier than boys. Evidence from the study also shows that 54 percent girls agree that a young married girl is more obedient to her husband than an older girl.

Figure 6: Driving Themes of Child Marriage: Framework
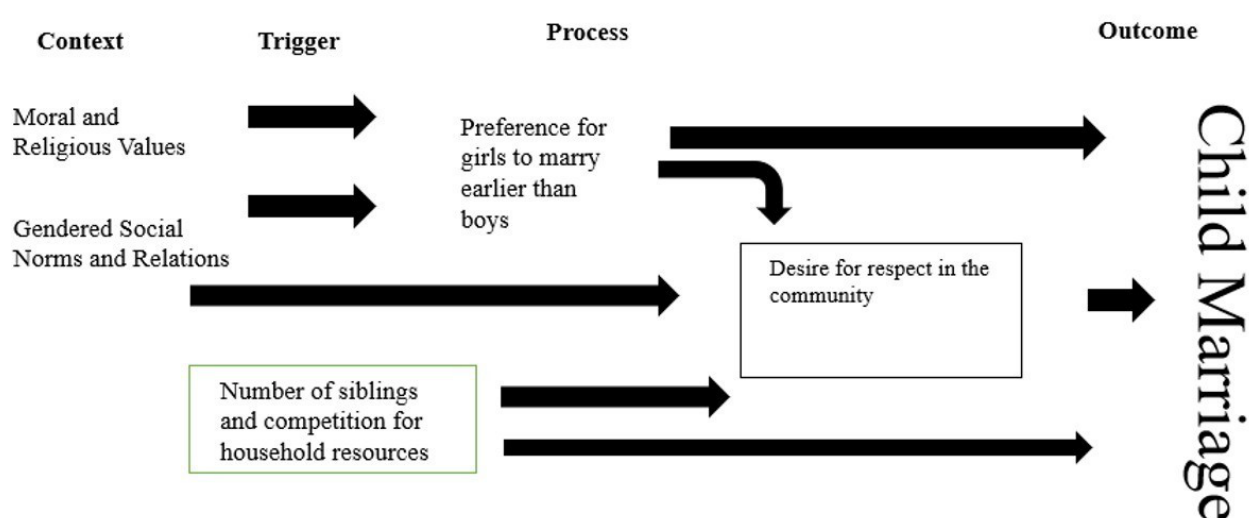
Figure 7: Drivers of Child Marriage: Factors
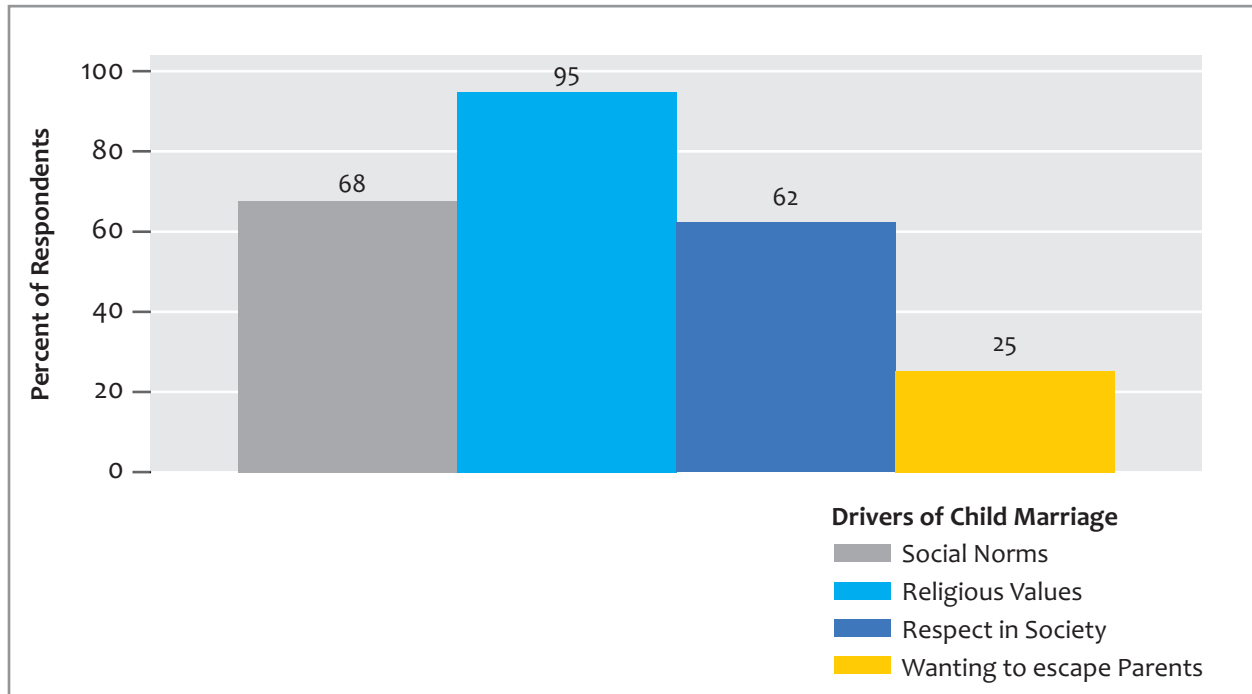
These religious values and social norms around gender are triggered by the household composition in terms of number of siblings a young girl has. Having more siblings puts greater pressure on limited household resources. Siblings compete on resources in terms of income spent on education, food and non-food expenditure. Where resources are scarce and customs are rooted, parents tend to marry their girls early to ease up pressure on resources. Evidence from the survey shows that 55 percent of the respondents agree that marrying early can solve parents' financial problems. Regression analysis on the survey data collected for this study shows that having larger number of siblings increases the likelihood of being married below 18. Estimates show that for each 1 additional sibling, the likelihood for the girl to be a child bride increases by 8 percent. Similarly, having more girl children as siblings compounds these effects where having 1 more girl child as sibling increases the likelihood of child marriage by 10 percent.

Once the above factors set in, the desire for respect in the community fuels child marriage. The current study shows that 62 percent of the respondents mention parents' desire for social acceptability as the driver of child marriage. A significantly high percentage of respondents (85 percent) also agrees that the girls should fulfil the wishes of their parents irrespective of the fact whether they agree with them or not.

Although the above-stated factors highlight the subjugation of agency of women and societal factors which drive child marriage in the society, in some cases women exercise their agency and prefer marrying earlier and escape family pressure as well. This can be fuelled by factors where the girl herself want to marry going against the wishes of her parents. The survey reveals that 25 percent of the respondents agree to the fact that sometimes girls marry early to escape their families.

11.2   Perceptions around Child Marriage

This study investigated perceptions of married women and girls in the sample around various themes surrounding the decision-making around girls' marriage and factors that drive child marriage in society. The purpose of this

section is to develop an understanding of the ways in which child marriage impacts the lives of young brides and whether there is acceptance among married women of certain norms around marriage that can trigger child marriage. The study sample shows that 56 percent of the respondents disagree that there are advantages to child marriage. Only 29 percent see benefit in terms of child and women heath status if they marry below 18. 82 percent agree that marrying below 18 can have negative impacts on girls' educational attainment. A significantly high percentage of women (90 percent) believe that despite social norms where parents have the final decision to marry, girls should not be forced or compelled into marriage. 67 percent strongly disagree that young brides should be comply to their husbands even if they resort to domestic or gender-based violence.

These statistics show that women of all ages have strong perceptions around negative effects of child marriage. The next sections highlight impact of child marriage in terms of socioeconomic differences and the cost the society and young brides bear as a result of child marriage.

12. Do young brides perceive the cost of child marriage? Lessons from Conjoint Experiment

In the previous sections, the study developed a framework of drivers of marriage and highlighted factors that fuel child marriage. The study also highlighted self-reported perceptions around those factors and whether the women accept the existing norms around child marriage. This study shows that there are strong negative attitudes around child marriage among women of all age groups.

This section highlights an important part of the study where it examines if the young brides themselves perceive any costs associated with child marriage. The study uses a conjoint experiment to determine how women make decisions around getting married. The Child Marriage Costing Study in Pakistan's Diagnostic Survey provided randomized information treatment to various respondents in the sample by varying information around 3 main factors that drive marriage: 1) age of marriage; 2) milestone achieved before marriage; 3) make decisions around marriage[5]. The statement was followed by questions on a 4-point Likert Scale asking about degree to which they agree with the statement for girls and degree to which they agree with the statement for boys. Results from the conjoint experiment show that most respondents prefer marrying between the age of 23 to 30 years, after they have completed their education and the decision to marry should be taken by themselves. The study also analysed differences in means for women who married below and 18 and for women who married 18 and above. Evidence shows that those women who married below 18, would have preferred to get married later had they been given the choice. The young brides also prefer to get married after completing their education and responded that the decision to marry should have been taken by themselves. Since these girls were married earlier than they would have preferred to get married, they perceive child marriage as a cost as well. The next sections provide estimates for these costs of child marriage on young brides aggregating these costs at a provincial level to estimate costs incurred on government as a whole.

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[5] Please see appendix C for exact statement of the conjoint experiment and information that was varied across 3 factors

13. Impact of Marital Age on Socioeconomic Differences

13.1 Educational Attainment

Data shows that almost 33 percent of respondents reported not attending any type of school at all. Even from those girls who went to school, 42 percent only completed Matric or below. Evidence in Figure 8 suggests that there are no significant differences across provinces. In Punjab and KP, women who didn't go to schools form the highest percentage of respondents.

Figure 8: Education Levels across Provinces
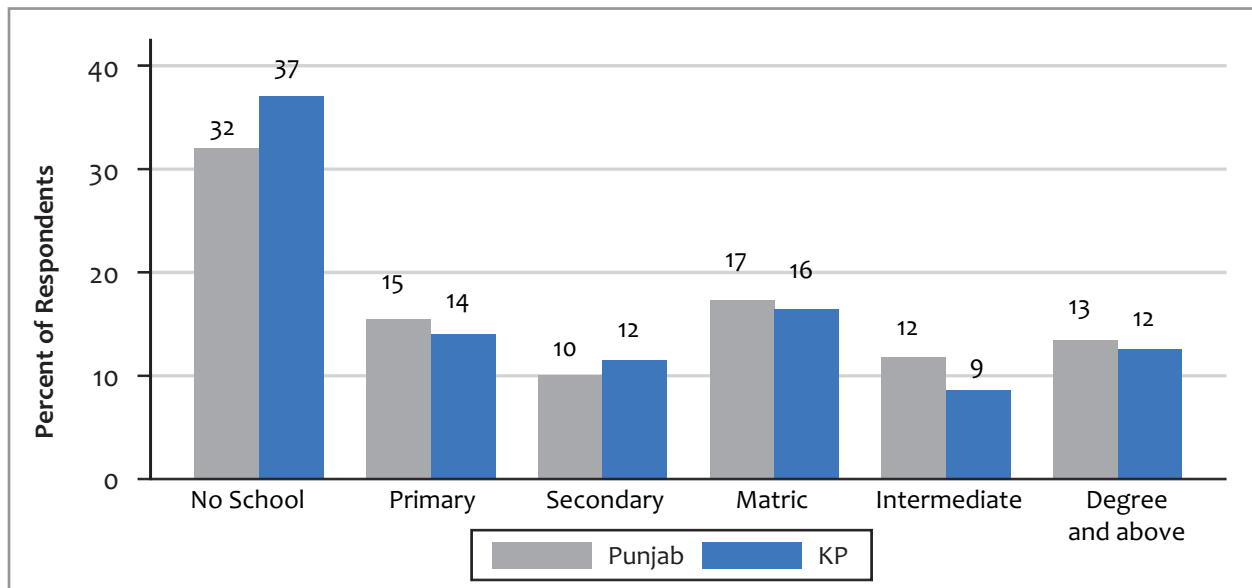
The study also explored types of schools that girls in Punjab and KP go to. Figure 9 shows more than 90 percent of the girls attended government schools. There is no variation across both provinces for types of school attended.

Figure 9: Types of School Attended Across Provinces
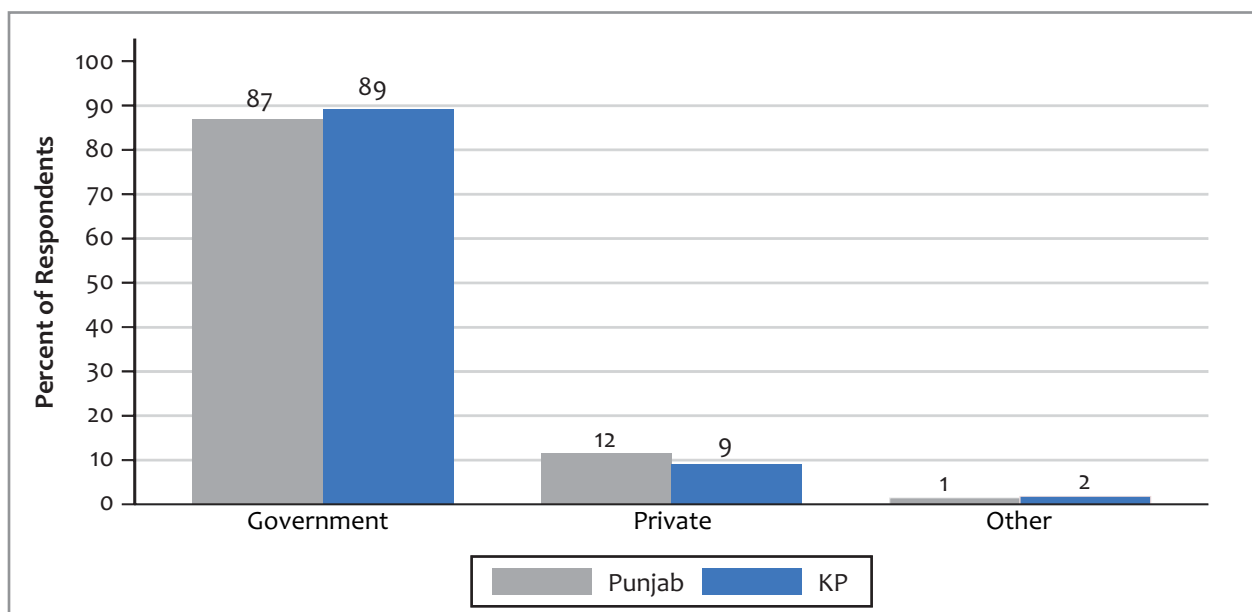
Since the focus of this study was to develop an understanding of factors relating to child marriage, the study also investigated reasons for dropping out or ending school. Data shows that on average only 19 percent of the respondents dropped out because they completed their education. A significant percentage of the reported reasons pertain to dropping out due to providing care at their homes (29 percent looking after household members in general and 5 percent to children). A large percentage also reported parents forcing them to drop out, followed by marriage (15 percent in Punjab and 20 percent in KP) as a reason for dropping. The report didn't find any stark differences across provinces except for getting married where it is 5 percentage points higher in KP than Punjab.

Figure 10: Reasons for Dropping Out Across Provinces
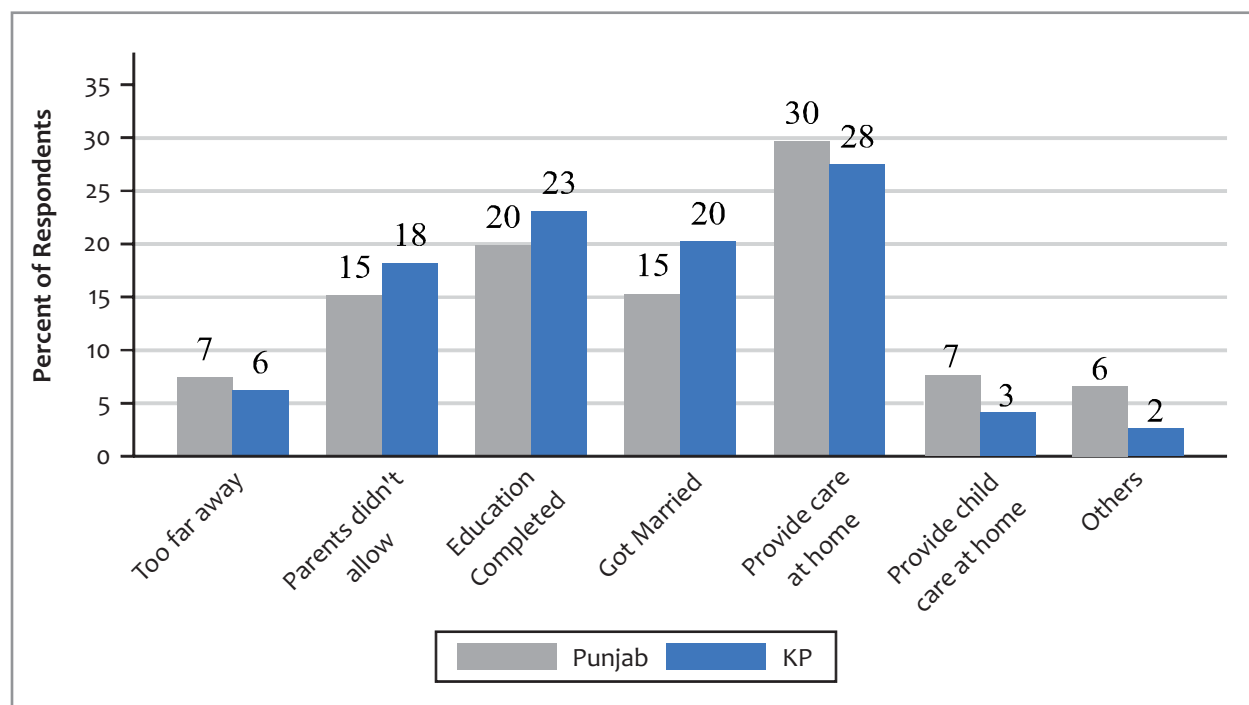
How do these factors affect women who get married at 18 or below? The educational trajectory of young brides gets completely altered once they get married early. They cease to attend formal school which deeply affects their educational attainment and skill set that can help them participate in the labour force. Since schools provide a social network where women can develop a support system, girls who get married early lose this network.

Thus, the earlier a girl marries, the more likely it is that her level of schooling will be low. Estimates from the study show that for the overall sample, young brides have attained 2 years less of education than those who marry after the age of 18. For Punjab, the effect of getting married is stronger as the young brides attain almost 2 years of less education as compared to KP where young brides attain 1 year less of education. In other words, for Punjab women who marry early attain 25 percentage points less education and for KP, they attain 16 percentage points less education.

Figure 11: Differences in Educational Attainment due to Child Marriage
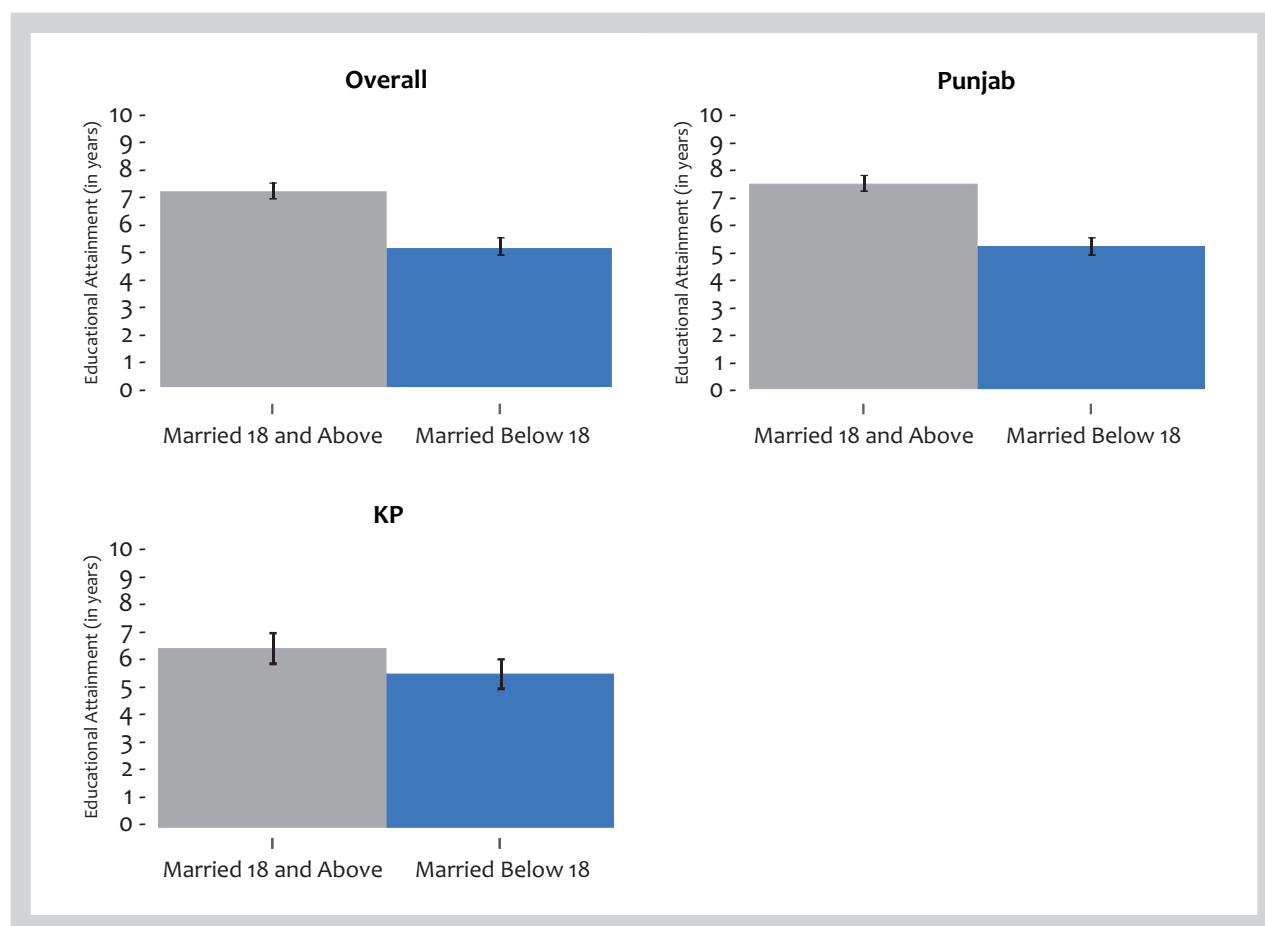
The economic impacts of girls' reduced educational attainment can be measured in terms of reduced earnings and productivity.

Cost of Child Marriage on Educational Attainment

The study estimated direct tangible costs of child marriage on educational attainment through two measures:

a) Direct tangible costs including the number of women who were unable to complete secondary education; number of women who could have completed above secondary education had they not been married. These two measures are the direct costs on women as a result of child marriage.

b) Indirect tangible costs including loss of earning potential due to low educational outcomes.

Direct tangible costs

The cost for the loss of educational attainment is calculated using the following methodology:

Using regression analysis on data collected for this study, differences in percentages in educational attainment for child brides and non-child brides are estimated. The educational attainment for non-child brides provides the counterfactual scenario of estimated educational attainment levels the young brides in the sample could have

achieved had they not been married below the age of 18. These percentages were then converted to actual numbers by multiplying them with total number of child brides for the period 2019-2020 in Punjab and KP separately.

Using this data, the study estimates educational attainment in absolute numbers for child brides (observed numbers) and absolute numbers had these child brides not married below 18 (estimated numbers). The cost of child marriage on educational attainment is then the difference between estimated numbers and observed numbers.

Punjab

Estimates in Table 2 from the costing exercise conducted on data collected through Costing Study on Child Marriage in Pakistan's Flash Survey show that, during July 2019-July 2020 given 21 percent incidence of child marriage in Punjab, almost 66,000 girls were unable to complete secondary education because of child marriage. This means that the cost of child marriage on women's secondary education is that secondary education completion rate of girls could have increased by 20 percent had these girls not been married earlier. Estimates show that for the period of 2019-2020, incidence of child marriage is mostly felt at higher level education where additional 294,000 young brides could have completed higher secondary education had then not been married below 18 years. Thus, the cost of child marriage on women's higher secondary education is that higher secondary education completion rate could have increased by 24 percent had these girls not been married earlier.

Table 2: Cost of Child Marriage on Educational Attainment in Punjab

Percent of Child Brides with no education	38%
Percent of Child Brides with secondary education	10%
Percent of child brides with above secondary education	6%
Percent of non-child brides with no education	28%
Percent of non-child brides with secondary education	12%
Percent of non-child brides with above secondary education	17%
Estimated number of child brides with no education had they not been married below 18	750,400
Estimated number of child brides with secondary education had they not been married below 18	324,280
Estimated number of child brides with above secondary had they not been married below 18	455,600
Observed number of child brides no education	1,018,400
Observed number of child brides with secondary education	258,620
Observed number of child brides with above secondary education	160,800
Loss of Secondary Education= Estimated Number-Observed number	65,660
Loss of Above Secondary Education= Estimated Number-Observed number	294,800

KP

In comparison to Punjab, the incidence of child marriage in KP is 11 percent greater and the costs of child marriage on education are relatively higher as well.

Estimates in Table 3 from the costing exercise conducted on data collected through Costing Study of Child Marriage in Pakistan's Flash Survey show that, during 2019-2020, given 32 percent incidence of child marriage in

KP, almost 47,000 girls were unable to complete secondary education because of child marriage. This means that the cost of child marriage on secondary education of girls is that women's secondary education completion rate could have increased by 25 percent had these girls not been married earlier. Estimates show that for the period of 2019-2020, incidence of child marriage is mostly felt at higher level education where additional 89,000 young brides could have completed higher secondary education had then not been married below 18 years. Thus, the cost of child marriage on higher secondary education of girls is that higher secondary education completion rate could have increased by 45 percent had these girls not married earlier.

Table 3: Effects on Education due to Child Marriage for KP

Percent of Child Brides with no education	43%
Percent of Child Brides with secondary education	5%
Percent of child brides with above secondary education	5%
Percent of non-child brides with no education	38%
Percent of non-child brides with secondary education	9%
Percent of non-child brides with above secondary education	13%
Estimated number of child brides with no education had they not been married below 18	421,800
Estimated number of child brides with secondary education had they not been married below 18	99,900
Estimated number of child brides with above secondary had they not been married below 18	144,300
Observed number of child brides no education	477,300
Observed number of child brides with secondary education	52,947
Observed number of child brides with above secondary education	55,500
Loss of Secondary Education= Estimated Number-Observed number	46,953
Loss of Above Secondary Education= Estimated Number-Observed number	88,800

Figure 12: Cost of Child Marriage: Loss in Educational Potential
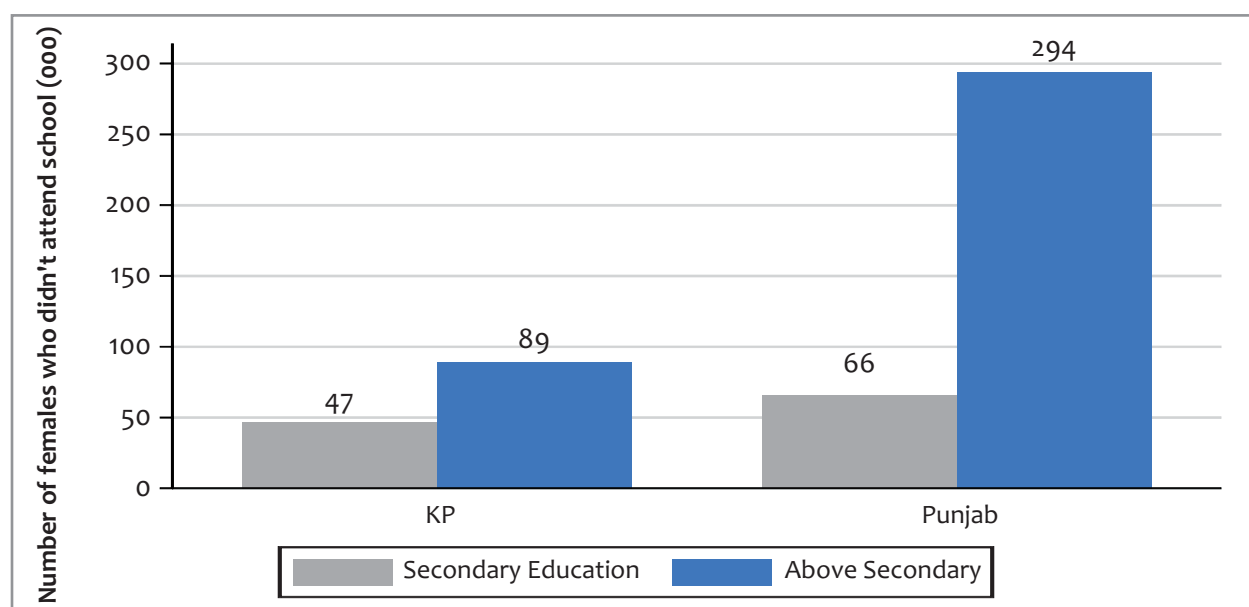
Indirect Tangible Costs

The direct tangible costs in terms of low educational attainment for young brides leads to wage potential where young brides are unable to get better paying jobs. This study identifies it as an indirect cost of child marriage due to low educational outcomes. The following analysis provides estimates for these costs.

Punjab

Estimates from the Table 4 show that between July 2019 and July 2020, for Punjab PKR 13.6 Billion was potentially income was lost because almost 360,000 girls were unable to complete secondary or higher education. Roughly this is 0.05% of Punjab's GDP for the last fiscal year.

Table 4: Indirect Loss of Potential Wages due to Child Marriage in Punjab

Number of girls who couldn't complete secondary or higher education due to child marriage for Punjab	360,460
Percent of LFP for females who have secondary or higher education	17%
Increase in LFP had young girls participated after attaining secondary or higher education	61,278
Average women monthly wage for secondary or higher education in Punjab	PKR 19,000
Annual loss in potential income due to limited educational potential of young brides	PKR 13.6 Billion

KP

Estimates from the Table 5 show that for KP between July 2019 and July 2020, PKR 4.2 Billion was potentially income was lost because almost 136,000 girls were unable to complete secondary or higher education. Roughly this is 0.01% of KP's GDP for the last fiscal year.

Table 5: Indirect Loss of Potential Wages due to Child Marriage in KP

Number of girls who couldn't complete secondary or higher education due to child marriage for KP	135,753
Percent of LFP for females who have secondary or higher education	15%
Increase in LFP had young girls participated after attaining secondary or higher education	20,362
Average women monthly wage for secondary or higher education in KP	PKR 17,250
Annual loss in potential income due to limited educational potential of young brides	PKR 4.2 Billion

13.2   Labour Force Participation

The study measures labour force outcomes by asking if the respondents ever worked before or after marriage and their current employment status as well. Data shows that only 14 percent of the women were working before marriage. 2 percent of the women were looking for jobs before marriage were unable to find work. Whereas 83 percent of the women were voluntarily unemployed.

Figure 13: Labour Force Participation
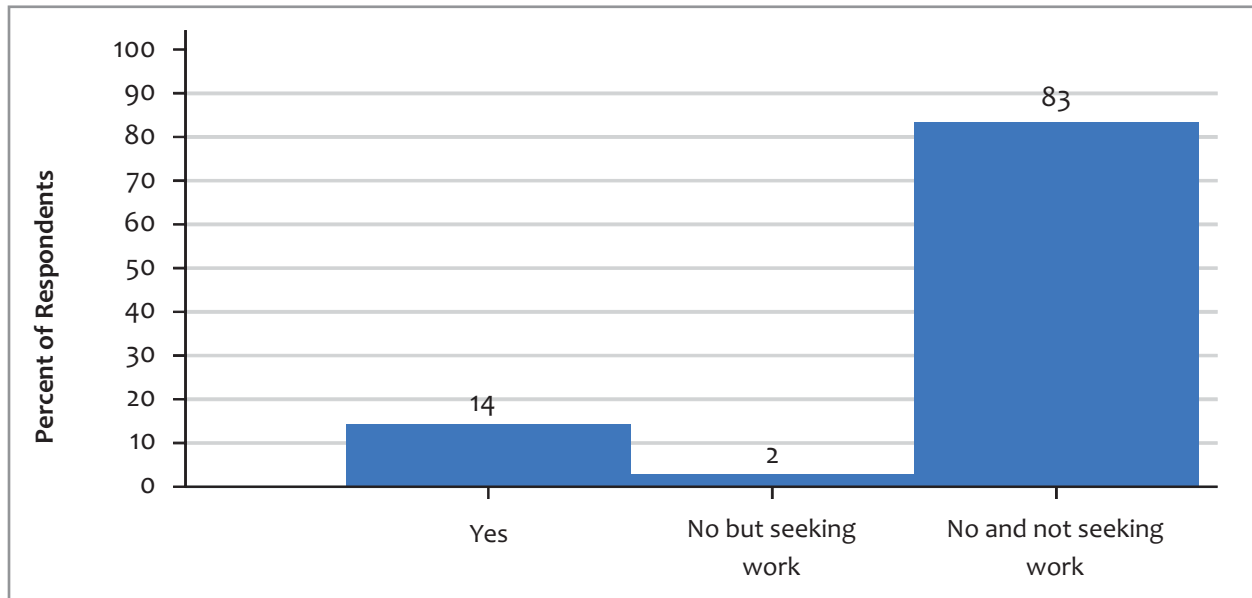
These statistics remain the same for questions asked about labour force participation (LFP) after marriage. For those women who were working before marriage, 28 percent dropped out from labour force participation. 29 percent of the women who were not working voluntarily or involuntarily joined the labour force participation.

How is the labour force participation affected by the age at which women get married? The impact of child marriage on labour force participation is affected by multiple reasons.

Firstly, it has a direct effect on decreasing labour force participation of young brides due to low educational attainment for women. Evidence from this study shows that labour force participation for young brides is 4 percent less than those women who marry later. We see a similar effect for Punjab. For KP, the effect of child marriage of LFP in terms of regression estimate is smaller than that of Punjab. For KP, 2 percent less women joined labour force because they got married below 18. This can be attributed to the fact that the LFP levels for women in KP are already very low. Given the low labour force participation rates, child marriage leads to the participation rates being lower by 21 percent and 17 percent for Punjab and KP respectively.

Figure 14: Loss in LFP
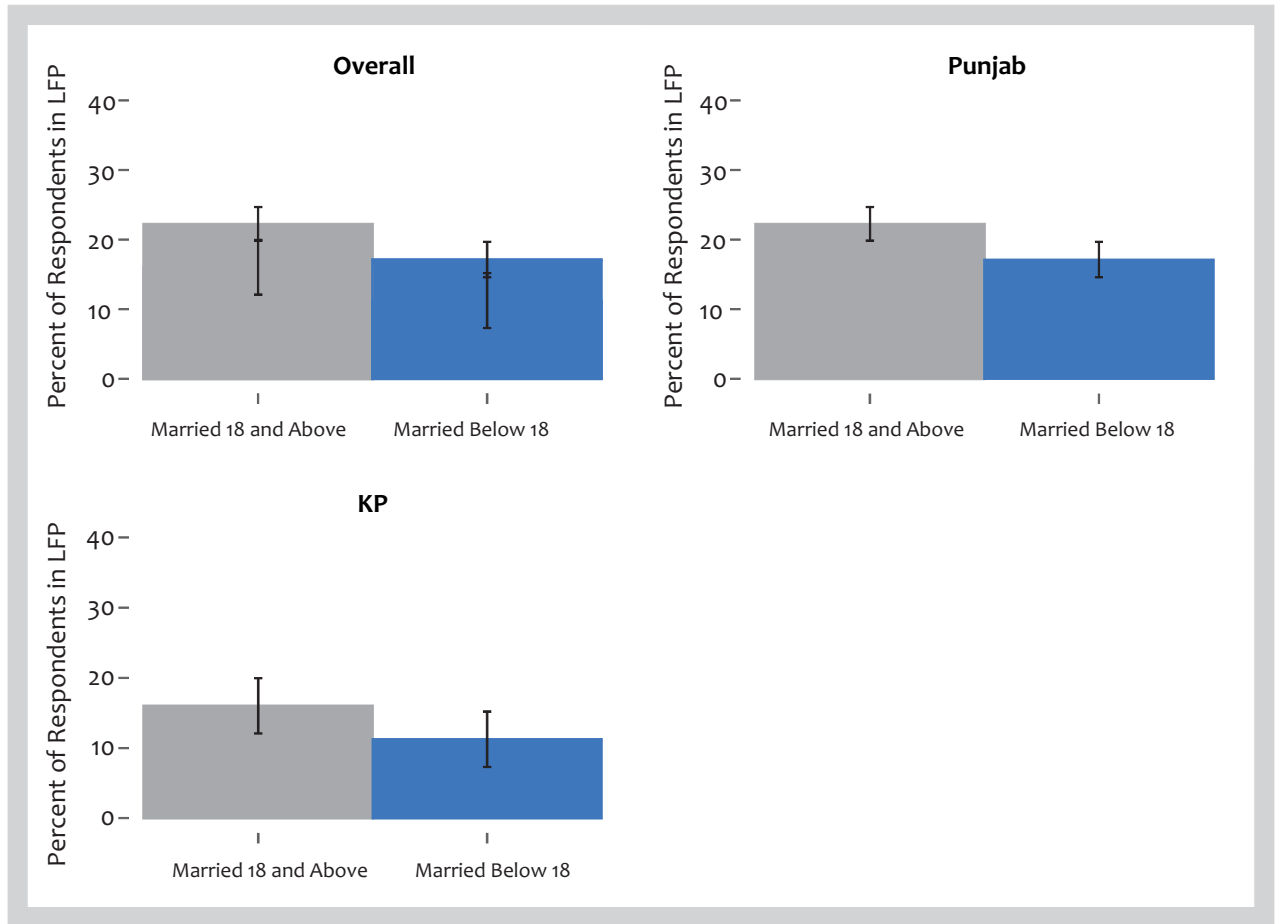
Secondly, child marriage can increase the burden of unpaid household work. Results from data show that young brides' LFP after marriage is 6 percent less than their counterparts. These differences are not significant if we analyse our results for Punjab and KP.

Thirdly, child marriage significantly affects women's agency. This can reduce bargaining power of women in the job market hence increasing wage differentials. On average, women who marry early and are still working earn PKR 1,800 less than women who got married at a later stage in their lives. The wage differential increases for women in Punjab, where young brides earn PKR 2,200 less than women who marry later. The wage differential for KP is on average PKR 1,900.

Figure 15: Wage Differentials
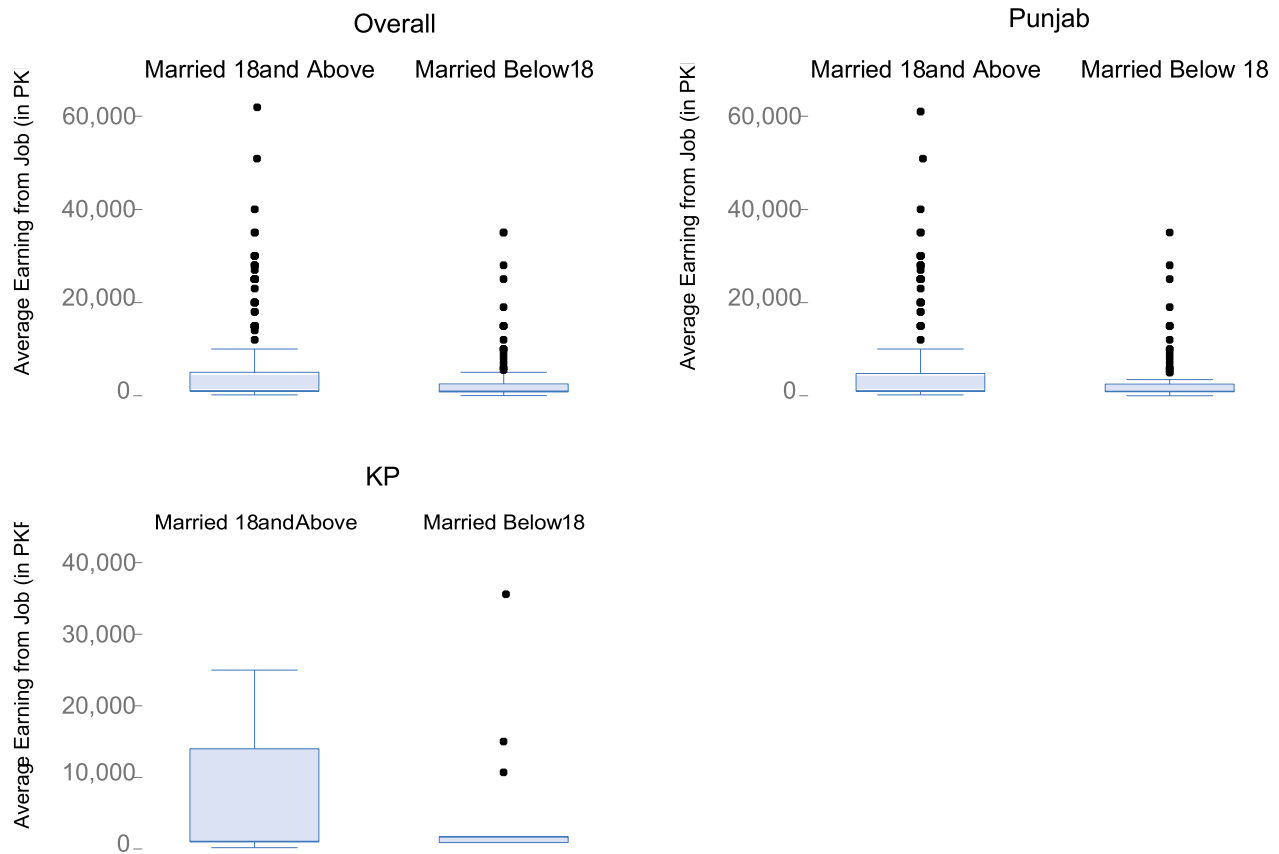
Cost of Child Marriage on Labour Force Participation

We construct two measures to estimate cost of child marriage on labour force participation:

- Direct tangible cost in terms of Number; additional women who could have been part of the labour force had they not gotten married below 18

- Indirect tangible cost in terms of Wage losses or wage differential of the women who married below 18 but are still working by virtue of decreased bargaining power

Direct and Intangible Tangible Costs

The cost for the loss of LFP and wages is calculated using the following methodology:

Using regression analysis on data collected for this study, differences in percentages in LFP and wages earned for child brides and non-child brides were estimated. The LFP levels and wages for non-child brides provided the counterfactual scenario of estimated educational attainment levels the young brides in the sample could have achieved had they not married below the age of 18. These percentages were then converted to actual numbers by multiplying them with total number of child brides in for the period 2019-2020 in Punjab and KP separately. Using this data, the study estimates LFP in absolute numbers for child brides (observed numbers) and absolute numbers

had these child brides not married below 18 (estimated numbers). Using similar methodology, aggregate wage losses were also calculated. The cost of child marriage on LFP is then the difference between estimated numbers and observed numbers of LFP and wage losses

Punjab

Estimates in Table 6 from the costing exercise conducted on data collected through Costing Study of Child Marriage in Pakistan's Study Flash Survey show that during 2019-2020, given 21 percent incidence of child marriage in Punjab, almost 118,000 women could have joined the labour force had they not been married below 18. In other words, the labour force participation could have been 21 percent higher if these child marriages could have been avoided. Figure 16. Similarly, as child marriage decreases the agency of the bride and hence the bargaining power, evidence given in Table 6 suggests that the indirect cost through lack of agency and reduced bargaining power incurs an aggregate wage loss of PKR 805 million/month to young brides as a whole.

Table 6: Effects on Labour Force Participation due to Child Marriage for Punjab

Fraction of Child Brides who work	17%
Fraction of non-Child Brides who work	21%
Actual number of child brides in LFP	447,560
Estimated number of females in LFP had they not married below 18	564,676
Loss of workers due to Child Marriage	117,116
Wage differential between child brides and non -child brides	PKR 1,800
Total Child Brides in Punjab	2,680,000
Annual Wage loss	PKR 9.6 Billion

KP

Estimates in Table 7 from the costing exercise conducted on data collected through Child Marriage Costing Study Flash Survey show that during 2019-2020, given 32 percent incidence of child marriage in KP, almost 36,000 women could have joined labour force had they not been married below 18. In other words, the labour force participation could have been 13 percent higher if these child brides would have participated in labour force Figure 16. Similarly, as child marriage decreases the agency of the bride and hence the bargaining power, evidence in Table 7 suggests that the indirect cost through lack of agency and reduced bargaining power incurs an aggregate wage loss of PKR 278 million/month to young brides as a whole.

Table 7: Effects on Labour Force Participation due to Child Marriage for KP

Fraction of Child Brides who work	11%
Fraction of non-Child Brides who work	15%
Actual number of child brides in LFP	126,318
Estimated number of females in LFP had they not married below 18	161,838
Loss of workers due to Child Marriage	35,520
Wage differential between child brides and non - child brides	PKR 1,900
Total Child Brides in KP	1,110,000
Annual Wage loss	PKR 2.9 Billion

Figure 16: Loss of Women LFP
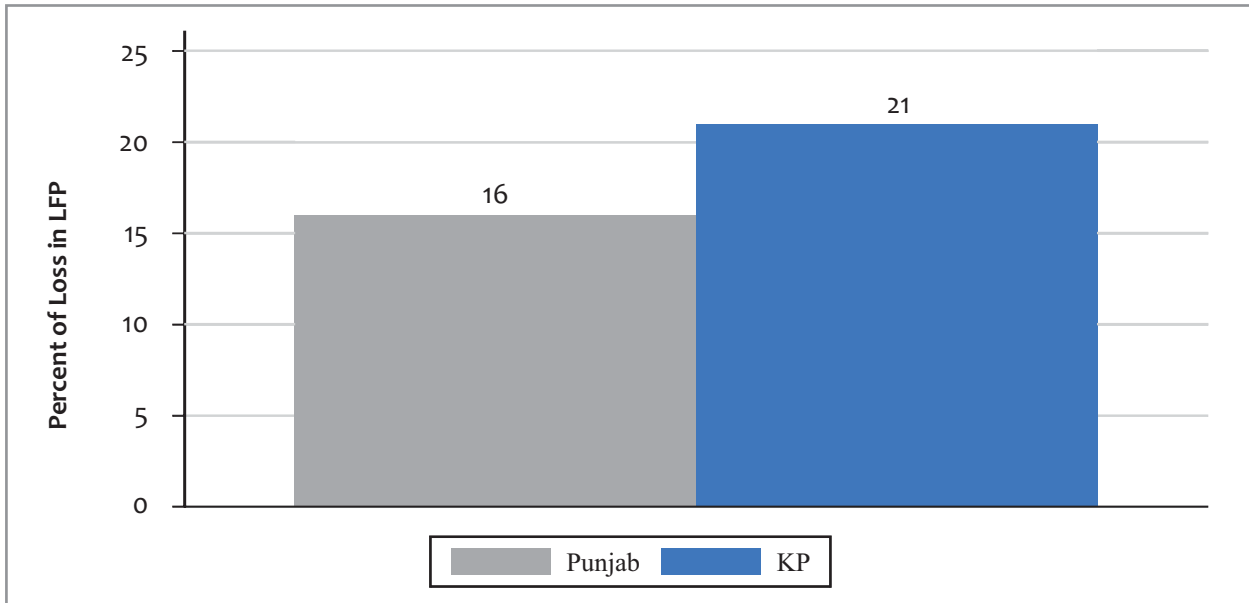
13.3   Fertility and Population Growth

Data suggests that women respondents in the study have 3 children on average. 7 percent of these women have more than 5 children. How does child marriage contribute to fertility and population growth? Child marriage contributes to higher total fertility as women marrying earlier tend to have children earlier and also more children over their lifetime than if they had married later in their lives. Results from our survey show that although women who marry early have 0.21 more childbirths than women who marry later these differences are more nuanced if a respondent had 4 or more children. Figure 17 shows the percentage difference of having 4 or more children increases for women who married below 18.

Figure 17: Impact of Child Marriage on Fertility
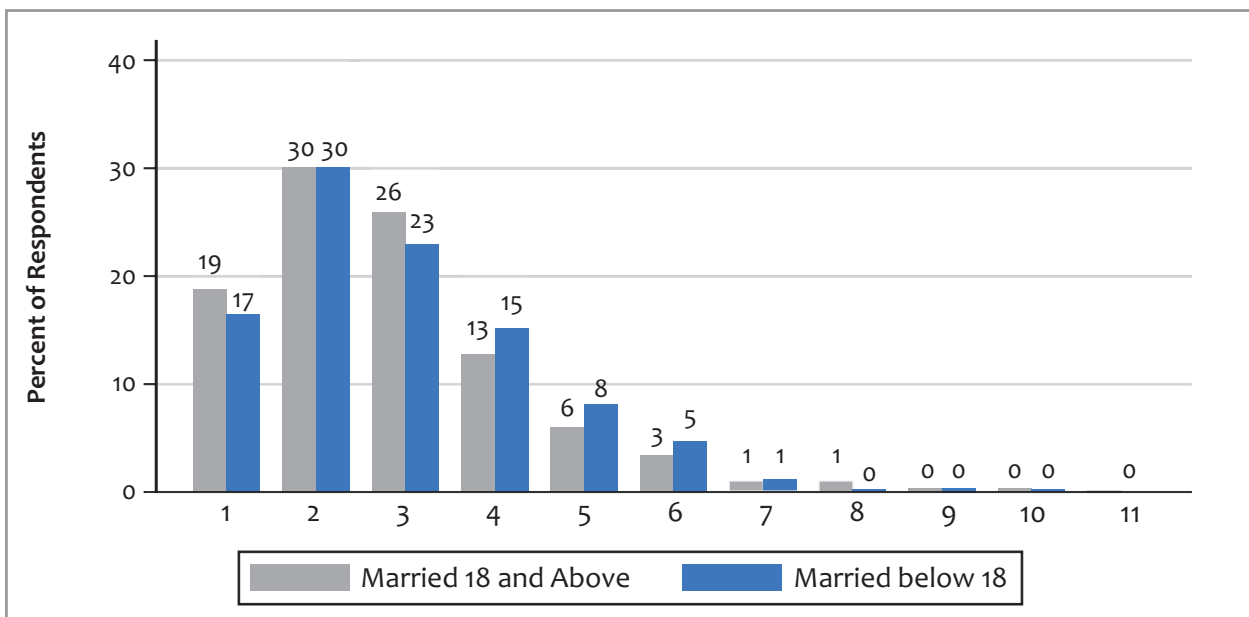
Through its impact on total fertility, child marriage may contribute to higher population growth. For Pakistan, high population growth may threaten long-term prosperity and exacerbate competition for access to scarce resources. High population growth may also weaken the ability of governments to provide basic services quality to their population, among others in the areas of education, health, nutrition, and infrastructure.

Cost of Child Marriage on Fertility and Population Growth

The direct intangible costs of child marriage on fertility and population growth is estimated by how many additional births happen due to the fact that a girl marries below 18. The cost in terms of additional childbirths is calculated using the following methodology: Using regression analysis on data collected for this study, differences in percentages were calculated for various childbirths: a) for no child; b) 1-2 children and c) having 3 or more children. The percentages for non-child brides provided the counterfactual scenario of estimated childbirths the young brides in the sample could have achieved had they not married below 18. These percentages were then converted to actual numbers by multiplying them with total number of child brides for the period 2019-2020 in Punjab and KP separately.

Using this data, the study estimates additional childbirths due to child marriage in absolute numbers (observed numbers) and absolute numbers had these child brides not married below 18 (estimated numbers).

Punjab

The total number of child marriages for Punjab during 2019-2020 is estimated to be 2.68 million. The study shows that although there is no difference of fertility for 3 and more children between child brides and non-child brides, we see an 8 percent significant difference for 1-2 children between child brides and non-child brides. When this difference was multiplied by total child brides in Punjab, we get the additional number of childbirths due to child marriage.

For Punjab, 1.7 million additional births take place because 21 percent of the girls get married below 18. This means that out of total new births, child marriage contributes to almost 21 percent of the additional births.

Table 8: Extra Fertility due to Child Marriage for Punjab

Total Child Brides in Punjab, Pakistan	2,680,000
Percentage of Child Brides with 0 total births	7%
Percentage of Child Brides with 1-2 total births	36%
Percentage of Child Brides with 3+ total births	57%
Odds Ratio of Child Brides with 1-2 total births	1.7
Odds Ratio of Child Brides with 3+ total births	4.8
Percentage of Non-Child Brides with 0 total births	15%
Percentage of Non-Child Brides with 1-2 total births	28%
Percentage of Non-Child Brides with 3+ total births	57%
Odds Ratio of Non-Child Brides with 1-2 total births	1.5
Odds Ratio of Non-Child Brides with 3+ total births	4.0
Actual Number of Births to Child Brides	8,946,912
Estimated Births to Child Brides had they not been married below 18	7,193,120
Additional Number of Childbirths due to Child Marriage	1,753,792

KP

Evidence from the data collected for this study shows that the total number of child marriages for KP during 2019-2020 is estimated to be 1.1 million. The study shows that although there is no difference of fertility for 1-2 children between child brides and non-child brides, we see an 11 percent significant difference for 3 or more children between child brides and non-child brides. When this difference was multiplied by total child brides in KP, we get the additional number of childbirths due to child marriage.

For KP, 0.7 million additional births take place because 32 percent of the girls get married below 18. This means that out of total new births, child marriage contributes to almost 14 percent of the additional births.

Table 9: Extra Fertility due to Child Marriage for KP

Total Child Brides in KP, Pakistan	1,110,000
Percentage of Child Brides with 0 total births	7%
Percentage of Child Brides with 1-2 total births	44%
Percentage of Child Brides with 3+ total births	49%
Percentage of Non-Child Brides with 0 total births	18%
Percentage of Non-Child Brides with 1-2 total births	44%
Percentage of Non-Child Brides with 3+ total births	38%
Actual Number of Births to Child Brides	2,977,794
Estimated Births to Child Brides had they not been married below 18	2,547,843
Additional Number of Childbirths due to Child Marriage	429,951

For KP, child brides lead to an additional 0.4 million births. This means that out of total new births, child marriage contributes to almost 14 percent of the additional births (Figure 18)

Figure 18: Additional Child Births due to Child Marriage
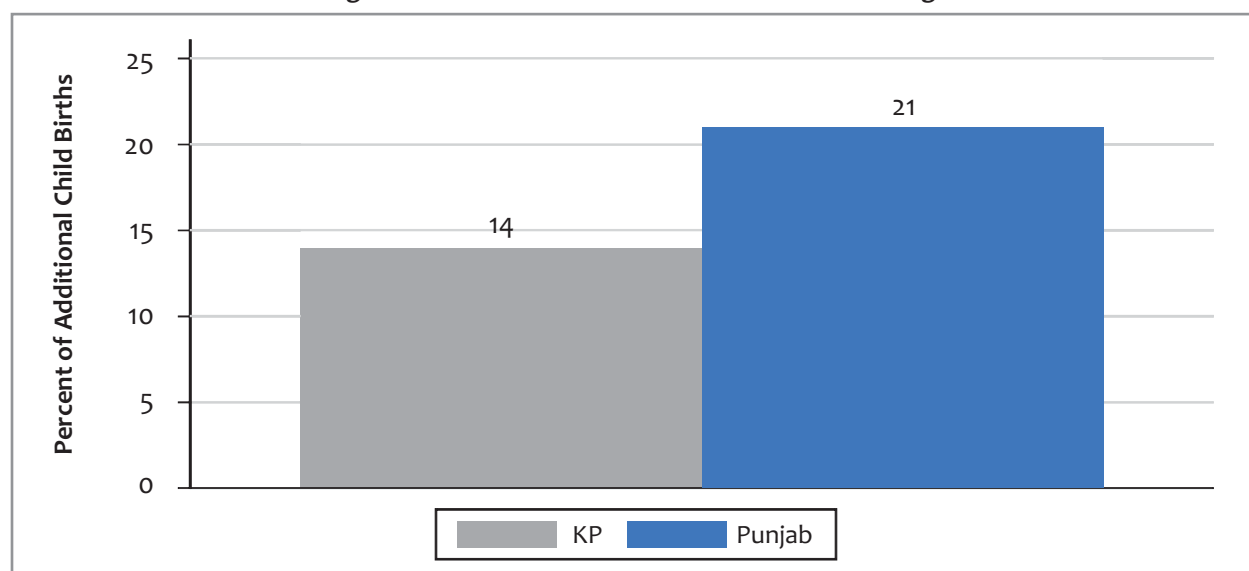
13.4   Child Mortality

In the study's sample, overall 16 percent of the women reported having a miscarriage or child dying below 5 years. For Punjab, child mortality rate is higher than KP where 93 in 1,000 children die as compared to KP where 64 in 1,000 children die below the age of 5 (PDHS, 2017). Child mortality is higher for young brides where overall incidence of child mortality is 3 percent greater than those women who marry 18 and above.

Cost of Child Marriage on Child Mortality

We construct direct tangible cost measure for effect of child marriage on child mortality in terms of additional deaths that happen if a girl marries below 18.

The cost estimates for each outcome are calculated as follows:

Step 1: In order to calculate the cost, child mortality was chosen as the dependent outcome variable to study the effects of child marriage on mortality outcomes.

Step 2: Further, child mortality was estimated using data on number of deaths in the age group 1-4.

Step 3: In addition to bivariate and multivariate analysis, Cox Proportional Hazard regression has been used to examine the effect of child marriage on child mortality in terms of hazard ratios.

Step 4: For cost calculation, we estimated actual population counts for different components (viz. child mortality) using data from study's survey supplemented with data from PDHS, and MICS where possible. The cost has been calculated in terms of additional loss because of child marriage for different components.

Punjab

For Punjab, estimates suggest that additional 304,000 children die if their mothers marry below 18. This means that child marriage leads to 18 percent more deaths in Punjab.

Table 10: Extra Child Mortality due to Child Marriage for Punjab

Estimates of child mortality per 1000 Kids (Source: PDHS Report 2017-18)	93
Census estimates of total population in 0 5 age group (Source: PDHS 2017-18)	17,051,928
Estimated number of total child deaths	1,585,829
Estimated number of child mortality if young brides had not married below 18	428,174
Observed number of child mortality for young brides	732,177
Additional child mortality because of child marriage	304,003

KP

For KP, estimates suggest that additional 36,000 children die if their mothers marry below 18. This means that child marriage leads to 12 percent more deaths in KP.

Table 11: Extra Child Mortality due to Child Marriage for KP

Estimates of child mortality per 1000 Kids (Source: PDHS Report 2017-18)	64
Census estimates of total population in 0-5 age group (Source: PDHS 2017-18)	5,000,000
Estimated number of total child deaths	293,024
Estimated number of child mortality if young brides had not married below 18	108,419
Observed number of child mortality for young brides	144,197
Additional child mortality because of child marriage	35,778

Figure 19: Cost of Child Mortality due to Child Marriage
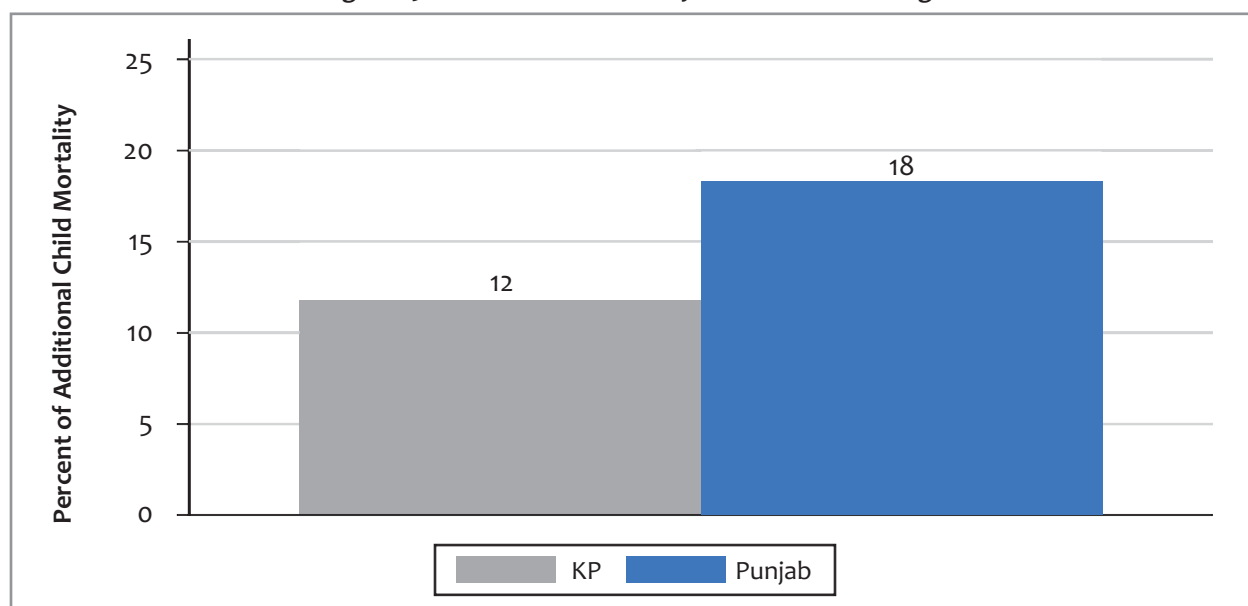
Furthermore, child deaths have a negative impact on future macroeconomic output. They increase health expenditure, cause attrition of future labour and productivity, and erode investments in human and physical capital formation (WHO, 2019). This study uses the cost-of-illness model used by Kirigia et al. (2015) to estimate the impact of child deaths on non-health components of future GDP. Child deaths reduce future spending on goods and services; future labour force; future household savings, and hence investments; the number of future taxpayers, and hence future tax revenues; and the number of future exports producers, bleeding future exports earnings. Since children are not part of the current labour force, their deaths affect future not present flows of GDP. Kirigia et al. (2015) have developed a model which was used to calculate loss in GDP due to child mortality fuelled by child marriage[6]. The following sections estimate future loss in non-health GDP for Punjab and KP because of additional child mortality due to child marriage in the next 10 years.

Punjab

The total number of additional child deaths due to child marriage in Punjab was estimated to be 304,000. Using MICS, we estimated Average Age at Death among under 5-year-old children (AAD), i.e. 2.5 years. Life expectancy in

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[6] For detailed methodology and formula statistical calculations, please see Kirigia et al. (2015)

Pakistan is 66 years (World Life Expectancy, 2019). Punjab's per capita GDP in 2019 was PKR 146,000. Punjab's Per capita total expenditure on health in 2019 was PKR 800. The non-health GDP per capita is the difference between PKR 146,000 and PKR 800. Using literature, in order to account for future losses, we discount this figure by 10 percent as we want to estimate future losses in next 10 years. For Punjab, undiscounted years of life lost under 5 years is the difference between life expectancy in number of years and average age at death among children under 5-year-old minus 14 years. Since according to Article 2 of the International Labour Organization (ILO) convention, the legal minimum age for employment is 15 years (ILO, 2019), the future productive years of life lost equal each country's life expectancy at birth minus 14 years[7].

Thus, undiscounted years of life lost due to child mortality is 66 - 2.5 -14= 49.5. Discounting this number by discount rate, the Discounted Years of Life Lost (DYLL) is then 29.13 years. The total loss of non-health GDP because of additional child mortality is thus the product of additional child deaths due to child marriage, discounted years of life lost and total non-health GDP per capita. Estimates suggest that for Punjab, additional child mortality due to child marriage will lead to the future loss of PKR 1.1 Trillion of non-health GDP. This is almost 5 percent of the current level of Punjab's GDP.

KP

The total number of additional child deaths due to child marriage in KP was estimated to be 36,000. Using MICS, we estimated Average age at death among under 5-year-old children (AAD), i.e. 1.5 years. Life expectancy in Pakistan at birth is 66 years (World Life Expectancy, 2019). KP's per capita GDP in 2019 was PKR 114,000. KP's Per capita total expenditure on health in 2019 was PKR 690. The non-health GDP per capita is the difference between PKR 114,000 and PKR 690. Using literature, in order to account for future losses, we discount this figure by 10 percent. For KP, undiscounted years of life lost under 5 years is the difference between life expectancy in number of years and average age at death among children under 5-year-old minus 14 years. Since according to Article 2 of the International Labour Organization (ILO) convention, the legal minimum age for employment is 15 years (ILO, 2019), the future productive years of life lost equal each country's life expectancy at birth minus 14 years.

Thus, undiscounted years of life lost due to child mortality is 66 - 1.5 -14= 50.5. Discounting this number by discount rate, the discounted years of life lost (DYLL) is then 29.9 years. The total loss of non-health GDP because of additional child mortality is thus the product of additional child deaths due to child marriage, discounted years of life lost and total non-health GDP per capita. Estimates suggest that for KP, additional child mortality due to child marriage will lead to the future loss of PKR 0.1 Trillion of non-health GDP. This is almost 3 percent of the current level of KP's GDP.

13.5   Women Physical Health

Early marriage can affect a girl's physical and mental well-being in a number of ways. As discussed in the previous section, intergenerational effects are seen in young brides' children, who may have poor physical health outcomes and poor nutrition status, and experience higher rates of infant mortality.

In addition to this, women who get married below 18 have low physical health outcomes. Evidence from the study shows that more young brides suffer from hypertension, ulcers and diabetes. These health outcomes result in

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[7] As per the methodology used by , they subtract 14 years to account for first year after birth

increased immediate out-of-pocket expenses for the girl and her household, as well as lasting effects on household earnings and reduced productivity.

Early marriage is also associated with poor sexual and reproductive health. Child brides are often unable to negotiate safe sex with their husband, making them more susceptible to sexually transmitted infections, including HIV, and putting them at higher risk for early pregnancy (UNFPA 2013; Walker et al. 2013). This leads to increased fertility and population growth as discussed in the Fertility and Population growth section. Evidence from the data shows that 10 percent more women who got married below 18 in the study sample didn't want to get pregnant at the time of their pregnancy.

Cost of Child Marriage on Physical Health

The direct cost of child marriage on physical health of young brides for this study has been defined using the following measures:

a) The additional out of pocket expenses to cater for medicines related to non-communicable diseases including diabetes and hypertension, etc.

b) The indirect costs associated with physical health in terms of child mortality and fertility

Whereas in terms of incidence of diseases such as diabetes, we did not find any differences in outcomes across young brides and non-young brides, there might be additional costs to child brides in terms of their health which can lead to higher child and mother mortality. While we are not able to estimate maternal mortality directly, we do factor these costs indirectly through their effect on child mortality.

The indirect costs of child marriage on women's physical health are already imputed in other sections.

13.6   Women's Agency and Decision-Making

A girl has voice and agency when she can make decisions about her life and act on those decisions without fear of retribution or violence. Child brides often experience overlapping vulnerabilities—they are young, often poor, and educational attainments are low as well. Child marriage hence places a girl under the control of her husband and often in-laws, limiting her ability to voice her opinions and form and pursue her own plans and aspirations. Evidence from the survey suggests that child marriage has a significant effect on young brides' ability to make key decisions. The study asked questions around ability to decide 1) buying household assets, 2) whether to work or not, 3) Visit family, parents or hospital, 4) daughters' or sons' education, 5) age at which daughter and son can be married.

Evidence shows that young brides have low decision-making in leaving house and deciding when to marry their children specially their son. Similarly, child brides have 10 percent less decision-making in taking up work after marriage.

Cost of Child Marriage on Decision-making

The cost of child marriage on decision-making is indirect intangible costs as there are no direct costs that can be estimated in terms of percentage loss or in monetary terms. However, these costs are manifested through other outcomes.

One mechanism of low educational outcome among young brides is because they are unable to express their agency to go to school or leave their homes. Similarly, they are unable to assert continuing work after marriage. Low decision-making also leads to higher incidence of unwanted pregnancies among young brides leading to higher childbirths. Young brides also have low degree of agency to attain antenatal or prenatal care leading to higher mortality rates.

The costs of loss of educational attainment, labour force participation, increased childbirths and child mortality are already discussed above, and they can be associated as the indirect costs of child marriage on decision-making.

13.7   Domestic Violence

Violence against women including Domestic Violence remains one of the starkest manifestations of the gender discrimination that exist in all our societies. It is both a result of unequal power dynamic between women and men and a tool to maintain it.

Though prevalence varies across Pakistan, we know that violence remains a grim reality for millions of women in the region, impacting all aspects of their public and private lives. In our sample, 11 percent of the respondents reported being a victim of physical threatening by her spouse. For a respondent residing in Punjab, 12 percent of the respondents reported being physically threatened whereas in KP 8 percent of the respondents reported being physically threatened. 17 percent of the respondents in Punjab reported that incidents of a husband physically threatening his wife are quite frequent. This percentage is significantly high for KP where 22 percent of the respondents reported that the spouse physically threatening his wife happens quite often.

Do young brides face more incidents of domestic violence? Marriage of girls below the age of 18 is one of the many forms of violence experienced by women and girls. This violence is manifested in the fact that when the decision to marry is taken by individuals other than the girl herself, it leads to severe lack of voice and agency. In our sample, although there is no impact of child marriage on physical threat, we see significant differences for more serious types of gender-based violence. Child brides face 3 percent more incidence of physical assaults as compared to women who marry after the age of 18.

Cost of Child Marriage on Domestic Violence

- The direct tangible cost in terms of number of additional incidents of domestic violence occurring due to child marriage.

- The direct monetary cost of medication and hospitalization charges for injuries sustained due to physical abuse on young brides

- The direct intangible costs in terms of pain and suffering for young brides

- The indirect cost in terms of wage losses due to work absenteeism in the wake injuries sustained due to physical abuse on young brides

- The indirect intangible costs in terms of psychological effects on children of young brides

- The direct intangible costs in terms of low educational outcomes of children of young brides facing domestic violence

Given the change in methodology due to COVID-19 as explained in Section 4, there was limited room left to ask questions about incidence of domestic violence and frequency of each event. Under these limitations, the survey team was unable to ask detailed questions on the physical impact of domestic violence in terms of injuries sustained, etc. This means that the study cannot estimate direct monetary cost of physical abuse in terms of out-of-pocket expenses including medication and hospitalization charges. However, the study does provide estimates for other costs. The detailed methodology is as follows:

Direct Tangible Costs

Using regression analysis, we calculated log odd ratios for child brides and non-child brides. Using log odd ratios, we calculate estimated number of incidences had these child brides not been married below 18 and actual number of incidences these child brides faced. The cost is calculated using the difference between actual number and estimated number of incidences.

Punjab

For Punjab, estimates show that 219,000 incidents of domestic abuse happen because the bride is married below 18. In terms of percentage, evidence suggest that this comprises of 14 percent of the total incidents of domestic violence that happen in Punjab.

Table 12: Effects on Domestic Violence due to Child Marriage for Punjab

Fraction of Child Brides who face physical abuse	13%
Fraction of non-Child Brides who face physical abuse	8%
Odds Ratio using Logit	1.52
Estimated Expected Physical Abuse faced by Child Brides	313,011
Estimated Actual Physical Abuse faced by Child Brides	532,120
Extra Physical Abuse Incidents faced due to Child Marriage	219,108

KP

For KP, estimates show that 91,819 incidents of domestic abuse happen because the bride is married below 18. Although in terms of absolute numbers this is lower than that of Punjab but in terms of percent, evidence suggest that this comprise of 53 percent of the total incidents of domestic violence that happen in KP. The staggering cost of child marriage on domestic violence in KP is alarming and reinforces the strong need for legislative reforms

Table 13: Effects on Domestic Violence due to Child Marriage for KP

Fraction of Child Brides who face physical abuse	10%
Fraction of non-Child Brides who face physical abuse	6%
Odds Ratio using Logit	2.44
Estimated Expected Physical Abuse faced by Child Brides	166,056
Estimated Actual Physical Abuse faced by Child Brides	257,875
Extra Physical Abuse Incidents faced due to Child Marriage	91,819

Figure 20: Cost of Domestic Violence due to Child Marriage
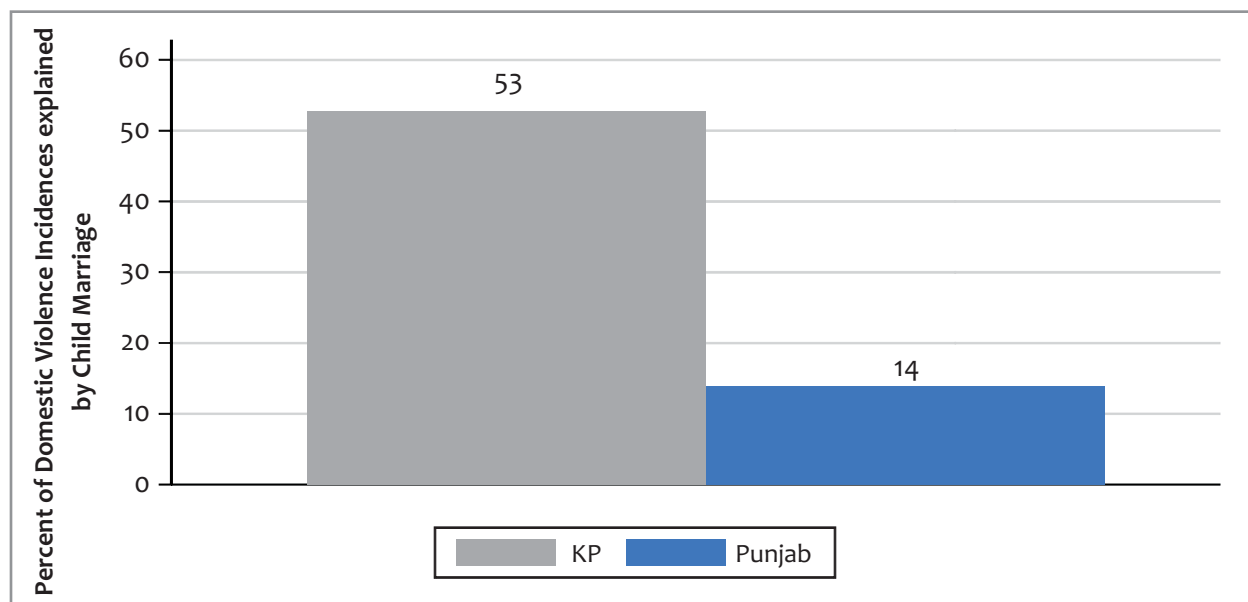
Indirect Tangible Cost

Evidence from the literature suggests that incidence of domestic violence has an indirect effect on labour force productivity of working women (Ghaus et. Al., 2019). Increased physical abuse causes injuries which may affect worker absenteeism resulting in wage losses. This study estimates using average days lost calculated by Ghaus et.al. 2019, to calculate indirect tangible cost of increased physical abuse on young brides. Ghaus et. Al. 2019 estimated that during 2019, on average 14 days were lost due to incidence of any kind of domestic violence.

Punjab

Using direct tangible estimates of cost of child marriage on domestic violence in Punjab, the study estimates monetary loss in the following table:

Table 14: Effects on Domestic Violence due to Child Marriage for KP

Number of additional incidences of physical abuse due to child marriage	219,108
Per month days lost due to child marriage	1.17
Average monthly wage rate from data	PKR 10,000
Proportion of young brides working	17%
Annual loss of wages due to physical abuse	PKR 5.23 Billion

In order to calculate the wage loss due to absenteeism caused by physical abuse on young brides, the method adopted is to multiply additional number of physical abuse incidence due to child marriage with average days lost per month. Then the product is multiplied with average monthly wage rate earned by child brides in Punjab during July 2019 and June 2020. Finally, this number is multiplied with the proportion of women in labour force who got married below 18. Estimates show that during 2019- June 2020, PKR 4.3 Billion or 0.02% of Punjab's GDP was lost in wages because of negative impact of physical abuse on labour force productivity of young brides.

KP

Using direct tangible estimates of cost of child marriage on domestic violence in KP, the study estimates monetary loss in the following table:

Table 15: Indirect monetary loss due to Child Marriage for KP

Number of additional incidences of physical abuse due to child marriage	91,819
Per month days lost due to child marriage	1.17
Average monthly wage rate from data	PKR 8800
Proportion of young brides working	11%
Annual loss of wages due to physical abuse	PKR 1.24 Billion

In order to calculate the wage loss due to absenteeism caused by physical abuse on young brides, the method used is to multiply additional number of physical abuse incidence due to child marriage with average days lost per month. Then the product is multiplied with average monthly wage rate earned by child brides in KP during July 2019 and June 2020. Finally, this number is multiplied with the proportion of women in labour force who got married below 18. Estimates show that during 2019- June 2020, PKR 1.24 Billion or 0.03% of KP's GDP was lost in wages because of negative impact of physical abuse on labour force productivity of young brides.

Intangible Costs (Direct and Indirect)

In addition to the tangible costs calculated above, young brides face perpetual pain and suffering due to domestic violence. While the pain and suffering cannot be monetized, their effects have strong intergenerational effects. Children of these young brides suffering from domestic violence have psychological stress which indirectly leads to low tests scores, hence curtailing their educational attainment.

14.   Cost of Child Marriage at the Provincial Level

Child marriage not only affects individuals, but it also has effects on the macro-economy. Ending child marriage is therefore not only critical from a human rights perspective, but it also has important economic implications.

Since the study does not estimate GDP at the district level on its own, therefore secondary data is used to estimate the effect of child marriage on GDP. The costs on GDP in this section have been estimated using a partial equilibrium approach which assumes that returns to different factors do not change over time. Also, the effects are estimated using direct impact on GDP and may not take into account indirect benefits to GDP through channels such reduced fertility and improved education. Such an approach whereby benefits of each year of education or each childbirth prevented are approximated requires additional information and assumptions and is therefore more prone to error due to the sensitivity of the estimates to the assumptions made therein the model. Therefore, the cost of child marriage on GDP at the provincial level has been estimated on a conservative basis using a partial equilibrium approach similar to Wodon et al., 2017.

14.1   Punjab

The child marriage rate for Punjab of approximately 27% is used to estimate the effect of child marriage on GDP at the provincial level. The study used regression analysis and simulations based on the existing studies to infer the relationship between child marriage rate and GDP per capita growth. Given that Punjab had an estimated GDP of $173 billion in 2019, the study calculated the child marriage in Punjab associated with a loss of around $4 per capita terms for each individual in Punjab. Taking into consideration the population of Punjab which was estimated to be around 110 million in 2019, this translates into a loss of around $4.75 million which is equivalent to a loss of PKR 791 Million given the current exchange rate. This represents a loss of 0.275% of total GDP value at the provincial level for Punjab. It is worth noting that the costs associated with GDP in this study are based on a number of assumptions under a partial equilibrium approach - they give a sense of the overall magnitude of potential costs, rather than precise estimations. What this implies is that they are large and cannot be ignored. However, benefits of eradicating child marriage are likely to be higher since increased education and reduced population growth will likely have a positive effect of the GDP growth rate as well.

14.2   Khyber Pakhtunkhwa

The child marriage rate for KP is higher than Punjab and therefore the effects of child marriage on KP economy are also on the higher end. Like Punjab, the study used regression analysis and estimates inferred from existing studies that suggest that an increase in child marriage rate of 1 is associated with 0.01 percent drop in GDP per capita. Given that KP had an estimated GDP of $27 billion in 2019 and an estimated population size of around 35.5 million, the study calculated the that child marriage in Punjab associated with a loss of 175 Million PKR. Even though the estimated loss in GDP for KP is lower than that of Punjab, it represents a higher percentage of the provincial GDP loss. Loss of PKR 175 million in GDP for KP using a partial equilibrium approach represents a loss of 0.4% of total GDP value at the provincial level for KP.

15.   Concluding Remarks

Girls who marry early have little decision-making power within the marital home, a greater likelihood of school dropout and illiteracy, lower labour force participation and earnings, and less control over productive household assets. Because child brides often become mothers during adolescence, they and their children are likely to experience poorer overall health and nutrition.

Girls who bear children early have more dangerous, difficult, and complicated births, and tend to have less healthy and less educated children than their peers who marry later. Adolescent mothers are at significantly higher risk of child mortality and morbidity than mothers just a few years older, which comes with a wide range of economic and social costs and impacts at the individual and household levels. Consequently, they have higher fertility as well. Not surprisingly, there are significant benefits to eradicating child marriage on the GDP as well.

A graver cost of child marriage is higher incidence of domestic violence which leads to pain and suffering that cannot be quantified. Effects of these pain and suffering are felt in next generations as well.

Finally, while the consequences of child marriage are felt most adversely at the individual level, child marriage is likely to also have profound and far reaching effects at national and global levels in the forms of lost earnings and inter-generational transmission of poverty. In short, the economic impacts and cost of child marriage are likely to be very high for the girls who marry early, their children, their families, their communities, and society at large.

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Appendix A: Sensitivity Analysis for District Selection

For the purpose of selection of districts, we use data from Demographic Health Surveys (PDHS) which is a reliable source of data at the provincial as well as the national level. We prefer using PDHS data instead of Multiple-Indicator Cluster Survey (MICS) as primary data source for district selection because MICS has not been conducted across various provinces within the same year. The latest datasets for MICS for Punjab are for 2017-18, for Sindh 2014, for KP-GB 2017-18 and for Balochistan 2010. While we can compare statistics within a province through MICS, we cannot compare statistics across various provinces through MICS and hence we rely on PDHS as the main data for district selection.

We use data from different waves of the PDHS. In particular, we make use of 2006-07 and 2017-18 waves since they represent the waves with the highest sample size and the most recent sample. Using different waves of the survey will allow us to get a more robust selection of different types of districts with varying rates of child marriage. Moreover, it will allow us to better capture regions with varying intensity of child marriage over time as opposed to at any given point in time. Using different waves of the PDHS data allows us to make use of this dimension.

Moreover, in an additional robustness check, we check the sensitivity of district selection against estimates based solely on the rural sample which is likely to have higher incidence of child marriage. The results of district selection are robust to using this criteria. However, since we aim for our sample to be representative of the both the rural and urban population, we randomly select districts based on the full sample of households.

Our final list is based on the set of districts that are randomly selected so that they are representative of the national rate of child marriage. Moreover, the selection criteria are also robust to selection of different waves of PDHS as well as whether we use only the rural sample or include urban sample. Since the results are very similar, we plan to use the entire sample of rural and urban areas in order to get results that are representative of both rural and urban areas.

We further conducted a validation exercise using Multiple-Indicator Cluster Survey (MICS) and found robustness of child marriage proportions for each district that we selected using PDHS data.

Table A1: Study Districts Selected

Province	District Name	Strata	District Type
Punjab	Chakwal	North	Low Incidence
Punjab	Toba Tek Singh	Center	Low Incidence
Punjab	Mandi Bahauddin	North	Medium Incidence
Punjab	Vehari	South	Medium Incidence
Punjab	Muzaffargarh	South	High Incidence
Punjab	Khanewal	Center	High Incidence
KP	Lakki Marwat	South	Low Incidence
KP	Kohat	Center	Medium Incidence
KP	Buner	North	High Incidence
KP	Chitral	North	Medium Incidence

Annex B: Statistical Equations

Respondent Sample Size Determination

In order to determine sample of respondents within each district, three criteria were used to determine the appropriate sample size: the level of precision, the level of confidence or risk, and the degree of variability in the attributes being measured. We determine the following rules for each of these three criteria:

- The level of precision also called sampling error, is the range in which the true value of the population is estimated to be. This range is often expressed in percentage points. For our project we will set **sampling error at +/- 5 percent.**

- We set the **confidence interval at 95 percent, which means that 95 out of 100 samples will have the true population value within the range of precision specified earlier.**

- The third criterion, the degree of variability in the attributes being measured, refers to the distribution of attributes in the population. We determine degree of variability through **proportion of child marriage within each province in PDHS 2006-07 and 2017-18[8].**

The following formula was used for calculating a sample for each district:

$n_o = Z^2 pq/e^2$ *(1)*

where n is the number of surveys to be conducted in each district. "Z^2" is the abscissa of the normal curve that cuts off an area a at the tails (1 - a equals the desired confidence level, e.g., 95 percent), e is the desired level of precision, p is the estimated proportion of child marriage incidence in the population, and q is 1-p.

Impact of child marriage on each outcome was estimated using the following regression specification:

$Y_{ijk} = \alpha + \delta_1 Child\ Marriagejk + \delta_2 X_{jk} + \beta_j + \gamma_k + E_{ijk}$ *(1)*

- Y_{ijk} refers to outcome variable of interest for individual *i* born in region *j*, in birth cohort *k*.

- X_{jk} refers to controls variables.

- Child Marriage$_{jk}$ is defined as the prevalence of child marriage in an area *j* for birth cohort *k*.

- β_j, γ_k refer to birth cohort and region fixed effects respectively.

For choice of dependent variables, the effect of child marriage was estimated on education, fertility, and health status of the mother as well as on indices of decision-making, empowerment, domestic violence of the women.

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[8] For KP and Balochistan we assume greater variability to account for any survey sampling error in PDHS.

Confidence Intervals:

Punjab

Variable	Mean	Std. Err.	[95% Conf. Interval]	
Incidence of Child Marriage	28.3	1.8	24.6	31.9

KP

Variable	Mean	Std. Err.	[95% Conf. Interval]	
Incidence of Child Marriage	37.4	3.4	30.3	44.6

Annex C: Conjoint Experiment

During the Diagnostic Survey, the enumerators read aloud the following statement:

Appropriate age of marriage for a person is [options for age] when she has [options of readiness] and the decision to marry should be taken by [decision makers]

The options for age were:
- Above 30
- 27-30;
- 23-26;
- 19-22;

The options for readiness were:
- Puberty signs
- Finishing school

The options for decision-makers were:
- Self
- Father and mother
- A member within family (grandfather, grandmother, uncle, brother
- A person outside family

The combination of options was randomized for each respondent. The statement was then followed up by two questions
- To what extent do you agree with this statement for girls
- To what extent do you agree with this statement for boys

On a 4-point Likert Scale where 1-Strongly Disagree and 4 was Strongly Agree

Annex D: Cost of Child Marriage using Pakistan Demographic and Health Surveys

Note: The following tables show costs of child marriage for various outcomes using proportions of child marriage from PDHS 2017-18. The costs are significantly lower from the main text because the main text uses primary data collected during July- August 2020. The incidence of child marriage in PDHS 2017-18 is 14.8 percent and 28 percent for Punjab and KP respectively. These percentages are significantly lower than the percentages reported from the primary data collected for this study (27 percent for Punjab and 38 percent for KP). This is because from 2017 till date, several macroeconomic indicators of the country have worsened including increased cost of living, higher unemployment trends and high economic vulnerabilities. It is expected that since macroeconomic indicators are positively correlated with the incidence of child marriage in Punjab and KP, they would have pushed the proportion of child marriage upwards from the past three years. Hence the costs calculated using PDHS 2017-18 proportions will significantly underestimate the current true cost of child marriage for Punjab and KP.

Educational Attainment:

Direct Costs

Table 0-1: Cost of Child Marriage on Educational Attainment in Punjab

Percent of Child Brides with no education	38%
Percent of Child Brides with secondary education	10%
Percent of child brides with above secondary education	6%
Percent of non-child brides with no education	28%
Percent of non-child brides with secondary education	12%
Percent of non-child brides with above secondary education	17%
Estimated number of child brides with no education had they not been married below 18	411,330
Estimated number of child brides with secondary education had they not been married below 18	176,284
Estimated number of child brides with above secondary had they not been married below 18	249,736
Observed number of child brides no education	558,234
Observed number of child brides with secondary education	146,904
Observed number of child brides with above secondary education	88,142
Loss of Secondary Education= Estimated Number-Observed number	29,381
Loss of Above Secondary Education= Estimated Number-Observed number	161,594

Table 0-2 : Cost of Child Marriage on Educational Attainment in KP

Percent of Child Brides with no education	43%
Percent of Child Brides with secondary education	5%
Percent of child brides with above secondary education	5%
Percent of non-child brides with no education	38%
Percent of non-child brides with secondary education	9%
Percent of non-child brides with above secondary education	13%
Estimated number of child brides with no education had they not been married below 18	310,800
Estimated number of child brides with secondary education had they not been married below 18	73,611
Estimated number of child brides with above secondary had they not been married below 18	106,326
Observed number of child brides no education	351,695
Observed number of child brides with secondary education	40,895
Observed number of child brides with above secondary education	40,895
Loss of Secondary Education= Estimated Number-Observed number	32,716
Loss of Above Secondary Education= Estimated Number-Observed number	73,611

Indirect Costs

Table 0-3 : Indirect Loss of Potential Wages due to Child Marriage in Punjab

Number of girls who couldn't complete secondary or higher education due to child marriage for Punjab	190,975
Percent of LFP for females who have secondary or higher education	17%
Increase in LFP had young girls participated after attaining secondary or higher education	32,466
Average women monthly wage for secondary or higher education in Punjab	PKR 19,000
Annual loss in potential income due to limited educational potential of young brides	PKR 7 Billion

Table 0-4 : Indirect Loss of Potential Wages due to Child Marriage in KP

Number of girls who couldn't complete secondary or higher education due to child marriage for KP	106,326
Percent of LFP for females who have secondary or higher education	15%
Increase in LFP had young girls participated after attaining secondary or higher education	15,949
Average women monthly wage for secondary or higher education in KP	PKR 17,250
Annual loss in potential income due to limited educational potential of young brides	PKR 3 Billion

Labour Force Participation

Table 0-5: Effects on Labour Force Participation due to Child Marriage for Punjab

Fraction of Child Brides who work	17%
Fraction of non-Child Brides who work	21%
Actual number of child brides in LFP	249,736
Estimated number of females in LFP had they not married below 18	308,498
Loss of workers due to Child Marriage	58,761
Wage differential between child brides and non-child brides	PKR 1,800
Total Child Brides in Punjab	1,469,037
Annual Wage loss	PKR 5 Billion

Table 0-6: Effects on Labour Force Participation due to Child Marriage for KP

Fraction of Child Brides who work	11%
Fraction of non-Child Brides who work	15%
Actual number of child brides in LFP	89,968
Estimated number of females in LFP had they not married below 18	122,684
Loss of workers due to Child Marriage	32,716
Wage differential between child brides and non-child brides	PKR 1,900
Total Child Brides in KP	817,895
Annual Wage loss	PKR 2 Billion

Fertility and Population Growth

Table 0-7: Extra Fertility due to Child Marriage for Punjab

Total Child Brides in Punjab, Pakistan	1,469,037
Percentage of Child Brides with 0 total births	7%
Percentage of Child Brides with 1-2 total births	36%
Percentage of Child Brides with 3+ total births	57%
Odds Ratio of Child Brides with 1-2 total births	1.70
Odds Ratio of Child Brides with 3+ total births	4.80
Percentage of Non-Child Brides with 0 total births	15%
Percentage of Non-Child Brides with 1-2 total births	28%
Percentage of Non-Child Brides with 3+ total births	57%
Odds Ratio of Non-Child Brides with 1-2 total births	1.5
Odds Ratio of Non-Child Brides with 3+ total births	4.0
Actual Number of Births to Child Brides	4,918,336
Estimated Births to Child Brides had they not been married below 18	3,966,400
Additional Number of Childbirths due to Child Marriage	951,936

Table 0-8: Extra Fertility due to Child Marriage for KP

Total Child Brides in KP, Pakistan	817,895
Percentage of Child Brides with 0 total births	7%
Percentage of Child Brides with 1-2 total births	44%
Percentage of Child Brides with 3+ total births	49%
Odds Ratio of Child Brides with 1-2 total births	1.6
Odds Ratio of Child Brides with 3+ total births	4.0
Percentage of Non-Child Brides with 0 total births	18%
Percentage of Non-Child Brides with 1-2 total births	44%
Percentage of Non-Child Brides with 3+ total births	38%
Odds Ratio of Non-Child Brides with 1-2 total births	1.7
Odds Ratio of Non-Child Brides with 3+ total births	4.1
Actual Number of Births to Child Brides	2,193,675
Estimated Births to Child Brides had they not been married below 18	1,878,868
Additional Number of Childbirths due to Child Marriage	314,808

Child Mortality

Direct Cost

Table 0-9: Extra Child Mortality due to Child Marriage for Punjab

Estimates of child mortality per 1000 Kids (Source: PDHS Report 2017-18)	93
Census estimates of total population in 0-5 age group (Source: PDHS 2017-18)	17,051,928
Estimated number of total child deaths	1,585,829
Estimated number of child mortality if young brides had not married below 18	234,703
Observed number of child mortality for young brides	401,342
Additional child mortality because of child marriage	166,639

Table 0-10: Extra Child Mortality due to Child Marriage for KP

Estimates of child mortality per 1000 Kids (Source: PDHS Report 2017-18)	64
Census estimates of total population in 0-5 age group (Source: PDHS 2017-18)	5,000,000
Estimated number of total child deaths	293,024
Estimated number of child mortality if young brides had not married below 18	82,047
Observed number of child mortality for young brides	109,122
Additional child mortality because of child marriage	27,075

Indirect Costs

Table 0-11: Indirect Loss in future GDP due to Child Mortality (Punjab)

Punjab's Per Capita GDP in 2019	PKR 146,000
Punjab's Per Capita Health GDP in 2019	PKR 800
Punjab's Per Capita non-Health GDP in 2019	PKR 145,200
Years of Life lost due to Child Mortality	49.5
Discounted Years of Life Lost	29.13
Total Future loss of GDP due to child mortality caused by Child Marriage	PKR 705 Billion

Table 0-12: Indirect Loss in future GDP due to Child Mortality (KP)

KP's Per Capita GDP in 2019	PKR 114,000
KP's Per Capita Health GDP in 2019	PKR 600
KP's Per Capita non-Health GDP in 2019	PKR 113,400
Years of Life lost due to Child Mortality	50.5
Discounted Years of Life Lost	29.9
Total Future loss of GDP due to child mortality caused by Child Marriage	PKR 92 Billion

Domestic Violence

Direct Cost

Table 0-13: Effects on Domestic Violence due to Child Marriage for Punjab

Fraction of Child Brides who face physical abuse	13%
Fraction of non-Child Brides who face physical abuse	8%
Odds Ratio using Logit	1.52
Estimated Expected Physical Abuse faced by Child Brides	178,635
Estimated Actual Physical Abuse faced by Child Brides	290,282
Extra Physical Abuse Incidents faced due to Child Marriage	111,647

Table 0-14: Effects on Domestic Violence due to Child Marriage for KP

Fraction of Child Brides who face physical abuse	10%
Fraction of non-Child Brides who face physical abuse	6%
Odds Ratio using Logit	2.44
Estimated Expected Physical Abuse faced by Child Brides	119,740
Estimated Actual Physical Abuse faced by Child Brides	199,566
Extra Physical Abuse Incidents faced due to Child Marriage	79,827

Table 0-15: Indirect monetary loss due to Child Marriage for Punjab

Number of additional incidences of physical abuse due to child marriage	111,647
Per month days lost due to child marriage	1.17
Average monthly wage rate from data	PKR 10,000
Proportion of young brides working	17%
Annual loss of wages due to physical abuse	PKR 2.66 Billion

Table 0-16: Indirect monetary loss due to Child Marriage for KP

Number of additional incidences of physical abuse due to child marriage	79,827
Per month days lost due to child marriage	1.17
Average monthly wage rate from data	PKR 8,800
Proportion of young brides working	11%
Annual loss of wages due to physical abuse	PKR 1.08 Billion

Aggregate Effect on GDP

Table 0-17: Aggregate Effect of Child Marriage on GDP in Punjab

Estimated Loss of log(GDP) per capita due to a 1% increase in Child Marriage Rate (Inferred from South Asian studies)	-0.01
Child Marriage Rate in Punjab	14.8%
Estimated Loss of GDP per capita in % terms due to Child Marriage in Punjab	-0.15%
Estimate of Punjab GDP 2019	$173.0 Billion
Estimated Population of Punjab 2019	110012442
Estimated Punjab GDP per capita	PKR 261,358
Estimated Loss to Punjab GDP per capita	PKR 386.81
Total Estimated Loss to Punjab GDP due to Child Marriage	PKR 426 Million

Table 0-18: Aggregate Effect of Child Marriage on GDP in KP

Estimated Loss of log(GDP) per capita due to a 1% increase in Child Marriage Rate (Inferred from South Asian studies)	-0.01
Child Marriage Rate in KP	28.0%
Estimated Loss of GDP per capita in % terms due to Child Marriage in Punjab	-0.28%
Estimate of KP GDP 2019	$27.0 Billion
Estimated Population of KP 2019	207,000,000
Estimated KP GDP per capita	PKR 21,678
Estimated Loss to KP GDP per capita	PKR 60.70
Total Estimated Loss to KP GDP due to Child Marriage	PKR 126 Million

Annex E: Data Collection Toolkits

This appendix includes the following data collection toolkits:

- Flash Survey
- Diagnostic Survey

Note: The questionnaires were translated into Urdu (National Language of Pakistan) for rolling out the survey – the English versions are given below.

Flash Survey Questions

1. District
2. Respondent Age
3. What is your marital status? (Married/ Divorced/ Widow/ Separated/ Single/ Refused to Answer)
4. What is your name?
5. How old are you right now?
6. What is your zaat/ biradari?
7. Name of tehsil you were born in
8. Are you living in urban or rural area?
9. What is your mother tongue?
10. Number of male siblings
11. Number of female siblings
12. Details of Male Sibling(s)
12.1 What is the current age of your sibling?
12.2 What is the current marital status of your sibling?
12.3 At what age did your sibling get married?
13. Detail of Female Sibling(s)
13.1 What is the current age of your sibling?
13.2 What is the current marital status of your sibling?
13.3 At what age did your sibling get married?
14. Have you ever attended school?
15. What is the highest class you have completed (Less than 1 year completed/ Class 1/ Class 2/ Class 3/ Class 4/ Class 5/ Class 6/ Class 7/ Class 8/ Class 9/ Class 10/ Class 11/ Inter-FA-FSc/ BA-BSc-Bcom/ Masters-MBBS-PhD-Phil-LLB/ Madrassa Taleem/ Refused to Answer)
16. Type of school attended (Government/ Private/ Deeni Madaris/ NGO, Foundation, Trust/ Non-Formal Basic Education/ School/ Privately/ Other/ Refused to Answer)
17. Age at which started going to school
18. Age at which stopped going to school (if applicable)?
19. Reason for dropping out of school (Too expensive/ Too far away/ Poor teaching or behaviour/ Had to help at home/ Had to help with work/ Parents or elders did not allow/ No female staff/ No male staff/ Child sick or handicapped/ Child too young/ Child not willing/ Lack of documents/ Education not useful/ Education completed/ Marriage/ Job/ Other/ Refused to Answer)
20. Was there a girls' primary school in your village/ community when you were of school going age?
21. Was there a girls' secondary school in your village/ community when you were growing up?
22. According to you what is the ideal education level for girls?
23. According to you what is the ideal education level for boys?

24. Aside from housework, did you ever work or looked for work for cash or kind? (Yes/ No but seeking work/ No and not seeking work/ Refused to Answer)
25. Do you work at home or away from home? (Work at Home/ Work away from Home/ Refused to Answer)
26. Did you work before (first) marriage? (Yes/ No but seeking work/ No and not seeking work/ Refused to Answer)
27. Did you work after you (first) got married? (Yes/ No but seeking work/ No and not seeking work/ Refused to Answer)
28. When did you start work after (first) marriage?
29. Are you still working for paid in cash or in kind? (Yes/ No but seeking work/ No and not seeking work/ Refused to Answer)
30. Why did you leave work after (first marriage)? (Husband didn't allow/ Childcare Responsibility/ Household Responsibilities/ Didn't Feel like working/ Laid off due to marriage/ Laid off due to children/ Laid off due to other reasons/ Refused to Answer)
31. What was the employment status? (Employer/ Paid Employee/ Self Employed/ Daily Wager/ Refused to Answer)
32. Do you usually work throughout the year, or do you work seasonally, or only once in a while? (Daily Wager/ Monthly/ Seasonal/ Annual/ Once in a while/ Refused to Answer)
33. What is your occupation? That is, what kind of work do you mainly do?
34. Are you paid in cash or kind for this work or are you not paid at all?
35. What is the frequency of payment? (Daily/ Weekly/ Bi-monthly/ On the basis of task/ Monthly/ Seasonal/ Yearly/ Refused to Answer)
36. If paid in cash, what was income from the time you last paid were paid?
37. If you could find a suitable job, would you like to work?

Now I would like to ask about all the births you have had during your life.
38. Have you ever given live birth?
39. Number of Children
40. Details of Child(ren)
41. Name of the child
42. Boy or girl?
43. Alive?
44. Year of birth?
45. Delivered by C-section?
46. Who assisted with the delivery? (Doctor/ Nurse/ Dai/ Lady Health Worker/ Homeopath/ Hakim/ Relative/ Friend (Not a Dai)/ No One/ Other/ Refused to Answer)
47. During the delivery or in the 40-day period after the delivery, did you experience any complications?
48. Were any of these problems so severe that you were afraid that you might die?
49. Were any of these problems so severe that you were afraid that child might die?
50. Did you seek advice or treatment for the problem(s)?
51. Did this child ever attend school?
52. In which class is the child?
53. Highest educational attainment?
54. Marital Status (Married/ Divorced/ Widow/ Single/ Separated/ Nikah solemnized but Rukhsati not taken place/ Refused to Answer)
55. Age at marriage?
56. At what age did your first menstrual period start?

57. At the time you became pregnant with last birth, did you want to become pregnant then, did you want to wait until later or did you not want to have any more children at all?
58. How much longer would you have liked to wait? (months/ years)
59. Did you see anyone for antenatal care for the last birth/ pregnancy?
60. The first time you went for antenatal care did you go because you had a problem, or did you go just for a check-up?
61. During this pregnancy, did you suffer from malaria?
62. Were any of these problems so severe that you were afraid you might die?
63. Are you pregnant now?
64. Have you ever had a pregnancy that miscarried, was aborted, or ended in a stillbirth?
65. Did you suffer from postpartum depression?
66. Do you have any of the following diseases:
66.1 Diabetes
66.2 Arthritis
66.3 Heart Disease
66.4 Tuberculosis
66.5 Ulcers
66.6 Asthma/ Chronic Bronchitis
66.7 High Blood Pressure
67. In the past 30 days, did you or any household member go whole day and night without eating anything at all because there was not enough food?
68. How often did this happen in the past 30 days? (Rarely-1-2 times/ Sometimes 3-10 times/ Often >10/ Don't know/ Refused to Answer)

Now I want to ask you some questions about different types of events that may have happened to SOMEONE ELSE IN THIS COMMUNITY. This can include your neighbours, friends, relatives, or any other person you know that's living IN THIS COMMUNITY
69. To the best of your knowledge do you know anyone in your community who was threatened to hurt or harmed by her spouse?
70. Generally speaking, how often did this happen in your community? (Often/ Sometimes/ Not in last 12 months/ Don't know/ Refused to Answer)
71. How has this behaviour changed in your community during the lockdown period of March till May? (Decrease in frequency/ Increase in frequency/ Unchanged/ Don't know/ Refused to Answer)
72. To the best of your knowledge do you know anyone in your community who was physically assaulted (push, shake, slap, kick, punch, twist arm, etc.) by her spouse?
73. Generally speaking, how often did this happen in your community? (Often/ Sometimes/ Not in last 12 months/ Don't know/ Refused to Answer)
74. How has this behaviour changed in your community during the lockdown period of March till May? (Decrease in frequency/ Increase in frequency/ Unchanged/ Don't know/ Refused to Answer)
75. How worried are you that you or a member of your household will be the victim of a VIOLENT CRIME in the coming year? (Not at all worried/ Somewhat worried/ Worried/ Very Worried/ Refused to Answer)
76. How worried are you that you or a member of your household will be the victim of a NON-VIOLENT CRIME in the coming year? (Not at all worried/ Somewhat worried/ Worried/ Very Worried/ Refused to Answer)
77. In the past 3 months, how often, if ever, have you or anyone in your family felt unsafe walking in your neighbourhood? (Never/ Just once or twice/ Several Times/ Many Times/ Always/ Refused to Answer)

Diagnostic Survey Questions

1. District
2. Respondent Name
3. Age at marriage
4. Do you have a smart phone?
5. Do you have any of the following apps installed?
5.1 WhatsApp
5.2 Facebook
5.3 TikTok
5.4 Likee
5.5 Snapchat
5.6 Instagram
6. Do you trust information spread on WhatsApp groups/ Facebook groups?
7. To what extent do you trust information spread on WhatsApp groups/ Facebook groups?
8. Do you know the legal age of marriage in Pakistan?
9. What is the legal age of marriage in Pakistan?
10. Are you aware that there is a section in a marriage contract which gives woman the right to divorce?
11. Can a woman file for a khulla (divorce) in court?

I am now going to ask you questions about how decisions are made in your household. I will tell you about certain issues and I'd like you to tell me who in your household usually takes the decision on these issues (Respondent herself/ Husband/ Joint Decision/ Decided by In-Laws/ Other -please specify/ Don't know/ Refused to Answer)

12. Household purchase of monthly goods and assets
13. Visits to your family and relatives?
14. Visit market alone
15. Visit hospital alone
16. Decide daughter's education (If no children, then in general who should decide?)
17. Decide son's education (If no children, then in general who should decide?)
18. Decide daughter's age at marriage (If no children, then in general who should decide?)
19. Decide son's age at marriage
20. Who do you consider a child in terms of age? Less than 18/ Less than 15/ Less than 12/ Don't know/ Refused to Answer

To which extent to you agree to the following statements (Strongly Disagree/ Disagree/ Agree/ Strongly Agree/ Don't know/ Refused to Answer)

21. Appropriate age of marriage for a person is when he/she is... (Above 25/23-25/21-22/19-20/18/16-17/Below 16/Don't Know/Refused to Answer)
22. The decision to marry should be taken by... (Self/Father alone/Mother alone/Both, father and mother/The whole family/A member within family (grandfather, grandmother, uncle, brother/A person outside family/Don't Know/Refused to Answer
23. There are advantages to marriage of girls under 18 years
24. Marrying girls young can help protect family honour/ reputation
25. Girls who give birth between 15-18 years are more likely to have a healthy pregnancy/ baby compared to girls over 18
26. Marrying girls young can help resolve financial problems in the family

27. Early marriage of girls can help prevent sexual violence, assault and harassment
28. Early marriage of boys can help prevent perpetration of sexual violence, assault and harassment
29. Marrying a girl young is preferable because younger brides are more obedient and respectful of their husbands
30. Even if a girl does not want to be married, she should honour the decisions/ wishes of her family
31. Younger brides require a lower dowry than older brides
32. A girl should never be forced or compelled into marriage
33. It is sometimes ok to beat or punish a girl when she dishonours her family
34. Discrimination against young women fuels child marriage
35. My religion encourages marrying children at a young age
36. Wanting to escape dominating parents drives child marriage
37. Desire for respect in the community drive families to marry children young

Thank you note

Annex F: Members of Technical Review Group

1. National Commission on the Status of Women (Chair)
2. UN Women (Co-chair)
3. Foreign, Commonwealth & Development Office (FCDO), UK Aid
4. UNFPA
5. UNICEF
6. British Council

UN
WOMEN