



From Reactive Regulation to Preventive Governance: A Pancasila-Based Legal Framework for Child Marriage Prevention in Central Lombok

Abdul Wahab ^{1*}, Yorman ²

¹ *Institut Pemerintahan Dalam Negeri Lombok Tengah, Indonesia*

² *University of Bumigora Mataram, Indonesia*

 abdulwahab@gmail.com*

Abstract

This study advances a Pancasila-based preventive governance framework for addressing child marriage by integrating empirical evidence from adolescent pregnancy data in Central Lombok, Indonesia. Using an empirical socio-legal research design, the study analyzes population-based administrative records of pregnancies and childbirths among girls under 19 years of age collected from all primary health centers (puskesmas) between 2022 and 2024. Adolescent pregnancy is employed as a policy-relevant empirical proxy for child marriage, reflecting the close structural linkage between underage unions and early childbearing in low- and middle-income contexts. The findings demonstrate that while the overall incidence of adolescent pregnancy declined after 2022, the childbirth-to-pregnancy ratio increased steadily, indicating the persistence of social and institutional mechanisms that normalize early marriage following pregnancy. Marked spatial inequalities were also identified, with specific health service regions consistently bearing a disproportionate burden of adolescent pregnancy and childbirth. These empirical patterns reveal that Indonesia's minimum-age marriage regulation continues to function predominantly as a reactive legal instrument, addressing consequences rather than preventing risk exposure. Normatively, the study argues that this condition reflects a failure of legal governance to substantively safeguard children's dignity and realize social justice. By reconstructing child marriage prevention through the Pancasila principles of humanity, social justice, participatory governance, and social solidarity, the study proposes a preventive legal framework that operationalizes routine health data as an early-warning system, strengthens community participation, and enables region-based governance interventions. Methodologically, the study demonstrates how administrative health data can be transformed into actionable legal indicators, while substantively contributing to socio-legal scholarship on preventive governance and offering policy-relevant insights for sustainable child marriage prevention in plural legal systems.

Keywords: Child Marriage Prevention, Adolescent Pregnancy. Socio-Legal Governance Pancasila Framework

ARTICLE INFO

Article history:

Received
January 11, 2026
Revised
March 16, 2026
Accepted
April 09 2026

Published by

ISSN

Website

This is an open access article under the CC BY SA license

CV. Creative Tugu Pena

2774-7077

<https://attractivejournal.com/index.php/bce/>

<https://creativecommons.org/licenses/by-sa/4.0/>



@ 2026 by the authors

INTRODUCTION

Child marriage remains a persistent global challenge and a critical barrier to human development, gender equality, and the protection of children's fundamental rights. Across many low- and middle-income countries, marriage before the age of 18 continues to affect millions of girls and is strongly associated with negative educational, economic, and health outcomes. Empirical evidence demonstrates that early marriage significantly increases the likelihood of school dropout, limits human capital accumulation, and reduces women's long-term economic participation

(Efevbera et al., 2019; Roy & Chouhan, 2022; Pourtaheri et al., 2023). Moreover, child marriage is closely linked to adverse reproductive health outcomes, including unintended pregnancy, maternal complications, and neonatal health risks ((Dadras & Nakayama, 2021; Mehari et al., 2023; Sabola et al., 2021). These consequences position child marriage not merely as a cultural phenomenon but as a structural problem embedded in social inequality, governance systems, and legal institutions.

From a public health perspective, adolescent pregnancy is widely recognized as one of the most reliable empirical indicators of child marriage. In many socio-cultural contexts, pregnancy among adolescents frequently leads to marital legitimation through formal or informal union arrangements. Studies across Asia and Africa show that early marriage substantially increases the probability of adolescent childbirth and reduces access to adequate maternal health services (Sekine & Carter, 2019; Dadras & Nakayama, 2021). Consequently, adolescent pregnancy can serve as a policy-relevant proxy for identifying the persistence of child marriage practices and evaluating the effectiveness of governance interventions designed to protect children.

Despite increasing global awareness and legal reforms aimed at raising the minimum age of marriage, the prevalence of child marriage remains significant in many developing countries. Comparative studies indicate that legislative change alone does not automatically eliminate early marriage practices. Instead, the persistence of child marriage is strongly influenced by socioeconomic factors such as poverty, educational inequality, rural residence, and prevailing cultural norms (Roy & Chouhan, 2022; Kok et al., 2023). In several countries, weak law enforcement, judicial dispensations, and social acceptance continue to undermine the preventive function of legal regulations (Horii, 2020). These findings suggest that child marriage should be understood not only as a legal issue but also as a governance challenge involving the interaction between law, institutions, and social values.

Indonesia provides a relevant empirical context for examining these dynamics. Although the government amended the Marriage Law through Law No. 16 of 2019, which raised the minimum legal marriage age to 19 for both men and women, child marriage remains prevalent in several regions. Empirical studies based on nationally representative data confirm that early marriage in Indonesia is strongly associated with limited education, poverty, and rural socioeconomic conditions (Rumble et al., 2018; Fitria et al., 2024; Cameron et al., 2023). Recent research further indicates that child marriage contributes to long-term economic vulnerability and household food insecurity, thereby reinforcing cycles of social inequality (Finuliyah et al., 2025; Pope et al., 2023). These findings highlight that legal reform alone is insufficient to address the structural drivers of child marriage.

Although a growing body of research has examined the determinants and consequences of child marriage, several important gaps remain in the existing literature. First, most studies focus primarily on socioeconomic determinants or health outcomes, while relatively few examine child marriage from a legal governance perspective. Second, empirical research rarely integrates administrative health data as an early-warning governance tool for detecting and preventing child marriage practices. Third, although Indonesia's constitutional ideology emphasizes the values of Pancasila, existing studies rarely operationalize these principles as a normative framework for designing preventive legal governance strategies (de Groot et al., 2018; Heise et al., 2019; Habib et al., 2025). Consequently, there remains a significant gap in understanding how empirical health indicators can be integrated with constitutional legal principles to strengthen child protection policies (Subramanee et al., 2022; de Groot et al., 2018).

Addressing this gap is particularly important in regions where child marriage continues to occur despite formal legal restrictions. Central Lombok Regency in West Nusa Tenggara represents one such context. The region has repeatedly recorded relatively high rates of adolescent pregnancy, suggesting the persistence of social and institutional mechanisms that normalize early marriage. In this setting, adolescent pregnancy data collected by community health centers (puskesmas) provide a valuable empirical resource for identifying patterns of early marriage and evaluating the effectiveness of preventive governance measures. However, these administrative data have rarely been used as a basis for socio-legal analysis or policy reconstruction.

Therefore, this study is important because it seeks to address the gap between legal norms and empirical governance realities in the prevention of child marriage. By analyzing adolescent pregnancy and childbirth data as indicators of child marriage practices, this research provides evidence-based insights into the limitations of current legal governance mechanisms. Furthermore, the study aims to contribute to the development of a more preventive and context-sensitive legal

framework that aligns empirical evidence with the normative values embedded in the Indonesian constitutional philosophy.

Based on this background, the objective of this study is to develop a Pancasila-based preventive legal governance framework for child marriage prevention by analyzing adolescent pregnancy data in Central Lombok Regency. Specifically, this study seeks to (1) examine the temporal and spatial patterns of adolescent pregnancy and childbirth, (2) analyze how these patterns reflect the limitations of existing legal governance mechanisms, and (3) formulate a preventive legal framework grounded in Pancasila principles of humanity, social justice, and participatory governance.

The novelty of this study lies in three main contributions. First, it introduces adolescent pregnancy administrative data as an empirical governance indicator for identifying the persistence of child marriage practices. Second, it integrates empirical socio-legal analysis with Pancasila constitutional principles, offering a culturally grounded framework for preventive legal governance. Third, the study proposes a data-driven preventive governance model that links health institutions, community participation, and legal policy reform in child marriage prevention. By bridging empirical data, legal analysis, and constitutional values, this research contributes both theoretically to socio-legal scholarship and practically to evidence-based child protection policy in Indonesia.

METHOD

This section describes how the research was conducted, research design, data collection techniques, instrument development, and data analysis techniques. This section explains how the data was collected/generated and provides an explanation of how the data was analyzed. This study adopts an empirical socio-legal research design to develop a Pancasila-based preventive governance framework for child marriage. The socio-legal approach conceptualizes law as a governance process shaped by the interaction of legal norms, institutional practices, and socio-cultural contexts, which is particularly appropriate for plural legal systems such as Indonesia (Subramanee et al., 2022; de Groot et al., 2018).

The research was conducted in Central Lombok Regency, West Nusa Tenggara, selected due to its socio-cultural diversity and persistently elevated adolescent reproductive health indicators that signal the continuity of child marriage practices. The institutional units of analysis are primary healthcare centers (puskesmas), which function as the state's official institutions for registering pregnancy and childbirth events. The study covers all puskesmas operating in Central Lombok during the observation period, 28 centers in 2022 and 29 centers in 2023–2024, ensuring full spatial coverage and minimizing selection bias.

The empirical dataset consists of population-based administrative records documenting pregnancies and childbirths among girls under 19 years of age during 2022–2024. Adolescent pregnancy is employed as a policy-relevant empirical proxy for child marriage, based on robust evidence that underage unions in low- and middle-income contexts are structurally linked to early childbearing and constrained reproductive autonomy (Sekine & Carter, 2019; Mwansa, 2023). While not all adolescent pregnancies result from formal marriage, in the socio-cultural context of Central Lombok, pregnancy among minors is commonly followed by marital legitimation through legal dispensation or socially recognized unions; accordingly, adolescent pregnancy and childbirth function as governance indicators rather than causal measures. To complement empirical analysis, the study examines normative legal materials, including Law No. 16 of 2019 on Marriage, child protection statutes, judicial decisions on marriage dispensation, and relevant regional governance documents.

Data processing involved multi-stage verification, age-based classification, and aggregation by year and puskesmas service area, followed by descriptive statistical analysis to identify temporal trends, spatial concentration, and childbirth-to-pregnancy ratios. The findings were then interpreted through a socio-legal lens and normatively reconstructed using core Pancasila principles: human dignity, social justice, participatory governance, and social solidarity, to formulate a preventive legal governance framework (Asshiddiqie, 2020; Svanemyr et al., 2020). This study relies exclusively on anonymized, aggregated administrative data and does not involve direct interaction with human subjects.

Figure 1 illustrates the sequential stages of the socio-legal research process, from research design and empirical data collection to normative legal analysis and Pancasila-based reconstruction, ensuring methodological coherence and analytical transparency.

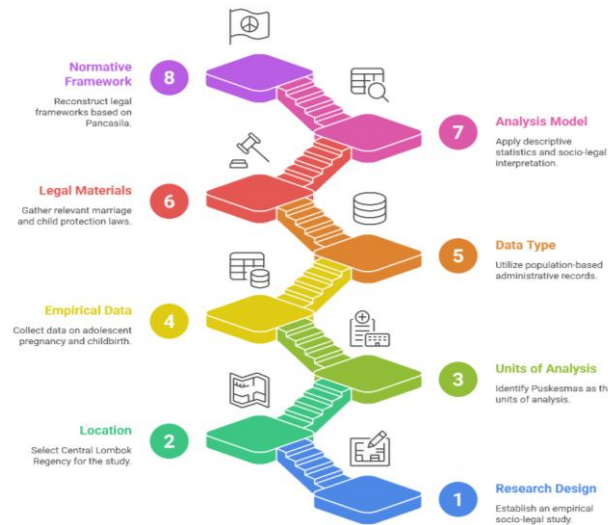


Figure 1. Conducting Socio-Legal Research

1. RESULT AND DISCUSSION

3.1 Overview of Teenage Pregnancy and Childbirth in Central Lombok

Adolescent pregnancy and childbirth in Central Lombok Regency remain persistent phenomena during the 2022–2024 observation period. Rather than representing isolated reproductive health events, these patterns reflect broader interactions between social norms, institutional practices, and the effectiveness of legal governance in preventing child marriage (Huda et al., 2022; Rumble et al., 2023). Using administrative data collected from all primary health centers (puskesmas), this study documents the dynamics of pregnancy and childbirth among girls under the age of nineteen. In this research, adolescent pregnancy is treated as an empirical proxy for the persistence of child marriage practices, since in many cases early pregnancy leads to marital legitimation within families and communities (Fotso et al., 2022; Mwansa, 2023). The aggregate trend indicates a substantial decline in the number of teenage pregnancies after 2022. However, a reduction in incidence alone does not necessarily indicate successful prevention. What becomes analytically significant is the relationship between pregnancy and childbirth, because the continuation of pregnancy into childbirth often reflects the social and institutional responses that follow adolescent pregnancy. In the socio-cultural context of Central Lombok, adolescent pregnancy is rarely separated from marriage arrangements, whether through formal legal procedures or informal social recognition. Similar findings in global research indicate that adolescent pregnancy is closely linked with marriage patterns, partner characteristics, and social expectations that encourage early motherhood among married adolescents (Huda et al., 2022; Bhowmik et al., 2021; Agha & Rind, 2025). To illustrate the relationship between teenage pregnancy and childbirth, Figure 2 presents the total number of recorded cases during the observation period.

Figure 2. Total Recapitulation of Teenage Pregnancy and Childbirth (<19 Years) in Central Lombok

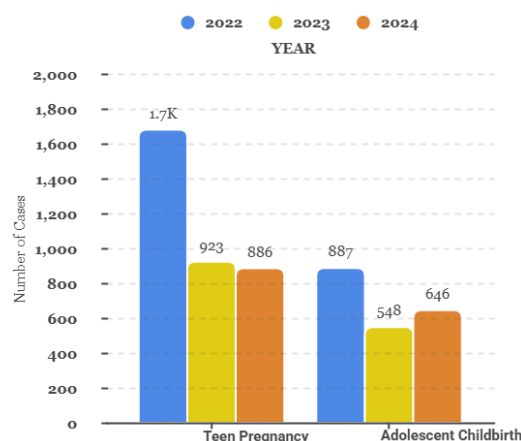


Figure 2 shows two key indicators for each year: the total number of teenage pregnancies and the number of adolescent childbirths. In 2022, Central Lombok recorded 1,670 teenage pregnancies and 887 adolescent childbirths. This indicates that approximately 53 percent of teenage pregnancies resulted in childbirth within the reporting period.

In 2023, the number of teenage pregnancies declined sharply to 923 cases, representing a reduction of more than 40 percent compared to the previous year. However, adolescent childbirth declined less dramatically, reaching 548 cases. As a result, the ratio of childbirth to pregnancy increased to approximately 59 percent. A further shift appears in 2024. Although teenage pregnancies slightly decreased again to 887 cases, the number of adolescent childbirths increased to 646 cases. Consequently, the childbirth-to-pregnancy ratio rose significantly to approximately 73 percent. This means that nearly three out of four teenage pregnancies in Central Lombok now proceed to childbirth.

These figures reveal an important empirical pattern. While the overall number of teenage pregnancies has declined, the proportion of pregnancies that continue to childbirth has increased substantially. This pattern suggests that the processes following adolescent pregnancy increasingly lead to childbirth rather than prevention or early intervention.

3.2 Main Findings: Pregnancy Continuation and the Persistence of Child Marriage

An important implication of this pattern is that the reduction in pregnancy incidence does not automatically represent a successful transformation of social norms regarding adolescent reproduction. Instead, it may reflect partial improvements in awareness, access to reproductive health information, or changes in reporting practices without necessarily altering the underlying social response to adolescent pregnancy. When pregnancy does occur, families and communities may still rely on marriage as the primary mechanism for resolving the situation. As a result, the institutional pathway from pregnancy to childbirth remains strong, reinforcing the persistence of child marriage practices despite declining pregnancy numbers.

This phenomenon highlights the importance of examining not only the prevalence of adolescent pregnancy but also the institutional responses that follow it. In many socio-cultural contexts, pregnancy among unmarried adolescents carries a strong social stigma that affects both the adolescent and her family. Marriage is therefore often perceived as a strategy to restore social legitimacy and protect family honor. Such dynamics have been widely documented in research on child marriage in Southeast Asia and other developing regions. For example, studies in Indonesia and neighboring countries demonstrate that early pregnancy frequently functions as a social trigger for marriage negotiations between families, even when legal restrictions formally prohibit underage unions.

The empirical findings of this study therefore reinforce the argument that child marriage cannot be understood solely as a consequence of poverty or limited education. Instead, it should also be interpreted as a socially embedded institutional response to adolescent pregnancy. In this sense, pregnancy operates as a catalyst that activates various social and legal mechanisms, including family negotiations, community mediation, and legal dispensation procedures. These mechanisms collectively transform a biological event into a socially recognized marital union.

Another important aspect of the findings is the increasing childbirth continuation ratio observed over the study period. The growing proportion of pregnancies that proceed to childbirth suggests that once pregnancy occurs, the likelihood of termination, miscarriage reporting, or alternative outcomes is relatively limited compared to the likelihood of continuation through childbirth. This pattern indicates that pregnancy resolution pathways increasingly favor childbirth, which in turn reinforces the normalization of adolescent motherhood within certain communities.

From a governance perspective, this continuation pattern reveals a structural gap between the normative objectives of legal regulation and the social realities experienced by adolescents. Although legal reforms have raised the minimum age of marriage in many countries, including Indonesia, the effectiveness of these reforms depends largely on how they interact with local social norms and institutional practices. When communities continue to interpret pregnancy as a condition that must be resolved through marriage, legal restrictions may become secondary to social expectations.

This observation is consistent with socio-legal scholarship emphasizing that law does not operate in isolation but within a broader system of social institutions. Legal rules may establish formal boundaries, but their practical effectiveness depends on how they are interpreted, negotiated, and implemented within communities. In contexts where marriage is viewed as the

socially acceptable response to adolescent pregnancy, legal reforms aimed at preventing child marriage may inadvertently function as reactive mechanisms rather than preventive ones.

Furthermore, the persistence of pregnancy-to-childbirth continuation also has significant implications for adolescent well-being and long-term development. Early childbirth is associated with increased health risks for both mothers and infants, including complications during pregnancy and childbirth. In addition to biological risks, adolescent mothers often face disruptions in education, reduced economic opportunities, and long-term social vulnerability. These consequences illustrate that the continuation of adolescent pregnancy into childbirth represents not only a demographic trend but also a broader challenge for child protection and social development policies.

The findings of this study therefore, underscore the need to reconsider how child marriage prevention policies are conceptualized and implemented. If early pregnancy continues to function as a gateway to marriage, preventive strategies must address both the causes of pregnancy and the social mechanisms that legitimize it. This requires a more integrated governance approach that combines legal enforcement with community education, reproductive health services, and programs that empower adolescents to remain in school and delay marriage.

In addition, strengthening coordination between health institutions, educational systems, and legal authorities could play a critical role in improving prevention efforts. Administrative data collected by primary health centers provide valuable insights into adolescent reproductive patterns and could serve as an early warning mechanism for identifying communities at higher risk of child marriage. When such data are integrated into broader governance frameworks, policymakers can design targeted interventions that address the structural drivers of adolescent pregnancy and early marriage.

Ultimately, the main finding of this study highlights a paradoxical dynamic: while the number of teenage pregnancies may be declining, the institutional pathway that links pregnancy to childbirth and marriage remains deeply embedded within social structures. This dynamic suggests that meaningful progress in preventing child marriage requires not only reducing pregnancy incidence but also transforming the social and institutional mechanisms that continue to normalize early motherhood and adolescent unions.

3.3 Comparison with Previous Studies

These observations suggest that the relationship between adolescent pregnancy and child marriage is not merely coincidental but structurally embedded within social systems. In many societies, early pregnancy generates strong social pressure to restore moral order through marriage, even when such unions contradict formal legal regulations. Consequently, legal reforms that raise the minimum age of marriage often encounter practical challenges when confronted with deeply rooted cultural expectations surrounding sexuality, family honor, and gender roles.

Comparative studies from different regions further confirm this dynamic. Research conducted in South Asia and Sub-Saharan Africa indicates that adolescent pregnancy frequently acts as a catalyst for early marriage, particularly in communities where premarital pregnancy is socially stigmatized. In these contexts, families often perceive marriage as the most acceptable solution for addressing the social consequences of early pregnancy. As a result, legal institutions may inadvertently facilitate early unions through legal exceptions or dispensations, reflecting the tension between statutory norms and social practices.

The situation observed in Central Lombok reflects similar institutional dynamics. Although national legislation in Indonesia establishes a minimum legal age for marriage, the presence of legal dispensation mechanisms creates a pathway through which underage marriages can still occur when pregnancy is involved. This institutional flexibility may be intended to protect the social and legal status of adolescents and their children, yet it also creates conditions where early pregnancy becomes indirectly legitimized through marriage. Such patterns demonstrate how legal systems can simultaneously function as instruments of protection and accommodation.

Another strand of literature emphasizes the role of structural socio-economic factors in sustaining both adolescent pregnancy and early marriage. Educational inequality, limited access to reproductive health services, and economic vulnerability frequently increase the likelihood that adolescents will experience early pregnancy and subsequently enter marriage. When educational opportunities are limited, families may perceive marriage as a more viable or socially acceptable pathway for adolescent girls. Consequently, pregnancy may accelerate decisions that might otherwise have been delayed.

The findings of this study correspond with these structural explanations. Several regions in Central Lombok that display higher levels of adolescent pregnancy also face broader challenges related to educational access and socio-economic inequality. Limited exposure to reproductive health education and restricted opportunities for adolescent empowerment may contribute to the persistence of early pregnancy risks. In such contexts, preventive legal regulation alone cannot effectively address the underlying drivers of early marriage.

Furthermore, previous research has highlighted the importance of examining how community-level norms interact with formal legal frameworks. Even when laws clearly prohibit child marriage, enforcement often depends on the attitudes and behaviors of local institutions, community leaders, and families. In communities where early marriage remains culturally accepted, legal restrictions may be interpreted flexibly or circumvented through informal arrangements. This phenomenon underscores the importance of understanding law as a social process rather than merely a set of written rules.

The Central Lombok case also illustrates the importance of integrating empirical health data into socio-legal analysis. While many studies rely on national surveys or demographic indicators to measure child marriage prevalence, this research utilizes administrative data from primary health centers to track patterns of adolescent pregnancy and childbirth. This approach provides a more localized and dynamic understanding of how early pregnancy relates to child marriage practices. By examining the continuation of pregnancy into childbirth, the study reveals how social and institutional responses shape reproductive outcomes among adolescents.

Moreover, the comparison with previous studies highlights that the persistence of adolescent pregnancy and child marriage is rarely attributable to a single factor. Instead, it emerges from the interaction of multiple influences, including legal frameworks, cultural norms, economic conditions, and access to education. Effective prevention strategies therefore, require comprehensive approaches that address these interconnected factors simultaneously.

In light of these observations, the findings from Central Lombok contribute to the broader international literature by providing empirical evidence of how adolescent pregnancy continues to interact with legal and social governance structures. The results reinforce the argument that legal reform alone is insufficient to eliminate child marriage when social norms continue to legitimize early unions following pregnancy. Instead, sustainable prevention requires coordinated efforts that integrate legal enforcement, reproductive health education, community engagement, and socio-economic development initiatives.

Overall, the comparison with previous studies demonstrates that the patterns identified in this research reflect broader global challenges in preventing child marriage. At the same time, the localized empirical evidence from Central Lombok offers valuable insights into how these global dynamics manifest within specific socio-cultural and institutional contexts.

3.4 Socio-Legal Interpretation: Legal Governance and Reactive Regulation

This reactive pattern of legal governance illustrates an important characteristic of how law operates within complex social systems. In theory, legal regulations that establish a minimum age for marriage are designed to function as preventive mechanisms aimed at protecting children from the risks associated with early marriage. However, when these regulations interact with deeply embedded cultural norms and social expectations, their practical operation may shift from prevention to accommodation. In such circumstances, the law tends to respond to situations that have already occurred rather than effectively preventing them from emerging in the first place (Laurenzi et al., 2023).

Within the socio-legal framework, this phenomenon reflects the distinction between law as a formal rule and law as a social institution. Formal legal provisions may clearly prohibit underage marriage, yet the implementation of these provisions depends on how they are interpreted and applied within local social contexts. In communities where early pregnancy is strongly associated with moral responsibility and family honor, marriage may be perceived as the most appropriate resolution to restore social order. Consequently, legal actors, including families, community leaders, and sometimes judicial authorities, may support or facilitate marriage arrangements even when they involve individuals below the statutory age threshold (Bhowmik et al., 2021).

The availability of legal dispensation procedures further illustrates how legal systems can simultaneously serve protective and accommodative roles. Dispensation mechanisms are often introduced to address exceptional circumstances where strict enforcement of the law might create additional social or legal complications. However, when adolescent pregnancy becomes a common

justification for requesting dispensations, the mechanism may gradually transform into a routine pathway for legitimizing early marriage. This institutional dynamic contributes to the reactive character of legal governance observed in the empirical data.

Another important aspect of reactive legal governance is the limited integration between legal institutions and preventive social policies. Effective child protection requires coordinated efforts among multiple sectors, including education, health services, and community development programs. When legal institutions operate independently from these broader social systems, their capacity to address the root causes of adolescent pregnancy becomes constrained. As a result, the legal system tends to intervene only after pregnancy has occurred, focusing on resolving immediate social consequences rather than addressing underlying structural risks.

The empirical patterns observed in Central Lombok illustrate how these institutional dynamics unfold in practice. The increasing ratio of childbirth following adolescent pregnancy suggests that once pregnancy occurs, social and institutional mechanisms converge to support the continuation of pregnancy and the formation of marital unions. This convergence reflects a broader governance structure in which legal, social, and cultural responses collectively reinforce the normalization of adolescent motherhood.

From a child protection perspective, this situation raises important concerns regarding the effectiveness of existing legal frameworks. When laws designed to prevent child marriage operate primarily in a reactive manner, they may fail to provide meaningful protection for adolescents who face reproductive and social vulnerabilities. Instead of preventing early unions, legal institutions may become instruments for formalizing them under certain circumstances.

This interpretation does not necessarily imply that legal institutions intentionally support child marriage. Rather, it highlights the structural limitations of legal governance when it operates within complex social environments characterized by competing norms and expectations. Legal actors may be compelled to balance the objectives of statutory regulation with practical considerations related to social stability, family pressure, and the welfare of pregnant adolescents.

Therefore, the socio-legal interpretation of the findings emphasizes the need to reconceptualize child marriage prevention as a governance challenge that extends beyond the legal system itself. Strengthening preventive legal governance requires greater integration between legal regulations, reproductive health programs, educational initiatives, and community-based interventions. By addressing both the structural drivers of adolescent pregnancy and the social mechanisms that legitimize early marriage, legal governance can move from a reactive orientation toward a more preventive and transformative role in protecting children's rights.

3.5 Implications for a Pancasila-Based Legal Framework

The findings of this study have important implications for the development of a Pancasila-based legal framework for preventing child marriage. Within the philosophical foundation of Pancasila, legal governance is not merely intended to regulate social behavior but also to ensure the protection of human dignity and social justice. The values embedded in Pancasila, particularly those related to humanity, justice, and social welfare, provide a normative foundation for developing policies that prioritize the protection of children and adolescents from harmful social practices.

From the perspective of Pancasila's second principle, which emphasizes just and civilized humanity, the persistence of adolescent pregnancy and early marriage raises significant ethical concerns. Early pregnancy exposes adolescent girls to various biological risks, including complications during pregnancy and childbirth, as well as long-term health consequences (Neal et al., 2021). In addition to health-related vulnerabilities, early marriage often disrupts educational trajectories and limits opportunities for social mobility (Bhowmik et al., 2021). Consequently, the continuation of these patterns reflects a gap between the normative aspirations of Pancasila and the practical realities experienced by many adolescents.

The third and fifth principles of Pancasila, which stress social unity and social justice, also highlight the importance of addressing structural inequalities that contribute to child marriage. Socio-economic disparities, limited educational opportunities, and restricted access to reproductive health information are among the structural factors that increase the vulnerability of adolescents to early pregnancy (Amoadu et al., 2022). A Pancasila-based legal framework should therefore recognize that preventing child marriage requires not only legal enforcement but also broader socio-economic interventions that promote equal access to education, healthcare, and social protection.

The empirical findings of this study indicate that legal governance currently tends to operate in a reactive manner, responding to adolescent pregnancy after it has already occurred. Within a Pancasila-based approach, however, legal institutions should adopt a more preventive orientation. Preventive governance emphasizes early intervention, community education, and institutional coordination in order to reduce the conditions that lead to early pregnancy and child marriage. Such an approach aligns with the broader objective of ensuring the well-being and development of young citizens as part of national human resource development.

Another important implication concerns the role of community participation in implementing Pancasila values within legal governance. In many Indonesian communities, social norms and local cultural practices significantly influence decisions related to marriage and family formation. Therefore, preventive policies should involve community leaders, religious institutions, and local organizations in promoting awareness about the risks associated with adolescent pregnancy and early marriage. By engaging these social actors, legal governance can better reflect the participatory spirit embedded within Pancasila's democratic principles.

In addition, integrating empirical health data into legal policymaking can strengthen the effectiveness of preventive strategies. Data from primary health centers, schools, and local government institutions can help policymakers identify areas with higher vulnerability to adolescent pregnancy and early marriage. Evidence-based governance enables targeted interventions, such as reproductive health education programs, youth empowerment initiatives, and educational support policies aimed at reducing school dropout rates among adolescents.

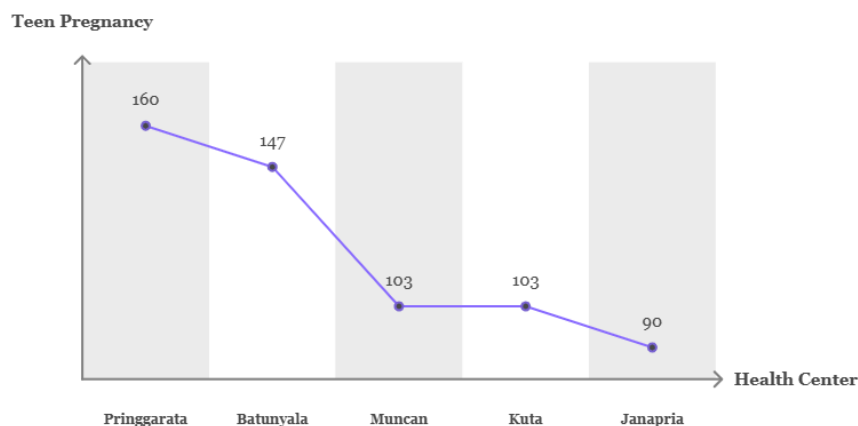
Ultimately, the development of a Pancasila-based legal framework requires a shift from viewing law solely as an instrument of regulation toward understanding it as part of a broader system of social governance. Preventing child marriage demands coordinated efforts across legal, educational, health, and community sectors. When these sectors work together under the ethical guidance of Pancasila, legal governance can more effectively fulfill its role in protecting children's rights and promoting social justice.

Therefore, the implications of this study extend beyond the legal domain. They highlight the need for an integrated policy approach that aligns legal reforms with the moral and philosophical values of Pancasila. Through preventive governance, evidence-based policymaking, and community engagement, Indonesia can move closer to realizing the humanitarian and social justice ideals that form the core of its national ideology.

3.6 Spatial Variation and Inequality Between Health Service Regions

Adolescent pregnancy in Central Lombok does not only appear as an aggregate statistical trend but also shows substantial spatial variation across health service regions (puskesmas). From an analytical perspective, spatial distribution is an important dimension in socio-legal research because the effectiveness of legal protection mechanisms rarely operates uniformly across territories. Legal governance is implemented within particular social environments, each characterized by different socio-economic conditions, cultural practices, and levels of institutional capacity. Consequently, patterns of adolescent pregnancy often reflect broader territorial inequalities rather than purely individual behavior. Figure 3 illustrates the distribution of teenage pregnancy cases across several primary health service regions in Central Lombok, providing empirical evidence of how adolescent reproductive risk is unevenly distributed within the regency.

Figure 3. Health Center with the Highest Teen Pregnancy Rate in Central Lombok



The empirical data presented in Figure 3 reveal clear disparities in the distribution of adolescent pregnancy across regions. Pringgarata records the highest number of teenage pregnancy cases with 160 incidents, followed by Batunyalala with 147 cases. These two regions represent the primary concentration of adolescent pregnancy within the regency and therefore become critical focal points for policy intervention. In contrast, Muncon and Kuta each report 103 cases, indicating a moderate level of adolescent pregnancy incidence. Jonggat records the lowest concentration among the observed regions with 90 cases. Although these differences may appear numerically modest at first glance, they reflect meaningful variation in relative risk across territories. When compared to Jonggat, Pringgarata demonstrates nearly seventy-eight percent higher teenage pregnancy incidence, while Batunyalala records more than sixty percent higher incidence. Such disparities indicate that adolescent pregnancy in Central Lombok is not evenly distributed across communities but instead concentrated within particular geographical and social contexts.

The spatial pattern illustrated in Figure 3 constitutes an important empirical finding of this study. Rather than occurring randomly throughout the regency, adolescent pregnancy appears to cluster in specific health service regions. Spatial clustering typically signals the presence of localized structural conditions that increase vulnerability to early pregnancy. In many cases, areas with higher rates of adolescent pregnancy face multiple intersecting disadvantages. These may include limited access to quality education, restricted availability of reproductive health information, economic hardship, and fewer opportunities for youth development. When these structural factors converge within a particular locality, they may significantly elevate the probability that adolescents experience early pregnancy. Cultural expectations also play an influential role. In certain communities, traditional norms that tolerate or even encourage early marriage may remain relatively strong, thereby reinforcing social acceptance of adolescent unions and indirectly increasing the likelihood of teenage pregnancy (Neal et al., 2021).

Another implication of the spatial pattern concerns the uneven reach of preventive interventions. The data suggest that existing education and health programs may not be distributed equally across all communities. While some regions demonstrate relatively lower pregnancy incidence, others continue to experience significantly higher levels of adolescent reproductive risk. Such variation indicates that prevention strategies may be more effective in certain areas than in others, possibly due to differences in institutional resources, community engagement, or program implementation. Without targeted intervention in high-risk regions, these disparities may persist and even widen over time.

The spatial inequality identified in Central Lombok is consistent with findings from previous studies conducted in other developing regions. International research has repeatedly shown that adolescent pregnancy and early marriage frequently cluster in rural or socio-economically disadvantaged areas where educational access and reproductive health services remain limited (Amoadu et al., 2022). Geographic location often shapes the opportunities available to adolescents, influencing their exposure to information, healthcare, and social support systems. Studies examining adolescent reproductive outcomes have demonstrated that girls living in communities with weaker institutional outreach programs face significantly higher risks of early pregnancy and marriage. In addition, regional inequality frequently interacts with cultural norms, creating environments where early marriage is socially normalized and therefore more likely to occur.

From a socio-legal perspective, the spatial variation observed in Central Lombok reflects unequal performance of legal governance across territories. Although Indonesian law establishes a uniform minimum age for marriage under the framework of Law No. 16 of 2019 on Marriage, the practical effectiveness of this regulation depends heavily on local institutional capacity and community acceptance. In regions such as Pringgarata and Batunyalala, where teenage pregnancy rates remain high, statutory legal norms may function primarily at a symbolic level rather than as effective instruments of social transformation. Social practices that tolerate early marriage continue to operate alongside formal legal rules, thereby limiting the ability of the law to prevent adolescent unions (Bhowmik et al., 2021).

This phenomenon illustrates a broader gap between legal formalism and social reality. Legal norms alone cannot guarantee effective child protection if they are not supported by strong institutional implementation, educational outreach, and community engagement. In areas where legal awareness remains limited or cultural norms continue to legitimize early marriage, statutory regulations may struggle to achieve their intended preventive objectives. As a result, the protection

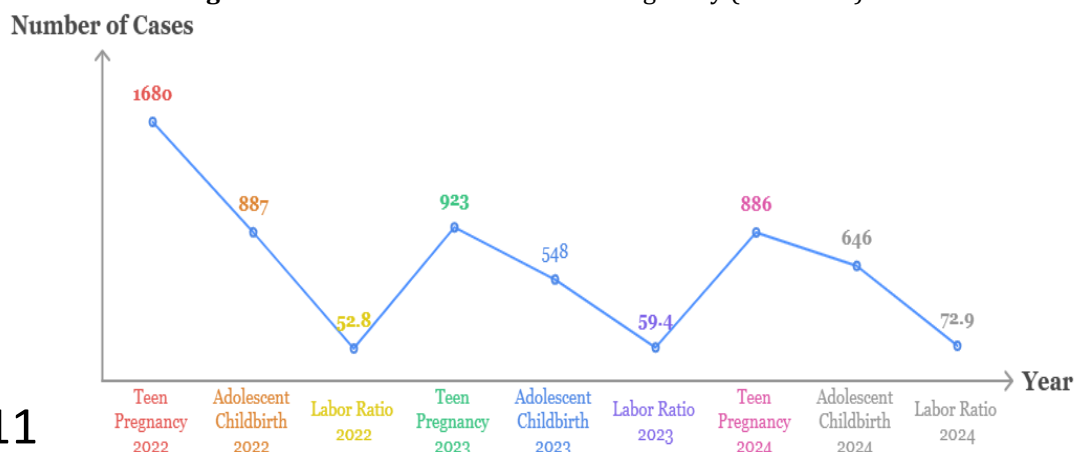
offered by legal governance becomes uneven across territories, reflecting the social and institutional conditions of each locality.

Spatial inequality also raises important normative concerns regarding the principle of equal protection. Ideally, legal protection mechanisms should operate consistently across all regions to ensure that every child enjoys the same level of rights and safeguards. However, the disparities observed in Central Lombok suggest that girls living in high-incidence regions face greater biological, educational, and social risks than those residing in areas with lower pregnancy rates. These inequalities challenge the expectation that legal protection should function equally across territories and highlight the importance of strengthening institutional capacity in vulnerable regions. The spatial patterns identified in this study, therefore carry important implications for public policy and governance. The uneven distribution of adolescent pregnancy indicates that prevention strategies should not rely solely on uniform national regulations. Instead, effective interventions must be tailored to local conditions and targeted toward communities facing the highest levels of reproductive risk. Primary health centers located in high-incidence areas can play a strategic role in this process. Beyond their traditional function as healthcare providers, these institutions can serve as central nodes for preventive governance by delivering reproductive health education, providing counseling services for adolescents and families, and coordinating community-based awareness programs. Furthermore, spatial data on adolescent pregnancy can function as an early warning mechanism for identifying communities that require additional social, educational, and legal interventions. When integrated into governance strategies, such data allow policymakers to allocate resources more effectively and design targeted prevention programs based on empirical evidence. Evidence-based governance is particularly important in addressing complex socio-legal problems such as adolescent pregnancy and child marriage, where multiple structural factors interact simultaneously. Overall, the spatial variation illustrated in Figure 3 demonstrates that adolescent pregnancy in Central Lombok is closely linked to regional inequality. The clustering of cases within particular health service regions suggests that early pregnancy is shaped not only by individual behavior but also by broader structural conditions. Addressing these disparities requires a governance framework that combines legal regulation with targeted educational programs, community engagement, and improved access to reproductive health services. Such an approach aligns with the broader ethical commitment to humanity and social justice embodied in the philosophical values of Pancasila, which emphasize the responsibility of the state to protect vulnerable members of society and promote equitable social development.

3.7 Temporal Patterns and Ratios of Adolescent Childbirth

Temporal analysis provides an important perspective for understanding how adolescent pregnancy and childbirth evolve over time and how social and legal governance respond to these changes. Unlike spatial analysis, which highlights regional inequality, temporal patterns reveal whether prevention efforts are improving, stagnating, or weakening across different years. By examining trends over time, researchers can identify whether policy interventions and social programs are producing measurable improvements in adolescent reproductive outcomes. Temporal data also allow policymakers to evaluate whether reductions in pregnancy incidence correspond to broader improvements in child protection or whether underlying structural problems remain unresolved. Figure 4 presents the yearly relationship between teenage pregnancy, adolescent childbirth, and the childbirth-to-pregnancy ratio in Central Lombok during the 2022–2024 observation period. The figure illustrates how these indicators interact over time and provides a clearer understanding of the social processes that follow adolescent pregnancy.

Figure 4. Ratio of Childbirth to Teen Pregnancy (<19 Years)



The empirical data displayed in Figure 4 reveal three key indicators for each year: the total number of teenage pregnancies, the number of adolescent childbirths, and the ratio between them. In 2022, Central Lombok recorded approximately 1,680 teenage pregnancies and 887 adolescent childbirths, resulting in a childbirth-to-pregnancy ratio of about 52.8 percent. This means that slightly more than half of teenage pregnancies resulted in childbirth within the reporting period. In 2023, the number of teenage pregnancies declined sharply to 923 cases. Although adolescent childbirth also decreased to 548 cases, the decline was not proportional. As a result, the childbirth continuation ratio increased to approximately 59.4 percent. A further shift occurred in 2024. Teenage pregnancies remained relatively stable at around 886 cases, while adolescent childbirth increased to 646 cases. Consequently, the childbirth-to-pregnancy ratio rose significantly to approximately 72.9 percent. This means that nearly three out of four teenage pregnancies in Central Lombok now continue to childbirth.

The temporal pattern illustrated in Figure 4 represents one of the most important findings of this study. While the overall number of teenage pregnancies has declined since 2022, the likelihood that these pregnancies will continue to childbirth has increased significantly. This pattern suggests that the social and institutional responses following adolescent pregnancy increasingly lead to childbirth rather than prevention or early intervention. In other words, once pregnancy occurs, social expectations and institutional practices appear to support the continuation of pregnancy rather than alternative responses. Early pregnancy, therefore remains socially and institutionally normalized, frequently culminating in childbirth and often followed by marital arrangements. This dynamic indicates that a decline in pregnancy incidence alone cannot automatically be interpreted as successful prevention of child marriage (Neal et al., 2021).

Instead, the growing childbirth continuation ratio suggests that once adolescent pregnancy occurs, it is increasingly likely to be resolved through childbirth and marriage. This pattern implies that the social response to pregnancy remains strongly oriented toward legitimizing the situation through family formation rather than preventing long-term consequences for adolescents. In this sense, the decline in pregnancy incidence may partially reflect improvements in awareness or reporting mechanisms, but it does not necessarily signify effective structural prevention of early marriage practices.

These findings are consistent with a growing body of international research highlighting the close relationship between adolescent pregnancy and child marriage. Studies have shown that adolescent pregnancy frequently triggers early marriage as families attempt to avoid the social stigma associated with premarital pregnancy. In many cultural contexts, pregnancy outside marriage is perceived as a threat to family reputation, prompting parents and community members to encourage immediate marriage as a means of restoring social legitimacy (Bhowmik et al., 2021). Additional research also indicates that pregnancy among adolescents often accelerates marriage decisions within communities where early marriage is already socially tolerated.

Furthermore, recent international studies demonstrate that legal reforms raising the minimum age of marriage do not automatically eliminate early marriage practices. Even when legal restrictions are strengthened, families may seek legal dispensations or informal arrangements when pregnancy occurs. Such mechanisms allow early unions to continue despite formal regulatory frameworks (Laurenzi et al., 2023). (Laurenzi et al., 2023). The patterns observed in Central Lombok therefore, align with broader global findings showing that adolescent pregnancy frequently functions as a pathway toward early marriage in many developing regions.

From a socio-legal perspective, the increasing childbirth-to-pregnancy ratio indicates that legal governance concerning the minimum age of marriage still functions predominantly in a reactive manner. Rather than preventing early pregnancy, legal mechanisms often respond after pregnancy has already occurred. When an adolescent pregnancy arises, families frequently pursue socially accepted marriages or legal dispensation procedures. In this context, legal institutions tend to legitimize early marriage after pregnancy instead of preventing it beforehand. This reactive orientation of legal governance helps explain why the continuation ratio continues to rise.

When social and legal systems accommodate pregnancy through marriage, the probability that pregnancy proceeds to childbirth becomes significantly higher. Once pregnancy is socially acknowledged and institutional pathways for marriage exist, adolescents are more likely to continue pregnancy to childbirth. This pattern illustrates the gap between the normative goals of legal regulation and the realities of social practice. Laws that aim to prevent child marriage may

lose their preventive impact when they operate within social environments that continue to normalize early marriage as a response to pregnancy.

The temporal dynamics identified in this study, therefore carry important implications for child protection governance. The rising childbirth continuation ratio suggests that prevention policies must address not only the factors that lead to adolescent pregnancy but also the social processes that occur afterward. Policies focusing exclusively on pregnancy prevention may overlook the institutional and cultural mechanisms that convert pregnancy into early marriage and childbirth. Effective prevention strategies should therefore integrate legal regulation with broader social interventions, including community education programs, adolescent reproductive health services, and stronger coordination among health institutions, schools, and local government authorities.

In addition, administrative data collected by primary health centers can play a crucial role in monitoring adolescent reproductive trends. Such data provide real-time insights into changing patterns of pregnancy and childbirth among adolescents. When integrated into governance frameworks, health data can function as an early warning system for identifying emerging risks and evaluating the effectiveness of prevention programs. Evidence-based policymaking is particularly important in addressing complex socio-legal issues such as adolescent pregnancy and child marriage, where multiple structural factors interact simultaneously.

Overall, the temporal patterns illustrated in Figure 4 demonstrate that preventing child marriage requires more than the existence of formal legal prohibitions. Sustainable prevention demands a comprehensive governance approach that integrates empirical data, institutional coordination, community engagement, and preventive social policies. By strengthening these interconnected mechanisms, policymakers can move beyond reactive responses toward a more proactive system of child protection that safeguards the well-being and future opportunities of adolescents.

3.8 Research Novelty and Contribution

This study offers several important contributions to the literature on adolescent pregnancy, child marriage, and socio-legal governance. While many previous studies have primarily examined demographic, socio-economic, or cultural determinants of early marriage, this research introduces a governance-oriented perspective that connects empirical reproductive health data with the effectiveness of legal protection mechanisms. By situating empirical findings within the broader philosophical and normative framework of Pancasila, the study demonstrates that adolescent pregnancy can also be interpreted as an indicator of how effectively legal governance protects children's rights and promotes social justice. In this sense, the research expands the analytical lens beyond traditional public health or demographic approaches and places adolescent reproductive outcomes within a broader socio-legal governance context.

One important novelty of this study lies in the use of adolescent pregnancy and childbirth data as empirical indicators of legal governance performance. Previous research has generally relied on demographic surveys to measure the prevalence of child marriage. Although such surveys provide valuable information, they often capture outcomes only after early marriages have already occurred. This study, in contrast, shows that routinely collected administrative health data from primary health centers (puskesmas) can function as an early-warning system for identifying communities where the risk of child marriage remains structurally embedded. Because pregnancy and childbirth are recorded within health service systems, these data allow researchers and policymakers to observe emerging patterns of adolescent reproductive behavior before they fully translate into formal marriage statistics.

Another important contribution of this research lies in the identification of the childbirth-to-pregnancy ratio as a key analytical indicator. Rather than focusing solely on the number of adolescent pregnancies, this study analyzes the proportion of pregnancies that continue to childbirth. This ratio provides deeper insight into how social and institutional mechanisms respond to early pregnancy. When the continuation ratio increases, it suggests that pregnancies are increasingly carried to childbirth rather than interrupted or prevented through early intervention. The increasing continuation ratio identified in this research indicates that adolescent pregnancy continues to be socially normalized through marital arrangements and family responses that legitimize pregnancy through childbirth and marriage.

A third aspect of novelty emerges from the integration of empirical analysis with a normative legal framework grounded in Pancasila. Many studies examining child marriage focus primarily on

medical risks, socio-economic conditions, or cultural traditions. While these factors remain important, this research highlights the need to interpret adolescent reproductive outcomes through the lens of legal governance and constitutional values. The principles embedded within Pancasila, particularly those emphasizing humanity, dignity, and social justice, provide a normative foundation for evaluating whether existing governance structures adequately protect adolescents from the risks associated with early marriage and pregnancy. By linking empirical reproductive health data with constitutional values, the study introduces a socio-legal analytical model that connects normative legal philosophy with measurable governance indicators.

Taken together, these innovations demonstrate that adolescent pregnancy should not be viewed solely as a public health problem. Instead, it should also be understood as an indicator of the effectiveness of legal governance systems in safeguarding children's rights. When patterns of adolescent pregnancy remain persistent or when pregnancy increasingly leads to childbirth and marriage, these outcomes may reflect deeper governance challenges related to education access, social protection, and the implementation of legal norms.

From an academic perspective, the study contributes to socio-legal scholarship by expanding the analytical framework used to examine child marriage prevention. Existing research often treats adolescent pregnancy and child marriage as separate areas of inquiry, with public health studies focusing on reproductive outcomes and legal studies focusing on statutory regulation. This research bridges these domains by demonstrating how patterns of adolescent pregnancy can serve as indicators of the functioning of legal governance systems. By doing so, it encourages a more interdisciplinary approach that integrates insights from legal studies, public health, and social policy.

The spatial and temporal analyses presented in this research further strengthen its academic contribution. By examining how adolescent pregnancy is distributed across regions and how these patterns evolve over time, the study provides a more nuanced empirical basis for understanding the persistence of early marriage risks. Spatial analysis reveals regional inequalities in reproductive vulnerability, while temporal analysis highlights changing trends in pregnancy continuation and childbirth outcomes. Together, these analytical approaches help identify structural patterns that may remain hidden when research focuses solely on national-level statistics.

Beyond its academic significance, the study also offers practical implications for public policy. The empirical patterns identified in Central Lombok suggest that legal reforms alone are insufficient to prevent child marriage if they are not accompanied by effective preventive governance mechanisms. Legal regulations that establish minimum marriage ages may provide an important normative framework, but their impact depends on how effectively they are implemented and supported by complementary social policies.

One important policy implication concerns the use of administrative data from primary health centers as a monitoring instrument for adolescent reproductive risks. Health data collected through routine service delivery provides valuable insights into local reproductive trends and can help policymakers identify regions where adolescents face higher risks of early pregnancy. Integrating such data into governance planning would enable evidence-based interventions and more targeted allocation of public resources.

Another implication concerns the need to shift from reactive legal regulation toward proactive community-based governance. When legal institutions respond only after pregnancy occurs, prevention becomes significantly more difficult. Preventive governance should therefore emphasize reproductive health education, programs that support school retention for girls, and community dialogue addressing the social consequences of early marriage. Engaging families, educators, and community leaders in preventive initiatives can strengthen social awareness and reduce the normalization of adolescent marriage.

The Pancasila-based legal framework proposed in this study also underscores the importance of aligning legal policies with the ethical principles of humanity and social justice. Preventing child marriage is not only a regulatory matter but also a constitutional responsibility to ensure equal protection and dignity for all children. When governance systems operate in accordance with these principles, legal institutions can move beyond symbolic regulation toward more meaningful protection of adolescents.

Although the study provides important empirical insights, several areas require further investigation. Future research should explore the socio-cultural dynamics that influence family decision-making after adolescent pregnancy, particularly the role of community norms, economic

pressures, and gender expectations. Understanding these dynamics is essential for designing interventions that address not only legal structures but also the social contexts in which decisions about marriage are made.

In addition, qualitative research involving adolescents, parents, educators, and community leaders would offer a deeper understanding of how legal norms interact with everyday social practices. Such studies could help explain why early pregnancy continues to lead to marriage despite the presence of legal restrictions. Finally, comparative research across different regions of Indonesia would help determine whether the patterns identified in Central Lombok represent broader national trends or whether they reflect region-specific governance dynamics. Expanding empirical investigation across multiple regions would provide a stronger basis for developing national strategies aimed at preventing child marriage and strengthening child protection governance.

CONCLUSION

The results of this study show that pregnancy and childbirth of adolescents under the age of 19 in Central Lombok Regency are still a persistent and structural phenomenon. Although there was a decrease in the number of teenage pregnancies during the observation period, the adolescent childbirth ratio actually showed an increasing trend, indicating the strength of the social mechanisms that encourage the legitimacy of pregnancy through child-age marriage. Spatial variation between health center service areas further confirms that the risk of pregnancy and adolescent childbirth is not evenly distributed, but concentrated in a specific community. These findings reinforce the assumption that teenage pregnancy can be used as a valid empirical indicator to read the sustainability of child marriage practices and the limitations of the effectiveness of applicable legal protections. From the perspective of legal governance, this study confirms that the regulation of the minimum age limit for marriage has not fully functioned as a preventive instrument. Laws tend to work reactively by responding to the consequences of teenage pregnancy through legitimacy mechanisms, rather than preventing risks in the first place. Inequality between regions shows that the implementation of the law is strongly influenced by social contexts, cultural norms, and institutional capacities at the local level. In the socio-legal approach, this condition reflects the distance between written law and social practice, so that adolescent pregnancy can be understood as an indicator of the failure of legal governance in protecting the rights and dignity of children substantively and equitably. The normative implications of these findings affirm the urgency of developing a legal framework for the prevention of child marriage based on Pancasila. The humanitarian principle demands preventive protection of children as subjects of law, while the principle of social justice demands an equitable distribution of protection regardless of region or socioeconomic conditions. The integration of empirical data on pregnancy and adolescent childbirth into the formulation of legal and social policies is key to strengthening the preventive function of the law. By placing the value of Pancasila as a normative foundation and health data as an instrument of early warning, the law can transform from just a formal norm to an effective, contextual, and sustainable child protection mechanism.

ACKNOWLEDGMENT

The authors would like to thank the Central Lombok Regency Public Health Office and all Community Health Centers (Pusat kesehatan Masyarakat-PUSKESMAS) for access to anonymized administrative data on adolescent pregnancy and childbirth. We also thank our academic colleagues and anonymous reviewers for their constructive input, which helped strengthen the socio-legal analysis and normative framework of this study. Any remaining limitations or interpretations are the sole responsibility of the authors.

REFERENCES

- Abdallah, A., Mohammed, M. O. M., & Mohamed, A. (2023). Early marriage and its association with the socioeconomic and sociocultural factors of women in Sudan: A predictive model. *The Open Public Health Journal*, 16, e230505. HYPERLINK "<https://doi.org/10.2174/18749445-v16-e230505-2022-167>" <https://doi.org/10.2174/18749445-v16-e230505-2022-167>
- Asshiddiqie, J. (2020). *Constitutional interpretation in Indonesia*. Beijing Law Review, 11(1), 1–15. HYPERLINK "<https://doi.org/10.4236/blr.2020.111008>" <https://doi.org/10.4236/blr.2020.111008>

- Alanyo, E. M., Masereka, E. M., & Bbaale, E. (2025). Photovoice experiences of teenage mothers with teenage pregnancy in Uganda. *PLOS ONE*. HYPERLINK "<https://doi.org/10.1371/journal.pone.0335413>"
<https://doi.org/10.1371/journal.pone.0335413>
- Amoadu, M., Ansah, E. W., Sarfo, J. O., & Agyemang-Duah, W. (2022). Sociocultural factors influencing adolescent pregnancy in sub-Saharan Africa: A systematic review. *BMC Pregnancy and Childbirth*, 22, 915. HYPERLINK "<https://doi.org/10.1186/s12884-022-05172-2>"
<https://doi.org/10.1186/s12884-022-05172-2>
- Amoadu, M., Ansah, E. W., Sarfo, J. O., & Agyemang-Duah, W. (2022). Sociocultural factors influencing adolescent pregnancy in sub-Saharan Africa: A systematic review. *BMC Pregnancy and Childbirth*, 22, 915. HYPERLINK "<https://doi.org/10.1186/s12884-022-05172-2>"
<https://doi.org/10.1186/s12884-022-05172-2>
- Bhatta, D. N., Pathak, R., & Joshi, D. (2025). Understanding the determinants of adolescent pregnancy in developing countries: Evidence from demographic health surveys. *Population, Health and Development*. HYPERLINK "<https://doi.org/10.1002/puh2.70041>"
<https://doi.org/10.1002/puh2.70041>
- Bhowmik, J., Biswas, R., & Hossain, S. (2021). Child marriage and adolescent motherhood: A nationwide vulnerability for women in Bangladesh. *International Journal of Environmental Research and Public Health*, 18(8), 4030. HYPERLINK "<https://doi.org/10.3390/ijerph18084030>"
<https://doi.org/10.3390/ijerph18084030>
- Banerjee, A., Duflo, E., Glennerster, R., & Kinnan, C. (2020). The miracle of microfinance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, 7(1), 22–53. HYPERLINK "<https://doi.org/10.1257/app.20130533>"
<https://doi.org/10.1257/app.20130533>
- Banlanjo, N. M. (2022). Cultural pedogamy: Towards an eco-cultural theory of early (child) marriage. *European Journal of Humanities and Social Sciences*, 2(6). HYPERLINK "<https://doi.org/10.24018/ejsocial.2022.2.6.334>"
<https://doi.org/10.24018/ejsocial.2022.2.6.334>
- Bedner, A. (2016). Autonomy of law in Indonesia. *Recht der Werkelijkheid*, 37(3), 10–36. HYPERLINK "<https://doi.org/10.5553/rdw/138064242016037003002>"
<https://doi.org/10.5553/rdw/138064242016037003002>
- Bedner, A., & Vel, J. A. C. (2019). *An analytical framework for empirical legal research*. *Law & Society Review*, 53(4), 1–25. HYPERLINK "<https://doi.org/10.1111/lasr.12410>"
<https://doi.org/10.1111/lasr.12410>
- Biswas, R. K., Khan, J. R., & Kabir, E. (2019). Trend of child marriage in Bangladesh: A reflection on significant socioeconomic factors. *Children and Youth Services Review*, 104, 104384. HYPERLINK "<https://doi.org/10.1016/j.childyouth.2019.06.017>"
<https://doi.org/10.1016/j.childyouth.2019.06.017>
- Cameron, L., Contreras Suarez, D. & Wiecekiewicz, S. (2023). Child marriage: using the Indonesian family life survey to examine the lives of women and men who married at an early age. *Rev Econ Household* 21, 725–756. HYPERLINK "<https://doi.org/10.1007/s11150-022-09616-8>"
<https://doi.org/10.1007/s11150-022-09616-8>
- Coast, E., Mwali, P., & Soremekun, S. (2021). "If she's pregnant then that means that her dreams fade away": Exploring adolescent pregnancy and motherhood in Zambia. *Journal of International Development*, 33(8), 1454–1472. HYPERLINK "<https://doi.org/10.1002/jid.3577>"
<https://doi.org/10.1002/jid.3577>
- Damayanti, R., Fatimah, S., & Pratama, A. (2025). Legal protection for adolescents against reproductive health risks related to child marriage. *Malaysian Journal of Nursing*. HYPERLINK "<https://doi.org/10.31674/mjn.2025.v16i04.028>"
<https://doi.org/10.31674/mjn.2025.v16i04.028>
- Dadras, O., & Nakayama, T. (2021). Child marriage and adverse reproductive outcomes: A systematic review. *Journal of Adolescent Health*, 69(4), 569–578. HYPERLINK "<https://doi.org/10.1016/j.jadohealth.2021.05.017>"
<https://doi.org/10.1016/j.jadohealth.2021.05.017>
- de Groot, R., Kuunyem, M. Y., & Palermo, T. (2018). Child marriage and associated outcomes in northern Ghana: A cross-sectional study. *BMC Public Health*, 18, 285. HYPERLINK

- "<https://doi.org/10.1186/s12889-018-5166-6>" <https://doi.org/10.1186/s12889-018-5166-6>
- Efevbera, Y. & Bhabha, J. (2020). Defining and deconstructing girl child marriage and applications to global public health. *BMC Public Health*, 20(1),1547. HYPERLINK "<https://doi.org/10.1186/s12889-020-09545-0>" <https://doi.org/10.1186/s12889-020-09545-0>
- Fan, S., & Koski, A. (2022). Child marriage and adolescent birth: Evidence from low- and middle-income countries. *Demographic Research*, 46, 1349–1380. HYPERLINK "<https://doi.org/10.4054/DemRes.2022.46.45>" <https://doi.org/10.4054/DemRes.2022.46.45>
- Finuliyah, R., Setyanti, A., & Widodo, A. (2025). Determinants of food insecurity: The role of child marriage in Indonesia. *Journal of Asian Economics*, 85, 101610. HYPERLINK "<https://doi.org/10.1016/j.asieco.2024.101610>" <https://doi.org/10.1016/j.asieco.2024.101610>
- Fitria, M., Laksono, A. D., Syahri, I. M., Wulandari, R. D., Matahari, R., & Astuti, Y. (2024). Education role in early marriage prevention: evidence from Indonesia's rural areas. *BMC Public Health*, 24(1), 3323. HYPERLINK "<https://doi.org/10.1186/s12889-024-20775-4>" <https://doi.org/10.1186/s12889-024-20775-4>
- Goers, M., Hunersen, K., Karim, L. S., Jeffery, A., Zedan, A., Robinson, C., & Metzler, J. (2022). Child marriage among displaced populations: A 2019 study in Kurdistan Region of Iraq. *BMC Public Health*, 22, 13220. HYPERLINK "<https://doi.org/10.1186/s12889-022-13220-x>" <https://doi.org/10.1186/s12889-022-13220-x>
- Griffin, S., Melo, J., & Rahman, A. (2023). The role of gender norms in shaping adolescent girls' reproductive choices. *Adolescents*, 3(2), 245–260. HYPERLINK "<https://doi.org/10.3390/adolescents3020024>" <https://doi.org/10.3390/adolescents3020024>
- Habib, S., Karim, H., & Lehri, Z. A. (2025). The impact of climate change on women's nutrition and food security in Pakistan. *Policy Journal of Social Science Review*, 3(10), 76-90. HYPERLINK "<https://policyjssr.com/index.php/PJSSR/article/view/526>" <https://policyjssr.com/index.php/PJSSR/article/view/526>
- Heise, L., Greene, M. E., Opper, N., Stavropoulou, M., Harper, C., Nascimento, M., ... & Gupta, G. R. (2019). Gender inequality and restrictive gender norms: framing the challenges to health. *The Lancet*, 393(10189), 2440-2454. HYPERLINK "[https://doi.org/10.1016/s0140-6736\(19\)30652-x](https://doi.org/10.1016/s0140-6736(19)30652-x)" [https://doi.org/10.1016/s0140-6736\(19\)30652-x](https://doi.org/10.1016/s0140-6736(19)30652-x)
- Horii, H. (2020). A blind spot in international human rights framework: a space between tradition and modernity within the child marriage discourse. *The International Journal of Human Rights*, 24(8), 1057-1079. HYPERLINK "<https://doi.org/10.1080/13642987.2019.1690468>" <https://doi.org/10.1080/13642987.2019.1690468>
- Hotchkiss, D. R., Godha, D., Gage, A. J., & Cappa, C. (2016). Risk factors associated with the practice of child marriage among Roma girls in Serbia. *BMC International Health and Human Rights*, 16, 6. HYPERLINK "<https://doi.org/10.1186/s12914-016-0081-3>" <https://doi.org/10.1186/s12914-016-0081-3>
- Hunersen, K., Attal, B., Jeffery, A., Metzler, J., Alkibsi, T., Elnakib, S., & Robinson, W. C. (2021). Child marriage in Yemen: A mixed methods study in ongoing conflict and displacement. *Journal of Refugee Studies*, 34(4), 3796–3822. HYPERLINK "<https://doi.org/10.1093/jrs/feaa144>" <https://doi.org/10.1093/jrs/feaa144>
- Hunersen, K., Jeffery, A., Karim, L. S., Gambir, K., Metzler, J., Zedan, A., & Robinson, W. C. (2024). Child marriage and displacement: A qualitative study of displaced and host populations in the Kurdistan Region of Iraq. *Journal of Refugee Studies*. HYPERLINK "<https://doi.org/10.1093/jrs/feae020>" <https://doi.org/10.1093/jrs/feae020>
- Laurenzi, C., Toska, E., & Cluver, L. (2023). Key normative, legal and policy considerations for addressing child marriage and adolescent pregnancy. *Global Public Health*. HYPERLINK "<https://doi.org/10.1080/26410397.2023.2249696>" <https://doi.org/10.1080/26410397.2023.2249696>
- Khan, M. A., Haque, M. A., Tariqujjaman, M., Sarmin, M., Ahmed, T., & Mahfuz, M. (2024). Influence of child marriage on nutritional status among children in Bangladesh. *Reproductive, Female and*

- Child Health*, 2(1). HYPERLINK "https://doi.org/10.1002/rfc2.102"
<https://doi.org/10.1002/rfc2.102>
- Kok, M., Kakal, T., Kassegne, A. B., Hidayana, I., Munthali, A., Menon, J., Pires, P., Gitau, T., & van der Kwaak, A. (2023). Drivers of child marriage in specific settings of Ethiopia, Indonesia, Kenya, Malawi, Mozambique and Zambia. *BMC Public Health*, 23, 15697. HYPERLINK
["https://doi.org/10.1186/s12889-023-15697-6"](https://doi.org/10.1186/s12889-023-15697-6) <https://doi.org/10.1186/s12889-023-15697-6>
- Lowe, H., Kenny, L., Hassan, R., Bacchus, L., Njoroge, P., Dagadu, N. A., Hossain, M., & Cislighi, B. (2022). 'If she gets married when she is young, she will give birth to many kids': A qualitative study of child marriage practices amongst nomadic pastoralist communities in Kenya. *Culture, Health & Sexuality*, 24(6), 886–901. HYPERLINK
["https://doi.org/10.1080/13691058.2021.1893821"](https://doi.org/10.1080/13691058.2021.1893821)
<https://doi.org/10.1080/13691058.2021.1893821>
- McCleary-Sills, J., Hanmer, L., Parsons, J., & Klugman, J. (2021). Child marriage: A critical barrier to girls' schooling and gender equality. *World Development*, 137, 105178. HYPERLINK
["https://doi.org/10.1016/j.worlddev.2020.105178"](https://doi.org/10.1016/j.worlddev.2020.105178)
<https://doi.org/10.1016/j.worlddev.2020.105178>
- Mrayan, L., & Obeisat, S. (2021). The lived experience of early marriage in Jordan. *SAGE Open*, 11(4). HYPERLINK
["https://doi.org/10.1177/21582440211048895"](https://doi.org/10.1177/21582440211048895)
<https://doi.org/10.1177/21582440211048895>
- Mwansa, C. (2023). Revisiting the endogeneity of adolescent pregnancy and early marriage. *Journal of Biosocial Science*, 55(3), 421–437. HYPERLINK
["https://doi.org/10.1017/S0021932022000123"](https://doi.org/10.1017/S0021932022000123)
<https://doi.org/10.1017/S0021932022000123>
- Muyonga, J., Kagurusi, P., & Ninsiima, A. (2024). Sociocultural drivers and barriers to addressing repeat adolescent pregnancy in sub-Saharan Africa. *African Journal of Reproductive Health*, 28(12). HYPERLINK
["https://doi.org/10.29063/ajrh2024/v28i12.16"](https://doi.org/10.29063/ajrh2024/v28i12.16)
<https://doi.org/10.29063/ajrh2024/v28i12.16>
- Mwansa, M. (2023). Revisiting the endogeneity of adolescent pregnancy and early marriage in developing countries. *The International Journal of Applied Research*. HYPERLINK
["https://doi.org/10.21522/tijar.2014.10.02.art004"](https://doi.org/10.21522/tijar.2014.10.02.art004)
<https://doi.org/10.21522/tijar.2014.10.02.art004>
- Neal, S., Channon, A. A., & Chintsanya, J. (2021). The impact of child marriage on maternal and child health outcomes in low- and middle-income countries. *BMJ Global Health*. HYPERLINK
["https://doi.org/10.1136/bmjgh-2021-006796"](https://doi.org/10.1136/bmjgh-2021-006796) <https://doi.org/10.1136/bmjgh-2021-006796>
- Pope, D. H., McMullen, H., Baschieri, A., Philipose, A., Udeh, C., Diallo, J., & McCoy, D. (2023). What is the current evidence for the relationship between the climate and environmental crises and child marriage? A scoping review. *Global public health*, 18(1), 2095655. HYPERLINK
["https://doi.org/10.1080/17441692.2022.2095655"](https://doi.org/10.1080/17441692.2022.2095655)
<https://doi.org/10.1080/17441692.2022.2095655>
- Pietras, J., Jarzabek-Bielecka, G., & Mizgier, M. (2024). Adolescent pregnancy: Medical, legal and social issues. *Journal of Maternal-Fetal & Neonatal Medicine*. HYPERLINK
["https://doi.org/10.1080/14767058.2024.2391490"](https://doi.org/10.1080/14767058.2024.2391490)
<https://doi.org/10.1080/14767058.2024.2391490>
- Pourtaheri, A., Tavakoli Sany, S. B., Aghaee, M. A., Ahangari, H., & Peyman, N. (2023). Prevalence and factors associated with child marriage: A systematic review. *BMC Women's Health*, 23, 264. HYPERLINK
["https://doi.org/10.1186/s12905-023-02634-3"](https://doi.org/10.1186/s12905-023-02634-3)
<https://doi.org/10.1186/s12905-023-02634-3>
- Raj, A., Dehingia, N., Singh, A. K., McDougal, L., & McAuley, J. (2020). Application of machine learning to understand child marriage in India. *SSM – Population Health*, 12, 100687. HYPERLINK
["https://doi.org/10.1016/j.ssmph.2020.100687"](https://doi.org/10.1016/j.ssmph.2020.100687)
<https://doi.org/10.1016/j.ssmph.2020.100687>
- Roy, A., & Chouhan, P. (2022). Exploring the socioeconomic factors associated with girl child marriage and its impact on pregnancy outcomes. *Indian Journal of Community Medicine*, 47(1), 8–11. HYPERLINK
["https://doi.org/10.4103/ijcm.ijcm_7_21"](https://doi.org/10.4103/ijcm.ijcm_7_21)
https://doi.org/10.4103/ijcm.ijcm_7_21

- Rumble, L., Peterman, A., Irdiana, N., Triyana, M., & Minnick, E. (2018). An empirical exploration of female child marriage determinants in Indonesia. *BMC Public Health*, *18*, 407. HYPERLINK "<https://doi.org/10.1186/s12889-018-5313-0>" <https://doi.org/10.1186/s12889-018-5313-0>
- Sekine, K., & Carter, D. J. (2019). The effect of child marriage on the utilization of maternal health care in low- and middle-income countries. *PLOS ONE*, *14*(1), e0210121. HYPERLINK "<https://doi.org/10.1371/journal.pone.0210121>" <https://doi.org/10.1371/journal.pone.0210121>
- Sekine, K., & Carter, D. J. (2019). The effect of child marriage on the utilization of maternal health care in low- and middle-income countries. *Health Policy and Planning*, *34*(3), 180–189. HYPERLINK "<https://doi.org/10.1093/heapol/czz005>" <https://doi.org/10.1093/heapol/czz005>
- Svanemyr, J., Chandra-Mouli, V., Raj, A., Travers, E., & Sundaram, L. (2020). Research priorities on ending child marriage and supporting married girls. *Reproductive Health*, *17*(1), 1–10. HYPERLINK "<https://doi.org/10.1186/s12978-020-0852-1>" <https://doi.org/10.1186/s12978-020-0852-1>